

P R O C E E D I N G S



**Natural Resources
Income Opportunities for
Private Lands**

C O N F E R E N C E

**Hagerstown, Maryland
April 5-7, 1998**

Proceedings and Invited Papers

Natural Resources Income Opportunities on Private Lands Conference

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Foreword

As we approach the new millennium, the challenge of sustaining rural lands and the economies and communities they support never has been greater. The Northeast and Mid-Atlantic regions have experienced rapid changes in land use, characterized by the fragmentation of farm and forest properties and increasing numbers of small farmers and forest owners with diverse objectives for land ownership.

The reasons for the change are many but include an expanding urban population and declining profitability of traditional agricultural crops. Changing land ownership and demographic patterns, coupled with increases in disposable income and leisure time for many people, have created new enterprise opportunities for rural landowners for products and services based on the management of natural resources and recreational access.

Agricultural and natural resources professionals receive an increasing number of requests from private landowners for information on the management of renewable natural resources. Requests come from traditional farmers looking to diversify income from their existing farm operation, part-time farmers looking for alternative products and markets, urban returnees trying to escape the rat race, and nonindustrial forest owners and hobbyists with objectives ranging from being good forest and farm stewards, to paying the taxes, to finding an extra income source.

The interest in natural resources income opportunities is not new, but the intensity of interest and the reality that these grassroot enterprises can contribute significantly to the development and sustainability of rural lands and economies is only now being realized. Unfortunately, many enterprises are destined for failure because of false expectations of a quick return and little effort. A major problem is the lack of technical, financial, business, and marketing information for landowners and the professionals that work with landowners. Potential entrepreneurs need adequate information to understand the realities of what they are considering, determine if the enterprise will be profitable, is consistent with their objectives, and is compatible with the long-term conservation of the property.

One of the first major attempts to deal with this rural development issue was the first Eastern U.S. Conference on, "Income Opportunities for the Private Landowner Through Management of Natural Resources and Recreational Access," held on April 9-12, 1989, at Oglebay Park, Wheeling, West Virginia. Attended by over 250 people from 29 states, it helped to synthesize and clarify the status of knowledge, issues, programs, and utilization of recreational access and other uses of renewable natural resources for enhancing landowner and rural community revenues. The 45 papers presented at the conference still serve as usable text.

Since that conference, many regional and local efforts have been developed to educate landowners and professionals. The purpose of this conference is to look at what has transpired since 1989, and address issue and topic areas that needed clarification and further study. Many of the conference organizers from the 1989 conference did help in planning this effort. Unfortunately, the untimely death of conference organizer, Tony Ferrise, shortly after the 1989 conference, greatly reduced follow-up efforts that likely would have occurred. This meeting is dedicated to his vision and commitment.

The proceedings and invited papers from this meeting were intended as a natural resources handbook for landowners considering enterprise options. Agricultural and natural resources professionals can use the resource to enable them to better serve farm and forest landowners, rural community leaders, and others.

*Jonathan Kays, Conference Chair
University of Maryland Cooperative Extension*

Acknowledgments

Organizing this conference has taken the time and commitment of the many talented people on the planning committee and their support staffs. Planning efforts for this conference started in December 1996 with the ambitious objective of providing a quality conference and an associated proceedings that would be completed in time for the conference.

A conference of this breadth is only possible if adequately funded. The generous financial contributions of all the organizations and agencies, both public and private, allowed the conference organizers to keep the registration reasonable and provide a proceedings. The inkind contributions of the many cooperating organizations were key to advertising the program and making it happen. A special thanks is extended to all the speakers who took time from their busy schedules to meet submission deadlines and prepare quality presentations.

It is unlikely this effort would have been successful without the efforts of Cindy Mason, secretary to the conference chair, whose tireless efforts and professionalism was responsible for developing the conference brochure, formatting and editing the proceedings, organizing all the conference papers, making the necessary arrangements to handle the registration, and many other associated tasks. A special thanks also to Vera Mae Schultz for her assistance in editing conference papers.

Several key members of the planning committee contributed greatly to making this conference proceed as planned. Bill Grafton accepted the responsibility of making all the speaker contacts and handling expense reimbursement, and provided sage advice to the conference chair on many occasions. Gary Goff developed a list of exhibitors and took responsibility for making necessary contacts and arrangements. Bill Aiken handled door prizes. Donald Schwartz and staff of the Washington County Cooperative Extension office assisted in processing conference registrations. Early on, the ideas and input of these planning committee members and the others identified below were key to identifying topics and appropriate speakers. These individuals include: Charles Barden, John Becker, Margret Brittingham, John Butler, Roger Locandro, Jim Miller, Jim Parkhurst, Bob Simpson, Peter Smallidge, and Edward Smith.

The short time frame provided to collect papers from presenters, edit the manuscripts and compile them, required a concerted effort by those on the editorial committee: Gary Goff, Peter Smallidge, Jim Parkhurst, and Bill Grafton. Each of these individuals carried through on his commitment to make time in his busy schedule to meet the necessary timelines to prepare the proceedings. They also contributed significantly their ideas and time in all the planning efforts.

SECTION 1

Natural Resources Income Opportunities: Trends and Considerations

Natural Resources Income Opportunities in a Changing Landscape

JOHN MICHAEL HAYDEN, President and CEO, American Sportfishing Association, 1033 North Fairfax St. Suite 200, Alexandria, VA 22314.

Abstract: The face of American agriculture, forestry, and outdoor recreation is changing dramatically. In many states, the number of farms is declining while farm size is increasing. In the eastern states, ownerships of farm and forest land are becoming smaller and increasingly fragmented as population pressures take hold. But these lands have great potential for providing alternative products and services to the same burgeoning population. Federal programs that once heavily subsidized crop production are being turned toward programs promoting conservation and water quality. These programs hold great promise for increasing wildlife and fish populations and therefore, an opportunity to increase farm and forest income as it relates to outdoor recreation.

Income opportunities are increasing dramatically as our population becomes more urbanized and as people do not have the opportunity to recreate as readily in their home community. To give you some idea of the dramatic shift, West Virginia now leads the nation in the sale of nonresident hunting licenses. This is a dramatic shift from the days when the western states, led by Colorado and Texas, predominated in the sale of nonresident hunting licenses. West Virginia is located in close proximity to major metropolitan centers along the east coast of the United States, yet in itself is still relatively undeveloped, with significant public and private lands available for hunting and fishing opportunities. These changing demographics and significant changes brought about by wildlife managers over the past several decades have greatly enhanced the opportunity for income-producing outdoor recreation on private lands.

White-tailed deer populations are at an all-time high. The wild turkey population is now estimated at four million in the United States and is increasing dramatically. It was only a few short years ago that many states had no huntable wild turkey population. Today, states such as Alaska, not normally associated with turkey populations, have a turkey season. The number of turkey hunters and the turkey population both continue to increase dramatically. Canada goose populations and snow geese populations continue to increase, except in the eastern flyway. With early seasons now established, resident goose hunting is now allowed in a number of states. This has provided a new income source for landowners.

Wildlife watching expenditures nationwide now top \$30 billion annually. This exceeds the amount of hunting expenditures by almost \$10 billion annually. I will discuss certain wildlife watching activities - particularly those which provide some reasonable income opportunity for land owners. And while the number of licensed hunters and anglers nationwide continues to stabilize or, in some cases decline, the number of people involved in wildlife watching continues to increase dramatically. It will require new thinking on the part of landowners to incorporate recreational-based income programs into their normal farm and forest operations.

Hopefully, we can set the tone in this conference and hear from entrepreneurs and experts on a number of areas. Landowners, and professionals who work with landowners, will learn how they might be able to develop a plan on their own land which will lead to a substantial increase in income based on outdoor recreation and natural resources income opportunities.

Keywords: natural resource income opportunity, wildlife watching, deer, turkey, hunting

Trends in Outdoor Recreation And Implications For Private Land Management in the East

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JAMES A. MAETZOLD, USDA National Agrotourism and Recreation Leader, Natural Resources Conservation Service, Washington, DC.

Abstract: The private owners and the rural lands they own are examined in the context of a growing market for outdoor recreation. There seem to be unexplored potentials for expanding the role of private lands as a source of outdoor opportunities in the East. In designing assistance approaches to help private owners explore expansion of this recreation supply role, differences between the North and South Regions of the East and between resident and absentee owners need to be considered.

Keywords: recreational access, landowner characteristics, income earning potentials

INTRODUCTION

Private rural land in the contiguous United States makes up more than 60 percent of this country's total land area and covers approximately 1.28 billion acres. Over one-third of this Nation's private land, just less than 37 percent, is in the East. Of the national total of private land in forest or woodland cover, around 65 percent is in the East. Of the total of 450 million acres of private forest and rangelands in the East (including Texas and Oklahoma), almost two-thirds is in the South. The trend in recent years in both the North and the South has been toward increasing numbers of ownerships and total acreage of private lands that is in forest cover.

Obviously, private land is a vast resource of enormous importance to rural livelihoods and provides crops, wood products, spacious lifestyles, and many other human benefits. But this vast estate is also important as a source of outdoor recreation opportunities, especially for people living in the populated East where public lands are limited. This paper examines trends in outdoor recreation demand, the identity of the owners of private lands, attitudes owners have about natural resources, levels at which owners allow others to use their land for recreation, and

differences between resident and absentee owners and how they use their land. From these examinations, implications for the management of private lands, especially with regard to outdoor recreation, are described as the authors see them.

TRENDS IN OUTDOOR RECREATION DEMAND

From the ongoing series of National Recreation Surveys begun in 1960, we have learned that outdoor recreation participation in the United States has been rising steadily, with only a few exceptions (Cordell et al. 1996). Riding bicycles, camping, swimming and snow skiing have increased in both the percentage of the population and millions of people who participate. The exceptions to this general rise in demand for outdoor recreation includes consumptive activities, such as hunting, some forms of fishing, and more expensive activities which require a great deal of space, such as horseback riding and sailing.

Since the previous 1982-83 National Recreation Survey was conducted, several interesting trends have become evident (Cordell, et al., 1998). First, growth in the number of persons who participate

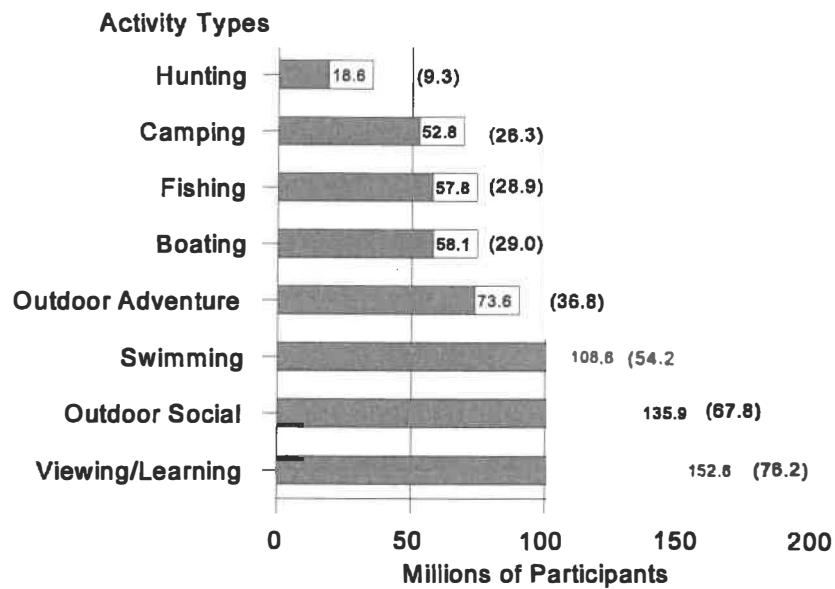


Figure 1. Millions and percentage (in parenthesis) of persons 16 years or older participating in general forms of outdoor recreation, 1995-96. Source: The National Private Land Ownership Study, Environmental Resources Assessment Group, USDA Forest Service and the University of Georgia, Athens, GA.

in land-based recreation activities has been faster than the growth of either snow/ice or water-based activities. Of the land-based activities, the fastest growing have been bird watching (+155 percent increase in number of people 16 or older participating between 1982-83 and 1994-95), hiking (+94 percent increase), backpacking (+73 percent increase), primitive camping (+58 percent increase), off-road vehicle driving (+44 percent increase) and walking (+43 percent increase). Of snow/ice-based activities, downhill skiing (+59 percent increase) and snowmobiling (+34 percent increase) has been the fastest growing. Of water-based recreation activities, the fastest growing has been motorboating (+40 percent increase) and swimming in rivers, lakes or ocean waters (rather than pools) (+38 percent increase).

The percentage and number of people 16 years or older who participate in different general categories of outdoor activities have also increased. Categories in order from the most to the least popular (Figure 1) are: viewing/learning-oriented forms (wildlife viewing, birdwatching, visiting historic sites, nature study, etc.); social activities (picnicking, family gatherings outdoors, swimming; and outdoor adventure (kayaking, backpacking, hiking, etc.). Hunting is the overall least popular type of activity (including small game, large game, and migratory bird hunting). The number of people participating in

viewing/learning activities at least once in 1994-95 was estimated at nearly 153 million. This represents 76 percent of all persons 16 or older in the U.S. Only an estimated 19 million people, or 9.3 percent, participated in hunting.

THE OWNERS AND HOW THEY USE THEIR LAND

Better understanding of the characteristics, motivations and attitudes of private land owners who must make choices about how to best use their land and who also take the risks associated with those choices, can be a great help in assisting landowners to interpret these recreation demand trends. This understanding can also help to identify ways to improve the sustainability of the benefits and income earning potentials from private land ownership. In this section we separately describe a number of dimensions of landowners in two regions, the North (MN, IA and MO to ME) and the South (TX and OK to FL, GA, SC, NC and VA). These descriptions are based on results from the 1995-96 National Private Land Owners Study (NPLOS) conducted jointly by the USDA Forest Service, the University of Georgia and the USDA Natural Resources Conservation Service (Teasley, et al., 1998). To improve the readability of this section,

South is abbreviated as S, and North is abbreviated as N.

Owners in both regions have owned their land an average of 21 years and about 50 percent of them reported that they reside on their land, as opposed to being an absentee owner (N=55 percent and S=44 percent). About 15 percent have added acreage to their tract since its original purchase. A similar percentage, about 14 percent, have sold some acreage from that original tract. On average, 41 percent of the total private acreage in the North and 48 percent of the acreage in private tracts in the South is considered by owners to be forest or woodland; 38 percent N and 21 percent S are in crop or hay production; 13 percent N and 21 percent S are in pasture, and 2 percent in both N and S is water.

Reasons for Ownership

Owners in both regions have a variety of reasons for owning rural land. It is noteworthy that recreation and amenity aspects of rural land ownership seem as important as income earning opportunities to owners in both regions. The reasons for ownership include:

- The provision of personal and family recreation opportunities (52 percent N and 43 percent S);
- Raising livestock for sale (50 percent N and 43 percent S);
- To sell it at some time in the future for profit (33 percent N and 39 percent S);
- To provide recreation opportunities for others outside the family (36 percent N and 31 percent S);
- To have a tax shelter (32 percent N and 20 percent S);
- To be able to live in a rural environment (33 percent N and 25 percent S).

Sources of Income

For those owners interested in earning income from their land, the most common sources of income are listed below. They include:

- Grazing livestock for sale (20 percent N and 28 percent S);
- Share cropping (15 percent N and 9 percent S);

- Harvesting timber or pulpwood (9 percent N and 12 percent S);
- Leasing to a commercial interest for timber, crops or other commodity (7 percent both N and S).
- Selling firewood, leasing to hunters, and renting a house or mobile home are other income earning practices, each which involves less than 5 percent of owners.

Land Management Practices

The most prominent land management practices employed by private owners include:

- Improvement of wildlife habitat (14 percent N and 11 percent S);
- Planting trees (14 percent N and 9 percent S);
- Using fertilizers to enhance pasture or woodland productivity (11 percent N and 13 percent S);
- Harvesting mature timber (9 percent N and 8 percent S);
- Thinning trees to enhance growth (11 percent N and 6 percent S).
- Other management practices involving relatively small percentages of owners include: clearing woodland for crops or pasture; providing songbird habitat; developing ponds; developing roads or trails; and using fire to control unwanted vegetation.

Landowner Employment and Income

Most landowners fall within one of three employment categories: retired (37 percent N and 43 percent S); self-employed (30 percent N and 26 percent S); or employed by a private business or corporation (21 percent N and 18 percent S). Most landowners can be characterized as Caucasian (96 percent N and 91 percent S), male (79 percent N and 72 percent S), and about 60 years old (mean age 59 N and 61 S). Only about 3 percent of owners are under 35, a percentage which increases to only 15 percent for owners under 45 years old. Two-thirds of the owners earn \$30,000 or more in annual income, and 42 percent earn \$50,000 or more per year. Incomes of owners in the South are somewhat higher (22.7 percent earn more than \$80,000) relative to those in the North (16.9 percent more than \$80,000).

RECREATIONAL ACCESS TO PRIVATE LANDS

Access for recreational purposes is of interest to the public at large, to the owners, and to those in landowner assistance roles. One aspect of access is the degree to which private land is being posted. Of owners in the North, 42 percent post their property against trespass, averaging just less than 109 acres per ownership among those who post. In the South, a similar 41 percent post their land, but the acreage per ownership posted is much larger at 238 acres. The most prominent reasons stated for posting are

- “To know who is on the property” (40 percent N and S);
- “To keep out persons not having permission” (38 percent N and 40 percent S);
- “To keep hunters out” (29 percent N and 32 percent S);
- “To protect from lawsuits” (28 percent N and 30 percent S);
- “To keep motor vehicles out” (28 percent N and 27 percent S).

Most owners who post are trying to protect their privacy as well as their land. About 80 percent of owners in both regions expect to be posting about the same amount of acreage in the future as at the time of the NPLOS survey. Only about 15 percent indicate they plan to post more acreage.

Who Is Granted Access?

Beyond persons in the household of the owner, there are four general categories of persons who are granted access to use private land for recreational purposes (Table 1). About 50 percent (54 percent N and 48 percent S) of owners have given explicit permission to immediate family members who do not live currently in the household of the owner. Somewhat less than 50 percent (55 percent N and 45 percent S) have given permission to friends, neighbors, acquaintances, or others outside their immediate family or household. Much lower are the percentages of owners who lease to individuals, clubs or other groups for hunting or other recreational activities (4 percent N and just over 7 percent S). A reversal of the order of percentages between the two regions is shown for proportions of owners who permit persons having no personal relationship with the owner, i.e., the general public, to use their land for recreation (16 percent N and over 6 percent S). Owners have a number of reasons for allowing recreational use of their land, the primary one being to maintain goodwill with neighbors and others.

Table 1. Proportion of owners of private rural lands providing access to persons outside their household by relationship and region, 1995-96.

Relationship between owner and persons permitted access	Region		
	North	South	Nation
Members of immediate family not living in household	53.6	48.2	49.4
Friends, acquaintances, others outside the family or household	55.2	45.3	49.3
Individuals, clubs, or groups who lease the land	4.2	7.4	5.1
Outside persons having no personal connection	16.0	6.5	11.9

Source: The National Private Land Ownership Study, Environmental Resources Assessment Group, USDA Forest Service, and the University of Georgia, Athens, GA.

Land Leasing

Some owners lease their land to individuals or groups as their way of granting access. In the North, the average acreage per lease is 183 and in the South the average is 418 acres. Typically, an individual lease gives access to between 10 and 15 persons. The most prominent reasons for using the lease mechanism are

- To help pay property taxes (62 percent N and 80 percent S);
- To get help in controlling trespass (30 percent N and 70 percent S);
- To get help in caring for and protecting the land (27 percent N and 61 percent S);
- As a source of extra income (30 percent N and 39 percent S).

The types of agreements covered by leases vary from written agreements with a fee (40 percent N and 77 percent S), verbal agreements with a fee (47 percent N and 15 percent S), to verbal or written agreements with no fee (12 percent N and 7 percent S). The tenure of leases varies widely between regions with only 28 percent being year-long in the North, but 62 percent being year-long in the South. Fifty-four percent of leases in the North are seasonal (or are a combination seasonal/annual), while only 35 percent of leases in the South are seasonal. The majority of owners in both regions lease at a fee rate lower than what they believe the market would bear as a way to encourage someone they know and trust to agree to lease their property so they can feel better assured the land will be well cared for (54 percent N and 66 percent S).

LANDOWNER ATTITUDES

Many landowner studies overlook an examination of the attitudes owners hold about the natural environment and their overriding values that underpin the way they think of their land. In our National Private Land Ownership Study, questions were asked to help shed more light on a few such attitudes. First, owners were asked whether they strongly agree, agree, disagree or strongly disagree with the following statement: "The balance of nature is very delicate, so we must try to limit economic growth that exploits nature." We examined reactions to this statement by comparing owners resident on the land with absentee owners for both the North and the South.

In both regions, around three-quarters of resident owners indicated either agreement (43 percent N and 45 percent S) or strong agreement (33 percent N and 31 percent S), that economic growth must be tempered with concern for the natural environment. Somewhat smaller percentages of absentee owners felt economic growth should be tempered, but still these percentages represented substantial majorities of owners agreeing either with the statement (41 percent N and 43 percent S) or in strong agreement with it (28 percent N and 24 percent S).

Owners were asked what they emphasized most in managing their land; either an emphasis on the wildlife, water, aesthetics and other natural components, or an emphasis on moneymaking ventures. Around 40 percent indicated they put more emphasis on the natural components, while 30 percent put their emphasis on making money. Just over 30 percent were unsure what they should emphasize most.

Between resident and absentee owners in both regions, owners living on the land put more emphasis on nature (44 percent N and 41 percent S) than absentee owners (39 percent N and 36 percent S). In both regions, significantly smaller percentages of resident owners indicated they mostly would emphasize income from the land (7 percent N and 4 percent S) relative to the percentages of absentee owners who would emphasize income (12 percent N and 10 percent S). Apparently the motivations behind ownership differ somewhat between resident and absentee owners.

EXPLORING FURTHER DIFFERENCES BETWEEN RESIDENT AND ABSENTEE LANDOWNERS

The following summary statements cover a variety of additional differences (significantly different at the 0.05 probability level) found to exist between resident and absentee owners.

- Higher percentages of absentee owners are members of business and trade associations and/or of a timber association, whereas, higher percentages of resident owners are members of farm or breed associations.
- Resident owners have owned their tracts an average of three years longer than absentee

owners, and higher percentages of resident owners have added acreage to their original tracts since they have owned it.

- On average, the percentage of land in forest or woodland cover on resident-owned tracts is substantially less than forest average of absentee-owner tracts (36 percent versus 47 percent N and 41 percent versus 53 percent S), whereas, the percentage of land in pasture on resident-owned tracts is substantially greater (17 percent versus 7 percent N and 27 percent versus 16 percent S).
- While resident owners place greater emphasis on raising livestock for sale, providing personal recreation opportunities (by a vast margin), having a tax shelter, and enjoying their own personal green space as reasons for owning their land, absentee owners put more emphasis on growing nursery or Christmas trees for sale, growing landscaping shrubbery for sale, making an estate for heirs, providing wildlife habitat, leasing and charging fees for recreational access, and renting houses or mobile homes.
- Resident owners differ from absentee owners in the way they manage their land in order to gain income by putting greater emphasis on grazing livestock, and less emphasis on harvesting timber, leasing to grow crops or for recreation, and share cropping.
- Resident owners tend to be somewhat younger, and there is a higher percentage who are male, when compared with absentee owners.
- Absentee owners tend to have higher annual incomes than resident owners, and substantially higher percentages of owners earn in excess of \$80,000 in both the North and South regions.

IMPLICATIONS FOR MANAGEMENT OF PRIVATE LANDS

Several points emerge from the data examined in this paper.

- 1) Private rural land is a vast resource that can have an important role as a resource for outdoor recreation and as a source of income—particularly in the East.
- 2) Demand for outdoor recreation has continued to grow over the decades in the United States and currently represents a huge market within

which private lands can play a substantive role. The more traditional outdoor recreation role of land, that of mostly providing hunting opportunities, is likely to remain strong, although demand for hunting is showing some signs of waning.

- 3) While owners in both the North and South vary widely in their reasons for owning land, in both regions opportunities for recreation and the amenities associated with a rural lifestyle seem as important as income earning opportunities as reasons for owning.
- 4) Most owners are retired or self employed, are Caucasian, are about 60 years old, and have good incomes.
- 5) Many owners allow others to use their land for recreational activities, but mostly this access is limited to family, friends, neighbors, acquaintances or co-workers. Only a small percentage lease to outsiders or otherwise allow outsiders access. Limiting access, including posting, is practiced by most in order to protect privacy and/or to prevent damage to the land or improvements. Many landowners have instituted some form of a fee as the necessary condition for granting access.
- 6) The majority of owners feel that “the balance of nature is very delicate, so we must try to limit economic growth that exploits nature” and they feel that caring for the natural components of the land is more important than earning money from it. Resident and absentee owners were found to differ in the percentages holding these attitudes toward the land, and this observation led to a further examination of resident and absentee owner differences.
- 7) In general, resident owners tend to be younger, more into farming and livestock, have more pasture and less woodland, value more highly use of their land for personal recreation, but provide less access for recreation to others with whom they do not have a personal relationship. Absentee owners are more into timber, leasing and other non-farm ways to earn supplementary income, and leasing and other ways to use recreational access as a means to earn income.

The implications of these findings for private land management and ownership indicate a need to explore additional ways that outdoor recreation can provide income to owners. Hunting has been, and will likely remain, a viable opportunity

through leasing or daily use fees. However, many other forms of outdoor recreation are growing at faster rates and represent much larger markets. The American public increasingly is seeking places and opportunities to view and learn about wildlife and nature in general. They are interested in learning about the land and its use, including farming.

In addition, Americans seek opportunities to hike, swim, fish, ride bicycles and ride motorized off-road vehicles. The limited public lands in the East increasingly are under pressures by a growing public that has a growing interest in outdoor recreation of all types. Public lands, such as national forests, national parks, or state parks, typically provide a different kind of experience than ordinarily can be provided on private lands. Often, however, the differences between public and private land opportunities are complementary, rather than competitive. If the downward trend in the amount of private land that is made accessible to the public by private landowners can be stemmed, it seems that an opportunity exists to explore the compatibility between private land and public land opportunities.

Increasingly, collaboration between public and private sector interests has been found to be highly workable and productive. This is especially applicable to private lands lying near public sites, and vice versa. It seems there are very favorable opportunities to provide a more diverse package of recreational opportunities for the public if the diversity of opportunities on both types of ownerships are provided as a package (or packages). Accommodations, services, hunting areas, fishing lakes and streams, and groomed trails are among the private land opportunities that would complement well the campgrounds, picnic areas, visitor centers, scenic drives, and long-distance trails on publicly-owned lands.

For resident owners, ways need to be found to provide access to outsiders so that their presence does not intrude upon the owner's privacy and so that their property and improvements are protected from damage. For nonresident owners, more information about income opportunities from recreation and more collaboration with public sector partners are needed to further extend their propensity to make their land available to others at a profit. Assistance to resident and absentee owners will need to be tailored to the

different needs and motivations of these two very different owner groups.

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Policy Directions Affecting Public Use of Private Land

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Abstract: There are various ways in which the public may gain access to the services of private land. Basic options are purchase, where owners sell to the general public the rights necessary for defined land services; lease, where the public may enjoy services for a specified period; inducements to the owner to provide selected services to the public; and regulation where the public assures certain opportunities by limiting choices of the owner. The particular means for securing public access to private land depends on the service desired and prevailing political attitudes about who should pay for the land services. Policy trends affecting that choice are discussed. Included are preference for market-like means, declining sympathy for owners of large holdings, impatience with land owners for permitting water pollution, and the property rights movement. Specific examples of each are discussed, with implications for future policy.

Keywords: land policy, land regulation, property rights

INTRODUCTION

Land provides many services that have value to people. Some of these services are exclusive, rival in consumption, meaning only one person at a time can consume them. This conference is primarily about such services that can be withheld until paid for, to generate income for the land owner. Examples include timber, food commodities, hunting experience. But other land services are nonexclusive, enjoyed by many people simultaneously, and cannot be withheld from users except at great cost. Examples here are open space amenities, wildlife habitat, and the various ecological services of wetlands. The mix of services possible from any land parcel is determined by nature, often manipulated by technology. All lands are not created equal. The services actually provided from a parcel, their priority, and choice among competing consumers of land services are determined by those who have rights to the parcel. Rights are concentrated in the hands of the person who holds title, the "owner in fee." These rights may be bought and sold to establish a new owner. But the owner's rights are not absolute. Nonowner rights to the services of private land are secured through the various instruments of public policy.

This paper considers the various means by which the public may enjoy the services of private land. Some of those ways involve payment to the owner in a fee, some do not. Some involve physical access to the land, some do not. The various policy approaches are identified and general policy trends that affect choice among them are discussed.

A TYPOLOGY

The particular means by which a nonowner gains access to the services of private land depends on the nature of the service and general public preferences. The institutional device chosen often reflects prevailing views on who should pay for the service desired.

Purchase

The most obvious way for nonowner to acquire rights to the flow of services from private land is by paying for them. The buyer essentially then owns a particular right from the bundle of rights we call property. The price presumably reflects the benefit the buyer expects from those rights and the reservation price held by the seller. Thus the

owner in a fee is made whole and the buyer can enjoy the land services that are purchased, within the conditions of sale. The buyer may be an individual, a unit of government, or a group such as a conservation organization. Examples are mineral or water rights, the right to cut certain trees, to traverse a stream bed or the right to develop the land. The purchase of limited rights is often termed an easement, a positive easement to occupy the rights purchased or a negative easement to simply separate that right from the fee simple bundle to protect a desired set of land services.

Lease

A lease is a temporary transfer of the right to enjoy a defined service. Hunting and fishing rights to private land may be leased by clubs or individuals for a specified period. Again, the land owner is paid for the right transferred, with the price reflecting the utility the lessee expects to derive and the inconvenience the owner will endure. With both lease and purchase, the transaction is clear cut, a service for a price over a defined period of time. Only services that are exclusive to the buyer lend themselves to this approach. Only people with ability and willingness to pay can enjoy the land service.

Inducement

The mix of services available from a given land parcel may be altered in the public interest by inducing the owner to change the mix in some way. The Environmental Quality Incentive Program (EQIP) administered by the U.S. Department of Agriculture through the state and local soil and water conservation structure seeks to induce land services that reduce pollution of nearby water sources. The use value assessment laws in forty-nine of the fifty states encourage individual private land use choices that keep land in productive agriculture or forestry rather than a more intensive developed set of services. Success of any inducement in providing the preferred set of land services depends on how the owner responds. Nothing is assured.

The use of purchase, lease and inducement as policy approaches to changing the flow of services from private land begins with the assumption that

ownership includes the right to provide, *or not provide*, the service in question. There is compensation and the owner is made whole. Regulation, on the other hand, assumes that the nonowner has an inherent right to those services, and the rights of a fee simple ownership is more limited.

Regulation

Under the U.S. Endangered Species Act of 1973, land owners must protect the habitat of plant and animal species determined to be so scarce that their continued existence is in danger. An exclusive agricultural zoning ordinance prohibits uses of land that may impinge on farming. Thus the flow of services is limited by edict and enforced by the police power of government to protect the general welfare of the broader society. Land rights are simply reallocated to assure a mix of services that includes the interests of the nonowner.

Thus, there is a wide array of means by which the public may consume or enjoy the services of private land, and while some approaches generate income, others do not. It would be very difficult to require those who benefit from the service of protected species habitat to pay the owner for that service while not charging those who do not value that service. Endangered species are considered to be national treasures, enjoyed widely, whether or not the consumer actually ever sees a member of that species. The "user pays" principle would be hard to implement under those circumstances, though general tax revenue might be employed to induce or purchase land owner choices protective of that habitat. The tools selected reflect prevailing attitudes about who should pay to assure land choices that provide selected services to the nonowner.

POLICY DIRECTIONS

Trends in the choice of policy instruments to accomplish public access to private forest, farm and other open land show certain counter tendencies. No one has ever asserted convincingly that people are consistent in their policy beliefs and preferences, and nowhere is that clearer than in the case of land use. Attitudes about the appropriate role for government in society and,

more basically, who should pay or bear the inconvenience for achieving the public interest in land use determine how policy evolves.

Preference for Market Mechanisms

In this era of “workfare” and performance budgeting, there is broad and general support for land policy approaches that require the beneficiaries to compensate the landowner for any rights lost in the process. That is, if we want the farmer or forester to forego development possibilities to provide a beautiful countryside for the commuter or traveler, then a public of some dimension should pay the owner for that service through a market transaction. That just seems right to many people.

Purchase of selected rights

Purchase is one way of securing the public’s interest in certain land services. The public acquires only the discretion needed to assure that the mix of services coming from the given parcel includes those valued by nonowner. Fourteen states have programs for local purchase of development rights from land with development potential and counties or towns in several other states have their own programs. Focus of these programs is farmland at the rural-urban interface. In those programs, which have acquired development rights to nearly 500,000 acres nationwide (American Farmland Trust, 1997), the owner offers to sell the right to develop at a certain price based on the appraised difference between the value for farming and value for development. The buyer (local government) must be sure that the land in question does in fact offer the desired services. Emphasis has been on productive land that may contribute to the local economy, long term food security or attractive rural countryside. A state or locality might choose to put priority on wildlife habitat.

A program under development in Florida would buy rights from landowners essential to protect the quality of habitat for the endangered Florida panther. The test is whether voters agree that they are benefiting adequately from privately owned land. Connecticut gives priority to farmland that is surrounded by other farmland, to provide large blocks of restricted land. Maryland buys development rights only if development is likely to occur in the next 20 years, or within one-

quarter mile of the urban growth boundary (American Farmland Trust, 1997).

When a local government buys a selected right, transfer is permanent. But if that right ceases to provide a service to its owners (the general public), for example if a farm cannot remain viable over time, consideration may be given to selling that right back to the owner to permit development. This reversion decision is not taken lightly, however, requiring careful review of the evidence to assure that the public interest would be best served by returning that right to the original owner. In Massachusetts, for example, both houses of the state legislature must approve by a two-thirds vote the request to sell back rights on a particular parcel (Daniels and Bowers, 1997).

A major challenge is finding the funds necessary to buy the desired rights. While there is general sympathy for using the market to accomplish public purposes, there is little support for increasing taxes or expanding public budgets. The two tendencies are obviously inconsistent. Pennsylvania voters supported a \$100 million bond issue for purchase of development rights, but changed the funding source to a two cents per pack cigarette tax when the bond money ran out. Other states and localities have tried development exactions, sales taxes, targeted millage increases and special tax districts (see Daniels and Bowers, 1997). Availability of funds remains the largest barrier to implementing purchase programs.

Mitigation and Tradable Rights to Pollute

Natural systems have both economic and social value. They perform important services *as* natural systems but also generate economic returns when converted or used in some way that drastically alters those natural properties. Wetland mitigation schemes are ways to capture the economic value of conversion and transfer it to another site in the form of a new wetland with the natural properties desired. The cost of building a new wetland with the essential natural features presumably is less than the economic returns from converting the original wetland. Mitigation has become an acceptable political compromise for those preferring market-like means for protecting natural systems.

The essential next step in this market approach is to assure that the newly created wetland does in fact entail natural services that people value at

least as much as services lost in the converted wetland. If the compensation rate is too low, development of a wetland will result in net loss of natural resource services; if too high, the developer may challenge the decision as imposing an unacceptable cost on development.

Public wetland protection programs inevitably rely on "rule of thumb" mitigation rules that can be easily enforced. Maine requires an eight-to-one ratio for destruction of their diminishing supply of existing wetlands; Florida has a two-to-one ratio; Maryland has different rates for different systems, with forested wetlands highest at three acres of new wetland required for every acre converted (King, Bohlen and Adler, 1993). A new wetland will not produce quality natural services immediately. Flow of service over time is an essential feature of any mitigation program. Location is important as well, since human perception of the value of the natural system may require accessibility or at least proximity. Can a wetland that nobody knows about really replace a wetland that had been on a flyway and produced valued opportunity for bird-watching? The "no net loss" rule for wetland protection must include consideration of human demand for the services involved (King, 1997).

Mitigation has also been applied to the protection of endangered species habitat. With the recognition that modifying habitat of selected species could essentially involve "taking" those species, managers in the Fish and Wildlife Service of the U.S. Department of Interior imposed strict regulations against forestry or other practices that might change the habitat in question. An amendment to the Endangered Species Act of 1973 permits landowners to modify habitat in one location if they establish a "habitat conservation plan" (HCP) that assures an adequate habitat somewhere else. As in the wetland case, the real question is whether the HCP does in fact provide the same level of public service as the endangered species in its original habitat. There is recent evidence that the system is working (Mann and Plummer, 1997).

The general mitigation approach to protecting natural resource services could be applied to other systems, such as forest or farmland. Perhaps the right to develop a given parcel of quality farmland could include the obligation to buy development rights to land of equal quality somewhere else.

These are market-oriented ways of granting public access to the services of private land.

Tradable rights to discharge pollutants into a watercourse enable water users with high cost of reducing pollution to pay users with lower abatement cost to meet a larger portion of the pollution reduction required to meet water quality standards (Taylor and Sohngen, 1997). If we know that a certain river naturally can process a given quantity of pollutant, why not let market forces allocate that right to pollute among competing water users rather than impose a uniform regulation on all? That approach assumes an existing quality standard that can be monitored and the ability of polluters to negotiate in a consistent framework. The latter condition is particularly troublesome, requiring creation and management of a market system for allocating the rights to pollute within an acceptable quality standard.

Taylor and Sohngen (1997) suggest a scheme for permitting trade between point and nonpoint pollution sources, with the notion that reducing nonpoint pollution is relatively inexpensive and would be an attractive abatement opportunity for point sources. Thus, with tradable pollution rights, the public gains the services of private land through public policy that relies on a market-like means of altering private behavior in the public interest. Unlike the case with purchase of development rights, the primary issue is not public budget outlay since private interests bargain among themselves. The challenge is to create and sustain a market system that will achieve desired results.

Declining Sympathy for Owners With Large Land Holdings

Another trend in policy for granting public access to private land is the decreasing sympathy for large private or corporate holdings of land. There is still broad public support for farming and forest management based on the general notion that these are laudable professions, close to the land, undertaken by honest, hardworking, God-fearing families. Those beliefs in the inherent virtue of the landed professions have produced various public programs over the years to make life easier for the families involved. But that reservoir of support is

also shallow, vulnerable to changing perceptions of those who work the land.

Farm subsidies began just after the “great depression” when the needs of rural Americans were immediate and obvious. The goals were to reduce price variability and improve farm incomes by controlling supply. Government became the consumer of last resort to keep prices to the farmer at an acceptable level. Program benefits were available to all farms, large and small. The reality was that those with the most land and output benefitted the most, to the point that about 90 percent of the payments went to 20 percent of the farmers (Cochrane and Runge, 1992). This “scandal” was picked up and amplified by the national media. Support for the small family farm way of life does not easily transfer to absentee or corporate owners. There is the growing feeling that farm and forest owners should make it on their own as other businesses must do, particularly for large ownerships. There is still concern for the “little guy.” This is a key component of the policy environment for farm and forest owners in the late years of this century and into the next.

Several states have begun treating large land ownerships differently than smaller ones. Two bills recently introduced in the Ohio legislature impose special environmental reporting requirements on large livestock operations. These bills follow closely on the recent arrival to Ohio of a foreign firm that has made huge investments in poultry production. Resulting problems with neighbors and local governments were frequently recorded in the statewide press. Thus the general sense of good will for farming and farmers in Ohio has given way to distrust of large, corporate owned animal production units. One of the proposals (Senate Bill 177, Sen. Karen Gillmore) would create a new regulatory category for farms larger than 10,000 animal units and label these as “major livestock management facilities.” Water quality protections are more stringent and mandatory than for other farms. Another bill (Senate Bill 168, Sen. Richard Schafrath) defines a family farm as “... an agricultural operation that is owned and primarily operated by individuals and their close family members and that confines fewer animals or grows fewer crops than a high density agricultural operation.”

Impatience with Farm-induced Environmental Problems

As an ever-higher percentage of U.S. population is perceptually and geographically removed from production agriculture and forestry, there is the growing sense that property owners must manage their resources responsibly. The idea that a land owner can do whatever he wants with his or her property is less and less understood by the general public. Home owners in a subdivision are used to restrictions on their opportunities in the interest of the neighbors. They recognize that such restrictions in effect expand their opportunities by reducing infringement by others. With that line of reasoning, voters, taxpayers and other citizens will expect farmers to steward their land in the broad public interest. They will resist having to induce environmental protection with subsidies or outright purchase of right from land owners.

River, lake and stream pollution remains a troublesome environmental problem in most states. Enforcement of water quality standards under the Federal Water Pollution Control Act of 1972 with subsequent amendments effectively has curtailed pollution from point sources, yet water quality problems remain. The rivers are laden with sediment in many places and eutrophication reduces opportunities available from many lakes. Agriculture and forestry practices are at least part of the problem. In Ohio, for example, a major barrier to achieving the defined goal of meeting standards on 75 percent of rivers and streams by the year 2000 is farm runoff. Successes with point sources of water pollution have been masked by failure with nonpoint sources. In fact, nonpoint source pollution has increased in Ohio rivers since 1988 (Rankin, Yoder and Mishner, 1996). There likely will be increasing pressure for mandatory action by farmers to reduce nonpoint source pollution. Many technical difficulties remain, including the fact that *by definition*, precise source and magnitude of nonpoint source pollution cannot be identified. As noted, the EQIP program of the 1996 Farm Bill seeks improvements in nonpoint abatement through induced farmer behavior. But the fact remains that citizens increasingly are impatient with farmers for insisting that the rest of society come to them with requests and subsidies to encourage actions that reduce water pollution. People want the farmer to put practices in place that are known to reduce

pollution, simply because it is their responsibility to do so.

Property Rights Protection

An important policy development of the past decade is state and federal legislation to protect the rights of the “owner in fee” of private property. This recent policy direction reflects a feeling that governments have gone too far to protect the interests of nonowner, to the detriment of owners. At least 42 states are considering or administering property rights protection programs, most of them patterned after President Reagan’s Executive Order 12630 of 1988 requiring all federal agencies to investigate whether proposed new programs might constitute a “taking” of private property under prevailing judicial standards.

Only Florida, Louisiana, Mississippi and Texas have laws that require compensation when local or state actions deprive an owner of economic opportunity from the land to an unacceptable degree. The Florida definition of unacceptable restriction of an owner’s rights is when a new law or rule “inordinately burdens” a private landowner. In Texas, the cutoff is a 25 percent reduction in the property value. The intent of all four is to reduce the burden of proving a constitutional taking of virtually all economic value due to regulation, and define “too much” loss of private value. Their further intent is to force government agencies to be more cautious in enacting new programs that might entail legal action later on.

There are documented instances in Florida where a municipal official changed his plans because of the possibility of costly litigation. These compensatory programs are not retroactive—Florida’s applies only to actions taken after May 11, 1995—and apply only to certain governmental units. Florida excludes transportation actions and all Federal programs; the Texas law excludes Federal actions as well as those by cities (except Austin) and all counties were exempt until 1997. The procedural requirements can be onerous and the complaining landowner may have to foot the bill if the court decides for the defendant. Only the landowner with “deep pockets” or a gambling nature should initiate the process.

Beyond legislation, there is a deep seeded political movement across the U.S. to resist government actions that may influence the value of private land. Its roots return to the 1964 decision of the U.S. Department of Interior to halt the process of returning public land to private owners for farming. The “Sagebrush Rebellion” across the southwest was in reaction to Federal land policies that reduced options for states to move lands into private hands. More generally, the concern largely pertains to Constitutional protection against “taking” of private land through regulation, without compensation (Marzulla, 1995).

Always at issue is the limit to which government can go to require private actions on the land that protect the rights of a nonowner. It is not *just* a western issue, though that is where the arguments have been the most pointed and where government is most prominent as a land owner (87 percent of Nevada is managed by government). Concern about the appropriate role of government in regulating private land is always greatest where development pressure, and potential return to land owners are greatest. Of course it must be acknowledged that public investment in development infrastructure is what gives private land much of its value.

CONCLUSIONS

Public rights to private land may be secured in many ways, only some of which provide income to the owner. In some cases, it is the nature of the land service that determines whether or not income may be earned, as in the case of hunting rights or a bed and breakfast experience that can be withheld from those who do not pay. The owner gives up some privacy or land use opportunities in the process. Withholding a scenic view experience from a nonowner is more difficult since it does not require physical occupation of the land and may even be experienced vicariously, from a picture or memory. But more important in deciding how, or if services will be paid for, is a choice of policy or a device for sharing rights. Nonowner *may* lease exclusive use of land for a period of time, paying for the right to exclude all others, perhaps even the owner.

Alternatively, we may decide to collectively purchase rights from timber owners to alter

harvest practices, or claim those rights by regulation as with endangered species habitat protection. Choice among these approaches to securing rights to private land are matters about which reasonable people differ. They are part of the general political climate for land use. Trends in preferences vary with time and general economic or social circumstances.

The enduring fact in all of this is that private property is a collection of rights, concentrated in the hands and judgement of the deed holder. But the policy environment also influences distribution of opportunities and obligations between landowners and the nonlandowning public. The owner is always a part of the policy process, whether he acknowledges it or not. The owner's best strategy is to engage that policy process in seeking income from land services.

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Overview of Legal Liability Associated with For-Profit Enterprises: Myths vs. Reality

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Abstract: Legal liability associated with the organization and operation of a for-profit commercial enterprise will place the owner or operator in a position of being responsible for the safety of those who come onto the business property. Owners and operators must not only know and understand the responsibility they accept when the decision is made to establish the business, but also they must develop a consistent strategy for operating the business in a way that will manage this responsibility as effectively as possible. The process of deciding whether to embark on the business venture requires that these steps be taken before the business starts operation.

Keywords: liability, business organization, business operation, business planning

INTRODUCTION

A 1995 survey conducted by the Insurance Information Institute revealed that 95 percent of Americans believed that there are too many lawsuits in the United States today. Furthermore, 77 percent of Americans think the amount of money awarded to people who win lawsuits is unusually high. The note went on to refer to the finding that 78 percent of Americans agree that fear of lawsuits causes doctors to perform unnecessary tests.

Is this surprising information to find in a survey conducted by an organization that has an interest in distributing the results to people like you and me, in the hope that it will influence our decision on how much or what type of insurance to buy? In fact, the flyer that contained this information came with an automobile insurance bill and carried the request that if I agreed with these positions, I contact my state and federal legislators and inquire about tort reform.

On the other hand, a professional organization of attorneys published a book that attempts to enlighten all of us about the American Civil Justice System. Excerpts from the book were published in a newspaper that highlights recent legal decisions and issues of importance to the profession as well as other interested members of

the public. The format for the discussion followed a question and answer style. The initial question posed in the first series of excerpts from the book addressed the question whether state courts were being overrun by cases involving injured person seeking financial compensation for the injuries or property damage they suffered. The answer, perhaps predictably, was “no,” state courts were not being overrun by personal injury lawsuits. In fact, the article pointed out that only 6 percent of all civil cases nationwide involved suits of this nature. The article also identified that there were more than four times as many domestic disputes, such as divorce, custody, visitation, alimony, support etc., already filed and active in the same period. One sarcastic conclusion we can draw from this bit of statistical persuasion is that the reason we spend so much time suing other people for problems they cause us is that we spend even more time arguing in our families and homes. Lessons learned at home are lessons to live by!

Should either of these tidbits of information be readily accepted because it came from a survey or appeared in a book, or should the apparent interest of either promoting organization cause us to be somewhat skeptical of the information being presented? Which do we find persuasive? Which article would prompt you to pick up the phone to call your state and federal legislators to voice your opinion? Which of these two articles would

prompt you to spend your money in support of some form of social or political action? Would you feel differently if you had just suffered an injury yourself in an auto accident or on another's property? Would you feel differently if you had just completed the emotional agony of being sued and having your financial future decided by a jury of your peers? The number of high profile civil and criminal cases in our society is well known and well publicized. Information about it is hard to ignore. There is no place to hide from it. You cannot escape it. So, what can you do about it?

WHAT YOU DON'T KNOW WILL HURT YOU!

As depressing and emotionally upsetting as it may seem, facing the issues which owning and operating a new business may pose to you are surmountable. The alternative of simply ignoring the problem until sometime in the future solves nothing, and only puts the ultimate resolution off to another day. Also delayed to that time is a determination of the activity's impact. In other words a void is created by the absence of information? Is the old saying, "Ignorance is Bliss!" actually correct?

In the course of this program you will be confronted with a wide range of information about operational and organizational issues that you are asked to consider when evaluating your plans to embark on a new business enterprise. Some of these issues are designed to help you understand the potential implications of decisions you are now making. The intent of this approach is to have you think of these issues before making the decision to proceed. This is an important part of any decision making process and cannot be overemphasized. At the end of this exercise be certain that you know and understand the following things: What types of responsibility must I accept in this new enterprise? Will I be able to fulfill it? Do I need someone or something's assistance to fulfill the responsibility? If so, can I find the people or things I need? What consequences will flow to me if I am not able to fulfill the responsibility?

PREVENT PROBLEMS, DON'T REACT TO THEM!

In the operation of your new enterprise, it will be necessary to anticipate problems before their impact creates a critical problem in the operation of the business. Overall, this approach recognizes the simple fact that without some bit of foresight any business can be easily overcome with fighting the fires that arise when things run afoul of the way they should be. As has been recognized many times in many different settings, it is far more cost-effective to prevent problems than it is to deal with them once they arrive.

An important part of any business enterprise that deals with the public is the responsibility you have for injuries or accidents that occur on the business property to business customers who came to the property to participate in the activity that was created for them. Since the business intended to invite customers to its property, it is fair to assume that the customers expect a certain degree of safety or protection has already been taken for their benefit. In order to fulfill this responsibility it may be necessary for the business to conduct periodic inspections of the places where customers go and the items customers use while on the property. What risks and hazards are identified in this process? Are these risks and hazards obvious to an ordinary person, or are the risks something that might only be obvious to someone with a degree of training and experience? What should you do with the information you gain from the inspection? Since people coming to the business property can properly expect a degree of safety or protection has been taken to protect their interest before they arrived, any important safety information can and should be shared with potential customers if the underlying problem cannot be solved before customers come in contact with the area in which the problem is located.

DON'T WAIT FOR SOMEONE ELSE TO SOLVE YOUR PROBLEMS!

The essence of being proactive, rather than reactive, is that a person doesn't wait for things to happen before doing something about them. As described above, problem prevention is much more cost-effective than having to respond to a

problem that has already occurred. Who should shoulder this burden?

The answer to this last question is simple. The business owner or operator has to shoulder the burden. It may seem a bit ominous at first, but the most logical place to have that responsibility fall is on the shoulders of the person to whom the outcome matters most, the owner or operator! No one else can be expected to care as deeply about the success or failure of the business, and no one else can be expected to have as much interest in wanting to be sure that things are done right as often as possible. Neither employees nor lenders or professional advisors will have any greater care or concern for the business than the owner or operator has.

Educational programs such as this one is designed to be of help and assistance by providing easy-to-understand information presented in a balanced and unbiased way. However, the information alone cannot solve all of the problems that may arise if the information is not read, understood and applied in efficient and effective ways. As mentioned above, this is a responsibility of the owner or operator of the business, the person whose stake is dramatically different from that of any other person associated with the business.

The responsibility is awesome, but the rewards can be great. Hard work and effort are what is needed to influence the outcome.

Marketing of Agricultural and Natural Resources Income Enterprises: Learning From and Sharing With Entrepreneurs

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Abstract: Entrepreneurs that seek nontraditional enterprises vary widely in their backgrounds and reasons for seeking these types of enterprises. An Extension program initiated in Western Maryland provided support for individuals seeking to explore and build businesses that are considered nontraditional in that region. While each participant in the program has his/her own specific reasons for developing such a business, a common thread throughout all the clientele was a desire to make good use of the resource base and get a reasonable return on the time and financial investment. This paper will examine several of these entrepreneurs and their enterprises in the hope of illuminating methods for others to follow in enterprise development.

Keywords: nontraditional, diversification, income enterprises, natural resources, agriculture, horticulture

INTRODUCTION

The use of educational programs and technical assistance to encourage and support entrepreneurial activity in nontraditional, agricultural, horticultural and natural resources-based enterprises has been demonstrated to improve the success of new and existing enterprises. A recently completed program initiated by the University of Maryland Cooperative Extension Service and funded by USDA Rural Development entitled, "*Improving Success of Alternative Enterprises that Utilize Natural Resources*" (Kays and Bogash, 1996), utilized education programs to attract potential entrepreneurs, provided information to enable them to make informed decisions, and provided one-on-one assistance to those who expressed interest. The project generated in excess of 2.6 million dollars in on-farm income directly associated with project efforts from October 1993 through April 1997 (Kays & Bogash, 1995). Enterprises initiated by clientele ranged from those that are natural resources-based, such as shiitake mushrooms and rainbow trout production, to horticultural enterprises such as wine grapes and greenhouse bedding plant production, to alternative agricultural enterprises such as popcorn and catnip. These few examples are just a sampling of several hundred nontraditional

enterprises actually considered and initiated by clientele.

This presentation will profile three of the entrepreneurs that successfully participated in this project and actually operated income-generating enterprises, as well as some examples of those that decided not to pursue a nontraditional enterprise. Of special importance to support professionals are the varying routes the clientele took in getting involved in the program. From the outset of the Maryland program, it was clear that a number of approaches were necessary in order to attract sufficient participation from the various groups of potential entrepreneurs. This was based on many years of Cooperative Extension experiences from the project supervisors. Traditional growers, those seeking to return to a rural-based business, and other farm business hopefuls were all part of an intended audience. While each of the clients profiled herein made the decision to explore nontraditional ventures for different reasons, they all chose their venture based on a clear knowledge of the resources available and profit potential of the various enterprises.

CLIENT PROFILES

The Higdon Farm

Scott Higdon and his father currently run a dairy farm in Frederick County, Maryland. As is the case in many dairy farms, they are faced with the challenge of turning a profit in an industry that works on a very narrow profit margin. They face the added difficulty of generating sufficient income to justify two families being able to work on the farm, as Scott's parents retire and prepare to hand the farm over to their son. While their current dairy is profitable, it is clear that the farm must generate additional income in order to be successfully handed down to the next generation.

The farm has low debt, is in an area of increasing land values, is in good condition with modern equipment, and has an abundant supply of fresh spring water. The spring is an unusual resource as it runs at a high year-round volume, is already well developed as a water facility, and is utilized only partially now.

Scott was approached by a group of Asian vegetable brokers from Washington, D.C., which initiated his inquiry for information on using the spring as an irrigation source and other general assistance in developing the specialty vegetable operation. The Higdon family also were wondering if this was the best use of this water resource.

Scott was referred to the Maryland Income Opportunities Program by his county agriculture Extension agent who made the initial contact with the enterprise consultant associated with the project. On the first farm visit, the consultant met with the Higdon family and the Washington brokers and toured the farm. There was little doubt that the spring was an important resource that needed further exploration. The consultant arranged for water testing, and inspections by both a private engineer with aquaculture experience and an agent from the USDA Soil Conservation Service. The water testing took place over several months to determine the stability of the spring flow rate and water quality. The evaluation indicated a high potential for developing the spring into an aquaculture operation, while still being able to use the outflow as irrigation for the specialty vegetables. The land application of highly dilute fish waste was considered to be a

positive method of waste handling by the regulating bodies.

The first roadblock came during the evaluation phase as it became imperative to determine the flow rate. There is no longer an agency or readily available equipment to measure this rate. A formula for measuring flow was located by the consultant and required damming the outflow pipe and forcing the water through a pipe of a known diameter. By carefully measuring several characteristics of that outflow, the rate was determined and engineering of a rainbow trout finishing facility could begin.

During this same period, Scott began to grow 29 acres of specialty vegetables such as Korean squash, several peppers including Thai, and a mix of lesser crops. The profit from this operation and the melding of that operation with the rest of the farm activities clearly demonstrated to the Higdon family, the benefits of continued diversification based on the clever use of resources.

As the Income Opportunities program closed in 1997, Scott had completed much of the engineering for the rainbow trout operation and was on the way to securing the necessary permits. While the final plans were not yet completed, the following changes in spring use were to be implemented:

- 1) Installation of a manifold box to control the amount of water for livestock watering, and the maintenance of an adequate flow into a nearby creek and the trout tanks.
- 2) Installation of ground level circular tanks with the potential for producing up to 20,000 pounds of rainbow trout per year.
- 3) Installation of a settling tank to capture fish feces and feed waste. This waste would be periodically removed via a suction pump and applied to crop production land based on soil test analysis.
- 4) Installation of a vastly improved system for livestock watering that kept the cows out of the creek.

For the Higdon family, the benefits of developing these nontraditional ventures were obvious. They increased farm profits immediately through the growing and marketing of specialty produce and were on their way to creating a set of diverse new farm operations that greatly reduced their reliance

on the dairy industry. Their marketing contacts in selling the specialty produce introduced the Higdons to other contacts that were interested in the rainbow trout. They were able to make more efficient use of their existing resources while making substantial headway in solving their financial dilemma.

Unlike most of the clients that come into the Program, the Higdons required very little training and had a very good idea of where they wanted to go before the first contact. They made use of only those specific services offered by the Program that were applicable to their needs.

The Wilson Farm

The Wilsons came into the Program through a series of introductory seminars that were offered at several county Cooperative Extension offices. These two-hour evening seminars highlighted a wide array of nontraditional opportunities in order to attract potential clients and to assess the need for follow-up programs, as well as to measure client interest in programs of this type. Most of the programs had experienced an excellent clientele draw and later served to provide a participant nucleus for the more detailed follow-up programs. They also served to screen out serious entrepreneurs by exploring both the positive and negative impacts of these opportunities (Kays and Bogash, 1996). Approximately one-third of those attending these evening seminars determined that no further exploration was needed as the ventures covered did not meet their needs. However, the Wilson's rapidly narrowed their focus to small fruit enterprises and again subsequently narrowed their focus to wine grape production.

After attending the initial evening seminar, they arranged to meet with the enterprise consultant and do a complete resource review and chart a course for business plan development. After meeting with several of the major players in the Maryland Wine Industry, enterprise budgets and cash flow analyses were prepared. With these and other support documentation on the potentials for marketing wine grapes, the Wilson's were able to persuade their family to transfer some acreage on the family farm to wine grape productions, that was previously rented to an outside grower for livestock corn production.

The farm has 137 acres of tillable ground. Based on the business plan and cash flow analysis prepared with assistance from the enterprise consultant, 26 acres are to be moved into wine grape production over a ten-year period. With the project starting in 1996, the operation should start generating limited profits beyond the production costs by the year 2002, and all of the initial investment will be paid back by the year 2007.

The Wilsons have made use of their resource base consisting of available acreage, strong market demand (currently Maryland has an immediate need for 50 percent more grape tonnage), and mechanical skills to minimize equipment expenses (they build much of their own equipment from discards). In the future, they plan to replace their cobbled together equipment with newer, better designed pieces, but in the meantime, they would rather invest in vines and trellis materials to keep their investment minimal. This method of investing only out-of-pocket monies are recommended to all entrepreneurs. At the writing of this report, they had nearly four acres planted and under deer protection with plans for 1.5 to 2.5 acres to be added per year. Their first projected harvest of saleable grapes should be in 1999, with yields increasing annually as the grapes approach maturity and subsequent plantings come into production.

The William Farm

The Williams came into the Program through the Greenhouse Short Course, which had been organized in cooperation with Horticulture Specialists from the Maryland Cooperative Extension. They had just purchased a used greenhouse with a vague idea of how to use it and with no previous greenhouse production skills. Their goal was to create a farm operation that would allow both spouses to work on the farm with minimal change in their lifestyle. Up to this time, Scott had been working full-time as a chef in a local white table cloth restaurant, while Cinda managed the farm and marketed their products through urban farmer's markets. While already growing 30 acres of mixed vegetables, they were having the same problem that many green businesses experience: poor winter cash flow. They wanted to use the greenhouse to stretch their season in some way.

The Williams have excellent marketing skills and are quite adept at both direct and restaurant marketing. They were already aware of a market for fresh, locally-grown winter herbs and greens and were seeking technical expertise to produce specific products to exploit that market. Skills gained at the Greenhouse Short Course and on-site meetings with the enterprise consultant, allowed the application of technical details and the start of full greenhouse production. At the time of this report, they were operating two greenhouses producing basil, rosemary, cilantro, and other herbs, as well as a mesclun mix and edible flowers for year-round sales.

This type of client is the easiest to work with as the important marketing skills are present and the client simply is seeking fairly specific technical information.

OTHER CLIENTELE

The vast majority of clients who investigate alternative enterprises (nearly 97 percent) decided not to pursue an enterprise. These clients were not surveyed specifically as to the reason(s) for this decision, however, the following comments are based on interviews with clients and the informal recollections by the enterprise consultant. While each client has his/her specific reasons, reasons can be grouped under several subheadings: (1) lack of financial resources; (2) poor match of production resources with interests; (3) regulatory complications; and (4) marketing difficulties.

Lack of Financial Resources

Surprisingly, insufficient financial resources were not generally a difficulty for clientele that owned the land for the intended enterprise. Many businesses can be started small and allowed to grow as funds are generated. Most of those that opted out for financial reasons were either dreamers or existing producers with extreme debt loads.

Poor Match of Production Resources with Interests

Those that decided not to continue, based on a poor resource match, generally had predetermined

the enterprise that they wanted to pursue and were unwilling to seek other opportunities that better matched their resources.

Regulatory Complications

Regulatory concerns are a common theme in any business development process. For those seeking to pursue value-added food-based businesses, health department issues come into play very quickly. Unfortunately, for those entrepreneurs, the Division of Food Safety is only concerned with the general public's health, not business start up concerns. For the entrepreneur new to food safety, the regulatory requirements of a state health department can seem overwhelming. Many interested clients chose not to pursue their idea based on concerns, real or imagined, regarding health department regulations.

Marketing Difficulties

Marketing is the single most difficult issue for new entrepreneurs and existing producers seeking to diversify. Many existing producers feel they are growers, not producers, and seem unwilling to learn this new, but all important skill. While it has been the traditional role of Cooperative Extension to deal with production issues, marketing has generally been left out of most programs. For many nontraditional enterprises, marketing is the single most important issue controlling the success of the venture. It is very difficult to evaluate how important this issue was to those that decided not to pursue an enterprise. On the other hand, marketing of any given product was always on the table for development for all of those that did develop businesses.

CONCLUSION

Each of the three growers highlighted in this report had very different reasons for exploring nontraditional enterprise development, with the notable exception that all wanted to experience a high return on their investment while making intelligent use of their resource base. They typify the clientele that participated in the three-year program in that there was never a one-size-fits-all method of assisting entrepreneurs. By offering a flexible program and having a broad base of

support from the University of Maryland, other Land Grant Universities, and business support programs such as the Small Business Development Corporation, it was possible to provide clients with programs that met their needs and resulted in substantial enterprise development.

Those that did not continue with the program and develop an enterprise can also be counted as a success as the vast majority of new businesses fail in the first three years. By providing effective information and consultation, this group was able to preserve their capital and perhaps use it to develop an enterprise at a later date that better matched their abilities and resources. Another outcome was that information on sound forest and farm stewardship was disseminated through the program, which led to significant increases in management planning efforts. In many cases, traditional farm and forestry programs would not have been effective in reaching this audience, and the farm and forest management practices adopted by clientele would not have been implemented.

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SECTION 2

Evaluating Natural Resources Enterprise Options

New Enterprise Prefeasibility Assessment: Taking Stock in Your Natural and Personal Resources:

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Abstract: Growing numbers of farmers and landowners are interested in creating new family income and employment opportunities from natural resources-based enterprises. Tales of "riches in them thar hills" abound, but the reality is that few will ever generate significant income to the family. While business planning will not guarantee success, it will increase the probability that a new enterprise will meet some personal and family goals. However, before investing the time and resources into conducting a full feasibility study or business plan, a relatively simple prefeasibility assessment will provide some basic but critical analysis. Such an assessment generally includes taking stock in your natural and personal resources and conducting some simple financial analysis. Basic questions that will be answered in this process include: Do you and your family have the skills and attitude to start and maintain a successful enterprise? What are your family's preferences in a new business? What are your physical (property), management, and financial resources? How do you choose the best enterprise option for you and your family? And finally, what is the income potential for the chosen enterprise?

The new enterprise prefeasibility assessment may provide a green light to proceed on a more detailed feasibility study or business plan. On the other hand, it can also save a family money and heartache if conducted prior to making any personal or financial investments in a risky venture.

Keywords: enterprise, decision making, income, farmers, landowners

DECISION-MAKING: A TEXTBOOK MODEL

The textbook guide to decision making involves the following six steps, which are intended to allow a person to evaluate his or her choices and reach a particular goal successfully.

1) *Set Goals.* Defining personal and business goals gives you some key guidelines for assessing your options.

2) *Identify and analyze your options.* Gather information on a range of options, including the market demand, production and labor requirements, start-up and operating costs and returns of promising enterprises.

3) *Select the option that best fits your goals.* Sounds simple enough. But have you thought about *who* ought to be involved in this decision?

How you and your family come to this decision can have a profound effect on the success of your business.

4) *Make a plan.* Writing down your farm business plan helps you to think through all the steps needed to achieve your goals. A good plan will include a goals statement, market assessment and marketing strategy, production plan, labor and management plan (who's in charge of what?), and a careful financial plan with profitability and cash flow projections and loan requirements, if any. This workbook will give you a start on your plan .

5) *Implement your plan.* This is the fun part - the part we usually think of as "farming".

6) *Monitor your progress and evaluate your results.* Good record-keeping is a key to good decision-making. After all, the decision-making process is not complete until you've considered

the outcome. How are you doing compared to the goals you originally set? Do you need to modify your plans? Taking the time to analyze your records and evaluate the decisions you've made is the way to become a better manager.

DECISION-MAKING: REAL LIFE SCENARIOS

In real life, we seldom do as the textbooks say! Many factors besides pure logic affect our choices. Often we feel too busy to take the time for careful planning and research. And sometimes we simply forget to consider some important issues. Here's a chance to slow down and check where you are in your own decision-making process.

Before you make the decision to start a family-owned business, consider the following things:

- Personal and Family Goals
- Family Labor and Management Resources
- The Marketplace
- Physical Resources
- Family Financial Resources
- Your New Enterprise: Marketing strategy, start-up costs and profit potential, cash-flow patterns, production requirements, labor and management requirements, legal, regulatory and liability issues.

Team Work

It has been shown that in family-run businesses, the principle manager is often *a lot* more enthusiastic about the business than the rest of the family team. This can really spell trouble. Decision-making in a family business *has* to take into account the needs and opinions of all family members. How well do you know your team members? Perhaps not as well as you think. Therefore, before embarking on this enterprise, take the time to discuss it with your family members and to set your priorities straight. Many businesses (and families) have failed because the business was more important than the family.

GOALS AND OBJECTIVES FOR YOUR NEW ENTERPRISE

When considering the goals and objectives of your enterprise, ask yourself the following questions:

- What is the single most important goal you and your family hope to achieve by starting this new enterprise?
- What additional goals do you and your family members have for the enterprise?
- What are the most important personal goals of family members over the next three to five years?

List the family members who would like to be actively involved in the new enterprise, and the types of responsibilities each would like to take on.

If you already run a natural resource-based business, what are your goals over the next three to five years for the enterprise you are currently involved in?

- _____ Maintain at about the same level
- _____ Expand
- _____ Cut back some
- _____ Get out altogether
- _____ Other

What are your financial goals for this new enterprise? For example, once the enterprise is established, what amount/percentage of your family living income do you expect from the following sources:

	<u>\$ Income</u>	<u>Percent</u>
Current farm enterprises	_____	_____
New enterprise	_____	_____
Non-NR employment	_____	_____
Other	_____	_____
Total	_____	_____

TAKING INVENTORY OF YOUR RESOURCES

Before you start, take inventory of the following resources that you might have available: land resources, buildings available, machinery and equipment, water and other natural resources, available labor, special skills, your financial resources for start-up, and the following local and regional marketing resources:

- Farmers markets
- Restaurants
- Groceries, specialty stores
- Ethnic markets
- Wholesalers
- Processing plants

- Slaughterhouses
- Roadside possibilities
- Other

PLANNING FOR SUCCESSFUL MARKETING

In order to plan for successful marketing, use the questions below to identify your strengths and weaknesses in marketing.

How much (or) do you already know about:
 Your customers, and how to reach them?
 Your competition?
 Your marketing options?
 Trends in demand, production and prices?
 Costs of marketing?

Do you know how to find out what you don't already know? How to do your own market detective work? How to find published market information? Plan your marketing strategy -Do you have the four P's?

- A **Product** that consumers are looking for
- A unique **Position** in the marketplace
- An appropriate **Price**
- Effective **Promotion**

Understanding Your Customers

A business can't be all things to all people. Choose your "Target Market" carefully. Knowing the following information about the target market will allow you to adapt your marketing strategy to make it successful.

- Targeted age group
- Place of residence
- Place of work
- Average income
- Marital status and average number of children
- How busy they are
- Ethnic group
- Education level
- Lifestyle
- Values, wants and needs
- What they are looking for in your product

Understanding Your Competition

Determining who your competitors are, the specific types of buyers they serve (their target

market), and their competitive strengths and weaknesses will help you define your own position in the marketplace. Your *direct competitors* are those businesses who are supplying the same types of products as you to the same potential customers. Your *indirect competition* is any *other* type of product which customers might buy instead of yours. Make it your business to find out all you can about your direct and indirect competition.

Keeping In Touch With Your Market

Effective marketing depends on staying tuned to your local customers and competitors and also to regional and national consumer trends, industry changes and the economy. Remember - *always think like a consumer first, a producer second!* Doing your own market detective work...

- Visit your competitors and other producers, and talk to suppliers
- Talk with your current customers - survey if needed
- Visit with wholesale buyers
- Travel as widely as possible - see how people do things elsewhere
- Visit terminal markets, restaurants, farmers markets and see what is selling
- Do your own test marketing - maybe try a consumer "focus group"

Finding Published Market Information

- Subscribe to trade and food magazines, association newsletters
- University and public libraries - ask for help with a computerized search for articles and publications
- Contact your State Data Center or the US Bureau of the Census, Data User Services Division (301) 763-4100
- Try the USDA Economic Research Service (301) 786-1512
- Read the popular press and business papers like Wall Street Journal
- Ask your local planning, business or economic development agencies

PRODUCTION AND FINANCIAL PLANNING FOR YOUR NEW ENTERPRISE

Before launching your new enterprise, you'll need to gather as much information as you can about production and financial aspects. Below are some questions you will want to think about.

- What capital purchases are required (buildings, improvements, equipment, land, breeding stock...)? Costs?
- What legal, regulatory and liability issues might affect your business? How will you deal with them?
- What will be your major production and marketing tasks, such as planting and other field operations, harvest, advertising, sales etc. In what months should they occur?

For each of these tasks, you will eventually want a good estimate of input requirements and their costs. This will be the beginning of your enterprise budget.

Plan to improve your financial management skills. Each of the following is an important tool for business managers. Do you know how to prepare:

- An enterprise budget to project costs and returns?
- A cash flow budget showing when to expect expenses and receipts?
- An income statement to calculate your profit for the year?
- A balance sheet showing all your assets and liabilities?

Ask your Extension agent or RC&D for help in developing these skills.

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Natural Resources Income Opportunities: Considerations for Forest Owners

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Abstract: Increasing numbers of nontraditional farm and forest owners are buying property and looking for ways to generate some level of income from the property. Unfortunately, many of these enterprises are not well-thought out, and other enterprises that may be more appropriate are never considered. In many cases, assumptions are made about family involvement or available skills and labor, that can lead to wasted time, effort, and money. A process of discovery should assess the risks and opportunities a number of enterprise options, focus on self-education and accessing available information, and select the enterprise(s) most compatible with personal and physical resources, and family goals. This paper will provide a framework and an example that can be used by all families considering a natural resource income enterprise.

Keywords: natural resources, forest landowner, enterprise options, discovery

INTRODUCTION

Changes in land ownership, demographics, and niche markets have increased the attractiveness of natural resources income opportunities for forest landowners. More than 80 percent of the private ownerships hold fewer than 50 acres of forest land, with most holding less than 10 acres. Practicing traditional forest management on these smaller parcels can be difficult, but the development of niche markets for many nontraditional products and recreational services has provided additional options. The increasing cost of taxes, controlling access, and regulatory compliance have many landowners, large and small, reevaluating the income potential of underutilized resources.

Hunting leases are a common income option, but the income potential for small landowners is questionable. The greatest barrier to the development of other natural resources income opportunities is the lack of good technical, financial, marketing and business information. Many forest owners want to be entrepreneurs, but their chance of success is reduced because of inadequate information when deciding to start or abandon an enterprise. Many find out too late that the time, family considerations, capital, and return did not even warrant being involved. Christmas

trees provide an excellent example of an enterprise started by many landowners, and then abandoned. The landowner may have assumed that assistance with pruning, sales, marketing and other tasks would be supplied by family members, but the family members were never asked. The result is a poorly run operation or a densely-spaced plantation.

WHAT ARE POSSIBLE NATURAL RESOURCES INCOME OPPORTUNITIES?

While there is an endless list of possibilities, we can group them into two main areas: forest farming and utilization and recreational access and tourism.

Forest farming and utilization: growing ginseng, goldenseal or other medicinal plants; mushrooms; collecting native plants or materials; crafts; choose 'n cut Christmas trees; maple syrup; deer farming; pine straw; custom sawmilling and kiln-drying; managing and marketing high-quality forest products.

Recreational access and tourism: fee hunting and fishing; hunting preserve; sporting clay; guiding service for hunting, wildlife viewing, photography, etc.; outdoor sports such as biking, hiking, and skiing; high-risk recreational

activities; bed 'n breakfast; vacation cabins; and weekend skill workshops in conjunction with local accommodations.

ASSESSING THE RISKS AND OPPORTUNITIES

Most alternative forest enterprises are a type of home-based business and require the consideration of all family members and a sound discovery process. Successful enterprise development can be thought of as sieve with a number of steps (Figure 1). After establishing family goals and objectives, enterprise options are identified, evaluated, and a few seriously considered. While many people may start this process, few will emerge with compatible and profitable enterprise ideas. Let's take a look at each of these steps.

Evaluate Personal and Family considerations: Seek Out Educational Opportunities

What business qualities do you or each family member possess that can be an asset? One person may be better at keeping the books, while another is better with dealing with customers. Other family members such as children may not be available due to another job or lack of interest. Many enterprises require letting customers on your property or in your home and this may not be acceptable to family members. After considering all these factors, set goals and objectives for the new enterprise (Table 1). These may range from paying the taxes to providing a specific amount or percentage of income within a certain time period. This step alone helps to narrow your options.

Seeking out educational programs and materials from University Extension Services, forestry organizations and others should be a priority during this discovery process.



Figure 1. Sieving out a successful income enterprise

Assessing Different Resources

Assessing Your Physical Resources

Now is the time to pin down 5-7 enterprise ideas that fit with your goals and objectives. For each enterprise idea, determine the limitations and opportunities by developing a resource inventory.

Physical resources include the land, buildings, and equipment. Many forest owners may have a good handle on timber resources, but fail to notice the potential value of special forest products such as

Table 1. Smith Family goals and objectives for a natural resource income enterprise

Property & family description:	50-acre tree farm 1.5 hours from large city includes a 1/2-acre pond, rented 10-acre soybean field. Live 50 miles from land; barn & liveable cabin on site. Family members include: Father, mother, son (12) and daughter (14)
Family members involved:	Dad, mother, son, and daughter
Types of businesses considered:	Vacation cabin, grapevine wreaths, aquaculture, hunting lease & Christmas trees
Role of new enterprise over next 3-5 years in income & employment:	Provide \$3,000 annual income to supplement day job. Development enterprise for retirement income.

mushrooms, medicinal plants, floral products, grapevines, and few consider the potential value of underutilized water and wildlife resources. For example, a pond or spring may have potential for fee fishing or aquaculture, while wildlife habitat improvements could attract more game and improve lease rates.

Fields used for traditional row crops and livestock could produce high-value horticultural crops, or other possibilities. While existing barns may have sentimental value, renovations necessary to make most barns usable for a business may not be practical. Finally, realistically assess the utility of your equipment for different tasks.

Assessing Money, Management, and Labor Resources

Lack of money can be a real problem, since many small entrepreneurs start out using their own capital. Even when start-up capital is adequate, cash must be available for the 3-5 years it may take to make a profit.

The time needed to manage a new enterprise must not create unworkable conflicts with existing operations, your family, or day job. Whether or not you live on the property is another consideration. Absentee landowners may have security concerns that will not allow leaving any valuable onsite inventory. Many production enterprises will require additional labor at key times, and you must be sure family members or outside workers will be available.

Choose an Enterprise and Get Serious

Now that you have a list of ideas and an assessment of your resources, rethink your idea list. Take your best 5-7 ideas, make an idea evaluation chart (Table 2), and pick the highest rated idea(s) and proceed.

Marketing or Will It Sell?

Marketing a product or service is often more important than producing it. First, describe the product or service you are selling in your own words and the benefits to the user. Then in less than 50 words communicate the basic concept of the enterprise. Completing some market research is needed to understand your market competition,

target audience, and consumer trends. You need this information to project potential sales, prices, and profitability. There are number of tools to accomplish this including do-it-yourself surveys, visiting other operations, and using existing data on demographics and market trends.

For example, if the Smiths were interested in making grapevine wreaths for sale, they would need to check prices being paid by the wholesalers, competitors, local retail outlets, when deliveries would be required, and other information. Likewise, developing a vacation cabin(s) on their property would require gauging demand and supply for these facilities.

Production or Can It Be Done?

This gets down to the nitty gritty of what is required from your physical, money, management, time, and marketing resources to accomplish a given enterprise. Consideration of other factors such as legal, regulatory, and liability factors is critical to protect yourself and other assets. This is where sources of production and marketing information from Cooperative Extension, trade organizations, and other sources are useful.

Profitability and Feasibility: Will It Make Money and Can I Afford To Do It?

Surprising, many landowners start an enterprise without determining if they will make money or how long it will take to make a profit. The two financial tools commonly used are the enterprise budget and cash flow analysis. The enterprise budget is a listing of your estimated gross income and costs which can be used to determine the expected net income. This budget is calculated on a per unit basis, such as an acre of land, for one year or one production period. Costs can be variable for those that depend on the level of production (materials, labor, etc.) or fixed (insurance, buildings, etc.).

Many people don't consider the cost of land or their labor, thereby overestimating their return. The cash flow analysis breaks down the business into monthly or yearly increments to determine when additional capital is required for expenses and when revenues can be expected. Most enterprises take 3-5 years to show a profit and a

Table 2. Idea evaluation chart for Smith family to help prioritize their ideas based on objectives.

List five ideas. Rate on a scale of 1-5 to the extent it fulfills goals listed below. A rating of 1 for an enterprise means it is least preferred, and a 5 is an enterprise that is most preferred.

	Enterprise Ideas				
	Choose 'n cut Christmas trees	Pond aquaculture production	Grapevine wreaths	Hunting lease	Vacation & hunting cabin
Enterprise preferred by family	1	3	5	4	5
Has special features preferred	2	2	5	5	3
Makes use of physical resources presently underutilized	5	5	5	4	4
Has a potential market	1	3	4	5	5
Makes use of underutilized management and labor resources	5	4	4	4	4
Uses by-products of forestry operations	0	0	4	0	3
Family financial resources can cover start-up costs	3	3	5	5	3
Total Points	17	20	32	27	27

lack of adequate cash flow is a major reason for failure. Most natural resources income opportunities such as ginseng production, Christmas trees, and sporting clays will require years to recoup costs and start making a profit.

Decision time: Yes, No, or Back to the Drawing Board!

By now, landowners will have adequate information to determine if they should start or abandon an enterprise. For some enterprises a few years of small-scale test production and marketing may be wise. In our example, the Smiths may start producing grapevine wreaths using the barn for storage and assembly. Income generated from sales could supplement personal funds to improve the cabin to rent to family vacationers, with use of the cabin increasing hunting lease income for that time of year.

CONCLUSION

Many successful enterprises start as hobbies and take years to develop. While many ideas are considered, few will make it out of the sieve process, but those initiated will be informed decisions based on good information.

Act on your ideas and dreams, but start out small and invest no more than you can afford to lose.

Many efforts are underway to educate forest landowners and the professionals that work with them about natural resources income opportunities. Contact your local Cooperative Extension office, state forester, or other organizations to seek out educational programs and information.

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Business Planning is Like Planning a Vacation to Disney World

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Abstract: Many budding entrepreneurs are reluctant to formally prepare a written business plan. Most believe that it takes too much time to prepare and that it is rarely essential unless financing is required. A business plan is a dynamic tool that can guide a business through its formative years. This document is used by internal audiences to measure progress toward mutual goals and by external audiences who must decide to invest or finance the project, product, or idea. Entrepreneurs need to approach a business plan in the same mindset they would use to plan their vacation. In fact, business planning is like planning a vacation to Disney World. This paper will provide a real life example, as well as an outline that contains the basic components of a business plan.

Keywords: business plan, competitor analyses, marketing, contingency planning, employees, financing

THE ROAD TO DISNEY

The Idea

Every parent has at one time or another, in a moment of weakness, decided to capitulate to his or her children's ardent requests and choose Disney World as their vacation destination. It is not that I have anything against taking a vacation or going to Disney World, but vacation planning is too much like work. It is with this mindset in place that I draw a corollary between the art of vacation planning and the science of business planning.

Making Plans

To plan the perfect vacation we must first decide upon our destination or ultimate goal. In the business world we have to decide where we would like our company to be in a few years. Once we know where we are going, we need to determine the appropriate routes that we should take to get there. We ask ourselves, do we want to take the scenic or circuitous route or do we want to forge ahead at light speed to quickly reach our goal? In some cases, the path we choose could have detours or delays. If we choose the scenic path we could see and learn new facts and details that could make our vacation even more successful. In

some cases the path we choose could impinge on our ability to even get to our goal.

Who Is Going with Us?

Once we have our road map or plan to our vacation spot, we need to figure out which relatives we're going to take and ask ourselves what they can contribute to our vacation adventure. Relatives are analogous to employees. They can be either a great help or a total embarrassment. Before extending an invitation to specific relatives, think about the special skills that will be needed by your family on your vacation.

In business planning, we have to decide whom we want to employ and who will be our essential managers or forepersons. If Uncle Billy's claim to fame is that he collects beach sand and Aunt Flo is an expert navigator, choose Aunt Flo, because her special skills are more congruent to the challenges that you will face on your vacation adventure. Too often in the business world we choose managers and key personnel without knowing fully what our needs are.

The Details

At this juncture in our vacation planning we need to make some of the logistical arrangements for our adventure. We need to know which vehicle can we use to transport our valued cargo (relatives). We need to know what supplies (raw materials) are needed and where these supplies can be obtained. We need to arrange for AAA, (consultants) so we'll have someone to fix our flat tires and tow our beloved minivan to the garage in case of a catastrophe. We need to know how long it will take for us to get there. More important, we need to know how much money we will need to finance our trip (business enterprise). Financing is the key to any vacation (business). If you are undercapitalized, you might never reach your vacation spot (goal) or you might have to skimp on quality and lower your family's (customer's) satisfaction level.

The Road Can Get Rocky

After weeks of planning the day has finally arrived for you to pack the minivan, load up your family and head down Interstate 95 to Disney World. Each suitcase has been meticulously packed and carefully placed into a luggage rack that has been affixed to the roof by Aunt Flo. A map of the East Coast has been placed in the glove compartment, a cellular phone has been plugged into the cigarette lighter, and a styrene cooler loaded with liverwurst and ketchup sandwiches, has been set under the rear seat. All are ready for the grand adventure to begin.

As we head toward our vacation spot, we begin our journey down Interstate 95. The odometer charts our progress toward our goals while the speedometer documents our immediate speed or success rate. When our speed drops below 55 miles per hour, we know that our vacation timetable will change. Hopefully, we have considered these factors in our vacation plan, as well as other possibilities, such as the brush fire, the fallen tree, or the flooded roadway that can obscure our path.

The hours turn into days and finally our vacation spot is in sight. Our motel sits on the edge of a swamp and a gaggle of resident geese now occupy the heart-shaped pool. A persistent leak from a cold water pipe saturates the bed linens and Aunt

Flo seems allergic to the mold-covered walls in the bathroom.

Is our vacation over? Are we at the hands of Murphy? Can we get our deposit back? Will Aunt Flo ever stop crying? These are all questions I'm sure that we ask ourselves. But the real question is, do we have a contingency plan? Contingency planning is essential for any vacationer or business owner. If things go wrong, do I have other suppliers (motels), other lines of credit (credit cards), different distributors (rental cars), etc. Do I have the organizational ability to get past these setbacks and implement my contingency plan? If so, I can weather the storm, select another motel, and continue on with my vacation plan.

Planning Did Pay Off

Disney World was truly a great adventure. My vacation plan was a glowing success despite two flat tires, a poor motel choice, and several other minor obstacles. Aunt Flo was a capable navigator and AAA proved their worth with flawless road service. Everything seemed to go according to plan and before I could take solace in my accomplishments, my oldest son reminded me that next year the family was going to California!

WHAT DO YOU REALLY NEED IN A BUSINESS PLAN?

Key Elements of a Business Plan

Business plans should establish succinctly the goals or the mission of the entity, its product or service line, the identities of its key managers, as well as income projections, financing needs, marketing strategy, labor requirements, etc. Internal audiences view the business plan as a road map for organizational growth and profitability. To external audiences, a business plan is both a road map and a sales document. As a sales document, the business plan must convince potential investors or loan officers of the merits of a product, service, business premise, or idea. If the business plan can successfully "close" the external viewer or investor, financing is usually secured.

A business plan should include a profile of the business entity and its management team. Educational background and relevant work

experience should be summarized for each key manager. A description of the company and its organizational structure should also be detailed.

Competition is inevitable in any industry and new entrants must be cognizant of what their competitors are doing. A business plan should include an industry analysis and should highlight the anticipated strengths or weaknesses of key competitors in their market area.

Business growth and profitability are perhaps the two most important segments of a business plan. External audiences (investors or loan officers) often require that business entities include monthly cash flow statements for the first year and 3-5 years of projected income statements in their business plan.

When crafting a business plan, entrepreneurs must take the time to carefully research and compile their data. Poorly crafted plans usually meet with resistance from loan officer's and/or investors. Each business plan is unique and should be created with a particular audience in mind. Funding sources should be researched carefully up front, to determine what the loan officer or investor is expecting.

A simplistic but proven format for a generic business plan is provided on the following page(s).

BUSINESS PLAN OUTLINE

Executive Summary

Include a company name, descriptions of the industry, description of product or service, financing needed, payback period, organizational goals, etc. (Keep concise and write this last.)

Introduction

Business goals
Description of product or service
Overview of industry
Overview of market

Amount of funding sought
Method(s) of financing
Financial goals

Industry Overview

History of your industry
Current size and makeup of industry
Trends within your industry
Your strategies for entering the market
Competitor analyses

Description of your Company/Product

Detailed description of your product
Outline production process

Marketing Plan

Define pricing strategy for product or service
Outline distribution strategy for product or service
Delineate promotion strategy for the product
Outline positioning strategies for the product

Organizational Plan

Organizational structure
Business structure
Management team
Organizational chart

Operational Plan

Location of enterprise
Facility costs (rent, utilities, etc.)
Labor requirements and needs
Salary structure/wage structure
Raw material procurement
Production schedule
Production goals
Long-range plans

Financial Plan

Capital requirements
Description of your financing plan
Pro-forma balance sheet

Projected cash flows
monthly, year 1
quarterly, year, 2 & 3
annually, for years 4 & 5

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Sources of Help for Income Enterprises

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Abstract: Finding help and information is important to small business success. There are low cost/no cost sources of assistance available to every business owner/manager. Advice and counsel is available readily from similar business owners in other communities. Many accountants, attorneys, and business consultants provide discounts to new small businesses. Free consulting is available at Small Business Development Centers, Score Chapters, Extension offices, and many chambers of commerce. State and federal agencies have consultants such as the Forest Service and Department of Natural Resources. The Internet, libraries, and literature offer a wealth of information.

Keywords: assistance, information, consulting, help, resources, funding

WHY CHASE INFORMATION?

The new start and the existing business owner find that the urgency of day-to-day operations makes it hard to find time to chase information. The small business owner is even more pressed for time, as he or she must wear all the management hats. There may be no one in the business to do their daily job tasks and limited resources to hire a substitute to free them to chase information. Many times they face the question: can they afford to lose the sale or income that will occur?

The same business environment that permits a new business to start or an existing business expand, is what forces any successful business to chase information. It is called "free enterprise." The new business start sees a niche and opens their doors. The existing business expands its market or introduces a new product. These entries in the marketplace are normally at the expense of some other business. That other business will be you each time another new or expanded competitor enters the marketplace.

Your only response to hold market share is to adjust and that requires information. That needed information may be internal, such as cost of production, quality controls, or employee productivity. It may be external information such as new products, changing consumer preferences or new technology. The time required to chase

information is valuable, but the need is constant. Knowing where to look and how to get information is a cost-saving practice.

GETTING ADVICE AND COUNSEL

Getting good advice has always been recognized as very productive. The problems are where to get it and is the information really valuable. There are many sources of advice and counsel. Several will be pointed out here. It is important to keep in mind some guidelines.

Select Your Advisors

Choosing whom you will seek advice and counsel from is important. Their knowledge of your business and market may be important. An individual who asks hard questions in learning about your business can provide valuable insights. Remember, you are seeking the new idea, niche, refinement, service or production improvement that keeps, and hopefully, expands your income. It is very easy to become comfortable with the existing advisor circle. Yet new ideas may come from new and/or unexpected sources.

Paid Consultants – Accountants, Attorneys Bankers, Insurance Agents

Seek out the advice and counsel of the consultants you hire such as accountants and attorneys. Many will take time to talk to you. Be sure to ask when the clock starts. Your banker is an excellent source of information. He or she works with numerous businesses each day and can provide insights into what successful businesses are doing. The insurance agent is another professional who has contact with lots of businesses.

Professional business consultants are available to provide assistance to businesses. These may be accountants, attorneys or other business professionals who specialize in business consulting. There are also firms that provide a broad range of services to the business. Many of these consulting services may be more costly than the smaller business can justify. However, there has been a significant increase in lower cost services for small business.

If you are seeking consulting services, make sure you ask what it will cost. Unfortunately, this is one of the least asked questions by small business and it can be a costly mistake. The attorney, accountant, or business consultant should be his or her expected to provide fee structure. This should include how or if they bill for counseling time, as well as services provided. The businessperson should clarify if phone conversations are included in the billing.

Internal Free Consultants

Suppliers and salespeople see businesses from the unique perspective of inputs. They know what is happening in your market, in terms of both volume of inputs and changing input mix. They know what your competition is doing and have a vested interest in your continuing success. Some business managers have identified their suppliers as their most valuable source of information and assistance.

Customers and potential customers are a prime information source. They provide information and advice on your product or service. Asking is the key to accessing this source. There are numerous techniques from survey to focus groups. Always

remember that the customer will ultimately vote when they do or do not make a purchase.

Trade associations provide information on starting and generating a business. The information and assistance can be very detailed for the specific business. They may charge or require membership to receive information.

Business Assistance From The Public Sector

There are many government agencies and government funded organizations that provide business consulting and assistance. Many are free or subsidized. The location of these services may be concentrated in urban centers. They also will tend to be understaffed, as revenues to support the services are not directly tied to the customer base. They may not market their services actively, so the businessperson will need to be proactive in seeking them out.

Chambers of Commerce

Chambers of Commerce vary drastically in the assistance they can provide. They all do provide excellent opportunities to interact with other businesses at meetings of members. They also provide information on business issues and concerns. The staff of a Chamber has contact with a wide variety of businesses and can provide unique insights.

Cooperative Extension Offices

These offices specialize in education and are an outreach of the land-grant university system. They are normally familiar with the business resources at the local level and are located in each county. They will have an Extension agent specializing in agriculture and/or natural resources. Other business specialties may also be available locally or through their statewide network. Most states will have educational information and materials related to business—especially small and home-based business.

City and County Government

Public officials are knowledgeable of many resources for business in a community. Many cities and counties have business loan programs with agencies to manage them. They also can help identify successful businesses in the community to visit. Some will have development departments that work with the business community.

Libraries

The library is a prime access point for information. Most have staffs that are knowledgeable in locating data, as well as, books and resource material related to business. Interlibrary loan programs and Internet access make virtually any information available at the local level. Some libraries have research consultants that specialize in doing research for business. Government Depository Libraries are located on larger communities and universities. They receive copies of all of the federal government publications and information.

Educational Institutions

Many high schools, vocational schools and colleges offer classes and seminars for business. Some will have business libraries and provide individual consulting.

Regional State and Federal Sources

There are numerous regional, state, and federal sources of assistance. Many state and federal agencies have business or small business departments to provide assistance. Examples include Department of Energy, Occupational Health and Safety Administration, Environmental Protection Agency, Internal Revenue Service, Attorney General, Department of Commerce, Forest Service, Department of Agriculture, regional development districts, and Appalachian Regional Commission. Always ask if a

department has a business or business advocacy division. The more common business resources are included here.

Small Business Administration - SBA

The SBA (U.S. Small Business Administration) has numerous programs and sources of information. Provides funds to several business assistance programs included here. It has small business loan programs in cooperation with local banks. To access toll free, call 1-800-UASK-SBA or access on the Internet at <http://www.sba.gov>.

Small Business Development Centers – SBDC

There are over 900 SBDC's throughout the United States that provide free technical assistance to new and existing businesses. They will have access to databases and market information. They can be located by contacting your local Chamber or the SBA.

Senior Corps of Retired Executives – SCORE

SCORE Volunteers are retired business people who provide counseling assistance to businesses. They provide years of business experience. SCORE Chapters can be located by contacting the SBA.

Public Officials

Governor's offices, legislators and other elected officials will have information on assistance available to business. Several will have staffs that specialize in business assistance. They can point you to loan programs, regulations, licenses, etc. at their level of government.

BUSINESS ASSISTANCE CONTACT AND REFERENCES

This list includes only a few of the sources of assistance. The references to books, magazines, programs and websites are examples and are not endorsed.

Contacts

Local	Chamber of Commerce Financial Institutions Library	Extension Office Commissioner’s or mayor’s office Educational Institution
State/Regional	Small Business Development Centers Governor’s Office Trade Associations	State Development Office State Chamber of Commerce
Federal	U.S. Department of Commerce EPA OSHA	Small Business Administration --SBA U.S. Department of Agriculture IRS

<u>Telephone</u>	1-800-UASK-SBA 1-800-829-3616 1-800-368-5888	Business assistance & loan programs Small business tax kit EPA small business programs
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<u>Books & References</u> (check your library)	How to Set Up Your Own Small Business Smart Steps to Smart Choices Encyclopedia of Associations Thomas Register Entrepreneur Business Guides	excellent resource testing your idea list of trade associations sources of products and services specific guides on starting a business
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<u>Magazines</u>	Entrepreneur Nation’s Business Inc. In Business	ideas, guides, solutions for new starts U.S. Dept. of Commerce magazine for small business medium-size business focus environmentally sound business
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<u>Websites</u>	SBA SBA outside resources U.S. Gov. websites Extension service Rural Dev. Business Programs U.S. Dept. of Commerce	http://www.sbaonline.sba.gov http://www.sbaonline.sba.gov/hotlist http://www.utdallas.edu/utdgeneral/news/govern.htm http://www.reeusda.gov http://www.rurdev.usda.gov/rbs/index.html http://www.doc.gov/
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SECTION 3

Natural Resources Enterprises Related to Recreational Tourism

Diversification Through Recreation: A Winner For Farms, Farm Families, And Communities

JAMES and LUCILLE McCULLOUGH, Farmers, Conservationists, Resort Owners, 421 Governor Chittenden Road, Williston, Vermont 05495

Abstract: We believe there are many diverse ways to earn additional money and public support for the stewardship of your land through the creation of a recreation enterprise. A secondary benefit of such an endeavor is the opportunity to educate the public about the forgotten qualities of the land and being closely associated with it. The outcome of such a program benefits the land owners, the land, those who use the land, and other land properties through the public's increased awareness of intrinsic values of land. Instead of just one steward (you) for your place, your place now has countless stewards (the public) who are now conservation minded and vote accordingly on conservation issues. Success will require a population base of sufficient size proximate to the property, or that the property be located in a destination resort community of sufficient tourist population. Success also hinges on your ability to educate customers so that they positively affect the business plan.

Keywords: diversification, recreation, education, family fun, profits

LAND IS CONSTANT

Oscar Hammerstein wrote the lyrics for Rogers' and Hammerstein's "Oklahoma". He reminded us in modern-day (sort of) song what the indigenous people throughout the ages have known; what farmers intuitively know, and what most of the world's modern population has drifted away from. As we have drifted away from an agrarian society to industrialization and specialization we have forgotten what our predecessors knew and practiced. Then we were unable to pass this knowledge on to our children.

What is this largely forgotten and often ignored wisdom? Here are the words, you supply the tune. "We belong to the land, and the land we belong to is grand!"

What does this mean? Is the lawful precedent developed throughout recorded time wrong? Are all the deeds and descriptions of land ownership false? The answer is, of course, yes and no. How can we own the land when we, all of us, are "of it"? Who can say that he "owns his mother"? Which mother can say, "I own this child"? Surely each child is his or her own individual, but there

are genetic, social and cultural ties extending both ways.

Similarly, we are part of the land, Earth, with all its attendant parts. Every leaf, fruit, root, animal, mineral, oxygen molecule, or drink which we consume becomes "us" through metabolism and cell reproduction. We are, like parent and child, individuals distinct from the land but part of it.

Throughout time parents love, protect, and care for their offspring and their children do the same for their parents. Since we cannot own our parents, or similarly the land, the best we can do is "love, protect, and care for".

Legal deeds and titles give us additional rights and responsibilities to certain described pieces of land. Those of us who have not drifted too far from the land recognize that deeds and titles speak largely to our responsibilities. We understand that true ownership is not possible. We recognize that our highest and best role is one of stewardship.

No one is self-sufficient with his/her own land. We all depend on food, fiber, and oxygen from other parts of the Earth. Many, in fact most, people are unable to participate directly in the

production of food and fiber and are therefore totally dependent. Thus, all of us are stewards of the land with an undeniable responsibility to it, to each other, and to ourselves.

Each of us, whether we till the soil or not, can be good stewards of the land. We must control our consumption, vote tax dollars for conservation and "Earth Responsible Management Projects", and vote for like-minded local, state, national and world leaders. We know that we have only a few years, as mortal humans, allotted to us on this Earth. Even fewer of these years can be expected to be productive.

Experience shows us that life goes on after individuals die. We know that the land survives us. We know the legal system gives us the right to direct to whom the land shall be given upon our passing. Most people wish to bequeath their property to their children or other loved ones. We all recognize our tenure is short, that life goes on, and that the land endures.

Every good Boy Scout or Girl Scout knows he must leave the land as clean as, or cleaner than, when he/she arrived. A good question to pose is, "How much can the land endure and still be supportive of those who are charged by all reasonability for its care?"

The Scouts know the land will be there clean, useful, and enjoyable for others after they are gone. We must all know the same for our land, The Earth, for when we are gone, it will endure.

MULTIPLE USE

Those of us who have a particular piece of land for which we are responsible have many options for its stewardship. One of these options is to use the land. Some land may appear to have as its only function "holding the world together," but if we look hard enough we may find additional uses.

It was once thought that our farm was only good for dairying. Our substantial woodlot was considered only as a fuel source for the farm's houses, or in some instances, as shade for the cattle. It was in all accounts considered more of a tax burden than an asset. It has always been loved and respected for its intrinsic values, if not on the positive side of the balance sheet. There was land

that was too stony or steep for anything but grazing. The most valuable land was suitable for cropping. This farm essentially had one use. It produced milk. It provided a living for seven families (owners and farmhands) at one time in the early part of the century.

In the early 1950's the mechanization, sanitization, and regulation of agriculture combined with urbanization rendered our farm unsuitable for dairying. Then its highest and best use was for residential development. Holding the world together seemed to be a distant second. My parents decided that holding the world together was indeed the best option. Neighboring farmers pastured and hayed the land enough to keep 90 percent of the brush back for 25 years while loggers came and high-graded the woodlot multiple times.

I went to school and then I went to school some more, only to learn that the highest and best use for the land was residential development and that any type of farming was not feasible. The best schooling I got was working on a friend's farm in Massachusetts. The Beldon Farm produced milk, potatoes, cucumbers, broadleaf tobacco, lamb, and wool. The Beldon Farm had two assets: the Luther Beldon Family and Connecticut River Valley climate and bottom land. Luther taught me that multiple use means multiple profits. It also hedges your bets. If the potatoes are bad this year something else will carry you through. Check your Irish History Book for this one!

In 1978 we diversified at the McCullough Farm in Williston, Vermont. We started a cross country skiing business and named the company Catamount Family Center. We did not include the words cross country skiing or nordic skiing because we knew that we would add other activities. We didn't know what they would be at the time, but we were tuned into Luther's teaching: multiple use means multiple profits. Since then we have added a restaurant, BMX, (both of these now defunct), mountain biking, trail running, orienteering, walking, interactive nature trail, ice skating and speed skating (on a 250-meter oval), and snowshoeing. We expect to be adding camping, ropes course, inline skating and skate board park, a paved 2-km multi-use wheel chair / rehabilitation / bicycle criterion course, hockey facility, and an indoor swimming facility.

With renewed interest 20 years later, we may be reintroducing BMX.

On the agricultural scale, we supply standing hay to two neighboring dairies, have an organic vegetable garden, and produce a choose and harvest your own Christmas Tree Plantation. We manage our woodlot for timber, wildlife, conservation, education and recreation.

We make our property available to K-12 schools for field trips designed around a variety of subjects; wildlife, plant and tree identification, wetlands studies, interactive nature trail, orienteering, and our farm, town, and state history. Our Williston graded school is developing curricula around many of these topics. Several of our local colleges and our state university conduct studies here and use our property for field trips. We anticipate an expanded need for these services for which we will charge a fee.

Our main house is listed on the National Register of Historic Places as the Giles Chittenden Homestead. It was built in 1796 by Vermont's first Governor Thomas Chittenden for his son Giles. We give house tours annually (multiple tours in '96). Every Halloween we produced a Haunted House which resembles theater more than a fright house.

So, what might work for you? Certainly, with an active imagination, you can think of some additional ideas. Based on your knowledge of your area and place, you can develop new, interesting and profitable uses for your property's stewardship. Always be certain to ask for and to listen to ideas. We have rejected far more ideas than we have been able to implement. We have implemented some ideas that we previously rejected. We have ideas on hold and ideas in the making that will be an integral part of our farm plan in the future.

Our individual projects have ranged from extremely successful to dismal failures. We shudder to think of what would have happened to our farm if we had failed to expand our thinking from the traditional models for farm use. Multiple use can be profitable for your property too, I'm certain, especially if you have a profitable core business as part of your farm plan.

COMMUNITY AND YOU

Lucy and I are very "community minded" people. For purposes of this discussion we are considering personal and civic communities. Just for fun, however, you may wish to consider many other types of communities and how mindful we all might be of them.

This philosophy has guided our lives. It has been a compass for stewardship. It has opened the door for a flood of love from our communities, through us, to our farm. Our farm owns a substantial "market share" of open land stewards in North Western Vermont. Instead of simply our several family members loving this land and committed to its care, we have thousands of lives that have been favorably affected by pleasurable experiences at Catamount. Many of these people demonstrate their love for this property frequently. I have to believe that there is a substantial windfall gain to conservation in general in this area as a result of their reawakened or newly developed conservation consciousness.

From the beginning, our marketing plan has included free use of the land. We felt in the beginning that we could not afford to give money, but that we could give services. We give area use to every not-for-profit, every school or youth group, and every church group that asks when these requests come as part of a fund raiser. This policy brings new assets (people) to our area. It serves our need to participate in our community's fund raising needs. It has been the basis of our marketing strategy to make our land "indispensable" as open space in our region.

In the last two years our land has been the venue for the American Cancer Society of Vermont's "Relay For Life." This single event has netted over \$130,000 in two years. Over the last 20 years, Catamount has hosted dozens of fund raisers for national and local not-for-profits.

Lucy and I maintain a high and useful personal profile in our civic responsibilities. We served and have served on many boards and committees for the betterment of our community and government. This has been rewarding for us personally and has been very profitable for the community. Our community lives and our stewardship lives are blended into one effort in the community's eyes. This is win-win and love in action!

In November of '96 we challenged our community to help us discover how Catamount Family Center can better served the community needs, and Catamount's needs, presently and into the next century. We started with a steering committee in June and identified the challenge and how to get the answers. Our town donated the Town Hall for a three-day retreat. Tom and Donna Perron, a husband and wife professional facilitator team of "Challenge The Future" from Jericho, Vermont, donated their expertise throughout the planning process and produced the retreat for us. We used public service announcements and press releases to invite people to commit to and register for the November retreat.

The results were overwhelming. Seventy-eight people actively participated for three days, sharing their love, wisdom, and ideas with us. Many are still with us actively on committees; all are with us in love, spirit, and other forms of participation. We feel tremendously empowered by this outpouring of support. We understand and appreciate that this level of giving is usually reserved for a "favored not-for-profit." When you work with your community, it will work with you!

COMMON DENOMINATOR

Who is the common denominator between diverse groups of people, diverse plant communities, and diverse groups of wildlife and domesticated animals? In addition to the land, that common denominator is you! You are the community that links much of what goes on at your place with all who reside and visit there.

If you decide to open your place to the public, then you become the link for them to your land and all that it holds and sustains. Further, if you decide to invite diverse social and economic cross sections of public, you will be markedly more successful at developing a broad profit base. You will also be more successful at positively affecting many more people's lives through connecting or reconnecting them with the land.

People from all walks of life, in varying stages of happiness or trouble, will all respond to the land and its own. They will, through repeated visits, become stewards of your land right along side of you. Further, they will become conservationists for other lands. They will become better educated

as to the importance of open space land for its intrinsic value and for the recreation value it has imparted to them and can give to others. You have helped create an educated voter and friend for the land.

Congratulations! You have brought the public to your place to recreate and earn extra profits for your business. Perhaps more importantly, you helped these people invest in themselves, in your land, and hopefully in broad-based conservation.

Your decision to diversify has multiplied your effectiveness as a steward through increased dollar profits and through a whole new generation of stewards who know: "We belong to the land, and the land we belong to is grand."

Wildlife-Associated Recreation in the U.S.: Results from the 1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation and What It Tells Private Land Owners

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Abstract: The National Survey of Fishing, Hunting, and Wildlife-Associated Recreation collects detailed data on participation and expenditure patterns for U.S. residents 16 years of age and older. The latest survey collected data for 1996. Results relating to fishing, hunting, and wildlife watching are presented in this paper. Specific attention is given to participants who used private land for their recreational activity.

Keywords: hunting, wildlife watching, demographic characteristic

INTRODUCTION

The National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (Survey) is the most comprehensive survey of wildlife-related recreation that provides data on a comparable state by state basis. The survey was started as a national survey of hunting and fishing in 1955 and has evolved into a national survey with state reliable estimates for hunting, fishing, and wildlife watching.

The latest survey collected data on participation in 1996. The national report was released in November, 1997 and state reports will be released on a flow basis beginning in February, 1998. The sample size for the 1996 Survey included more than 77,000 households in a screening interview and 28,000 sportsmen and 14,000 wildlife watchers for detailed interviews about their participation and expenditures in 1996. Detailed data are collected only on participants 16 years of age or older.

Results from the 1996 Survey show that there are nearly 77 million outdoor wildlife-related recreationists 16 years of age and older in the U.S.. With increasing urbanization and greater demand on existing public lands, more recreationists could be turning toward private land to meet their needs for wildlife-related recreation. The 1996 Survey collected data on participation in

fishing, hunting, and wildlife watching and the types of sites on which these recreationists participated. Specific results related to hunting and wildlife watching are presented below. The emphasis of these results is on participation on private land and the types of sites participants visited.

SUMMARY OF FINDINGS

In 1996, nearly 77 million individuals participated in some kind of wildlife related recreation. Anglers numbered 35 million, hunters 14 million, and wildlife watchers 63 million. Because people participate in more than one activity, the sum of anglers, hunters, and wildlife watchers is more than 77 million. Expenditures for trips and equipment for these activities topped \$100 billion.

The large number of participants and their expenditures are evidence of the importance of these activities to the economy. Payments to private land owners can be very profitable. For example, hunters spent nearly \$324 million on private land-use fees in 1996. Specifically, that is \$348 for each hunter who paid some kind of private land-use fee. Anglers spend more than \$84 million on private land-use fees; \$54 per angler paying fees. Wildlife-watching participants spent over \$106 million on private land-use fees. An average of \$67 for each participant who paid a

private land-use fee. Given these high expenditures, it is astonishing that only 7 percent of hunters and wildlife watchers and 4 percent of anglers are paying ANY private land use fees. This is direct testimony to the potential for income opportunities in providing fishing, hunting, and wildlife watching opportunities for these participants.

In the remaining portion of this paper I will focus on participation in hunting and wildlife watching on private land. Hunting will be discussed first, followed by wildlife watching. Fishing is not included because the 1996 Survey did not collect information on private land participation for anglers.

HUNTING

Of the 14 million hunters in 1996, more than 11 million (81 percent) hunted on private land. Slightly more than 7 million (51 percent) hunted ONLY on private land. The remaining 4 million hunters (30 percent) hunted on both private and public land. The distribution of persons hunting on private land by type of hunting (big game, small game, migratory birds, other animals) is similar to that of total hunting with 77 percent of big game and migratory bird hunters and 86 percent of "other animal" hunters participating on private land. Eight-two percent of small game hunters hunted on private land.

Seventy-seven percent of the total 257 million hunting days was spent hunting game on private land. The percent of days of hunting on private land by type of hunting ranges from 69 percent for big game hunting to 81 percent for "other animal" hunting. Days hunting on private land include days where hunters hunted on both private and public land.

High participation rates in terms of hunters and days hunting on private land emphasize the importance of private land to hunters. How these hunters find land to hunt on and the amenities that these lands provide are important in continuing this trend of high participation on private land and the resulting income opportunities for private land owners who wish to manage their land for hunting purposes.

One way to better understand private land users and meet their needs is to examine the characteristics of the hunters who use private land. The 1996 Survey collected data on the demographics of participants. This data is presented below in Table 1. Table 2 contains demographic information for public land users to allow for comparisons between the types of users.

The breakout of hunters using private land who are urban and rural residents is relatively close. Rural residents have a slight edge, making up 56 percent of private land users. This may be due to the fact that rural residents are more likely to own land on which they can hunt.

Comparing the percent of hunters using private land by region of the U.S. shows a much higher percent in the Eastern U.S. This is likely due to the availability or quantity of public land in the East relative to the Western U.S. Whereas, only 45 percent of hunters in the Mountain region (Idaho, Montana, Wyoming, Colorado, Utah, Nevada, Arizona, and New Mexico) hunted on private land, 92 percent of hunters in the East South Central region (Kentucky, Tennessee, Mississippi, and Alabama) hunted on private land. Eighty-nine percent of the hunters in the South Atlantic (West Virginia, Virginia, Maryland, Washington D.C., Delaware, North Carolina, South Carolina, Georgia, and Florida) and West North Central (North Dakota, South Dakota, Minnesota, Iowa, Missouri, Nebraska, and Kansas) regions participated on private land.

The age of hunters participating on private land was distributed relatively evenly. The maximum participation rate was 83 percent for hunters 25-34 years old and the minimum was 80 percent for hunters 65 years old and older. All other age groups fell within those percentages.

The race of hunters has a slight effect on participation on private land. Eighty-six percent of black hunters participated on private land and 82 percent of white hunters did so. Only 60 percent of all other races participated on private land.

The percent of hunters that participated on private land by income ranged from 77 percent for those with incomes below \$10,000 to 88 percent for those with annual incomes of \$20,000-\$24,999. Hunters with incomes of \$100,000 or more participated on private land at a rate of 86 percent.

All other income categories had participation rates within 3 percentage points of the 81 percent average.

The education level of hunters is also a factor in participation on private land. Only 77 percent of hunters with less than a high school education hunted on private land. Hunters with 4 years of college education participated on private land at a rate of 87 percent and 85 percent of hunters with 5 or more years of college education participated on private land.

While 81 percent of hunters hunted on private land, only 77 percent of all hunting days were spent on private land. This includes days where hunters participated on both private and public land. The distribution of hunting days on private land by geographic region is similar to that of participation on private land with hunters in eastern states spending a larger portion of their days on private land. Additionally, rural residents spent 82 percent of their hunting days hunting on private land whereas only 35 percent of hunters from urban areas did. With respect to individual characteristic, older hunters spent a higher percent of their days on private land, with the exception of 16-17 year old hunters who spent 91 percent of their days on private land. Female hunters spent 85 percent of their hunting days on private land compared to 77 percent for males. Black hunters who were more likely to hunt on private land also spent more of their days hunting on private land. White hunters spent 76 percent of their days hunting on private land. All other races spent 90 percent of their days on private land. There was no definitive pattern for percent of days spent on private land for the income and education categories.

WILDLIFE WATCHING

Nearly 63 million U.S. residents 16 years old and older participated in wildlife watching in 1996. Ninety-seven percent of them, nearly 61 million, participated in residential wildlife watching. Residential wildlife watching includes observing, photographing, and feeding wildlife within a one mile radius of ones home. Also included is maintaining plantings or natural areas of 1/4 acre or more for the primary benefit of wildlife and visiting public parks within one mile of home. More than 23 million wildlife-watching

participants participated in nonresidential wildlife watching. Nonresidential wildlife watching includes observing, photographing, and feeding fish and other wildlife while on trips of more than one mile from home. Because nonresidential wildlife watching involves trips away from home and thus potential for private land owners, it will be the focus of the rest of this section.

Participation on private lands by nonresidential wildlife-watching participants was not as popular as was participation on public land. Only 44 percent of nonresidential wildlife watchers participated on private land, compared to 84 percent on public land. One reason for this might be the availability of private land for this type of recreation. If private lands were available, a small amount of marketing could increase this percentage.

Detailed demographic statistics on nonresidential wildlife-watching participants who participated on private land are not yet available for the 1996 Survey. However, information on the types of sites visited and types of animals sought are available. Information on the type of sites and animals that are sought can help landowners decide the type of things to provide on their land. If a property provides a unique experience or a popular type of site or species to see, it could become a big draw for wildlife watchers. Additionally, even if wildlife watching is not the primary reason for coming to a particular property, the availability of wildlife-watching experiences can influence participants to choose that particular site over another. For example, a hunter may choose to hunt on private land that also provides good wildlife-watching opportunities. This "crossover" activity can be particularly important given that 68 percent of hunters are also wildlife watchers. Thirty-seven percent of hunters also take trips for the primary purpose of wildlife watching. As for anglers, 65 percent are wildlife-watching participants, with 32 percent of anglers taking trips of one mile or more to go wildlife watching.

Table 3 shows the number and distribution of nonresidential wildlife-watching participants who participated on private and public land and the types of sites they visited. The most popular type of site visited was woodland areas with 77 percent of nonresidential wildlife watchers visiting. Lake and stream side was the next most popular site

with 69 percent visiting. This was followed by open fields (63 percent), brush covered areas (59 percent), and marsh, wetlands and swamps (44 percent).

The type of animals that were sought for observing, photographing, and feeding are shown in Table 4. Both birds and land mammals attracted 75 percent of nonresidential wildlife-watching participants. Of the birds, waterfowl attracted the most, 61 percent of all nonresidential wildlife watchers. Songbirds were sought by 55 percent of nonresidential wildlife watchers. Small land mammals attracted 64 percent of the participants and large mammals attracted 56 percent. Other wildlife (frogs, turtles, crabs, butterflies, etc) were sought by 49 percent of nonresidential wildlife-watching participants.

SUMMARY

The National Survey of Fishing, Hunting, and Wildlife-Associated Recreation collects a substantial amount of information about wildlife-related recreation. One element of the survey is participation on private or public land and how much time was spent on each. The information about private land participation can be used with other information that is collected (e.g. types of activities, species, sites, and demographic data) to improve marketing to recreationists based on their participation patterns and demographic characteristics. For example, land that is located near a hunting area could be managed in a way to promote more songbirds. The existence of more songbirds could attract more visitors (such as hunters) to the site because they also enjoy watching wildlife. Likewise, land could be managed for larger populations of small game animals for small game hunters thus increasing hunter success rates. By providing multiple benefits or better hunting, fishing, or wildlife watching opportunities a higher level of participation can be attained on a given parcel of land and thus increasing income opportunities.

Table 1 Hunters and Days of Hunting on Private Land, by Selected Characteristic: 1996

(Population 16 years old and older. Numbers in thousands)

Characteristic	Hunters				Days of hunting			
	Total hunters, public and private land	Hunters on private land ¹			Total days, public and private land	Days on private land ²		
		Number	Percent of total hunters	Percent of hunters using private land		Number	Percent of total days	Percent of days on private land
Total persons	13,975	11,383	81	100	256,876	198,165	77	100
Population density of residence								
Urban.....	6,402	4,971	78	44	101,159	70,257	69	35
Rural.....	7,573	6,412	85	56	155,517	127,908	82	65
Population size of residence								
MSA.....	7,783	6,212	80	55	129,005	95,882	74	48
1,000,000 or more	3,318	2,572	78	23	46,344	34,549	75	17
250,000 to 999,999.....	2,692	2,207	82	19	50,005	35,932	72	18
50,000 to 249,999.....	1,773	1,434	81	13	32,657	25,402	78	13
Outside MSA.....	6,192	5,171	84	45	127,671	102,283	80	52
Census geographic division								
New England.....	485	374	80	3	8,433	6,552	78	3
Middle Atlantic.....	1,453	1,208	83	11	26,874	20,604	77	10
East North Central.....	2,712	2,337	86	21	50,075	38,278	76	19
West North Central.....	1,917	1,711	89	15	29,376	24,887	85	13
South Atlantic.....	2,050	1,821	89	16	42,985	35,903	84	18
East South Central.....	1,301	1,196	92	11	28,613	23,516	82	12
West South Central.....	1,812	1,579	87	14	38,285	33,824	88	17
Mountain.....	1,061	477	45	4	13,158	4,884	37	2
Pacific.....	1,203	680	57	6	18,878	9,719	51	5
Age								
16 to 17 years.....	672	542	81	5	14,033	12,793	91	6
18 to 24 years.....	1,397	1,145	82	10	27,527	20,152	73	10
25 to 34 years.....	2,783	2,316	83	20	60,353	45,577	76	23
35 to 44 years.....	3,819	3,076	81	27	69,502	52,522	76	27
45 to 54 years.....	2,851	2,315	81	20	51,529	39,709	77	20
55 to 64 years.....	1,486	1,215	82	11	20,900	16,693	80	8
65 years and older.....	967	774	80	7	12,831	10,720	84	5
Sex								
Male.....	12,783	10,498	82	92	241,567	185,345	77	94
Female.....	1,192	885	74	8	15,109	12,820	85	6
Race								
White.....	13,226	10,854	82	95	242,804	185,731	76	94
Black.....	303	260	86	2	4,839	4,300	89	2
All others.....	446	269	60	2	9,033	8,134	90	4
Annual household income								
Less than \$10,000.....	428	331	77	3	5,977	4,233	71	2
\$10,000 to \$19,999.....	951	756	80	7	18,430	13,901	75	7
\$20,000 to \$24,999.....	820	720	88	6	17,251	15,572	90	8
\$25,000 to \$29,999.....	1,001	790	79	7	20,243	15,214	75	8
\$30,000 to \$34,999.....	1,107	914	83	8	22,354	16,323	73	8
\$35,000 to \$39,999.....	965	751	78	7	17,973	12,564	70	6
\$40,000 to \$49,999.....	1,882	1,519	81	13	33,432	25,471	76	13
\$50,000 to \$74,999.....	3,036	2,467	81	22	52,368	40,528	77	20
\$75,000 to \$99,999.....	1,178	973	83	9	20,971	14,945	71	8
\$100,000 or more.....	851	734	86	6	15,368	12,912	84	7
Not reported.....	1,756	1,428	81	13	32,310	26,504	82	13
Education								
8 years or less.....	470	362	77	3	6,655	5,341	80	3
9 to 11 years.....	1,616	1,247	77	11	34,173	24,712	72	12
12 years.....	5,776	4,854	81	41	113,735	87,824	77	44
1 to 3 years college.....	3,115	2,532	81	22	53,532	41,009	77	21
4 years college.....	1,654	1,440	87	13	28,714	23,006	80	12
5 years or more college.....	1,345	1,147	85	10	19,867	16,273	82	8

¹ Hunters on private land include those who hunted on both private and public land.

² Days of hunting on private land includes both days spent solely on private land and those spent on private and public land.

Note: Percent of total hunters and percent of total days are based on the total hunters and total days columns for each row. Percent of hunters using private land and percent of days on private land are based on the total number of hunters on private land and total number of days on private land, respectively.

Table 2 Hunters and Days of Hunting on Public Land, by Selected Characteristic: 1996

(Population 16 years old and older. Numbers in thousands)

Characteristic	Hunters				Days of hunting			
	Total hunters, public and private land	Hunters on public land ¹			Total days, public and private land	Days on public land ²		
		Number	Percent of total hunters	Percent of hunters using public land		Number	Percent of total days	Percent of days on public land
Total persons	13,975	6,533	47	100	256,676	77,018	30	100
Population density of residence								
Urban	6,402	3,322	52	51	101,159	37,216	37	48
Rural	7,573	3,211	42	49	155,517	39,803	26	52
Population size of residence								
MSA	7,783	3,828	49	59	129,005	41,411	32	54
1,000,000 or more	3,318	1,695	51	26	46,344	16,390	35	21
250,000 to 999,999	2,692	1,275	47	20	50,005	14,908	30	19
50,000 to 249,999	1,773	858	48	13	32,657	10,113	31	13
Outside MSA	6,192	2,705	44	41	127,671	35,608	28	46
Census geographic division								
New England	465	216	46	3	8,433	3,346	40	4
Middle Atlantic	1,453	760	52	12	26,874	7,491	28	10
East North Central	2,712	1,198	44	18	50,075	13,933	28	18
West North Central	1,917	809	42	12	29,376	7,657	26	10
South Atlantic	2,050	755	37	12	42,985	9,750	23	13
East South Central	1,301	435	33	7	28,613	5,484	19	7
West South Central	1,812	540	30	8	38,285	7,865	21	10
Mountain	1,061	886	84	14	13,158	10,435	79	14
Pacific	1,203	935	78	14	18,878	11,058	59	14
Age								
16 to 17 years	672	333	50	5	14,033	3,848	27	5
18 to 24 years	1,397	640	46	10	27,527	7,380	27	10
25 to 34 years	2,783	1,262	45	19	60,353	18,526	31	24
35 to 44 years	3,819	1,922	50	29	69,502	23,048	33	30
45 to 54 years	2,851	1,374	48	21	51,529	15,996	31	21
55 to 64 years	1,486	609	41	9	20,900	4,926	24	6
65 years and older	967	393	41	6	12,831	3,295	26	4
Sex								
Male	12,783	6,064	47	93	241,567	72,595	30	94
Female	1,192	468	39	7	15,109	4,423	29	6
Race								
White	13,226	6,185	47	95	242,804	73,193	30	95
Black	303	111	37	2	4,839	775	16	1
All others	446	237	53	4	9,033	3,050	34	4
Annual household income								
Less than \$10,000	428	183	43	3	5,977	1,762	29	2
\$10,000 to \$19,999	951	418	44	6	18,430	5,948	32	8
\$20,000 to \$24,999	820	313	38	5	17,251	5,109	30	7
\$25,000 to \$29,999	1,001	469	47	7	20,243	5,408	27	7
\$30,000 to \$34,999	1,107	522	47	8	22,354	6,454	29	8
\$35,000 to \$39,999	965	465	48	7	17,973	5,543	31	7
\$40,000 to \$49,999	1,882	963	51	15	33,432	11,815	35	15
\$50,000 to \$74,999	3,036	1,492	49	23	52,368	16,648	32	22
\$75,000 to \$99,999	1,178	576	49	9	20,971	6,993	33	9
\$100,000 or more	851	381	45	6	15,368	4,299	28	6
Not reported	1,756	752	43	12	32,310	7,040	22	9
Education								
8 years or less	470	207	44	3	6,655	2,023	30	3
9 to 11 years	1,616	734	45	11	34,173	10,744	31	14
12 years	5,776	2,661	46	41	113,735	32,311	28	42
1 to 3 years college	3,115	1,530	49	23	53,532	16,416	31	21
4 years college	1,654	789	48	12	28,714	9,335	33	12
5 years or more college	1,345	612	46	9	19,867	6,188	31	8

¹ Hunters on public land include those who hunted on both public and private land.

² Days of hunting on public land includes both days spent solely on public land and those spent on public and private land.

Note: Percent of total hunters and percent of total days are based on the total hunters and total days columns for each row. Percent of hunters using public land and percent of days on public land are based on the total number of hunters on public land and total number of days on public land, respectively.

Table 3 Nonresidential Wildlife-Watching Participants, by Area or Site Visited: 1996

(Population 16 years old and older. Numbers in thousands)

Area or site visited	Number	Percent
Total, all areas	23,652	100
Public only	11,983	51
Private only	2,357	10
Public and private	8,062	34
SITES		
Total, all sites	23,652	100
Oceanside	6,353	27
Lake and streamside	16,349	69
Marsh, wetland, swamp	10,420	44
Woodland	18,313	77
Brush-covered area	14,065	59
Open field	14,849	63
Manmade area	9,145	39
Other	3,299	14

Note: Detail does not add to total because of multiple responses and nonresponse.

Table 4 Nonresidential Wildlife-Watching Participants, by Wildlife Observed, Photographed, or Fed and Place: 1996

(Population 16 years old and older. Numbers in thousands)

Wildlife observed, photographed, or fed	Total participants		Participation by place					
			Total		In state of residence		In other states	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total, all wildlife	23,652	100	23,652	100	20,656	87	7,502	32
Total birds	17,711	75	17,711	100	15,391	87	6,027	34
Songbirds	12,905	55	12,905	100	11,149	86	4,171	32
Birds of prey	10,578	45	10,578	100	8,612	81	3,788	36
Waterfowl	14,320	81	14,320	100	12,359	86	4,804	32
Other water birds (shorebirds, herons, pelicans, etc.)	9,483	40	9,463	100	7,546	80	3,478	37
Other birds (pheasants, turkeys, road runners, etc.)	6,478	27	6,478	100	5,352	83	1,730	27
Total land mammals	17,668	75	17,668	100	15,224	86	5,614	32
Large land mammals (deer, bear, etc.)	13,152	58	13,152	100	10,946	83	4,074	31
Small land mammals (squirrel, prairie dog, etc.)	15,211	64	15,211	100	13,088	86	4,905	32
Fish	8,424	36	8,424	100	6,532	78	3,023	36
Marine mammals	3,471	15	3,471	100	2,098	60	1,678	48
Other wildlife (turtles, butterflies, etc.)	11,533	49	11,533	100	9,738	84	4,014	35

Note: Detail does not add to total because of multiple responses. Column showing percent of total participants is based on the "Total, all wildlife" number. Participation by place percent columns are based on the total number of participants for each type of wildlife.

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Developing a Forest Guide Service for Outdoor Activities

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Abstract: This presentation will help the landowner determine what type of outdoor activities could be developed at his or her location to generate additional income. It will highlight the areas that need to be explored to establish a guide service on his or her property. It includes a case study on the design and development of a guide service for a landowner using the hunting of whitetail deer as the activity to produce a significant income.

Keywords: guide service, outdoor activities, additional income

RESOURCE INVENTORY

A first step in developing income opportunities is to evaluate your property to determine what activities may be feasible. Conduct a site cruise, similar to what a forester might do, to establish an inventory of natural features that exist. In the site inventory the land itself, and the amount of land that you have, may help you define the types of activities most suited for your property. Guided activities, such as deer hunting, mountain biking, cross country skiing, may require larger acreage. Softer activities such as photography and bird watching, may utilize smaller acreage.

Make a list of the features that the property has to offer, such as wildlife, streams, trails, geologic formation, etc. Also make a list of possible activities, such as hunting, fishing, hiking, bird watching, etc. Review the list taking into consideration your interest, values and expertise. Determine which activities you would feel comfortable working with or allowing on your property. For example, if you are a birder, the activity of guided spring turkey hunting may not be the type of activity you would want to consider. However, if you are a hunter, the guided spring turkey hunting activity may be an excellent fit.

GUIDE SERVICE

There are several different approaches to offering these guided activities on your property. There are three types of guide services: individual-guide; semi-guided; or self-guide.

Individual-guide services would typically be a one-on-one relationship with the expert guide and client. In some instances the guide may take two individuals depending on the activity. Guiding in this sense usually requires the expert to participate actively with the client, helping the client with information, skills or instruction. The guide will typically stay with the client at all times, producing a high level of experience and education.

Semi-guided services would be the type most used if you were guiding a small group of clients. This type of service is typically used for interpretive walks or guided day trips. In Semi-guided deer hunts, for example, the guide would be responsible for the selection of the site, placement of the hunters, and routine checking throughout the day to ensure the safety of the clients.

In Self-guided activities the client typically would receive detailed information, such as maps, but would be responsible individually for their activity. An example would be a nature hike where a photographer would have the opportunity to explore areas for nature/wildlife photographs on their own.

MARKET AND COMPETITION ANALYSIS

Once you have identified potential guided activities, you must analyze the market and the competition. Are the activities and guide service in demand and available?

This initial exploration does not require a lot of expertise. Use the resources you have available, such as, local economic development councils, tourism offices, local, state or regional parks, yellow pages and local outdoor clubs (bird watching, hunting, canoeing, etc.). These resources are usually free and can help give you a first level understanding of the potential market and competition that may exist for your selected activity. Once you have explored the initial market, and there continues to be a match between your interest, your lands, resources and the potential market you will now need to determine if you have the necessary expertise or if you need the help of an outside consultant to develop a business plan for a guide service.

EXPERTISE REQUIRED

Don't overlook the value of an outsider's experience and insight. Depending upon the type of activity you have selected, you can seek out experts in many ways. For example, if you decide to do guided deer hunting activities, you could identify a hunting consultant through various publications, trade shows, hunting clubs or Department of Natural Resources agencies. If you choose an activity such as bird watching, you could identify these experts through publications, or national or local chapters of ornithological organizations.

Consultant compensation can be financial, or simply the use of your property for their related interest, or a percentage of income.

DEVELOP A BUSINESS PLAN

A detailed business plan should be developed by the landowner and/or in conjunction with the consultant to insure success. The plan would include financial objectives, income and expenses, insurance considerations, marketing strategy, timeline, goals and objectives.

The following case study is a review of the process used by a small crop farm in western Kentucky, just south of Evansville, Indiana, to develop a semi-guided deer hunting service as an income producing activity.

A CASE STUDY

With approximately 600 acres, the case study farm in Kentucky is a mix of woodland and fields that is used to produce corn and soybeans. Only about one-third of the farm is wooded, with only a few fence rows and small patches of trees about 20-30 years old on the property. There are some larger units of hardwoods and very thick cover on adjacent farm properties.

After a number of years of leasing the farm to local hunters, the farmer realized most local hunters were not willing to pay very much for the opportunity to hunt, and therefore very little income was generated. It was believed that the exposure to nonresident hunters could create a greater opportunity to market this type of activity and a higher income could be expected.

The objective was to explore the possibility of marketing the farm to out-of-state hunters seeking the opportunity to hunt trophy whitetail deer. Each hunter would need to feel that the farm provided an opportunity to bag a trophy whitetail deer and a guide service would be required.

One of the first needs was to determine if the site supported a healthy deer herd and could supply trophy deer hunts to non-resident hunters. Based on information from the Kentucky Department of Fish and Wildlife, past experience and first hand knowledge, the site does support a very good population of whitetail deer with a good herd supporting some large trophy deer. This section of Kentucky annually produces a respectable number of very nice or above average bucks compared to other parts of the United States. According to local wildlife officials there exists a good balance between bucks and does. The reported size of the local deer herd was considered to be balanced with the carrying capacity of the habitat. At the farm site there was no immediate need to enhance the wildlife habitat because the combination of adjacent farms collectively provide the needed balance of cover, food, and water.

Without a doubt the farm had some potential, but the ability of the farmer to market the operation to out-of-state hunters was very limited. He employed the services of an outside consultant to assist with the marketing process. Based on the experience of the consultant, it was determined that if the site had the potential for trophy whitetail hunts, such a hunting operation could exist. The consultant also determined there would be a good possibility that self-guided or semi-guided trophy whitetail hunts could sell for between \$500 and \$1500 per three-day hunt.

The farmer would need to identify the major escape routes used by the deer, major trails, bedding areas, feeding and watering locations. Once this was accomplished, the farmer needed to consider the placement of tree or ground blinds in order to intercept the deer in their daily movements. The use of tree stands increases the possibility a hunter would be injured by a fall from a stand, therefore, the farmer would need to get appropriate insurance coverage to address this liability concern.

With the offer of a free hunt and expenses paid for an external hunting consultant, the farmer was able to get the expert to visit the site. The outsiders view would aid in the determination of what direction should be taken to market this type of activity.

Year One - 1996 Hunting Season.

The first year, the hunting consultant visited the site for four days for a complimentary hunt primarily to get first hand knowledge of the site, and to kill a nice buck! The first year's visit resulted in no large buck being taken by the consultant but did yield a nice trophy for both the farmer and a friend.

After experiencing the site and making a determination on the potential, the consultant and the farmer began to build a long range plan to develop the site for future income. The goal was to build a quality opportunity and sell hunts for different seasons of the year, thus realizing an income of potentially \$10,000 per year. The plan was to start out slowly and build some creditability before trying to reach for the big dollar hunts that may be possible. The hunts would be sold without accommodations, but there

were very reasonable accommodations at nearby local motels and restaurants.

Income

There was no income anticipated in year one. The objective was to determine the feasibility of selling whitetail deer hunts and to determine if it would be an income producer.

Expenses

There were no expenses for the year, since the property was already posted and the consultant agreed to just the free hunt.

Results

On the first hunt the farmer harvested a nine-point buck weighing 187 pounds with a 22-inch antler spread. During the four-day hunt, the consultant passed up the opportunity to harvest six different younger bucks with the hope of harvesting a mature buck, and did not fill his tag.

Objective for the 1997 hunting season

Arrangements were made with the outside consultant to bring in nonresident hunters and charge a basic fee for a semi-guided hunt for the first five days of the rifle season. This was the first opportunity to expose the farm property to nonresident hunters. The ideal situation would be to give each hunter about 75 to 100 acres, thus allowing for a better quality of hunt. The placement of both portable and permanent tree stands was accomplished. It was also decided that, based on the possible deer crossings and frequently used trails, there should be no more than six to nine persons hunting at anyone time.

Year Two - 1997 Hunting Season

Each hunter was asked to take only older bucks with antlers past the ears (an antler spread of 16 inches or better). This would assure the harvesting of only mature deer of three to four years in age. A lottery type drawing was accomplished to determine the stand location of each hunter.

Income

This year there were eight persons hunting on the farm at \$200 per person, which produced \$1,600 in revenue. One free hunt was given to the consultant.

Expenses

The only major expense was to build four new tree stands that cost a total of \$200. It was determined that the insurance liability was covered under the overall insurance the farm already had in place.

The Results

The following is a list of the deer that were harvested on the farm site during the season:

- 10-point, 4 ½ years old, 214 lbs. field dressed, spread 24 inches
- 10-point, 3 ½ years old, 170 lbs. field dressed, spread 19.5 inches
- 9-point, 3 ½ years old, 190 lbs. field dressed, spread 20 inches
- 8-point, 3 ½ years old, 155 lbs. field dressed, spread 15 inches
- 6-point, 2 ½ years old, 150 lbs. field dressed, spread 15 inches

All nine hunters could have harvested a buck. Hunters were as selective as possible with five of the nine harvesting a mature buck. In any part of the deer hunting world, if a location is capable of producing this number of nice deer in a single season, it is certainly a marketable location for trophy deer.

With the results of the second year hunt completed, the farmer and consultant reviewed the progress and began to finalize the objectives for the next year.

Objectives for 1998 Hunting Season

It was determined that there was ample opportunity to develop the deer hunting income potential. It was decided to explore the leasing of adjacent property to expand the number of huntable acres, thus expanding the potential number of hunts. In order to expand the number of hunts it would be very important to promote this year's hunting success. In the hunting world, the most effective marketing method is to encourage other hunters to recommend the location and to use successful clients to spread the results. When you are dealing with a small number of marketable hunts, this method, not trade shows, is a very successful marketing approach.

The consultant anticipates selling eight hunts during the rifle season for \$300 per person with an income of \$2,400 for the 1998 season. This income would be used to lease adjacent property

to increase the amount of huntable land to about 1,000 acres. Currently there is a potential pool of six additional hunters from out-of-state that are interested in hunting on the property if additional farms can be secured.

Year Three - 1998 Hunting Season

This year eight hunters will hunt on the 1,000 acres, which includes the addition of an adjacent farm now under lease.

Income

Currently there are eight hunters who have paid \$300 each for the next season's hunt, producing an income of \$2,400.

Expenses

Anticipated expenses for the year will be approximately \$900 for the additional acreage leased.

Objective for the 1999 hunting season

Starting in the 1999 season, the objective is to begin to offer a variety of hunting options, including archery, muzzle loading, and rifle. It is anticipated to continue to add additional land leases to the location and expand the number of huntable acres as well as the number of hunts.

Year Four - 1999 Hunting Season

If the conditions permit, there will be a variety of potential hunts available. Hunts planned include five-day archery hunts; two-day muzzle loader hunts; a five-day rifle hunt, and a late season muzzle loader hunt for either sex deer. The consultant will be responsible for marketing the hunts and will be paid 10 percent of the net income from the hunts.

Potential Income

The following is an example of the income potential that may exist by the end of the fourth year (Table 1). If the ability to acquire additional leases materializes then this income projection will increase accordingly.

Table 1. Income Projection at End of Fourth Year

<i>Five-day archery hunt</i>		
▪ \$400 per hunter X 8 hunters	=	\$ 3,200
<i>Two-day muzzle loading</i>		
▪ \$300 per hunter X 8 hunters	=	\$ 2,400
<i>Five-day rifle hunt</i>		
▪ \$500 per hunter X 8 hunters	=	\$ 4,000
<i>Five-day late season</i>		
▪ \$400 per hunter X 8 hunters	=	<u>\$ 3,200</u>
Total Income		= \$12,800

Realities of Hunting Preserves and Sporting Clays - What You Need to Know

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20181

Abstract: There are two categories of bird hunting preserves: commercial (public) and non-commercial (private). Most commercial preserves operate in conjunction with other income producing agricultural or recreational activities. Starting a preserve requires considerable investment. An operational “rule of thumb” for hunting preserves should be: double your projected expenses and halve your estimated income for the first few years. Operators must be well-prepared, learn about applicable laws and ordinances, and obtain required permits before operating the preserve. Land for preserves can be acquired by lease or direct purchase. Having good cover, birds, dogs, and hunting guides make a preserve. Operators must promote and advertise the facility, and ensure proper care and feeding of customers, guides, and helpers. A successful operator will be a people manager and have a sense of humor. Although characterized by advantages and disadvantages, sporting clays can be a money making ancillary operation to a hunting preserve.

Keywords: game bird, hunting preserve, hunting dogs, hunting guides, sporting clays

TYPES OF GAME BIRD HUNTING PRESERVES

There are two main types of bird hunting preserves: commercial (public) and non-commercial (private). Commercial preserves are those open to the general public on a reservation basis during the usual 6-month preserve season. To survive on such a seasonal basis, most commercial preserves must operate in conjunction with other year-round income producing recreational and agricultural activities of the owner/operator (e.g., farming, ranching, game breeding, bird dog training, boarding kennels).

Non-commercial hunting preserves are grouped into three subcategories: private, co-operative, and “do it yourself.” Private preserves usually are owned by an individual, a corporation, or a foundation. They have a Board of Directors, often hire a full-time manager and other employees, and charge an annual membership fee. Some of the more affluent private preserves have spacious club houses, guest facilities, and offer other outdoor recreation year-round (e.g., riding, fishing, camping, birding, rifle and sporting clays shooting). Like private preserves, co-ops also charge an annual fee, have a constitution and by

laws, elect officers, Board of Directors, and committees, and have scheduled meetings. However, most co-ops are administered by an organized sporting club and their facilities may include a skeet, trap, sporting clays, or small arms range and club house. The least structured group is the “do it yourself” operation, usually an operation comprised of up to 10 individuals, who together provide both the labor and the money to run the facility (lease land, purchase and stock game birds, plant feed plots).

A successful preserve operator or manager must wear many hats and become skilled in business operation, entrepreneurship, bird dog training, firearms, game breeding, hunting, farming, public relations, and people management.

Although my remarks to you are addressed as an entrepreneur and commercial preserve operator/-owner/manager, they generally are applicable to all types of hunting preserves.

STARTING YOUR OWN HUNTING PRESERVE

Starting your own hunting preserve from scratch will take more than a “bit of scratch;” it will take a good nest egg and a friendly banker. If you are married, a willing, supportive, and sympathetic partner and a family of helpers can surely be a big asset down the road to a successful operation. Go into this business with your eyes wide open because it is a high risk, relatively low income venture. Don't count on breaking even the first year. You'd be surprised how the expenses will pile up for such things as construction of holding and flight pens, purchase of equipment and supplies to raise and maintain birds, farm and cover management equipment, bird dogs and kennels, game birds, and feed (see Appendix 1). A good rule of thumb for operators is to double your projected expenses and halve your projected income for the first few years. Having a back-up source of income certainly won't hurt.

Prepare - Do Your Homework

If you are going to operate a professional, well run, “close to natural” hunting preserve, you'd better prepare and do your homework. Visit and even hunt on other preserves. Work on one part-time, if possible, as I did. There is no substitute for “hands on experience,” especially with customer relations. Join trade associations, such as the North American Game Bird Association, the Southeastern Game Breeder's and Hunting Preserve Association, or other relevant local and state affiliations. Attend their seminars, conventions, and short courses and talk to those already in the business. Read a book on the subject, like *Shooting Preserve Management - The Nilo System* by Dr. Ed Kozicky and John Madson.

Laws, Regulations, Ordinances, Permits

Learn and stay abreast of state and local ordinances, regulations, and permits that are required for starting and operating a hunting preserve and game farm. A good place to gain information is to start with your local game warden and state game commission. Failure to investigate regulations and laws could doom your operation before it gets off the ground, or cause you unnecessary grief, money and time. Get to

know your local legislators and learn where your county zoning, planning, and permit offices are located.

How to Acquire Land

You must have sufficient land available to conform to state licensing requirements and also to run a profitable hunting operation. If you own enough land on which to start your basic operation, count yourself fortunate. Next, locate additional acreage that you can rent, as necessary, to expand the facility. Remember, I'm referring primarily to the person who is starting a hunting preserve from scratch, not one who simply will be managing a hunting ground for someone else. Having to rent all the land used for your preserve may save you property taxes, but it can be risky in the long run. For example, I knew of a new, “up and coming” preserve operator who invested most of the profits back into building up facilities on rented property, only to have it sold, with little or no warning, out from under him by the owner.....that ended a budding career. Be sure to have your rental contract in writing, with as many safeguards (e.g., prior notification of lease termination) as possible in it, but also have a back-up plan, just in case.

What Makes a Good Preserve

Quality cover, birds and dogs make a quality hunting preserve. Survey the cover on your grounds to see what you have and what is needed. Then plant your feed plots and cover strips as necessary. If you are blessed with plenty of good natural holding cover, so much the better. It is your most durable and cost effective cover.

Whether you plan to raise or purchase your game birds, one of the first things you should do in the planning process is to look for good birds of each type you plan to use on your preserve. Fully feathered, strong flying, flighty birds are a must. If you plan to buy birds, place an order with the game breeders early so that you are assured a supply of birds when you open. Check out as many sources of good birds as possible so that you'll have an alternate source in case of emergency.

Before going into the game bird hunting business, you should have owned or worked with bird dogs and have a good working knowledge of gun dogs. If not, you'd better have a partner who does. You need good hunting guides and dogs because you cannot do it all yourself. Check out the local bird dog club, attend hunting tests and/or field trials, and perhaps consider joining one. Owners of bird dogs always are looking for a place to work and hunt their dogs. You should be able to select from such pools those you wish to utilize as guide dog handlers. Be sure to pick out dog owners with steady, well-controlled, relatively close working dogs. You'll also have a ready-made reservoir of potential customers. Mature, responsible, personable individuals are needed as guides because they will be charged with handling your customers and ensuring gun safety. This is a big responsibility and could make or break your operation.

Type of Preserve for you - Incorporation and Insurance

Once you have all the main ingredients of a good hunting preserve, you need to decide what type of preserve you wish to operate. You also must decide whether you wish to incorporate or not. Liability insurance is a must and will be the next big hurdle you must negotiate. Given all the "anti-gun" bias in the media and a general lack of knowledge about the hunting preserve business among insurance companies, this can be a big problem.

Promotion and Advertising

Promotion and advertising of your forthcoming hunting grounds is necessary to let people know that you exist. Don't keep it a secret. Your cheapest and most effective forms of advertising will be talking to sporting and civic clubs, inviting your area newspaper's outdoor editor to the site to write an article about preserves (and using your facility as an example), advertising in the Yellow Pages®, and distributing brochures and handouts to gun shops and sporting good stores. Appearing at sporting shows and advertising in local or national hunting and fishing magazines can be useful. In the long run, word of mouth advertising by satisfied customers probably is your best and most cost-effective form of advertising.

Care and Feeding of Customers and Guides

You may be the greatest wing shot, bird dog trainer, or game breeder, but if you can't manage people, you'll have problems as a preserve operator. PEOPLE are your customers as are your employees and workers. People come in all sizes and shapes and, although most bird hunters are good people and true sportsmen, some are not. Some can be a "real pain." Worse yet, some are real safety hazards. Ensure that all customers, especially those hunting with their own dogs, alone and without guides, understand the conditions and rules of your preserve. Whenever possible, initially go out with them to check out both the dogs and the hunter.

For the success of your operation, remember a few simple rules for you, and your guides/dog handlers:

- 1) keep your cool;
- 2) never take anything for granted;
- 3) stress safety; and
- 4) be firm and even-handed in your dealings.

Have it in writing, post it in the clubhouse, and generally let it be known that you reserve the right to terminate any hunt of those with uncontrollable dogs or those who continue to flagrantly disregard proper gun safety.

SPORTING CLAYS - A SYNOPSIS

What is a Sporting Clays Operation?

- 1) Sporting clays is a clay target shooting game as practice for hunting. It simulates small game hunting shots in woods or over water. Each course varies.
- 2) A sporting clays set-up consists of a 10-station, 50-shot course, usually with a 5-shooter squad. Fifty shooters per hour can be put through a typical course.
- 3) The cost of construction of a sporting clays course varies widely, from as little as \$4,000 (manual course) to as much as \$50,000 (automatic course).
- 4) The cost of throwing traps may vary from \$700 to >\$3,000 for a fully automatic device.

- 5) A self-contained trap house and a 5-stand sporting clays course are the most economical, mobile and easy-to-install facility, and these can range from \$6,595 to \$9,375, minus construction costs.

Advantages

- 1) Operating costs per shooter average about \$10.50. The shooter pays \$15-\$20 per round - a money maker.
- 2) Sporting clays can operate year-round and in any weather.

Disadvantages

- 1) Cost of construction and equipment
- 2) Noise pollution problems.
 - consider sound buffers, prevailing winds, subsonic shot gun shells
 - be prepared to accommodate your neighbors, especially on Sundays
- 3) Permits, zoning and noise ordinances
 - know your laws, your rights, and your local politicians
 - know your neighbors and be a good neighbor

Anyone considering establishing a sporting clays operation should refer to Black's *Wing & Clay* for additional description and cost information.

Good luck, good hunting, and don't lose your sense of humor!

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APPENDIX I

The following information was condensed from the publication, entitled *Hunting Preserves*, by Walter S. Walker, Extension Poultry Scientist, Clemson University Cooperative Extension Service, College of Agricultural Sciences, P.O. Box 218, Elgin, SC 29045.

To determine the costs of setting up a hunting preserve, you first need to decide what services are to be provided, such as:

Will you furnish -
guides
dogs
guns
transportation
ammunition
lodging and meals

Will you offer -
fishing
clay target practice
training in safety
horseback riding

How will you Charge?

Daily fee, based on:

- number of birds released
- a sporting opportunity
- birds released, plus set cost per bird for extras

Membership:

- basic fee paid in advance
- enhanced fee based on -
 - set number of hunts and number of birds to be released
 - additional birds
 - additional services (e.g., lodging, fishing, trail rides)

Capital Investments

Inherent costs of the basic infrastructure include:

Land needed for hunting area, buildings (if producing own birds), holding or flight conditioning pens, clubhouse, kennels, ponds for fishing, area for trail riding

Buildings to support the above noted activities plus storage buildings for equipment and vehicles

Dogs

For those rearing their own birds: feeders, waterers, brooders, cages, incubators, hatchers, feed storage tank or building, standby generator

Facilities to process any game harvested

Vehicles to haul supplies (pick-up truck), to clean out pens or houses (Bobcat tractor), to plant cover crops and bushhog fields (tractor and related equipment), to transport hunters (Jeeps)

Expenses

Fixed Costs

- depreciation
- interest on investment
- property tax
- insurance (fire, storm, liability)
- licensing and posting land

Variable Costs

- birds reared
- birds purchased
- feed for birds and dogs
- labor (including benefits / social security)
 - bird care
 - dog care
 - guides
 - processing
- cover maintenance
- transportation
- ammunition, guns, and clay targets
- advertising

- utilities
 - electricity
 - phone
 - water
 - gas for brooding
- medication for birds and dogs
- mortality of birds and dogs

There may be additional items not mentioned above that would be peculiar to your own preserve; the items listed above are just some things to stimulate your thinking and for which you may decide to add or delete.

No two hunting preserve operation are alike, nor should they be. Your own innovative ideas are what keep customers returning and provide a profitable venture.

Just be sure the services you offer really are provided and *never* forget that satisfaction of the customer is the only way you will stay in the business.

Income

As calculated by the number of hunts:

No. ____ daily feeds per gun at \$ ____ = ____

No. ____ memberships at \$ ____ = ____

As calculated by birds processed:

No. ____ Quail at \$ ____ per bird = \$ ____

No. ____ Pheasant at \$ ____ per bird = \$ ____

No. ____ Chukar at \$ ____ per bird = \$ ____

No. ____ Duck at \$ ____ per bird = \$ ____

No. ____ Turkey at \$ ____ per bird = \$ ____

As calculated by number of extra birds harvested:

No. ____ Quail at \$ ____ per bird = \$ ____

No. ____ Pheasant at \$ ____ per bird = \$ ____

No. ____ Chukar at \$ ____ per bird = \$ ____

No. ____ Duck at \$ ____ per bird = \$ ____

No. ____ Turkey at \$ ____ per bird = \$ ____

On ammunition sold:

Quantity ____ = \$ ____

On gun rental:

Quantity ____ = \$ ____

On additional fishing fees:

Number ____ = \$ ____

On trail riding fees:

Number ____ = \$ ____

On lodging and meals:

Number ____ = \$ ____

Adventure Travel: Extraordinary Experience, Extraordinary Opportunity

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Abstract: Adventure travel has become a mainstream form of tourism experience for an increasing number of people worldwide. Yet this tourism genre is continually being transformed by new technologies and the emergence of increasingly bizarre “extreme sports” that change the way these participants engage and relate to the outdoors. As adventure activities once considered radical become mainstream, participants become increasingly ambitious, creative, and willing to confront ever-higher risks in an effort to create original experience. The result is an increasingly diverse and “alternative” activity mix fueled by technological innovation. Landowners interested in capitalizing on the adventure travel phenomenon must be in tune with this “culture of risk-taking” and its attendant rapid pace of change. This presentation will discuss current status and worldwide trends, economic implications, and business opportunities available to landowners.

Keywords: adventure, adventure travel, risk recreation, extreme sports, ecotourism

INTRODUCTION

From a global perspective, the growth of adventure travel—that is, leisure travel experiences that contain structurally inherent elements of danger and uncertainty—has been one of the fastest growing sectors of the world tourism industry. Driven by the thrill of completing a hard rock-climb, the challenge of a single-track mountain bike ride, or the camaraderie of a kayaking a whitewater river with friends, adventure experiences have become a part of everyday life for an increasing number of people around the world. Indeed, a recent Internet search conducted in preparation for this paper, using the phrase “adventure travel” resulted in over 30,000 hits, most of them adventure travel service providers!

This growth presents significant opportunities for landowners interested in providing goods and services for adventure travel clientele. In this paper, an overview of the risk recreation and adventure travel phenomenon is presented, along with discussion of issues of concern for landowners interested in capitalizing on this sector of the travel and tourism market. What are the participation trends and patterns? What are the income opportunities? What should a landowner

keep in mind when establishing such an enterprise? What are the risk management and liability implications?

CHARACTERISTICS OF ADVENTURE TRAVEL

Adventure travel includes the subset of leisure travel that contain elements of real or perceived danger, in which the outcome, while uncertain, can be influenced by the participant and circumstance (Ewert and Hollenhorst, 1989). Similar concepts include *extraordinary experience* (Abrahams, 1986; Arnould and Price, 1993), *flow* (Csikszentimihalyi, 1975, 1990), and the *Adventure Model* (Ewert and Hollenhorst, 1989, 1994). Embodied in these concepts are the experiential qualities of clear focus and extreme concentration; merging of action and awareness; spontaneity of action; personal control and awareness of power; intense enjoyment; and perhaps transcendence of self as congruency is found between the challenges inherent in the activity and one’s abilities to respond competently to those challenges (“Flow”).

Going beyond the traditional set of benefits ascribed to leisure experiences (e.g., physical

exercise), adventure experience has been described as a means to crystallize selfhood through personal testing, provide life-meaning and perspective, confer awareness of one's own mortality, reduce anxiety, and improve fear-coping mechanisms (Arnould and Price, 1993; Abrahams, 1986; Ewert, 1988, Ewert and Hollenhorst, 1989).

Adventure travel and ecotourism, while similar, are not synonymous. In order to understand their similarities and differences, one must look at the interplay of two factors under each experience form. These factors are: 1) risk, danger and uncertainty, and; 2) interaction with the natural environment.

Central to the adventure travel experience is the idea of purposeful inclusion of elements of risk or danger (Ewert and Hollenhorst, 1994). The risk or danger may be either perceived (i.e., apparent to the participant but not really present) or real (i.e., actual injury or death might occur and in some situations have a substantial probability of occurring). Close proximity to danger tends to heighten concentration and adds consequence to individual decision-making. A related factor is the concept of "uncertainty of outcome." In contrast to the chance probabilities inherent in gambling, this uncertainty can be influenced by skills and actions of the participant. Chance occurrences such as bad weather and falling rock are attenuated by the decisions of the participant. Competent response to this uncertainty requires appropriate actions and intense concentration, both of which contain the potential of leading to extraordinary experiences.

In contrast, ecotourism may or may not contain elements of risk. Indeed, it is not difficult to imagine an ecotourism experience devoid of danger and uncertainty. Therefore, one way to contrast the two concepts is that risk and danger are requisite components to the adventure experience, but only accessory to the ecotourism experience.

A critical element in both adventure and ecotourism is interaction with the natural environment. Remote and natural setting settings imply less availability of outside aid and corresponding increases in the need for self-sufficiency, leading to heightened sense of consequence and awareness.

An important difference between the two concepts is that while interaction with nature is a requisite component of the ecotourism, it is often only an accessory condition to adventure travel. In fact, "developed" adventure experiences have become commonly sought out by growing number of participants. Extreme danger can be found on class VI rivers running through urban areas, or rockclimbing crags located adjacent to roadways and parking lots. Similarly, indoor adventure activities such as climbing walls and ropes courses, provide "threshold" adventure experiences that may lead to or prepare participants for greater levels of involvement.

MARKET TRENDS AND IMPLICATIONS

Motivations and Participation Patterns

The dramatic growth of adventure travel is part of an overall trend in the international travel and tourism market towards "special interest tourism" activities (Hall & Weiler, 1992) such as "ecotourism" (Cater & Lowman, 1994), "nature tourism" (Whelan, 1991) and "human-powered outdoor recreation." This trend is driven by demand from increasingly sophisticated travellers with the financial means and psychological disposition for unique, innovative, and physically active experience. While travel costs remain a significant determinant in making travel decisions, travellers are increasingly looking for human-power oriented vacations that provide deep and enduring meaning and satisfaction.

The popularity of adventure travel apparently resides in its capacity to satisfy sophisticated travellers seeking authentic, unique, and enduring experiences (Black & Rutledge, 1995; Madrigal, 1995). There appear to be three components of such "extraordinary experiences" (Arnould and Price, 1993):

- 1) Opportunity for connection with nature. Successful adventure travel service providers appear to be those that find innovative ways to facilitate participant's connection with nature. Developing this connection begins with the operation or guide's experiences and reverent feelings towards nature, which is interpreted and passed on to the client.

2) Opportunity to build community and connect with others outside of one's normal circles. The evolving feeling of communion with friends, family, and strangers is stimulated by common goals, close physical proximity, and harsh physical conditions inherent in adventure experiences. Of particular importance is the relationship that develops between participants and the guide/leader and the social structure imposed by guides and leaders.

3) Opportunity for extension and renewal of self. Adventure experiences provide a simple, encapsulated world that offers participants opportunity for progressive mastery of a unique set of skills, knowledge, and specialized jargon. The adventure experience can serve as a metaphor when relevance skills and lessons learned in the adventure are transferred to one's functioning in everyday life.

These themes represent values that are highly sought and prized among adventure travelers. The search for such experiences may be a reaction against the commercialization of meaning, segmentation and specialization of work (Arnould and Price, 1993), and the loss of wild nature to increasing development and mechanization. Thus, prospective adventure service providers must take care to develop and present products genuinely in tune with these sensitivities.

Use of adventure travel images to evoke these archetypal themes is common in the marketing of a diverse set services and products. While it seems paradoxical to link adventure recreation's promise of renewed self with automobile sales, award winning advertisers have done just that (Arnould and Price, 1993). In turn, it is not unreasonable to expect that incorporating of these themes directly into the marketing of adventure travel services may be particularly effective. Ideas for effective, meaningful, and culturally accurate images can be found in award-winning periodicals such as *Outside*, *Backpacker*, *Mountain Bike*, *Bicycling*, *Walking*, *Climbing*, and *Undersea Journal*.

This increased interest in "human-powered" travel is supported by several factors, including increased disposable income, greater leisure time, and more convenient and cheaper transportation. Technological innovation, and increased diversity of equipment, combined with the expanded capacity of commercial outfitters and retailers, has

resulted in an explosion of adventure travel products. The result is that adventure travel has become one of the fastest-growing segments of the tourism industry.

Adventure travel is most popular, and is being promoted most heavily in less-developed regions endowed with natural environments. In fact, the great difference between adventure travel/ecotourism and more traditional tourism is that the adventure and ecotourism participant actually seeks out locations without development. Since little is needed with regard to infrastructure development, nature and adventure tourism have become dominant components of the economic development strategies in these regions.

In addition to long-haul destinations such as Kenya or Nepal, many leading operators (i.e., Backroads, Mountain Travel-Sobek, Overseas Adventure Travel, and Wilderness Travel) also offer domestic trips in every region of the U.S. Adventure travel packages come in many forms, including wilderness trips, safaris, adventure holidays, cultural trips, treks, nature tours, and soft adventure trips. Increasingly, the adventure experience is being packaged and marketed as the "core" of larger vacations that may also include historic, cultural, and eco-travel experiences.

The constellation of adventure activities is vast and increasing in size each year. Table 1 lists many of the most commonly provided adventure travel activities. Within each activity group there exists a diversity of participant skills, experience, and preferences. For instance, In whitewater sports, a skilled kayaker has vastly different needs and expectations that does the novice rafter. This implies the need for careful targeting of products and services to meet the needs of specific participants. The most effective operations are ones able to match physical settings and activity services with the characteristics of the targeted clientele group.

Demographic Trends

Most U.S. participants range in age between 16 and 40 for most activities, and like the rest of the population, the mean age is increasing. With increasing age, frequency of participation levels off. In physically strenuous activities such as rockclimbing and backpacking, there is a notable

decline in participation with middle age. However, this emerging picture is not simply one of a uni-dimensional reduction in participation rates (Marcin, 1993), with several trends offsetting this aging baby-boomer affect. First, older adults will likely substitute other adventure activities, or will engage at less challenging levels. Second, technology will serve to offset some of the disadvantages of growing older by offering equipment that is lighter and more multi-functional in addition to adding a higher level of safety. Third, improved health and increased lifespan will allow seniors to participate later in life. Fourth, seniors tend to have the greatest amount of time and disposable income available for adventure travel endeavors.

In addition Miller (1995) points out that the children of the baby boomers born between 1978 and 1995 will form an age cohort almost as large as the original baby boomers. These 73 million "echo boomers" will enter the prime age for adventure participation (24 to 34) around the turn of the century. This age group will form the nucleus of the next generation of adventure recreators.

This influx of young participants already is making a significant impact on the nature of adventure travel experiences. For instance, Generation X kayakers are pushing the extreme edge of the sport, abandoning standard whitewater rivers to perform first descents down

"steep creeks" and unique tributaries. The same phenomenon is bringing revolutionary change to other adventure sports such as mountaineering and rock climbing. Younger participants have virtually abandoned downhill skiing for snowboarding, and to a lesser extent, telemark skiing.

Participation in adventure activities differs substantially among ethnic groups, with whites participating at much higher levels than African Americans and all other ethnic groups. In fact, minority participation in activities such as kayaking, mountaineering, and rockclimbing is less then 5 percent, compared to 20 percent in most other outdoor recreation activities. The potential market represented by this high number of non-participants from minority groups cannot be ignored, and may offer opportunities for businesses able to tap into these groups.

Adventure participants are highly educated compared to the rest of the U.S. population, with over 50 percent having completed at least some college education. Income levels of participants tend to be 30 percent-40 percent higher than the national average. Men participate at nearly twice the rate of women in most adventure activities. The notable exception is birdwatching and other forms of nature observation, in which participation rates by women exceed or equal that of men. Recent increases in female participation appears to be the result of both a shift in attitudes and expanded product offerings that cater to

Table 1. Most commonly provided adventure travel activities

Backpacking	Fishing	Mountain climbing	Sky diving
Backcountry skiing	Four wheel driving	Mountain running	Snowmobiling
Ballooning	Hang gliding	Orienteering	Snowshoeing
Bicycling	Hiking	Paragliding	Survival training
Bird watching	Horseback riding	Rafting	Surfing
Bungee jumping	Ice climbing	Rappelling	Wilderness travel
Camping	Jungle exploring	Safaris	Winter camping
Canoeing	Kayaking	Sailing	Soaring
Caving/spelunking	Motorcycling	Scuba diving	Walking tours
Dog sledding	Hunting	Skin diving	Windsurfing
Ecotours	Mountain biking	Ski touring	Trekking

women. Most participants also live in urban/suburban areas, and seek opportunities withing a few hours driving distance of their homes.

One encouraging statistic for prospective adventure business operators in the Eastern United States is the fact that the vast majority of participants (nearly 75 million) resides in the Eastern region. In general the Eastern region can be described as having fewer adventure recreation opportunities, higher population densities, and shorter driving distances. Prospective service providers in the region should benefit from these factors (ORGA/SGMA 1997).

Activity Trends

Several adventure activities are among the fastest-growing outdoor recreation activities in the U.S., and warrant more discussion because of the potential business opportunities they offer landowners. Mountain biking, for instance, has in just over a decade become one of the most popular outdoor recreation activities in the U.S. Virtually unheard of before the mid-1980's mountain bike sales now represent over 63 percent of the adult bicycle market. In addition, the continual pace of technological improvement will continue to make mountain biking a highly popular activity amenable to a host of new and innovative programming opportunities (Hollenhorst and others, 1995).

Climbing, in all of its various permutations, also has experienced record growth in the last several years. Factors influencing this growth include improvements in equipment and the construction of indoor climbing facilities in hundreds of locations around the country. Rockclimbing continues to be the predominant activity type, followed by alpine climbing and ice climbing. Access continues to be a major issue among climbers, and may provide exceptional opportunities for landowners.

Although the number participants in kayaking and other whitewater sports still is relatively low, growth rates are the highest of any outdoor recreation activity. Since participation requires a significant investment in speciality equipment, the activity may provide particularly lucrative

opportunities for landowners interested in equipment sales, rental, or manufacturing.

Technological Innovation

Innovations in technology will result in overall, sometimes dramatic increases in adventure recreation participation, primarily for three reasons. First, technological innovations like lightweight equipment and navigational tools increases the ease of access to many adventure recreation sites. Second, technological innovations like outdoor clothing and improved climbing ropes enhance the ability of the participant to deal with dangerous events or environments, and ropes have increased the margin of safety. Unfortunately, these technological improvements often merely create an "illusion of safety." For example, hand-held GIS locators can provide navigational information but not knowledge or safety about travel of rough or impassable terrain. Third, technology will also serve to increase the types and diversity of participation by providing for different experiences and accommodating for differing levels of skill. Examples of this diversification through technological changes include mountain biking, snowboarding and whitewater "play boating."

Of particular interest is the way that technology is being used to create totally new forms of wildly popular adventure activities. Most notable examples are mountain biking, windsurfing, SCUBA diving, and snowboarding. We can expect that further innovations and technological developments will result in completely new activities that rival these activities in their appeal. A vast cohort of potential participants interested in engaging new and unique forms of adventure await the entrepreneur able to invent and popularize these new activities.

Technology will also play an important role in providing information about potential opportunities, safety, costs and other valuable knowledge components (Coates, 1992). This information explosion will apply to all forms of tourism including adventure travel and other similar endeavors (e.g., ecotourism). The input and output of this information increasingly will become sophisticated as the risk recreator increasingly becomes experienced and knowledgeable. Providing for these "information

bundles" will create a market niche for companies and consultant groups capable of understanding the adventure recreation experience and information needs.

Liability Concerns and Issues

Should landowners and commercial operators be concerned with increased liability resulting from provision of adventure travel services? In general, the answer is yes, but no more than for other form of outdoor recreation. Public and judicial opinion generally holds that provision of these opportunities does not mean more liability exposure to operators. What is crucial is that operators become familiar with and implement practices that approximate or exceed the industry "standard of care" for protecting the participant from undue risk or harm. This means conducting the program as would any "reasonable and prudent professional."

Professional conduct falls into three general categories: supervisory conduct, safety equipment and procedures. Each must be reflective of the standards a reasonable and prudent professional would use in a similar situation. Conduct should consider varying levels of client experience and ability along with environmental condition.

As part of a professional standard of conduct, operators should make participants aware of the inherent risks in the activity. Most operators also require that participants sign an assumption of risk form developed and approved by legal counsel.

The implication is that the operator must have the professional competence required for the role taken. For example, if whitewater guide services are provided, then the operation is saying it has a professional level understanding of whitewater activities with clients. Developing a safe and effective risk recreation operation is a difficult task requiring a great deal of knowledge and skill. These operations require highly qualified staff, safe equipment, and comprehensive risk management procedures. Landowners interested in developing these programs are advised to seek expert assistance. Since no single body certifies adventure professionals, finding qualified employees requires extreme diligence and reference checking.

Every state in the U.S. has a "recreation use statute" that is intended to promote public recreational use of private land by granting landowners broad immunity against personal injuries or property damage suffered by land users pursuing recreational activities on the owner's land. The underlying philosophy behind these statutes is that the public's growing need for recreational land has outpaced the ability of local, state, and federal governments to provide such areas. Private landowners should therefore be encouraged to help meet the need by sheltering them from liability. This protection does not extend to situations in which the landowner is guilty of malicious conduct. Unfortunately, because a higher duty of care is required when a fee is paid, landowners generally lose immunity if they charge more than a nominal access fee.

BUSINESS OPPORTUNITIES

So what income opportunities exist for landowners interested in the adventure travel market? The options are endless, but can be divided into two basic categories: 1) setting, and 2) services.

The Setting

Adventure participants are highly dependent on specific types of outdoor settings. Rockclimbers require crags with solid rock that doesn't break off easily. Whitewater boaters need creeks and rivers with relatively continuous rapids. Mountain bikers look for loop trails (usually not roads) that offer a variety of relief and terrain. It's fairly safe to say that if you have quality adventure resources on your property, participants would have let you know by now.

Increasingly, popular outdoor recreation opportunities on private land are being lost to development and suburban sprawl. Landowners also are more likely than in the past to post their property against trespassers. The overall affect is a precipitous decline in outdoor recreation opportunities on private land, particularly in the Eastern U.S. where many popular crags, trails, and river access points are found on private property. Other attractive properties are those that located adjacent to large public lands and that provide access to these lands via trailhead or river put-ins

and take-outs. Investing in such properties can often be lucrative.

Nordic skiing and mountain bike touring centers are excellent examples of private operations that have capitalized on the adjacency of their land to large public trail systems. In some cases, as the operation develops and the access point becomes more popular, a future buyout from government can be expected. In West Virginia, this has been the case with several popular river access points owned by outfitters.

In essence, landowners with significant adventure resources or that are located adjacent to such resources can often sell access, either through a lease arrangement, easement, or outright sale to public agencies or non-profit groups. Various groups can assist landowners in constructing such deals, most notably the Access Fund and American Whitewater Affiliation.

Services

The adventure travel sector with the most potential for income opportunities is service provision. Typically, these adventure services fall into several categories: 1) outfitting and guiding; 2) education/training programs; and 3) support services.

Outfitting and Guiding

Most first-time adventure participants don't have the skill, knowledge, or equipment needed to participant safely in such activities. In the Swiss Alps and parts of the U.S., it is through outfitters and guides that these people "purchase" access to adventure opportunities. In the Alps, it is not unusual for a private guide to make between \$200 and \$500 per day guiding clients on mountain treks and climbs. In the U.S., fees are generally lower and guides are more likely to be employed by outfitting companies.

Adventure experiences offered by outfitters and guides can be part of standard packages, or customized to the desires of individual clients. Experiences can range from a few hours to several weeks, and from soft adventures to extreme mountaineering expeditions. While most guided experiences take place on public lands, the landowner's property often serves as a base of operation. Typically, as the operation matures,

additional hospitality services are developed on the property, and may include lodges, cabins, campgrounds, restaurants, bars, retail clothing and equipment sales, convenience stores, equipment rentals and liveries, showers facilities, fee parking facilities, laundry services, and even child care and special children's program.

Education/Training Programs

Another way for beginners and intermediate users to engage adventure experiences is through adventure schools and training programs. Best known among these programs are Outward Bound and the National Outdoor Leadership School, but literally thousands of spin-off programs have emerged in the last few decades. Such programs typically fall into three categories: 1) personal growth programs that use adventure experiences to facilitate individual goals such as enhanced self-esteem; 2) training/survival programs that teach adventure skills for no other reason than to learn a specific set of outdoor skills.

While most of these schools and programs are run by non-profit organizations, there is one sector with significant commercial sector penetration: residential camps. Literally hundreds of privately owned residential camps, usually operated as family businesses, exist around the country. Increasingly, these camps are turning to adventure programming such as rockclimbing, ropes courses, and wilderness tripping as means of attracting clientele. They are also shifting from services designed especially for children to more family oriented operations.

Nordic skiing and mountain bike touring centers also usually offer instructional clinics and private instruction, for a fee. Such services are often combined with equipment rental, lodging, food, and transportation packages.

Support Services

Once they move beyond the beginning phases of involvement, adventure participants tend to be extremely self-sufficient and autonomous. However, there are several areas where even the most self-reliant individuals require the assistance of local providers, and may offer the greatest business opportunity for landowners. For instance whitewater boaters, mountain bikers and trekkers often require transportation in the form of shuttle services, airport pickups, and equipment delivery. These participants also require a secure place to

leave their car and store belongings while in the field. Lodging, camping, shower, and restaurant facilities are often utilized, particularly at the beginning and end of a trips.

Participants also seek out restaurants, nightclubs, and outdoor retail shops where they can interact with peers, trade stories, make plans for the next day's adventures, or find new adventure partners. On-site travel services that provide up-to-the-minute information, link participants and guides, and arrange transportation can be lucrative operations.

CONCLUSION

The meanings, symbols, and behaviours that define the modern-day adventure experience are constantly changing and increasing in complexity, offering an infinite array of business opportunities for the adventure travel entrepreneur. Yet this changing landscape requires the operator to be acutely aware and in-tune with the changing cultural framework and value systems that define this genre of tourism. It also requires in-depth knowledge of the liability issues and resulting operational procedures necessary to provide the professional standard of care expected by both customers and the courts.

Since my first talk on this subject at the 1989 Conference on Income Opportunities for Private Landowners, there has been an unprecedented explosion in adventure activities, participants, and service providers. Demographic and cultural trends give every indication that this growth will continue. The result will be even greater opportunities for private sector involvement, and increased quality and sophistication in the adventure travel products and services delivered.

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SECTION 4

Natural Resources Enterprises Related to Recreational Access

Fee-Hunting Enterprise on Oakley Farm: A Working Farm in an Urbanizing County

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Abstract: The Oakley Farm has developed a successful fee-hunting enterprise on a working farm in order to preserve and support traditional land uses in an urbanizing area. The enterprise seeks to improve hunting opportunities for a variety of game species, specifically whitetail deer, and help to cut down on illegal hunting.

Keywords: deer, farm, trophy buck, poaching, dues, DMAP

INTRODUCTION

Oakley Farm is a family-owned diversified working farm located just west of the Route 95 corridor in Spotsylvania, Virginia, midway between Washington, D.C. and Richmond. Oakley is situated in the western part of one of the fastest growing bedroom communities in Virginia. The major industries in the urbanizing area are residential and commercial construction. Dwindling in number and size are privately owned tracts of farm and forest lands which typically, in the Piedmont region of Virginia, historically have constituted the major land uses. The soil types and land features dictate that Oakley Farm should be diversified with a combination of livestock, crops, and (mostly) timberland enterprises.

In order to survive, we determined in the early 1980's that the traditional corn, soybean, and small grain crop rotations would never yield enough profit to justify the cost of production. At the same time, we realized that our traditional farm community was rapidly changing. In 1974, for instance, Spotsylvania County had a population of about 15,000, and most of our neighbors were farmers. All of our farm business could be done in nearby Fredericksburg. These days, Spotsylvania boasts a population nearing 80,000, and we are the last full-time nondairy farm in the area. What were once serious farm suppliers in Fredericksburg now concentrate on servicing a residential population, and our farm business must be done in the western towns of Orange, Culpeper, and Warrenton.

I must interject here that prior to 1960, Oakley Farm was almost entirely a timber operation, supporting a portable sawmill and employing 15 to 20 men on its payroll. Livestock farming and its supporting crops were at a minimum level and were done on part-time basis. In the 1960's, the family hired a manager who greatly expanded the farming operation and de-emphasized timber. So, in reevaluating my position in 1980 as a 30 year-old manager of this 3,600 acre farm, and still being very wet behind the ears, I wanted to find something that would supplement our farming operation, take advantage of our geographic location near a growing and recreation-thirsty populace, while developing new income-producing opportunities which had as little impact on the landscape as possible.

When I was 10 years-old, in 1961, I shot my first deer at Oakley Farm. In those days, the deer population was just beginning to increase due in large part to clearcut and pine plantation forestry practices which were being promoted by the Virginia Department of Forestry. This practice alone has probably accounted for the tremendous explosion of deer which continues to this day in many parts of the state. In those days, quail were plentiful and it was common to see several flocks of wild turkey in the fields scattered around the property. Unlike the deer, however, both turkey and quail populations dwindled severely in the 1970's and 1980's. And while the wild turkey has enjoyed a rebound in the last seven years or so, native bobwhite quail are a rarity despite our

continued efforts to provide favorable habitat and four-legged predator control.

Spotsylvania is steeped in the southern tradition of having a dog for every kind of hunting one can think of. There are squirrel dogs, rabbit dogs, deer hounds, coon hounds, bird dogs, duck dogs, turkey dogs, bear hounds, and, of course, cattle and sheep dogs—and the occasional human companion, otherwise known as the porch dog.

Living in a part of the country that has very few highways and many large tracts of timberland, hunting deer with hounds is traditional and is often more a social event than a serious hunting situation. Management of a resident deer population becomes difficult with this style of hunt, because the hunter lacks time to choose his target when the dogs are pursuing the deer at a rapid pace. Typically, a large buck of, say, eight points, with an antler spread greater than 15 to 16 inches, was harvested once a year, while many smaller bucks and does were also taken in great numbers.

After much deliberation, we felt that we needed to break from the “deer-drive” tradition for the following reasons:

- 1) *Raising trophy bucks* - We believed that with our own acreage and additional rented land, we could have a contiguous land base large enough to manage for “trophy” bucks.
- 2) *Control of poaching and trespassing* - By having a paying membership club, we would have a continued presence on our property to cut down on trespassing and poaching, which had become prevalent and potentially dangerous.
- 3) *Income from club dues* - The club offered us another income-producing enterprise on the farm.

Each of these reasons is discussed in greater detail in the rest of this paper.

Raising Trophy Bucks

We have been successful in increasing the number of trophy bucks on the approximately 4,200 acres of land we manage for wildlife. This has been accomplished by attracting a membership that buys into our strict standards for deer harvesting. The way we reach our goal of producing trophy bucks is to allow them to reach an age class of

four years and older, and to provide them a good, naturally-growing food supply. Our current restriction on buck size is an 18-inch inside spread minimum on the rack, regardless of the number of points. Making a quick decision in the field as to whether a buck meets these standards is nearly impossible if the deer is being pushed by dogs. Therefore, all of our 45 club members hunt from portable tree stands or on the ground without dogs.

I believe one of the reasons we have a large waiting list is the fact that I have gone to great lengths to make sure that all prospective members are interested in quality hunting, and have lots of experience in the field. I am not interested in “blood and guts” members. We promote, attract and look for families interested in hunting and using the farm for other recreational purposes year-round, which is a privilege of membership. These other activities include camping, fishing, hiking, and trail riding.

By not taking young bucks, we have noticed a marked increase in the number of trophy bucks ranging on various parts of the farm. The opportunity to shoot a trophy buck is one of our main attractions, while seeing deer and hunting deer is no problem at Oakley.

We have been cooperators with the Department of Game and Inland Fisheries’ Deer Management Assistance Program (DMAP) for seven years. This cooperation has been an integral part of our deer management success. Under their advice and program rules, the landowner establishes the goals—in our case, trophy bucks—and they help us attain them. Under the DMAP program, in exchange for these doe permits, we are required to record live and dressed weights, various physical measurements, and remove a jaw from each deer for aging purposes. This data is submitted at the end of the season. We are also a check-in station for our own deer, which is a real convenience for our members.

Typically, DGIF issues Oakley Farm 30 to 35 doe permits, which can be used at any time during the deer hunting season. Our club rules dictate that no doe less than 75 pounds may be harvested, except by a young hunter (18 years and under). This assures that we are harvesting breeding-age does and we are NOT harvesting button bucks.

Therefore, the opportunity for putting meat in the freezer is always available on a day's hunt at Oakley. In fact, I estimate that at least 85 percent of my hunters see deer every time they take to the woods.

2) Control of Poaching and Trespassing

One of the problems with having a large property which borders on both residential subdivisions and large corporate, publicly-accessible timberland, is that it is very attractive to the "the neighbors." As far as deer and turkey hunting goes, we are even more attractive because we actively farm our land. The wildlife love the alfalfa, clover, lespedeza, vegetation associated with young pine plantations, and the diversity of our 2,000 plus acre hardwood forest.

While we are an oasis for wildlife among subdivisions and pine plantation, we also attract the two-legged "homo trespassus." We have found that having a club serves as a deterrent, although we don't have the constant presence of our own hunters along our boundaries as often as we would like. The deterrent effect occurs for the following reasons: 1) because the club is paying for the privilege to hunt, they resent anyone trying to get it for free, and 2) they are very protective of the wildlife in which they have considerable time invested. Many of my hunters watch these deer grow from year-to-year and don't like to see their investment stolen by strangers who are trying to cash in on their hard work and appreciated values.

Income from Club Dues

The fact that we have a 45-member hunt club that pays dues, and that there is a waiting list for membership, is a real plus for a property which has, like most farms, a very difficult time making ends meet. This does not mean that the club is doing much more than paying its own way at the present time. We don't charge a lot for annual membership because the club started out as an interesting mixture of local tradespeople and out-of-town (D.C.-oriented) professionals, and we like it that way. We have club members who work for national conservation organizations, agrichemical lobbyists, politicians, and wildlife and forest managers.

We are a fairly laid-back farm and don't offer a lot of amenities. The club members have a couple of required workdays per year, during which they post our boundaries, do any necessary road clearing, and, of course, scout out their favorite hunting spots. Their dues provide financial support for road maintenance. We do not yet have an official club house, although we do have shelter and a rustic cabin (no electricity or running water) that is very popular for overnight stays. We feel that when we bring our plans to fruition for put-and-take bird hunting and a sporting clays/skeet facility and clubhouse, we will have to market ourselves to a broader and different clientele.

I guess as true farmers, we are reluctant to jump whole-hog into the "people service" industry. At times we'd rather herd our cattle than our customers. More and more, however, as people continue to overpopulate this area, we realize that in order to survive as a farm, we must share our resources.

Developing a Hunting Lease: Considerations, Options, and Realities

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Abstract: Recreational hunting leases have become an important source of supplemental income for forest and farm owners in the Southern U.S. As hunting leases are being considered by landowners in other regions of the U.S., it is essential that these landowners have an understanding of hunting leases. Specifically, landowners should understand what a hunting lease is, the importance of developing a hunting lease agreement, guidelines for developing an effective lease agreement, as well as key components to include in a hunting lease agreement. Example hunting lease agreements can provide a framework for landowners interesting in developing their own hunting lease program. Well thought out hunting leases can protect both the interest of landowners and sportsmen leading to an enjoyable and profitable relationship.

Keywords: hunting leases, guidelines, written lease agreements

INTRODUCTION

Some of the earlier leasing of hunting rights began in Texas in the 1930's. Texas ranchers quickly realized that hunting and wildlife management could go hand in hand with traditional agricultural and natural resource operations. Today, hunting leases are commonplace in many southern states, especially the Southeast, where private landowners (corporate, industrial, and nonindustrial landowners) have successfully integrated wildlife management and hunting leases into their timber and agricultural operations. Concurrent with the rich history of hunting leases in the South, there has been an evolution of learning by both landowners and sportsmen regarding hunting leases. In worst case scenarios, hunting leases have been disastrous for both landowners and sportsmen. Unethical sportsmen, liability exposure, and a loss of control over property have been problematic for many landowners who have leased their lands for hunting. However, learning from past mistakes, landowners have moved away from hunting leases that granted access with a handshake to more formal arrangements that protect the interests of both the landowner and sportsmen. The information presented here represents the opinions of many landowners who have had a good deal of experience leasing their land for hunting, as well as information obtained from several studies about

hunting leases in the South. If landowners are interested in diversifying their natural resource or agribusiness to include a hunting lease program, it is important that they be well-informed before diving into a hunting lease program.

TYPES OF HUNTING LEASES

A hunting lease is an agreement between the landowner (lessor) and sportsmen (lessee) which grants sportsmen access rights for hunting game animals (and other specified activities) on the landowner's property for a certain time period. Sportsmen usually pay the landowner some dollar amount per acre or per hunter, or the landowner may require sportsmen to perform some service for the landowner in exchange for hunting access. Some common types of hunting leases included the following:

Long-term:

- Seasonal lease, all game animals;
- Seasonal lease, specified game animals;
- Annual or multi-year lease, all game animals (most popular); and
- Annual or multi-year lease, specified game animals;

Short-term:

- Daily or weekly hunting, often by permits.

The most common types of hunting leases are long-term. Landowners under this leasing system provide a hunter (or group of hunters) the privilege of hunting the land for a hunting season, an entire year, or for several consecutive years. Most often these leases allow harvesting of all game species during their respective seasons and fees are assessed on a per-acre or lump sum basis. Under this type of lease landowners often reserve some hunting rights for themselves and their immediate family. These leases often include other activities such as preseason scouting, camping, and fishing. Long-term hunting leases usually result in better sportsmen-landowner relationships because the landowner gets to know the hunter(s) personally which helps to build a degree of trust over time. This type of arrangement is often renewed for multiple years which helps the landowner project future income. Sportsmen are often more willing to make time, labor and financial investments in leased property that is secure for several years into the future.

Some landowners may also choose to lease access rights only for hunting certain game species. Under this system, a landowner may lease out the hunting rights for several game species to different sportsmen's groups. This system works best when access rights granted to different groups do not overlap during the same time of year, such as fall deer hunting and spring turkey season.

Short-term leases may be on a per-day, weekend, or week-long basis. Landowners under this arrangement allow access for a specified time period and generally for a specific wildlife species. The tradition of dove hunting (in the South) is an example of this type of lease. Often these types of hunts come in a "package," which includes guides, lodging and meals. This type of hunting experience requires intensive management and marketing to be successful, but often yields a high rate of return.

Hunting leases are most often arranged by sportsmen who directly contact landowners interested in leasing their lands for hunting. In some cases, however, a broker may act as a liaison to secure the hunting rights from landowners. Brokers will actually do all the leg work such as advertising hunting lease opportunities and dealing directly with sportsmen. This saves the landowner time and the inconvenience of seeking responsible sportsmen to lease their lands. Where

land ownerships are small, brokers can also work to secure hunting rights from adjoining tracts to form a larger cooperative block that is more desirable for leasing. Brokers may also provide additional amenities to sportsmen such as room and board, transportation, guide service, dogs, and game cleaning.

Before beginning a hunting lease program landowners should also recognize the advantages and disadvantages of leasing their lands for hunting. Some of the advantages and disadvantages are listed below:

Advantage of Leasing

- Additional income
- In-kind labor assistance from sportsmen
- Better access control on land
- Fellowship
- Increased recreational opportunities
- Enhanced quality of hunting experience
- Complements forestry & agriculture operations
- Benefits local economy

Disadvantages of Leasing

- Liability concerns
- Increase in landowner time
- Sportsmen possibly present at inopportune times
- Complaints from neighbors & locals
- Requires investment in habitat management

THE HUNTING LEASE AGREEMENT

Today almost all hunting leases are, and should be, finalized with a written agreement. The written agreement serves as a contract that protects agreed upon rights of sportsmen and landowners. The importance of a well-thought out written lease agreement cannot be overemphasized since it forms the foundation for a successful hunting lease program. Many of the conflicts that arise between hunters and landowners can be prevented and a good relationship maintained by having a written lease. Effective hunting lease agreements protect the interest of the landowner, but are flexible enough to allow enjoyment of the property for hunting by sportsmen. Several examples of hunting lease agreements are given in Tables 1 and 2.

The following are considerations and suggestions to consider when developing a lease agreement that should be helpful to landowners who are considering a hunting lease program:

Considerations

- 1) *References*- Landowners who are unfamiliar with sportsmen or sportsmen groups should not hesitate to ask for references. References may be from landowners who leased to sportsmen in the past, conservation officers, or key community leaders.
- 2) *Organized Sportsmen* - Hunting clubs should be organized, governed by self-regulating bylaws, and have a contact person.
- 3) *Lease to Local Sportsmen* - Local sportsmen usually are more visible and can spend more time on the property providing greater protection and property improvements. This is a positive public relations effort that eliminates the potential for local resentment caused by leasing to "outsiders." Lease income may not be as great from local sportsmen as compared to others, but the intangible benefits are greater.
- 4) *Proof of Liability Insurance* - Sportsmen should pay for liability insurance (with the landowner listed on the policy) and provide proof of coverage by giving the landowner a copy of the insurance policy and receipt of purchase. This helps to transfer a large portion of liability to sportsmen. Landowners should also make sure that policies cannot be canceled. Requirements for liability insurance may be written into the lease agreement.
- 5) *Establish Open Communications* - An open channel of communications prevents potential misunderstanding between landowners and sportsmen.
- 6) *Annual Meeting* - Landowners should meet with sportsmen annually to discuss concerns or modifications to the lease agreement. At the annual meeting (preferably in the summer) landowners should also inform sportsmen about any major land management practices that will significantly alter the hunting habitat (e.g. a clearcut in an area where hunting stands are or will be erected). This will prevent future misunderstandings and conflicts.
- 7) *Restrict Number of Hunters* - For safety and enjoyment, the number of hunters should be restricted. As an example, for deer a hunter per 25 acres, for turkey a hunter per 200 acres, and waterfowl a hunter per 100 acres of waterfowl habitat.
- 8) *Incorporation* - Hunting club representatives (e.g. president, secretary-treasurer) cannot legally represent the entire club when signing a lease agreement, unless the club is incorporated. If the hunting club is not incorporated, every member of the club must sign and date the lease agreement.
- 9) *Practice a Liability Risk Reduction Program* - In addition to requiring the hunting club to purchase an insurance policy, landowners should practice a risk reduction program that reduces all known hazards on the property. Accurate records should be kept of all efforts made to reduce or eliminate known and potential risks to hunters. If a libel suit is ever filed, you will have a record of efforts taken to make conditions on your property safe. Hazards that cannot be reduced should be identified and explained to sportsmen with a map and written description. Other considerations to reduce risk are the following:
 - a) No ATV's, or required additional rider insurance policy from sportsmen;
 - b) No portable climbing tree stands;
 - c) Avoid single-strand cable gates or have them clearly marked; and
 - d) Require all sportsmen to have passed an approved hunter education course and show a certificate of completion.
- 10) *Written Rules* - Consider developing written rules aimed at preventing accidents and protecting property. Make sure that all hunters are aware of the rules. You may want to have hunters sign a statement that they have read and understand the rules.
- 11) *Review by Attorney* - When the written lease agreement is complete, but before it is signed by either party, landowners should have an

attorney review the agreement. This helps to clarify that the agreement is legal and binding.

- 12) *Upfront Payment* - Lease payments should be made at the beginning of a hunting lease period. This allows the potential for investing these funds and accruing interest.
- 13) *Policy on Permanent Structures* - Permanent structures established by the lessee such as buildings, sheds or cabins may or may not be an asset to the landowner. Landowners should decide if and what types of permanent structures are allowed, and what happens to these structures when the lease is terminated.
- 14) *Vehicle Restriction* - Landowners may want to restrict the use of four-wheel drive vehicles, or limit their use to existing roads.
- 15) *Notification of Presence* - In order to know when hunters are on the property, landowners may require hunters to check in and out or notify the landowner in advance in writing or phone.
- 16) *Automatic Hunting Lease Renewal* - Landowners who are pleased with the lessee may want to provide for an automatic lease renewal. If the lessee knows that he or she will have hunting access to the land for several years, he or she is more willing to provide improvements to the land.
- 17) *Arbitration* - Disputes may arise even with the most well-thought out lease agreement. Some leases specify for arbitration of disagreements with neutral arbiters agreed upon in advance by both parties. Arbiters may be local attorneys, conservation officers, Extension agents, or other mutually agreed upon individuals.

Suggested Items to Include in a Written Hunting Lease Agreement

- 1) *Name and address* of the landowner (the lessor) and the sportsman, sportsman's group or club (lessee).
- 2) *Purpose of the hunting lease* explaining what game will be hunted as well as other activities allowed on the property.

- 3) *Description of the property* with location of the tract, boundaries, and areas off-limits to hunters. A map should also accompany the written description. A tour of the property is recommended to point out property boundaries as well as known hazards. A description of the present condition of the property can also be included in this section.
- 4) *Duration of the lease* describing beginning and ending dates of the lease.
- 5) *Method of lease payment* stating how much the lessee must pay the landowner and when the payment must be made. Penalties for late payment can also be included.
- 6) *Damage provisions and a deposit* to cover the costs of destruction of property, livestock, or damage to other landowner assets if not properly repaired or compensated. Damage provisions should specify that the lessees are responsible for any damages caused by their presence on the property. Damage deposits should be returned to the lessee if damage is corrected or does not occur.
- 7) *Termination of a lease clause* to cancel the lease agreement if either party fails to abide by provisions stated in the agreement, such as violation of state or federal game laws. Also hunting leases may be terminated if the property is sold or if the lessor dies during the lease period.
- 8) *Subleasing clause* which specifies whether sportsmen will be able to sublet or assign leasing rights to a third party. Landowners should consider seriously not allowing subleasing of their property.
- 9) *Lessee's responsibilities* should be defined within the agreement to include duties such as closing gates, repairing broken fences, helping to put out forest fires, evicting trespassers, obeying all game laws, following a biologist's game harvest recommendations, keeping and reporting game harvest records, posting of property, and restrictions on the use of alcohol.
- 10) *Lessor's responsibilities* should be defined within the lease to include duties such as maintaining roads, planting of food plots, or

Table 3. Methods of Determining Hunting Lease Prices

Method	Description
What Neighbors or Others are Charging in the Immediate Area	Lease price is based upon the going rate in the area.
Break-Even Plus 10%	Lease price is based upon management and other costs plus 10%.
Habitat Valuation	Lease price is based upon a subjective rating of the quality and quantity of wildlife habitat.
Baseline Plus Value Added	Base price per acre is charged. Additional fees are assessed on each improvement, amenities, or services provided.
Sealed Bid Approach	Similar to timber sales. A description of the hunting lease is made and a request for offers is solicited.

providing facilities for lodging or game cleaning.

- 11) *Landowner rights* should be clearly stated in the lease, such as the right to continue land management, hunting by family and friends, and other provisions.
- 12) *Indemnity clauses* or "hold-harmless" disclaimers can be added to the lease agreement and may protect landowners from liability if someone is injured on their land. They can be used as proof that an injured hunter assumed the risks of engaging in a particular activity. They do not, however, relieve landowners of liability associated with demonstrated negligence.
- 13) *Number of members* allowed in lessee group or club.
- 14) *Policy on guest and the number of guests* that the lessee may bring onto the property at anyone time.

DETERMINING HUNTING LEASE PRICES

The hardest decision for many landowners is what to charge for a hunting lease. Most landowners determine their lease price based upon what neighbors or others in the area are charging. Table 3 suggests several methods of determining hunting lease prices.

HOW TO FIND RESPONSIBLE HUNTERS

Locating responsible hunters who will respect your property and abide by terms specified in a lease agreement can be a challenge. Without proper screening of hunters, landowners could find themselves with an unmanageable group who have little regard for the property or the landowner's rights. Potential problems in these circumstances could include road and tree damage, trash dumping, fire, illegal hunting, or a legal overharvest of game. These problems, however, can be circumvented in two ways: 1) if the landowner knows the background of the hunters, and 2) as discussed earlier, if a well-written lease agreement is in place that protects the interests of the landowner.

If you have not leased your land in the past, you may have to rely on locating hunters initially by word-of mouth to friends, local hunters, or local conservation groups. Advertising in local newspapers and specialty magazines that target the type of sportsmen you are interested in can also be helpful in finding a potential pool of lessees. After locating interested hunters ask that they provide a list of references. Use this list to ensure that they have not had problems in the past leasing lands with other landowners and are known to be responsible and ethical sportsmen. If the interested group passes the "background check," conduct an interview with the hunters or a group representative. A list of questions developed in advance can be helpful. Don't be

afraid to ask the tough questions. Finally, use all the information you have gathered to make an informed decision based upon the hunter's background, reputation, and willingness to accept the terms of a lease agreement.

SUMMARY

Recreational hunting leases have become an important source of supplemental income for forest and farm owners in the Southern U.S. Many industrial timber companies now consider income from hunting leases in their resource and financial management decisions. As landowners consider hunting leases as an alternative enterprise, they should understand the advantages and disadvantages of a hunting lease, important guidelines and considerations in developing a hunting lease program, and provisions that are important to include in a written lease agreement. Hunting leases can be an enjoyable and rewarding experience for both landowners and sportsmen with advance planning, preparation, and communication.

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APPENDIX A. SAMPLE HUNTING LEASE AGREEMENT

This hunting lease agreement is for educational purposes only. It is important to check with your attorney before writing and signing a binding legal agreement. This lease may be more or less inclusive than the parties desire. If the lessor wants to provide other services or rights, such as guides, cleaning game, or allowing the lessee to improve the habitat, those provisions should be included.

HUNTING LEASE AGREEMENT

STATE OF:

COUNTY OF:

TRACT:

This Lease Agreement (the "Lease") entered into as of the day of _____, by and between _____ hereinafter referred to as Lessor, and _____ a/an (state whether an individual, a partnership, corporation, or unincorporated association) hereinafter referred to as Lessee.

The Lessor agrees to lease the Hunting Rights, as defined below, on _____ acres more or less, to Lessee for _____ (\$ _____ / Acre), for a term commencing on _____, (the "Commencement Date") and ending on _____ (the "Expiration Date") on the following described property (the "Land").

See Attached Description

The Hunting Rights shall consist of the exclusive right and privilege of propagating, protecting, hunting, shooting, and taking game and waterfowl on the Land together with the right of Lessee to enter upon, across and over the Land for such purposes and none other.

This Hunting Lease Agreement shall be subject to the following terms and conditions:

PAYMENT

1. The Lessee shall pay to the Lessor _____, the amount of one (1) year's Rent in full, on or before _____ by check payable to Lessor.

COMPLIANCE WITH LAW

2. Lessee agrees for itself, its licensees and invitees to comply with all laws and regulations of the United States and of the State and Local Governments wherein the Land lies relating to the game or which are otherwise applicable to Lessee's use of the Land. Any violation of this paragraph shall give Lessor the right to immediately cancel this Lease.

POSTING

3. Lessee shall have the right to post the Land for hunting to prevent trespassing by any parties other than Lessor, its Agents, Contractors, Employees, Licensees, Invitees, or Assigns provided that Lessee has obtained the Lessor's prior written approval of every sign designed to be so used. Every such sign shall bear only the name of the Lessee. Lessor reserves the right to prosecute any trespass regarding said Land but has no obligation to do so.

LESSOR'S USE OF ITS PREMISE

4. Lessor reserves the right in itself, its Agents, Contractors, Employees, Licensees, Assigns, Invitees, or Designees to enter upon any or all of the Land at any time for any purpose of cruising, marking, cutting or removing trees and timber or conducting any other acts relating thereto and no such use by Lessor shall constitute a violation of this Lease. This right reserved by Lessor shall be deemed to include any clearing, site preparation, controlled burning and planting or other forestry work or silvicultural practices reasonably necessary to produce trees and timber on the Land. Lessee shall not interfere with Lessor's rights as set forth herein.

GATES/BARRIERS

5. Lessor grants to Lessee the right to install gates or other barriers (properly marked for safety) subject to the written permission of Lessor and the terms and conditions relating thereto as set forth elsewhere in this Lease, on private roads on the Land, and Lessee agrees to provide Lessor with keys to all locks prior to installation and at all times requested by Lessor during the term of this lease.

ROAD OR FENCE DAMAGE

6. Lessee agrees to maintain and surrender at the termination of this Lease all private roads on the Lands in at least as good a condition as they were in on the date first above-referenced. Lessee agrees to repair any fences or other structures damaged by itself, its licensees or invitees.

ASSIGNMENT

7. Lessee may not assign this Lease or sublease the hunting rights the subject of this Lease without prior written permission of Lessor. Any assignment or sublease in violation of this provision will void this Lease and subject Lessee to damages.

FIRE PREVENTION

8. Lessee shall not set, cause or allow any fire to be or remain on the Land. Lessee covenants and agrees to use every precaution to protect the timber, trees, land, and forest products on the Land from fire or other damage, and to that end, Lessee will make every effort to put out any fire that may occur on the Land. In the event that any fire shall be started or allowed to escape onto or burn upon the Land by Lessee or anyone who derives his/her/its right to be on the Land from Lessee, Lessor shall have the right immediately to cancel this Lease without notice, and any payments heretofore paid shall be retained by Lessor as a deposit against actual damages, refundable to the extent such damages as finally determined by Lessor are less than said deposit. In addition, Lessor shall be entitled to recover from Lessee any damages which Lessor sustains as the result of such fire. Lessee shall immediately notify the appropriate state agency and Lessor of any fire that Lessee becomes aware of on Lessor's lands or within the vicinity thereof.

INDEMNIFICATION AND INSURANCE

9. Lessee shall indemnify, defend and hold harmless Lessor, its directors, officers, employees and agents from any and all loss, damage, personal injury (including death at any time arising therefrom) and other claims arising directly or indirectly from or out of any occurrence in, upon, or at the said Lands or any part thereof relating to the use of said Land by Lessee, Lessee's invitees or any other person operating by, for or under Lessee pursuant to this Lease. Lessee further agrees to secure and maintain a \$ 1,000,000 public liability insurance policy in connection with the use of the Land with Lessor named as insured and with such insurance companies as shall be agreeable to Lessor. This indemnity shall survive the termination, cancellation or expiration of this Lease.

RULES AND REGULATIONS

10. Lessor's rules and regulations attached hereto as Exhibit "A" are incorporated herein by reference and made an integral part hereof. Lessee agrees that any violation of said rules and regulations is a material breach of this Lease and shall entitle Lessor to cancel this Lease at its option effective upon notice by Lessor to Lessee of such cancellation.

Lessor reserves the right from time to time, to amend, supplement or terminate any such rules and regulations applicable to this Lease. In the event of any such amendment, supplement, or termination, Lessor shall give Lessee reasonable written notice before any such rules and regulations shall become effective.

MATERIAL TO BE SUBMITTED TO LESSOR

11. If this Lease is executed by or on behalf of a hunting club, Lessee shall provide Lessor, prior to the execution hereof, a membership list including all directors, officers, and/or shareholders, their names and addresses and a copy of Lessee's Charter, Partnership Agreement and By-Laws, if any. During the term of this lease, Lessee shall notify Lessor of any material change in the information previously provided by Lessee to Lessor under this paragraph 11.

LESSEE'S LIABILITY RE: TREES, TIMBER, ETC.

12. Lessee covenants and agrees to assume responsibility and to pay for any trees, timber or other forest products that may be cut, used, damaged or removed from the Land by Lessee or in connection with Lessee's use of the Land or any damages caused thereupon.

NO WARRANTY

13. This Lease is made and accepted without any representations or warranties of any kind on the part of the Lessor as to the title to the Land or its suitability for any purposes; and expressly subject to any and all existing easements, mortgages, reservations, liens, rights-of-way, contracts, leases (whether grazing, farming, oil, gas or minerals) or other encumbrances or on the ground affecting the Land or to any such property rights that may hereafter be granted from time to time by Lessor.

LESSEE'S RESPONSIBILITY

14. Lessee assumes responsibility for the condition of the Land and Lessor shall not be liable or responsible for any damages or injuries caused by any vices or defects therein to the Lessee or to any occupant or to anyone in or on the Land who derives his or their right to be thereon from the Lessee.

USE OF ROADS

15. Lessee shall have the right to use nay connecting road(s) of Lessor solely for ingress, egress, or regress to the Land, such use, however, shall be at Lessee's own risks and Lessor shall not be liable for any latent or patent defects in any such road nor will it be liable for any damages or injuries sustained by Lessee arising out of or resulting from the use of any of said Lessor's roads. Lessee acknowledges its obligation of maintenance and repair for connecting roads in accord with its obligation of maintenance and repair under paragraph 6.

SURRENDER AT END OF TERM

16. Lessee agrees to surrender the Land at the end of the term of this Lease according to the terms hereof. There shall be no renewal of this Lease by implication or by holding over.

MERGER CLAUSE

17. This Lease contains the entire understanding and agreement between the parties, all prior agreements between the parties, whether written or oral, being merged herein and to be of no further force and effect. This Lease may not be changed, amended or modified except by a writing properly executed by both parties hereto.

CANCELLATION

18. Anything in this Lease to the contrary notwithstanding, it is expressly understood and agreed that Lessor and Lessee each reserve the right to cancel this Lease, with or without cause, at any time during the Term hereof after first giving the other party thirty (30) days prior written notice thereof. In the event of cancellation by Lessee, all rentals theretofore paid and unearned shall be retained by the Lessor as compensation for Lessor's overhead expenses in making the Land available for lease, and shall not be refunded to Lessee.

APPLICABLE LAW

19. This Lease shall be construed under the laws of the State first noted above.

IN WITNESS WHEREOF, the parties have hereunto caused this Agreement to be properly executed as of the day and year first above written.

WITNESSES:

APPENDIX B. SAMPLE HUNTING LEASE AGREEMENT

This hunting lease agreement is for educational purposes only. It is important to check with your attorney before writing and signing a binding legal agreement. This lease may be more or less inclusive than the parties desire. If the lessor wants to provide other services or rights, such as guides, cleaning game, or allowing the lessee to improve the habitat, they should be included.

_____, owner of _____ farm, (legal description of the land), County, (state), herein referred to as "Landowner," for good and sufficient consideration, as hereinafter set forth, leases hunting rights on those portions of the _____ farm, hereinafter described, to _____ and others so executing this agreement and hereinafter referred to as "Lessees," on the following terms and conditions:

1. The tract of land, hereinafter referred to as "lease" upon which hunting rights are granted, is the _____ farm described herein consisting of approximately _____ acres.

(description of land with aerial photograph if available)

Lessees understand the location and boundaries of said tract and agree that no hunting rights are granted hereunder on any tract other than the tract herein designated and that no hunting or discharging of firearms shall be done by Lessees while traveling to or from the lease.

2. This agreement and the rights and duties granted and incurred hereunder shall be for a term commencing with the opening of _____ season in 19__, and the closing of _____ season in 19__, as set for _____ County, (state), under regulations enforced by the (state wildlife agency) unless terminated pursuant to provisions of this agreement hereinafter set forth. Provided that either the Landowner or Lessee may cancel this agreement by giving written notice of its intent to do so thirty (30) days prior to the date that rental for the second or third year of the term here provided is due. In which event, Lessee shall be relieved of the obligation to pay further rental under the terms and shall deliver possession of the premises.

3. The consideration to be paid by Lessee to Landowner at _____ County, (state), is \$_____ in cash, one-half to be paid on or before June 1, 19__, and the balance to be paid on or before October 1, 19__. Failure to pay the second installment shall thereupon terminate and cancel the lease and the amount already paid shall be forfeited as liquidated damage for the breach of the agreement. A \$_____ deposit will be required to insure that lease premises are left in a clean and orderly condition. Farm personnel will inspect the premises within 30 days after the lease expires. If clean-up is necessary, the farm will accomplish such, and the \$_____ deposit will be forfeited by the Lessees. If the premises are determined by farm personnel to be clean and orderly, the \$_____ deposit will be returned to the Lessees within 60 days after expiration of the lease.

4. Lessees shall not assign this lease or sublet the leased premises without the written consent of _____.

5. Lessees shall at all times abide by and obey all state and federal hunting laws and regulations and Lessee shall be responsible for the conduct of Lessee's guests or members in connection with said hunting laws and shall be responsible for any violation of said hunting laws or regulations by said Lessee, its guests, or members. Any violation of the hunting laws or regulations of any governmental authority shall give rise to the right of immediate cancellation of this lease by the Landowner upon written notice to Lessees, and in the event of the cancellation of said lease due to violation of game laws by Lessees, its guests or members, no prorata of the rent previously paid shall be made, same to be forfeited as liquidated damages, and Lessees shall, upon receipt of such notice, immediately vacate and surrender unto the Landowner possession of the leased premises.

Lessees shall, during the period in which it has access to the leased premises, continually protect same against trespassers and squatters, and to the best of Lessee's ability have such persons apprehended and prosecuted.

6. This lease agreement is expressly made subject to the "General Conditions of Lease," which are attached hereto as Exhibit "A," and made a part hereof for all purposes the same as if copied herein verbatim.

7. If Lessees default in the performance of any of the covenants or conditions hereof, including the "General Conditions of Lease," which are attached hereto as Exhibit "A," then such breach shall cause an immediate termination of this lease and a forfeiture to Landowner of all consideration prepaid. The Lessee shall have no further rights under the term of this lease agreement. In the event a lawsuit arises out of or in connection with this lease agreement and the rights of the parties thereof, the prevailing party may recover not only actual damages and costs but also reasonable attorneys' fees expended in the matter.

8. Landowner shall not be liable for any injuries, deaths, or property damage sustained by (1) any Lessees hereto, (2) any employees of Lessees, (3) any business invitees of Lessees, (4) any guest of Lessees, (5) any person who comes to the leased premises with the express or implied permission of Lessees on the _____ farm with permission of the Lessee hereunder except for such injury, death, or property damage as may be sustained directly as a result of Landowner's sole negligence. Lessee hereunder jointly and severally agrees to indemnify Landowner, his agents or employees against any claim asserted against Landowner or any of Landowner's agents or employees as a result of any personal injury, death or property damage arising through: (1) the negligence of a Lessee or any persons on the farm with the permission of a Lessee, or (2) through the concurrent negligence of a Landowner or his agents or employees any one or more of Lessees or any person on the _____ farm with the permission of the Lessee.

All minors permitted by Lessee to hunt, fish, or swim on the leased premises shall be under the direct supervision of one of their parents (or guardian) and when children are present on the leased premises, the parents shall be fully responsible for their acts and safety and agree to hold Landowner harmless therefor, regardless of the nature of the cause of damage, whether property or personal injury, to themselves or others.

9. The leased premises are taken by Lessee in an "as is" condition, and no representation of any kind is made by _____ regarding the suitability of such premises for the purpose for which they have been leased.

10. This lease may not be terminated or repudiated by Lessee except by written notice signed and acknowledged in duplicate before a Notary Public by Lessee, and such termination or repudiation shall not be effective until Lessee has mailed one executed copy thereof to Landowner by registered mail and filed the other executed copy thereof for record in the office of the County Clerk, _____ County, (state). This lease shall be binding upon the distributees, heirs, next of kin, successors, executors, administrators, and personal representatives of each of the undersigned. In signing the foregoing lease, each of the undersigned hereby acknowledges and represents:

- (a) That he has read the foregoing lease, understands it, and signs it voluntarily; and
- (b) That he is over 21 years of age and of sound mind;

In witness whereof, the parties hereto have set their hands this the _____ day of _____ 19 .

LESSEES: DATE: LANDOWNER: DATE

WITNESS: DATE

STATE OF _____

: SS

COUNTY OF _____ }

The foregoing instrument was subscribed, sworn to, and acknowledged before me this day of _____, 19__.

by _____ and _____.

My commission expires: _____.

Notary Public

APPENDIX C. EXHIBIT "A", GENERAL CONDITIONS OF LEASE (EXAMPLES OF OPTIONAL CLAUSES)

_____ LANDOWNER, LEASE TO _____ LESSEE

These general conditions of lease are applicable to the lease agreement between _____, hereinafter referred to as LANDOWNER, and _____, LESSEE. Lessee and all persons authorized to Lessee to hunt upon the leased premises shall be hereinafter collectively referred to as "Hunters."

1. It will be the responsibility of the Lessee to furnish each hunter or guest with a copy of these general conditions of lease.

2. Lessees understand and agree that the leased premises are not leased for agricultural or grazing purposes and, consequently, taken subject to the rights thereof.

3. Lessee acknowledges that Landowner owns the property herein leased, primarily for agricultural purposes and the growing of timber. Lessee shall in no manner interfere or obstruct Landowner's farming, forestry, or livestock operations.

4. Landowner reserves the right to deny access to the leased premises to any person or persons for any of the following reasons: drunkenness, carelessness with firearms, trespassing on property of adjoining landowners, acts which could reasonably be expected to strain relationships with adjoining landowners, or any other activities which to the ordinary person would be considered objectionable, offensive, or to cause embarrassment to Landowner or be detrimental to Landowner's interest. Failure of Lessee to expel or deny access to the premises to any person or persons after being notified to do so by Landowner may result in the termination of this lease at discretion of Landowner.

5. No hunter shall be allowed to:

- (a) shoot a firearm from a vehicle;
- (b) erect a deer stand within 150 yards of the boundary of the herein leased premises;
- (c) permanently affix a deer stand in trees;
- (d) abuse existing roads by use of vehicles during wet or damp conditions.
- (e) fire rifles or other firearms in the direction of any house, barn, other improvements or across any haul road located on the leased premises;
- (f) build or allow fires on the leased premises, except in those areas specifically designated by Landowner in writing, and, in event, shall be kept fully liable for such fires; and
- (g) leave open a gate found closed or close a gate found open.

6. Hunters shall at all times maintain a high standard of conduct acceptable to _____.

Managing Recreational Clubs

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Abstract: There are a number of considerations involved in the management of recreational clubs. These Clubs have an extensive history. This paper explores starting a recreational club, demand, marketing considerations, complying with the law, business organization, club management, and profitability.

Keywords: recreational clubs, management, organization, rules and regulations

INTRODUCTION

This paper describes factors involved with starting and operating a recreational club (Club). Clubs are defined as any organization that is in the business of providing services for a number of outdoor recreational activities, such as hunting clubs, game preserves, sportsmen clubs, and bird clubs. Clubs range in size from a few acres to several thousand acres. Many also rely on nearby public lands to carry on the hunting activity. They may be operated by a few individuals or may involve 20 or more persons. Some are operated on a nonprofit basis, but many are operated on a commercial basis.

The demand for outdoor recreation is projected to increase in the future. The eastern United States contains 78 percent of the nation's population and only 9 percent of publicly owned lands. Trends in recreation patterns indicate a growing preference for shorter trips in close proximity to home, which will create more pressure for recreational opportunities close to urban centers. Further, demand for outdoor recreation is influenced by population growth, demographic composition of the population, economic activity, and leisure time availability. Each of these factors can influence patterns of recreation demand.

An aging population indicates potential changes in recreational patterns toward more passive activities and possibly a declining overall participation rate. However, the current demand for physically demanding activities is high and is expected to grow in the near future. An older and

more affluent population will tend to take longer trips at farther distances, but the prevailing effect at present is dual-income families with little available leisure time who demand recreational opportunities close to home.

Private landowners provide a major source for hunting and other outdoor recreational activities demanded by the public. In the past, many farmers and ranchers have leased their land for recreation to produce supplemental income, and occasionally alternative income, for the agricultural operation. Today, because of problems with agricultural profitability and increasing demand for recreational sites, there are many new opportunities for landowners to commercially develop wildlife, fish, and habitat resources.

HISTORY OF RECREATIONAL CLUBS

A review of the literature on Clubs indicates that this concept has been in existence in some form for several centuries. It is well documented that Europeans have been involved in Clubs for several generations and that they have had an influence on Clubs in the United States. Early settlers were involved with Clubs for fox hunting using dogs and horses. The importation of the pheasant is an example of how Clubs have had an influence on the introduction of exotic wildlife species in the United States.

Like in Europe, many of the early Clubs in the United States were established by wealthy individuals and/or companies. The Ames

Plantation in Tennessee, which originally comprised approximately 25,000 acres, was established primarily to provide a place for bird trials. Wealthy individuals or companies often established Clubs for the benefit of company employees, clients, and friends. Today many Clubs operate in the United States and provide a wide variety of services, which range from simply a place to hunt or fish up to guide services with overnight accommodations.

WHY START A RECREATIONAL CLUB?

Starting a Club may be appealing to many entrepreneurs. It can be rewarding, both personally and financially. However, operating or managing a Club is not for everyone. Before starting a Club, it would pay to analyze personal and financial considerations and to consult with individuals already operating a Club.

Personal Issues

A Club business is not unlike a number of other home-based businesses. Whether the business will be successful depends on the personal traits or qualities of the individual, family, or whoever will be involved. To be successful in the management of a Club, you, your family, and/or any others involved, should possess a number of traits or qualities, including

- being a good decision maker
- having good organizational abilities
- liking people
- liking to entertain
- being a self-starter
- having discipline
- having a personal commitment
- being willing to manage records.

Operating a Club must be a family decision because the entire family will be affected. Family is defined to mean anyone who will be residing at the Club. Many Clubs involve the use of the family home. The operation of the Club will infringe upon the family's privacy, use of a number of facilities, and use of the home.

Although a family might have to give up some things to have a Club, a number of positive benefits result. Younger family members are

provided an early opportunity to learn lifetime skills such as making reservations, dealing with the public, and serving meals. Having a business in the home may strengthen the family because all members have to work together.

Like many small businesses, a Club takes a real personal commitment. Although operating a Club may provide for more flexible working hours, it also requires that you be a self-starter. There is no one to tell you when certain items have to be done. Many Club managers have to perform all the managerial and maintenance tasks that would be done by the staff in other enterprises.

Financial Issues

Operating a business such as a Club in your own home or on your own property can provide financial benefits. Many people operating a Club cite financial benefits as one reason for starting. These benefits can help to subsidize the annual operating expenses of the home/property.

Consulting with Professionals

Before starting your Club, consult with a number of professionals to obtain sound business advice. Begin by obtaining literature on how to start a Club from your local bookstore, library, and county Cooperative Extension office. Next, visit a number of Recreational Clubs and discuss your proposed Club with them. You may be able to apprentice at a Club to gain valuable experience. If you decide to proceed with starting a Club, you may want to obtain professional advice from

- lawyer/legal counsel
- CPA/accountant/financial officer
- architect/building contractor/building safety and code officials
- public relations firm/advertising expert

Generally, it is important to retain only those professionals who have experience in small business and working with Clubs.

DEMAND

The U.S. Fish and Wildlife Service conducts a national survey of Fishing, Hunting, and Wildlife

Associated Recreation every 5 years. This is an invaluable document for anyone planning a commercial Club. Private landowners can use information on the patterns of recreation demand in assessing the feasibility of marketing recreational opportunities such as Clubs. Different types of participation require different natural resources. Information on potential demand, in combination with information on the landowner's natural resources base and management objectives, can give a more complete picture of opportunities to manage the land for public recreation.

The Survey revealed that 77 million US residents 16 years of age and older participated in wildlife-related recreational activities in 1996. During that year, 35.2 million people fished, 14.0 million hunted, and 62.9 million enjoyed at least one type of wildlife-watching recreational activity, such as observation, feeding, or photographing fish and other wildlife, in the United States.

Expenditures associated with wildlife-related recreation totaled \$101 billion in 1996. Trip-related costs were \$30 billion whereas \$60.4 billion was spent on equipment, and \$10.8 billion was spent on other items.

A 41-year trend can be traced for the number of anglers and hunters that participated in a given year. Trends show that the number of anglers increased at over twice the rate of the US population growth from 1955 to 1996. The US population increased by 62 percent while the

fishing population increased by 138 percent during that same period. The number of hunters also increased over the 41-year period, but not at a rate equal to the overall population growth. The number of hunters increased 41 percent from 1955 to 1996 (Figure 1).

The number of wildlife-watching participants is traced over 16 years because wildlife watching has been part of the Survey only since 1980. The number of wildlife-watching participants who took trips away from home for the primary purpose of observing, feeding, or photographing wildlife decreased 12 percent from 1980 to 1996. The number of people who fed wildlife around their home decreased by 21 percent. This trend information is based on published findings from the 1955 to the 1996 Survey reports and unpublished screening data from the 1985 to 1991 Surveys (Figure 2).

MARKETING

For anyone who is contemplating starting a Club, the first thing to do is analyze the market potential. Marketing initially starts with the concept of developing a product or service and then proceeding to market research, pricing, promotion, and sales.

In the case of a Club, you are talking about providing a facility where some types of recreational experience will take place. Along with providing an experience (e.g., hunting), you

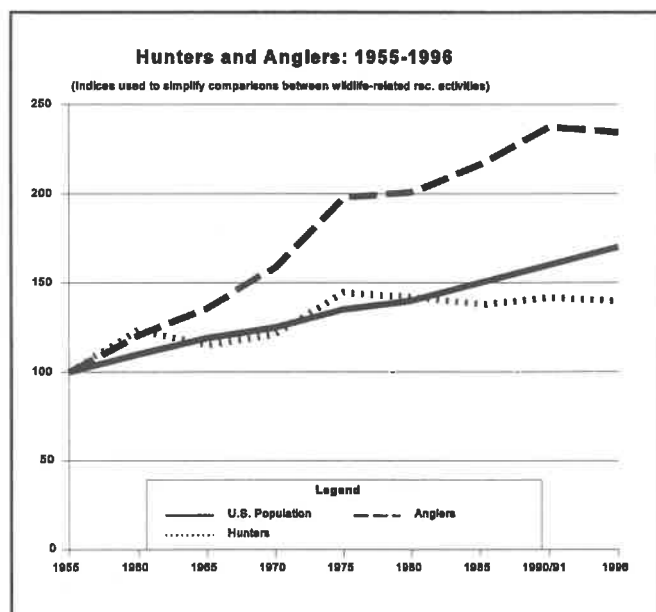


Figure 1

may want to consider what other compatible services might be offered. Many Clubs offer meals, overnight accommodations, game cleaning, and a wide variety of services. Each of these additional services should be priced so that additional profit is made.

Concept/Service

What type of Club are you going to provide? Will it be an exotic game preserve, upland bird farm, or fee access hunting? What are you going to provide besides the Club? Do you own the property now or are you going to have to purchase it? In some cases, Clubs are operated on leased property and/or utilize nearby governmental property.

Generally, a good way to develop the concept of your Club is to visit a number of similar facilities. Many managers from other Clubs will be willing to discuss your concept. As the concept is being developed, it will be necessary to constantly modify it due to regulatory requirements, availability of money, time, and the type of property available.

It is extremely important for any Club entrepreneur contemplating purchasing property to analyze the market potential and be aware of the regulatory requirements involved with starting a Club. Several entrepreneurs have purchased property only to find out that zoning precludes the operation of a Club or that renovation costs to meet building codes are prohibitive. In many situations, it would be wise to take an option on the property until all of the questions regarding its potential use can be resolved.

Market Research

This phase of marketing involves analyzing why anyone would use your Club. Who will be your customers in terms of age, income, and educational levels? Who are your competitors?

People go to Clubs for a variety of reasons. Some of the more common reasons are to engage in a recreational activity, to get away from work, and to socialize with friends. Some of the most successful Clubs are the ones that offer a variety

of options, such as trap/skeet shooting and bird huntin

Who are your competitors? Are there other Clubs in the area? What are they charging for the services and amenities they provide? Clubs generally are not in competition with each other because each tends to be unique.

Pricing

What price are you going to charge? It may surprise many people to find out that Clubs are not necessarily inexpensive. Price should be a function of the indirect and direct costs plus an amount for profit. It normally pays to survey what your competitors are charging and be somewhat in line with their rates. The more you have to offer in terms of services and amenities, the more you should be able to charge.

Promotion

How are you going to promote your Club? Promotion involves advertising, personal contact, and publicity. In the Club business, you are selling more than just a recreational activity. Decide what your Club will do for people and then use this in your promotion.

Deciding what form of promotion to use is one of the hardest decisions facing beginning Club managers. The form of promotion should be

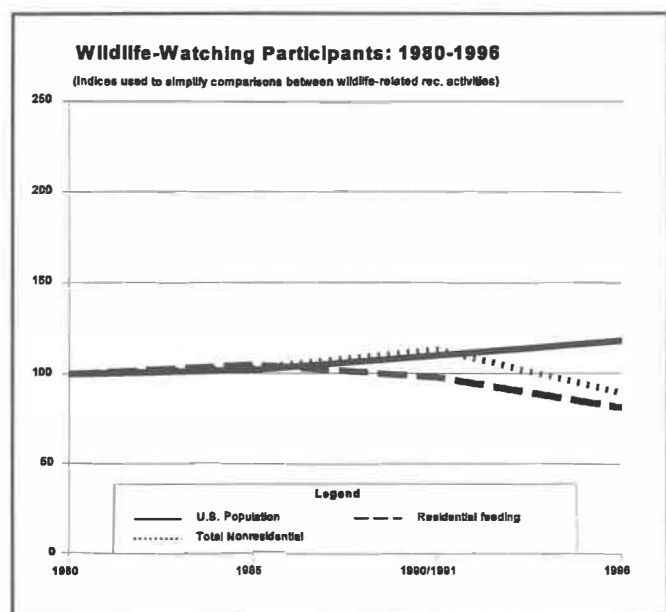


Figure 2

determined by the image you want to project. Professionally printed materials compared to handwritten items will convey different messages. Most beginning managers will need to choose several ways to promote their Club. Space does not permit an in-depth discussion of the various promotion options available, however, some of the most common include

- word-of-mouth
- brochures
- business cards
- telephone book/yellow pages
- magazine ads
- state wildlife agencies
- guide books
- newspaper ads
- radio and television ads
- direct mail
- letterhead and envelopes
- Internet/web page/e-mail.

This list should not be viewed as being all inclusive. Check with other Clubs in your area to see how they advertise.

In advertising, keep in mind such things as reach, frequency, and costs. Reach is defined as how many people receive the material and how many people have heard or seen it. Frequency has to do with the number of times the advertising appears. Most Club managers constantly re-evaluate the reach and frequency of each promotional item in relation to its cost. For example, it might cost \$600/year to advertise in a national magazine that is published 12 times a year and reaches 3 million households whereas 5,000 brochures cost only \$200 to produce.

Sales

The ultimate objective of any marketing program is to produce sales. Within the Club industry, business success is measured by the number of participants and dollars generated. As discussed later in the section on Profitability, it is extremely difficult for Clubs in the East to "make a go of it" just on the hunting operation. The Club generally must rely on a number of different activities to generate enough sales to be profitable.

COMPLYING WITH THE LAW: ZONING, LICENSES, PERMITS, REGISTRATION

When contemplating starting a Club, a review of the various laws governing such an operation is essential. It can be very confusing and frustrating trying to determine which laws may apply to your Club. Many states do not have specific legislation that applies to Clubs; local officials may have to interpret existing laws for you.

Many states now have established agencies to oversee such activities, like the one in Ohio called the "One-Stop Business Permit Center." The function of this office is to assist entrepreneurs starting businesses by providing all the necessary forms, permit applications, and other information at one location. These agencies make it easier for entrepreneurs to start their business.

The purpose of checking on various legal requirements is to determine whether it is legal to operate a Club in your area or to find out if it is feasible to renovate a property to meet code requirements. There have been several cases in which people have purchased property with the idea of using it for a Club, only to find out later that it was illegal or not permitted. In other cases, people renovated a property without checking the codes and found out after work was completed that the property did not meet code requirements and would not be permitted to open.

Several of the permits/licenses discussed below are not initial considerations in strategy, but must be renewed annually as long as the Club is in business. Food service and vendor's licenses are two examples that must be renewed annually.

Zoning

One of the first items to inquire about are the existing zoning regulations for the community in which the Club will be located. Zoning in most states is a locally-enacted law that regulates and controls the use of private property. Not all local communities have enacted zoning. Also, zoning laws will differ from one community to another.

Building Code

Most states have enacted building codes that generally prescribe standards for construction of new facilities, renovations, and changes of use. Many states have adopted national codes. These codes set the standards for the structural conditions, as well as plumbing and electrical requirements. In addition to state building codes, many communities enforce local building codes. Normally, a building permit must be secured before any new construction, alteration, repairs, or change in use can be initiated.

Fire Codes

In most states, your Club will be subject to an inspection from the local fire department and/or state fire marshall's office. These inspections are conducted to ensure that the facility conforms to applicable fire safety codes.

Health Regulations (Food Service License)

To serve food, it may be necessary to secure a food service license. In most states, you need to contact the local or state Department of Health for information on how to obtain a food service license.

Vendor's License

In many states, a vendor's license is required if you collect sales taxes on the food or other services you provide. Depending on where you live, these taxes may be state, county, and local. Consult your state Tax Commission for relevant information.

Motel/Hotel License

In some states where overnight accommodations are provided, you may need to purchase a hotel/motel license. Check with the appropriate agency in your state to see if your Club will need a license.

Registration

You may face a requirement to register the name of your Club. This could be a local, county, and/or state requirement. Generally, its purpose is to let government agencies know you are in business. In most cases, it is a state law that you register a trade name, fictitious name, or name of a corporation.

Other

If you are handling and/or containing wildlife species on your property, you should contact your state agency on wildlife, the state Department of Agriculture, and possibly the U.S. Fish and Wildlife Service. These agencies have jurisdiction over wildlife species.

There may be other licenses or permits not covered in this paper that you may be required to obtain before starting and/or operating your Club.

BUSINESS ORGANIZATION

Once a decision has been made to start a Club, a number of business organizational matters needs to be considered. Many are legal or financial concerns. It is important to understand the ramifications of the various legal and financial options.

Planning Your Business

Every Club begins with an idea or concept of what will be provided. An important tool to help your Club get started is the business plan, in which you describe in writing your vision or dream and develop a way to implement it. The plan is your road map to success. To succeed, you must know what is involved and how you are going to accomplish it. Many of the items already discussed should be in your business plan. A number of organizations have publications on how to prepare a business plan; these include the U.S. Small Business Administration or local Small Business Development Center. Your local Chamber of Commerce, library, and county Extension office may have publications on this topic. If financing has to be obtained, your local

financial institution will have information on how to prepare a business plan.

Selecting a Name

What are you going to call your Club? There are any number of ways to select a name. Your Club can be named after a famous person or place. Many Clubs are named after a species of wildlife. Select a name very carefully because it will identify your Club. In many states, you have to register the name of your Club as a trade name, fictitious name, or corporate name.

Business Structure

Three major business structures exist for Clubs: sole proprietorship, partnership, and corporation. If you are not familiar with these structures, you may want to seek legal/financial advice. Because many Clubs provide activities that involve some risk, most are incorporated to gain liability protection.

Another item to consider under business structure is the aspect of forming a landowner cooperative. In the East, many of the land holdings are relatively small and often are not large enough to manage effectively the wildlife resources (e.g., deer require many acres). If a Club is going to attempt to manage a wildlife resource, it might be necessary for several small landowners to go together and form a cooperative. Ideally, the cooperative should include all the owners in a locality. Landowner cooperatives may be a method to manage effectively a number of small properties as one unit. Without the cooperative as the mechanism for combining small properties, small landowners may not be effective in attracting hunters.

Taxpayer Identification Number

Corporations, partnerships, and sole proprietorships with employees must have a Federal Identification Number (Employer Identification Number), obtained from the Internal Revenue Service. The Federal Identification Number must be used on all tax papers.

Records

A Club is a business, therefore, you must maintain proper records to analyze your business operation and to pay appropriate taxes. The law does not necessarily require you to keep records in any particular format. However, your records must be accurate, permanent, complete, and clearly establish your income, deductions, credits, and employee information.

Taxes

As mentioned previously, the Club is a business so you will be required to pay taxes (federal, state, and/or local). Some of the more common taxes that your Club might be expected to pay are

- income tax
- self-employment tax
- estimated tax
- Social Security (FICA)
- federal unemployment tax
- excise taxes
- personal property tax

Insurance

Operating a Club will expose you to additional liability. Insurance will help to protect your Club from losses through fire, illness, and injury. Because it is very important that you obtain the proper amount of coverage, you should contact an insurance company that specializes in Club insurance.

CLUB MANAGEMENT

Club managers and employees must enjoy meeting people and serving as hosts. The unique lifestyle, interests, and personality of each Club operator creates an individuality to each operation that can be one of the strongest marketing features to bring persons to that Club again and again. The personal contact with the customer, combined with good management and business skills, lead to a successful operation.

Club Rules

One of the most important items to consider when operating a Club has to do with Club rules. There are numerous activities associated with operating a Club that can be quite hazardous. It will be important to establish rules to lessen the chance of accidents. Safe and prudent Club rules can also help to reduce your insurance premiums.

Some Club rules you may want to consider are:

- will you permit smoking in your facility?
- will you permit social drinking?
- if firearms are involved, how will they be secured and handled?
- will you permit your guests to bring their pets?
- how are you going to charge for your services?
- what is your refund policy going to be?
- how is payment to be made?
- how are reservations made and is a deposit required?

PROFITABILITY OF THE RECREATIONAL CLUB

The thought of operating a Club appeals to many entrepreneurs who relish the idea of outdoor life and being afield with dog and gun. The management appears simple—just release the birds for hunters and collect fees. But such prospective operators/managers are in for a rude and expensive awakening unless they do some groundwork and investigate and study the Club industry, serve an apprenticeship at a Club, and/or seek professional guidance.

Business volume is important to a successful Club operation. Many Clubs must create special events to ensure business volume. Certain fixed expenses accrue when managing a Club, regardless of whether it operates at capacity. The greater the volume of your business, the lower the percentage of fixed expenses to be charged against every source of income. Special events can range from clay target tournaments, seasonal picnics, fishing derbies, and field trials for hunting dogs to educational activities.

A problem associated with Clubs in the East is the amount of available land. In the West, Clubs

typically cover several thousand acres. In the East, many Clubs are being operated on less than 1,000 acres.

Many Clubs may have to offer other services or amenities to generate sufficient income to sustain the business. Other primary sources of income can be rearing game birds; boarding, training, and selling hunting dogs; livestock production; or farming. Secondary sources of income may be leasing land for agricultural purposes, field-dog trials, picnics, fishing, and outside employment. Many commercial Clubs simply cannot make a profit by operating only during the hunting season. To be profitable, each commercial manager/operator must decide on the proper mix of activities, based on his/her skills, location, and facilities. One cannot reduce the drive, personality, initiative, perseverance and imagination of a given Club manager to cold numbers. At best, one can only offer suggestions and guidelines from successful Clubs.

CONCLUSION

Starting a Club actually can be very simple. It is a matter of securing the various licenses, permits, and registrations that are required to start. Successfully operating a Club is another matter. This involves the whole aspect of marketing management. Club managers must be able to attract customers, provide them with services, and have them return time and time again. Gather the facts, analyze them very carefully, and then decide if you are the type of person who likes to deal with the public. You are the best person to determine whether a Club enterprise is right for you.

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Assessing Whole Farm Returns On Investments in Wildlife

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Abstract: Despite recognition of the diversity of assets that exist on production lands, producers and landowners may not fully capitalize on the income potential of their land-based asset portfolio. In particular, economic, social, and cultural factors may hinder adoption and participation in habitat enhancement and leasing projects. Failure to employ a portfolio management perspective in farm investment decisions may reduce the diversity and increase the risks of private land income streams. The market for wild quail hunting is assessed as an alternative investment to crop production at field edges. Conjoint Analysis surveys find hunters willing to pay \$63.79 per covey contact whereas precision farming and traditional harvest data show yield at field edges may often be below break-even levels. Installation of field border systems to enhance quail populations may provide viable economic investments for diversifying portfolio risk and increasing farm profits.

Keywords: farm investment, habitat enhancement, portfolios, quail

INTRODUCTION

Requirements of intensive management on modern production farms may result in producers being unaware of, or unable to capitalize on, income opportunities within their land-based asset portfolio. Income opportunities may arise from any or all of the timber, agricultural, wildlife, aquatic, and scenic resources found on production lands. Effective exploitation of these opportunities increases the diversification of the farm income stream, thus reducing the inherent risk and volatility of operational cash flows. Economic, social, and cultural factors exist and may inhibit producer adoption and participation in non-crop income opportunities.

Eastern North Carolina is a productive crop and livestock region. Poultry, swine, tobacco, corn, wheat, cotton, peanuts, and soybeans are produced on family farms and large corporate operations. This also is the most productive area in North Carolina for bobwhite quail, although even here the same decline in quail populations is present as in other southern states (Brennan 1991).

Investments in naturally-vegetated field border systems offer an opportunity to enhance quail

populations and generate hunting lease income. Flush-count surveys in mid-summer indicate 4.3 times the number of quail on two farms with field border systems as on those without (Puckett 1995). In addition, field borders provide habitat for other game and nongame species and are a best management practice recommended for improving farm water quality and reducing nonpoint source pollution from agricultural production. Despite these benefits, producers are often unwilling to install field border systems on production land.

ECOLOGICAL AND FINANCIAL RISK ASSESSMENT

Participants in landowner focus groups in eastern North Carolina indicated that without adequate information and motivation, landowners will persist in currently profitable farming patterns. For these producers, farming methodologies that maintain production levels and annual profitability represent sustainable agricultural practices. Participants stated that investments in wildlife habitat may not occur on farms even when growers would like (or have no objections) to increase wildlife such as the bobwhite quail.

Two reasons for this are outcome uncertainty and financial risk.

Outcome uncertainty results from uncertainty about how habitat investments will benefit species and to what degree. For example, food plots, protective cover, and nesting structures do not guarantee results of a certain magnitude. Likewise, the response of quail populations to field border systems cannot be guaranteed on a farm-by-farm basis. The amount of salable product (i.e., quail coveys) generated by an investment in field border habitats is thus uncertain. While not all outcome uncertainty can be removed from habitat enhancement projects, inclusion of such investments in the farm portfolio hedges against crop income losses in poor production years. Consequently, the risk- return profile of the farm asset portfolio will improve as the potential volatility of total expected income is reduced.

The second group of risks faced can be termed financial risk. Often there is uncertainty about the costs of establishing and maintaining habitat areas. There also may be uncertainty associated with the value of the commodity a landowner may be trying to produce, such as quality quail hunting opportunity.

Taken together, outcome uncertainty and financial risk represent formidable roadblocks to producer investments in habitat enhancement projects. This problem is further magnified when such projects are to be established on land already under cultivation. Although producers may be willing to enhance habitat on unused areas in meeting their stewardship obligations, the land ethic alone generally is not sufficient to ensure such investments on production areas. To encourage establishment of wildlife habitat on production areas, research, and management recommendations must reduce outcome uncertainty and financial risk while providing compelling economic arguments (Morris et al. 1996).

THE MARKET FOR WILD QUAIL HUNTING OPPORTUNITIES

Originally a marketing research tool, Conjoint Analysis (CA) is an extension of the closed-ended

Contingent Valuation (CV) econometric method. Instead of respondents being asked to value a change in one attribute of an environmental good, CA asks respondents to value two or more goods, each comprised of bundles of attributes, where price is one of the attributes.

CA is superior to traditional CV in terms of informational efficiency because several attributes are allowed to vary at once. Because price is one of the attributes, information is collected simultaneously about the marginal values of several attributes. Here "marginal" refers to the incremental increase in value resulting from the consumption of one more unit of an attribute. The marginal rate of substitution between a pair of attributes, where one of the attributes is price, represents the marginal willingness-to-pay (WTP) for the other attribute. Once the marginal utility from consumption and marginal WTP for each attribute have been identified, predictions can be made as to respondents' preferences and expected WTP for new combinations of the attributes. This information provides landowners with the ability to predict what prices the market will bear for recreational access, such as leases for quail hunting.

A mail survey of 2,422 quail hunters in North Carolina was used to identify hunters' marginal WTP for 8 attributes comprising the quail hunting experience. Although more than 8 attributes surely exist, consensus among participants in focus groups narrowed the investigation to the 8 most definitive attributes, which included (1) type of cover on the land; (2) number of covey contacts/day; (3) whether a guide was present; (4) access fee/day to hunt the site; (5) number of hunters present not in the respondent's own party; (6) size of the site in acres; (7) how many minutes the site was from the respondent's home; and (8) whether the site could be hunted legally on Saturday and Sunday or just on Saturday.

The values obtained from the survey can be used to construct an economic analysis of investments in field border systems on production grain farms in eastern North Carolina. Projections of hunter WTP for 2 quail hunting scenarios are made. Anticipated hunting lease income is based upon two hunter days. It is assumed that the ecological response of bobwhite quail to the 15-foot and 30-foot field borders will be 2 coveys and 4

coveys respectively. A corn price of \$3.30/bushel represents the average 1997 market price in the lower coastal region. Enterprise budgets for this region were obtained from the North Carolina Cooperative Extension Service, from which we calculated a net crop profit of \$55.35/acre. A \$50/acre green payment for field border establishment was assumed to be available from the state soil and water conservation incentive program.

Costs to maintain the field border areas are based upon use of the Weed Sweep technology (Anderson et al. 1996). The Weed Sweep is a tractor-mounted herbicide wiping device that can economically and selectively remove undesirable vegetation from many different noncrop areas such as field borders. At an operating cost of \$33.85/acre, this represents the cost of preventing the establishment of woody vegetation in the field borders; a primary concern among producers. In other words, this is the cost of maintaining an early successional structure in field border habitats to provide for optimal quail benefits. The opportunity cost of lost crop production is based upon actual yield figures. Satellite-guided precision farming technology and combine sampling were used to analyze corn yields at field edges. Combine sampling involved cutting consecutive passes in from the field edge and weighing the grain harvested from each pass in a motorized weigh wagon. In Wilson County in the upper coastal region, average yield in the first 15

feet of field edge was 99.3 bushels/acre. In the next 15 feet (i.e., 15 to 30 feet in from the field edge), average yield was 131.6 bushels/acre (Table 1). Given the parameters assumed, the break-even number for this investment decision is 118 bushels of corn/acre. Thus, on areas where production is below 118 bushels/acre, investments in field borders should generate positive returns. On areas above 118 bushels/acre, losses will result.

Although this analysis provides a concise guideline for determining when the field border/quail lease investment should be undertaken from a profitability perspective, it does not include considerations of social and cultural factors that may affect the investment decision.

SOCIAL AND CULTURAL BARRIERS TO FIELD BORDER ADOPTION

Despite the clear economic incentives demonstrated for establishment of field border systems and the sale of quail hunting leases, many landowners are unwilling to make such investments. Data on hunter willingness to pay (WTP) and crop yield distributions reduce financial risk and studies of quail response to field border systems decrease outcome uncertainty. However, case study interviews with landowners

Table 1. Net returns from field border investments using actual 1997 corn yields in Wilson County, NC.

	15- Foot Border	30- Foot Border
Acres	3.6	7.1
Bushels/acre	99.3	115.36
Quail lease income	\$231.38	\$486.54
Lost crop income	(\$71.54)	(\$518.54)
Weed Sweep cost	(\$120.84)	(\$240.34)
Green payment	\$178.50	\$355.00
Net Gain	\$217.50	\$82.66

This figure represents the average yield/acre throughout the 30-foot border when yield in the first 15 feet was 99.3 bushels/acre and 131.6 bushels/acre in the next 15 feet.

revealed other social and cultural factors that deter adoption of this investment opportunity.

Landowners who were interviewed believed most quail hunters willing to pay high lease amounts would be located in the larger cities of the state. In addition, landowners were reluctant to lease their lands to individuals from outside the community and to the detriment of local hunters. Some based this reluctance on long-standing relationships with friends and neighbors whereas others expressed concern about damage and vandalism from locals expelled from their traditional hunting grounds.

Another important issue in the landowners' reluctance is the prevalence of deer hunters and deer hunting clubs within their communities. As deer populations have flourished during recent years, so have the number of deer hunters. Consequently, hunting areas once utilized by quail hunters are now extensively leased by well-organized deer hunting clubs. This serves to strengthen the hold of local hunters on these areas.

Finally, some landowners stated they would not be willing to lease their land to anyone just to avoid these issues and other problems, such as liability, excessive noise, and littering. Others wanted to save their land for use by only themselves and their families.

CONCLUSION

If producers and landowners are to adopt environmentally beneficial practices, there needs to be compelling economic arguments to do so. Popular sources for these incentives have been income opportunities available from sportsmen and other recreationists. When the costs of these investments are assessed precisely and the benefits quantified, compelling economic arguments can be made. Economic returns may be optimized on conservation investments on production lands by carefully and accurately analyzing investment opportunities. When all such opportunities are considered, and all possible incomes from recreational access fees, cost saving technologies, and government conservation incentives are included, the diversification, returns, and risk structure of the farm portfolio can be improved.

The importance of social and cultural factors in these investment decisions must not be overlooked. At times, compelling economic arguments alone may not ensure that investments will be undertaken. Although compelling economic arguments often are necessary, they may not be sufficient for diversification of producer investments in the land-based asset portfolio.

Such factors should be considered carefully, and on a regional basis, when developing income opportunities or economic incentives for conservation practices on private lands.

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Using Farm Bill Programs to Improve Natural Resources Conservation, Recreational Opportunities, and Land Values

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Abstract: The Federal Agriculture Improvement and Reform Act of 1996 was signed into law as the most sweeping Farm Bill in history. The law reformed older programs enacted as far back as the 1930's and consolidated others that focused on improving the performance of the nation's investments in private land conservation. The new programs the 1996 Farm Law created were not designed to generate recreational opportunities or increased land values. The overarching purpose was natural resource conservation, however, their potential effects on recreation and land values can be enormous.

Keywords: farm bill, benefits, conservation, cost-share, Natural Resources Conservation Service

INTRODUCTION

The Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS), is the lead Federal agency that addresses the conservation needs on the nation's private land. The private land base of the Nation covers nearly 70 percent of the United States, excluding Alaska. NRCS serves the citizens of all 50 States, Puerto Rico, the U.S. Virgin Islands, and the U.S. affiliated Pacific Islands. NRCS combines the authorities of the former SCS with new authorities delegated by the Secretary through the Federal Agriculture Improvement and Reform Act of 1996 (FAIR) resulting in 16 technical and financial assistance programs for natural resources conservation.

Today, many private land owners are making conservation improvements and adding alternative enterprises, such as recreation, to their farm or ranch. They use their resources in many different ways to increase income and enhance land values. Communities are also developing businesses to help their economic sustainability. Conservation of natural resources is becoming more important for sustained multiple resource use. Societal values are also changing. Individuals are conserving the natural uses of their land while also enjoying and participating in outdoor

activities involving these resources. Natural resources conservation, recreation opportunities and land values are linked in almost every aspect. Conservation improves the resource health which generates better and more diverse use options that yield better recreation experiences and results in an increase in "natural resources income opportunities". This is especially true in rural counties and in metropolitan counties.

NRCS provides technical and financial assistance to landowners and the public to protect, conserve, and enhance soil, water, air, plant, and animal resources. The technical assistance is provided through a voluntary approach to achieve the goals and objectives of the landowner. It is through voluntary stewardship of the land that farmers and ranchers, not only produce food and fiber but fish and wildlife and their associated habitat as well as clean, pure water for their downstream neighbors.

However, the generation of recreational opportunities and land values enhancement are not co-equal objectives of the 1996 law. The positive benefits resulting from conservation investments do affect recreation and land values as secondary or tertiary outcomes. This paper analyzes how the 1996 Farm Bill yields natural resources conservation benefits and also its implicit impacts on recreation and land values.

Potential Conservation and Recreation Benefits from the 1996 Farm Bill

The Conservation Title of the 1996 Farm Bill helps private land owners improve natural resource health. Healthy natural resources can generate recreation and other benefits through increased opportunities for

- hunting
- fishing
- hunting
- bird watching
- hiking
- swimming
- improved scenic views

Table 1 describes how each farm bill program benefits natural resources conservation and increase income opportunities.

USDA technical assistance is available for all 1996 Farm Bill programs. In addition, cost sharing that is available to assist the private landowner with installing approved, cost-effective practices. Many states and local communities also provide cost-share assistance to improve the natural resources.

Because the farm bill programs are so new, sufficient data is not yet available to address the land value component of this matrix. However, we do know this, many farmers are installing higher cost conservation practices such as animal waste facilities. The practices add value to the property affected and reduces the risks of pollution violations.

1996 Farm Bill

Legislatively, the 1996 Farm Bill was not authorized to generate recreational opportunities or enhance land values. The 1996 Farm Bill was formulated to improve natural resources conservation by targeting public investments to priority areas; to maximize the environmental benefit per dollar expended; to insure that problems resulting from livestock were fully addressed; and to capitalize on the best attributes from the former conservation program.

The 1996 Farm Bill has been called a "Commitment to Conservation." This Bill has

been heralded as the most progressive environmental farm bill to date. The conservation provisions in the 1996 Farm Bill will affect farmers and the land they own or operate well into the next century. The new provisions of the 1996 Law build on the conservation gains made by landowners over the past decade. They simplify existing programs and create new programs to address high priority environmental protection goals.

The farm bill authorizes more than \$2.2 billion in additional funding for conservation programs, extends the Conservation Reserve Program and Wetland Reserve Program, and creates new initiatives to improve natural resources on America's private land. Here is a summary of some of the key provisions:

- The new Environmental Quality Incentives Program (EQIP) consolidates the functions of four older conservation programs into one and focuses assistance to locally-identified conservation priority areas or areas where agricultural improvements will help meet water quality goals. In fiscal year 1996, \$130 million was made available. The program is funded currently at \$200 million annually. The Administration proposes in it 1999 Budget to increase funding to \$300 million. Funds pay for technical assistance and cost-sharing on conservation practices. Fifty percent of the funds are dedicated to conservation associated with livestock operations.
- The popular Conservation Reserve Program (CRP) protects highly erodible and environmentally sensitive lands with grass, trees, and other long-term cover. This is a voluntary program that offers annual rental payments and cost-share assistance to establish approved cover on eligible cropland. The program has a statutory limit of nearly 36 million acres.
- The popular Wetlands Reserve Program (WRP) was extended through 2002. Changes provide landowners more options for protecting wetlands and highly erodible lands. In the Wetlands Reserve Program, landowners will now be able to choose either permanent or 30-year easements, or restoration only cost-

share agreements. The program enrollment is limited to 975,000 acres.

- A new Farmland Protection Program (FPP) will provide up to \$35 million to help farmers preserve their land in agriculture. The program provides assistance to states with existing farmland protection programs to purchase conservation easements. The program enables working farms to exist near cities.
- Current Swampbuster and wetlands provisions from the 1985 and 1990 Farm Bills were modified to provide farmers with more flexibility to meet wetland conservation compliance requirements. Changes include expanding areas where mitigation can be used, allowing mitigation by restoration, enhancement or creation, and changing the abandonment clause.
- The new Wildlife Habitat Incentives Program (WHIP) provides \$50 million to help landowners improve wildlife habitat on private lands. Most of the improved habitat will occur on upland areas.
- Conservation Compliance (CC) was changed to direct USDA employees who are providing on-site technical assistance to notify landowners if they observe potential compliance problems. Landowners will have up to one year to take corrective action. Farm Service Agency County Committees are authorized to provide relief in cases of economic hardship.
- A new Conservation Farm Option (CFO) was created for producers of wheat, feed grains, upland cotton, and rice who are eligible for Agriculture Market Transition Contracts. Under this pilot program, landowners may consolidate their CRP, WRP, and EQIP payments into one annual payment. The participants was created for producers of wheat enter into a 10-year contract and agree to adopt a conservation farm plan.
- The Forestry Incentives Program (FIP) which was originated in 1978 to share up to 65 percent of the costs of tree planting, timber stand improvements, and related practices on

nonindustrial private forest lands. FIP's forest maintenance and reforestation provide numerous natural resources benefits, including reduced wind and soil erosion and enhanced water quality and wildlife habitat as well as helping to assure a reliable future supply of timber. Improving timber stands, which help to sequester greenhouse gases, also contributes to the President's Climate Change initiative.

Conservation Farm Option

The Conservation Farm Option (CFO) is a pilot program for producers of wheat, feed grains, cotton, and rice. The program's purposes include conservation of soil, water and related resources, water quality protection and improvement, wetland restoration, protection and creation, wildlife habitat development and protection, or other similar conservation purposes. Eligibility is limited to owners and producers who have contract acreage enrolled in the Agricultural Market Transition Act program, i.e., production flexibility contracts. The CFO is a voluntary program. Participants are required to develop and implement a conservation farm plan. The plan becomes part of the CFO contract which covers a ten year period. CFO is not restricted as to what measures may be included in the conservation plan, so long as they provide environmental benefits. During the contract period the owner or producer (1) receives annual payments for implementing the CFO contract and (2) agrees to forgo payments under the Conservation Reserve Program, the Wetlands Reserve Program, and the Environmental Quality Incentives Program in exchange for one consolidated payment.

Conservation Reserve Program (CRP)

CRP is a program which offers annual rental payments, incentive payments for certain activities, and cost-share assistance to establish approved cover on eligible cropland. The program encourages farmers to plant long-term resource conserving covers to improve soil, water, and wildlife resources. Offers for CRP contracts are ranked according to the Environmental Benefits Index (EBI). The Natural Resources Conservation Service collects data for each of the EBI factors,

based upon the relative environmental benefits for the land offered. Bids are then ranked in comparison to all other bids offered and selections made from that ranking. Ten to 15 year contracts are made with eligible producers.

To be eligible to be placed in CRP, land must be cropland that is planted or considered planted to an agricultural commodity 2 of the 5 most recent crop years; acreage enrolled in the Water Bank Program; or marginal pastureland suitable for use as a riparian buffer to be planted to trees. In addition to the eligible land requirements, cropland must have an erosion index of 8 or higher or be subject to highly erodible land conservation compliance provisions; be considered a cropped wetland; be subject to scour erosion, be located in a national or State CRP conservation priority area; be cropland associated with or surrounding non-cropped wetlands, or be devoted to the environmental practices, such as riparian buffers, filter strips, grass waterways, shelter belts, and wellhead protection areas. Producer eligibility requirements include an applicant must have owned or operated the land for at least 12 months; the new owner inherited the land; the ownership changed as a result of a foreclosure; or the circumstances of the acquisition present adequate assurance that the new owner did not acquire the land for the purpose of placing it in CRP.

Program participation is voluntary. The applicant applies at the local USDA service center during appropriate sign-up periods which are announced. Continuous CRP sign-up is offered for acreage devoted to certain special conservation practices such as riparian buffers, filter strips, grassed waterways, shelter belts, living snow fences, contour grass strips, salt tolerant vegetation, and shallow water areas for wildlife. These areas are not subject to competitive bidding and may be enrolled at anytime.

Rental rates are based on relative productivity of soils within each county and the average of the past three years of dryland cash rent or the cash rent equivalent. Producers may offer land at that rate or may bid a lower rental rate to increase the likelihood that their offer will be accepted. In addition, a landowner or operator may receive additional financial incentives of up to 20 percent of the annual payment for certain continuous sign-

up practices. Restoration of wetlands is encouraged by offering an incentive equal to 25 percent of the costs incurred. This is in addition to the 50 percent cost-share provided to establish approved cover.

Environmental Quality Incentives Program (EQIP)

EQIP is a program which helps farmers and ranchers install enduring natural resources conservation and pollution abatement practices. The program provides technical, educational, and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resources on their lands in an environmentally beneficial and cost effective manner. The purposes of the program are achieved through implementation of a conservation plan which identifies the structural, vegetative, and land management practices which will be applied on the eligible land. Five to ten year contracts are made with eligible producers. The program is carried out primarily in priority areas that may be watersheds, regions of multi-state areas, and for significant statewide natural resources concerns that are outside of geographic priority areas.

Individual/family farmers and ranchers who face serious threats to soil, water, and related natural resources, or who need assistance with complying with Federal and State environmental laws. A participant may be an owner, landlord, operator, or tenant of eligible agricultural lands. Eligible agricultural land may include tribal, allotted, or Indian trust land. Limited resource producers, small-scale producers, producers of minority groups, Federally-recognized Indian tribal governments, Alaska natives, and Pacific Islanders are encouraged to apply.

Program participation is voluntary. The applicant applies at the local USDA service center. Applications may be filed at any time during the year. The participant develops and submits a conservation plan for the farm or ranching unit of concern. The participant's conservation plan serves as the basis for the EQIP contract. Technical assistance, educational assistance, and cost-share or incentive payments may be provided to apply the needed conservation practices and land use adjustments within a time schedule

specified by the conservation plan. A contract with a participant may apply one or more land management practices or one or more structural or vegetative practices or both.

Structural and vegetative practices can be funded by cost sharing up to 75 percent of the total cost of establishing the practice. Incentive payments can be made for land management practices in an amount and rate that NRCS determines is necessary to encourage a participant to perform the practice that would not otherwise be initiated without government assistance. Other practices may be required to be installed without program payments. The contract period is between 5 to 10 years, depending on the conservation systems that need to be applied. Obligations for assistance are tied to the schedule for applying conservation practices included in the conservation plan used as the basis for the contract. Payments are made when the participant and NRCS certify that a conservation practice is completed in accordance with the contract.

Technical assistance is provided in conservation planning for eligible participants. Educational, technical, and financial assistance is provided for implementation of structural, vegetative, and land management conservation practice. Fifty percent of the funding available nationally for technical, cost-share payments, incentive payments, and education will be targeted at practices relating to livestock production. Cost-share and incentive payments are limited to \$10,000 per person per fiscal year and to \$50,000 any contract. With regards to contracts on tribal land, Indian trust land, or BIA allotted land, payments exceeding the above limitation may be made to the tribal venture if an official of the BIA or tribal official certifies that no one person directly or indirectly will receive more than the limitation. Expenditures under a contract entered into during a fiscal year will not be made to the participant until the subsequent fiscal year.

Forestry Incentives Program (FIP)

FIP helps landowners install practices such as tree planting, timber stand improvements, and other related practices on nonindustrial private forest lands. This program provides technical and financial assistance to eligible landowners to

assure a reliable future supply of timber, while at the same time reduce wind and soil erosion and enhance water quality and wildlife habitat. The purposes of the program are achieved through implementation of a forest management plan. This program is a nationwide program available in counties designated on the basis of a Forest Service survey of total eligible private timber acreage that is potentially suitable for production of timber products.

To be eligible for cost-share assistance, a landowner must

- Own no more than 1,000 acres of eligible forest land capable of producing at least 50 cubic feet of wood per acre per year. In the public interest, the NRCS State Conservationist, with the State Forester's concurrence may grant an exception for larger acreage;
- Be a private landowner or nonindustrial forest;
- Be individuals, groups, associations, or corporations whose stocks are not publicly traded, provided they are not primarily engaged in the business of manufacturing forest products or providing public utility services;
- Forest landowners who manufacture forest products on a part-time or irregular basis;
- Have land that is suitable for one of the following:
 - Afforestation;
 - Reforestation of cutover and other nonstocked and understocked forest land; or
 - Intensive multipurpose management and protection of forest resources.

Program participation is voluntary. The landowner requests FIP cost-share at the NRCS office. Applications may be filed at any time during the year.

Tree planting; improving a stand of forest trees; and site preparation for natural regeneration can be funded by cost sharing up to 65 percent. The maximum payment limitation is \$10,000 per individual per fiscal year. Technical assistance is provided by the State Forester in developing a forest management plan. The State Forestry agency must certify that the project has been

completed satisfactorily before cost-share payments can be made.

Wildlife Habitat Incentives Program (WHIP)

The WHIP is a voluntary program for people who want to develop and improve wildlife habitat primarily on private lands. It provides both technical assistance and cost-share payments to help establish and improve fish and wildlife habitat.

Participants who own or control land agree to prepare and implement a wildlife habitat development plan. The Natural Resources Conservation Service (NRCS) provides technical and financial assistance for the establishment of wildlife habitat development practices. In addition, if the landowner agrees, cooperating State wildlife agencies and nonprofit or private organizations may provide expertise or additional funding to help complete a project.

Participants work with NRCS to prepare a wildlife habitat development plan in consultation with the local conservation district. The plan describes the participant's goals for improving wildlife habitat, includes a list of practices and a schedule for installing them, and details the steps necessary to maintain the habitat for the life of the agreement. This plan may or may not be part of a larger conservation plan that addresses other resources needs such as water quality and soil erosion.

NRCS and the participant enter into a cost-share agreement for wildlife habitat development. This agreement generally lasts from 5 to 10 years from the date the agreement is signed.

Cost-share payments may be used to establish new practices or replace practices that fail for reasons beyond the participant's control.

All lands are eligible for WHIP, except for

- Federal lands;
- land currently enrolled in Waterbank, Conservation Reserve Program, Wetlands Reserve Program or other similar programs;
- lands where the expected impacts from on-site or off-site conditions make the success of habitat improvement unlikely.

WHIP is currently budgeted for \$50 million through the year 2002.

WHIP funds are distributed to States based on State wildlife habitat priorities which may include wildlife habitat areas, targeted species and their habitats, and specific practices. WHIP may be implemented in cooperation with other Federal, State, or local agencies, conservation districts, or private conservation groups. State priorities are developed through a locally led process to identify wildlife resources needs and finalized in consultation with the State Technical Committee.

For more information about WHIP, ask NRCS, the Cooperative Extension Service, or your local conservation district. Your local USDA Service Center is listed in the telephone book under U.S. Department of Agriculture. Information is also available on NRCS's World Wide Web site.

Wetland Reserve Program (WRP)

The Wetlands Reserve Program (WRP) is a voluntary program to restore and protect wetlands on private property. It is an opportunity for landowners to receive financial incentives to enhance wetlands in exchange for retiring marginal agricultural land. Congress authorized WRP under the Food Security Act of 1985, as amended by the 1990 and 1996 Farm Bills. The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) administers the program in consultation with the Farm Service Agency (FSA) and other federal agencies. Check with your local USDA Service Center or conservation district office for the sign-up schedule in your state.

Landowners who choose to participate in WRP may sell a conservation easement or enter into a cost-share restoration agreement with USDA to restore and protect wetlands. The landowner voluntarily limits future use of the land, yet retains private ownership. The landowner and NRCS develop a plan for the restoration and maintenance of the wetland. The program easements, and restoration cost-share agreements of a minimum 10-year duration.

Permanent Easement

This is a conservation easement in perpetuity. Easement payment will be the lesser of the agricultural value of the land, an established payment cap, or an amount offered by the landowner. In addition to paying for the easement, USDA pays 100 percent of the costs of restoring the wetland.

30-Year Easement

This is a conservation easement lasting 30 years. Easement payments are 75 percent of what would be paid for a permanent easement. USDA also pays 75 percent of restoration costs.

Restoration Cost-Share Agreement

This is an agreement (generally for a minimum of 10 years in duration) to reestablish degraded or lost wetland habitat. USDA pays 75 percent of the cost of the restoration activity. This does not place an easement on the property. The landowner provides the restoration site without reimbursement.

Other agencies and private conservation organizations may provide additional assistance for easement payment and wetland restoration costs as a way to reduce the landowner's share of the costs. Such special partnership efforts are encouraged.

To offer a conservation easement the landowner must have owned the land for at least 1 year prior to enrolling the land in the program unless the land was inherited or the landowner can prove the land was not obtained for the purpose of enrolling it in the program. To participate in a restoration cost-share agreement, the landowner must show evidence of ownership. The land must be restorable and be suitable for wildlife benefits. Eligible land includes: wetlands farmed under natural conditions; farmed wetlands; prior converted cropland; farmed wetland pasture; farmland that has become a wetland as a result of flooding; rangeland, pasture, or production forest land where the hydrology has been significantly degraded and can be restored; riparian areas which link protected wetlands; lands adjacent to protected wetlands that contribute significantly to wetland functions and values; and previously restored wetlands (Conservation Reserve Program [CRP] land is eligible if it meets WRP requirements).

Ineligible land includes wetlands converted after December 23, 1985; lands with timber stands established under a CRP contract; Federal lands; and lands where conditions make restoration impossible.

A landowner continues to control access to the land—and may lease the land—for hunting, fishing and other undeveloped recreational activities. At any time, a landowner may request that additional activities be evaluated to determine if they are compatible uses for the site. This request may include such items as permission to cut hay, graze livestock or harvest wood products. Compatible uses are allowed if they are fully consistent with the protection and enhancement of the wetland.

Additional information on WRP is available from USDA Service Centers, State Cooperative Extension offices, and local conservation districts.

The WRP will have an enrollment cap of 975,000 acres. Program changes provide more flexibility and help landowners work toward a goal of no net loss of wetlands.

The revised WRP:

- Requires that, beginning October 1, 1996, one-third of total program acres be enrolled in permanent easements, one-third in 30-year easements, and one-third in restoration only cost-share agreements. Individuals may choose the category for their eligible land.
- Stipulates that effective October 1, 1996, no new permanent easements may be enrolled until at least 75,000 acres of temporary easements have entered the program.
- Provides landowners with 75 percent to 100 percent cost-sharing for permanent easements, 50 percent to 75 percent for 30-year easements, and 50 percent to 75 percent for restoration cost-share agreements. Cost-sharing will help pay for restoration.

Farmland Protection Program

The farmland protection program was authorized by the 1996 farm bill to enable the Secretary of Agriculture to assist state, local and tribal units of government in purchasing development rights to protect agricultural land. Funds are used to match

the cooperating entity with existing programs and with pending offers in agricultural areas that are under threat to conversion to non-agricultural uses. Applications are made through a request for proposals.

SUMMARY

The Nation's private lands constitute a tremendous resource that yields food and fiber as well as the livelihood and recreation for private land users. These lands also produce hunting opportunities, places for all kinds of flora and fauna to live and views of the landscape where farms reach forests fields, reach streams and lakes. These lands also produce abundant supplies of clean water and fresh air.

The 1996 Farm Bill goal is for the continued enhancement and long-term sustainability for soil, water, air, plants, animal, and humans. To private landowners interested in increasing their income opportunities from their lands, this means they must continue to improve their resources through direct or indirect effects of conservation systems applied to the land.

The benefits of using the Farm Bill programs to improve natural resources conservation, recreational opportunities, and land values are multi-faceted, including sustained and improved agricultural productivity; cleaner, safer, and more dependable water supplies; reduced damages caused by floods and other natural disasters; and an enhanced natural resources base to support continued economic development for the private landowner and the community.

Table 1. Farm Bill Program Benefits and Effects on Recreational Opportunities and Land Values

1) ENVIRONMENTAL QUALITY INCENTIVES PROGRAM (EQIP)

Natural Resources Conservation Benefits:

- Reduced erosion and sediment loads
- Increased productivity and wildlife habitat
- Savings in municipal water treatment costs
- Lower uses of chemicals and synthetic fertilizers
- Improved surface and subsurface water quality
- Reduction of carbon gases contributing to the greenhouse effect
- Avoidance of risks of contaminants entering surface rivers, lakes, and streams, and also ground water

Note: On-site benefits were estimated to be \$47.3 million annually (EQIP Benefit-Cost Analysis (BCA), 1997)

Recreational Opportunities:

- Enhanced freshwater and marine fishing
- Improved swimming and boating opportunities
- Enhanced wildlife habitat for hunting, bird watching, etc.

Private Landowner's Benefits*:

- Animal waste storage units*
 - Filter strips*
 - Diversions, terraces, waterways*
 - Forestry management practices*
 - Nutrient management practices
-

2) CONSERVATION FARM OPTION (CFO)

Note: The present value of the expected on-site and off-site benefits is expected to equal \$438.1 million until 2002 (CFO draft BCA, 1997). It should be noted that benefits from the CFO that would extend beyond the life of the contract were not included in the CFO analysis.

Natural Resources Conservation Benefits:

- Reduced erosion and sediment loads
- Increased productivity and wildlife habitat
- Savings in municipal water treatment costs
- Lower uses of chemicals and synthetic fertilizers
- Improved surface and subsurface water quality
- Reduction of carbon gases contributing to the greenhouse effect
- Avoidance of risks of contaminants entering surface rivers, lakes, and streams, and also ground water

Recreational Opportunities:

- Enhanced freshwater and marine fishing
- Improved swimming and boating opportunities
- Enhanced wildlife habitat for hunting, bird watching, etc.

Private Landowner's Benefits*:

- Animal waste storage units
 - Filter strips
 - Diversion, terraces, waterways
 - Forestry management
 - Nutrient management practices
-

3) CONSERVATION RESERVE PROGRAM (CRP)

Immediate Natural Resources Conservation Benefits:

- Improved surface and subsurface water quality
- Saved water resources
- Lower uses of chemicals and synthetic fertilizers
- Reduced erosion and sediment loads
- Improved fish and wildlife habitat
- Reduction of carbon gases contributing to the greenhouse effect
- Flood and storm water protection
- Lower uses of chemicals and synthetic fertilizers
- Improved soil tilth
- Reduction of pest infestations

Recreational Opportunities:

- Enhanced wildlife habitat for hunting, bird watching, etc.
- Enhanced freshwater and marine fishing
- Improved swimming and boating opportunities

Private Landowner's Benefits*:

- Filter strips*
 - Riparian buffers*
 - Tree planting*
-

4) FORESTRY INCENTIVES PROGRAM (FIP)

Immediate Natural Resources Conservation Benefits:

- Reduced soil erosion and sediment loads
- Improved water quality
- Enhanced wildlife habitat
- Reduction of carbon gases contributing to the greenhouse effect

Recreational Opportunities:

- Enhanced wildlife habitat for hunting, bird watching, etc.
- Enhanced freshwater and marine fishing
- Improved swimming and boating opportunities

Private Landowner's Benefits*:

- Tree planting
 - Reforestation
 - Timber stand improvement
-

5) FARMLAND PROTECTION PROGRAM (FPP)

Note: The FPP Benefit Cost Analysis did not quantify the benefits of FFP.

Immediate Natural Resources Conservation Benefits:

- Farmland - "a superior alternative to developed uses" (Farmland Protection BCA, 8/7/96)
- Enhanced wildlife
- Improved water quality
- Reduced soil erosion and sediment loads

Recreational Opportunities:

- Enhanced wildlife habitat
- Enhanced scenic landscapes
- Increased bird and wildlife watching opportunities compared to other developed uses

6) WETLAND RESERVE PROGRAM (WRP)

Improved Natural Resources Conservation Benefits:

- Improved water quality
- Flood and storm water protection
- Reduction of carbon gases contributing to the greenhouse effect
- Improved fish and wildlife habitat
 - Fish & Shellfish (\$45-\$92/acre)
 - Waterfowl (\$234/acre)
 - Mammal & Reptile (\$17/acre)
- Improved habitat for threatened and endangered species
- Improved habitat for declining wildlife populations that would otherwise be listed as threatened or endangered
- Reduction of pest infestations
- Protection and enhancement of open space and aesthetic quality
- Flood conveyance (\$267/acre, annually)
- Reduced erosion and sediment loads (\$.62/acre, annually)

Note: Estimates from WRP Benefit Cost Analysis, 7/24/96)

Recreational Opportunities:

- Enhanced freshwater and marine fishing
- Improved swimming and boating opportunities
- Enhanced wildlife habitat for hunting, bird watching, etc.

Private Landowner's Benefits*:

- Wetland construction & restoration
- Wildlife habitat enhancement

7) WILDLIFE HABITAT INCENTIVES PROGRAM (WHIP)

Immediate Natural Resources Conservation Benefits:

- Improved water quality
- Improved habitat for threatened and endangered species
- Improved habitat for declining wildlife populations that would otherwise be listed as threatened or endangered
- Reduction of nuisance populations
- Reduction of pest infestations

Recreational Opportunities:

- Enhanced freshwater and marine fishing
- Improved swimming and boating opportunities
- Enhanced wildlife habitat for hunting, bird watching, etc.

Private Landowner's Benefits*:

- Wildlife habitat enhancement
- Wetland construction
- Tree & shrub planting
- Seeding

*** Practices which may receive Federal cost-share.**

Developing A Fee Fishing Operation: From Idea to Reality

SAMUEL COOL, fee fishing operation owner and fruit farmer, 14425 Edgemont Road, Smithsburg, MD 21783

Abstract: Starting a fee fishing operation with minimal investment has proven a good experience and provided an increasing amount of income as the years progress. It takes time to work out the problems and develop a clientele. This paper provides a personal experience for those interested in pursuing this aspect of aquaculture.

Keywords: fee fishing, pay-to-fish, aquaculture, trout

INTRODUCTION

I was born and raised on the 100-acre farm I now operate my business. The farm was established in 1878 and has been in the family ever since. I left the farm after high school to go into the military and after working a number of different jobs, I came back and took over the farm in 1975. Our main business is growing apples, some peaches, as well as some small fruits and other miscellaneous crops. For the first two years we had decent crops, but this was followed by two years of back-to-back freezes, which was unusual according to my dad. The farm has a unique upper slope location with a beautiful view near the Maryland / Pennsylvania line at the northern end of the Blue Ridge Mountains

The pond on the farm is about an acre in size and was built by the Soil Conservation Service in the mid-1940's. It has been used primarily for occasional irrigation and recreation. The characteristics of the pond make it very adaptable for growing fish. It is 15 feet deep, spring fed, clear, and has never gone dry. The pond is on the edge of the orchard that has been in constant use for decades.

Our kids developed a bad habit of eating a lot so we toyed with the idea of raising fish for the family. There has always been trout in the pond so it seemed reasonable they could do well. We built some cages in 1989 to raise fish for the family and hopefully to sell to local restaurants. I quickly

found out that what I could produce was too little to supply a local market and the marketing required was too difficult, since I had no experience in that area.

I decided to release the fish, sink the cages, and get into the fee fishing business. Many people thought I was crazy because there were no such operations around here. The closest operation was about 50 miles away in West Virginia, with no operations in Maryland or nearby Pennsylvania. To me, the lack of any nearby competitors was a real advantage.

When I started considering raising fish I contacted the Cooperative Extension Service and worked with a regional Extension specialist. He tested the water, provided some ideas, and supplied publications on fee fishing from other states. The three things I learned from reading all this material helped me as the business developed. First, to be successful you need to be a people person. Second, the best way to advertise is by word-of-mouth. Third, you need a good sign along the road to attract interest and a place to park.

The water test revealed that, even with the past herbicide use in the orchard beside and above the pond, there were no problems with the water quality. What we did find was an incredible source of high quality, high volume water coming from an underground aquifer in the mountain located above the pond. This knowledge made it

possible to build a smaller pond above the existing pond to expand the fishing operation.

WHAT TO CHARGE AND WHICH SPECIES TO STOCK

Deciding what to charge was difficult when we first started out in 1990. We started by charging \$3 a day and \$3 for each fish caught, but quickly found it was not enough to cover our costs and make a profit. Over the years we have raised the price to \$5 to fish and \$5 for each fish kept, which provides a good return. At first, we required that the fishermen had to keep all the fish caught. Since we kept the pond well-stocked, people ran out of money before they ran out of time. We changed our policy to allow catch-and-release, which allows people to fish all day if they please and keep the fish they want.

Overall, we have found the majority of customers are very careful with the fish they catch and when they are released, most survive. We have had more problems with catfish released than with trout because customers handle the fish much rougher. They are afraid they will get stung by the whiskers on the catfish. By the way, catfish whiskers do not sting, but it is hard to convince people of this fact. To maintain the catch-and-release policy and minimize injury, we are now going to require the use of a barbless hooks for all customers.

A big appeal of fee fishing to families and other customers is that they do not have to buy a state fishing license, since we stock the pond ourselves. If each customer had to buy a license in addition to the daily entrance charge and per fish charge, it would make it unaffordable as a family outing.

At first, we only stocked trout, but now we also stock catfish and some bass. The reason for stocking different species is to provide variety, but more important, to provide fish that will bite well during different seasons. We have found that trout will bite well in the spring and cooler weather, but they slow down in the summer. The catfish and bass will bite well in the hot summer months.

A major factor that determines which species you can stock is the maximum water temperature and water quality. To raise trout the pond water must

not rise above 65 degrees. Bass species are great sportfish but very expensive to purchase for stocking. I have also noticed that bass fisherman have an attitude. Most tend to have lots of equipment, plugs, and lures, and if they don't get what they expect they get irritable and can be hard to handle.

THE GOOD AND BAD SIDES OF FEE FISHING

The Good

A fee fishing operation can help diversify your income and provide a secondary source of income. As a fruit farmer with little cash flow throughout most of the year, the operation provides a steady income, especially in the spring and early summer when cash is tight. The spring and early summer is a good time to attract frustrated deer hunters and other sportsmen looking for something to do. As summer progresses the income becomes more steady and you get a more diverse range of customers.

If you like to talk and meet with people, like I do, then this enterprise is very attractive. If you have crafts, fruits, vegetables or other items to sell, customers provide a ready market outlet. As a fruit farmer with a small fruit stand or farmers market, we had difficulty getting people to our location because of the out-of-way location. Now we market our produce and other crafts in a 20-foot by 40-foot building we constructed by the pond. This supplements the sales of food and fishing-related items. One caution is to start out slow and carefully add items to be certain they are worth the trouble.

The Bad

A downside of this enterprise is the amount of time involved. We keep the pond open seven days a week - sunup to sundown. Initially, most of the fee fishing was on the honor system and we had few problems. When we started the business, we allowed night fishing, but this was too difficult to regulate. We do not allow fishing after sundown anymore.

A few years ago we built the farm market building so people now pay in that building when it is open. Still, the schedule ties you down and requires that someone be on-site or around the area to check on things. When you start considering your costs, you may have to pay someone to mind the store when you cannot be available.

You need to keep an eye on people bringing coolers with alcoholic drinks who may create a disturbance. We do not allow open alcoholic beverages at our pond. Another problem is people who catch fish and do not pay. While this has not been a big problem, it is necessary to keep an eye on customers around the pond with strings of fish and who you suspect may not pay. Believe it or not, you can tell the outlaws by the look on their face.

If we have a problem with a customer regarding behavior or payment, we ask them to leave and make it clear they are no longer welcome. Very seldom does this ever happen.

BEFORE INVESTING

Unless you have an existing pond with an acceptable water supply, it is unlikely that you can develop a fee fishing enterprise and make money. To build a new one-acre pond like ours today would cost about \$10,000-\$15,000, because of the heavy equipment, piping, etc. If you run the numbers, it is difficult to make this a worthwhile venture.

If you have a stream on your property, don't assume you can divert the water into a pond you wish to construct. There are people in jail and those paying high fines who also thought they could do this. There are strict state requirements regarding a water diversion of streams, and permits are required. Do your homework before you start making changes on the ground.

If you do have a pond that you are considering developing into a fee fishing enterprise, you have to check the water quality and quantity. The water must be tested for a number of factors that will influence the ability of fish to survive and thrive. Some of these factors include: minimum and maximum water temperature, dissolved oxygen

concentration, pH, nutrients, chemical contamination, etc.

In general, conditions in the pond in the warmest part of summer or coldest part of winter will determine the ability of fish to survive. Water temperature is critical to determine the kind of fish you can raise. If you have a pond with decent water quality and the maximum temperature goes higher than 65 degrees, trout will probably not survive. Dissolved oxygen is also very critical, especially in the hot summer months. If it is lacking you may have to provide aeration and there are a number of options to accomplish this task. You also need a history of steady flow of water all year-round. Make sure your water source doesn't dry up in the summer. This can lead to water stagnation, increases in water temperature, decreased levels of dissolved oxygen, and other conditions that will kill fish. Chemical contamination can be a problem in areas with a historic use of pesticides.

If you are planning on making any water diversions or building any structure, you need to check on what permits are required. Regulations and requirements change with each state and locale.

ACCESS

If you are located off the main road like most people, you will need a parking lot or area. It is a good idea to offer wheelchair access for the disabled. You don't have to build expensive ramps and structures, just provide some way for the disabled to easily reach the pond. In our case, we allow a disabled person to drive his or her car around the back of the farm market to access the edge of the pond.

INSURANCE

Insurance is absolutely essential in this age of litigation. I carry a one million-dollar liability policy that is a rider on my conventional farm policy. If you are considering this type of enterprise, discuss it with your insurance agent to make sure he or she knows what you are doing, so there are no surprises if you have a problem. It never hurts to get a few estimates from different

insurers. If you have an existing farm operation, adding coverage for a fee fishing operation may be minimal. Otherwise, you may wish to contact some specialty insurance companies. There are a number of companies now that provide policy coverage for recreational enterprises.

MAINTENANCE

The purpose of maintenance is to keep the place clean, neat, and looking good to existing and new customers. People don't want to visit a place that is dirty and unkept. We mow regularly and have plenty of trash containers distributed around. If you have a parking lot, use gravel to reduce mud. A bathroom is essential and proper maintenance of the bathroom even more important. We have a porta-potty and clean it regularly.

SOURCE OF FISH

You should shop around your area for fish suppliers and get to know their prices, reliability of delivery, and quality of the fish. You will pay more to have fish delivered to your pond, but a great deal of time, effort, and risk is involved to pick the fish up yourself. If the supplier delivers the fish, you are guaranteed they will be alive when they arrive. If you pick up the fish, you accept this responsibility and the risk of mortality. While you can build a transport tank, there is considerable cost involved with the cost of the tank, aerator, and other gear.

One alternative to buying all your fish is raising some of them yourself in cages in the pond. An old swimming pool can be adapted to raise catfish and bass, but trout may be a problem due to the quick heating of the water volume. We plan on starting to experiment with raising some of our own fish. The returns can be attractive. For example, you can buy 100 trout fingerlings for about \$75, but a 16-inch trout costs about \$10. A fish is like a cat, it puts most of its growth on the first year, therefore, you can assess the return on your investment within a year.

THINK LIKE YOUR CUSTOMER: WHAT DO YOU SEE?

A good sign along the road and signs on the property that explain your charging policy are essential. While the meaning of the sign may be clear to you, it may not be clear to the customer. For example, we have a sign that says "fee fishing," and while this may seem clear, many visitors take a quick look and think that it says "free fishing." We have had people set up for a picnic and refer to our operation as the "free fishing place." We are now changing the sign to say "pay-to-fish" to avoid any confusion. The same situation can arise with the parking lot. You have to say "park here," otherwise people will park in the fields, the middle of access roads, or wherever they please.

For security reasons, it is best to have dusk-to-dawn lights to keep the area lighted and deter any vandalism or theft. We have had no problems.

WAYS TO IMPROVE INCOME

Anything you can sell or provide the customer beyond the basic entrance fee and cost per fish will increase greatly your profit margin. We rent rods purchased at yard sales, sell bait and tackle, and sell simple foods like hot dogs, sodas, candy, and fresh fruit, in season. We have been buying worms and reselling them for a good return. We now are experimenting with a compost pile made of old fruit and other waste. We plan on putting some red wigler worms in the pile. When people want to buy bait we will give them a cup, tell them to get the worms from the pile, and ask that they put the extras back when they leave.

We have made an effort to attract larger groups like the Boy Scouts and the Adult Day Care (people in wheelchairs) by providing discounts. This helps to maximize the pond use during slow times. We are also talking with a fly fishing instructor who runs a fly fishing school and wants to use our pond for teaching his customers.

KEEPING RECORDS TO SAY ON TOP OF BUSINESS

Keeping good records is essential for tax purposes, to see if you are making money, and to determine on what products you are getting your best return. Keep records on the number of fish stocked, fish purchased, the number of people fishing, as well as other costs and revenues. Costs include the cost of purchasing fish, bait, rental for a port-a-potty, electricity, and other costs. Also, you have to be realistic and expect some losses from fish that die, are stolen, and food items that are eaten by the help.

If you have to hire help outside your family, there are all kinds of employment regulations and laws that apply, and you need to really look at this seriously.

PRACTICAL CONSIDERATIONS

You have to be realistic about the income you can expect from a fee fishing enterprise. It will probably take about 2-3 years to show a profit and work out the problems with the operation. It takes time to build a clientele and add products, buildings, and marketing ideas.

You must be good with people and have a sense of humor to enjoy this business and the customers. It is important to stay on top of things, but you must avoid making people feel like they are being watched every minute. There is an element of trust involved.

Proper maintenance and keeping the place clean and appealing is very important to first-time customers and repeat customers. We use flower gardens and other means to dress up the building and grounds.

We have tried to keep our operation family-oriented. It is easy to appeal to people who want to party, drink, and carry on, but they probably will not contribute to a family atmosphere. One joy I have had is the opportunity to see little kids grow up. We have now been open for business about eight years and kids who fished at the pond with their dads are now coming back with their girlfriends. For families, where else can you go

with a family of three, pay \$15 and catch all the fish you want all day?

Overall, fee fishing has been a good way to diversify our income, sell the fruit from the farm, and the crafts we make. We are working toward making this our sole livelihood, but it is a slow process to find the things that work and provide the best return. We have learned that people will pay for a recreation experience before they buy other things.

Aquaculture Opportunities in the Mid-Atlantic and Northeast

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Abstract: Aquaculture is one of the fastest growing segments of agriculture in the U.S. and quickly is becoming a significant economic factor in the Northeast region. This session will focus on issues of importance for starting an aquaculture operation including aquaculture site evaluation, species selection, system design and business planning. Natural and personal resources needed to operate successfully an aquaculture facility will be detailed. Information on where to seek help and technical expertise in aquaculture production and marketing will be provided.

Keywords: aquaculture, water resources, aquatic species, aquaculture production systems, business planning

INTRODUCTION

Since the early 1990's, aquaculture has been one of the fastest growing segments of agriculture in the U.S. The explosion of growth in this new industry has been fueled by a variety of circumstances including increases in world population and fish and seafood consumption, decreases in commercial catches of fish and seafood due to declining ocean stocks, concerns over the safety and quality of commercially caught fish and seafood, and a growing awareness of the health benefits of adding more fish and seafood to the diet. Aquaculture production in the Northeast Region has been dominated since 1992 by oyster culture in Connecticut, and by the culture of Atlantic salmon and trout in sea cages on the coast of Maine. Hard clam aquaculture in Connecticut, Massachusetts, New Jersey, and New York provides significant economic impact to the region, as does trout production in Pennsylvania.¹

The aquaculture industry continues to develop rapidly in the Northeast due to the production of new and valuable species, advances in production system design and management practices, improving nutrition, and better disease control. Regardless of the advances the industry continues to make, however, there are still some basic principles that continue to frame the development of aquaculture. Today's discussion will center on these foundations of aquaculture - biology and

business. This session is designed to give new and prospective producers a shopping list of things to consider in preparing to start an aquaculture business. In particular, the session will focus on the issues of site evaluation, species selection, system design, and business planning and will conclude with a brief discussion of where to seek help.

AQUACULTURE SITE EVALUATION - WATER SOURCES

New aquaculture operations should begin with a careful evaluation of the proposed site. It is recommended that the prospective producer enlist the help of someone with aquaculture expertise to assist in the evaluation of this site. Aquaculture site evaluation should focus first on the water source, the fundamental resource needed for successful aquaculture. The water source that supplies a proposed site should be evaluated for quantity and quality before any further decisions are made about site development. Many different water sources may be used for aquaculture provided that they have the appropriate quality for fish culture and that they supply a steady quantity. Fresh water resources suitable for aquaculture may include springs, streams, ponds, wells, or rivers. Salt water resources can include coastal waters, bays and estuaries. Freshwater or marine organisms also can be grown in recirculating

aquaculture systems where salinity and other water quality parameters can be monitored and controlled. One of the most important steps in evaluating a potential aquaculture production site is to have the water source tested for the water quality parameters essential to successful aquaculture. A list of important basic parameters for fresh water aquaculture is provided (Table 1). Similar lists for saltwater also are available. Please note that certain water sources may require additional testing based on the characteristics on the individual sites. For instance, it is usually recommended that well water sources be tested for iron and sulfur. Marine culture operations need proper salinity. Influxes of fresh water may lower salinity and stress or kill the organisms in culture. Fouling organisms or predators may further complicate marine culture.² The need for additional water testing should be discussed during the initial site evaluation.

Table 1. Water Quality Parameters for Freshwater Aquaculture. An evaluation of a potential site for aquaculture should include testing for the following water quality parameters.

Parameter	Acceptable range
pH	6.0 - 8.0
Alkalinity (measured as CaCO ₃)	100 - 400 ppm
Total hardness	100 - 400
Carbon dioxide	0 - 15 ppm
Iron (Fe) - ferrous	Less than 0.1 ppm
Ammonia (NH ₃)	Less than 0.02 ppm
Nitrate (NO ₃)	0 - 3.0 ppm
Nitrite (NO ₂)	0.1 ppm

Because potential sites and water sources for aquaculture can differ widely, additional water quality testing may be required if the results of the above tests are within acceptable ranges. The standards listed above are only the very basic parameters needed to keep fish alive and healthy. Other recommended tests can include screening for heavy metals, organochlorine compounds, hydrogen sulfide, nitrogen gas and other contaminants depending on the nature of the individual site and water source. These tests generally are very expensive and should be conducted only if recommended after other aquaculture site evaluation criteria have been met successfully. For further information on water quality testing for aquaculture or for a listing of approved water quality testing laboratories, contact your local county Extension

A second aspect of the water source which is critical to the success of an aquaculture operation is the quantity of quality water available to supply the operation. The quantity of water available for aquaculture will dictate the annual amount of production that a site can support. Except in the case of recirculating aquaculture systems, the volume of water at a proposed site is critical to the planning of an aquaculture operation. Seasonal changes in the volume of water available are common for most surface water sources such as streams and ponds. Significant variations in the flow of springs can also occur in dry periods. Determination of the water available for aquaculture at a given site should be made during the low-flow periods of the year, usually the summer months. An aquaculture system is then designed according to low-flow information for a given site. Production systems that are designed and stocked for high-flow estimations of water volume incur the risk of losing water in a dry season while heavily stocked with fish or other species, thus experiencing a fish kill. Business planning for an aquaculture enterprise should also incorporate realistic production estimates which allow for low-flow impacts on annual production levels.

A final point concerning water sources for aquaculture is the need to identify the elevation drop between the water source and the proposed location of the actual culture facility. Aside from recirculating aquaculture systems and some land-based marine culture systems, the remainder of aquaculture production systems need some volume of flowing water to function. It is important that this water flow be provided to the culture system on a gravity-feed basis rather than by pumping if possible. Supplying water to a culture system by gravity feed can greatly reduce the cost of production.

AQUACULTURE SITE EVALUATION - PERSONAL RESOURCES

There are two common mistakes made by prospective aquaculture producers. The first mistake is underestimating the quantity of water needed to operate successfully an aquaculture business. The second mistake is underestimating the time needed to manage and market the business successfully. The need to carefully assess

the water resource proposed for aquaculture was discussed above. In recent years, the availability of water recirculation technology for fish culture has begun to provide options for the use of sites which otherwise would not have the volume of water necessary for successful fish culture. The decision to undertake recirculation aquaculture is a significant commitment that must be made with care. Recirculation aquaculture is discussed in a later section dealing with aquaculture system designs.

To avoid the second mistake of underestimating the time and attention necessary to manage an aquaculture operation, the prospective producer must ask several key questions. First, a potential producer must decide at what level he or she wishes to attempt aquaculture. The answer to this question requires an honest appraisal of the personal resources—both time and money—which the producer has available to invest in aquaculture. The usual recommendation for a first-time aquaculture producer is to start small. Allow the aquaculture business to grow and develop in pace with developing markets and with the growing knowledge and experience of the producer. Many large aquaculture businesses have begun as small, hobby level enterprises in a backyard or garage. Large-scale aquaculture operations require significant investment and management effort. Because aquaculture is a relatively new agricultural enterprise in the U.S., financing institutions often are hesitant to lend large sums of start-up capital to new producers, especially if the prospective producer has no previous aquaculture experience. One way to avoid this difficulty is to begin an operation on a small-scale to gain some practical culture experience and begin to establish a market demand for the product. When a producer becomes successful at a small scale level, financing can then be sought for expansion of the business. Financing for expansion of existing aquaculture facilities is often easier to secure based upon a proven track record of production and sales, and a sound business plan for the expanding business.

Time Consumed in Aquaculture

The management of an aquaculture business can be a very time consuming task. In intensive

aquaculture production systems, animals are raised in crowded conditions with very little room for error in care and management. A prospective producer must ask himself whether aquaculture is to be undertaken as a part-time or full-time occupation and whether he or she has access to assistance to manage the business, such as access to technical assistance and problem-solving and access to the labor necessary to operate the system, harvest, and market the products. The management of an intensive aquaculture operation has been compared to the operation of a dairy. The manager is on-site at the production system at least once per day, every day of the year. Less intensive methods of aquaculture do exist, but these methods may require economic trade-offs in terms of the amount of annual production or value of the species produced. In West Virginia, several small part-time aquaculture operations have been integrated successfully into existing farm structures as part of an overall farm diversification strategy. Relative few “stand-alone” aquaculture businesses have developed to date. To address adequately questions about time and management issues in aquaculture, prospective culturists need to take some time for a fact-finding mission. Visit several aquaculture operations with similar production systems or species of interest. Talk with the owners and managers of these businesses if possible to get a feel for the time and effort required to run the business. A good source of information about existing businesses can be found through your state aquaculture associations.

AQUACULTURE SPECIES SELECTION

Once an evaluation of a potential site has been completed with respect to natural and personal resources available, the potential producer may then begin to identify appropriate species for culture and to identify options for the design of a production system. Certain production systems such as ponds or tanks, are suitable for the production of a variety of species. Some species however, require very specific production systems for successful culture. Before a production system can be designed for a specific site or for culture of a preferred species, there are some biological, political, and financial factors which may affect species selection.

All aquatic plant and animal species have a preferred range of water temperatures in which they reproduce and grow well. For water sources which provide a year-round supply of water with a relatively constant temperature, such as springs, wells, or recirculation systems, the choice of a species to raise may simply be to identify which species grow well in the water temperature available. A special note should be made with respect to hatchery operations as opposed to grow-out operations for aquatic animals. Hatchery operations may require different water temperatures than grow-out operations use for the same species. Information on preferred water temperatures for many commercially cultured species are readily available from state University Extension aquaculture programs (Table 2). Technical options for heating and/or cooling large volumes of flowing water exist but have not yet been proven to be economical for aquaculture. Recirculating aquaculture, again, may offer a solution to technical dilemmas of water temperature control. Other production systems which are exposed to seasonal air temperature changes, such as ponds and streams, tend to experience large seasonal fluctuations in water temperature. These seasonal changes may limit aquaculture production to one part of the year, or may strongly influence the selection of species for culture. Many species are hearty with respect to survival of water temperature extremes, but the outdoor growing season for these species may be so short that it is not economically feasible to commercially produce them. Projected growing season will influence the amount of annual production and must be taken into account in business planning for aquaculture.

Role of Regulations

The prospective producer should not discount the role that state and federal government regulations can play in species selection for aquaculture production. State and federal wildlife agencies are charged with protecting and managing fish and wildlife resources for the common good. Concerns over the environmental impacts of aquaculture production, including release of exotic species and disease transmission, have led to increased state and federal regulations of interstate movements of live plants and animals. Accidental introductions of exotic species such as the zebra mussel, have

been shown to have significant negative impacts on native plant and animal species in certain regions of the country. These impacts have occurred in fresh and in salt water. While aquaculture has not been a considerable vector for the introduction of exotic species, concerns over these impacts, can influence regulations over the culture of non-native species. A potential aquaculture producer should check with his or her state wildlife agency to determine if there are regulations that may prevent the culture of the species of interest within their state. For instance, the state of West Virginia has approved the culture of the popular exotic foodfish tilapia, only in indoor, closed recirculating production systems to avoid introduction of tilapia into the local environment.

Marketability of Species

Finally, the last and most obvious concern for species selection is the marketability of the species. Many of the important marketing issues, such as price paid to the producer and availability of markets or seasonal demand, are important factors in preparing an aquaculture business plan. The prospective producer must investigate these questions BEFORE production of the selected species is begun, or the producer may find himself or herself with a large harvest of fish that cannot be sold profitably. A good place to begin looking for market information on a variety of aquaculture species is the state Departments of Agriculture (Table 2). Many state Departments of Agriculture have product marketing divisions and offer assistance to in-state producers. In states which have established aquaculture industries, state aquaculture associations may also be good sources of information. In particular, potential producers must investigate what the available markets are for their products and how those markets can be accessed. The easiest way for beginning producers to assess potential markets is to start with the aquaculture products which are currently being raised and marketed within their home state. Markets for fish can include both food markets and live markets for fish sold to stock recreational fishing areas. In some states, live markets may be more profitable for small-scale aquaculturists than food fish markets. Larger scale aquaculture production companies may have to seek a variety

of markets to move all their products at a profitable price.

Aquaculture producers who investigate food fish markets will not have the additional investment of equipment and labor for live-hauling and stocking fish, however they may receive lower prices by selling to fish processors or wholesalers. A potential producer should also consider the distance the product will have to be transported to specific markets such as processors or recreational areas, in considering which markets will be most profitable. Finally, aquaculture producers who produce food fish must be aware of state and federal regulations regarding the quality and safety of fresh fish products. These regulations often affect the way in which fish are treated for diseases during production, and how fish are slaughtered, handled, and transported to a processing facility. State Departments of Agriculture can provide information and assistance to potential producers regarding these regulations.

AQUACULTURE PRODUCTION SYSTEM DESIGN

For many potential producers, the overriding consideration in production system design is cost. In general, the cost of a production system depends on both the size and technical complexity of the system. Price tags for aquaculture production systems cover an enormous range of investment and are influenced strongly by the proposed site and water source. In other words, there are few generalizations that can be made about the cost of aquaculture production systems. Production systems should be designed with an eye to the most appropriate system design for the topography of the site and the location and availability of water. Initial investment in fresh water aquaculture production systems in West Virginia has ranged from less than \$500 for a small-scale 2-pond bait minnow production facility to roughly \$150,000 for a 50,000 pound per year rainbow trout production facility. Estimates for initial investment for highly technical commercial-level recirculation aquaculture production systems have ranged as high as \$500,000 to \$1,000,000 initial start up costs. An important point for the novice aquaculture producer is to realize that the start-up

cost for aquaculture operations is often depreciated over multiple years, but this cost can have a significant impact on the ultimate cost of production of the aquaculture product. The potential producer must take care so that the initial start-up cost of the production system will not force the annual cost of production above a level that will affect adversely the profitability of the business.

Although production systems should be customized to a production site and water source as much as possible, there are some general classifications of production systems. Finfish culture can be done in ponds, cages or net pens, single-pass flow through systems, reuse, or recirculation systems. Culture of crustaceans such as crayfish or freshwater shrimp is typically done in ponds. Marine shellfish culture systems utilize in or on bottom culture, near bottom culture, or water column culture. Land-based systems often are used as nursery capacity for juvenile stages of shellfish or as holding facilities for crab shedding operations.

Pond Culture

Pond culture of aquatic organisms is accomplished either by stocking seedstock into an open pond with the stocking density based on the surface acreage and volume of water in the pond, or is accomplished with cages or net pens placed in larger ponds and lakes. Although aquaculture can be undertaken in existing farm or recreational ponds, harvest of these ponds is often complicated. Ponds constructed for the purpose of aquaculture are generally built in such a way as to facilitate control of water level and harvesting procedures. Potential producers considering the use of an existing pond for aquaculture should identify other current uses of the pond which may impact the aquaculture operation, such as livestock watering or irrigation. Both of these practices require the use of water during times of the year when water may be in short supply. In addition, livestock watering may affect the quality of the pond water to a degree that would negatively impact the culture of fish or aquatic organisms. Cage or net pen culture can be used in ponds which would not provide access for harvest by seining. The downside to cage culture however, is that the animals are tightly

concentrated, and cannot be stocked into cages in the same numbers as fish stocked into an open pond. In either case, cage culture or open pond culture, it is highly recommended that the culture ponds receive some inflow of fresh water during hot summer months to maintain water quality. The general recommendation for culture ponds is that they receive 25 gallons per minute of flow for every surface acre of water.

Flow-through Systems

Flow-through or single pass systems use relatively large volumes of flowing water which is passed through the culture system, typically tanks or raceways, one time before being discharged. Raceway or tank culture is a common method of culture for many finfish species including rainbow trout. Flow-through systems are designed and stocked based on the flow of water in gallons per minute. Attention to design and stocking rates in these systems generally reduces the management concerns for water quality because uneaten feed and waste products are washed away before they have a chance to accumulate in the system. However, recent attention to discharge of wastewater from flow-through aquaculture systems in the Pacific Northwest has led to a tightening of regulations on the quality of water discharged from these types of systems. Flow-through production systems of a certain size, typically 20,000 pounds of production per year or more for cold-water species, are now required to provide some sort of waste treatment plan for water discharged from the system.

Water Reuse Systems

Water reuse systems are similar to flow-through operations in design, however the water is used more than once before it is discharged. For instance, a water reuse system may pass water from one culture pond to another or may link several raceways in series before the water is finally discharged. The number of times that the same water may be reused before it must have some treatment to remove waste products depends on the design of the system, the weight of the animals that the system contains, and management practices particularly relating to feeding schedules and cleaning of the system. Water reuse systems

can allow the production of more animals for a given flow of water than flow-through systems alone, however there is a limit to the number of times the water can be reused before it must undergo biological and/or physical treatment to remove toxic waste products. Furthermore, the control of disease in reuse systems is more difficult than in flow-through systems where individual ponds or tanks can be isolated for treatment.

Marine Shellfish Culture

A great deal of technical culture and design information exists for the culture of marine shellfish organisms. Intense competition for use of our ocean shorelines on the Northeastern coast has limited the availability of space for marine aquaculture. One of the major constraints to the growth of shellfish culture is the difficulty in securing access to appropriate marine culture sites which provide the necessary uncontaminated substrate for burrowing clams and oysters. Options for near bottom culture include the use of cages or boxes of plastic mesh which are used to hold clams and oysters just off the bottom of the shore during grow-out of these animals. An additional technique for clam and oyster culture, also used for scallop and mussel culture, is the suspension of containers such as nets and cylindrical containers in the water column. These containers are hung from floats, and are grown in deep areas with good water flows.³

RECIRCULATION AQUACULTURE

An area of aquaculture production which is gaining increasing attention is that of recirculation aquaculture. Recirculation aquaculture employs a variety of technological means to remove waste products from water used in an aquaculture production system so that the same volume of water may be used continuously with only a small amount of make-up water added to compensate for evaporation and a small daily discharge. Recirculation systems are housed either in enclosed buildings or in green houses where air and water temperature can be carefully controlled, allowing intense, year-round production of aquatic animals. Experimental projects linking recirculation aquaculture to green house or

hydroponic production of ornamental plants and vegetables currently are generating a great deal of interest. Recirculation aquaculture has been slow to compete with more traditional systems for aquaculture production due to the high initial cost of constructing a recirculation system, the energy cost of operating a recirculation system, and the intensive on-site management that commercial-level recirculation aquaculture requires. Regardless of these factors, recirculation aquaculture has listed some economic success stories with the culture of high value species, and recirculation aquaculture provides one option for aquaculture production on sites with water sources which could not otherwise support traditional aquaculture. Finally, recirculation aquaculture may be the only option for culture of exotic animal species in environmentally sensitive areas. Extensive technical information and production systems plans are available through state University Extension aquaculture contacts or on-line through various world wide web sites (Table 3).

BUSINESS PLANNING FOR AQUACULTURE

A well-researched aquaculture business plan may make the difference between the success or failure of an aquaculture business. In the process of preparing an aquaculture business plan, the potential producer is forced to consider the economics of the aquaculture enterprise intended, and in doing so, is forced to set realistic goals for the enterprise and to evaluate truthfully the potential for such an enterprise to succeed. Financial institutions will require that a potential aquaculture producer who is seeking funding to start an aquaculture business be prepared to present a well-researched, well thought-out plan for the operation and sustainability of the business. This means that the potential producer must provide carefully researched figures about the cost of start-up for the intended operation, the annual cost of operation of the proposed facility, the estimated cost of production for the proposed species, and the anticipated market demand and price for the proposed species. Developing a business plan for an intended aquaculture enterprise will require that the producer identify realistic expectations for the business based on the

natural and personal resources available to start and to operate the business.

Market Potential Assessment

Aquaculture business plans require that the potential producer conduct a thorough assessment of the potential market for the intended product within a reasonable geographic range from the production system or access to a delivery system that will allow the producer to supply markets outside the immediate geographic vicinity. Research is required to determine the species and products which are in demand. The producer must be able to demonstrate a feasible way that he or she can then supply those markets with the species or product desired. Again, state Departments of Agriculture can be of great assistance in the identification of aquaculture markets and products.

An integral part of the aquaculture business plan is a detailed accounting of start-up costs and of fixed and variable cost of production. Fixed costs are costs that don't change over the long-term such as salaries, overhead, insurance and depreciation. Variable costs can change depending on the level of production and include costs such as seedstock, feed, power, labor, etc.⁴ These costs must be detailed carefully in a business plan to give a true picture of the financial feasibility of the intended aquaculture business. Although the specific elements of a complete aquaculture business plan are too numerous to discuss in this session, there are several good enterprise budgets and aquaculture business plan templates available to help the potential producer cover as many bases as possible in the preparation of a plan. Contact a state University Extension specialist to receive copies of these types of materials. A final recommendation would be to have an accountant review the plan before it is submitted to a financing institution. Lastly, don't hesitate to ask questions about any aspects of the intended operation that you don't fully understand.

Here's to happy aquaculturing!!

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Table 2. List of Aquaculture Information Contacts in the Northeast.

A list of university Extension aquaculture contacts is available on-line from the Northeast Regional Aquaculture Center. To access, use www.umassd.edu/specialprograms/nrac/ExtensionText.html or contact NRAC by phone at 508-999-8157 and request a copy of the publication titled, "Northeastern Regional Aquaculture Center Aquaculture Extension Contacts for the Northeast".

State Departments of Agriculture Contacts in the Northeast. Material adapted from: Pitts, J. 1996. Northeastern Aquatic Animal Health Directory. Northeastern Regional Aquaculture Center. NRAC Publication No. 96-002. University of Massachusetts, Dartmouth, MA.

Connecticut:	Connecticut Department of Agriculture, State Office Building, Room 273, 165 Capitol Ave. Hartford, CT 06106 Phone: 203-566-4667
Delaware:	Delaware Department of Agriculture, 2320 South DuPont Highway, Dover, DE 19901 Phone: 302-739-4811
Maine:	Maine Department of Agriculture, Deering Building (AMHI), State House Station #28, Augusta, ME 04333 Phone: 207-287-3871
Maryland:	Maryland Department of Agriculture, Marketing and Aquaculture Development, The Wayne A. Cawley, Jr. Building, 50 Harry S. Truman Parkway, Annapolis, MD 21401 Phone: 410-841-5724
Massachusetts:	Massachusetts Department of Food and Agriculture, 100 Cambridge St., Boston, MA 02202 Phone: 671-727-3000
New Hampshire:	New Hampshire Department of Agriculture, P.O. Box 2042, Concord, NH 03302-2042 Phone: 603-271-3551
New Jersey:	New Jersey Department of Agriculture, Health/Agriculture Building, John Fitch Plaza, CN-330, Trenton, NJ 08625-0330 Phone: 609-292-3976
New York:	New York Department of Agriculture and Markets, 1 Winners Circle, Albany, NY 12235 Phone: 518-457-3136
Pennsylvania:	Pennsylvania Department of Agriculture, 2301 North Cameron St., Harrisburg, PA 17110-9408 Phone: 717-772-2853
Rhode Island:	Rhode Island Division of Agriculture, 83 Park St., 6th Floor, Providence, RI, 02903-1037 Phone: 401-277-2781
Vermont:	Vermont Department of Agriculture, Food and Markets, 116 State St., Drawer 20, Montpelier, VT 05620-2901 Phone: 802-828-2430
West Virginia:	West Virginia Department of Agriculture, 1900 Kanawha Blvd. East, Charleston, WV 25205 Phone: 304-558-2210

Table 3. Helpful World Wide Web addresses for Aquaculture-Related Information

The Northeastern Regional Aquaculture Center	www.umassd.edu/specialprograms/nrac/
The Aquaculture Network Information Center	http://ag.ansc.purdue.edu/aquanic/
The Seafood Network Information Center	www.seafood.ucdavis.edu/haccp/Plans.htm
Aquafind - The Ascot International Fish Database	www.aquafind.com
West Virginia University Extension Service	www.wvu.edu/~agexten/

SECTION 5

Natural Resources Enterprises Related to Forest Farming and Forest Utilization

Sustainable Use of Non-Traditional Forest Products: Alternative Forest-based Income Opportunities

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Abstract: For generations, residents of Central Appalachia have supplemented their income by processing and marketing non-traditional forest products (NTFPs) gathered from forest lands. The NTFP business is growing rapidly—perhaps faster than that of timber. Some estimate that NTFP markets had grown nearly 20 percent in the last few years. The size of Virginia's NTFP industry has been estimated at \$35 million. In 1991, Virginia exported nearly 6.5 tons of ginseng collected from its forests, worth more than \$1.8 million.

However, little is known about the extent of harvesting or the long-term effects of extraction. Much less is known about the multitude of products found in our forests but not widely marketed. Information is needed that draws attention to critical issues related to non-traditional forest products. Recent increased demand for NTFPs may have serious long-term effects on the forest ecosystem and will slow efforts to ensure sustainable management of the region's forests.

Virginia Tech has embarked on an effort to learn more about these products and how they would support increased incomes for landowners in the region. Through interviews with stakeholders, and structured and unstructured focus meetings with local communities, we have begun to gather the data needed to better understand this burgeoning forest use. Before developing policies to sustain forest resources, local management practices, the value and volume of products traded, and the scope of NTFP markets need to be documented. Those who gather, market, and manage NTFP resources are involved at all stages of the research. Early indications show that NTFPs offer good opportunities for increased income in rural areas, especially in those hard hit by recent declines of traditional timber industry and the region's coal mining, and should lead to the sustainable management of forest resources.

Keywords: non-timber forest products, special forest products, forest-based economic development

INTRODUCTION

Several opportunities for improved rural development are linked to non-traditional forest products (NTFPs). In many areas, rural populations have traditionally depended on local forest resources to provide additional income through collection and marketing of NTFPs. Where employment opportunities from traditional industries are declining, workers looking for alternative income sources often turn to collection of these products from nearby forests. This is particularly noticeable in the Pacific Northwest where employment in the logging industry is declining rapidly. It is just as critical in

Southwestern Virginia where the declining coal industry has increased the average unemployment rate to 3-4 times higher than the state average.

Unemployment will continue to increase until sustainable alternative employment opportunities are developed. Local pressure on forest resources to provide NTFPs will increase without sustainable forest management programs.

Non-traditional forest products provide important employment and income opportunities in several regions. Throughout the United States, interest in collecting NTFPs is growing rapidly. The floral sector employs thousands in the Pacific Northwest

to collecting moss, ferns, and grasses. In southern Florida, hundreds of seasonally displaced agricultural workers collect Spanish moss for export to Europe. With little or no documentation of resources and products, the full impact on the environment and employment potential of these products has not been estimated. Less is known about managing forests for NTFPs than for traditional timber products, even though NTFPs contribute significantly to rural and regional economies. The following discusses, in more detail, these products and their importance and describes an effort at Virginia Tech to learn more about how these products can be useful as tools for economic development.

WHAT ARE NON-TRADITIONAL FOREST PRODUCTS?

Non-traditional or non-timber forest products are biological and generally not cultivated. They are not timber; but can be made of wood. Collected in natural forests, these products are usually harvested and processed in small amounts. These products fall within four general categories: edibles such as mushrooms; medicinal and dietary supplements, including ginseng; floral products such as moss, grape vines, ferns, and other plant products used for decorations; and specialty wood products including hand crafted products such as carvings, utensils, and containers.

Mushrooms, are perhaps the most well-known edible NTFP - but we also include in this general category many other food products gathered from the forest. Since most of these products are not traded widely and are usually collected and consumed by the harvesters themselves, it is difficult to assess their economic magnitude or potential for increased returns to landowners. These products include ferns, berries or other fruits, nuts, ramps (wild onions), herbs, and spices.

The second major category of NTFPs, medicinal and dietary supplements, includes plant-based products that are processed into medicines outside the region for the U.S. and international markets. Beginning in the late-eighteenth century, over 100 plant species indigenous to the U.S. were commonly accepted for their medicinal properties. The majority are wild-harvested from the

Southern Appalachian mountains and are widely traded as botanical products—many to overseas markets (Foster 1995). Examples of these include products manufactured from sassafras, goldenseal, mayapple, slippery elm, black cohosh, white oak bark, and scores of other species.

Floral products include pine boughs, grape vines, ferns, and other plant products used for decorative applications. These unique forest products may appear in floral arrangements, dried flower decorations, and ornaments or packaging. Common examples include products made from pine boughs, grape vines, moss, ferns, flowers, cones, mistletoe, and holly. Several widely marketed products are made from pine boughs collected in the forest or from trimmings of commercial Christmas tree plantations.

Specialty wood products include handicrafts, carvings and turnings, musical instruments, as well as utensils and containers. In general, specialty wood products are considered non-traditional if they are produced directly from trees, and not from lumber or timber purchased from mills or retail establishments. Because wood crafters may purchase logs or collect trees directly from the forest, often little is known about the impact they have on forest resources. Often produced from trees or logs collected from the forest and processed by the crafter, but products common in the Appalachian region include handicrafts, carvings, turnings, utensils, and containers (baskets), and special furniture pieces. Raw materials may include cypress knees, willow branches (for weaving), yellow poplar bark, or forked dogwood pieces.

WHY THIS INTEREST IN NTFPS?

Sustainable environment and economic development depend directly on the diversity of investments and diversity of the ecosystem. The Appalachian region has some of the most biodiverse ecosystems in the world.

"The most ecologically diverse region in Virginia is home to more than 400 rare plants and animals" (The Nature Conservancy 1996). In the Eastern United States, The Nature Conservancy is supporting "ecologically compatible development" through the formation of the Center

for Compatible Economic Development (CCED). One of three pilot programs is focused on Virginia's Clinch River valley and creating jobs in environmentally friendly small businesses, including wood products, but not NTFPs. In the Pacific Northwest, non-traditional forest products are considered to be the most viable option for strengthening those rural communities suffering from the decline in timber harvests from government lands. There is an urgent need to examine the markets for these products and to integrate these findings into land-use planning and Extension programs.

HISTORICAL PERSPECTIVE

Native Americans traditionally used plants and plant products for food and medicine, and shared this knowledge with early settlers. They used the bark of trees for housing, branches and stems for utensils and other household products, and the wood for containers and other useful items. These traditional forest products became an integral part of rural economies and many techniques are still in use today.

In the 1990's, there has been a dramatic increase in demand for natural products, including those made from non-traditional forest products. This can be traced to a number of factors, including a growing interest in alternative medicines and homeopathy. Environmentally conscious and responsible consumers actively seek ecologically friendly and socially correct products. The potential for non-traditional forest products as alternative income sources to a timber-based economy is expanding tremendously. These products will continue to play an important role in economic development of communities-especially those depressed by the decline of traditional industries such as timber in the Pacific Northwest and coal in Central Appalachia.

The collection and processing of these products at the local level can help under-employed and displaced workers. Processing and marketing often requires low capital investment, but can employ or give partial support to thousands.

RESOURCE BASE

Non-traditional forest products are found on all timberlands. The increasing market demands for these products often exceed the capabilities of many public and private agencies to provide sustainable supplies of these products. As more than 75 percent of the land in Virginia is held by non-industrial private landowners, it is easy to postulate that much of the NTFP resources are found on private lands.

The eastern deciduous forest, much of which is located in the Central Appalachian region, provides the habitat for most of the American medicinal plants used in commerce today. One of the more popular eastern species, *Podophyllum peltatum* (mayapple), is found in forests from southern Quebec, south through the Appalachian region to Florida. "No other region in North America hosts so much living diversity, than Appalachia," notes Constantz (1994). Some estimate that the temperate hardwood forests of Southern Appalachia may be one of the most diverse forest ecosystems in the world (Johnson 1996). More information is needed on this great diversity and its potential to produce NTFPs on a sustainable basis.

VALUE AND GROWTH OF THE NTFP SECTOR

Markets for non-traditional forest products and the capacity for NTFP enterprises to add value at the local level are not well known, but are thought to have significant impact on rural economies. A few of the edible forest products are prominent enough to generate national economic data. In 1993, the United States exported about 77 tons of wild harvested American ginseng, worth more than \$21 million (Foster 1995). Two years earlier, Virginia exported about 6.5 tons of ginseng collected from its forests, worth more than \$1.8 million (O'Rourke 1993).

The commercial U.S. herbal medicine market has been estimated to account for \$970 million of the global market, which is worth more than \$60 billion. In the Pacific Northwest, mosses, ferns, grasses and other plants have sustained the commercial floral products industry and contributed more than \$125 million to the region's

economy. According to Nan Vance, a U.S. Forest Service research scientist who studies non-traditional forest products in the Pacific Northwest, "American exports of commercial moss and lichen amounted to \$14 million" in 1995 (New York Times 1996). Most of the sheet moss used by the floral industry comes out of Tennessee and West Virginia (Thomas and Schumann 1993). Apparently, the Netherlands alone imported moss valued at \$8 million in 1995, to use for natural packing floral products—many of whom are exported to North America. Many new opportunities for value addition exist.

Specialty wood product markets are not well-defined. The size of the retail handicraft market is projected to reach \$600 million in 1996 (Bureau of Census 1993). However, in support of this sector, woodworkers spend heavily each year for the purchase of equipment, raw materials, and supplies.

The NTFP sector is growing rapidly, perhaps faster than the timber industry, and is expected to grow more in the future. According to Catherine Mater (New York Times 1996), "the market for forest products other than trees has mushroomed by nearly 20 percent annually over the last several years." The U.S. herbal medicine market is growing at an estimated annual rate of 13-15 percent with sales of medicinal herbs forecast to reach \$5 billion in the year 2000 (New York Times 1996).

FOCUS ON ALTERNATIVE FOREST-BASED INCOME OPPORTUNITIES

A study based at Virginia Tech is exploring opportunities for NTFPs in Central Appalachia. After completion of our modest case study in Southwestern Virginia, we expect to apply lessons learned in a statewide study for Virginia. Next, we will expand throughout the Central Appalachian states of West Virginia, Kentucky, Ohio, and Tennessee. This study is very timely. There are many organizations in the region seeking to learn more about these products and their role in economic development and sustainable forest management. The region shares a common forest-based culture and forest vegetation. In addition, economic conditions are common with

income levels below national average, subsistence-based economies, and lower local employment opportunities with the decline of traditionally dominant industries.

The work in Southwestern Virginia seeks to identify market opportunities for development of non-traditional forest products. We also wish to increase awareness of NTFPs on the part of the users and those who manage timberlands. This should demonstrate the significance of NTFPs in sustainable forest management.

Lastly, we hope to involve communities in the planning for and implementation of local forest resource utilization and management programs.

Project Approach

We have built on international experience of developing plans for sustainable marketing of NTFPs for areas dependent on forest resources. This experience has helped us handle the often sensitive issues surrounding NTFPs. Collectors are reluctant to share information about their harvest sites and income gained from NTFP collection. In addition, use of participatory rural appraisal methods increases the likelihood that solutions found will be accepted and sustainable. The work includes the use of focus groups and other community-based activities that solicit the help and input of those living in or near the forest. We have partnered with several organizations based within the study area to build our credibility with local communities. This avoids the "outsider syndrome" that sometimes occurs when larger organizations attempt to conduct programs in small, rural localities.

Less is known about how to manage forests for non-traditional forest products than for more common timber products. Overall, management and marketing NTFPs remain an enigma; very little information exists on the management systems or market channels for these products. But, the collection and processing of NTFPs may provide valuable employment opportunities. To learn more about these opportunities, extensive field visits to meet stakeholders in the study area are necessary.

The project embraces the notion that economic development is critical to the sustained environmental management of Southwestern Virginia, and throughout Central Appalachia. This area was selected due to its high level of unemployment, strong dependence on a single industry (coal) and the extreme pressures on the forest resources. The area is very similar to other areas in the region in terrain and level of isolation. It has some of the most species diverse forests in the Eastern United States and is representative of the forests that cover the entire Appalachian region.

Project Activities

The study is based on the fundamental assumption that market opportunities exist for non-traditional forest products that can sustain economic development of the region and still conserve valuable forest resources.

However, before this can occur, much more knowledge is needed on all factors that influence NTFP resources. To date, information has not been collected on the distribution and management of the region's NTFP resources, and the nature of and extent to which these products are harvested, processed, and used. The conspicuous lack of information on the scope and value of these markets is a major obstacle to the sustainable development of NTFP resources.

Understanding the needs of the stakeholders, those involved in managing and marketing these products, is most critical. Forest landowners, NTFP harvesters and processors, and policy makers all greatly influence how the NTFP resources are used and whether suggested policies will be successful. Their collaboration is essential to improve our understanding on how the NTFP resources are managed, and hold the key to successful implementation of any suggested changes. We seek to document local knowledge on all aspects of these products, to identify local needs for policy changes, and to collect suggestions of inputs required for improved management and marketing.

Several steps are needed to determine the scope of NTFP resources, products, and markets. The goal is to recommend strategies for the sustained

management of these resources. As critical forest resources are identified, management schemes for sustainable management are being suggested in consultation with forest biologists and ecologists, and collaborating agencies including the U.S. Forest Service, the Virginia Forestry Department, and The Nature Conservancy.

Concurrently, the project strives to identify and document non-traditional products generated from the forests of Southwestern Virginia. During this stage, we hope to identify which plants or plant products are collected, how these products are used, the volumes collected, and the season(s) in which they are harvested. The products' value and prices at each stage of the marketing chain need to be documented. Local methods for processing and other pertinent information associated with the products also will be gathered.

We are also documenting the distribution networks for non-traditional forest products. Representative products from each of the four general product groups will be selected and traced through the market. These examples will illustrate the breadth and depth of the markets for NTFPs. We are illustrating the extent to which these products are marketed, showing that the markets are significant at local, regional, national, and international levels. This will verify the tremendous market potential for many of these products.

Once the body of knowledge on the resources, products, and markets has been analyzed and documented, recommendations for sustainable management and development of NTFP resources will be drafted. These recommendations will be presented to local focus groups for comment and suggestions. The draft recommendations will be modified to reflect the input received from collaborators and other stakeholders.

Finally, we expect to present our findings to local, regional, and state agencies concerned with the management and marketing of NTFPs.

Anticipated Results and Applications

The project is beginning to examine, define, and develop information on the NTFP resources, products, and markets. This information had not

been documented or organized. It is crucial to establishing guidelines for the sustainable management of forests for non-traditional forest products. The results will have applications far beyond the geographic scope of the project.

We are producing a market profile for each of several example NTFPs to illustrate how widely these products are distributed. From these opportunities for improved management, potential new markets, and technologies appropriate for the sustained economic development of Southwestern Virginia will be identified. All recommendations should be ecologically sound and based on criteria that conserves the ecological integrity of the region. We seek a balance for management of these resources that provides the maximum benefits to the local people while conserving the forest ecology.

There is significant potential to improve the economic conditions of the people involved in the non-traditional forest products. The value of these products to Virginia's economy was estimated to be about \$35 million, in 1995, and growing at an annual rate of 25-30 percent. By the year 2000, with growth continuing at this rate, the value of the NTFPs to the state of Virginia, would be in excess of \$1.05 billion. Certainly, it is unrealistic to think that this tremendous growth will continue, but if the markets for these products grow at 50 percent of this projection, the potential benefits to the people Virginia are still significant. If a small section of the state, such as in Southwestern Virginia, could realize 5 percent of this value, the additional benefits to the region's economy would be about \$5 million annually, by the turn of the century.

Perhaps the most fundamental benefit to NTFP stakeholders will be a better understanding of the importance of non-traditional forest products to the local and regional economy. Stakeholders throughout the region will benefit from improvements in the management and marketing of NTFPs. Local communities will further benefit from the increased involvement in determining how to best manage their forest resources.

The knowledge gained from this project will support economic development policies that reflect community needs and are based on ecological principles. It will help promote sound

ecological development in many depressed areas of Virginia. This information will enable policy makers and program managers to make better decisions on the use of these important resources.

DISCUSSION

For generations, many families of Central Appalachia have supplemented their income by gathering and marketing non-traditional forest products. Increased demand for NTFPs may have serious long-term effects on the forest ecosystem. The integrity of the environment and economic development in many rural areas depends on the sustained management of the forests.

Less is known about managing forests for NTFPs than for timber products, even though NTFPs contribute significantly to rural and regional economies. Clearly, these resources are valuable and their sustainable use must be maintained. Yet, little is known about the extent of or the long-term effects that extraction of these products has on our forests. There is a severe lack of information on all aspects of non-traditional forest products, particularly on their markets.

We have begun gathering the requisite data needed to understand this burgeoning forest use (Hammett and Chamberlain 1997). This knowledge is essential for developing policies to sustain the forest resource. Little is still known about markets and marketing of NTFPs in Appalachia. But, perhaps more importantly, little is known about the environmental impact of gathering NTFPs. For instance, uninformed collectors may over-harvest or kill the plants. Already, ginseng and goldenseal have been over-harvested and are now listed as endangered. To assess the local processing and markets for NTFPs, one must canvas local collectors and buyers. These and others involved in NTFP trade are often reluctant to give information vital to formulating plans for sustainable marketing of these products and management of forest resources.

To achieve sustainable use of non-traditional forest products, there are still many questions left to answer. What is the value added chain for NTFPs? Are we managing these resources so they will be available for future generations? How do

local crafters get and process enterprise management and marketing information? Or even more important to local economic developers, what market information is needed and how can it be best provided to local producers? What new value added and product market opportunities exist? When provided increased markets and processing, what issues arise from increased use? It is obvious that these products have been overlooked for decades by Extension and economic development programs.

Focus on these products will bring numerous opportunities for landowners to gain income. Clearly, their time has come!

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Growing Ginseng and Goldenseal in Your Forest

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Abstract: American ginseng (*Panax quinquefolium*) and goldenseal (*Hydrastis canadensis*) are herbaceous perennial plants native to North American forests. Both are highly valued as medicinal herbs with a long history of collection from wild populations. Attempts to cultivate these herbs in natural forest environments have met with mixed results due to the exacting site requirements and a general lack of published information regarding cultural practices. Recent investigations of sites harboring wild populations of ginseng in New York, Massachusetts, North Carolina, and Tennessee have yielded interesting data regarding the ecological niche of this woodland herb. These new data will be useful to potential growers of both ginseng and goldenseal since both plants have similar native habitats.

Keywords: ginseng, goldenseal, panax, hydrastis

INTRODUCTION: BOTANICAL FEATURES OF GINSENG AND GOLDENSEAL

Ginseng is the common name for a number of deciduous perennial herbs in the family Araliaceae. Hortus Third (Bailey staff, 1976) describes these members of the genus *Panax* as "about six species of glabrous herbs with thick roots and simple stems; native to North America and eastern Asia: leaves borne in whorls, palmately compound; leaflets toothed or lobed; small flowers, polygamous in mostly single, terminal umbels, five petals, imbricate, sometimes united; stamens five; ovary 2-3 celled; stylus 2-3, separate or in male flowers united; fruit a drupe, pyrenes 2-3."

The common name "ginseng" is derived from two Chinese words meaning "likeness of man" because the mature root of the ginseng plant often resembles a human figure. The scientific name *Panax* comes from the Greek "pan-axos" meaning "all-healing" (Fulder 1980). Of the three species mentioned in Hortus Third, two of them are native to north America, *Panax quinquefolium*, which is commonly called American ginseng and *Panax trifolius* or dwarf ginseng. Only American ginseng is of significant economic interest in the United States.

Goldenseal (*Hydrastis canadensis*) is generally included in the buttercup family (Ranunculaceae) or sometimes a separate family (Hydrastidaceae) containing one species native to eastern North America. The common name was adopted in the 1880 revision of the United States Pharmacopoeia (Foster 1991). Other common names include yellow root, orange root, ground raspberry, and yellow eye. Scars left on the yellow colored rhizome where the stem has senesced resemble wax seals, once used to seal envelopes. Hortus Third describes it as "leaves palmately lobed; flowers small, solitary, sepals 3, petaloid, petals 0, stamens many, clavate; fruit, a berry, several in a cluster."

Both ginseng and goldenseal occur in fertile, moist, woodland soils from southern Canada to Georgia, west to Alabama and north to eastern Iowa and Minnesota. Both have evolved as understory plants with very similar habitat preferences and both have long histories of traditional medicinal uses.

MEDICINAL USES

Simply and eloquently stated "The worth of all other plants pales in comparison with the value proclaimed for ginseng by millions. Ginseng is the

only plant used routinely by so great a number of more or less healthy individuals for stimulation, added energy, and a sense of well being—a panacea for the healthy who want to remain well for a long time and if possible, become healthier.” (Lewis 1977) Approximately 4,600 years ago Huang Ti, the first human ruler of China documented ginseng’s medicinal properties in the “Nei Ching Su Wen” the Yellow Emperor’s Book of Internal Medicine—the first written text of Chinese medicine.

Interestingly, the western world has long been skeptical of ginseng’s medicinal properties. The British Pharmacopoeia does not mention it, nor does the British Pharmaceutical Codex (Fulder, 1980). In the United States, ginseng was once listed in the U.S. Pharmacopoeia, but was removed from this list in 1880. The U.S. National Formulary (another listing of useful drugs) dropped ginseng in 1937 noting that the extraordinary properties and medicinal virtues formerly ascribed to ginseng had no other existence then in the minds of the Chinese (Fulder, 1980).

It is not surprising, therefore, that the beneficial effects of ginseng are not appreciated in the western hemisphere. The prevailing view in the west is that each disease arises from a specific cause and is a discreet entity which can be cured by drugs which are applied for the specific disease. Curing the disease will cure the patient since the patient is merely the carrier of the disease. Much of “modern medicine” is directed at curing disease and not maintaining general health. Ginseng has never been demonstrated to cure unequivocally any specific disease. It is consumed to maintain good health which, in turn, prevents disease from occurring.

Debate On Ginseng’s Beneficial Effects

The debate regarding the beneficial effects of ginseng has been raging for more than a century and shows no sign of abating in the foreseeable future. Countless papers have been published from nations throughout the world on both sides of the issue. Ginseng roots and dozens of extracts from ginseng roots have been analyzed for “active ingredients” for many years. At least 20 physiologically active compounds dubbed

“ginsenosides” are now generally considered to be responsible for some of the beneficial effects of ginseng since they appear to mimic the effects of the whole root when applied individually. Levels of some of these ginsenosides are being studied now in wild and cultivated ginseng roots in laboratories at Cornell University and elsewhere (Fichtner, Mudge 1997, unpublished).

Regardless of efficacy, ginseng use has been increasing dramatically in the west as more and more people look to alternative medicinal products and practices. First person testimonials by celebrities such as nationally syndicated talk show host Larry King have given credence to ginseng and many other alternative medicines. It is unlikely at this time that a “definitive” study will put the issue to rest once and for all. It is perhaps in the best interests of the ginseng growers for the medicinal properties to remain a mystery. Many former botanical medicines such as foxglove (*Digitalis sp.*) have been abandoned once their active ingredients have been isolated and synthesized.

In contrast, goldenseal, has a number of well-documented active ingredients. The major alkaloids include hydrastine (2-4 percent), berberine (2-3 percent), and smaller amounts of canadine and hydrastinine (Genest and Hughes, 1969). Hydrastine lowers blood pressure and stimulates involuntary muscles while berberine stimulates secretion of bile in humans, is antibacterial and has numerous other activities (Leung, 1980).

Goldenseal Ingredients Documented

According to Hobbs (1990) goldenseal is among the top selling herbs in the American health food market and is used as an antiseptic, hemostatic, diuretic, laxative, and tonic for inflammations of the mucous membranes. It has also been recommended for hemorrhoids, nasal congestion, mouth and gum sores, eye afflictions, externally for wounds, sores, acne, ringworm, and other ailments (Leung, 1980). Tyler (1985) reports that goldenseal was frequently and enthusiastically recommended for the treatment of sore mouth and related problems. A teaspoon of the powdered root, mixed in a glass of water, was recorded as a

folk remedy for sore throat and stomach troubles (Foster, 1991).

A more modern folk use has been as a means to mask illicit drugs in urine tests although there is no scientific evidence to support this use and it may, in fact, instead promote false-positive readings (Tyler 1987, Foster 1991). This is a much more difficult myth to dispel since testimonials in popular press continue to appear periodically.

Since both ginseng and goldenseal have such long histories of domestic use with few reports of toxicity, other than those based on poor procedures or suspect ingredients, it is safe to say that these roots can be consumed with a reasonable assurance of safety. This is not necessarily the case with some other popular herbs in use today. It is also important to note that there are virtually no guarantees to insure the consumer that he or she is actually buying pure ginseng or goldenseal. The only way to be certain absolutely that the ginseng or goldenseal that you consume is pure is to grow your own.

HISTORICAL ASPECTS OF GINSENG AND GOLDENSEAL COMMERCE

American ginseng was "discovered" in North America by a French Jesuit missionary named Father Joseph Francis Lafitau in 1716 near Montreal, Canada (Persons, 1986). He had heard of this wondrous plant through the writings of another Jesuit priest, Father Jartoux, who had observed the use of Asian ginseng in Manchuria. Since the forest types and climate of Manchuria and southern Canada were so similar, Father Lafitau hypothesized that ginseng might grow in North America. Soon after its discovery, ginseng was being dug by the native North Americans, purchased by French fur traders, and exported to China. Even today many fur dealers in New York and elsewhere also are ginseng dealers. Ginseng and furs were the new world's very first exports.

Ginseng was discovered in western New England in 1750 and in 1751 in central New York, Massachusetts, and Vermont. John Jacob Astor of the American Fur Company financed one of the first American shipments to China in the late 1700's and it has been widely reported that

ginseng started the Astor fortune (Persons, 1986). Daniel Boone gathered and purchased for export twelve tons of ginseng in 1788 in Kentucky. In 1858, 366,053 pounds of ginseng was exported according to the United States Department of Commerce and Labor (Harding, 1972). Between 1858 and 1901 ginseng exports averaged 278,000 pounds per year. Prices paid for the dried roots during this time ranged from 52 cents per pound in 1858 to \$5.38 per pound in 1901 with an average price of \$2.50 (Harding 1913). During this time period almost all ginseng was gathered from wild populations. Obviously, this situation would not last indefinitely.

In the early 1880's a New York State Ginseng Association was formed with George Stanton serving as President. Mr. Stanton is now widely recognized as the Father of the Cultivated Ginseng Industry (Williams, 1957). In 1904 Liberty Hyde Bailey, then director of the Cornell University Agricultural Experiment Station wrote "New York is one of the leading states in the growing of ginseng. Considering the value of the New York product and the attention given to the plant, it is not improbable that New York leads the states" (Van Hook, 1904).

Ginseng Farming at the Turn of the Century

Ginseng farming became quite common throughout much of its native range at the turn of the 20th century as the supplies of wild roots disappeared due to over-harvesting. Between 1906 and 1970 ginseng exports averaged 215,000 pounds per year (Harding, 1972) with only one year showing a significant decline (1951) due, most likely, to the Korean war. Even that year exports still amounted to 77,000 pounds.

In 1977 the U.S. Fish and Wildlife Service began to implement the internationally approved CITES treaty. CITES stands for the Convention on International Trade in Endangered Species which lists ginseng as one of many plant and animal species that need protection (Persons 1986). Ginseng now needs to be certified as to whether it is wild or cultivated and states must adopt a conservation program to allow any harvest of the wild roots. Nineteen states now certify all ginseng exports as wild or cultivated. Between 1988 and 1993 the average certified export of wild ginseng

amounted to 158,000 pounds per year nationally with Kentucky and Tennessee leading the states averaging 23,666 and 17,833 pounds respectively. During that same period of time exports of cultivated ginseng averaged 1,341,000 pounds per year, however, the overwhelming majority of the cultivated crop came from one state, Wisconsin, which averaged 1,317,000 pounds. Almost all of the cultivated Wisconsin ginseng is grown under artificial shade (Pritts, 1995).

Ginseng Grown Under Artificial Shade

In recent years significant increases of cultivated ginseng grown under artificial shade have occurred primarily in British Columbia and Ontario, Canada. Ontario alone in 1997 reported more than 2,000 acres and British Columbia had close to 1,000 acres. With an average yield of 2,000 pounds per acre, an additional six million pounds per year were being harvested in North America since the late 1980's. China is also becoming a major producer of American ginseng with at least 250 acres in production in 1987 (Proctor 1987) and, most likely, much more by 1997.

The effect of this huge increase in supply has had a predictable effect of the price of cultivated ginseng. During the mid 1980's Wisconsin ginseng farmers were receiving between \$40 and \$60 per pound depending on quality. By 1997 prices had dropped to \$10 to \$15 per pound.

It is interesting to note that while the price paid for field cultivated ginseng has dropped dramatically in the past 10 years, the price for wild or woods cultivated ginseng has risen just as dramatically. In 1985 wild ginseng in New York state sold for approximately \$180 per pound. In 1995 the price was \$500 per pound and in 1997 the average price was in the range of \$300 to \$400 per pound.

In summary, it is safe to say that the price curve for ginseng since the 1800's resembles a roller coaster, reflecting not only supply and demand but many other factors, not well understood.

Goldenseal's History

Goldenseal also has a long history of collection and exploitation. As early as 1884 and 1885 Lloyd and Lloyd noted dramatic declines in wild populations, partially due to over-harvest, but also due to loss of woodland habitat (Foster, 1991). In 1904 prices ranged from 74 cents to \$1.50 (Harding, 1972). Harvest data is generally unavailable from the early years but Harding (1910) quotes "reliable dealers" as estimating the harvest at between 200,000 and 300,000 pounds per year with less than 10 percent being exported. Foster (1991) reports "there are no figures to determine current supply and consumption of Goldenseal. However, supply shortages and gluts with their attendant price fluctuations have been experienced in the past decade, just as they were 100 years ago."

It is interesting to note that goldenseal was used by many tribes of eastern Native Americans far more than ginseng for many different maladies and was considered a much more useful plant. On the other side of the world ginseng was, and still is, considered the "King of Herbs." This important distinction is responsible for the continuing large demand for high quality ginseng while goldenseal, despite its known pharmacological properties, does not command similar interest.

HOW TO GROW GINSENG AND GOLDENSEAL IN YOUR FOREST

Both ginseng and goldenseal thrive in rich, moist, forest soils that are high in organic matter. Both require 70 to 85 percent shade and are found as companions to mature, deep-rooted trees in the wild. Other herbaceous plants which grow in similar environments include maidenhair fern (*Adiantum pedatum*), Christmas fern (*Polystichum acrostichoides*), Jack-in-the-pulpit (*Arisaema triphyllum*), Blue Cohosh (*Caulophyllum thalictroides*), and Baneberry (*Actea pachypodia*). The tree species most commonly associated with ginseng in the northern part of its range is sugar maple (*Acer saccharinum*). In the southern part of its range it is often associated with tulip poplar (*Liriodendron tulipifera*). A study of ginseng habitat in Western North Carolina and East Tennessee by Jim Corbin (1997, unpublished) listed the following plants, in

addition to many of those listed above, as appearing between 99 and 100 percent of the time in good ginseng stands: Dutchman's Pipe (*Aristolochia macrophylla*), Black Cohosh (*Cimicifuga racemosa*), Spicebush (*Lindera benzoin*), Silverbell (*Halesia carolina*), and a few other more cosmopolitan species that occur in many environments.

Appropriate site selection is extremely important for ginseng and goldenseal production. Although both species may be cultivated in other habitat types and even in artificially shaded, intensively managed fields, success is achieved much more easily in environments that resemble the natural state of both species.

There is a major distinction between ginseng and goldenseal as to the final product that is produced and how it is produced. The age and appearance of ginseng roots have a dramatic effect on the market value. In general, the older the roots, the more valuable they are, whereas with goldenseal, age and appearance are not nearly as critical. Prices paid per pound of dried ginseng root range from \$10 to \$500 with the highest prices paid for the oldest, best looking roots and the lowest prices for three to four-year-old roots, grown in fields under artificial shade. Goldenseal is generally dug at five to six years when it reaches its maximum size and the appearance of the root does not matter. The price paid for goldenseal root is much more dependent upon supply and demand in any given year than appearance.

Site Preparation

Site preparation varies with type of growing operation ranging from wild simulated to intensively managed raised beds. Wild simulated usually requires no more site preparation than raking back the existing leaves and duff, broadcasting seed, and allowing nature to take its course. Ginseng grown in such a manner for a period of 10 years or more usually commands the same price as truly "wild" ginseng. This type of cultivation is possible only in the most appropriate sites which have soils of medium to high fertility, well supplied with calcium, an absence of pests and ample moisture availability.

Most growers will usually do some site preparation prior to planting either seeds or small roots. Once a site is located, competing vegetation is removed either by hand or by the use of a non-selective herbicide. Small, pole sized trees are usually removed as is all woody brush. When possible, the soil is tilled with a rotary tiller several times and larger rocks are removed. The main objective in site preparation is to create a site that will facilitate maintenance and eventually root harvest. Raised beds look nice and may enhance drainage slightly but will not substitute for a naturally well drained site which is a crucial requirement.

Fertilization of Ginseng and Goldenseal

The issue of whether or not to fertilize prior to planting, and if so, how much, and what type, is a continuing source of debate for both ginseng and goldenseal. Dr. Jeanine Davis at North Carolina State University, writing about goldenseal, advises taking a soil test and following recommendations for native ornamentals using organic sources of nutrients such as composted manure, composted leaves, bone meal or cottonseed meal, being careful not to over fertilize. There are no recommendations for soil pH although many growers adjust the pH to between 6 and 7 (Davis, 1994).

Ginseng fertilization is even more of a mystery. In controlled experiments, it has been demonstrated that ginseng roots do grow larger and faster when fertilized (Konsler, 1980), however, there is a concern that fertilizer may encourage disease development. Many growers report serious increases in disease outbreaks in healthy stands only after fertilizer and/or garden limestone has been applied. Unpublished data by the author indicates that healthy stands of wild ginseng in NY State, Massachusetts, and West Virginia, are found in soils with wide ranges of nutrient availability and wide ranges of ambient pH from 3.9 to 7.0. The one element that appears consistently at higher than expected levels is calcium (Corbin, 1997). Stoltz (1982) found that calcium deficiency resulted in a rotting of the primary root. Konsler (1982) obtained increased root weight when he used calcium nitrate as a nitrogen source, but reduced root weight when he used urea. Tissue samples from ginseng and

companion species reveal high calcium levels in good stands of wild ginseng (Corbin, 1997). Observations by Corbin and Beyfuss indicate that substantial additions of gypsum (calcium sulfate) at rates of up to 4,000 pounds per acre produce much larger roots than did the control group.

PLANTING PROCEDURES

Both ginseng and goldenseal may be propagated by planting seeds or rootlets. Goldenseal may also be propagated from rhizome pieces or rootlet cuttings. Ginseng rootlets usually are planted whole. The most economical way to plant ginseng is from seed. Ginseng seed has a very complicated dormancy mechanism. Ginseng berries appear on three years old and older plants. The berries ripen from late July until mid September depending upon geographic location, weather, and other factors. Within each ginseng berry are one, two, or three seeds. Almost all of the seeds have an immature embryo which continues to grow well into the fall and early winter. The majority of the seeds will not germinate until two winters have passed. Thus, most of the seed within berries which ripen in August of 1998 will not germinate until spring of 2000. The seed is highly perishable and subject to desiccation, consequently most ginseng seed is planted in the fall prior to spring emergence, approximately one year after harvest. Ginseng seed that remains in the stratification box until spring often germinates prematurely, even at temperatures as low as 34 degrees F. Seed which already has sprouted usually perishes unless planted almost immediately.

Planting Ginseng Seeds

Ginseng seeds are planted either approximately one inch apart in rows six inches away from each other or broadcast at the rate of 6 to 12 seeds per square foot. There are between six and eight thousand seeds per pound. Most growers purchase stratified seed. Seeds are planted one half to one inch deep and mulched immediately after planting with up to two inches of shredded leaves or clean straw. Wild simulated plantings usually are just covered with nearby leaf mold after broadcasting.

One, two, and three years old rootlets are sometimes planted to save time and to establish

seed bearing plants sooner. Rootlets are planted almost horizontally with the apical bud facing uphill if possible. The apical bud is usually fully developed by early August and rootlets may be dug and transplanted anytime after the bud is fully formed.

Ginseng plants tend to be self thinning if planted too densely. Seedlings can be grown at a density of 10 or 12 per square foot, hand thinned to approximately six per square feet after the first growing season and thinned again after the second year to a final density of one or two plants per square foot. This wide spacing helps to prevent rapid spread of foliar or root diseases. Crowded ginseng plants almost always are troubled by disease. Field grown ginseng is planted at rates as high as 25 plants per square foot and requires frequent applications of pesticides to control diseases.

Goldenseal seed is planted in the fall also but rootlets, rhizomes, and root cuttings may be planted successfully in the spring also (Davis 1994). Plants started from seed usually flower in the third or fourth years, although vegetatively propagated plants may flower the year they are planted. Seeds are planted at the rate of 3-4 seeds per foot in rows six inches apart with seeds one half inch deep. Seedbeds are covered with two to 3 inches of straw or some other organic mulch.

PESTS OF GINSENG AND GOLDENSEAL

In their wild state, both ginseng and goldenseal do not seem to be plagued by many pests. When cultivated however, both have serious problems from diseases and other pests. The most serious pest of both is slugs which can eat the seed, the seedling, or even entire older plants. Slugs are controlled by hand picking, trapping, or the use of commercial slug poisons. Regulations regarding the use of pesticides vary a great deal from state to state. Growers are advised to become familiar with all pertinent regulations before applying any pesticides to either crop.

Perhaps the second biggest pest problem associated with these crops is thievery. Poachers may visit ginseng or goldenseal plantings and simply help themselves when the owner is not

around. Growers are advised to investigate security issues before planting.

Ginseng and goldenseal also are attacked by fungal diseases. The most serious diseases of ginseng are leaf and stem blight caused by *Alternaria panax* and root rot caused by *Phytophthora cactorum*. Both diseases are controlled somewhat by commercial fungicides where legal. Both diseases may be seed borne, so careful selection of seed sources is important. Goldenseal is subject to a leaf blight caused by a species of *Botrytis*.

Mice, chipmunks, gray and red squirrels readily will eat ginseng berries and seed, often before the berries even begin to ripen. Wild turkeys, ruffed grouse, and songbirds also may eat berries in the forest. White tailed deer occasionally may eat foliage but ginseng is not a preferred deer food.

In addition to the two diseases mentioned above ginseng also is attacked by several other fungi and at least three species of insects. Once again it must be stated that prospective growers should become familiar with the rules and regulations regarding pesticide use before applying or even before planting.

Goldenseal does not appear to be afflicted by nearly as many problems as ginseng and, in this regard, may be planted in some locations where ginseng has perished due to root rot. Both species will have far fewer problems of any sort if planted in appropriate locations using seed that is derived from healthy sources.

GINSENG AND GOLDENSEAL HARVEST

Goldenseal usually is harvested about three to four years after planting when the plants fully occupy the area they were planted in. It does not pay to wait longer as the oldest roots start to die off when the planting becomes crowded. Roots are generally dug in the fall after the tops have died down unless a market can be found for the leaves and stems. It is important to dig carefully so as not to injure the many fibrous roots. Pieces of roots with buds that are destined for replanting should be kept moist and cool or replanted immediately. Roots to be sold are spread on screens and gently hosed down to remove all surface soil. Cleaned

roots are spread on screens again and dried in the shade or in a forced air drier. The roots will lose about 70 percent of their weight during the drying process. Dried roots should be packed loosely into boxes and stored in a cool, dry environment. Yields of goldenseal have been reported at 1,000 to 2,000 pounds per acre under excellent growing conditions.

Forest grown ginseng usually is left to grow for at least seven years. As mentioned above, the older the roots are, the more valuable. Like goldenseal, they are dug in the fall, being careful not to injure the hairlike fibrous roots. Roots are dried using the same procedure as outlined above for goldenseal. Ginseng also loses about 70 percent of its fresh weight during the drying process.

MARKETING GINSENG AND GOLDENSEAL

Virtually every state that harbors populations of wild goldenseal and wild ginseng has buyers who routinely place advertisements during the fall in local, rural newspapers offering to buy. Many states including NY, Wisconsin, and Maine have growers' organizations which can help to market roots. Local fur buyers or trappers also are often buyers of ginseng or goldenseal. Local or state conservation or agriculture agencies may be able to assist with marketing. Cooperative Extension Services also may be consulted for information regarding growing and marketing of both ginseng and goldenseal.

COSTS AND RETURNS

It is very, very difficult to project accurately costs and returns of any ginseng or goldenseal enterprise due to the wide range of prices paid for the final product as well as the constantly changing costs of inputs. For example, last year, stratified ginseng seed was sold in New York State for \$30 to \$200 per pound depending upon seed origin, quantity purchased, and other factors. Dried ginseng roots grown in New York state sold for \$40 per pound to \$400 per pound, again depending upon age of the roots and quality. Costs of establishing and maintaining gardens vary from region to region, state to state, and even within the same county. Local property taxes, prices paid for

timber, real estate values and other variables all need to be considered before undertaking a ginseng or goldenseal growing venture.

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A Primer on Producing and Marketing Maple Syrup Products

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Abstract: Spring is maple season, when commercial maple producers throughout northeastern North America tap trees, collect sap, and boil it down to produce maple syrup, or further process it into maple sugar, fudge, nougat, cream, or other products. While making maple products can involve long days of hard work, it offers a healthy, enjoyable way for woodland owners and their families to earn additional income. During an average year, the sap from four taps will produce one gallon of syrup; the net profit from that gallon will commonly range between five and twenty dollars. This article describes the process of making maple syrup including tree tapping, sap collecting, processing, and packaging, and discusses how maple candy and other confections are made. Equipment needed along with sources is presented, and marketing strategies are explored briefly.

Keywords: maple syrup, maple products, maple candy, maple confections

INTRODUCTION

Spring is maple season, when commercial maple producers throughout northeastern North America tap trees, collect sap, and boil it down to produce maple syrup, or further process it into maple sugar, fudge, nougat, cream, or other products. If you have access to a few maple trees, whether growing in your yard or in a woodland, you can produce your own maple syrup and even enough extra to use as gifts for family or friends. With more trees, maple products can be produced for sale.

Considerations for Maple Activities

On a small scale, making maple syrup and other maple products is relatively easy, great fun, and a very educational family activity. However, anyone contemplating becoming a commercial maple producer should remember that maple production is not a casual, year-round activity. Maple season occurs for a few weeks each spring during which time all of the activities required to produce syrup

must be completed¹. Depending on the scale and efficiency of the operation, the maple season can involve long days of hard work. For many producers, however, such work is healthy, enjoyable, and profitable, commonly returning net profits between five and twenty dollars or more per gallon.

Selecting Maples for Sap

Sap to produce maple syrup can be collected from any native species of maple, but sugar and black maples are the first choice when they are available. Making maple syrup from sap requires boiling off water until the desired sugar concentration is achieved. Sugar and black maple usually have considerably higher sap sugar contents than red and silver maple, resulting in less sap needed and less time and energy required to produce a given volume of syrup. Good syrup can be made from red or silver maple, but it is more likely to be cloudy. Tapping season is also likely to be shorter when tapping red or silver maple because both species tend to break bud at

¹ Maple candy and other confections can be made from maple syrup at a later date.

an earlier date than sugar or black maple. Once the trees begin to break bud, chemical changes within the sap cause syrup to have an unpleasant flavor, often referred to as a “buddy” taste. Maple syrup is rarely made from the sap of boxelder trees (they belong to the maple genus), particularly for commercial purposes, because the sugar content of the sap is extremely low and the syrup produced is generally of low quality.

Equipment for Maple Product Production

Equipment required to produce maple products depends to a large extent on the scale of the operation. A limited amount of maple products can be produced by the hobbyist with very little specialized equipment, though there are some standard items required to do the job correctly. To produce efficiently a high quality, marketable product, however, larger operations will use a great deal of equipment developed specifically for the maple industry. While a small hobbyist may have a few hundred dollars invested in collecting and processing equipment, larger commercial operations will have many thousands of dollars invested.

There are a limited number of companies which manufacture and sell maple equipment² directly and through regional distributors. Anyone interested in becoming a maple producer, should obtain copies of these catalogs and become familiar with the types and cost of maple equipment. Many maple producers, particularly those just starting, purchase used equipment from other producers or regional equipment distributors (trade-ins). Individuals purchasing used equipment should assure themselves that the equipment is in good operating condition and meets current industry quality standards.

² Three of the larger and more comprehensive maple equipment companies are: Waterloo/Small, R.F.D. #4 - Box 731, Enosburg Falls, VT 05450; Leader Evaporator Co., Inc., 25 Stowell Street, St. Albans, VT 05478; and Dominion & Grimm, Inc., P. O. Box 208, East Montpelier, VT 05651-0208.

PRODUCING MAPLE SYRUP

At its simplest, the process of making maple syrup involves collecting maple syrup in the spring when the sap is “running” and boiling the sap for a period of time to evaporate water and concentrate the sugars. There are, however, techniques and equipment unique to maple syrup production which must be utilized to produce a high quality product. What follows is a brief, simplified discussion to acquaint readers with the process of making maple syrup. A much more comprehensive discussion of equipment and techniques, along with discussions of tree and sugarbush management, marketing, economics, syrup chemistry, candy and other confection making, and other aspects of the maple products industry is available in the *North American Maple Syrup Producers Manual*.³

Tapping the Trees

The production of maple syrup begins with the collection of pure, clear, maple sap. Some sap flow may occur any time during the dormant season, after a maple loses its leaves, when cold nighttime temperatures (below freezing) are followed by days when there is a rapid warming above freezing (ideally, to about 40°F). Tapping for maple sap, however, is generally done only in the spring when the weather is more predictable and the sap sugar content is high. Some producers tap by the calendar, routinely tapping each year on or before a certain date such as the second or third week of February. This date will vary with geographic location. Others, particularly those with a relatively small number of taps who collect with buckets or bags, watch the weather. When suitable weather is predicted, they tap. Sap flow from a tapped tree will not occur every day throughout the tapping season, but only when conditions are right. Sap can be collected for syrup production until just before tree buds begin to expand, usually sometime in March or April, again depending on the weather and geographic location. Sap collected and processed into syrup after bud expansion begins results in “buddy” syrup, which has a distinctly unpleasant flavor.

³ Please see "Literature Cited" for ordering information

Tapping Guidelines

Trees should be at least 10 to 12 inches in diameter (measured 4.5 feet above ground level) before they are tapped. The number of tapholes a tree can support depends on its diameter and its health and vigor. Traditional tapping guidelines for healthy, vigorously growing trees with no major trunk defects (dead areas, scars, etc.) are to use one tap for trees 10–15 inches in diameter, two taps for trees 16–20 inches in diameter, three taps for trees 21–25 inches in diameter, and four taps for trees larger than 25 inches in diameter (tree diameter equal tree circumference divided by 3.14). These should be considered maximum tapping rates and should be reduced for trees that are in less than excellent condition, have small crowns, or have trunk defects. In recent years many syrup producers have gone to more conservative tapping guidelines, placing one tap in trees 10-18 inches in diameter, two taps in trees 19-25 inches in diameter, and three taps in trees larger than 25 inches. Some producers even have gone to a two-tap maximum, placing one tap in trees 12-18 inches and two taps in trees larger than 18 inches. These conservative tapping levels are recommended particularly for trees that have been subjected to severe stresses in recent years from such factors as insect defoliation, drought, ice damage, etc. Reducing the number of taps does not result in a proportional reduction in sap collected because with fewer taps, the sap yield per taphole generally increases substantially.

Taps can be located anywhere on the tree trunk but, for convenience, they are generally located between two and four feet above the ground. Tapholes are made by drilling a 7/16-inch diameter hole 2-1/2 to 3 inches deep into the trunk. Slant the hole slightly upward to allow sap to run out and prevent sap from collecting in the hole, freezing and cracking the tree. On trees with more than one taphole, space tapholes evenly around the tree when possible. If the trees have been tapped before, locate new tapholes at least 6 inches to the side and 4 inches above the height of the old tapholes. Do not tap within 24 inches above or below an old taphole. Tapholes should be made only into “sound” healthy, light-colored sapwood. Decayed or discolored wood should not be tapped, and tapholes should not extend into the

darker heartwood. Tapholes in healthy trees should heal in one or two years.

A collecting spout or spile is then inserted into the taphole and tapped lightly to seat it in the taphole. Metal spiles are used when buckets, bags, or other containers are used to collect sap; plastic spiles are used when plastic tubing is used to collect sap. Spiles usually have a tapered shoulder that forms a “saptight” seal so that sap does not leak. Do not seat spiles with too much force or when the trees are frozen, as the wood may split.

Collecting the Sap

Maple sap is commonly collected either in a bucket, sap bag, or other container hanging on each spile or by a network of plastic tubing connecting the spiles from many tree and draining into a common container. Most small maple operation and many larger ones still rely on the traditional method of collecting sap using buckets. While hobbyists may use a variety of clean, sterile containers for collecting, commercial bucket operations commonly collect in 16-qt buckets. In these operations, sap is periodically transferred from the buckets to hand-carried gathering pails and dumped into larger collecting tanks mounted on some form of carrier (e.g., a tractor-drawn wagon) for transport to the location where processing to syrup will occur (commonly referred to as the sugarhouse). At the sugarhouse the sap is transferred to a still larger storage tank where it is kept until processing. Generally, it is desirable to filter bucket collected sap through a cloth or screen and cloth filter before it enters the storage tank to remove any debris, e.g., twigs, leaves, bark.

Many larger maple operations collect sap and transport it directly to the sugarhouse using a network of plastic tubing. Such a collection system, once installed, requires far less labor. In areas of relatively steep topography, gravity may be the only force required to move the sap through the tubing from the trees to the sugarhouse or intermediate collection point. In other situations vacuum pumps are used to move the sap through the tubing.

Sap Flow

Because sap flow depends on weather, it is not always consistent. Some days no sap will flow; at other times, as much as a quart to a gallon of sap may flow during the flow period (lasting several hours to a day or more). During the season, an average tap will produce six to 10 gallons of sap. Slightly more than 10 gallons of 2 percent sugar content sap are required to produce one quart of syrup.

To produce high quality syrup, sap should be collected and processed as quickly as possible. It is best to collect sap the day it runs and process it immediately into syrup. The longer sap is left in buckets or a storage tank the more likely it is to spoil, particularly during warm weather. During periods of cold temperature, sap can often be stored for a couple of days under the proper storage conditions without seriously reducing the quality of syrup it will produce. However, such storage is not commonly recommended.

Making Syrup from Sap

Sap is made into syrup by boiling off water, which increases the sugar content to 66 percent (termed 66° Brix) and causes chemical changes that darken the syrup and provide its characteristic taste.⁴ The amount of sap required to produce a gallon of syrup depends on the sugar content of the sap. Throughout the maple region, sap averages about 2 percent sugar content, requiring 43 gallons of sap to produce a gallon of finished syrup. If the sap sugar content is higher (it varies from tree to tree, with weather, location, and other factors) less sap will be needed to make a gallon of syrup; if lower, more sap will be required.

Continuous Feed Evaporation Process

Commercial producers and many larger hobby producers use a continuous feed evaporation

⁴ A couple of New England states define maple syrup as having a slightly higher density. However, throughout the rest of the maple region minimum maple syrup density is identified as 66° Brix at 68° F.

process to make syrup. In this process, the evaporator consists of one or more pans (commonly two) divided into channels so that sap is added at one end and syrup is removed at the other in a continuous or semicontinuous process. Evaporators using wood, oil, natural gas, or propane as fuel and in a range of sizes with correspondingly different evaporation rates are commercially available. Commercially, evaporators commonly are available from a 2'x6', which would evaporate about 25 gallons of water per hour, to a 6'x16', which would evaporate about 340 or more gallons per hour. The size of the evaporator must be matched to the number of taps in order to process the sap in a reasonable amount of time. It is important to note that syrup made in a continuous feed evaporator will generally be of higher quality than that made by the batch process described below because the processing time for each gallon is much shorter.

To reduce costs and improve quality, some larger commercial maple producers will run the sap through a reverse osmosis (RO) machine before it enters the evaporator. The RO machine removes one-half to three-fourths of the water in the sap, thereby reducing evaporation time and fuel costs, shortening the holding time for unprocessed sap, and shortening the time sap is processed at high temperature.

Method for Hobbyists

The simplest method for converting maple sap to maple syrup, and the one used by many hobbyists, is the “batch” method. In this method sap is placed in a pan and brought to a boil. As evaporation occurs, more sap is added until a suitable amount of concentrated sap is present. The evaporation process is then continued with no additional sap and the entire batch is “finished” to the desired density.

To batch process syrup, a large pan is needed that is at least 6" and preferably 8" deep to prevent foaming over. Obviously, the larger the pan, the more water evaporated in a given time. With a good, constant heat source, flat-bottomed pans generally will evaporate about 2 gallons of water/hour for each square foot of liquid surface. Remember, 43 gallons of sap are required to produce one gallon of syrup, therefore, 42 gallons

of water must be evaporated. This would require about 21 hours of continuous boiling (and sap refilling) if a pan with one square foot of liquid surface were used. By comparison, a gallon of syrup can be produced in about seven hours using a rectangular 24" x 18" pan (three square feet of liquid surface). Obviously, the larger the pan, the quicker the evaporation process will be completed, and, quite obviously, the more important it is to use a continuous feed evaporator discussed above when large amounts of sap are to be processed.

The "batch" processing pan should not be filled completely, as boiling sap usually rolls and foams. However, to avoid burning or scorching, most producers keep at least 1-1/2 inches of liquid in the pan and monitor the heat carefully (don't let the heat get too high). The risk of scorching increases as the density of the liquid increases. When foaming occurs, the foam can be skimmed off and discarded. In a continuous feed evaporator, maple producers often use a defoamer to reduce the amount of foaming. Defoamers are not, however, commonly used when batch processing small amounts of sap. In "batch" processing, if foaming over is a problem, the common solution is to use a deeper container. If needed, commercial defoamers are available from maple equipment suppliers or a flavorless vegetable oil may be used. Use the defoamer sparingly (a drop at a time) as excessive amounts may give the syrup an off-flavor.

Finishing Syrup

The higher the sugar concentration in a sugar solution, the higher the temperature at which the solution boils. As water evaporates from sap, the temperature of the boiling liquid increases. Finished syrup (66° Brix) boils at 7.1°F above the boiling temperature of water. In a large continuous feed evaporator, the rate of flow through the evaporator can be adjusted so that syrup is constantly drawn off at the finish end. In most operations, however, syrup is not drawn off continually, but periodically as the sap in the last channel of the evaporator pan reaches the proper density. To gain better control over the final product, some producers remove sap from the evaporator when it is between 45° and 60° Brix and finish the syrup in a batch finishing pan.

When "batch" processing, sap is added periodically to the pan to replace the evaporated water until a suitable volume of partially processed sap is obtained. At that time no additional sap is added and the evaporation process is continued until the liquid is boiling at 7.1°F above the temperature of boiling water. The temperature and heat must be monitored very carefully as "finish point" is approached so that the syrup does not scorch or become too dense. For accurate readings, the thermometer bulb should not touch the side of the pan.

Finishing syrup at the correct temperature is critical to producing quality syrup that stores well. If the temperature does not reach the proper finish point, the syrup will not store well and will taste very watery. If the temperature of the syrup goes beyond 7.1°F above the temperature of boiling water, a small amount of sap should be added to bring the syrup to the correct finish point. Besides wasting sugar, syrup finished too heavy (too high Brix) will form sugar crystals in the container while in storage.

Boiling Point Variations

It is important to remember that the boiling point of water varies with location (elevation) and weather (high and low pressure), and should be determined whenever syrup is made. This is easily done by placing a thermometer in a pan of vigorously boiling water to calibrate the boiling point for that time and place.

Once the syrup has reached the desired boiling temperature, it is ready for filtering and packaging. Most small maple operations and many larger ones filter hot syrup through clean wool or Orlon syrup filters to remove sugar sand and other suspended solids. Some larger operations are now using pump driven, diatomaceous earth, pressure filters.

After filtering, syrup that is to be used immediately can be cooled and refrigerated. The rest of the syrup should be packaged hot in tightly sealed, clean, air-tight containers. Many kinds of commercial maple containers are available in plastic, glass, and metal. Hobbyists and small commercial producers often use canning jars or similar containers. A variety of techniques and

equipment are used for packaging syrup, ranging from filling the containers directly from the evaporator pan to using commercially available, heated canning units. For safe storage, it is critical that syrup temperature when packaged be at least 180°F. After filling and sealing the containers, the containers should be inverted immediately for a short time to flood the container neck and lid bottom with hot syrup.

Once cooled, each container should be labeled with its contents, and the name and address of the producer. In some states maple syrup packaged for retail sale must be graded according to USDA or state grading guidelines into classes such as Light Amber, Medium Amber, and Dark Amber. Some other states have voluntary grading standards and some other states have no grading guidelines. Producers should determine and abide by the laws and standards applicable in their state.

MAPLE CONFECTIONS

Maple syrup can be processed into a wide variety of confections including granulated or molded maple sugar, “crunchy” hard maple sugar, molded soft sugar candy, maple cream, maple fondant, and ‘Jack Wax’ or ‘Maple on Snow.’ Some of the confections, such as ‘Jack Wax’ or ‘Maple on Snow,’ are fun confections with little commercial value. Others, such as molded soft sugar candy, maple cream, and maple fondant, are outstanding value-added products to increase a producer’s income. While a gallon of maple syrup might sell for \$25-\$40, that gallon of syrup will produce seven to eight pounds of candy or fondant selling for close to nine dollars per pound. The small amount of time required to convert the gallon of syrup to candy or fondant increases the gross value of the gallon of syrup by \$32-\$47.

The process of making maple confections is simple: heat maple syrup to the desired temperature and then cool it with or without stirring. The temperature to which it is heated, how rapidly it is cooled, and whether it is stirred as it cools, determines the confection made. In the directions that follow, a temperature range rather than a specific temperature is recommended for making most confections. Many factors affect confection making including barometric pressure, humidity, and the character of the syrup used.

Often, the recommended finishing temperature must be adjusted upward or downward to produce the desired characteristics.

Making Maple Confections

Making small quantities of maple confections requires little special equipment. A kitchen stove will provide a steady, easily-controlled heat source. A variety of spoons, ladles, and pans are necessary, as is a candy or other thermometer with a temperature range of 200 to 300°F. For some confections, a trough or container large enough for stirring or to function as a water/ice bath for rapidly cooling the heated pan of syrup will be needed.

Rubber candy molds also will be required if candy or molded sugar is made. Common recommendations for new rubber candy molds are to boil them for 10 to 15 minutes in a mild solution of Sal Soda, Caustic Soda, Arm & Hammer Washing Soda, or Arm & Hammer Baking Soda (1/4 pound to a gallon of water), scrub them well with a semi-stiff brush, and rinse them well with clean, cold water. If the molded confections are sticking, a thin coat of glycerine may be applied with a brush and the excess blotted with a soft cloth. After the molds have been used a couple of times, the glycerine should not be needed. Occasionally the first candy made in new rubber molds has a bitter taste and should be discarded. After use, rubber molds should be placed in warm water until sugar dissolves, rinsed in clean water, and then placed upside down in a rack to dry.

When heating the maple syrup, experiment to achieve the right combination of pan depth, depth of syrup, and heat to avoid burning the syrup or foaming over. Begin with moderate heat and no more than one and one-half inches of syrup in an eight-inch deep pan. If foaming becomes excessive, it can be reduced using a drop of commercial defoamer or vegetable-based oil.

An important step in making any maple confection is determining the boiling temperature of water. The temperature necessary to produce a particular confection is stated in degrees Fahrenheit above the boiling temperature of pure water. Pure water boils at 212°F only at standard

atmospheric pressure. It varies with altitude and weather conditions (low and high pressure). The temperature of boiling water is easily determined through the use of a candy thermometer.

Maple Sugar (Granulated or Molded)

Much of the maple syrup made in colonial times was processed into maple sugar. In this form, it was easier to store and transport, and could be reconstituted easily to syrup by adding water. Today, maple sugar can be used as a partial or complete substitute for cane sugar depending on the degree of maple flavor wanted. Try it as a sweetener on cereal or in tea, as a substitute in baking, or when making glazes or sauces for meats.

Make granulated maple sugar by heating maple syrup to a temperature 40 to 45°F above the boiling temperature of pure water, immediately transferring the syrup to a trough or flat pan, stirring until granulation is achieved and all apparent moisture is gone. At this point, the product may be sieved through a course screen (e.g., 1/8-inch hardware screen) to produce a uniform product. Making granulated maple sugar can be difficult when the humidity is high.

Make molded hard maple sugar by heating maple syrup to a temperature 40 to 45°F above the boiling temperature of pure water, immediately transferring the syrup to a trough or flat pan, stirring it until crystals form, and then packing it into molds (with a spoon, spatula, or putty knife) to harden. Note that this is not maple candy, but a molded form of sugar that is quite hard.

"Crunchy" Hard Maple Sugar

A relatively hard, crunchy, molded maple sugar candy is made by heating maple syrup to a temperature 28 to 30°F above the boiling temperature of pure water, allowing it to cool to about 150°F, stirring it to develop a plastic consistency containing relatively large crystals, and pouring or packing it into molds.

Molded Soft Sugar Candy

This is the relatively soft maple sugar candy often seen molded in a variety of shapes such as maple leaves. Make soft sugar candy by heating maple syrup to a temperature of approximately 32-34°F above the boiling temperature of pure water, pouring the syrup into a flat pan or trough, and allowing it to cool undisturbed to at least 200°F but not less than 160°F, stirring until the syrup is soft and plastic, and then pouring or packing it into molds. Molded candies commonly set up in 10 to 30 minutes. Candies formed by pouring rather than packing will have an attractive glazed surface.

Maple Spread (Cream or Butter)

Maple spread is a smooth, semisolid, creamy-maple spread that is a delicious topping for toast, muffins, plain donuts, or similar products. In many areas, maple spread is referred to as maple cream. Most Ohio producers reserve the term maple cream for the nougat product described below. Maple spread is made by heating the syrup to the prescribed temperature, cooling it rapidly, and then stirring to produce a product with very small, almost undetectable crystals.

Not all syrup is suitable for making maple spread. Almost all the sugar in maple sap is sucrose, but during processing to maple syrup some sucrose is converted to invert sugar. Syrup containing more than 4 percent invert sugar is unsuited for making maple spread. There are tests to determine the amount of invert sugar in maple syrup, but they are complicated. As a rule, light colored syrup (US Grade A Light Amber) contains small amounts of invert sugar and can be successfully creamed or made into smooth nougat. Darker syrup is more likely to contain higher quantities of invert sugar, though some contain amounts low enough to be successfully creamed. Without testing for invert sugars, it is best to stick to the light syrups for creaming and nougat making.

Maple Spread

Make maple spread by heating maple syrup to a temperature 22 to 24°F above the boiling temperature of pure water, cooling the syrup

rapidly in a water or ice bath to room temperature (at least 70°F and preferably 50°F), and then stirring the chilled syrup at room temperature until crystallization is complete. When stirred, the cooled syrup first becomes more fluid (less stiff), and then stiffens and shows a tendency to "set-up." At this point it loses its shiny appearance and develops a dull or flat look. The crystallization process is then complete and the spread can be transferred to an appropriate container. Maple spread is best stored at low temperatures, ideally in a refrigerator or freezer.

Maple Fondant or Nougat (Ohio Maple Cream)

Maple fondant or nougat, sometimes called Ohio maple cream, is a "fudge-like" maple product that is often described as the candy form of maple spread. Good maple fondant requires the same low invert sugar content as maple spread. It is made in the same manner as maple cream except that the syrup is heated to a higher temperature.

Make maple fondant by heating maple syrup to a temperature 27°F above the boiling point of pure water, cooling the syrup rapidly in a water or ice bath to room temperature (at least 70 and preferably 50°F), and then stirring the chilled syrup at room temperature until it sets to a soft solid. Maple fondant can be packed into molds, formed into a small "cake," or dropped in small pieces onto a marble surface, waxed paper, or a metal sheet.

"Jack Wax" or "Maple on Snow"

"Jack Wax" or "Maple on Snow" is a maple product produced by pouring hot maple syrup over snow or crushed or cracked ice. It is most commonly eaten quickly, rather than stored for future use.

Make "Jack Wax" or "Maple on Snow" by heating maple syrup to a temperature 18-40°F above the boiling temperature of pure water and immediately pouring the heated syrup over snow or cracked or crushed ice. The nature of the product produced depends on the temperature attained. At the lower end of the temperature range, the "Jack Wax" will be taffy-like, and

chewy; at the upper end of the temperature range it will be much harder, and more glass-like.

ECONOMICS OF MAPLE PRODUCTION

As we have noted throughout this article, the retail price of a gallon of maple syrup will vary, depending on location, from perhaps \$25 to more than \$40. Although it is highly variable, a maple producer will have, on the average, somewhere between \$15 and \$22 per gallon in costs of production, including equipment, labor, and materials. This would suggest that, depending on their location, production efficiency, and marketing effectiveness, maple producers receive between \$3 and \$25 net income per gallon. Obviously, this is a wide range, and emphasizes the importance of efficient production and effective marketing within a specific geographic area to minimize costs of production and maximize price.

Also, as we noted above, the net profit from a gallon of syrup can be substantially increased by converting it to maple confections. Similarly, it can be increased by packaging in smaller containers. In general, the smaller the container the greater the profit. Some local market research will identify prevailing prices, but as an example, a gallon might sell for \$30, a half gallon for \$18, and a quart for \$12. Even though the cost of four quart containers will be greater than the cost of one gallon container, the net profit from the sale of the four quarts will be substantially higher. And, from a marketing perspective, there will generally be substantially more demand for containers smaller than a half gallon.

When considering maple production as an income generating alternative, it is also important to remember that maple production at any scale requires an initial investment in the form of equipment. The larger the operation the greater the initial investment, ranging from a few hundred dollars for the small hobbyist to as much as twenty thousand or more dollars for operations in excess of a thousand taps. This initial investment cannot be recouped totally during the first few years of production. Much of the equipment has a life expectancy between ten and thirty years. An evaporator, for example, if properly cared for, can

be expected to last at least twenty and perhaps more than thirty years.

MARKETING

As with many other enterprises that offer a product for sale, the importance of effective marketing for an individual maple producer depends on a number of factors including location, competition, the amount of production, and whether the sales are wholesale or retail. Certainly maple syrup can be sold wholesale to a broker, requiring very little marketing, but you take the going price. Producers can also wholesale maple products to a variety of stores, including farm markets, gift stores, health food stores, etc. These sales require a quality product and some effort on the part of the producer to market to the buyer and meet the buyer's needs and specifications.

Throughout most of the maple region most retail maple products are sold by the producer at or near the point of production, often directly from the sugarcane store or the producer's home. The type and amount of marketing necessary for such sales will depend on what and how much is to be sold and location. Producers located on a well-traveled road may find that a visible, legible, roadside sign or two will provide all of the customers they can handle. Those "off the beaten track" or those wishing to expand their sales may need to utilize other forms of advertising as newspaper, radio, or direct mail. Producers wishing to expand their retail markets can also explore a wide variety of outlets including county and state fairs, festivals, mall sales, and holiday gifts for company employees.

Maple producers selling products should be aware of any licenses and certifications required in their locale.

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Developing a Custom Sawmilling and Kiln-Drying Enterprise

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Abstract: The development of small portable bandsaw mills has opened new opportunities for individuals to develop full-time and part-time businesses. These opportunities can be developed to meet the individual needs of the developer and customer on an almost unlimited basis.

Keywords: individual, trees, logs, lumber, products, markets

INTRODUCTION

I was asked to make this presentation because I have personally developed a small woodworking business as an avocation that includes the operation of a portable bandsaw mill. I first became involved in the lumber business at the age of fourteen working for a neighboring circular sawmill in northwestern Massachusetts. My jobs included sorting lumber in the yard, pulling lumber off the green chain and rolling logs for the sawyer. The last task was my favorite. I enjoyed helping position the log, set the works, and see the face of a cant open up to reveal lumber that would be produced. I was awed by the skill of the sawyer in being able to plan his settings to yield predicted products efficiently without waste. He was a gruff old Yankee, but took pride in the obvious respect of a kid who was willing to work. I spent several summers and school vacations working for that mill.

Then I went on to forestry school, working my way through as a self-employed logger while raising a family. I sought out specialty markets to give me a competitive edge. One of my favorites was butternut veneer with the grade logs going to a mill that contracted for paneling Friendly Ice Cream stores. I gained much of my weight touring Friendly's restaurant trying to determine which woodlots paneled which stores.

Upon moving to Catskill, NY, to work for the Department of Environmental Conservation, I began restoring an old farmhouse with the pallet

grade butternut I had set aside from my logging days. People seeing my work encouraged me to start a woodworking business as an avocation.

Over the years I accumulated about \$30,000 worth of tools as I would sell furniture and kitchens. I found I wanted flexibility to run moldings in various species to match my custom work so I bought an old sticker machine that looks like the one at the Smithsonian. I wanted to have control of the grain patterns and dimensions of the lumber I could use so I bought an inexpensive chain saw mill that I decided was not going to suit my needs after sawing about five thousand board feet. I replaced this with a used Wood Mizer LT40 manual mill. Then I wanted control of drying so I bought an Ebac dehumidifier kiln. The latest purchase has been a 1953 Allis Chalmers WD45 with a Farmi winch. At this point I can take the process from the standing tree to the finished project supplying most of my lumber needs.

My avocation will become a full time business as I enter retirement. As I approach it I have been able to reinvest income to establish an equipment and lumber base while developing a reputation; so I can enter the business with both a workload and minimal outlay.

HOW CAN YOU GET STARTED?

I will focus on the sawmill and lumber drying aspects of the business.

Selecting a Mill

First, there are many brands of portable sawmills on the market today. I will not advertise for any one manufacturer, other than to say I am very pleased with my mill. I bought it for \$5,000 after it had been owned by three people. I was able to fix the few minor problems it had without significant cost or frustration. I have sawed over 100,000 board feet and plan to continue using it for many years to come.

The important factors in selecting a mill are finding one with the features you want and near enough to reliable service so you can tolerate any repairs that are needed. In my case help is about 160 miles away, but, so far, I have been able to fix all the problems I've had on my own.

My mill is a manual mill and the bed is about waist height so I have to roll the logs up onto the mill to saw. There is a manual boat-trailer style winch to do this and I have loaded 28 inch diameter, sixteen foot long logs by myself. A friend of mine has a mill with the bed just above ground level so loading is easier; however, he has to bend over to handle every board - a task my old back would not enjoy. He also has a seat to ride on so he isn't standing all day to saw. This might be a nice feature if you have a helper to offbear lumber and roll the logs; but he has to dismount to handle his own wood when alone. I prefer standing so I can toss or carry the slabs and boards while the headrig is returning under its own power.

Some mills have hydraulic loaders, turners and other features. Another friend of mine has a Ross mill that uses gravity to feed the headrig. This gentleman is almost ninety and he still is able to saw lumber by himself. That mill capacity is 18 inches for diameter; but it can produce accurate lumber with a little care.

Where I do not have hydraulic loader or turner, I welded a pulley into a frame that I can set in my log holder mechanism. This allows me to run the winch cable around the pulley, back under the log to a cant dog bale which I hammer into the top of the log. This allows me to crank the log over against the upright supports thus I am able to turn logs I could not possibly roll by hand. The cable supports the log and cushions the drop as the log falls onto the bed. Some mills may have similar

devices available as accessories. Having used the winch on my crawler to lift logs away from bunk stakes on my log scoot gave me this idea to make the job easier.

Mills come in various power options including electric, gas or diesel. I have seen mills from 8 to 35 horsepower. The more powerful the motor the faster you can saw, to a point. My 16 horse motor seems plenty adequate. I find blade tension and sharpness coupled with species factors to be my production limiting factor. I can saw black locust faster than I can old field pine because the hard knots and soft wood of the pine tends to deflect the blade. I find the water cooled bandsaw cuts locust much better than my neighbor's circular mill. His blade heats up begins to warp and sing, sending us running out to safety while my cool bandsaw slices right through.

In summary, you want to select a mill with the features that are important to you and at a cost that you decide is within the investment limits you are willing to make. Make sure good service is available or at least parts can be attained within reasonable time frames.

Maintenance

On the subject of sharpening, my mill came with the original grinder and upscale set tool. It was a little the worse for wear and consequently takes me about a half hour to sharpen and set each blade. As I have it set up, the water drip to keep the teeth cool dribbles in my lap, which is OK in my unheated barn in the summer but less pleasant in the winter. I find I am not consistent. Some blades cut well and others climb or dip on the first cut. Part of this is due to missing parts and part is due to out of date equipment. I have chosen to use Wood Miser's Resharp Program. They grind the whole tooth profile and the blades seem sharper than a new blade. The cost is reasonable to the point that I do not feel my time is well spent in the frustrating repetitive task of sharpening ten blades or so. The one draw back is having enough blades to have twenty in transit at a given point in time. Yet with my part time operation, I can easily adjust to that with a total resource of around thirty blades.

Hitting hardware dulls blades. Barbed wire will break blades quicker than spikes. When you hit hardware, depending on what side takes the worst hit, the blade will either rise out of the log or dive deeper. You may have to cut the board off with a chain saw to get out of the predicament. Often you can chop around the item and pull it with pliers.

Dirty logs also quickly dull blades. I use an axe to chop away gritty bark on the lead side of the log. A friend bought an attachment for his chain saw for the task. On tight barked species that don't chop well, I have just run my chain saw across the bark chaffing away the dirt.

Sharp well-tensioned blades are the key to accurate lumber. I use water and add antifreeze in the winter for blade coolant. Another friend of mine uses a pump oiler can to spray the blade with kerosene at the beginning of each cut. I haven't tried it and am satisfied with the five gallon water bottle drip that falls on the lead edge of the cut. Perhaps the kerosene might prevent pitch buildup; but even a rusty blade shines clean after one cut with water as a lubricant.

Most other maintenance is easy, such as greasing bearings at recommended schedules. The seals on my mill were blown when I bought it; so I grease more frequently than recommended. The bearings hold true; so I won't replace them yet. With my manual mill there really isn't much to keep track of. I do scrape the track clean because sawdust buildup interferes with the fast return feature. If I don't scrape off the sawdust, I have to drag the headrig back. Although I haven't measured to check, pressure on those guide wheels might cause inaccurate lumber by throwing the headrig out of alignment thus causing a clapboard effect.

In summary, take care of your mill and your mill will take care of you. Take your time and don't force the mill beyond its limits. Remember it is much easier to maintain your mill than fix it. Blade tension and sharpness are key to productivity and quality.

Sawing

Experience is the best teacher. My mill has a scale to set whether I want to cut 4/4, 5/4, 6/4 or 8/4 lumber. One friend of mine has scribed the back

of that bar for 3/8's, inch and an eighth and other settings. I have visually used the halfway mark on the 6/4 scale to saw 3/4 inch boards for fencing. I usually change for different thickness settings when I roll the log so that my waste goes into the slab.

One proclaimed advantage of the portable bandmills is that they waste less lumber due to their smaller kerf. That is true if you are sawing accurately enough so there is no drift to the blade. I often sacrifice that for faster production. A little wave planes off without a problem with my dual feed roll 24 inch planer,

In mentioning production, the most often quoted figure I've heard is that someone can expect to saw 1,000 board feet per day. In actuality there are many factors influencing production. Log size, dimension of lumber being sawed, accuracy being sought, species, location of the mill are but a few of the factors that influence yield. I have sawed less than 100 board feet per hour sawing small or excessively large diameter logs, short logs, or logs with significant crook, sweep or defect. And I have exceeded 350 board feet per hour sawing two foot diameter 16 foot long hemlock logs into framing lumber. By splitting cants and stacking them side by side I have sawed three to four 2x6's in a single pass. That can really make an offbearer puff. The problem with excessively large logs is a combination of too much weight to handle efficiently and extra effort required to be able to make the first few cuts. My mill is rated for 28 inch diameter capacity. I have sawed 34 inch diameter logs by chain sawing a groove for the blade guide. That may be necessary on two or three faces before one gets the log trimmed down to size.

A combination of care and creative thinking has provided me with many hours of profitable milling.

THE BUSINESS END

There are many approaches to developing a business with one of these mills. So far I have custom sawed my own logs for my own use and for sale of lumber. I have bought logs and trees from a neighbor and both brought the logs home and taken the mill to the trees. And I have sawed

other peoples logs for them both at my site and theirs.

The mill is truly portable. It follows my pickup like a dog on a leash and can go anywhere my truck can go. I've sawed logs in downtown Schenectady, New York, while parked in a residential backyard on a future pool site. I was the neighborhood attraction that day. The key to setting up the mill is finding a suitably level spot with enough room to work.

I normally charge by the hour. I stay as busy as I want to be charging \$35 per hour portal to portal and I absorb the cost of blade sharpening unless I hit hardware. If hardware is hit I charge \$20 per blade. These costs are known up front by all my customers. I do not like to charge on the basis of production because, as I discussed earlier, production is a function of what you are sawing. Clients soon learn that small crooked logs are not worth sawing and sometimes even those clear, short, narrow boards off the sides of the log might be better left in the slab. The customer decides what to have sawn and whether to bring the logs to me or have door to door service.

Most of the friends I know with similar ventures lean towards the hourly rate also; although some work by the board foot.

Hourly rates are fair from my perspective. The customer can see that I work steadily, can work with me to reduce cost, and does not feel gouged if high production costs more per hour than might have been anticipated. And I do not end up losing money because I am expected to yield great lumber out of a poor quality log.

In the case of custom sawing, the business might end with green lumber coming off the mill. If sawing for yourself, there are additional options to consider.

The primary points to remember with the sawmilling end of this type of business are that flexibility offers you the opportunity to develop your own business to suit your desires. Plan to make your approach one that you are comfortable with.

As with any business, you have to decide how big or small you want to develop. Personally I do not

want the hassle of employees. I tried the partnership route twice and believe in the old saying that "there are two types of partnerships—forming and falling apart." It is very hard to find someone who wants to work at the same intensity as yourself. And you can ruin some good friendships through a partnership.

DRYING LUMBER

After the log is milled, one has to decide how to process it to become a usable product. This usually entails drying.

Once I built a porch for a neighbor, sawing his hemlock one day and nailing it in place the next. This lumber dried in place. The nails drove easy and held extremely well with the boards drying in place. The porch is strong and held true. Yet, for most products, at least air drying is needed.

To air dry lumber properly, make a level foundation of 6x6's or other solid material to stack the boards on. Stack the lumber with gaps between boards to allow air passage. Use uniform stickers (1 inch square strips) spaced over the foundation supports at two foot intervals to keep the pile from sagging and causing warped lumber. I use hardwood stickers for softwood and softwood stickers for hardwood on the theory that staining fungus that might attack one species may not attack another. If I am stacking a species prone to warp, I try to stack another species on top of the pile so the weight helps stabilize the pile. I allow one year per thickness inch for air drying.

Because I build furniture and cabinets as the primary backbone to my woodworking business, I wanted to be able to use kiln dried lumber. There are no opportunities for hiring custom kiln drying near my shop. Further, I am generally trying to dry less lumber than would a commercial kiln load; so, if accepted by a commercial kiln, my lumber might be dried with different species or different dimension lumber and consequently might get significant degrade through hiring the kiln drying. Considering these factors, I decided a kiln on my own property made sense for me.

Fine Woodworking magazine had run a couple of articles on solar kilns. Professor Bill Rice at the University of Massachusetts had designed a solar

kiln for the small operator. I considered building one, but I was concerned about consistency and my career keeping me away at times I might need to be monitoring performance.

I also considered kilns of varying capacities using other energy sources. I ended up purchasing a small Ebac dehumidifier kiln that uses electricity and has a 650 board foot capacity. For a part time operation, this kiln seemed to fit my needs for the price I was willing to pay. For \$1,400 plus materials for plywood and insulation for the box, I had a kiln that would fit into one end of my barn. I can dry wood to 7.5 percent moisture content for about \$100 per load of 4/4 lumber and twice that for 8/8 lumber. I first air dry my lumber before putting it in the kiln because it is too costly to start with green wood. 4/4 lumber dries in about three weeks to a month depending on the volume being dried. The process is simple. A schedule helps set the dials and each day I increase the temperature setting until I reach 45 degrees centigrade and then I can leave it alone for the rest of the schedule. I must say I am less impressed with Ebac than I am with Wood-Mizer; but the kiln was inexpensive and has proved profitable for me.

As with sawmills, you need to review what is available and determine how much you want to pay for the type of equipment that will fill your needs.

I have one customer who tends to keep my kiln busy when I am not using it for my own needs. There seem to be opportunities to do custom drying. I have limited myself to one logger who specializes in gathering and selling wide lumber. I charge him barely over my costs and gain the real benefit when I need some lumber that I don't have on hand; for he returns the favor by selling me lumber at very reasonable rates. As with milling, drying lumber provides you with varying opportunities to develop your own market strategies.

MARKETING PRODUCT

Developing a small bandsaw milled lumber business requires you to consider filling unique marketing niches. You cannot compete with the big boys marketing wholesale. They can produce a

million board feet of 2x4's cheaper than you can to sell to a retail lumber yard.

Where you can be competitive is seeking out specialized products, such as butternut, locust, sumac, and other species that are not readily available. You can produce speciality dimensions for individual clients. You can look at each log to determine the best character to saw for. With butternut, I seek the defect that yields the most interesting pattern to showcase in a door panel or special spot. You can gain access to cheap logs a commercial logger cannot afford to deal with. And you can help salvage trees that people don't know how else to deal with. And you can make a homeowner something out of his or her tree. This last concept can work very effectively.

One way to sell lumber is to join a woodworkers' association or check lumber yard bulletin boards for business cards of potential buyers of lumber. Once people know you are out there, buyers begin to seek you out. I have never resorted to paid advertising to sell my lumber. Word of mouth has given me all the business I can handle. One example I can reflect on was when a twister cut across a few old towns in western Massachusetts. One contractor learned that I made custom moldings and contracted with me for some 6 inch crown moldings to match those on a historic home he was repairing. Within a month I had orders for two thousand lineal feet of duplicate moldings from several other contractors in that area. I don't know how the first customer heard of me, but he certainly was effective advertising.

I base my business on delivering what and when I agree to produce. My prices are apparently fair. And I am producing products that may not be available from the local retail lumber yard. Consequently I've found a niche that serves my needs. By having the options of producing each level of product from veneer log to firewood, rough lumber to finished furniture, I have a business base that can flow with the economy. I have not had a time when I have not had something to do. When there is a lack of orders, I turn my focus to stockpiling lumber for the future. Currently I have about ten thousand feet of lumber of around ten or fifteen species air drying or kiln dried. I look on these as money in the bank. Sometimes I get a customer who wants a few boards that are at the bottom of a pile. I usually

accommodate in order to have that customer return in the future. Space is a limiting factor for me. My lawn is becoming a lumber yard. My neighbor's barns are being taken over. And my barn is full. Unlike money in the bank, I may not be able to make a withdrawal when I'd like. Yet there is real satisfaction in having a solid supply of lumber to draw on.

How you plan your business will determine your marketing strategies. If you are single product focused, have employees, and are full time, you may need a more aggressive marketing strategy than if you work alone and are diversified.

CONCLUSION

Many options can be viable. The variety of equipment, resource supply, saleable products, operation structure, and potential markets allow one to enter a bandsaw milling venture under many different approaches. The entrepreneurs must decide how they want to proceed. One can jump in all at once. One can start with new or used equipment, with some facets or many, with discretionary money or going into debt. Being a Scotch/Irish Yankee, I've gone the conservative route. Developing this venture as an avocation has worked well for me and allowed me to move slowly. I have never had to depend on my woodworking to feed my family any week.

You have to choose what will work for you. Take time to look at equipment options. Visit with others who won't perceive you as direct competition, who you feel you can trust to share their knowledge with you. Then take care of your investment, do not push your tools beyond their limits. Work safe. These portable band mills appear to be designed to be pretty hazard free; yet with any cutting tool, you must be alert to possible dangers. Be realistic and follow good business practices and be fair to your customers and success should be your reward.

Managing for Sustainability by Marketing Commercial Timber Products

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Abstract: Timber marketing based on sound forest management principles is essential to ensure long-term forest sustainability. Both timber marketing and forest sustainability depend on the partnership of the forest landowner, resource professional, and timber harvester. Traditionally, the objective of this partnership is to maximize income; today a stronger emphasis on sustaining the forest resource is required. Evidence suggests that many timber harvests occur without the use of sustainable forestry and harvesting practices. Use of Best Management Practices, including those that address timber sustainability, can increase the likelihood of timber sustaining outcomes. Informed landowners following proven marketing practices, using resource professionals, and demanding a concern for the forest and its amenity values can increase the number of sustainable timber harvests and ensure the long-term stewardship of their forest resources.

Keywords: timber marketing, forest sustainability, foresters, landowners, timber harvesters, stewardship

INTRODUCTION

Originally, this paper was entitled, “Marketing Commercial Timber Products and Managing for Sustainability.” I have chosen to change the order of concepts and thus the focus of the discussion. All of us, landowners, resource professionals, and timber harvesters—the audience for this presentation—should first decide to manage for sustainability, before even considering marketing products. Failure to do so will ultimately deplete

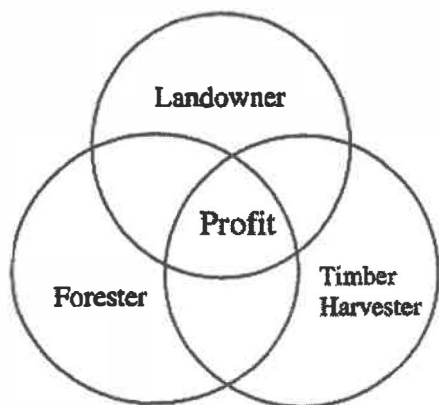


Figure 1. Venn Diagram focused on profits and depicting each partner's individual interests in timber marketing and in sustaining forests.

our options or cause society to impose restrictions to protect their broader interests in forestland management.

In this paper, I will examine three questions. Each question is important and together they provide a perspective for analyzing your harvesting decisions.

What does managing for sustainability mean? How do we manage for sustainability? And, what is the role of marketing? No doubt you have given thought to each question. Unfortunately, from anecdotal and research evidence, not every question in this sequence receives equal consideration when making harvest decisions. Why? That is not a question I am prepared to answer. Rather, I will attempt to develop the argument, that when we harvest and manage forests, we must look beyond the immediate returns

To “Manage for Sustainability and to Market Commercial Timber Products,” we have to talk about partnerships between the landowner, resource professional, and timber harvester (Figure 1). The areas of overlap represent shared interests or empathy between partners. The nature and extent of what the overlap represents will vary. The forester and the logger might want to keep mud off the

county road, and, most certainly, they want to keep the landowner happy. The landowner and the forester want to make the largest profit possible. And, the logger and the landowner may share a concern for making the harvest look good.

Central to the interest of all three partners in Figure 1 is profit. While profit may represent something more than money, such as increased access to the land or improved hunting, it most often represents a dominant interest in income. Obviously each partner is dependent on the other to maximize the total “profit” from a harvest. And, although each may not consider it, the impact of each partner’s decision affects forest sustainability. Each partner may internalize concerns about: What do we sustain and how do we sustain it?

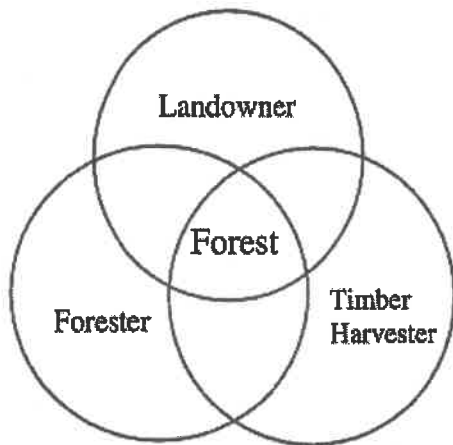


Figure 2. Venn Diagram focused on forests and depicting each partner’s individual interests in sustaining forests and in timber marketing.

I feel that the partners seldom articulate these questions to each other. Fortunately, most forest systems in our region are very resilient and can sometimes recover at least partially from profit-focused timber harvests.

When a harvest focuses on sustainable outcomes, the partners have to shift the focus of their partnership away from profit and to the forest (Figure 2). The intent is to first manage the forest system through the harvest and then to make a profit. Forestry is the practice of silviculture: the theory and practice of controlling forest

establishment, composition, structure, and growth. The focus of silviculture is on the forest and never exclusively on profit.

Silviculture is central to forestry. Unfortunately foresters represent landowners in less than 20 percent of the timber harvests (Birch and Dennis 1980, Birch 1994). More frequently, when involved, foresters represent the buyer, not the landowner. This changes the nature of the relationship from the perspective of both the forest and profit. It is not my intent to question the integrity of foresters, but to suggest that shifting concern from profit to what is right for the land will advance the implementation of sustainable practices.

Loggers are an important part of the sustainability discussion. Frequently, the diagrams representing the timber harvest have only two circles: the landowner and the logger. Loggers are technicians who, ideally, implement the forester’s harvesting prescriptions. A useful analogy is to compare a timber harvest to building a home. The landowner provides a description of needs, the forester designs the house, and the logger builds the project. The architect (i.e., forester) may seem superfluous, but no one builds a house without plans. Every timber harvest is unique and as such, demands a forester who can consider the landowner’s desires, the site’s characteristics, and the builder’s skills, to design a sustainable outcome.

The practice of sustainable forestry may reduce short-term profits, but the long-term benefits of healthy forest systems will accrue to all partners. Forestry education is key. Ideally, the logger, who paid for production, will understand the concern about damaging young trees or regeneration. The forester, paid on a percentage of the gross revenue, will retain the best seed sources. The landowner, faced with a need for income, may choose to defer taking it all from the forest, choosing to borrow against a forest improved by a more considered harvest.

An economist would say that each person in a timber sale is rationally seeking to maximize profit. In most cases, this is probably true, everyone involved in the process wants as much as he or she can get. If there is any altruism in the model, where is it? Research would suggest that landowners, because of their frequent emphasis on amenity values, are most likely to express an altruistic

attitude (Jones et al. 1993, Egan and Jones 1995). In nearly any landowner study, there is a listing of respondent objectives. Timber, even amongst large landowners, is not the first objective (Jones et al. 1993). Often it is not even among the top three. However, asked to provide a list of benefits, landowners recognize income production as one of the most important.

There can be a fundamental conflict—income versus doing the right thing. Obviously, shifting from Figure 1 to Figure 2 will require change. Frequently, the difference between an unsustainable outcome and a sustainable one is small. Sometimes it involves investing some resources back into the forest, other times it requires more complete knowledge of forest systems and functions, or other times, an open discussion about concerns about forest conditions will lead to desired outcomes. What then is forest sustainability? Understanding that, we can begin to think about marketing to protect it.

FOREST SUSTAINABILITY

The American Forest and Paper Association in their Sustainable Forestry Initiative provides a working definition of Forest Sustainability.

“ . . . means managing our forest resources to meet the needs of the present without compromising the ability of future generations to meet their own needs by practicing a land stewardship ethic which integrates the growing, nurturing, and harvesting of trees for useful products with the conservation of soil, air and water quality, and fish and wildlife habitats ” (AFPA 1995:3).

Clearly the definition considers products essential, but at the same time it recognizes the need to consider non-market values. The most important component of this definition is, *“ . . . meeting the needs of the present without compromising the ability of future generations to meet their own needs.”* This is nothing more than the concept of stewardship, which most landowners, resource professionals, and timber harvesters agree with and champion. Merely sharing a perspective is not sufficient to ensure that sustainable forestry occurs. Forestry, based in science and practiced with caution and sensitivity is sustainable and will provide for future generations.

MEASURING SUSTAINABILITY

Forest sustainability has many components. Consider all of the values you and others assign to ownership: recreation, aesthetics, water, wildlife, etc. The combinations are innumerable. A recent research study called the Timber Harvesting Assessment Project (THAP) (Finley and Jones 1997, Finley et al. 1997) at Penn State attempted to measure forest sustainability. However, after considerable thought, the researchers chose to narrow their focus to identifying and measuring criteria that define timber sustainability. This may seem less than ideal and their rationale may appear less than perfect. Nonetheless, the question they chose to investigate was “whether and to what extent are timber harvesting operations affecting timber sustainability.” Perhaps imperfectly, the committee that worked with the THAP believed that if it could define the essential variables from a timber perspective, it would in part address wider concerns of forest sustainability. Timber sustainability works well within the context of this paper since marketing forest products is the focus.

Every forest site has a given potential—a potential to produce timber crops (Finley and Jones 1997). Productivity is a measure of this potential (Figure 3). Measures commonly used to express productivity are site index, annual volume growth,

Potential = Productivity

Potential = Site + Trees

Potential = Ability to produce a full suite of values

Figure 3. A conceptual framework for considering forest site potential and its relationship to a full suite of values in the context of sustainability.

and tree and plant species. Some of these measures reflect the site itself, that is, the potential of the soil, moisture, and light available on the site to produce timber resources. These resources link directly then to the plants and, more specifically, to the tree. From a timber perspective, some trees have

Table 1. Variables chosen to measure timber harvesting sustainability in the Pennsylvania Timber Harvesting Assessment Project (THAP) and an interpretation describing the variables selection.

Measures of Sustainability	Interpretation
Species —the proportion of high value (e.g., oaks, white ash, black cherry, and sugar maple), medium value (e.g., red maple, and yellow poplar), low value (e.g., any species of commercial value not in high and medium), and noncommercial species (e.g., all noncommercial species).	With a focus on timber maintenance of preferred tree species, composition is important. Harvesting operations should maintain or improve species composition, moving a stand toward higher amounts of high and medium value species.
Quality — considered suitability of residual trees for developing potential sawlogs. Two classifications used: Acceptable Growing Stock (AGS) and Unacceptable Growing Stock (UGS).	Classes refer to residual tree stem quality and defects. The relative proportion of AGS to UGS serves as an indication of tending (i.e., cull removal)
Diameter Distribution — a tally of all residual trees greater than 1 inch diameter breast high (DBH). Estimates of DBH harvested trees estimated from stump measurements to obtain pre- and post-harvest diameter by species.	Shifts in diameter distribution along with information on species composition, basal area, and relative density help define the type of harvest and silvicultural treatment.
Regeneration — focuses on stocking levels for species classes (i.e., high, medium, and low value, seedling size, probable species, and measures of competition from interfering plants).	This information evaluated against research findings designed to evaluate pre-harvest conditions and blended with experience provides benchmarks for judging regeneration success.
Site Disturbance — the amount of site disturbed, the use of erosion and sedimentation control practices, and depth of rutting.	Statewide averages were compared to individual site values in describing the care given the site.
Tree Damage — square inches of stem damage on the first log and the proportion of the crown damaged on residual trees served as an index.	Index values compared to statewide averages served as a criterion for interpretation.

higher market potential than others; therefore, if we want to sustain potential, it is essential that we protect the inherent site productivity as well as ensure that harvesting does not adversely affect the species composition or market potential. A major shift in species composition following harvesting may represent a shift in potential (e.g., a Northern red oak site converted to red maple, or an Eastern white pine site changed to Northern red oak—the first negative and the second positive). Finally, by retaining site potential, we protect the ability of the site to produce a full suite of values and move closer, even through a focus on timber harvesting, to sustaining a range of important forest values.

In THAP, the intent was to identify the components of timber sustainability that represent the effect of timber harvesting on the site and trees. Six principal variables groups described timber sustainability for the 97 randomly selected sites evaluated across all ownership categories in

Pennsylvania (Table 1). While the variable groups are important, understanding about the use of the data to evaluate sustainability comes from the interpretation. A careful review of these interpretations begins to provide a set of criteria that can guide improvements in timber harvesting practices that will lead more frequently to sustainable outcomes.

Using the criteria to assess timber harvests is not easy. A panel of nearly 25 resource professionals labored with the problem and the data for nearly a year before they were comfortable with the process. Frequently what had been done during the harvest was clearly unsustainable in the long run; however, the data suggested that despite the apparent abuse, the harvest left the stand in a sustainable condition, at least in the short run. An example would be a diameter limited harvest where the limit was high enough to leave sufficient trees of desirable species so that another harvest could follow later. The practice of diameter limit cutting was

Figure 4. Timber resource sustainability matrix for practice and outcome.

		OUTCOME		
		Sustainable	Possibly Sustainable	Unsustainable
P R A C T I C E	Sustainable	s/s (41, 48%) ¹	s/ps	
	Possibly Sustainable	ps/s	ps/ps (4, 5%)	ps/u
	Unsustainable		u/ps	u/u (40, 47%)

¹The first value is the number of sites included in the group and the second, the percentage of the total (n=85).

unsustainable, but the **outcome** of leaving enough timber was sustainable. To address this incongruity, a matrix of practices and outcomes evolved (Figure 4). The matrix provided an opportunity to comment on harvesting practices that do not represent sound application of silviculture in particular and forestry in general.

Figure 4. Timber resource sustainability matrix for **PRACTICE** and **OUTCOME**. Matrix values of “s” indicate sustainable, “ps” indicate possibly sustainable, and “u” indicate unsustainable. The first numeric value in a cell is the number of sites and the second numeric value is the percentage of sites. The upper right and lower left cells are null outcomes, because it is unreasonable that a clearly unsustainable practice can produce a sustainable outcome, and vice versa. Because the upper left box with the double line border contains at least one sustainable cell, they were for the purposes of THAP considered sustainable. Similarly cells in the lower right contain one unsustainable element and are at best only possibly sustainable in the second direction. Harvests occurring in this section of the matrix were unsustainable. The central element, the panel agreed, represented an uncertain case. The parenthetical values represent the placement of 85 of the harvest sites, where a majority of the panel agreed on placement within the matrix. Twelve sites did not obtain a majority opinion. That nearly half of the timber sales reviewed were sustainable and an equal number where unsustainable is clearly an important

concern. Sustainable harvesting does not occur with the frequency that all partners in the operation would like to have happen.

Findings from this study suggest that sustainable timber harvests: 1) protect or enhance species composition; 2) do not greatly reduce average stand diameter unless they are clearly regeneration harvests; 3) leave a desirable distribution of UGS to AGS in the residual stock; 4) indicate cutting in all diameter classes, not just the larger ones; 5) establish or release regeneration; 6) show low amounts of residual stem and crown damage; and 7) use practices to protect water and soil resources. Importantly it is possible to address all of these concerns during a well planned and executed timber harvesting operation.

BEST MANAGEMENT PRACTICES FOR PENNSYLVANIA FORESTS: Promoting forest stewardship through education, cooperation, and voluntary action

What **can be done** to ascertain that your timber sale falls into cells that represent sustainable harvests? The use of Best Management Practices (BMPs) (Chunko and Wolf 1996, 1997) will help you reach sustainable objectives. While most states have BMPs, these guidelines almost exclusively address water quality issues. While protecting water resources is important, failure to use water quality BMPs was never a reason for classifying harvests in Pennsylvania unsustainable; however, when water

quality BMPs were ignored or poorly installed other concerns surfaced.

Best Management Practices for Pennsylvania Forests is the product of the state's Forest Issues Working Group (FIWG). The FIWG is a diverse group of professional resource managers, forest landowners, scientists, environmental organizations, and other citizens concerned about forests. The BMPs developed by the FIWG establish the minimal acceptable forest management guidelines that forest landowners, loggers and foresters can use to assure sustainable harvests. The BMPs benefit a wide array of forest resources and values. They reflect what we know today about using forest resources wisely and well.

Pennsylvania's BMPs provide guidelines for pursuing sustainable timber harvesting outcomes. The components include: planning, forest renewal and tending, and protecting non-timber forest resources, such as aesthetics and wildlife habitat.

Findings from the THAP suggest that planning is an essential tool for achieving a sustainable timber harvest. Clearly, timber harvest planning links to forest renewal and stand tending; making sure that you focus on leaving a viable stand that protects the largest suite of options for subsequent management operations or that you provide for forest renewal. By far the most common problem encountered in the THAP analysis was the failure to address residual stand conditions and forest renewal. Stands rated unsustainable were cut in a manner such that most of the current value was taken, leaving a residual forest of less valuable species, too widely spaced to warrant their subsequent harvest and too closely spaced to foster forest renewal. In a word, they left too much "green junk." Diameter limit cutting and high-grading are the common tools used to plan timber harvests. This is not good forestry!

MARKETING COMMERCIAL TIMBER PRODUCTS TO PRACTICE SUSTAINABLE FORESTRY

Many forest owners will eventually have the opportunity to harvest trees from their property (Grace 1985). These landowners must recognize that timber harvesting is a tool that can enhance

their use of the forest, provide income, and affect forest sustainability. The decision to harvest trees should be part of a plan that reflects the owner's short- and long-term goals for the forest. The harvest should follow a silviculture prescription that considers controlling forest establishment, species composition, forest structure, and forest growth. The silvicultural focus emphasizes the forest and not profit.

Certainly, this is a naive representation, but it does occur, especially when one person or entity embodies all three partners (e.g., family owned sawmills). How then can a forest harvest move toward this ideal?

Obviously, developing a team of partners with shared interests in the forest is fundamental. Clearly stated forest centered objectives are important. Developing trust and shared vision with the partners is necessary. This is not an easy task, especially when even a good timber harvest will change the nature of the forest. Few people find a timber harvest beautiful; however, if you understand that it is only a temporary disruption designed to meet your objectives, it is easier to tolerate.

If you are considering a timber harvest, develop a long-term management plan working with a resource professional who represents your interests (Jones 1994). Choose a forester in the same way you would select any service-related business. Check the phone book and classified ads, ask friends and professional acquaintances, including other woodlot owners, your banker, lawyer, and consultant, or call your state forestry agency, Cooperative Extension agent, or land-grant university.

Once you select several candidates from which to choose, determine whether an individual may have a conflict of interest that may influence the representation of your interests. Ask each to submit a resume, including documentation of professional experience, list of local client references, and fee schedule. Call selected clients and inquire about their satisfaction with performance and, with their permission, visit their woodlot to see for yourself the nature and quality of service provided. Meet with each forester and have them outline management options available to you and have them explain why they should represent your interests. Key to this discussion is their ability to

relate to your land and your objectives to sustain the forest.

Finally, as with any other service-related transaction, insist on a written agreement, with fees, services, obligations, terms and principal parties clearly identified. Read the agreement carefully and make sure you understand it. Ask questions. Have your attorney review the conditions of the agreement with you.

If a timber harvest is part of the plan, have your forester develop the silvicultural prescription as a first step. Then determine the volume and quality of timber for sale. You should never sell timber without knowing what you have to sell. Mark the trees you plan to sell and develop a plan for harvesting them with minimal damage. Accomplishing this will require that you develop a plan for developing and installing a road system in your woodlot. Eventually, you and your forester may modify this harvesting plan and road system while working with the timber harvester whose skills, knowledge, and equipment may help in further refining these elements of the operation.

After marking your harvest and tallying your volume, your forester will prepare a prospectus. The prospectus describes the location of the property, indicates the volume marked and the method of marking, and states that the timber is available for purchase in accordance with the proposed contract. The prospectus should indicate that you reserve the right to accept or reject any bid. This permits you the leeway to select a timber harvester that shares your concern for the maintaining your woodland values.

Selecting a timber harvester, as a partner in managing your woodlot, should follow a procedure similar to that used in finding a forester. Finding either of these professionals takes time; however, it is time well spent, because the sustainability of your forest depends upon these people.

High-quality timber resources are in demand and will only become more important to you and the forest industry in the future. Several initiatives such as the American Forest and Paper Association Sustainable Forestry Initiativesm and various third-party green certification efforts under the auspices of the Forest Stewardship

Council, an international organization, have as shared missions the desire to increase the use of sustainable forestry practices

CONCLUSION

What does managing for sustainability mean?

Managing for sustainability means having a focus on the future and understanding that your decisions will affect the suite of options you leave to those who own and manage the land after you. Forest land management involves developing a working relationship with partners who share your vision for sustaining the integrity of the forest. These partners, the forester and the timber harvester, bring to the process different skills that a landowner should understand and appreciate. Each partner has a specific role in the harvest. The landowner sets the objectives, the forester designs the prescription, and the timber harvester implements the plan.

How do we manage for sustainability? Evidence suggests that good intentions are not sufficient to attain sustainable outcomes. The partners in the process must focus on the outcome and use practices that protect the forest's potential. This includes using sound silvicultural practices that focus the harvest on the forest. Although difficult and perhaps sometimes impractical, the harvest should consider, first, the forest and, secondarily,



Figure 5. A modification of an earlier example. It represents a partnership fully focused on the forest during the timber harvest. The forest—the central point—brings the interests of the partners together, where they share a total commitment to the forest and a sustainable outcome.

the profit it generates. Attention to using Best Management Practices that broadly address all timber values, including residual forests, regeneration, aesthetics, wildlife, water resources, will help guide the partnership to attain sustainable outcomes.

What is the role of marketing? Marketing provides the reason to harvest and the opportunity to capture monetary and other values from your forestland investment. Planning the timber harvest is essential. A well planned and documented harvesting operation permits the landowner to market his or her products and to find a timber harvester who can identify with his or her management goals. A timber harvest occurring without planning is not as likely to protect the resource, maximize profits, and provide for long-term stewardship of the resource.

Forest sustainability and forest stewardship are terms that imply a commitment to the future. As landowners and land managers we have a responsibility to do the right thing.

We may abrogate our responsibilities at any time, but collectively and individually we are always responsible. No excuse will suffice or be accepted by those who inherit our legacy (Katakis, 1993; xii).

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SECTION 6

Forestland as a Sustainable Investment: A Panel Discussion

Managing Forestland as a Sustainable Investment: A Landowner's Perspective

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Abstract: A Maryland tree farmer realistically looks at her ten years experience in managing and operating thirty-acres of mixed hardwoods amidst pasture land that she inherited. Efforts towards a sustainable woodlot include a timber cut, sale of small lots of processed lumber, and a high degree of personal involvement. Discussed are several questions that potential forestland owners should consider: 1) Does forestland fit into your life? 2) Who will do the work? 3) Can you afford the forestland? and 4) What is the future for your forestland?

Keywords: landowner, sustainable forestry, personal experiences

INTRODUCTION

First, I should confess that I'm not certain I can tell you that forestland is a sustainable investment. However, I can tell you some of our experiences with a small woodlot and our efforts to make it "pay for itself." Our woodlot adjoins pastureland that we rent out and the two support each other. For today's remarks, I've separated the activities as much as possible and will identify where there is overlap.

Ten years ago, my sister and I inherited 190 acres of the family farm (eleven miles west of here) on which we had grown up. In the ten years that we have managed and operated our land, we have learned a lot, expended a lot of time, energy, and thought, and even have had time to look up from our work and appreciate the beauty of the woodlot and farm. I hope by sharing our experiences with you that you will become aware of some issues you should consider when contemplating forestland as an income opportunity and you will bypass some situations that can hinder your efforts.

When considering forestland as a possible income opportunity, there are several questions that, sooner or later, you should address: 1) Does forestland fit into your life? 2) Who will do the work? 3) Can you afford the forestland? and 4) What is the future for your forestland?

DOES FORESTLAND FIT INTO YOUR LIFE?

Before we inherited the farm, we had not planned to be forest managers. Neither my sister nor I, nor our husbands, had experience in woodlot management. Growing up on the farm, my sister and I had helped our parents with the variety of livestock and crops on the farm and had our own 4-H livestock projects that paid for much of our college education. We had enjoyed walking and playing in "The Big Woods," thirty acres of predominantly hardwood trees in the far corner of the farm, collecting leaf and bark samples for science projects, spotting the early-blooming redbuds and dogwoods, discovering columbine, May flowers, and jack-in-the-pulpits, and occasionally finding morel mushrooms. The woods provided firewood for the kitchen cookstove, shelter for the beef cattle, and lumber for barn fences. The woodland did not receive much attention because livestock and grain farming (to be a sustainable enterprise!), required the full time and efforts of our parents. The closest we came to having any qualifications for woodlot management was that my husband, Art, had grown a few Colorado blue spruce trees in the backyard of his parents' Pittsburgh home and he and I had a small tree nursery in our semi-rural backyard, twenty miles from Washington, D.C., for about ten years.

Once we inherited the farm, we soon found ourselves spending Saturdays (and often a weekday for me) working at the farm, driving one hour each way from our home, and doing a lot of loading and unloading of the pickup truck, since there were no buildings on our land. At first, we even did not have a pickup truck—we used our family car and a trailer from the tree nursery days. The days are demanding, but we must enjoy them as we keep going back, and planning more plantings, etc. . . ." Does forestland fit into your life?"

WHO WILL DO THE WORK?

Depending on the extent you want to be involved with your forestland, you will expend little or much time, energy, and resources or some amount in between. It's the familiar principle of saving your own time and energy by having someone else do the work, or saving money by using your own time and energy.

Do you have the knowledge to manage forestland or can you get the information you need? We have been fortunate to have available many seminars and other opportunities to learn about forest stewardship. They have included: one seminar offered by USDA in Washington, D.C. almost as soon as we inherited the farm; annual regional

workshops offered by the Cooperative Extension Service; special events by the Maryland Department of Natural Resources-Forest Service; plus the educational information and advice available from the extension service, project foresters, consulting foresters, the Walnut Council, and forestry associations and publications. Referring back to whether forestland fits into your life, one of the biggest challenges is to find the time to attend all the programs and read and digest all the information that is available! And yet, to manage our woodlands wisely, it behooves us to take advantage of many of these opportunities. Get on forestry newsletter mailing lists, subscribe to some forest stewardship magazines, and join an organization or two to learn, to share ideas, and to expand your vision.

In the end, however, one of the most valuable resources is your own experience. Absorb all the information you can and then try what makes sense for your situation. You will learn what works for you. We were amused this summer when we attended the national meeting of the Walnut Council in Indiana. It seemed that for every theory on growing walnut trees, no matter what end of the spectrum was represented, there was someone who advocated it as the "right way."

How much of the work can you do and how much will be contracted? We do most of the work

Table 1. Sources of Labor

Owners (no fee)	Contractors (fee)	Public Agencies (no fee)	Barter (no fee)
Management decisions	Consulting forester	Management plans	Firewood harvest
Management activities	Timber harvest	Information	Rubble removal
Tree planting	Portable saw mill	Advice	
Weed control	Commercial milling		
Seedling maintenance	Kiln drying		
Pruning	Planing		
Production of stakes	Firewood harvesting		
Purchasing	Residual log hauling		
Marketing of lumber	Fence construction		
Hauling lumber			
Record keeping			
Tax preparation			

ourselves, but we have hired fence builders, a portable saw mill operator, and a consulting forester to conduct the timber sale (Table 1). Sometimes, we choose to have other people do things we could do, just to free our time for management practices that (we think) only we can do. We could cut firewood ourselves, but we let several other people do that. In exchange, we get some ready-cut firewood for ourselves, neater-looking pastures, several Saturdays for other work, plus other people looking out for the property a few of the days that we are not there. Depending on your circumstances and wishes, activities can move between the columns, to another source of labor.

Will other people help you? Is this a reasonable and reliable expectation? Often families or friends start enterprises with high expectations that the whole family will be involved. Sometimes this is an assumption and sometimes it is the result of honest intentions. Be realistic about what you can expect from others. Others may not have the same interest and dedication that you have. If others are involved in your forest management, have some written agreement on how decisions will be made, finances handled, and responsibilities divided.

CAN YOU AFFORD THE FORESTLAND?

Can you afford the forestland? What will be the expenses? If inheriting it, what are the inheritance and estate taxes? Considering the infrequency of timber harvests, will there be adequate cash flow? What other sources of income could there be?

Acquiring forestland usually involves some cash outlay, whether for a mortgage or for inheritance and estate taxes (although the Taxpayer Relief Act of 1997 will reduce this expense for many). This is a frontend expense against which there may be no income for several years. Therefore, you may need to borrow, unless you have other personal funds and are willing to use them.

Upon inheriting the property, two of our first acts were to contact the Maryland Department of Natural Resources (DNR) project forester and wildlife biologist for help with "what we should or could do with the woods," and what we could do to enhance habitat for the upland game birds that had disappeared from the farm. It was not long

before we realized that the income from renting the 150 acres of pastureland would cover routine expenses but not any capital improvements, such as fencing. We looked to the woods and to the management plan and our DNR project forester and concluded that having a timber sale would be consistent with the management of the woodlot and would provide some needed income. About the same time, several loggers approached us with offers to buy timber. Since the offers were on *different* selections of trees, we recalled advice we had received at forestry seminars and hired a consulting forester. He inventoried the woodlot and marked trees for timber and for thinning (timber stand improvement), to enhance the growth of the remaining trees, and to conduct a timber sale. Eleven bids were received, ranging from \$.09 per board foot to \$.29 per board foot. The top bid was 50 percent higher than the previous independent offers, but, more important, the woodlot would not be "high graded." The harvest would result in many sawtimber-sized trees remaining for the near and distant future, plus undesirable trees would be removed. From our experience, we strongly recommend hiring a consulting forester to act as your agent for the timber sale.

Utilizing Wood After the Timber Sale

Following the timber sale, there were many tree tops and usable logs remaining. The portable saw mill operator, who was on the property sawing fence posts from our black locust trees, and my husband Art, lobbied me to skid those logs from the woodlot and saw them into lumber. The operator charged \$.18 per board foot to saw these logs. Through experience, we learned that painting the ends of the logs would help prevent checking until the logs are sawed and that, once felled, white ash needed to be sawn and kiln-dried quickly to avoid insect damage and other deterioration.

We have been able to sell processed lumber, but it has not been easy and requires much handling. After skidding the logs ourselves, the logs are sawed into lumber by the portable saw mill. We haul them in the pickup to a near-by mill for kiln-drying (at a cost of \$.25 per board foot) and planing (at a cost of \$.10 per board foot). Meanwhile, we make phone calls to potential

FORESTRY INCOME AND EXPENSES

Pre-1987; 1987-1997

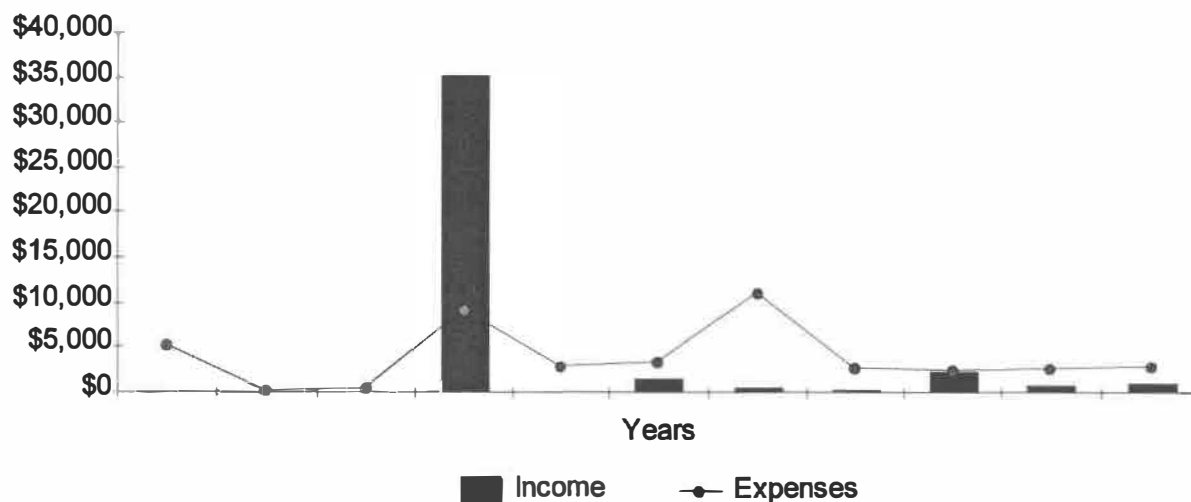


Figure 1. Income and Expenses

buyers and sometimes place newspaper ads. When advertising is part of the marketing, you have to allow time to deal with and accommodate individual customers. Prices received from customers have ranged from \$1.80 to \$3.00 per board foot, depending on the species. This lumber would otherwise be firewood or rot in the woods. So far, this venture has not been profitable, but we do have a thousand board feet of lumber drying now that could push this activity into the profit column, and, in the tradition of my frugal Aunt Annie, everything is used.

I suggest before sawing lumber for sale, you locate potential buyers to determine their needs and cut the wood accordingly to the desired thickness. We discovered that offering 5/4" rather than 4/4" lumber wasn't necessary and that hobbyists may have their own planers and not care if the lumber is planed. This can vary with locations and purchasers, so it is wise to know the market before sawing the lumber.

Considering all the handling, time, and effort involved to processing small lots of logs into lumber, one might prefer to sell the logs to a commercial saw mill. This is not always possible as it depends on the mill's need for lumber. We did this once, having the mill saw several logs into

lumber, keeping some, and then selling the remaining lumber to the mill at \$.32 per board foot.

Assessing Cash Flow

Obviously, the cash flow is irregular when forestland is managed for timber. Depending on the maturity of your trees and your management objectives, a major timber sale will occur very few times in your lifetime. With timber as our main activity, there is a spike in the income distribution (Figure 1). The other two years with slightly-greater than normal income reflect receipt of Stewardship Incentive Program (SIP) cost-sharing funds for forest stewardship practices. Cost-sharing has extended income, enabling us to undertake other practices. Some income was used for expenses related to the pasture rental, e.g., installing a well and watering troughs and fencing the pastures. We cost-shared the well and watering troughs, under programs to improve the water quality of the Chesapeake Bay and, thereby, again extended the income. The three mini-spikes in expenses were caused by, left to right, (1) estate taxes; (2) capital gains tax on the timber sale, fee of the consulting forester, and purchase of a used pickup truck; and (3) the purchase of a 25-year old farm tractor, and new auger and mower. Assets

from our parents' estate paid the estate and inheritance taxes. We used personal funds for the tractor and pickup truck. Another timber sale is a possibility within ten years.

CHANGING MARKETS AND OPPORTUNITIES

We are fortunate to have a mixture of hardwoods in our woodlot. We've noted the importance of this several times. When we had the timber sale, the winning bidder was driven by contracts he had to fill for white ash, a wood favored in international markets for furniture making. Last spring, the retailer to whom we usually sell dried lumber, had no demand for white ash but asked for walnut. Unfortunately, we did not have any. Six months later when I contacted him about some walnut we then had ready to market, he said there was little demand for walnut, but he could use white ash. Suddenly, there was a market for the ash lumber we had in storage and we sold it all. And, several months later, the walnut market was on the upswing. According to the Walnut Council International, walnut lumber that has had a steady market for decades did experience an unusual down swing this past year, but appears to be in demand again. With diverse species or endeavors, you can ride out market cycles.

There are potential sources of income from our woodlot that we have not pursued because of time and energy involved. We have had some of our lumber made into cutting boards, desk items, and small pieces of furniture for personal use and gifts. Perhaps there is a market for these items, but it would require having the skills to manufacture the items or locating woodworkers and contracting for production, developing market outlets, providing a regular supply of consistent quality products, record keeping and financial analysis, and keeping in touch with what the public wants.

Table 2. Uses of Forest Products

Quality Hardwoods:

- Commercial timber sale
- Small lot lumber sales to sawmills
- Small lot lumber sales to retailer
- Small lot lumber sales to hobbyists
- Personal use for furniture, other items

Lower-grade hardwoods:

- Farm use: lumber
- Stakes for seedlings
- Organic matter for woodland
- Firewood for others
- Firewood for selves
- Lumber to charitable organization

Black locust trees:

- Farm fence posts

Black walnuts:

- Occasional sales
- Food for resident wildlife

One enterprise we do not pursue is the marketing of black walnuts. After they have been collected and hauled to the hulling station, they yield \$9 per hundred pounds! If you have lots of "cheap labor," there might be a break-even point. The real value in black walnuts is the value-added product, the nut meats, which can bring \$7 per pound. Again, this depends on cheap labor and successful methods for cracking those "tough nuts" and eliminating all shells in the nut meats to guarantee a quality product.

Depending on the situation, hunting may be an income opportunity. This depends on the size of the woodlot, the location, and the situation. Occasionally, we allow a few persons to hunt squirrels and deer and trap foxes for no fee. We limit hunting, however, and carefully select the hunters because of the firewood harvesters, the beef cattle in the adjoining pastures, and the people in the homes that are sprouting up around our property.

There are at least two other potential sources of income for woodland owners. When I see the local convenience store selling packages of four pieces of firewood for three or four dollars, I think

that someone must be making a profit despite the labor involved. And, it's possible that there is a market for evergreen cones through craft shops and shows and "country" furnishings stores, etc. Again, it depends on how much time and effort you want to invest in processing and marketing.

WHAT IS THE FUTURE OF YOUR FORESTLAND?

What is the future of your forestland? Will forestry activities continue to be compatible with the area? What are the outside pressures? What will happen when you no longer can continue the forestry activities? If it is your wish that your forestry stewardship continue, what can you do to assure that it can or will?

Before you consider forestland, learn what the plans are for the area. If development is a possibility, consider how your activities would be received by others in the area—others who are not knowledgeable about forestry management practices, unless you or someone educates them. One of the reasons we had a selection timber cut instead of a clear cut was the neighborhood. The woodland backs onto a county road on which are an increasing number of homes, carved out of farm land. We considered the potential appearance of the harvested area and the perceived impressions of the neighbors. We also attempted to keep them informed of the harvest procedures. This can benefit you as the same neighbors can be monitors for your property when you are absent. The neighbors' reactions can be amusing. When we were replacing the perimeter fence, a neighbor in one of the adjacent recently-built homes was concerned that we were developing the property and people would be moving in!

Tools for Continued Stewardship

Several years after inheriting the property, we enrolled the farm in an agriculture district, one of Washington County and Maryland's tools to keep productive land in agriculture. This serves notice that we are engaged in agricultural operations (by way of renewable ten-year agreements) and provides some protection against "nuisance" complaints. It also eliminates county property taxes, (reducing our total property tax by 90

percent!) which is another means to trim operating expenses.

Another tool for providing for continuation of your forest stewardship practices is a conservation easement. Granting conservation easements on your property assures that the property will continue in forestry and conservation in perpetuity. Conservation easements can be handled by a variety of agencies, e.g., Maryland's Agriculture Land Preservation Foundation, and organizations, such as land trusts or charitable foundations. Easements can be sold, resulting in taxable income, or donated, yielding an income tax deduction. In return, you receive the assurance that the land will not be developed and that you, your heirs, or anyone who purchases the property will have the right to continue forest stewardship. By selling or donating an easement on your property, you reduce its sale value, but that also makes the property more affordable for someone who shares your values of forest stewardship (and increases the possibility of *sustainable* forestry for him/her!).

I've heard numerous forestland owners tell of their love for their land and lament that their children probably are not going to continue the tradition. It does not follow that our heirs will want to dedicate as much of themselves to forestry as we have and we have to respect that. (It does cause me to cringe, however, when our sons—jokingly, I assume—comment that our farm would make a nice golf course.) Other forest landowners consider themselves fortunate when they find a younger person who can work with them now, preparing to assume the forest management in the future.

Whoever stewards your forestland after you should have the benefit of documentation of your activities. Keep current your management plan, records of practices, and finances. This not only will be helpful to someone else, but is the basis for the periodic reviews and evaluations that you should conduct. These reviews will reveal the trends in your enterprise and areas where adjustments need to be made. Even if you choose to ignore evidence and continue a practice with minimal or no returns because of other reasons (and we are allowed to let our "heart" influence some decisions), at least you are aware of what you are doing because of these periodic reviews.

As in most other enterprises, one has to be adaptable in forestry ventures. If the enterprise is timber production, you will experience cycles in demand for lumber and for particular species. You have to be prepared to wait for the market. If necessary, you may be able to switch from high labor, value-added products to lower labor, lower value products or vice-versa. However, it is difficult to switch species and see the results in one's lifetime.

There are many factors to examine when considering forestland as a sustainable investment. I hope these remarks have helped you gain some insight into these factors. If you have the energy and resources and enjoy working outdoors, I recommend forestland and forest stewardship to you. And, perhaps it can be a sustainable investment, sustainable as long as the investment of yourself, your time, energy, and resources endures!

Tree Biology and Economics: These Are Not Choices

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Abstract: Forest management based on tree biology can overcome compromises made through short-term economic decisions. Through a case study, guidelines for recovery are suggested such as giving more attention to dominant trees and working with all species and sizes. Forest management works best if biological decisions are made. Every woodlot owner benefits through shorter periods between harvests and more value for products sold.

Keywords: tree biology, economics, timber harvest, residual forest, managed forest

SETTING THE STAGE: FOREST OWNERSHIP OF YESTERDAY

Over the past 25 years, I have had the opportunity to review more than 400 woodlots in private ownership. Although each woodlot is unique, all are inextricably linked by a common denominator: short term economic decisions. I refer not exclusively to woodlots where harvesting takes place. Short term economic decisions have major impacts even on woodlots where no regular harvesting occurs. This latter category includes the sugar bush with the sugar maple favored above all other species, the northern hardwood forest stripped of white ash because the baseball bat market was good, the hemlock forest left unattended in case the barn should burn, and the woodlot simply ignored in its march toward old growth. Harvesting, whether part of planned management, for emergency need, or just fortuitous liquidation upon change of ownership or ownership objectives, nearly always occurs at a rate that is "short term" relative to the maximum biological age of most forest stands.

As a tree overgrows its cumulative injuries, only to be revealed in dissection at the mill, so also the forest buries within itself its history. Unfortunately, this history often has a negative impact on the very struggle for biological survival and may delay or prevent the realization of long term economic benefit we have come to expect from the forest.

To illustrate this, consider a woodlot over which I have had some influence for the past 25 years. This 180-acre woodlot, although part of a 250-acre farm, was not cleared for agricultural purposes. Intensity of subsistence farm activity was minimal. Farm activity ceased around 1940. Homestead buildings succumbed to fire and the forest entered a period of intense change. For the next 20 years, short term economics ruled. This period appropriately might be termed the period of exploitation. New owners, to whom we shall assign the name MF Logging and Milling Company began a systematic harvest. First areas cut contained black cherry, sugar maple, and white ash. Most trees of quality were cut, regardless of size. Next, red and white oak and red maple, being of low value, were harvested if of high-grade, generally in the larger diameter range. Hickory, beech, and black birch were ignored and left as residuals.

Value was perceived to be depleted by 1964 and new owners were sought. Richard and Doris, the new owners proudly now owned a hunting camp. Any hope of timber investment was too far into the future for them. Deer were abundant among the brambles. Even the occasional bear was taken in the beech forest just over the top of the run. As good stewards, Richard and Doris planted larch in the remaining old fields while the forest began its slow recovery. Somehow the forest was expected to do its magic so that we might soon benefit from a new round of short term economic decisions.

THE NEW FOREST: LIMITS OF RECOVERY

My first opportunity to review this woodlot came in 1970. The forest stands of highest potential, which were cut the hardest, now had experienced 30 years of recovery. Stands of low potential that had been cut later had as little as 14 years of renewal. Several factors limiting full development of economic potential were obvious. Yes, the forest was surviving. It became clear that our task was to remove the wedge forcing tree biology and economics apart. Future management efforts were to be guided by the following:

- The post-harvest stand should closely resemble the pre-harvest stand in composition and sizes.
- A managed forest should allow removal of approximately 1/3 of each diameter class and include all species.
- Biologically dominant trees must represent each size category in the post-harvest stand.

When these objectives are accomplished, a strong supply of quality material to the industry is assured and sustainable income for the landowner is enhanced. To ensure adequate recruitment into the small pole-age class, the stand is managed via the group-selection system with due consideration to seed sources and advanced regeneration.

A significant limitation to recovery of this forest was the condition of the dominant trees. Nearly every large cherry had a low fork limiting its future to one log or less. Many were split. This was not due to site limitations because large pole-sized black cherry were already showing more than two 16-foot log lengths and potentially more. In this author's opinion, it was simply a matter of poor choice for post-harvest dominant trees, more accurately, probably no choice for post-dominant trees. These low quality trees simply became dominant after 30 years due to removal of any truly dominant trees around them. This problem usually is worse for shade intolerant trees such as black cherry, white ash, tulip and red oak. The sudden release of a subordinate tree usually results in branch development from meristematic points (epicormic branching) and development of branches from dormant buds. This is strong biology for survival but compromises future sawtimber value.

A second loss of economy resulting from the failure to leave vigorous dominant trees post-harvest is loss of growth potential. A bona fide dominant tree grows significantly with only minor adjustment after the harvest. Ten years of growth provides measurable volume. By contrast, a 10-inch cherry, dominant only because a large overtopping tree was removed, may grow in diameter almost imperceptibly with much of its energy being used for branch growth. Ten or more years may pass before this tree begins "normal" growth.

Stand management by harvesting began in 1975, thirty-five years after the initial harvest. This would be too long a time period for most landowners. Sadly, this rudimentary harvest still only was conditioning for future management. Emphasis during marking was to create a biologically strong residual forest with well-spaced dominant trees of large, medium, and small sawtimber as well as large, medium and small poles. Defective trees were targeted and, especially among oaks, single stems were selected to be retained from clumps of two or more. In each case, the best tree was left to become the residual stand.

No attempt was made to significantly alter the stand composition. Unfortunately, it is easier to decrease than to increase the percentage of high value species in a stand. Rather, it is good management to grow the best of each species present on a site. In 1975, beech scale was not present in our area. Timber marking favored the best beech as residuals.

The mission was accomplished—almost. The post harvest stand represented single-stemmed, well-spaced trees of the highest economic potential. The timber buyer convinced the landowner that it would be better to keep the poor beech standing for firewood. They did. The beech were still there in 1993 when the next management cut was made.

THE MANAGED FOREST

In 1993, fifty-two years from the original cut and eighteen years from the conditioning harvest came the opportunity to evaluate our past efforts in order to comfortably accept future management.

Harvesting took place on 55 acres which included representative portions of each type of stand including areas predominately sugar maple, other black cherry, or red oak and the previously slighted beech stand. Was the vitality of the forest improved through respecting tree biology? Was economic gain compromised in doing so? The answers are revealed as the main points are revisited (Table 1).

Post-harvest should closely resemble pre-harvest in stand composition and sizes. A biologically healthy forest is pleasing to review. The post-harvest forest of 1993 met that criteria. Large,

single-bole red oak are visible throughout the stand and each is in a dominant position. Cherry and ash appear similarly. Cherry is especially evident in the smaller pole category. Except for the slash from the tops and the blackberry patches in the larger openings the forest appears to be the same as before. The management plan calls for the next harvest to be in 15 years. Visually, the stand is ready. If anything, the average diameter appears to have increased.

Only where beech predominated in the stand is the harvest obvious. These areas were not adequately treated in the sale 18 years prior. In 1993, beech

Table 1. Sawtimber Harvest Data.

Species Cord	SAWTIMBER		PULPWOOD
	# Trees	Volume (bf)	# Trees
Beech	388	60,947	345
Black Cherry	213	39,565	8 culls
Red Maple	153	24,955	1 girdle
Red Oak	116	22,464	
White Ash	42	10,835	
Sugar Maple	53	10,003	
Birch	33	3,392	
White Oak	14	3,136	
Hemlock	13	2,536	
Tulip	2	1,624	
Scarlet Oak	2	366	
Aspen	3	353	
Cucumber	1	164	
Chestnut Oak	1	62	
TOTALS	1,034	180,402	

Harvest Summary Statistics:

55 Acre Sale
 180.4 Thousand Board Feet (MBF)
 3.3 MBF/Acre - 3,400 board feet/Acre
 \$92,272 stumpage value
 \$1,678 stumpage value/Acre
 \$511 stumpage value/MBF

scale-nectria complex disease was affecting the stand. The most seriously affected areas were harvested as salvage. It was obvious that ignoring the biology of the beech 18 years prior merely accentuated problems.

Secondly, the point is made that a managed forest should allow the removal of approximately one-third of each diameter class and include all species. Fourteen species were present within the sale area and all were represented in the tallies. The forest of the future has very nearly the biological makeup of the forest prior to harvest.

Small diameter classes were reduced in number as marked pulpwood. A contract provision required their being cut even if not utilized. Through sale of pulpwood it was possible to manage trees as small as eight inches in diameter. It should be noted that 354 trees (6 per acre) were treated as pulpwood. Each represented the removal of a tree lacking economic potential or the release of a tree showing significant biological potential. Many trees less than eight inches in diameter were lost during normal logging operations.

Among larger trees targeted during marking was 1/3 of each species for removal. Post harvest revealed minor adjustments. Beech, which represented the largest number of trees and greatest volume (388 trees, 60.9 MBF) were reduced by 50 percent. For much of the beech area, this was the first management treatment. Because the beech was cut more heavily it became necessary to retain more of the red and white oak associates. Subsequently, post-harvest oak stems had been reduced only by three. Black cherry and tulip were on target. Overall, volumes had been reduced by 39 percent. This residual stand, supporting 5,039 board feet per acre, representing all species in each broad diameter class, is biologically vigorous and well suited for immediate and sustained growth over the next 15 years.

The third objective of keeping dominant trees was met easily. Unfortunate tragic consequences of not being keenly aware of tree biology became evident, however, in review of some largest diameter class black cherry. Two trees, one 28 and one 33 inches in diameter had been retained as dominant trees 18 years prior. They now were split from top to bottom. This biological

weakness, when ignored, caused an economic loss of nearly \$2,000. Future trees selected for dominance do not exhibit weak forks or other obvious biological limitations.

The final point, and perhaps most important is the use of tree biology in strengthening the small private woodlot ownership. First, working with tree biology has shortened the time between harvests. The conditioning harvest was 30 years from the exploitive harvest. The management cut followed in 18 years. The next management harvest is scheduled for 15 years but could easily be as short a period as 12 or 10. This new interval is more conducive to private ownership management interests. Care must be given to layout of permanent skid trails to minimize damage to the residual stand.

A second encouragement for the small ownership comes with the increased value as quality increases. Table 1 details tree numbers and volumes of the 1993 sale.

The average timber price for this sale was projected to be \$50,471. The average of ten bids received was \$54,659. By allowing more trees to develop their biological potential, the quality had increased to attract veneer buyers. Value received was \$92,272. This could not have been realized had the cutting pattern of 1940 continued. Harvesting to any diameter limit tends to de-emphasize the importance of tree biology.

By respecting tree biology, we can expect to receive more dollars for what is sold. By paying more attention to the makeup of the residual stand than what is cut we do not compromise aesthetics and other values. Tree biology and economics make forest management work—they are not choices.

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Trees, a Growing Green Legacy

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Abstract: This paper describes the financial characteristics of tree growing investments for individuals and families interested in transferring assets from one generation to another. Two tree growing cost alternatives are described to help landowners assess which would be most beneficial for them. Reasons are given for why more people aren't investing in the tree growing business, and what people who do invest need to believe the future will hold for them.

Keywords: forest investments, intergeneration transfer of wealth, tax deferred

GREEN, HOW SO?

Trees are a good green investment in three ways.

1) *They are green in color during the growing season, and they are a pleasure to watch grow.* Most people who are in the business of growing trees are not doing it because there are great short-term profits to be made. If you don't enjoy the business, you should stay out of it. There are easier, less risky investments available.

2) *They are a socially responsible investment.* Relative to most investments, the business of growing and harvesting trees is a non-polluting activity. It is also non-exploitative of both natural and human resources. Trees are a renewable resource. While harvesting trees is a high-risk employment activity, relative to other industries, it provides equitable compensation for laborers and investors.

3) *Society greatly benefits from the amenity benefits of growing trees.* Forests are highly preferred locations for recreational activities, from viewing to hiking to hunting. They are the preferred land cover for providing clean water so prized by an expanding human population. They can be a financially profitable investment for landowners, and an excellent stable, long-term economic asset for communities.

While the first two reasons for investing in the business of growing trees are at least as important as the third, the focus of this article will be on the financial characteristics of tree growing investments for individuals and families interested in transferring assets from one generation to the next.

Growing Trees is Financially Attractive Because:

The increase in value of trees from price increases and growth in diameter, volume, and grade is tax-deferred. Trees do not send annual 1099's to the IRS. The landowner does pay annual property taxes, but the income from the eventual sale of timber usually qualifies for capital gains treatment when the timber is harvested. For most landowners, the capital gains rate is more favorable than their ordinary income rate.

Investing in growing trees is an excellent opportunity to transfer wealth from one generation to the next, using the following strategy. The older generation (with the capital) purchases the asset (forestland) and invests in the development of that asset. After developmental investments (reforestation or release of crop trees), the asset is given or willed to the younger generation. At the time of inter-generation transfer, the asset is of only modest value. As the trees grow, they increase in value in the ownership of the second

generation. Again, any capital gain on that growth is deferred until the time of sale of the timber.

TREE GROWING COST STRATEGIES

Investors who grow trees consciously or unconsciously use one of two strategies for absorbing costs of growing trees to profitable size.

Long-Term Cost Strategy

This is the approach historically used by most forest products industries in the Northeast. The investor is conservative with cash outlays. They purchase the land, pay the taxes, minimize management costs, avoid labor costs, and hope something worthwhile grows on their land. If it does, they harvest it as cheaply as possible while meeting requirements to protect basic soil and water resources. There are no significant investments aimed at accelerating growth of individual trees, or to increase the number of high-value trees per acre. Consequently, trees grow at whatever rate the site and competitive vegetation permit without manipulation.

This strategy spreads the cost of growing a tree to a given size over a longer period of time than is used with the short-term cost strategy described below. Investment costs are paid in the form of more property taxes and land holding expenses per unit of volume produced. The risk of loss because of damaging agents like drought, ice, wind, fire, insects, and disease is also greater because the asset is exposed for a greater length of time.

Short-Term Cost Strategy

This strategy is more commonly used by forest product industries in the South where the length of time for achieving the desired product size is shorter. Investments in land holding costs, property taxes, and administrative expenses are minimized per unit of volume produced. This is accomplished by increasing the number of crop trees per acre and accelerating the growth of those crop trees through management activities. In the South, that often means planting trees and thinning them. A greater volume of high-value

product is produced in a shorter period on a smaller land base. In the Northeast it would often mean precommercial release of potentially high-value crop trees. There are instances when planting is appropriate to increase the number of potential crop trees per acre, but often natural regeneration is sufficient.

The primary disadvantage of the strategy is that it requires more up-front capital, as well as knowledge and interest. It is a more proactive course of action with more treatments that must be directed by management. However, in many cases, on good timber growing land it is probably the most cost-effective alternative.

This is a logical strategy for non-industrial private landowners who want to make an intergeneration transfer of assets. The older generation with capital can make the investments and the younger generation receives the benefit.

To clarify the difference between these two strategies, I will use an example of two identical 12-inch diameter red oak crop trees that two landowners are fortunate enough to have on their property at the time of purchase. One tree is growing on land with an owner practicing a long-term cost strategy, while the other tree is growing on land with an owner practicing a short-term cost.

Long-Term Cost Red Oak

Under this scenario, the landowner does not release the 12-inch diameter crop tree, and it grows at a rate of 2 inches of diameter per decade. In 40 years, it is 20 inches in diameter and ready to harvest as a high-value product. The landowner pays property taxes for 40 years, and has land holding capital tied-up for the 40 years.

Short-Term Cost Red Oak

Under this scenario, the landowner does release the 12-inch diameter crop tree, and it grows at a rate of 4 inches of diameter per decade. In 20 years, it is 20 inches in diameter and ready to harvest as a high-value product. The landowner pays property taxes and land holding capital costs for only half as long as the landowner using the

long-term strategy. However, he must make the up-front investment to release the tree from competing trees. If the work cannot be done as part of a commercially-operable thinning treatment, it is an out-of-pocket investment. It requires management, labor, equipment, and materials to accomplish.

IF GROWING A GREEN LEGACY IS SUCH A GREAT IDEA, WHY AREN'T MORE PEOPLE DOING IT?

Awareness

Most people with capital they want to transfer to the next generation are not aware that investing in growing trees is a good mechanism to accomplish that goal.

Knowledge

Most potential investors do not have the knowledge base needed to make good forest management investment choices.

Interest

Most potential investors do not have the interest in acquiring the necessary skills needed to make good long-term forest management investment choices.

Attractive Alternatives

In this country we are fortunate to have a wide-range of investment alternatives. Some of them are easy to manage and provide a respectable return. In short, the competition for investment capital is intense.

Non-Typical Return-on-Investment Periods

Timber management investments often give new definition to the phrase long-term investment. To most people, an investment of 10 to 50 years with no intermediate returns is incomprehensible. However, in the tree growing business, these investment time periods are common. People with traditional schooling in financial management in

this country will usually quickly reject long-term timber management investments.

Ease of Finding Desirable Investment Packages

Good investment opportunities often aren't easy to find packaged together in a marketable form. For example, a 200-acre property is not likely to be all high-site productivity land stocked with healthy, vigorous, potentially high-value trees, that will have a good growth rate. There are many variables affecting the quality of the investment opportunity with each individual purchase option. Finding good options usually requires more than just luck. It often requires professional skill.

Risk

Almost all long-term investments are risky. Some of the risks associated with timber management are drought, ice, insect damage, disease, fire, and market changes.

SUMMARY

In summary, to use the business of growing trees as a means of transferring assets from generation to generation, the investor must BELIEVE the following:

- Society will continue to recognize the value of the free enterprise system and the right of individuals to accumulate assets and transfer them to others. Managed forests where trees are not only grown but harvested, must be recognized as a socially acceptable, even desirable private asset, that produces social and economic benefits for communities as well as individuals. In short, that society will agree with the investor that growing and harvesting trees is a green activity.
- There will continue to be a premium price paid for high-quality sawtimber and veneer products. While prices will fluctuate, over a long period there will be good opportunities to sell high-quality products at a price that will make the return on investment at least acceptable.

- That they and their heirs will have sufficient capital to sustain a long-term investment with extended periods of little or no intermediate returns. Property taxes, management fees, labor costs, equipment purchases, materials and supplies must be absorbed with the anticipation of future return.

- That they and their heirs will have the tenacity to handle the psychological rigors of an investment that has the previously described characteristics. Not all people are willing to wait for an asset to increase in value. Some are impatient. Others are too worried about investment performance. It takes a certain personality type who is willing to work and invest with confidence that eventually it will all be worthwhile for someone. Often, someone else. Are you and your heirs of that personality type?

SECTION 7

Challenges to Address

Real and Potential Income Opportunities for Riparian Areas

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Abstract: Numerous federal and state cost-share programs focus attention on establishing riparian buffer systems to improve water quality and fish and wildlife habitat. Even with the availability of these programs, many farmers are reluctant to establish a riparian buffer, claiming they will lose income by retiring this acreage from row crops. After exploring the available alternative income opportunities, landowners may be interested in establishing a riparian buffer system. New riparian buffer plans must be designed to meet environmental objectives and provide income to landowners. These plans must provide for a diverse plant species selection and be flexible enough to be integrated into most farming operations. These plans also must be designed in a way that pay for themselves and ensure their maintenance and long-term sustainability.

Keywords: riparian, buffer, alternative income opportunity

INTRODUCTION

Interest in riparian areas has increased significantly over the past 5 years, driven primarily by the positive effects riparian buffers have on water quality and on fish and wildlife habitats. A riparian area is the land adjacent to streams, rivers, and other bodies of water that serves as a transition between aquatic and terrestrial environments and directly affects or is affected by that body of water. A stream and its riparian area function as one. The condition of the riparian area helps determine the quality, health, and integrity of the stream and the habitat available for fish and other wildlife. Because of their position in the landscape, riparian areas play an important role in determining water quality as they interact with surface waters from upland areas and with the flow of groundwater.

According to a report from the Chesapeake Bay Executive Council (1996), forests protect water quality by absorbing and denitrifying nitrogen in both surface and groundwater, and by trapping phosphorus-laden sediments and other pollutants coming from adjacent lands. Riparian forests provide shade and organic matter to streams, which helps to moderate stream temperature and supports the aquatic food web. Riparian buffers

also help stabilize streambanks, which in turn will reduce erosion and sediment loading. Forests provide the greatest number of benefits and highest potential among all types of streamside vegetation for meeting both water quality and habitat restoration objectives. Many forms of vegetation, such as trees, grasses, shrubs, or combinations thereof, can be established within managed riparian areas. A newly established riparian buffer can be designed to meet both environmental concerns and the landowner's financial needs.

Even though it has been documented that riparian forest buffers provide a number of environmental benefits, and despite the fact that government cost-share and incentive programs (e.g., Conservation Reserve Program, Agricultural Conservation Program, and Stewardship Incentive Program) exist, the agricultural community remains reluctant to establish or adopt the concept of riparian buffers. Landowners are concerned about losing income by retiring acreage from row crop production. To alleviate this concern, natural resources professionals should develop planting designs that meet environmental objectives and provide income to landowners. Alternative income opportunities are available that will meet these needs. In this paper, we will focus on three areas:

1) the regulatory and policy framework and issues that exist around the use of forest and farm riparian buffers; 2) income opportunities that presently are being used or may be practical, such as alternative agriculture, agroforestry, and natural resources income opportunities; and 3) challenges facing landowners (e.g., full and part-time farmers, woodland owners) when they make decisions on different income opportunities.

REGULATORY/POLICY FRAMEWORK AND THE ISSUES RELATING TO RIPARIAN BUFFERS

Regulations and policies have been established at the federal and state levels on establishing riparian buffers. The following compendium briefly describes some of the laws and programs that relate to or protect riparian forests in Maryland, Virginia, and Pennsylvania. It focuses on riparian forests, rather than other, more all-encompassing stream protection efforts. Still, a wide range of riparian forest protection laws and programs is listed. Although some of these programs do not have specifically defined forest components, they are worth noting because they provide opportunities to increase the emphasis on protection of riparian forest elements.

Riparian forest protection can be divided into four areas: agriculture, forestry, cross-land uses and tax programs. These areas will demonstrate how riparian forests can be restored or maintained. Clearly, riparian forest policy does not fall into one neat category or a single law.

Agriculture

All three states have programs that focus on the following practices:

- **permanent vegetative cover** - cost-share is provided for the establishment of trees, grasses, and shrubs to stabilize soils or eroding areas, including riparian areas
- **grazing land protection** - cost-share is provided for spring development or provision of troughs or tanks to provide watering sites for livestock away from the stream area

- **stream protection** - cost-share is provided for the establishment of permanent vegetative cover (including trees) along the banks of streams; related items, such as remote watering systems, stream crossings for livestock, and stream fencing, may be included

For residents of Maryland:

Buffer Incentive Program - a one-time payment of \$300 per acre provided for the planting and maintenance of 50-foot minimum forested buffers along streams and shorelines on private lands 5,000 acres or less in size.

For residents of Virginia:

Woodland Buffer Filter Area - a one-time payment of \$100 per acre provided for the establishment of 50-foot minimum forested buffers along streams; practice is permitted only on crop and pasture land that recently has been in production.

Loafing Lot Management System - cost-share provided for development of a rotational grazing system; practice requires a 25-foot minimum fenced buffer around streams; vegetation is not specified.

For residents of Pennsylvania:

Streambank Fencing Program - fencing, erected with a 12-foot minimum buffer, is provided free to rural landowners by the Pennsylvania Game Commission in exchange for landowners allowing public hunting on their land.

At the Federal level:

Environmental Quality Enhancement Program (EQUIP) - as a replacement for the Agricultural Conservation Program, EQUIP provides a number of cost-share practices designed to solve soil, water, and related environmental problems. Many practices are similar to those noted in state cost-share programs. There is a riparian buffer strip practice, which requires a 95-foot minimum buffer consisting of diverse, undisturbed forest nearest the stream and managed forest, shrubs, and grasses farther away from the stream. Other

forestry cost-share practices also are authorized under EQUIP.

Conservation Reserve Program (CRP) - this program seeks to remove highly erodible lands from production for at least 10 years. Cost-share is provided for establishment of trees and other vegetative cover. Annual rental payments are provided for the years that conservation practices are maintained on the land.

Conservation Reserve Enhancement Program (CREP) - similar to CRP, but emphasis in CREP is on sensitive environmental areas such as riparian buffers. Bonus payments and cost-share money are authorized for certain practices. Presently, this program is not available in all states. In Maryland, landowners receive a cost share bonus of 37 percent, for a total of 87 percent, and a bonus on rental payments of 50 percent for planting grasses and 70 percent for planting trees in riparian areas.

Wetlands Reserve Program (WRP) - the WRP allows farmers to sell permanent easements to the US Department of Agriculture and receive cost-share money to restore previously altered wetlands to their original natural condition. Eligible lands include prior converted cropland, farmed wetlands, and riparian areas along streams or water courses that link wetlands that previously had been protected by an easement or similar agreement.

Forestry

For residents of Maryland:

Forest Harvest Guidelines - a 50-foot minimum forested, no-cut buffer is required around all perennial streams. If a Buffer Management Plan is implemented, selective harvesting is allowed, so long as 60 percent crown cover or 60 square feet of basal area is evenly retained.

Buffer Incentive Program (BIP) - the BIP program (see Agriculture) also can be applied to non-commercial timber land.

Woodland Incentive Program - cost-share is provided to non-industrial private woodland owners for tree planting, including riparian forest

buffer establishment, as well as other forest management activities.

For residents of Virginia:

Water Quality Law ("Bad Actor" Law) - the Department of Forestry has enforcement powers to implement corrective measures on any forestry operation being conducted in a manner that causes or is likely to cause pollution. Voluntary Best Management Practice (BMP) guidelines achieve compliance with the law, specify the maintenance of a 50-foot minimum forested buffer along streams and retention of at least 50 percent of the crown cover or 50 square feet of basal area per acre. The Department may allow a reduction in the width of the buffer so long as equivalent water quality protection is provided.

Woodland Erosion Stabilization - cost-share is provided to establish permanent vegetation on eroding areas on forest harvest sites; grass and legume cover usually is used.

For residents of Pennsylvania:

Voluntary Guidelines - there are no mandatory requirements in the riparian zone on private land, although a 50-foot buffer is recommended.

At the Federal level:

Forest Stewardship Program - this federally funded program, which is administered by the states, provides technical assistance to private landowners for implementing conservation practices while meeting harvesting needs. A Forest Stewardship Plan is required for participation in federal cost-share programs for forestry.

Stewardship Incentives Program (SIP) - encourages implementation of a broad range of ecological enhancements on non-industrial private forest land. Cost-share is provided for tree planting, stream fencing, riparian and wetland improvement, tree shelters, and fish and wildlife habitat improvement.

Environmental Quality Enhancement Program (EQUIP) - cost-share for forestry practices is authorized (see Agriculture)

Forestry Incentives Program (FIP) - designed to increase the future supply of timber on private non-industrial forest land. Cost-share is provided for tree planting, including in forested wetlands and riparian areas.

Cross-Land Uses

For residents of Maryland:

Maryland Environmental Trust - helps landowners establish conservation easements; requirements for riparian land in easement areas include a 50-foot minimum vegetative buffer strip.

For residents of Virginia:

Conservation Easements - Soil and Water Conservation Districts may use part of their funding to purchase conservation easements in eroding areas or areas of important ecological value, including riparian areas.

For residents of Pennsylvania:

Easement Purchase Program - Counties or the state may purchase farmland easements for a minimum of 25 years. Part of the easement purchase decision is based on the level of stewardship and use of BMP's.

Tax Programs

For residents of Maryland:

Forest Conservation and Management Program (FCMP) - provides special tax assessments on forest land, if the landowner agrees to adhere to a forest stewardship plan for 15 years. In return, the tax assessment is frozen, usually at the agricultural rate.

Reforestation / Timber Stand Improvement Tax Deduction Program (TAXMOD) - allows landowners of small forestry operations to deduct from their adjusted gross income double the costs associated with reforestation activities, including those in the riparian area.

Agriculture Use Assessment - provides a preferential assessment on the value of land that is

used for agriculture. Woodlots also can receive an agricultural assessment; specific requirements for riparian areas do not exist.

For residents of Virginia:

Use-Value Taxation - Counties voluntarily participate in this program, which provides preferential assessment on the value of agricultural and forestland consistent with its use. Although popular in urbanizing counties, it can have a negative impact on the tax base in rural counties. There are no specific requirements for riparian areas.

For residents of Pennsylvania:

Covenant-Preserving Land Uses - authorizes a county to enter into covenants with landowners for the preservation of farmland, forest land, water supply land, or open space. The real property tax is reduced to reflect the fair market value of the land with the covenant restrictions. The covenant is good for 10 years and can be extended with the agreement of both parties for 1 year at a time.

Farmland and Forest Land Assessment Act ("Clean and Green Act") - the county Board of Assessment can grant a preferential assessment for 10 or more contiguous acres of land devoted to agricultural, forest reserve, or open space purposes. Land is assessed at the use value rather than the prevailing market rate; can apply to land in the riparian area as well, although there is no requirement for forests in the riparian area.

At the federal level:

Public Law 96-451 - provides federal tax incentives to reduce reforestation costs. The law permits up to \$10,000 of capitalized reforestation costs each year to be eligible for an investment tax credit and a 7-year amortization; may include reforestation efforts in the riparian area.

Policy has been established rather rapidly over the past several years dealing with riparian areas. The Chesapeake Bay Executive Council established a goal in 1997 of planting 2,010 miles of forested buffers by the year 2010, with Maryland obligating to plant 600 miles. At the federal level, the Natural Resources Conservation Service (NRCS) has established a National Conservation

Buffer Initiative that focuses on riparian areas. As a result, new standards have been developed and new opportunities have arisen. Some of these opportunities will be short-term while other will be long-term. However, it is important to assist the landowner in establishing a riparian area that has long-term sustainability. For example, landowners that enter into a CRP or CREP agreement have a legal obligation to maintain the buffer for 10-15 years. For landowners considering to put CRP land back into production after the contract period expires, an alternative income opportunity may encourage them to leave it for many years. Rental payments, under CRP or CREP, can provide income as the plant material matures. Because of restrictions limiting income from CRP or CREP lands during the contract period, many of the income sources will not be available for 10+ years. Additionally, alternative income opportunities also may encourage landowners who have no interest in government programs to establish riparian buffers on their own.

Although the environmental and economic benefits of a properly designed riparian area are numerous, just the simple mention of the word “riparian area” often puts fear in the eyes of many landowners. Typically, these fears lack firm foundation, but they nonetheless are real and emotional for those involved. Their attitude represents a broad-based resistance to any government program and especially new programs that may require a change in management or operations. In a public forum on riparian buffers held on the Eastern Shore of Maryland in 1997, the Eastern Shore Land Conservancy documented the following landowner comments:

- riparian buffers will increase deer damage to crops
- trees will shade crops and decrease productivity next to the buffer
- buffers will create habitat for endangered species and future management will be limited
- buffers will obstruct views of water
- buffers will increase fire risks
- by establishing riparian buffers, they will take land out of production and decrease income potential
- there will be an increase in noxious weeds
- riparian buffer plantings and fencing will limit livestock access to water, thus increase cost of herd by providing alternative watering sources

- too much red tape in government programs
- buffers increase the damage to equipment when turning in fields
- maintenance of buffers will cost money
- uncertainty of future government policy in regulating riparian areas
- buffers represent a loss of property rights
- buffers will increase trespassing for hunting and fishing
- an increase of falling trees in fields could damage crops and equipment
- an increase of falling trees in streams will cause flooding of fields and roads
- lack of trust in bureaucracy and government programs-too many laws and regulations now
- there will be an increase in taxes if the land is developed
- there is a loss of timber income if no cutting is allowed.

There may also be conflicts among landowner assistance programs that act as a barrier to riparian stewardship. For example, the Commodity Set-Aside Program makes price support payments to farmers based on the number of acres in or available to production. If a farmer removes part of his land from production, he risks losing some of that subsidy.

Whether these concerns are real or perceived, they are constraints to establishing riparian buffers and need to be addressed. One of the greatest obstacles appears to be the loss of income from crop land. The challenge is to design riparian buffers in a way so the landowner can obtain a short- and long-term income, and enable them to recover some of the income previously derived from agricultural crops.

ALTERNATIVE INCOME OPPORTUNITIES

For the purposes of this conference, we will not provide great detail on cultural practices nor budgets on alternative income opportunities; others will cover this topic in greater depth. Instead, we will focus on the range of opportunities that benefit the landowner financially.

Because the design of a riparian buffer is critical when developing alternative income enterprises, the one that offers the best match is the “A three

zone buffer concept". This design works well for water quality and habitat concerns and can be adapted to fit alternative income enterprises. Zone 1 (closest to the stream) is planted in trees and is left intact to protect and shade the stream. Zones 2 and 3 are active management zones where an alternative crop can be grown. Zone 2 (the middle zone) is the area where selective tree harvesting can take place and many woody plant species can be grown for a profit. Zone 3 (farthest from the stream) lies between Zone 2 and the adjacent agriculture field, and is planted to grasses, forbs, or some combination. The width of Zone 3 is dependent on the landowner's objectives, the amount of land available, and the requirements of the cost-share program. Zone 2 offers the most obvious potential for producing income—timber production. Riparian areas are often excellent growing sites for timber because the soils are deep, well- to moderately well-drained, and have good water holding capacities. Under these conditions, the riparian area can produce high quality trees, provided the species selected for management can flourish in the soil moisture conditions typically found in riparian buffers. Main factors to consider when managing trees in riparian zones are flood frequency, flood duration, and high water tables. Common species of timber crop trees that can be found growing in these areas are only marginally adapted to riparian conditions. For example, black cherry is found in riparian zones, but if drainage conditions are poor or if periodic flooding occurs, cherry may not produce to its potential as a timber crop tree. Although the "3-zone buffer" option is a long-term investment effort for a landowner, it helps guarantee the long-term sustainability of the buffer (Perkey 1992).

In 1992, timber products composed the largest portion (\$23.8 billion) of total agricultural crop value in the United States, surpassing corn and soybeans as the leading agricultural commodity (Cooksey 1997). In addition to the value of timber, special forest products and other crops can be grown. Below, we describe some of the available options:

Aromatics - Essential oils are concentrated in the leaves, flowers, seeds, bark, and roots of plants. Examples of trees cultivated for their oils include cedar, sweet birch, and sassafras. These oils are used to scent soaps, polishes, deodorants, and other personal care products. They are the core of

the \$10 billion/year flavorings and cosmetic industry. Cedar oil is especially profitable; 25 metric tons are produced each year, bringing about \$9.50 per pound (1978 price).

Cooking Wood (smoke wood / flavor wood) - Wood fiber from alder, apple, and cherry are used as flavor enhancers in grill cooking in both homes or restaurants. Annual gross sales in cooking wood is estimated at \$18 - 20 million/year. Unfortunately, profit margins are thin (a 5-pound bag retailing at \$3.00 - 3.50 will yield a profit of only \$0.06 - 0.08/bag). However, this profit can increase if the packaging, marketing, and delivery is done by the landowner.

Nuts - Nut trees are an excellent alternative crop that can be raised in riparian areas. Products include acorns, black walnuts, butternuts, pecans, and hickory nuts. Black walnut meats can bring at least \$6/pound whereas uncracked nuts range from \$0.75 - \$1.25/pound.

Weaving and Dyeing Materials - A variety of native materials that grow in or near woodlands and riparian areas can be used for weaving, decorating, and dyeing. Although few are used on a commercial scale, many products are used in developing cottage industries, such as weaving and basket making. Species that offer usable material (bark) include alder, brown ash, birch, hickory, poplar, and willow. Native vines from bittersweet, honeysuckle, and Virginia creeper also are popular.

Decorative Cones - A wide variety of cones are used in floral, wreath, and potpourri products. They are used as gift and fragrance items, ornaments and table decorations, and in a variety of small niche products, such as jewelry, grave blankets, and bird feeders. Whole, intact cones dipped in wax are used as fire starters and decorations whereas crushed cones can be molded into Presto-log shapes for fire starters. Cones from hemlock, loblolly, white, and red pines, and spruce all are marketable. Landowners can expect to make \$7 - 24/bushel, depending on the species.

Christmas Trees and Greens - Although Christmas tree production can be incorporated into a riparian buffer plan, these trees should be planted in Zone 3 (where grasses are proposed to be planted) or in a zone between the managed

forest and the grass area. Actively managed Christmas trees can be a vital part of sustaining this riparian system. According to studies conducted in Virginia, a landowner could expect to receive about \$6,826/acre for white pine Christmas trees over a 10-year period. Similar returns could be expected from Scotch pine, Douglas fir, and Fraser fir. Additionally, greens (including various conifers, hollies, magnolias, *Lycopodium*, and mistletoe), cones, fruits, and berries can be harvested and sold. Wreaths, corsages, and other types of decorations also can be sold by a landowner who wishes to make and sell a finished product.

Ginseng - Ginseng is a wild forest herb first discovered in China 5,000 years ago. The ginseng root is used in medicinal products and is claimed to act as an anti-depressant, increase resistance to disease, and improve both physical and mental performance. Wild-growing American ginseng is so much in demand that it has all but disappeared. It sells for as much as \$360/dried pound, and over \$70 million of ginseng root, both wild and cultivated, is exported annually.

Shiitake Mushrooms - Shiitake mushrooms have been popular for centuries in Japan, where they are known simply as the forest mushroom. During the last 20 years, hundreds of shiitake growers have begun cultivating this mushroom here in the United States. Since the 1940's, worldwide demand for the shiitake mushroom has made it second (in market volume) to the common white mushroom. Its market potential is great because it is highly nutritious and it can be grown in every part of the country. Shiitakes usually are grown on oak logs (mostly white oak) thinned from woodlands. Landowners can receive \$6 - 10/pound for fresh and \$15 - 20 for 4 pounds for dried mushrooms.

Wildlife Recreation - Management of riparian areas for recreation and wildlife-based enterprises has good potential for landowners. Both consumptive and non-consumptive uses can be developed, such as providing access for hunting and fishing, or opportunity for photography and informal field education of school children. In Vermont, farmers have incorporated photography and outdoor education opportunities into scheduled farm visits; vacationers or schools pay \$2.00- 2.50/person, depending on the level of the

activity. In Maryland, fees paid to private landowners to hunt deer and upland birds range from \$3 - 10/acre/year, and up to \$80/hunter/day for access to hunt waterfowl.

Field-produced Cut Flowers and Grasses -

There has been a recent resurgence of interest in the production of specialty and field-grown cut flowers. In Zone 3, it could be feasible to incorporate wildflowers in with grass mixtures to establish plots of field-grown flowers. Many species of cut flower currently are being grown in the United States, including *Dendranthema*, *Liatris*, *Gypsophila*, *Limonium*, and *Gladiolus*. Other potential field-grown cut flowers include Gerberas, Snapdragons, Tuberoses, Asiatic hybrid lilies, Dutch iris and Calla lily. The Kiplinger Agriculture Letter (1988) stated that "cut flowers and potted plants generated \$28/square foot/year in supermarkets," about twice that generated by fresh produce. However, little information is available for nontraditional field-grown cut flowers. In addition to the traditional cut or wild flower market, ornamental grasses (Meyer, 1988) and grains (Godwin, 1988) could be grown and harvested. Meyer (1988) developed a list of ornamental grasses suitable for the floral industry, including such things as brome grass (A), love grass (P), weeping love grass (P), plume grass (P), barley (*Hordeum vulgare*) (A), switch grass (P), little bluestem (P), foxtail millet (A), and Indian grass (P) ["A" denotes annual; "P" perennial]. Switchgrass, a warm-season grass, often is recommended for Zone 3 because it provides wildlife habitat and can be harvested as hay. It is tolerant of both droughty conditions and wet areas. When managed for hay production, it is typically mowed twice (mid-June & August) each summer.

Production of Fruit Blossoms from Trees and Shrubs - This type of vegetation can be grown anywhere within the buffer, depending on its growth habits. They can be grown in combinations with other forest crop trees and/or between Zones 2 and 3. These trees and shrubs produce income from the clipped flowering branches used in the floral industry. Jenkins (1991) listed the following woody plants as potential products: Pussy willow, flowering quince, forsythia, purple leaf plum, Japanese cherries, peach, crabapple, dogwood, Bradford pear, redbud, *Prunus triloba*, spirea, mock orange, viburnum, *Pryacantha*, lilac,

Hydrangea, red twig dogwood, variegated privet, and *Ilex verticillata*. Jenkins Florists in Maryland commercially have grown 2 tons/year of *Ilex verticillata* (winterberry or black alder) for the floral trade for 50 years. Branches are cut 15 - 18 inches long and are marketed in 1-pound bunches in the Washington, D.C. area.

Cut Flowers - The market for cut flowers (broadly defined as ornamental grasses, grains, wild flowers and weeds, and shrubs that produce berries, have unusual or colored bark, or have flowering stems for forcing) is expected to show future growth (Kelly 1991). Kelly (1991) discusses the potential for this market and suggests several factors that the grower should consider prior to establishing a nursery. First, local markets may not yet be developed for the product, so growers may have to "peddle" their product to develop the market. Potential markets may be floral shops and wholesalers, supermarket chains, direct retail sales, and pick-your-own sales. Then, the grower must obtain financing, which can be difficult when trying to create a market for a "new" crop. The grower also must recognize that the market is highly variable throughout the year, as are demands for labor. The grower should have proper systems for boxing, storing and distributing the cut product.

Intercropping - Miller et al. (1994) evaluated several planting designs that met environmental objectives and provided an income to landowners that equaled or exceeded row crop production on the same acreage. They installed a strip of trees and shrubs and, between these trees and agricultural field, a strip of perennial livestock forage that was to be cut for hay. Shrubs incorporated to be sold as floral crops included corkscrew willow, pussy willow, dogwood, forsythia, redbud, and witch hazel; those used for fruit production included persimmon, Chinese chestnut, apple, and pear. Also part of the plan were Christmas trees, hardwoods for fenceposts and firewood, and trees for timber production (green ash, black walnut, red oak). They found that cut woody branches utilized by the florist trade are capable of giving the environmental benefits desired in their plantings and are compatible with most row crop operations because labor needs typically occur between December and April. Pussy willow branches were harvested as early as 2 years post-planting. Preliminary

harvest studies indicate gross returns in excess of \$13,590/a are possible. Four designs were incorporated to meet 3 income objectives: 1) short-term - 6 forage mixes providing annual forage, 2) mid-term - 4 grass/legume mixes with noted wildlife value planted with strips of shrubs (13 species) whose branches can be harvested within 2 - 3 years post-planting and used by the nation's \$7 billion/year floral industry, 3) mid-term - edible fruits that can be raised for home use or sale and 4) long-term - hardwood species that will provide timber, firewood or fenceposts. Even though this project is on-going, they concluded the concept of designing these systems in a way that will pay for themselves will ensure their maintenance and long-term retention.

Fuelwood in riparian areas - Other studies (e.g., Schultz et al. 1993) have suggested producing fuelwood in riparian areas based on the 3-zone buffer system. They suggest using specially selected fast growing tree species (e.g., *Populus X euramericana* Eugenei, *Fraxinus pennsylvanica* Marsh, *Acer saccharinum* L, *Juglans nigra* L, *Cornus stolonifera* Michx, *Physocarpus opulifolium* L.) that are grown as short rotation woody crop systems to produce biomass for energy in 5 - 8 years and timber products in 15 - 20 years (*Juglans nigra* L. is grown on a 45 - 55 year rotation). These particular species were selected because they grow rapidly, reproduce vegetatively by stump or root sprouts, and develop large root systems required for rapid nutrient uptake and soil stabilization. These trees are combined with native shrubs and grasses to enhance wildlife habitat.

Kort (1995) evaluated the value of trees and shrubs in shelter belts in the Great Plains States and the Canadian Prairie Provinces. He suggests the use of box elder (*Acer negundo* L.) for the production of syrup and Saskatoon berry (*Amelanchier alnifolia* Nutt.) for fruit production. Saskatoon berry grown for fruit, jams, jellies, and syrup can produce about 33,000 pounds of fruit/year, for a net income of \$25,000. Choke cherries (*Prunus virginiana* L.), highbush cranberry (*Viburnum trilobum* Marsh.), buffaloberry (*Shepherdia argentea* Nutt.) and seabuckthorn (*Hippophae rhamnoides* L.) are being studied as species with commercial potential. He estimates 3,211 board feet/half mile of green ash and 4,953 board feet/half mile of American elm

may be harvested from 55-year old shelter belts in southern Manitoba, for a combined value of \$3,464 of hardwood/half mile.

CHALLENGES IN MAKING INCOME DECISIONS

Challenges facing landowners who develop alternative income enterprises in their riparian area are, for the most part, no different than those facing other business ventures - marketing, distance to markets, concentration of harvestable resources, competition, available money, availability of labor (how much and when), income needs (short- vs. long-term), permitting requirements, zoning restrictions, and overall objectives of the landowner. However, landowners also will face the challenge of designing a buffer system that can deliver environmental benefits as well as provide a source of income. Landowners may recognize a lack of availability of certain plant materials suitable for planting in the riparian area, resulting from the increased use of these species. Other concerns include

- When harvesting timber, management costs may be high or the stumpage price may be low, due to the nature of the riparian forest and small acreage involved. However, if incorporated into other harvesting operations in the area, harvesting costs may be reduced.
- Herbicides being applied on adjacent agricultural fields may present a problem to vegetation in this riparian area, especially within Zone 3 where grasses, flowers or fruit blossoms are being grown. Also, some herbicides may be restricted from use within a riparian area due to proximity to a waterway.
- If grasses such as switchgrass are planted, conflicts between mowing schedules for prime hay and wildlife habitat needs may arise. Wildlife will benefit most if mowing does not occur between April and August.
- Many riparian areas are in flood plains; therefore, during a major storm, flooding could occur and wash away many of the established species.

- Noxious weeds can become a problem when establishing a riparian buffer and must be controlled by mowing, burning or herbicides. It will be important to develop and follow a maintenance plan on this area or, in many cases, the enterprise will be lost due to weeds or poor growth. Once the riparian area is established, it should be treated no differently than any other farming acreage—it needs care and maintenance. The degree of maintenance will depend on the plant material and the landowner's objectives of the property.

If a landowner enters into a federal or state program (e.g., CRP, CREP, EQUIP), there may be some uncertainty as to what type of income can be derived from the cost-shared land. In most cases, haying is allowed and passive income from alternative crops will be allowed. However, other plantings, such as Christmas trees and timber, will not be eligible for harvesting during the contract period (10-15 years).

Because many cost-share programs have been targeted at riparian areas, it may be confusing which one is right for a landowner. Many times this confusion leads to frustration and, as a result, the landowner takes no action. It is important that natural resources professionals clearly present the objectives of these programs to a landowner and then tailor a management plan that will assist them in obtaining an alternative income from the riparian area.

CONCLUSION

There are three guiding principles for implementing a successful alternative income opportunity management plan in riparian areas: 1) encourage practical management measures that limit soil disturbance and reduce potential water quality impacts, 2) increase shade, habitat, and food for fish and riparian-dependent wildlife, and 3) maintain economic viability of farming operations.

Many species and design options that provide income and protect the environment are possible in these plans. It will be critical to keep the design concept flexible enough to be integrated into the farming operation. They must also be designed in a way that they will pay for themselves to ensure

long-term maintenance and retention of the riparian buffer.

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Nontraditional Income Opportunities for Forest Industry: Identifying New Approaches for Old Products

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Abstract: For many generations forest industry has concentrated most of its efforts on maintaining income flows based on timber products. This has been accomplished through industry private landowner assistance programs, outright purchase of stumpage from private landowners, and the intensive management of industry-owned lands. The leasing of land for hunting is well-established on forest industry lands and private landowners can learn much from their experience.

Recently, there is a greater emphasis on increasing revenues from industry land holdings, and practicing sustainable forest resource management on industry and private lands through the Sustainable Forestry Initiative (SFI). The forest industry will continue to develop better working relationships with private landowners to assure its resource needs for wood in the future will be met, but what about other forest-based products and services? Several forest products once popular and several new products and services, need to be considered for extension programs and resource management plans. Labor costs, lack of business skills, and liability concerns often constrained seemingly reliable opportunities for revenue generation. However, if planners are flexible and have vision, several new or forgotten ventures might be considered. Those that warrant our consideration include access to niche markets, utilization of under-utilized species, improvement of resource knowledge and marketing capabilities, and organization of specialized land-use leasing programs.

Several challenges and opportunities exist for forest industry to share its wealth of experience with small landowners. Recent programs focused on landowners can serve as models for new systems which offer a broader range of assistance with a more diverse set of forest products. Early experiences with SFI and certified wood programs have offered alternatives to traditional management and marketing programs. A new and expanded list of alternative forest resources and products will lead to several important opportunities for increasing partnerships with non-industrial private landowners. This presentation will discuss some of those possibilities.

Keywords: sustainable, forest industry, alternative forest products

Barriers to Recreational Access Opportunities on Private Lands

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Abstract: Landowners need to supplement and diversify their current income source. Farmers and foresters near large urban populations can provide recreational access to generate additional income. With more Americans participating in outdoor recreation, private lands are needed to accommodate the demand. Landowners cite several barriers to engaging in this income opportunity including visitor behavioral problems, lack of knowledge of economic factors, such as demand, costs and potential incentives, limited labor availability, lack of marketing skills, and legal issues. Improving recreational access opportunity will depend on the right mix of private initiative, economic instruments, and regulation, focused local action, and new public-private sector delivery mechanisms.

Keywords: recreation, tourism, income opportunities, natural resources, agritourism

INTRODUCTION

Landowners, foresters and farmers alike, are looking for new ways to earn revenue, in addition to, or in place of, their current income source. Faced with the decoupling of farm program payments from production, the expected impact on prices of the Tobacco Settlement, and the pace and pattern of suburban development threatening the viability of rural economies, landowners need to diversify their economic activities to maintain their properties. Farmers and landowners in areas near large urban populations have the opportunity of providing recreational access as an alternative income generator. The additional revenue can increase the probability that the environmental amenities associated with farm and forest land, such as outdoor recreation, wildlife or water recharge areas, are maintained.

Recreational access for purposes of this paper is being defined very broadly. Basically, a landowner permitting members of the general public to enter his or her property for enjoyment, whether it is hunting, fishing, hiking, picking berries, birdwatching, taking a hay ride, or a farm tour, is providing recreational access. Some landowners permit free access to friends, family and others, to control wildlife population or for

good public relations. Others lease their land for a specified time period or charge a daily fee for access. Still others find that inviting others onto the property results in the increased sale of farm and forest products.

WHY RECREATION?

While recreational enterprises have attracted interest by landowners recently in the United States, European farmers have been successful in their agritourism and recreational endeavors for years. Travel and tourism output in the United States is expected to grow 28 percent between 1997 and 2007, providing growth opportunities. More than three-quarters of Americans who live in an urban setting, consider visiting a rural area a novel and interesting experience. People want to observe and experience everyday farm life as well as special events, such as farm and forest festivals. The number of forest visitors has been increasing annually as people go to rural areas for hunting and non-hunting wildlife experiences.

More Americans participate in outdoor recreation than own a pet, tend a garden, or go to professional sports games combined. It is estimated that more than 160 million Americans,

or 77 percent of the population observe, photograph or feed wildlife every year. In a 1991 survey, the U.S. Fish and Wildlife Service found that expenditures by wildlife enthusiasts total more than \$14.5 billion a year. Nature tourism is the fastest growing segment of the tourism industry, averaging a 30 percent annual increase each year since 1987. Worldwide natural tourism sales totaled \$238 billion in 1994.

In the U.S., nature tourists spend more than \$7.5 billion annually on travel alone. Many of these people would consider visiting a farm or a forest setting for their recreational experience. Private landowners in the United States own 60 percent of the land base, with an even higher percentage in the Northeast states. Private lands hold a major role in providing the land base to satisfy the increasing demand for recreational opportunities. In addition, rural tourism resulting from these activities can be an important rural development tool.

PERCEIVED BARRIERS

While the demand for recreational enterprises appears to be increasing, landowners still perceive formidable barriers to opening their property for this purpose. Data on various types of tourism activities exist, however, information to facilitate a feasibility analysis of different recreational opportunities is limited, and located in a variety of sources. Regulations that may apply are equally dispersed and differ by locality.

Although some excellent programs have been developed to transfer information to landowners, many are underfunded or have difficulty reaching new or nontraditional clientele. New resource materials and models to disseminate information are needed. Tourist groups and state and federal agencies realize the economic potential of satisfying the increasing recreational demand using private lands, but research is needed on the most appropriate incentive structures and policy instruments to facilitate this expansion.

DEMAND FOR RECREATIONAL ACCESS: SENIORS, BABY BOOMERS, AND FAMILIES

The disposable personal income of most Americans is increasing, and many seek and can afford to pay for a quality recreational experience. Evaluating the demographic structure of the general population and the surrounding areas can help define the appropriate audiences. For example, as a result of falling birth rates and rising life expectancy, the age structure of the U.S. population is shifting. The average worker lives 11 years beyond the standard retirement age of 65, and as senior citizens increase in number, the demand for recreational activities has increased. Public campgrounds have seen an influx of older visitors and the National Park Service has responded by providing annual park passes for this group, such as Golden Eagle, Golden Age and Golden Access Passports.

Baby boomers are another target group that has reached the age of peak earnings and expenditures. They often have large disposable incomes and desire to use their leisure efficiently. A recent executive report by the Association of Travel Marketing Executives, *Travel Trends*, found that more Americans chose leisure over work as the most important activity in their lives. Boomers want more frequent, but shorter vacation outings. Vacation trips of three nights or less have become more common. In addition, the Baby Boomers children desire recreation opportunities. Families seek immersion experiences which provide combined recreation and educational possibilities.

Another significant demographic trend is the decline in the traditional two-parent family and increase in the number of single-parent households, especially those with children living with one parent and visiting the other. Single parents seek appealing recreational activities to maximize quality time with their children. For these groups and others, agritourism constitutes an affordable recreational activity appealing to many age groups.

SUPPLY AND BARRIERS TO DEVELOPING RECREATIONAL ACCESS OPPORTUNITIES

The idea of farm and forest recreation enterprises is not new. Rural tourism dates back to the 19th century when people sought relief from the stress and squalor of the expanding industrial cities. Many commercial forestry companies permitted hunters access to maintain community goodwill. For the last three decades, farmers have engaged in pick-your-own operations, petting zoos, hay rides, pumpkin patches, cross country skiing, fee fishing, hiking, bed and breakfasts, and more. Growers sell their farm products directly and some have opened on-farm doughnut shops, gift shops and restaurants. Many rural landowners like the opportunity to educate city people about agriculture.

Recreational enterprises on farms are poorly developed in the U.S. compared to their European counterparts. Only a quarter of private rural lands in the United States are open for public recreation (283 million acres). Since 1977, the percentage has decreased from 29 percent to 23 percent (Cordell, et. al., 1990). To meet the increasing demand for recreation given the limited amount of public lands available in the Northeast United States, more private land is needed. However, significant barriers to accomplishing this objective remain.

Lack of Information

Private landowners cite the lack of information as a major impediment to developing recreational enterprises. Information on various alternative enterprises, such as management costs, labor needs, potential demand, fee structure, competitors, and the bottom line, given their resources and location is scattered and inconsistent. Entrepreneurs often have to do their own research with little aid from local or state groups.

Cornell's Farming Alternatives Program has provided some good resource materials and contacts for small farm entrepreneurs. Several states have information on charging a fee for access for hunting or fishing. Some magazines such as *Small Farmer* provide examples of

successful enterprises, but these articles rarely contain financial information. For most traditional producers, recreational enterprises represent a diversification of an existing operation.

Information on more traditional agricultural enterprises such as hog farming, is available through extension materials, and other sources, but is lacking for nontraditional recreational enterprises.

In addition to basic enterprise startup information, entrepreneurs want to answer questions such as: Will the enterprise provide additional income to sustain them in times of low cash flow? Will the enterprise keep a second family on the farm? Can it provide a cushion in low income years? Before making the decision to invest time and resources to start an enterprise, a landowners must know if it will meet their objectives, or if another enterprise would be better, or if they are better off investing elsewhere.

Market Analysis

Detailed market analysis for many recreational enterprises do not exist. Many basic questions must be answered.: While demand for recreational activities is increasing and may provide a potential income opportunity, can that interest be funneled to private lands? What type of private lands is needed and how does one contact potential visitors? How many people would be interested and where are they? How much will they pay? How frequently will they come? How many seasons will a demand for the recreational activity exist? Hunter numbers have not been increasing, so will investments in hunting blinds, wildlife habitat, and other improvements pay off over time? Will people continue to taste wine on a regular basis? Do people stop cutting their own Christmas tree when their children are grown and will other families replace them?

In addition to the demand side, landowners require information and analysis of the potential competition. Who are they? What do they offer and for how much? How many competitors are there and where are they located? Is there a public park, forest or wilderness area nearby? Does this increase demand or decrease demand? Some European farmers state that an 80 to 100-day

season is needed each year to ensure profitability. Does this minimum standard apply in the U.S.?

Liability Concerns

A major concern of landowners providing recreational access is their rights, the extent of their liability, how they limit this liability, and how charging a fee will affect their duty of care toward visitors. Landowners are concerned about how permitting access to the general public for recreational activities exposes them to threats of liability suits. Some landowners say that liability issues are the main reason they do not permit access. Often, they have been given inappropriate information to understand their legal rights and responsibilities. Liability laws vary by state, which adds to the confusion.

Many states have passed legislation or recreational statutes that limits the landowner's responsibilities when people use their property for recreational activities at no charge. The legislation strives to encourage landowners of undeveloped land to permit access for sport and recreational activities by providing limiting liability. As a rule, these laws cover particular recreational activities and release the landowners from the responsibility to keep the premises safe for outdoor activities if no fee is charged. The landowner usually remains liable for willful or malicious failure to guard or warn against dangerous conditions.

In spite of this type of legislation, landowners still question what situations are covered. A landowner can develop guidelines and rules for the use of his lands, but there is no guarantee that all people will follow them. Even if limited liability can minimize the chance of a judgement, visitors can still file suit against the landowner, even when the case has no merit. The lack of merit does not decrease the time and trouble the property owner incurs. Landowners may find that their defense costs thousands of dollars (this is often covered by the insurance company minus any deductible). In these cases, an insurance company may decide to settle out of court.

Fees and Liability

Recreational statutes passed by states to limit landowner liability does not apply to owners who collect a fee for access. In this case, the landowner is seen as a business and the liability changes depending with the type of visitor on the property. These types include trespasser, licensee, or invitee. If a fee is charged, the visitor is usually considered an invitee in the eyes of the court, and the landowner must protect them against all known dangers and those that would be discovered with reasonable care. If no fee is charged, recreational users are usually considered trespassers, thus limiting the liability of landowners for injuries under the states recreational statute.

All landowners need to investigate their level of exposure and ensure that their insurance coverage or the insurance coverage of the lessee (such as the hunting club) adequately protects their interests. If the landowner does not plan to charge for access, legal costs and judgments from lawsuits resulting from harm suffered by a visitor may be covered by a conventional homeowner or farm policy. Many insurance providers will pay for the damages resulting from a judgment and also the cost of the legal defense, if the property owner's conduct was not criminal, but each landowner must affirm the policy of his/her provider.

The availability of liability insurance for recreational enterprises that charge a fee used to be costly and hard to find, although many specialty insurance providers are now available for a reasonable cost. Many landowners can get an additional coverage endorsement on their standard policy or umbrella coverage. Some find they fare better going with another insurance company who may specialize in recreational access, rather than dealing with their regular insurer for this type of coverage. Depending on the type of recreational access, the cost of the liability insurance may prohibit the enterprise from being profitable.

Other Factors Affecting Recreational Access?

While liability concerns is a factor in refusing recreational access, other factors are also important. A recent Maryland survey of 300 landowners found that limiting the landowner's

liability for granting access would result only in 16 percent more landowners allowing access for hunting. Farmers said the main reasons they do not allow hunters on their land were: they don't like having strangers (26 percent); the risk of injury (19 percent); and the risk of damage to property (17 percent). Only 17 percent of those surveyed opened their land to the general public. Only 6 percent admitted charging an access fee. Visitors and the inherent problems they pose continue to be a major obstacle for these landowners. As suburban areas begin to encroach on farm and forest lands, many property owners have experienced problems with trash, vandalism, trespassing, mistreatment of animals, and nuisance complaints.

Concerns about the behavior of visitors are not new and have been found repeatedly in landowner surveys (Wright, 1988, Waldbauer, 1966, Rounds, 1973, Westfall, 1975). Even with a more established recreational industry, European farmers who provide access find similar problems, including littering, livestock disturbed, open gates, complaints about odor, and crop damage. One Maryland grower had to pay a trash bill of \$20,000 to clean up the litter dumped on her property.

Although some enterprises limit actual contact with clientele, the behavior of visitors is a concern. Many visitors think they can have access at anytime. While the landowner could charge these visitors for trespassing during non-business hours, this is not good business and some owners fear this opens them up to retribution. A few landowners who permitted recreational access discovered a loss of privacy, resulting in calls at anytime of day or night, and the theft of their home or farm equipment. On the other hand, others have found that their clientele can help them police the property against vandalism and theft. Some hunting clubs will mutually-beneficial activities with landowners, such as investing in roads and other improvements.

Farmers have had to get creative to overcome visitor's interference with the day-to-day operations on the farm. Some practices must be shifted to different times to prevent possible conflict with the visitors. Curious visitors want to explore beyond the set boundaries. Additional signage has been required as well as some new

fences. Others do not know how to treat the farm animals and express discomfort with common farm odors. Providing access may require additional investments in ventilation of farm buildings and cleaning up constantly after animals. Bed and breakfast owners have found their clientele lack knowledge on rural life that may lead to some disappointment in their experience. For example, one guest left when he found the farmhouse did not have a porch light on all night.

Labor Needs

Like other farm and forest activities, the availability and affordability of labor can be a major obstacle. In many cases, the owners maintain off-farm jobs until the enterprise is established enough to contribute significantly to the family's income, if this ever does occur. The management required to maintain a part-time enterprise, or the extra management effort required by a full-time farmer to handle a secondary enterprise, can be exhausting and the effort may fall short of what is needed.

Many landowners who engage in agritourism enterprises and need occasional labor hire pinch-hitters, or people who will come in on short notice for a short period of time. Other operators hire high school or college students, which can create shortfalls at the beginning and end of the summer season when students are in school. In the initial business stages, entrepreneurs usually depend on family labor, which requires eliciting the help of the children. In some cases, the children may not be cooperative.

Farmers may utilize farm employees for assistance, but if a farm employee spends his or her time in a tourist-type enterprise, the labor laws under which they are covered may change. The removal of most exemptions that are given to agricultural labor probably will not alter the employment relationship, however, other exemptions may become binding in certain seasons and economic circumstances. In many cases, visitors will spend more time with these employees than with the owners themselves. Their behavior will determine a visitor's perception of the enterprise. Thus, the owner should be sure the person has good people skills.

Marketing Needs

Marketing skills are essential to a successful recreation-based enterprise. A landowner must find a way to publicize the business and/or cooperate with others to educate clientele. Many landowners find marketing a daunting and unfamiliar task and only make token efforts, focusing instead on the production side of the business. The result can be an unsuccessful enterprise.

As a rule, the general public does not look to private provision of recreational activities. Landowners have to be willing to spend the time and money to learn how to market their product or service, and then do it. Recreational suppliers and providers say that marketing is the most important component of the tourism sector. Landowners need to determine what is the appropriate target audience, find information providers for that group, be it newsletters, associations, trade magazines, etc. Many landowners develop a brochure describing their offerings and leave them in various outlets frequented by tourists, such as the tourism office, state fair, area supermarkets, and hotels and motels. Landowners can also attempt direct mail if a mailing list of past customers and other target audiences can be produced.

Word of mouth has been one of the most successful marketing tools for private recreation providers. This requires that people enjoy their experience so they tell others and return themselves. If a community advertisement campaign can be developed around an event or festival which included the local offerings, the individual landowners could afford to publicize beyond the local area.

MECHANISMS TO TRANSFER INFORMATION TO LANDOWNERS

In the National Commission on Small Farms publication, *A Time to Act*, a producer was quoted as saying, "sometimes attempts to find the starting place for access to federally-generated or federally-supported information that is relevant to small family farms, were intimidating, confusing, or sometimes led to less visible, underfunded, and

overextended offices or people." It appears knowing where to begin is a major hurdle.

Educators need to set up partnerships with community-based organizations, non-profits, recreational and farmer groups to ensure growers can find a starting point. In the same small farm report previously mentioned, a representative from a community-based organization stated "we think one of the biggest things that keeps limited-resource farmers from succeeding is their lack of access to services. We believe outreach is absolutely critical to this function." Effective outreach can make the difference in ensuring all groups have access to services and information. There is a need to overcome both inadequate resources for outreach as well as mismatches between the methods and the target groups.

Dissemination Strategies

There are three general types of dissemination strategies. First, is the individual contact methods such as farm visits and office calls. Second, is the group contact method, such as tours, conferences and demonstrations. Thirdly, there is the mass contact method with bulletins and exhibits as well as the Internet. Previous research has shown that part-time farmers like on-farm demonstrations while full-time farmers prefer newsletters, publications, and visits to experiment research areas. Of greatest influence is the influence one farmer or producer can have on another to try some new technology or practice, due to their perceived credibility in the community.

Locating new clientele, specifically potential entrepreneurs, to get them involved in educational programs and the access to services, is a major obstacle. One Maryland Project, *Income Opportunities for Rural Areas*, had success attracting new clientele utilizing a multi-prong approach to marketing the available services and resource materials, which included mass contact, group contact and individual contact methods. The project displayed up-to-date information at all Extension meetings. The enterprise consultant on the project regularly gave talks to local groups and a newsletter was developed and sent to over 900 program recipients. Education programs and events were advertised through the newsletter, as

well as local media and Extension offices. Cooperative Extension agents and county and state agencies referred potential clientele to the program as did other cooperators. Once a person attended an educational session and returned an information form, the program would set up an on-site appointment to assist the client in assessing his or her resources. Resource evaluation included land, labor, financial resources and more. Additional on-site visits were provided if professional forestry expertise or another type of expertise was needed. In addition, the program conducted follow-ups with the clientele annually or as needed.

Educational events or group contact methods such as this conference offer a cost-effective means of providing information about recreational access issues and opportunities. Unfortunately, struggling farmers and those with off-farm employment, often do not take the time to attend such events. They look for some type of technical assistance publications they can use at home. We have to provide a format to access existing publications in an easily available central location. Several universities have done this with Web pages, but it is impractical for a landowner to investigate 50 different web sites, many of which may not cover many the alternatives of interest to the landowner.

To facilitate the location of needed publications and other contacts, a process similar to the tourism project being developed for rural communities could be pursued. Our-TOWN (which is an acronym for On-line Recreation and Tourism Opportunities Network) seeks to facilitate the development of a sustainable tourism effort in communities by providing the best technical assistance available and by developing a full partnership with state tourism offices, federal and state agencies, and the private sector. The project focuses on building the capacity of rural communities to develop tourism.

Cooperative Extension is playing an important role in the development and delivery of educational materials to interested landowners. In the early 1990's, a group of extension professionals developed strategic initiatives to facilitate the transfer of tourism information to landowners and local communities. It included several proposals that stressed the importance of establishing training initiatives for

both clientele and other extension members (a train the trainer approach), establishing a nationwide library of tourism and travel information, and the building of a national research base. Many universities and extension offices house publications on the development of agritourism and other types of recreational enterprises, but a central clearing house, whether developed on the model of Our-TOWN or in another form, would assist both trainers and individual landowners. Trade journal articles also provide good mass contact techniques, but need to contain contacts for obtaining additional information.

COMPETING WITH PUBLIC LANDS

Consumptive Recreation Activities

Maryland operates 47 State parks covering 90,239 acres. Nine state forests and 15 state parks are open to public hunting, in addition to 36 wildlife management areas covering 88,348 acres. Yet, 62 percent of the surveyed Maryland hunters use private lands for most of their deer hunting. In a recent Maryland survey, 38 percent of the 300 hunters said there is nowhere to hunt and many cite this as one reason for the decreasing hunter numbers.

As more private landowners post their land against trespassing and hunting, hunters without friends in rural areas have been forced to public lands that are becoming crowded. Some hunters avoid public lands due to safety concerns (19 percent) and crowding (13 percent). Most expressed a desire to travel two or fewer hours to hunt, with a demonstrated preference for private lands.

Private landowners can compete with public parks and wilderness areas on several fronts. A major comparative advantage for private landowners may be their location. Hunters and non-hunters prefer location close to their homes. If a private property lies in close proximity to state land it may increase the amount of wildlife available and make hunting on the private land more attractive. Landowners who use forest and wildlife management techniques to increase or maintain wildlife habitat and numbers can also charge a premium for quality hunting.

Hunters appear willing to pay for uncrowded conditions and what they perceive to be a safer location. Eastern Shore landowners earn \$2,000 to \$20,000 per year to lease their farms for winter geese hunting. For the last few years, no hunting for migratory geese season has been permitted, and landowners have had to suffer this loss of income. Deer hunting leases range from \$500 to \$2000 for a farm depending on the location and the number of deer.

Non-Consumptive Recreation

Non-consumptive recreation on public land is no longer free. Currently, almost all state and federal parks charge a fee for access, whether by the person (\$1-5), or by the car (\$5-20). In addition to entrance fees, other user fees are required for camping, boating, day use, or tour fees. Because of their bureaucratic nature, these parks have high costs of administering and collecting revenues. On an individual property, these costs would be much lower.

In Maryland, over 10 million people visit state parks each year. In some areas, the demand exceeds the available space such as at Sandy Point and Assateague Island. As the parks become more congested, people with limited leisure time available may prefer to pay a higher fee on a private property to be less crowded during their recreational activities.

Limited leisure time can also motivate people to seek locations closer to home. Many urban areas in the Northeastern states have a limited amount of park space within a short driving distance. People who desire farm or forest exposure will go to a working farm. They may want to expose their children to a new experience, to new animals, or to an education experience. While some public parks have tours, nature walks, and educational programs, they do not change dramatically year-to-year. A farm tour or petting zoo is a different type of phenomenon. Agritourism can compete by its uniqueness with many of the parks settings.

RECREATIONAL STATUTES AND LAWS

In 1964, the Council of State Governments proposed the adoption of a Model Act to

encourage landowners to grant access to recreationalists for no fee, by limiting the liability for any injuries that occurred while on the property. The Act defined these recreationalists as trespassers under the law. A National Association of Conservation Districts study found that landowners were still concerned about liability protection after the 1965 Model Act, which resulted in the proposed 1979 Model Act.

These Model Acts, or recreational statutes, have been adopted by many state legislatures in different ways, resulting in state-by-state differences and interpretations. For example, Maryland's law does not define charge clearly. Since, these laws limit the liability of the landowner if no charge is required, the interpretation of charge is quite important. Does this mean only monetary or are non-monetary exchanges included? If the hunters give the landowner some of the deer meat does that constitute a charge? This is one example of gray areas that exist in these statutes.

User Fees

What about user fees? Landowners pay taxes, maintain fences and roads, buy signs, and incur other expenses to own land. Some states now permit landowners to charge a minimal fee for access, to compensate them for their land maintenance costs, and still enjoy the protection of the recreational statute. In Maryland, a delegate is introducing an amendment to the recreational statute to add bicycling to the list of recreational activities. The current legislation does not specifically mention bicycling.

As state parks begin to charge fees, some states have questioned whether public lands are included under the recreational statute and enjoy the liability protection it provides. Interpretation of the statutes have varied from state to state, with Connecticut ruling the opposite of Pennsylvania. Maryland has decided these recreational statutes need amending to ensure that the state's liability for fee-based activities is limited.

Regulation and Reality

Many of the regulations that now affect recreational access enterprises were written with entirely different businesses in mind and create legal challenges. These regulations cover restrooms, drinking water, commercial kitchens, signage, zoning, off-street parking, permits, and employees. Most county regulations do not permit activities like a bed and breakfast business on land zoned agricultural, which requires a zoning variance by the landowner. Growers who choose to have non-domesticated animals in their business need to apply for a zoo permit issued by the USDA Animal and Plant Health Inspection Service.

Some state and local legislation restricts selling products not grown or made on your farm. Other states have strict laws extending to on-farm food processing. Attempts have been made to alter these statutes and laws but they are often conducted in a band-aid style. For example, in Maryland, a committee composed of different state agencies and farmer groups have been meeting to amend these regulations to encourage growers to produce more value-added products. Some growers currently ship their products to Pennsylvania for processing then re-import for sale on their farms or in farmer's markets.

A more thorough evaluation of these regulations needs to be done and a more comprehensive approach to recreational access-friendly legislation is needed. Beyond improving the laws, state and federal programs can do more to encourage recreational access with incentive programs, such as financing school trips to the farm, purchase of conservation easements, and longer hunting seasons and increased bag limits for wildlife habitat improvement.

New Hampshire, for example gives an additional 20 percent property tax reduction to landowners if the landowner does not charge an access fee, and there is no prohibition on snowshoeing, skiing, fishing, hunting, hiking, or nature observation on the property. In Vermont, landowners of agricultural and forest land can reduce their property taxes by permitting public use or access for such activities as hunting, snowmobiling, skiing, camping, hiking, fishing, and trapping. In

New Jersey some lands are granted tax exempt status for permitting use by the general public of natural open-space areas for recreation and conservation purposes. The uses of land can include parks, natural and historic areas, nature education, forests, camping, fishing, water reserve, wildlife preservation, hunting, boating, recreation centers, winter sports etc. User fees are permitted as an incentive for landowner participation. These types of programs provide additional incentives to growers to open their property for recreational access.

FUTURE ISSUES AND INFORMATION NEEDS

Teaming With Wildlife

One promising element for non-consumptive recreational activities on the legislative front is the Teaming with Wildlife legislation. This legislation follows in the tradition of the Pittman-Robertson Act which charges an excise tax on hunting and fishing equipment to support the funding of wildlife habitat, conservation activities and other game management objectives. Under Teaming with Wildlife, all outdoor recreationalists would pay an excise tax on their equipment to fund additional conservation efforts. The International Association of Fish and Wildlife Agencies estimate that \$350 million would be raised annually. The fund would be dedicated to the conservation of fish and wildlife species that are not fished or hunted, outdoor recreation access and development, and conservation education projects. If the legislation were to pass, incentive programs for granting private land access may be forthcoming.

Coordination Within Communities

At this point, few communities have worked on a cooperative format for recreational opportunities with the rural private landowner. Cooperative offerings or more regionalization should aid in drawing people to the area. Community events connected to recreational experiences appeal to more people and can result in more repeat business. Communities can organize festivals or events periodically in which landowners can participate and advertise their recreational

pursuits. These could be agriculture- or forest-related events such as a apple festivals, forest festivals, or culturally- related such as a story-telling festival.

The more places tourists have to go, the more reasons they have to come to the area, and the more likely they are to return. Many landowners find that 25-50 percent of their clientele are repeat visitors. In addition, different family members have diverse interests and offering a wide range of possibilities may result in family agreement to travel to an area. Tourists often say that shopping and buying mementoes are important parts of their experience. Local stores that promote recreational activities with t-shirts, caps, or other products can both advertise the area and stimulate the local economy. As land ownership patterns change resulting in more and more smaller parcels being created, cooperation between landowners will be essential. For example, hunters would need adjacent landowners to cooperate to ensure an area large enough for safe and successful hunting:

In 1995, the World Travel and Tourism Council (WTTC), the World Tourism Organization, and the Earth Council completed an 18-month review of the implications of the Rio Earth Summit for Travel & Tourism. They set nine priority areas for action by government departments, national tourism administrations, and trade organizations. These priority areas included: assessing the capacity of existing regulatory, economic, and voluntary structures to achieve sustainable tourism, training, education, and public awareness; providing for the participation of all sectors of society; and the design of new tourism products with sustainability at their core. They also stressed that achieving sustainability in tourism development depended on the right mix of private initiative, economic instruments, and regulation, focused local action, and new public-private sector delivery mechanisms. Private landowners can tap into this new interest and desire to develop this important industry. To engage in this endeavor, an association may need to be established to represent this group's interests.

Conclusions

Private lands, hence private landowners, constitute the majority of the rural land base, and must be considered if the demand for recreational opportunities is to be met. Research is needed to determine the regulatory and structural obstacles on the local, state and federal level hindering recreational access development. Information on the costs and potential revenues need to be developed and the information disseminated to individual landowners, so they can conduct a reasonable feasibility analysis and compare potential enterprises.

Opening lands to recreational access and developing agritourism enterprises has the potential to provide significant income to struggling farmers and forest owners. Real and perceived barriers still exist however. Altering regulations and providing additional resources and information can overcome some of these real and perceived barriers, however, others will persist. An individual landowner must ultimately decide if the risks of potential liability, financial loss, or other risks warrant initiating the enterprise.

Information on the effectiveness of existing incentive programs for recreational access development are needed by policy makers. Any additional funding would require this type of analysis to assist in the design of effective programs. Many states have programs to promote wildlife habitat conservation, access for hunting, as well as water quality oriented incentives and cost-share program provided by the 1996 Farm Bill. However, a couple of questions need to be considered: Do these programs contribute to private landowners granting access or do they impede it? Do programs under which the landowner leases the property to the state truly exempt the landowner from liability? Evaluation of the preferred incentive mechanism, whether it be subsidies, tax breaks, marketing assistance, or direct leasing, are needed

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SECTION 8

Managing Your Natural Resource Investment

Managing Risk In Your Enterprise: Working Your Way Through the Legal Minefield

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Abstract: Landowners opening their properties for use by others are frequently troubled about the potential of lawsuits brought by those injured on the land. Because many outdoor activities present a somewhat heightened risk of harm, this concern is appropriate. The landowner can, however, through a basic understanding of negligence law and risk management significantly reduce personal liability exposure. The objectives of this paper are to address the standard of care required by the law of negligence, discuss an employer's liability for acts of its employees, describe the landowner's duty of care owed to various categories of visitors, discuss disclaimers and exculpatory clauses and address some key steps in developing and implementing a risk management approach to limit liability exposure.

Keywords: landowner liability, risk management, negligence

INTRODUCTION

Practically any income producing activity on private lands carries with it an increased exposure to lawsuits. Private landowners wishing to protect themselves, must first know what to protect themselves from. This paper addresses basic, yet key, elements of negligence law that are important to the private landowner in dealing with the public and stresses the importance of sound risk management in limiting liability exposure.

NEGLIGENCE

The legal standard of "negligence" is applied to an individual who fails to act in a reasonable and prudent manner in a situation where the individual has a duty to another person or to the public.¹ A person found negligent is responsible for the damages that the act or omission causes, unless some defense is available.

The standard of care required by the law of negligence is that care which would be carried out

by a person, exercising ordinary prudence under the same set of circumstances. This is often referred to as the "reasonable person" standard, as in this paper, the "reasonable private landowner" standard. Private landowners are also considered negligent when they fail to act in an ordinary and reasonable manner to protect others from unintended injury.

Negligence is categorized into ordinary negligence and gross negligence. Ordinary negligence is behavior which a reasonable person might know would cause injury to other persons or property. Gross negligence is behavior that a reasonable person should know "would probably and most likely result in injury to other persons or property."²

The mere occurrence of an injury does not necessarily establish landowner negligence since the injury can be a result of an act of God, an unavoidable accident, or is so remote that the landowner cannot be held liable. In determining whether negligence exists, the courts look for several elements. These elements include: (1) the

¹ 38 Fla. Jur. 2d Sec. 1 (1982)

² *Id.*

negligent person must have some kind of relationship with the harmed party. This relationship is significant in establishing a duty on the part of the negligent party; (2) the negligent person must have behaved in such a manner as to breach this duty; (3) this breach must be the cause of the harm; and (4) the harmed party must have suffered damages as a result. All of these elements must be met for actionable negligence to exist.³

Negligence liability is often limited by such doctrines as contributory negligence, comparative fault and assumption of risk. The applicability of these doctrines is contingent on the state where the suit occurs, because not all states follow these doctrines.⁴ Contributory negligence and comparative fault may be found when the harmed party has also been negligent in some way. Differences exist among the states in the application of this doctrine. For example, some states employ a pure comparative negligence approach where no amount of contributory negligence by the injured party cannot claim damages unless the injured party's negligence was the sole cause of her harm.⁵ Other states use the 50 percent rule.⁶ Here, if the plaintiff's negligence is greater than the defendant's, then the harmed plaintiff cannot claim damages from the defendant. Finally, other states use the 49 percent rule.⁷ This rule states that if the plaintiff's negligence equals or exceeds the defendant's, the plaintiff has no claim.

A further limitation is the assumption of risk doctrine. This doctrine is limited to contact sports in some states, including Florida. Generally, assumption of risk applies when the harmed party

acknowledges the risk involved in his or her conduct. Under this doctrine, the injured party must voluntarily expose himself to a known and appreciated risk without any external pressure.

DUTY OF CARE OWED VISITORS

In many states, special laws delineate the level of care landowners owe visitors on their property. These laws establish three categories of visitors: invitees, licensees, and trespassers.

By law, the highest duty of care is owed to **invitees** while the lowest falls to **trespassers**. Licensees and invitees enter the owner's or occupier's land with permission. Licensees have permission to be on the property of another, but do so solely to further their own purposes.⁸ An invitee on the other hand, enters land for the purpose for which that land is held open to the public, or invited for business dealings with the owner or possessor of the land.⁹ By definition, an invitee's permission arises to further the owner's or possessor's purpose. As an example, an individual using the land of another for recreational purposes would be classified as a licensee if entering with permission, but not paying a fee. If the individual pays an entry fee, he becomes an invitee. Generally, a landowner who freely opens land for recreational use to the public and who conducts no commercial activity on the land, "owes no duty of care to keep that park area, land or water area safe for entry or use by others or to give warning to persons entering or going on that area of any hazardous conditions, structures, or activities thereon."¹⁰ Social guests entering property are classified as licensees and not invitees even though they have been "invited."¹¹

The significance of the distinction between licensees and invitees is in the level of care required by the owner or occupier of the land. Owners and occupiers of land have a duty to invitees to "use ordinary care in keeping the premises in a reasonably safe condition and to

³ 57 Am. Jur. 2d Sec 78 (1989).

⁴ Joseph W. Little, *Torts, The Civil Law of Reparation For Harm Done By Wrongful Act*, 452 (1985).

⁵ *Id.* States following this approach are: California, Florida, Alaska, Arizona, Illinois, Iowa, Kentucky, Louisiana, Michigan, Mississippi, Missouri, New Mexico, New York, Rhode Island, and Washington. *Id.*

⁶ *Id.* States following this approach are: Connecticut, Hawaii, Indiana, Massachusetts, Minnesota, Montana, Nevada, New Hampshire, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, Texas, Vermont, and Wisconsin. *Id.* at 453.

⁷ *Id.* States following this approach are: Arkansas, Colorado, Georgia, Idaho, Kansas, Maine, North Dakota, Utah, West Virginia, and Wyoming. *Id.*

⁸ *Restatement of Torts, 2d., section 330.*

⁹ *Id.*, section 332.

¹⁰ Fla. Stat. Sec. 375.251 (1996).

¹¹ *Restatement of Torts, 2d., section 330, comment g(3).*

warn of latent or concealed perils that are known or should be known to the owner and of which the invitee is unaware."¹² For licensees, the property owner owes the licensee a duty to avoid acts which show gross negligence or willful misconduct that would result in injury and to warn of any known defects that are not within the licensee's ordinary view.¹³ A duty is owed both licensees and invitees to exercise reasonable care in conducting activities to protect both groups.

As a general rule, there is no duty of care owed to trespassers. Under most circumstances, a trespasser injured on the property of another cannot sue the landowner to recover for injuries received during the trespass. A key element excusing the landowner's liability is the lack of knowledge of the trespasser's presence. However, there are two exceptions to this general rule. One exception is when the landowner is aware of the presence of a trespasser. The landowner must also not engage in willful or wanton acts which result in injury to the trespasser. Jurisdictions differ in the duty of care owed to known trespassers. In some jurisdictions, the landowner must exercise ordinary care towards the trespasser. Other jurisdictions also require warning the trespasser of hidden dangers.

The other exception applies to trespassing children of tender years, which is adopted by most courts. This exception requires the landowner to exercise reasonable care to eliminate any danger to children posed by an artificial condition on the land, if the owner knows or should know that children are likely to trespass and that the condition poses an unreasonable risk of death or serious bodily harm.

EMPLOYER LIABILITY FOR ACTS OF EMPLOYEES

Can an employer be liable for the acts of its employee? To answer introduces the concept of vicarious liability and what is the course and scope of employment.

Vicarious liability, or imputed negligence, makes one person responsible for the negligence of another person. Vicarious liability only occurs where the parties are related to each other, such as in an employer-employee relationship. Vicarious liability consequently occurs where, for example, a business owner is found to have been negligent in hiring the wrongdoer or in entrusting a dangerous instrumentality [such as a motor vehicle] to an incompetent person. The business employer is generally responsible for the acts of the employee when that employee is acting within the course and scope of employment, unless the employer can show that the employee acted in bad faith.¹⁴

While it is difficult to precisely define what constitutes course and scope of employment, generally it is those activities directed by the employer or assumed to be directed based on the nature of the position.¹⁵ Other relevant facts are whether the employee's acts occur within the authorized time and space of employment, whether those acts are incidental to employment, and whether the employee's acts further the interests of the employer. For example, a restaurant could be held liable for the acts of a waiter's assault on a customer while collecting payment on a bill.¹⁶ However, if an employee acts in a manner unrelated to her employer's business, then it is doubtful that the employer will be held vicariously liable for the acts of that employee.

DISCLAIMERS AND EXCULPATORY CLAUSES

A common business practice is to limit liability exposure through a disclaimer or exculpatory clause. In general, these pre-injury agreements releasing a party from liability for future negligent acts are not looked upon favorably by the courts. Subsequently, courts strictly interpret such agreements with regard to the parties' intention. While some states have not allowed individuals to contract away the duty to exercise ordinary care, most states do uphold such provisions. However,

¹² 41 Fla. Jur. Sec. 20 (1994).

¹³ *Id.* at Sec. 52.

¹⁴ 57B Am. Jur. 2d Sec. 1752 (1989).

¹⁵ 2 Fla. Jur. 2d Sec. 213 (1977).

¹⁶ *Columbia by the Sea Inc. v. Petty*, 157 So. 2d 190 (Fla. 2d DCA 1963).

the provisions of pre-injury agreements must be drafted in clear and nontechnical language because courts generally do not interpret ambiguous clauses in the drafter's favor and give words their "legal, natural, and ordinary meaning."¹⁷ Additionally, it is important that drafters check and make sure that such provisions are not barred by the appropriate state's laws.

The more commonly used type of such exculpatory clauses are indemnity (or hold harmless) provisions. These are often used in agreements between construction contractors and property owners and between landlords and tenants. If such provisions are not contrary to public policy, fairly bargained for, and clearly stated, they will usually be upheld by the courts. Indemnity provisions which may be contrary to public policy are those which indemnify a party from intentional acts and, in some states, negligent acts or acts which are considered as gross negligence. Indemnity agreements may also not be upheld by courts in situations where the party seeking indemnification had actual knowledge of a hazardous condition. For example, a car owner could not be indemnified by the manufacturer for the defective design of her vehicle's brakes when she knew of the defective condition and continued to operate the auto. Where both parties are actively negligent in contributing to a parties' injuries, then neither will be entitled to indemnification.

RISK MANAGEMENT

Risk management is a process of identifying and evaluating risks and selecting the best alternatives to limit liability exposure and costly law suits. In developing and implementing a sound risk management approach, the private land owner must acknowledge that: 1) any business activity involving the public carries with it a risk; 2) that the risk can be managed; and 3) it can be managed through a reduction of the risk. Risk reduction involves a common sense approach in which the private land owner identifies those risks within her business venture, considers alternatives of handling those risks, picks the most risk averse

alternative and implements a consciousness effort in risk reduction. Within such a risk management process, it is extremely important that the private landowner constantly evaluates and reviews the risk management strategy.

CONCLUSION

Private landowners and others in rural areas often lack adequate information about laws, regulations and the legal systems affecting the use of private lands for income opportunities. The legal environment has changed so rapidly in recent years that knowledge which served our grandparents well enough is quite inadequate today. This is especially true with respect to the legal duties owed business visitors. With the constant proliferation of lawsuits, a basic understanding of negligence, vicarious liability, and pre-injury agreements coupled within a sound framework of risk management is essential for the transition from private landowner to entrepreneur.

¹⁷ 41 *Am. Jur. 2d Sec. 17* (1995).

Organization of the Natural Resources Business Organization

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Abstract: How should a natural resource income opportunity business be organized? The choices are many and mixed and relevant issues include management, tax and operational considerations. It is imperative for business owners and operators to evaluate all options and alternatives before making the decision to proceed with the most advantageous form.

Keywords: business organization, corporation, partnership, proprietorship, limited liability company, choices and considerations

CHOICE OF FARM OR BUSINESS ORGANIZATION

The four general ways in which a business enterprise can be organized are a proprietorship, a partnership, a corporation or a limited liability company. Proprietorships are the most common type of organization. Corporations are the least common type. Partnerships are more frequent than corporations, but significantly less frequent than proprietorships. Limited Liability companies are created from a hybrid of characteristics of partnerships and corporations.

PROPRIETORSHIPS

The reason that a substantial number of businesses use the proprietorship form is the simple nature of the organization. In a proprietorship, every aspect of the business revolves around the owner. All of the assets, debts, profits and responsibility fall on the owner's shoulders. The owner decides when the business is formed, how it operates and when it chooses to end its existence. Between its formation and its closing, all business decisions are made by the owner.

Partnerships

A partnership is an association of two or more persons to carry on a profit making business as co-owners. In this type of organization, partners share capital and labor in the operation of the business and make decisions that benefit the business. By combining these resources, the partners hope to gain the advantage of a larger operation that lowers costs, increases efficiencies and enables the partners to increase business volume through their combined efforts.

In contrast to hiring an employee to provide additional labor, a partner provides more than just additional labor. A partner is also an owner who applies management expertise and skill to business decisions. Co-ownership of assets, such as joint tenancy with the right of survivorship and tenancy in common, does not rise to the level of a partnership since ownership alone does not constitute the operation of a business for profit. Sharing profits is an indication of a partnership relationship, but there are many situations where gross profits are shared which are not partnerships. These include wages paid to an employee, rent paid to a landlord, payments on a debt and annuity payments to the heirs of a deceased partner. In determining the nature of the relationship between multiple owners, the intention of the parties at the time the organization is formed is an important point to consider.

General Partnerships and Limited Partnerships

Partnerships are of two common types, general partnerships and limited partnerships. In a general partnership each of the partners is involved in the operation and decision making of the partnership. Each general partner is personally responsible for the payment of partnership debts and obligations, even to the extent of personal assets. A limited partnership differs in that there are two types of partners, general and limited. General partners of a limited partnership are much like general partners in a general partnership. They make decisions regarding the operation of the partnership business and are personally liable for the debts and obligations incurred by the partnership business.

Limited partners, however, have only a limited role to play in the operation and decision making of the limited partnership. Their role is similar to that of an investor rather than a general partner. As a consequence of their limited involvement in the partnership business, they have no responsibility for the payment of partnership debts and obligations beyond the amount of their investment in the partnership. Limited partners who exceed their role of limited involvement in the partnership, by participating in the control of the business, run the risk of having their responsibility expanded to that of a general partner. A limited partner who participates in the control of the partnership business faces broader responsibility for debts and obligations incurred when dealing with others who reasonably believe the partner is a general partner and not a limited partner.

Registered Limited Liability Partnerships

Registered Limited Liability Partnerships are a third type of partnership. In a general partnership, all partners are jointly and severally liable for all losses chargeable to the partnership because of a partner's wrongful acts or omissions, or because of a partner's breach of trust, and jointly responsible for all other debts and obligations of the partnership. In a registered limited liability partnership, however, partners are not liable for debts and obligations of, or chargeable to, the partnership arising from any negligent, wrongful acts or acts of misconduct committed by another partner or other

representative of the partnership. In a registered limited liability partnership, a partner cannot be forced to contribute to payment of the debt or obligation, or to indemnify anyone else who makes such a payment.

An important condition for this result to apply is that the partnership must carry minimum liability insurance coverage or other form of financial security equal to \$100,000 times the number of partners in the partnership in excess of one. In no event will this minimum coverage or financial security exceed \$1,000,000. This coverage protection is for liability arising from negligent or wrongful acts or misconduct committed by a partner.

This limitation on liability does not extend to liability of a partner arising from his own acts of negligence or wrongful acts or misconduct, or those acts of others who are under the partner's direct supervision or control. Debts or other obligations of the partnership which arise from some other source continue to be the responsibility of all partners as well as those debts or obligations for which any partner has agreed in writing to be responsible for or which are expressly undertaken by the partnership.

Once registered as a limited liability partnership, the partnership remains liable for all debts and obligations and its entire assets can be used to satisfy these debts and obligations.

Corporations

The third type of business organization is a corporation. A corporation is a legal entity that has a life of its own that is separate and apart from the lives of people who own or operate the corporation. This separate existence is unique among the four business organizations we discuss. As an entity that has legal existence, a corporation is tied to the statute that gives it this existence. Laws in Pennsylvania and other states provide for the creation and operation of corporations that can be organized for business and non-business purposes. As a business organization form it has particular appeal and advantage to medium and large businesses, but less advantage to small businesses.

In most states, corporations include several different types, such as business, nonprofit, close, professional or cooperative corporations. The differences between these organizations are relatively few. Business corporations are the traditional or common example of a business organization formed to conduct a commercial activity. Close corporations, or closely held corporations, are business corporations owned by not more than 30 shareholders that wish to simplify management of the corporation and restrict future ownership of shares of stock in the corporation to only a defined class of people, such as family members of present shareholders.

Professional corporations are business corporations created for the purpose of providing professional services that require a license, admission to practice or other legal authorization, such as medical, dental, funeral director, legal, accounting and professional engineering services.

Cooperatives are business organizations that are organized on the principle that members working in cooperation with each other can achieve a greater advantage than individuals working alone.

Limited Liability Companies

Limited Liability Companies are designed to allow business owners to gain the advantage of limited liability for debts and expenses, which corporations provide, while being treated as a partnership for most other operational purposes. In this way, business owners can combine some of the distinct advantages that apply to partnerships and corporations in a single entity. Property transferred to such a company belongs to the company and individual members or managers of the company have no claim to it. Real estate acquired by the company is owned by it and not its individual members.

In general, a limited liability company can be organized and treated as either a partnership or a corporation for federal tax purposes. As the partnership tax status avoids separate taxation of the business, most limited liability companies are organized with the intent of being taxed at the federal level as partnerships rather than corporations. For state tax purposes, however, Pennsylvania's limited liability company law

provides that for purposes of state taxes, licenses or fees, domestic limited liability companies are recognized to be corporations and its members are treated as shareholders of the corporation. Although this corporate status is granted, the company may elect to be treated as a Pennsylvania S corporation and its members treated as shareholders of the corporation if the company meets the requirements of such an election. As income tax consequences are generally an important ingredient in the organizational decision, great care must be taken to assure that the entity is properly organized to achieve desired goals and consequences.

Under Pennsylvania's limited liability company law, neither members of such a company nor its managers will be liable, solely by reason of being a member or a manager, for any debt, obligation or liability of the company of any kind or for the acts or omissions of any other member, manager, agent or employee of the company.

ORGANIZATION OF FARM AND AGRIBUSINESS ENTERPRISES

Proprietorships

To organize a proprietorship, a simple statement by the business owner that the business is active and the owner is exercising control is sufficient. If the owner chooses to do business in a name other than the owner's own name, the proprietor may need to consider registering the business name as required by laws dealing with doing business under a fictitious name.

Partnerships

Before deciding to organize a partnership or a corporation, two important questions must be answered. The first asks, "Is the business financially strong enough to generate income to support two owners and their families?" The second is equally important, "Can I get along and work well with the person I want to bring into the business?"

General partnerships are formed when two or more persons form their association to co-own and carry on the business for profit. For purposes

of forming a partnership, a person can be an individual, a corporation or another partnership. From there, creation of the entity can be formalized in a written partnership agreement that details the rights and duties of the partners to each other and to the partnership business. If the partners do not take advantage of the opportunity to formalize their agreement, most states follow the provisions of the Uniform Partnership Act (UPA). Under the UPA, if the partners have not entered into an agreement that defines their relationship to the partnership, the act fills in the blanks and provides rules that control the relationship of the parties to the business and to each other.

For example, if the partners have not prepared a written partnership agreement, the UPA provides that partners will share equally in the following items: profits, losses, management of the partnership, access to partnership books, possession of partnership property, capital and profits of the partnership that remain at dissolution after creditors and debts to partners are paid.

Most partnerships take the time to reduce their agreement to writing. In the written document, the partners detail the who, what, when, where, and how the partnership business will be operated. Its terms provide for such things as the amount of capital to be contributed to the partnership, capital additions by the partners, distribution of profits, accounting responsibility, managerial duties of the partners, limitations on the authority of partners to act on behalf of the partnership, dissolution rights of the partners and a blueprint for handling the death or withdrawal of a partner. Although the partnership agreement covers many issues, its value to the partners is most apparent when it is used to resolve disputes between the partners. In this context, it provides guidance for resolving problems under the framework designed by the partners in a more cooperative spirit.

Formation of a limited partnership is a more complex process. The central documents are the certificate of limited partnership and the partnership agreement. In the certificate of limited partnership, the partnership describes its name, address of its registered office, name and address of each general partner and any other

matter of importance that the partners decide to include in the certificate. In addition to the certificate, the partners prepare a detailed partnership agreement similar to that of a general partnership, with provisions for sharing of profits and losses and distributions to the partners. The agreement should also include provisions that detail the special relationship which limited partners have to the partnership and the importance of the limited partners remaining out of the operation of the partnership business. When the certificate of limited partnership is prepared by the general partners of a Pennsylvania limited partnership, it is filed with the Department of State of the Commonwealth of Pennsylvania. Upon filing the partnership comes into existence, although the certificate can request its existence be delayed until some other time. After filing the certificate, the general partners deliver copies of the filed certificates to the limited partners, unless the partnership agreement provides otherwise.

Organizing a partnership as a limited liability partnership requires filing a statement of registration with the Department of State. In the statement, the partnership expresses its intent to be a limited partnership under the law. This statement must be signed by a general partner.

Corporations

Formation of a business corporation requires filing documents to create the organization. The central document that leads to the creation of a corporation is the Articles of Incorporation which is prepared by the incorporators of the business. One or more natural persons above the age of 18 or another business or nonprofit corporation may be an incorporator of a business corporation.

In the Articles, the corporation describes the name which it has selected and is eligible to use in conducting its business, the address of its initial registered office, a statement of its intent to be organized as a business corporation, a statement that the corporation is to be organized on a stock or nonstock basis, the name and address of each incorporator, the term of the corporation's existence and any other provision that the incorporators choose to place in the Articles. All business corporations organized in

Pennsylvania are organized with the power to engage in all lawful business activities, unless the Articles limit the corporation's authority in some express way.

When the Articles are prepared, they are filed with the Corporation Bureau of the Department of State. Upon filing the Articles of Incorporation with the Department of State, the corporation comes into existence as a separate legal entity, unless a later date is requested in the Articles. Either prior to, or following the filing of the Articles, the corporation places an ad in a local newspaper announcing the filing or expected filing of the Articles. After the Articles are filed, the incorporators or the initial directors of the corporation call an organizational meeting for the purpose of establishing the corporation. At the meeting, the bylaw of the corporation can be adopted to guide the operation of the corporation. Bylaw deal with four important aspects of any corporation: its organization; its officers, directors, and shareholders; its membership and its future. The corporation is now operating as a body that is independent of its owners. Maintaining a separate operating identity and following the formalities of corporate existence are important to retaining the advantages of separate corporate existence.

Limited Liability Companies

To organize a limited liability company, one or more persons must act to initiate the organization process. If a single member company is organized, it will be taxed as a corporation rather than as a partnership. As the first step in the organization process a certificate of organization must be filed with the Department of State. In this document the organizers decide if the company is to be operated by a single manager or several managers. In the absence of this decision, management authority vests in the members of the company.

In addition, members of a limited liability company should enter into a written operating agreement which describes the affairs of the company and the conduct of its business. This agreement will contain provisions for regulating the internal affairs of the company with which members agree. The limited liability company

law provides certain general rules for the treatment of specific situations which could apply to a business if the business has not exercised its opportunity to determine how that the situation should otherwise be treated. Therefore, if the organizers of the business do not take advantage of this opportunity the general rules will apply.

MANAGEMENT OF A FARM OR AGRIBUSINESS ENTERPRISE

Proprietorships

If the organization has chosen to operate as a proprietorship sole management authority is vested in the proprietor. If the proprietor dies, the business ends.

Partnerships

Unless otherwise specified in the partnership agreement, each partner has authority to make decisions on behalf of the partnership. General partners act as agents of the partnership. Their acts bind the partnership unless the partner has no authority and the person with whom the partner transacts business is aware of this absence of authority. Every partner must account to the partnership for any benefit and hold as a trustee any profits that arise out of any partnership business transaction and which are obtained without the consent of the other partners. Partners also have the right to use all partnership property for any partnership purpose, but they have no right to use the property for any other purpose, without the consent of the partners.

Management authority in a limited partnership is vested in the general partners who operate under the terms of the partnership agreement and the law relating to general partners. To retain their limited liability status, limited partners must avoid participating in control of the partnership business. This does not mean that limited partners have no role to play in the operation of the business.

For example, the Revised Uniform Limited Partnership Act provides that limited partners can be involved in the following activities and still maintain their status as limited partners:

act as agent or employee of the limited partnership or of the general partner; act as officer, director, trustee, partner or shareholder of a general partner; consult with or advise a general partner with respect to any matter including the business of the limited partnership; borrow money from the limited partnership or the general partner; lend money to the limited partnership or the general partner; provide collateral for the limited partnership or the general partner; request or attend a meeting of partners; propose or vote on issues that involve the partnership, such as the sale of partnership assets, change in business activity, admission of new general or limited partners, merger of the partnership or its dissolution and winding up; and other matters that relate to the business of the limited partnership described in the partnership agreement as subject to the approval or disapproval of the limited partners.

Corporations

Corporations are owned by shareholders. One of the matters on which shareholders vote is election of the Board of Directors of the corporation. This Board constitutes the long range planning and decision making body within a corporation. Directors stand in a position of trust to the corporation. They are obligated to perform their duties in good faith, in a manner which the director reasonably believes to be in the best interest of the corporation. In making decisions, directors exercise care, including reasonable inquiry, skill and diligence as a person of ordinary prudence would use under similar circumstances.

The Board of Directors appoints the officers of the corporation. Officers serve as the day-to-day decision makers of the business in matters of sales, production, personnel management, marketing and so forth. Officers are obligated to perform their duties in good faith and in a manner which the officer reasonably believes to be in the best interests of the corporation. Officers exercise their authority with care, including such reasonable inquiry, skill and diligence, as a person of ordinary prudence would use under similar circumstances.

In a small corporation, all of the stock may be held by one person who serves as shareholder, director and officer of the business. In larger corporations, a seat on the Board of Directors or appointment as an officer of the corporation may be given to other shareholders who are active in the business. In close corporations, management can be simplified by eliminating the role of the Board of Directors and giving its authority to the shareholders.

Limited Liability Companies

In the management and operation of a limited liability company, the principal players are members and managers. A member is a person who has been admitted to membership in the company. Generally, membership is acquired by either purchase of an interest in the business or by assignment or transfer of an existing interest from another member. The operating agreement of a company may provide for classes of members at the time of organization as well as in later years. An owner's membership interest may be evidenced by a certificate of membership, but such a certificate is not a required item. As a limited liability company may restrict the right to transfer a member's interest, a potential purchaser should carefully examine the organizational and operational documents creating the entity.

Unless a company's certificate of organization provides for management by a manager or managers, management of a limited liability company vests in the members of the company who operate the company with the same power which general partners have in a general partnership. If a company is managed by its members, every member of the company must account to the company for any benefit that he or she derives from any transaction with the company which has not been the subject of consent from other members of the company.

The second key player is the manager or managers of the company who is designated in the company's certificate of organization as having the authority to manage the business of the company in accordance with a description of authority in the certificate. Managers serve for a term of one year and until a successor has been

elected and qualified, or until the manager's earlier death, resignation or removal. Replacement managers may be selected according to procedures described in the company's operating agreement. Managers of limited liability companies have the authority of general partners in a general partnership and have the same duties as corporate officers and directors. Members of a limited liability company which has designated managers are treated as limited partners in a limited partnership. A manager need not be a member of the company and may in fact be another entity.

AN IMPORTANT STEP: EVALUATE THE TAX CONSIDERATIONS INVOLVED WITH BUSINESS ORGANIZATIONS

The first tax point to consider is that neither a proprietorship nor a partnership involves the creation of a new taxing entity. In a proprietorship, the taxpayer is the person who owns and operates the business. Reporting business income and expense deductions involves filing IRS schedule C plus supporting schedules and forms as required. As assets are already owned by the business owner/operator, few tax consequences are incurred when the decision is made to devote personally owned assets to a business activity.

Partnerships

In a partnership, partners are the responsible taxpayers and the partnership simply passes income and deductions back to the partners who file this information on their personal or corporate tax returns. Reporting is accomplished by filing IRS forms and other supporting schedules and forms as required. When assets are transferred by an incoming partner to the partnership, two important tax events occur. The first is that the fair market value of what is transferred to the partnership becomes the partner's contribution to the partnership, and is then used to determine the partner's share in the overall capital of the business. The second event is that when the partner's share of the capital is determined, the individual partner acquires a tax basis in the partnership capital he or she contributed.

For example, two partners contribute property to a partnership when it is formed. Partner A contributes purchased property that has a fair market value of \$10,000 and an adjusted basis for income tax of only \$4,500. Partner B contributes equipment that has a fair market value of \$10,000 and an adjusted basis of \$8,000 for tax purposes.

If we consider only these items as the property of the partnership, the value of the partnership property is \$20,000. Each partner contributed one-half of that amount so they are equal partners in terms of their contribution to the partnership.

In regard to the partners, each will have a different tax basis in his or her share of the partnership. Partner A's tax basis is \$4,500 and Partner B's tax basis is \$8,000. In terms of the partnership, its basis in these assets is the same as that of the partners. If the assets were of the same type, the partnership's tax basis would be a combination of the basis of each partner.

These basis figures become important when the partner's interest in the partnership is transferred or the partnership distributes funds to the partners. If cash is contributed, its value is its basis.

When property subject to a debt or liability is transferred to a partnership in exchange for a partnership interest, the debt can be involved in the calculation of the contributing partner's tax basis in the partnership.

As income is generated by the partnership, a partner's tax basis can be increased by the amount of undistributed income. Partnership operating losses have the effect of reducing a partner's tax basis in the partnership. If a partnership chooses to distribute partnership property to the partners during the lifetime of the partnership, tax basis is also important. When distributions are made, the partnership's basis in the item is carried over to the receiving partner who reduces his or her tax basis in the partnership by the amount of the partnership's basis. If the amount of this distribution exceeds the partner's tax basis in the partnership interest, gain is recognized by the receiving partner. If at the time of liquidation a partnership distributes cash, unrealized receivables or inventory, of which the aggregate bases to the partnership are

less than the partner's tax basis in the partnership, the partner may report as a loss the difference between the taxpayer's basis and the aggregate bases of the distribution.

Corporations

Corporations by virtue of their separate legal existence have a separate existence for income tax purposes. Therefore, they are subject to separate corporate income tax at the federal and often at the state level as well. Under such tax statutes rates of taxation vary from individual tax rates. Many states also tax other corporation attributes, such as Pennsylvania's tax on Capital Stock.

To the extent income exceeds expenses, corporations may choose to retain a portion of the earnings or pay them out to shareholders as dividends on their investment in the business. Before the dividends are paid, the corporation calculates its own taxable income and pays the appropriate tax. Shareholders who receive dividend distributions report them on their individual returns. In this situation the amount passed to shareholders is subject to tax twice.

The solution to this dilemma of corporate shareholder taxation in the relatively small corporation is the election of S-corporation status. An S corporation is a regularly organized small business corporation that has elected to be taxed on corporate earnings and losses directly, similar to the pass through treatment of partners in a partnership. S corporations lose their elected status as S corporations if for more than three consecutive years the corporation receives more than 25 percent of its receipts from rents, royalties, dividends, interests, annuities, and sales or exchanges of stock or securities. To be eligible to elect this status for federal income tax purposes, a corporation must not have more than 35 shareholders, with married couples treated as one shareholder. None of the shareholders can be nonresident aliens and the corporation cannot be part of an affiliated group. The capital structure of eligible corporations must permit only a single class of stock, but distinctions in voting rights within the single class are allowed without such differences being considered a second class of stock. If the corporation issued promissory notes

or corporate bonds to individual creditors of the corporations, such debt instruments are not viewed as creating a second class of stock if the debt instrument is in writing, it contains an unconditional promise to pay on demand or on a particular day, the debt is not contingent on specified events and the debt is not convertible into stock of the corporation. To be effective, the election to S corporation status must be made with the consent of all shareholders on or before the 15th day of the third month of the tax year to be effective for that tax year.

For state corporate tax purposes, S corporation opportunities may also exist.

In the case of either a regular corporation or an S corporation, certain rules allow the transfer of property to the corporation to be a tax-free event. These rules are based on the assumption that the transfer of property to a corporation controlled by the persons who transfer the property is merely a change in the form of an entity, from direct ownership of property by individuals to indirect ownership through ownership of a corporation that owns the property. If the tax-free organization rules apply, recognition of gain and recapture of depreciation arising from the transfer of assets to the corporation are avoided.

Three requirements must be satisfied for the tax-free incorporation rules to apply:

1) There must be a transfer of property by one or more persons to the corporation.

Stock that is issued in exchange for services rendered in the past or to be rendered in the future is not considered property for these purposes, even though the corporation law of the state where the business is organized permits stock to be issued for services.

2) The transfer of property must be solely in exchange for stock of the corporation. In situations where the transfer of property to a corporation is made in exchange for stock and other types of property, the receipt of other property will trigger the recognition of gain to the extent of the money or fair market value of the other property received.

3) Immediately after the exchange, the transferring parties must be in control of the

corporation. The transferring parties must be in control of the corporation immediately after the exchange. Control is defined to mean ownership of at least 80 percent of each class of voting and non-voting shares of stock in the corporation. Individuals who provide services to the corporation in exchange for issuance of stock are not counted in the 80 percent test. If their shares exceed 20 percent of any one class, the test cannot be met.

The basis of stock issued in the incorporation equals the transferor's basis in the property transferred to the corporation in return for the issuance of stock. If the transfer includes assets that are subject to a debt or liability that the corporation assumes, the transferor's basis in the stock is reduced by the amount of the debt assumed by the corporation. Where the liabilities assumed by the corporation exceed the transferor's basis in the property, the transferor recognizes gain equal to the excess amount.

It should be noted that this discussion of state and federal taxes covers only a small portion of the tax issues that a business faces in deciding to organize, acquire property and start operations. Before making a decision, persons who seek to organize a new business or convert an existing business to a new form must take adequate time to explore these other tax issues with knowledgeable persons. This is done to assure that decisions are made on the basis of complete information. The discussion in this chapter is limited in its scope and cannot replace the more thorough discussion that is needed.

OPERATIONAL CONSIDERATIONS IN BUSINESS ORGANIZATIONS

Proprietorships

The relative simplicity which surrounds the organization and management of a proprietorship is obtained at a price which is the liability of the owner for all debts and obligations of the business that either the owner or the owner's employees create.

Partnerships

In a general partnership, all general partners are jointly and severally liable for the payment of partnership obligations, except those that arise from the partnership's failure to perform a contract, in which case the partners are jointly liable with each other. Joint and several liability can be enforced against any one or all of the partners, while joint liability can only be imposed on all partners. In fulfilling this liability, a partner's personal assets, above and beyond those employed in the partnership, can be called upon to respond to the liability.

A limited partnership with its protected status of limited partners and a registered limited liability partnership which has more sweeping changes to the general rules which determine a partner's liability for obligations created by other partners are opportunities to avoid some of the undesirable results which the general partnership liability rules create.

Corporations

A general business corporation, as a separate entity, may be able to limit its liability to its own assets without including the assets of its shareholders. Corporate employees who create liability while performing within the scope of their duties and responsibilities for the corporation are jointly and severally liable with their employer for injuries and property damage caused by their acts. Although shareholders are generally not responsible for liabilities incurred by the corporation or their employees, shareholders who participate in the act or event that gives rise to liability may lose that protection through their participation. This protection can also be waived by a shareholder who assumes responsibility to pay a corporate debt or who guarantees performance of a corporate obligation.

As mentioned above limited liability companies were created with the intent of providing an entity that has the tax advantage of a partnership while providing the limited liability advantage that a corporation provides to its shareholders. If properly formed, the entity created can accomplish the goals it was intended to achieve.

A second operational consideration involves the lifetime of the business. Proprietorships and partnerships are tied to the fate of their owners or partners. The death of an owner ends the business existence. In a partnership, the deceased partner's share may be transferred to someone else, but the original partnership must come to an end when one of its partners dies. A corporation's existence, however, is not affected by the death of its owner or owners. Corporate existence can be perpetual, thereby allowing for continued future existence if the business is profitable.

Recreational Access To Private Lands: Liability Problems and Solutions

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Abstract: An increasingly urbanized population is in need of wider access to lands providing wilderness or rural experiences. Recreational agricultural land can benefit landowners, the public, and state and local economies. A landowner benefits by getting additional income from his or her property while largely maintaining the property's traditional agricultural uses. The public benefits by enjoying recreational activities on land that otherwise would not be available for public use. State and local economies benefit from the dollars brought in by tourism and tax revenues. But landowners who open their properties to recreational use must be knowledgeable of the legal problems accompanying such use. Farmers and ranchers need to be aware of (1) the liability exposure from such activities; (2) statutory limitations on liability exposure; (3) how such statutes actually work; (4) insurance coverage problems; and, (5) possible solutions to liability problems, before they open their properties to the public for recreational uses.

Keywords: recreational, trespassers, licensees, invitees, liability insurance

NEED FOR RECREATIONAL ACCESS TO PRIVATE LANDS

Along with an increasing United States population, there is a growing public desire to engage in outdoor recreational activities. Besides the traditional activities of hunting, fishing, camping, and swimming, many of today's urban baby boomers desire to get outdoors for pleasure walking, sightseeing, day hiking, wildlife observation, horseback riding, and photography. Some of the more daring recreational enthusiasts have taken up such outdoor hobbies as hang gliding, snowmobiling, or driving off-the-road vehicles. However, three out of four recreational enthusiasts simply want to appreciate the outdoors by observing, photographing, and feeding wildlife.¹

Regardless of the recreational activity of choice, there is no question that the public demand for outdoor recreational activities has increased. In 1962, the Outdoor Recreational Resources Review Commission projected that by the year 2000 the public's recreational demand would triple. This projection was surpassed by 1983.²

Inability of Public Lands to Meet Demand

Unfortunately, for modern day outdoor enthusiasts, federal, state, and local efforts to acquire more recreational land have not kept pace with public demand. Many of our state and national parks suffer from overuse and their natural resources are being seriously degraded. To protect fragile plants and wildlife, public access to national parks such as Yellowstone, Teton, and Yosemite has been curtailed. In addition, much of the public land is concentrated in the western U.S. and is not easily accessible to many Americans. There are approximately 746 million acres of public land in the U.S., of which 691 million acres are owned by the federal government. But only 8 percent of the public land is in the eastern U.S.³

Private Lands Opened to Public (Reasons)

The obvious solution to the lack of public land for recreational use is for outdoor enthusiasts to find private landowners willing to grant recreational users access to private properties. Even though urban expansion annually consumes an estimated

1.5 million acres of agricultural land, and the U.S. is annually losing 400,000 acres of wetlands,⁴ there is still an estimated 1.35 billion acres of private rural land in the United States. Of this acreage, 75 percent lies east of the Mississippi River.⁵

It is estimated that nearly all agricultural lands and 64 percent of rangelands are privately owned. In addition 71 percent of the total U.S. forest land is owned by private landowners or private industry. As a result, a high percentage of the 141 million Americans who participate in outdoor recreational activities must rely on private lands and the natural resources they afford.⁶

But why would any landowner permit other persons to use his or her property for recreational purposes, especially when some of those persons are total strangers? Farmers and ranchers often open their properties to recreational users because, as landowners, they need the additional revenues generated by those persons who pay for the privilege of camping, hunting, fishing, sightseeing, or other recreational activities on private lands. For many farmers and ranchers, the extra revenue generated by recreational activities on farm and ranch land means the difference in economic survival. This is especially true in many Western states where the uncertainty of cattle revenues has prompted many ranchers to get into the tourism business.⁷

What is true for the farmers and ranchers in the Western states is true for farmers and ranchers throughout the United States. Some landowners have opened bed and breakfast operations on their properties while others have gone so far as to open restaurants where old style country home cooked meals are the main offering. After a hearty meal, guests are welcome to tour the property and see a working ranch or farm in operation. Farm animals in particular fascinate children and adults alike, as do other common farming elements such as barns and farm equipment.

U-pick or direct marketing operations are also extremely common for farmers who own fruit orchards and berry farms. Consumers can purchase fruit and berries already picked by the farmer and available at the farmer's fruit stand or, at a cheaper price, consumers can enter the orchards and fields and pick their own fruit.

Traditionally, farmers furnish the consumers whatever equipment is needed, such as gloves, buckets, and ladders. For farmers, U-pick or direct operations have the dual benefits of reducing labor costs while generating revenues. Consumers get to select their own fresh fruit while engaging in a recreational outing, although for some the outing can be very strenuous.

I am sure there are many other recreational activities conducted on private farm and ranch lands which I have not mentioned. But any recreational activities conducted on private property have two things in common: (1) the possibility of generating additional income to support the farm or ranch; and, (2) the possibility of a liability action being commenced against a property owner because of bodily injury to a recreational user of the property.

DANGERS TO LAND ENTRANTS

Agriculture is a hazardous business, as any farmer or rancher can attest. In 1992, there were 1,200 agriculturally related deaths in the United States and an additional 140,000 serious injuries.⁸

Naturally, recreational users can be exposed to some of the same risks to which farmers and ranchers are exposed on a daily basis. Some agricultural operations are chemically intensive operations and recreational entrants may be inadvertently exposed to harmful levels of pesticides or herbicides. There is also the possibility that some recreational users may have allergic reactions to even relatively low levels of pesticides or herbicides.⁹

Animals, of course, can injure recreational entrants. A recreational user could be thrown from a horse or run over by an animal that has escaped from an enclosure. And there is the nightmare situation of a landowner owning a vicious animal which attacks and injures a recreational user.¹⁰

Modern agriculture is also highly mechanized. The use of heavy equipment can pose a risk to land entrants and even idle equipment, such as a bulldozer with a blade on it, can result in injury to the unwary land entrant.¹¹

Even the land itself can pose risks to someone using the property recreationally. Holes, ditches, and waste pits that are familiar to the landowner can represent a real threat to someone who is hunting or fishing on the land or engaged in any other recreational activity.

Finally, there is also the risk of a recreational user being intentionally or negligently harmed by a landowner's employee. If the injury occurs during the course and scope of employment, the landowner can be held vicariously liable for the employee's actions.¹²

Causes of Action Against Landowners

Any of the foregoing exposures may result in physical injury to a recreational user of the landowner's property. When a land entrant is injured during recreational activities, there is the strong likelihood of a lawsuit being filed by the injured party against the landowner. The landowner will be accused of having committed a tort against the land entrant. A "tort" is simply a wrongful act, injury, or damage, other than breach of contract, for which a civil action may be brought. The types of damages the injured party is likely to seek include compensation for the physical injury itself, compensation for pain and suffering, emotional distress, medical expenses, and lost wages. In cases of death, a wrongful death action may be filed. The landowner may also face claims from family members for loss of companionship. These are just some of the typical claims that can be made in such cases. The types of tort actions possible against a landowner include strict liability or negligence.

Strict Liability

Strict liability is often referred to as liability without fault. Strict liability is based on the societal judgment that those who expose the community to a dangerous risk must bear the financial responsibility for any resulting damage, even while acting with the utmost care. Because the probability of harm is so great, the burden of loss must be shifted to the one who created the danger. A good example of the application of the doctrine of strict liability is injuries caused by an animal with vicious or dangerous propensities. If a landowner is in control of an animal with such propensities, and the landowner has knowledge of

the propensities, then the landowner is strictly liable for any injuries caused by the animal.¹³

Obviously, the doctrine of strict liability has broader application than just animals owned by a landowner. The doctrine applies to any situation or circumstance where the exposure to injury is abnormally great, such as the storage of explosives or hazardous chemicals.¹⁴

Negligence

Fortunately for landowners, most tort actions are not based on strict liability, but upon negligence. Negligence is the failure to do what a reasonably prudent person would ordinarily do under the same or similar circumstances of a particular case, or doing what a prudent person would not have done. Negligence may be caused by acts of omission, commission, or both. A claim of negligence involves three elements: (1) a duty owed to another person; (2) breach of that duty; and (3) injury caused to the person as a result of that breach.

In cases involving land entrants, the critical question for the landowner is often the level of duty owed to the land entrant, because the level of duty determines whether a breach of the duty has occurred. Farmers and ranchers are not liable merely because someone is injured on their premises. Traditionally, the common law has divided property users into three categories. The duty owed by the landowner to the injured person depends to a large extent on whether the person on the premises is a trespasser, licensee, or invitee.

Status of Land Entrants

The three land entrant categories of trespasser, licensee, and invitee have been recognized in the United States since 1865. While most states judge a landowner's duty in accordance with these three categories, some states have begun to abandon these distinctions in favor of a single reasonable care standard.

Trespassers (Defined)

A trespasser is one who enters or remains upon the land without the landowner's consent. An example of a trespasser would be one who hunts on a landowner's property without permission or simply hikes across the property without

permission. A trespasser is also one who enters upon a landowner's property to commit a crime, such as theft. The duty of care owed by the landowner to a trespasser is slight, but it is not non-existent. The duty also varies depending upon whether the trespasser is an adult or child.

Trespassers in General

A landowner cannot intentionally injure a trespasser and cannot use more force than is reasonably necessary to eject him from the property. The landowner also cannot engage in conduct which recklessly endangers a trespasser, even if the trespasser is engaged in criminal conduct. In *Kato v. Briney*¹⁵ a farmer, who became frustrated with trespassing thieves who kept breaking into an uninhabited house on his premises, rigged up a 20-gauge spring shotgun. A trespasser, who was injured by the discharging shotgun when he broke into the house, sued the farm owner for the injuries the trespasser received. A jury returned a verdict in favor of the trespasser for \$20,000 in actual damages and \$10,000 in punitive damages.¹⁶

Child Trespassers

Where a child is a trespasser, a landowner may be held liable for the trespasser's injuries in a situation where the landowner would not have been liable if the trespasser had been an adult. The law recognizes that children do not possess the same judgment as adults, and the younger the child the greater the landowner's obligation to safeguard a trespassing child against injury.

Several legal theories have developed to clarify a landowner's obligation to trespassing children. One is the attractive nuisance theory. Children are naturally curious. There are many objects on rural property to attract the interest of children and to encourage children to explore them to satisfy their curiosity. Examples of attractive nuisances include barns, farm machinery, animals (especially young animals), and farm ponds.

Instead of applying the attractive nuisance theory to trespassing children, some states apply the rule found in section 339 of the Second Restatement of Torts. Section 339 provides that a landowner is liable for physical injury to a trespassing child caused by an artificial condition upon the land if: (a) the place where the condition exists is one upon which the landowner knows or has reason to

know a child is likely to trespass; (b) the condition is one which the landowner knows or has reason to know will involve an unreasonable risk of death or seriously bodily harm to the child; (c) the child's age is such that she or he cannot discover the dangerous condition or risk involved; (d) the utility to the landowner of maintaining the condition and the burden of eliminating it are slight as compared with the risk to the child involved; and (e) the landowner fails to exercise reasonable care to eliminate the danger or otherwise protect the child.¹⁷

Most states have adopted either the attractive nuisance doctrine or the Restatement rule. A few states apply the usual common law trespass rules to both children and adults.¹⁸

Licensees

The second category of land entrant is the licensee. The licensee is a person who enters upon the land with the landowner's permission, but for the licensee's own purpose or business interest instead of the landowner's interest. Social guests and unsolicited sales persons are examples of licensees.

A hunter permitted to hunt on property without paying the landowner a fee is also a licensee. Property owners need to remember that in some states the failure to post land against hunting constitutes implied permission for anyone to enter the property for hunting purposes and such a person is also a licensee.¹⁹

Landowners owe licensees a higher duty of care than that owed to trespassers. Besides refraining from intentionally injuring a licensee or recklessly endangering a licensee, the landowner must take measures to warn the licensee of any dangerous conditions on the land. This is especially true for concealed dangers about which the landowner has knowledge. As a general rule, however, the landowner is under no obligation to inspect his or her property to discover concealed dangers previously unknown to the property owner and then warn an invitee as to those discovered dangers.

Invitees

It is to the third category of land entrants, invitees, that landowners owe the greatest duty of care. An invitee is a person who comes onto the land at the express or implied invitation of the landowner for

the landowner's financial benefit. A landowner who charges a fee for the recreational use of his or her property, such as hunting, fishing, or camping, or who charges entrants a fee to pick fruit, or runs a bed and breakfast operation, or conducts any other type of recreational activity for a fee, owes special legal duties to his or her invitee. An invitee enters upon the land with the implied representation that the landowner has taken reasonable care to make the premises safe for its intended recreational use. In making the premises safe for recreational use, the landowner must take into consideration the nature of the land, the use to which it will be put, and the nature of the person who will be using the premises.²⁰

The landowner must not only warn the invitee recreational user of known concealed dangers, but carefully inspect the premises for dangers currently unknown to the landowner. In response to these dangers, the landowner must eliminate the dangers, or if elimination is impossible, clearly mark the dangers or make them inaccessible to an invitee, depending on the nature of the recreational use and the invitee. For example, a landowner who charges hunters a fee for hunting on the property would need to inspect the premises for any holes or precipices on the land not likely to be readily apparent to a hunter intent on finding game. Adequate warning signs would need to be posted as to such hazards and it might even be necessary to make certain parts of the property inaccessible to recreational users. A landowner who charges land entrants a fee to come onto the property to pick produce would need to warn the entrants of any recent use of chemicals, such as pesticides, that could be hazardous to an entrant's health, especially if there is the possibility that an entrant might be allergic to certain chemicals. Again, a landowner would probably need to post warning signs as to the type of chemical used on the property and what date it was used. Some areas would probably need to be made inaccessible to land entrants. If the landowner furnishes equipment to recreational users, such as ladders to fruit pickers, then the landowner has a duty to make sure that the equipment is safe and adequate for its intended use. The landowner not only needs to conduct his own activities in a safe and reasonable manner, but needs to make sure his or her employees do the same.

Reasonable Care Standard

Some jurisdictions have now abandoned the common law distinctions between the duties of care owed to entrants by landowners. Instead of applying different standards of care based on an entrant's status, courts in some jurisdictions apply a single standard of reasonable care under the circumstances. One of the earliest jurisdictions to abandon the common law treatment of trespassers, licensees, and invitees was California. In the influential 1968 case of *Rowland v. Christian*,²¹ the California Supreme Court articulated the single standard of reasonable care. The single standard of care follows ordinary principles of negligence. Whether a landowner is liable for injuries suffered by an entrant depends on the foreseeability of the entrant's presence, likelihood and seriousness of the injury, and the landowner's burden of avoiding the risk of injury. In determining the landowner's liability, all relevant circumstances are taken into consideration, including the reasonableness of the landowner's actions and the injured entrant's contributory negligence. At least eight states (Alaska, California, Colorado, Hawaii, Louisiana, New Hampshire, New York, Rhode Island) and the District of Columbia, have abandoned the common law distinctions between entrants in favor of a single standard of "reasonable care under the circumstances."²²

RECREATIONAL USE STATUTES AND LAND ENTRANTS

In General

A large majority of states have enacted recreational use statutes. These statutes give landowners immunity from personal injury lawsuits filed by persons negligently injured on the land so long as certain statutory conditions are met. To qualify for immunity under a recreational use statute, a landowner must have permitted the injured party free access to the land for recreational purposes.²³

Recreational use statutes do not restrict access to state courts or deny injured persons due process of law. Although the right of redress for injury is constitutional in nature, the compensability of a specific injury is derived from state common law. Recreational use statutes merely redefine the

injury or class of persons to which the constitutional right of redress attaches.²⁴

Common Requirements

Legal Interest in Land

Recreational use statutes provide liability protection to those persons who have some legal interest in the land. If a person does not have a legal interest in the land, they cannot take advantage of the immunity protection provided under a state's recreational use statute. As to who has an interest in land, referred to herein as a "landowner," both state statutes and courts interpreting those statutes have taken a broad interpretation of what is a legal interest sufficient to give a landowner protection under a recreational use statute. Besides those with a fee interest in land, lessees, tenants, occupants, holders of security interests, or any other persons in control of the premises are said to have a sufficient interest to claim immunity under a state recreational use statute. Some courts have gone so far as to hold that an easement is sufficient interest in land to create an ownership interest for purposes of a recreational use statute.

The fact that the courts have held a leasehold interest in land to be a sufficient ownership interest to invoke the immunity protection of a recreational use statute is particularly significant to farmers and ranchers. The leasing of farm and ranch lands to hunting clubs has become a common practice of landowners in need of additional sources of income. At least one state court has held that a hunting club which leases private land is entitled to take advantage of the immunity provided under a state recreational use statute. Such a ruling makes lease arrangements for hunting and fishing purposes much more attractive to hunting and fishing clubs, as their liability exposure is greatly reduced.

Public Access

Recreational use statutes protect landowners from liability claims only if the land in question is made accessible to the public. As to public access, the question arises regarding whether the land must be open at all times to all members of the general public for a recreational use statute to apply. Most courts have not required unrestricted access to property in order for a landowner to

claim the liability protection of a recreational use statute. However, the more restrictive a landowner is about the public's use of his or her property, the less likely it is that the landowner can claim protection under a recreational use statute. For example, in the Wisconsin case of *Le Poidevin v. Wilson*,²⁵ the state recreational use statute did not apply to a landowner's invited guest who was injured after driving off the landowner's lake pier. The court held that the landowner had not opened his land to the public generally, or given permission to one or more members of the public to use the land for recreational purposes. Instead, he occasionally invited family friends over for water sports. The court held that extending the recreational use statute to protect the landowner in question would not further the statute's intended legislative purpose of encouraging landowners to open their lands to the general public.

In comparison, in *Johnson v. Stryker Corp.*,²⁶ it was held that the Illinois recreational use statute did apply in a diving accident similar to the one in *Le Poidevin v. Wilson*. Although the landowner in question did not open his land to all members of the public, sometimes he did permit the casual use of his property for recreation. The court held that the statute applied even though signs near the pond forbid swimming on holidays and warned swimmers to swim at their own risk. The court emphasized that the farmer landowner could not be expected to keep his land open at all times to everyone. The court concluded that the immunity benefits of the recreational use statute should not be denied a landowner simply because a landowner places some reasonable restrictions on the use of his property.

Recreational Activities

Even if land is made accessible to the general public, a recreational use statute does not apply unless the use is recreational in character. Many recreational use statutes specifically list the recreational activities covered by the statute. For example, Georgia's recreational use statute defines recreational purpose as hunting, fishing, swimming, boating, camping, picnicking, hiking, pleasure driving, nature study, water skiing, water sports, and viewing and enjoying historical, archeological, scenic, or scientific sites. Most state recreational use statutes, though they do contain a list of uses such as Georgia's, also state that the list is not exhaustive. This leaves state

courts free to consider other uses not described in the statute. Courts in general have been lenient in defining recreational uses or purposes. For example, in *Fisher v. United States*,²⁷ a child's death during a school's field trip to a wildlife refuge was held to be covered by the Montana recreational use statute. During the field trip the children were having lunch in a maintenance barn and some of them were playing on a snow plow. One child was killed when the snow plow's blade fell on her. The child's parents argued that Montana's recreational use statute did not immunize the landowner, which was the United States government, from a lawsuit because the field trip was educational instead of recreational in purpose. The court held, however, that the trip had the dual purposes of education and recreation and that the statute applied. Courts have held recreational use statutes applicable to injuries received by land users while motorcycling for pleasure,²⁸ four-wheeling,²⁹ snowmobiling,³⁰ during a hayride and wiener roast,³¹ and diving from a railroad trestle into a shallow stream.³²

Property Protected

Related to the issue of recreational purpose or use is the issue of whether the landowner's property is suitable for recreational purposes. As a general rule, recreational use statutes apply to rural or semi-rural lands. The activities specifically covered under a recreational use statute, or impliedly covered under such a statute, are the type of activities that are conducted on rural or semi-rural lands. The larger and more undeveloped a tract of land is, the more likely it is to be subject to a recreational use statute. Recreational use statutes are designed to protect landowners from injury claims arising out of accidents taking place on tracts of land where continuous supervision by the landowner is not expected. The fact that the rural or semi-rural land in question may be located near a residential area, and may even itself be zoned for residential development, does not mean that a recreational use statute does not apply to the claims of persons injured on the land. In *Tallaksen v. Ross*,³³ the defendant landowner owned 70.58 acres of undeveloped land located near a residential area. The plaintiff was injured when she fell on a tree stump while ice skating on a frozen pond on the defendant's land. The court held that, even though

the land in question was zoned for residential development, it was undeveloped and semi-rural in character at the time of the accident. As a result, the landowner could claim immunity from suit under New Jersey's recreational use statute. The court rejected the plaintiff's comparison of the frozen pond to a private swimming pool on developed residential property, to which New Jersey's recreational use statute would not apply.³⁴

Payment of Valuable Consideration or Fee

To qualify for immunity under a state recreational use statute, a landowner must permit free access to the land. Some state statutes forbid the payment of any valuable consideration by land users if landowners are to avail themselves of protection of a state recreational use statute, while other state statutes forbid the charging of a fee. Regardless of the language used, a recreational use statute grants a landowner immunity only as to land users who use the property gratuitously. Extensive litigation has occurred as to what constitutes valuable consideration and whether a fee charged was for the recreational use of the land or was compensation for some other purpose. For example, a motorcyclist injured on federal land during a motorcycle race sought to recover under the Federal Tort Claims Act. Because the accident occurred in California, the United States claimed immunity under California's recreational use statute. The plaintiff successfully argued that California's recreational use statute did not afford the United States immunity because of the statute's consideration exception. California's statute stated that the recreational use statute did not apply if the land user paid valuable consideration to the landowner for the use of the property. The court noted that the race was conducted by a racing association, but had received a permit to conduct the race from the Bureau of Land Management (BLM). The BLM charged the racing association a \$10.00 application service fee and a \$10.00 rental charge. In turn, the association charged each motorcyclist a \$6.00 entry fee.³⁵

In some cases where a monetary fee was not actually paid to the landowner, other consideration received by the landowner was decreed by a court to be a "charge," again paralleling the rulings in jurisdictions where the valuable consideration language is used. In *Kesner v. Trenton*,³⁶ a father brought an action against a boat marina's operator

for the drowning deaths of the father's two daughters. The girls drowned after stepping into a 10-foot deep excavation dug in the lake's bottom. Although the father had not actually paid a fee to the marina's operator, the court held that the landowner had levied a charge for the use of the facilities, thereby preserving the landowner's liability under West Virginia's recreational use statute. The court stressed that the marina was a money-making business in that it sold, serviced, and rented boats. Allowing people to swim free in the lake was a means of attracting prospective marina customers who would pay for this additional service.³⁷

ADDITIONAL LIABILITY PROBLEMS

Besides the danger of claims arising out of actual physical injuries to recreational entrants, landowners must also be concerned with other types of liability claims. The following material is an overview of the variety of potential liability claims which landowners face, including violations of federal legislation protecting the rights of individuals, nuisance suits, trespass claims, environmental laws, and other compliance problems.

Americans with Disabilities Act

One of the most important and far reaching pieces of legislation to ever be enacted is the Americans With Disabilities Act (ADA), which was signed into law by President Bush on July 26, 1990.

Under the ADA, disability means:

- a physical or mental impairment that substantially limits one or more of an individuals major life activities;
- a record of such impairment, or,
- being regarded as having such an impairment.³⁸

Title III of the ADA prohibits private entities providing public accommodations or services from discriminating against any individual on the basis of a disability. Specifically, the ADA states the following:

No individual shall be discriminated against on the basis of disability in the full and equal enjoyment of the goods, services, facilities,

*privileges, advantages, or accommodations of any place of public accommodation by any person who owns, leases (or leases to), or operates a place of public accommodation.*³⁹

Under Title III of the ADA, discriminatory conduct includes imposing any eligibility requirement that screens out disabled individuals, or limits their ability to fully enjoy the facilities;⁴⁰ the failure to make reasonable modifications in policies, practices, or procedures to ensure the availability of the goods or services to individuals;⁴¹ failure to take reasonable steps to ensure that disabled individuals are not treated any differently from any other individuals because of the absence of auxiliary aids and services;⁴² or, a failure to remove architectural barriers and communication barriers that are structural in nature.⁴³ For example, a landowner who opened his or her property to the public for fishing or target shooting might be required under the ADA's Title III to provide a certain number of fishing or skeet shooting places for persons confined to wheelchairs and to arrange for their transportation to and from the sites. A landowner operating a bed and breakfast facility would have to make the premises accessible to persons in wheelchairs.

Discrimination - Title II of the Civil Rights Act of 1964

Title II of the Civil Rights Act of 1964 prohibits discrimination based on race, color, religion, or national origin in places of exhibition or entertainment, including motion picture houses, theaters, concert halls, sports arenas, and other similar public places. The courts have interpreted Title II to include both spectator and participation activities. Morally and legally, there is no justifiable excuse for such discrimination. Certainly, Title II applies to any recreational activity open to the public on a landowner's property. A facility owned and operated by a youth football association for its football program was held to fall within Title II. A fishing camp, hunting facility, campground, or other recreational facility made available to the public would also fall under Title II. For example, a family-owned recreational complex with swimming and picnic areas was held to be a "place of entertainment" and subject to Title II's non-discrimination provisions.⁴⁴

Nuisance

Although a precise definition of nuisance is difficult to formulate, the Kansas Supreme Court has described it as follows: "Briefly stated, the word nuisance, while perhaps incapable of precise definition, generally is held to be something which interferes with the rights of citizens, whether in person, property, or enjoyment of property, or comfort, and also has been held to mean an annoyance, and that which annoys or causes trouble or vexation, that which is offensive or noxious, or anything that works hurt, inconvenience, or damage."⁴⁵ A nuisance can be private or public. A private nuisance involves the interference with the private property rights of another. A public nuisance is an unreasonable interference with a right common to the general public. Gun clubs and private shooting ranges have often been the sources of nuisance claims because of (1) the noise from such facilities, and (2) the real or imagined threat such facilities pose to the general public. The courts have refused to automatically declare gun clubs and private shooting ranges nuisances (often referred to as nuisances *per se*), but have instead applied the test of reasonableness, taking into consideration such factors as the facility's location and even when the activity was being conducted. For example, in *Roberts v. Clothier*⁴⁶ the noise coming from a shooting range was declared not to be a nuisance based upon the activities locality, the degree of quietness consistent with the standard of comfort prevailing in the locale, the location of the trap, the distance of the complainant's house, the degree and quality of the noise, the number of times and the hours of day when the trap was used, the character of such use, the days of the week when it was used, the effect of the noise upon persons of ordinary sensibility to sound when in or near the complainant's house, the number of persons complaining, and all other relevant circumstances disclosed by the testimony.⁴⁷

Trespass Claims

Trespass is an action related to nuisance, but more limited in scope. Trespass is an unpermitted interference with an exclusive possessory interest in land. Unlike nuisance, trespass requires a physical invasion of the land. When a trespass occurs, the defendant is liable for even unforseen

damages. Just as the activities of a gun club or private shooting range could constitute a nuisance, those same activities could be a trespass if stray bullets crossed onto neighboring properties.

Environmental Laws

Landowners desirous of opening their lands to the public for recreational uses must be sure that they comply with the applicable recreational statutes. The following is a brief survey of some of the more relevant federal statutes which can affect recreational businesses. It also must be kept in mind that many of the states have passed their own versions of the federal statutes and many of the state statutes are more restrictive than their federal counterparts. As a result, a landowner can be in violation of both federal and state environmental laws or the landowner could be in violation of state environmental statutes even though federal compliance has been achieved.

Safe Drinking Water Act (SDWA)

The Safe Drinking Water Act (SDWA) was enacted in 1974⁴⁸ and significantly amended in 1977⁴⁹ and 1986. The SDWA assures high quality water supplies to all citizens served by public water systems. A public water system is defined as any system used for piping water to the public which has 15 service connections or regularly serves at least 25 persons. The SDWA could apply to a bed and breakfast business, hunting and/or fishing lodge, dude ranch, or almost any recreational business, if the landowner furnishes water to at least 25 persons. The 25 person limit includes both employees and other persons.

Clean Water Act (CWA)

The Clean Water Act (CWA) is one of the most extensive and far reaching pieces of federal legislation with which a landowner must be concerned if she wants to go into the recreational business. Any landowner who provides toilet facilities to recreational users must be in compliance with the CWA if there is a direct or indirect discharge of the effluence into navigable U.S. waters. The courts have taken a broad view of what constitutes a navigable body of water. Besides a body of water upon which commercial traffic is possible, a navigable body of water includes tributaries into the water, as well as

groundwater systems supplying the surface waters.

Wetlands

Besides regulating point source discharges into navigable U.S. waters, the CWA regulates what is known as "dredge and fill" activity. Section 404 of the CWA provides protection for what are known as "wetlands" from dredge and fill activities. Wetlands are lands inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, under normal circumstances, vegetation typically adapted for life in saturated soil conditions. Wetlands include swamps, marshes, bogs, and similar areas. If an area is a wetland and dredge and fill activity is proposed, a permit may be required before the activity can take place. Before a permit is issued, the Corps of Engineers will decide whether the proposed impact will adversely affect the waters of the United States or whether the impact will be minimal. Permits granted by the Corps may be vetoed by the Environmental Protection Agency (EPA).

Endangered Species Act

The Endangered Species Act⁵⁰ identifies and protects endangered and threatened animal and bird species. The Act prohibits the killing of any species on the endangered list.

LIABILITY INSURANCE COVERAGE AND RECREATIONAL ACTIVITIES

Besides seeking the protection of recreational use statutes, landowners also look to their liability insurance policies to protect them from damage claims. The farmers comprehensive personal liability policy (hereinafter FCPL policy) is the most common liability policy written for farmers. But, as will be explained, the standard FCPL policy does not always provide liability coverage to landowners for claims arising from the recreational use of farm and ranch land.

Insurance transfers or allocates to an insurance company the insured's risk of legal liability for bodily injury or property damage to others. In exchange for the payment of a premium to the insurance company the insurer promises to indemnify the insured as to bodily injury and property damage claims.

Farming Activities and the Business Pursuits Exclusion

The FCPL policy provides liability coverage for bodily injuries and property damage arising out of farming activities and excludes coverage as to claims arising out of business pursuits other than farming. To complicate matters further, claims arising out of nonfarming activities are sometimes covered under an FCPL policy if the activities are ordinarily incidental to nonbusiness pursuits. What does all this mean to insurance coverage for recreational activities on farm and ranch lands? It means that the standard FCPL policy, with some notable exceptions, does not provide liability coverage for recreational activities.

Defining Farming

Although the standard FCPL policy provides liability coverage for claims arising out of farming activities, farming is rarely defined within the policy. As a result, the courts have been left to define the term. Relying upon such sources as Webster's Dictionary, law dictionaries, agricultural tax cases, and agricultural zoning cases, the courts have generally defined farming to include all acts and products connected with the tillage of soil and animal husbandry.⁵¹

The Business Pursuits Exclusion

Not only have the courts taken a traditional view of what constitutes farming, but the standard FCPL policy specifically excludes coverage as to business pursuits other than farming.

The following are examples of how FCPL policies typically treat the issue of excluding insurance coverage for business pursuits:

This coverage does not apply

*...to bodily injury or property damage arising out of (1) business pursuits of any insured except (i) activities therein which are ordinarily incident to non-business pursuits and (ii) farming, or (2) the rendering of or failing to render professional services.*⁵²

The most recent ISO business pursuits exclusion contained in its FCPL policy form reads as follows:

"Business" means a trade, profession, enterprise or activity other than "farming" or

"custom farming" which is engaged in for the purpose of money or other compensation.⁵³

Recreational Activities

A closer examination of these clauses, along with how the courts and insurance companies have defined farming and other key insurance terms, makes it doubtful that the standard FCPL policy covers recreational activities on private lands.

In deciding whether an activity constitutes a business pursuit not covered under an FCPL policy the courts look to see if there is (1) a profit motive, and (2) evidence of continuity in the activity. If both elements are present the courts have consistently found the landowner's activities to be a business pursuit separate and apart from farming. As a result, any causes of action for bodily injuries or property damages arising out of those activities are not covered under an FCPL policy.

A good example of a court applying the business pursuit test to a recreational activity conducted on a ranch is the case of *Heggen v. Mountain West Farm Bureau Mutual Insurance Co.* The insured annually staged a steer roping contest on his ranch. The annual entry fees charged the participants totalled between \$1,200 and \$1,500. During one of the annual events a horse fell on a participant, seriously injuring the participant's leg. A claim was made under the insured's FCPL policy. The company refused the claim on the grounds that the contest was a business pursuit other than farming. The court agreed with the insurance company and applied the business pursuits exclusion. The court found a profit motive in the steer roping events even though all of the entry fees were distributed as prize money. The court also found the steer roping events to be regular and continuous even though in some years several were held and in other years only one was held. For private landowners who want to earn additional revenues from their lands through recreational use, the *Heggen* case establishes a dangerous precedent. If the landowner regularly grants the public access to his property so that the public can use the property for hunting, fishing, camping, or any other recreational purpose, and charges a fee to do so, then the landowner does so without liability insurance coverage under the standard FCPL policy.

OTHER INSURANCE POLICY EXCLUSIONS

As already explained, the primary problem with obtaining coverage under the standard FCPL policy for income generating recreational activities is the business pursuits exclusion. Insurance policies, however, are filled with exclusions limiting the insurance company's coverage for certain events. Regardless of whether the landowner or some other party or entity purchases liability insurance covering injuries incurred by land entrants during recreational activities, there are a number of exclusions about which the insured needs to be aware.

Undescribed Premises

FCPL policies specifically describe the insured farm premises. The description is normally set out in the policy's declarations page. As a general rule, bodily injury or property damage occurring away from the described premises is not covered. In *Dorre v. Country Mutual Insurance Co.*,⁵⁴ the insured's declarations page listed his 309-acre farm as the insured farm premises. The insured failed to list an additional adjoining 12-acre tract owned by the insured's son. When a tenant was injured on the son's 12-acre tract the insurance company successfully denied coverage even though the insured also helped his son farm the adjoining 12 acres.

The same is true as to recreational coverage. The policy must specifically describe the property on which the recreational activity will take place. If a recreational user is injured on a portion of property not described in the policy, then it is likely that there will be no insurance coverage for the event even if (1) the insured owned the land on which the injury occurred and (2) the recreational user was engaged in the activity covered by the liability policy.

Persons Excluded

Persons Not Named Insureds or Additional Insureds

Liability policies often designate not only a named insured, but also additional insureds by description. The additional insureds are usually

classes of people who have some relationship to the named insured, such as family members, household residents, and any other persons under the age of twenty-one in the insured's care. The liability policy protects all those persons who qualify as insureds against liability claims of third parties for bodily injury or property damage arising out of an insured's negligence. This means that the insurer owes the named insured and additional insureds the duties of indemnification and defense. Conversely, a liability policy offers no protection to a person who is not a named insured in the policy or who does not qualify as an additional insured.

Employees

A key feature of a liability policy is coverage for the harm caused by the negligence of the insured's employees. Suppose, for example, that a private landowner has opened his or her land to the public for hunting purposes and an employee of the landowner serves as a guide. Suppose also that during a hunting trip the employee negligently discharges a firearm and injures one of the hunters. In such a case the liability policy would provide coverage for the employee's negligent conduct. Suppose, however, that the insured is also with the hunting party and it is the insured who negligently discharges a firearm and the person injured is the accompanying employee. Since many liability policies exclude coverage for bodily harm suffered by an employee as a result of an insured employer's negligence, there would be no insurance coverage for the insured as to any cause of action likely to be filed by the injured employee. This is true at least as to farm employees and is also probably the same as to recreational employees.

Family or Household Members

Besides excluding coverage for employees injured by the negligent conduct of an insured, liability policies also routinely exclude coverage for family members or members of the insured's household who are injured by the insured's negligence. This particular exclusion is commonly found in automobile policies. Unfortunately, the exclusion is also commonly found in the FCPL policy, which is particularly disturbing given the tendency of family members to work together on a farm. I suspect that most recreational policies contain a similar exclusion, especially where the

policies are simply modifications of the standard FCPL policy.

Undescribed Activities

Most liability policies covering recreational activities are specific as to the recreational events that are covered. If an insured purchases a policy which covers recreational horseback riding activities, he should not expect liability coverage for the recreational user who is injured on the premises while riding a dirt bike, even if the accident occurs on a trail commonly used by the horseback riders.

Ultra-hazardous Activities

Many insurance companies will exclude coverage for certain recreational activities because the activities are considered to be exceptionally hazardous. Although the activities excluded from liability coverage will vary between companies, coverage for snowmobiling and any activities involving all-terrain vehicles are commonly and routinely excluded. Special insurance coverage is required for those activities. Rock climbing is an example of a hazard for which there is rarely any coverage and it is often difficult to find coverage for skiing activities.⁵⁵

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Creative Estate Planning for the Land Owner

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Abstract: Changes resulting from the 1997 Taxpayer Relief Act have increased the Unified Tax Credit and make other favorable changes for landowners. Depending on your assets, family members, objectives, health, and other considerations, you will have to make some careful decisions. Remember, if you do not make an estate plan, the government will make one for you. And you and your heirs may not like it. This paper provides some basic information for those planning their estate that should be discussed further with a qualified estate tax attorney.

Keywords: estate planning, medical assistance, Medicaid, family farm, easements, will, trust

CHANGES UNDER 1997 TAXPAYER RELIEF ACT

Estate Tax

Unified Tax Credit

Prior to 1998, the unified tax credit allowed an exclusion exemption for estate assets less than \$600,000. More than \$600,000, actual out-of-pocket taxes increased with the size of the estate. Changes in the unified tax credit will increase exclusion exemption from \$625,000 in 1998 to \$1 million in the year 2006 and after (Table 1). This will help to decrease the estate tax burden.

As an example, the savings with respect to a taxable estate of \$1,000,000 or more would be **\$153,000**. If the new family business exclusion also is fully utilized, there would be additional savings of **\$124,000**. On this basis, taking into account a husband and wife, each of whom has a taxable estate of \$1,300,000, **total savings** under the new rules would be **\$544,000**. Larger taxable estates could receive additional savings because the business exclusion effectively will shield assets from the "top" of the estate where the otherwise applicable estate tax rates will be higher.

Family-Owned Business Exclusion - §2033(a) of the IRC

Practitioners must carefully review and examine all wills and trusts to verify that references to closely held businesses should be examined and formula clauses should be modified to take into account the new exclusion relating to family-owned businesses. In addition, couples who have divided their assets so that each spouse has at least \$625,000 may have to readjust their holdings.

It may no longer be advisable to wait until death to dispose of or sell appreciated assets or residences. This is so because the assets step up to a new cost basis at the time of your death which can enable you to avoid long-term capital gains taxes.

Planning problem: Taxpayers holding interests in small businesses and family owned farms may have to choose between the unified credit exemption and the business exclusion, which may create planning problems. This is especially true if the business is intended to pass to one child and other estate assets to a different child, or to a spouse.

Before the Taxpayer Relief Act of 1997, there was no special estate tax provision that excluded a portion of a qualified family-owned business from a decedent's gross estate. Now there is excluded from a decedent's gross estate the lesser of (1) the

Table 1. Changes in the unified tax credit increased.

Year	Applicable Unified Tax Credit (1)	Unified Tax Credit Cash Equivalent	Family Business Exclusion
1998	\$202,050.00	\$625,000.00	\$657,000.00
1999	\$211,300.00	\$650,000.00	\$650,000.00
2000 and 2001	\$220,550.00	\$675,000.00	\$625,000.00
2002 and 2003	\$229,800.00	\$700,000.00	\$600,000.00
2004	\$287,300.00	\$850,000.00	\$450,000.00
2005	\$326,300.00	\$950,000.00	\$350,000.00
2006 and after	\$345,800.00	\$1,000,000.00	\$3,000,000.00

adjusted value of the decedent's qualified family-owned business interests; or (2) the excess of \$1,300,000 over the applicable exclusion amount in effect with respect to the decedent's estate.

In 1998, the applicable Unified Tax Credit equals \$625,000. By following the conditions set forth in 2033(a), a maximum of \$675,000 of adjusted value of the decedent's qualified family-owned business interests could be excluded from the gross estate. To qualify for the exclusion, the aggregate value of the decedent's qualified family-owned business interests that are passed to qualified heirs must exceed 50 percent of the decedent's adjusted gross estate. A recapture agreement signed by each person in being having an interest in the property must be filed.

A qualified family-owned business is any interest in a trade or business, regardless of form, with a principal place of business in the United States. The ownership can be held in one of three ways: (1) 50 percent by one family; (2) 70 percent by two families; or (3) 90 percent by three families. If held by more than one family, the decedent's family must own at least 30 percent of the trade or business. Members of the individual's family include: (1) the individual's spouse; (2) the individual's ancestors; (3) lineal descendants of the individual, of the individual's spouse, or of the individual's parents; and (4) the spouses of any such lineal descendants.

Planning Note: Transfers of non-business property to the decedent's spouse will not be

effective unless they are made more than 10 years before the decedent's death and transfers to others. The exception to this is a nontaxable transfer to members of the decedent's family, which must occur more than three years before the decedent's death.

There are participation requirements that must be met for a family owned business. The decedent, or members of the decedent's family, must have owned and materially participated in the trade or business for at least five of the eight years preceding the decedent's death in order to qualify for special treatment. In addition, a qualified heir is subject to a recapture tax if the heir, or a member of the qualified heir's family, does not participate materially in the trade or business for at least five years of any eight-year period within 10 years following the decedent's death. The definition of "material participation" is provided in Code Sec. 2032A.

An additional recapture tax is imposed if any of the following recapture events occur within 10 years of the decedent's death and before the qualified heir's death:

- The qualified heir ceases to meet the material participation requirements;
- The qualified heir disposes of any portion of his or her interest in the family-owned business, other than by a disposition to a member of the qualified heir's family or through a conservation contribution under Code Sec. 170(h);

- The relationship between the two provisions will create difficulties for those individuals who have, for example, one child in the business and one or more who are not.

Planning issue: Farm families must discuss their business succession plan in order to make certain that they can utilize this provision and §2032(a) special farm use valuation. Allocating the farm and the business operation to a trust or placing it in one person's name will impact dramatically the use of this provision.

Revaluation of Gifts for Estate Tax Purposes

Prior to the implementation of the Taxpayer Relief Act of 1997, it was possible for the IRS to successfully argue that a decedent's lifetime taxable gifts be revalued in computing adjusted taxable gifts for estate tax purposes, even if the gift tax statute of limitations (three years) had expired and the gift had been disclosed.

Now gifts may not be revalued for estate tax purposes after statutes of limitations have run out. In order for this provision to apply, the gift in question must have been adequately disclosed.

Gifts From Revocable Trusts

Prior to the implementation of the new tax act one could not utilize the annual gift exclusion when making gifts from a revocable living trust. The new law permits such gifts. It is critical to have a gift giving provision in your power of attorney and in your trust agreement.

Inflation Adjustments - after 1998

- \$10,000 annual exclusion for gifts, rounded down to the next lowest multiple of \$1,000
- §2032A \$750,000 ceiling on special use valuation - rounded to the next lowest multiple of \$10,000.
- GST \$1,000,000 generation-skipping transfer (GST) tax exemption
- \$1,000,000 ceiling on the value of a closely-held business eligible for the special low interest rate when an executor elects to pay the estate tax in installments.

Installment Payment on Estate Taxes Section 6166 of the IRC

The new tax law reduces the interest rate on the deferred tax liability on the first \$1,000,000 in value of a closely held business (includes the

family farm) to 2 percent. Interest only is due during the first four (4) years. Thereafter, the tax plus the interest must be paid for ten (10) years. Be certain the farming operation exceeds 35 percent of your adjusted gross estate. This could persuade you not to make gifts to children particularly if you want to utilize 2032(a).

The excise tax due to excess accumulations and withdrawals from retirement plans and IRAs is eliminated.

Qualified Conservation Easement 2031© of the IRC

The new tax law permits up to a 40 percent reduction from your gross estate of land subject to the easement. If the value of the easement is less than 30 percent of the value of the land, then there is a 2 percent reduction for each 1 percent by which the value is less than 30 percent.

The maximum exclusion limitation from your gross estate is phased in as follows:

<u>Year of Death</u>	<u>Exclusion Limitation</u>
1998	\$100,000
1999	\$200,000
2000	\$300,000
2001	\$400,000
2002	\$500,000

The qualified easement may be placed on the land by you or a member of the family, your trustee or your personal representative. The property must be within 25 miles of a metropolitan area, national park or wilderness area or within 10 miles of an urban national forest. You can utilize special use valuation 2032(a) in addition to this section.

Elder Law Planning

Criminal penalties have been repealed for transfers to qualify for Medicaid. On 1/1/97 gifts made to a loved one could cause the donor to be criminally prosecuted if the purpose of the gift was to enable the donor to protect assets and qualify for Medicaid. The new law now unlocks the door to the utilization of Medicaid planning techniques to protect your assets from being lost due to a prolonged nursing home stay.

Capital Gain Provisions

Rate Change

In addition to cutting the maximum capital gains tax rate, the Act has made the computation of capital gains taxes more complicated. There are now three different levels of capital gains tax with numerous technical rules. Short-term capital gains, which are taxed at the taxpayer's maximum marginal tax bracket, apply to capital assets held less than 12 months. A new midterm rate of 28 percent applies to assets held at least 12 but less than 18 months. Long-term capital gains, which apply to assets held more than 18 months, are taxed at 20 percent (10 percent for taxpayers in the lowest marginal bracket). If a taxpayer sold a capital asset after May 6, 1997 but before July 29, 1997, the 20 percent rate (10 percent for lower bracket taxpayers) applies if the asset was held for more than one year.

Planning opportunity: Now that the maximum capital gain rate is 20 percent versus a maximum ordinary income rate of 39.6 percent, the importance of obtaining capital gain treatment on a transaction is greater than ever. Any person engaging in any transaction in 1997 or in the future should consult with a tax advisor before entering into any agreements to take maximum advantage of the lower capital gain rate.

Landowners selling forest products off their land should give careful consideration to how this will change their tax bracket. It may be wise to investigate options, such as receiving timber sale income over two years to utilize a lower capital gains bracket.

Sale of Principal Residence

All taxpayers, regardless of age, can exclude up to \$250,000 of gain on the sale of their principal residence. Couples filing a joint return who meet certain conditions can exclude up to \$500,000. A gain can generally be excluded only once every two years, and the taxpayer must have owned and lived in the residence for two of the previous five years. However, a relief provision allows a taxpayer to exclude gain on a "forced" sale that occurs in less than two years. The exclusion does not apply to any part of the house that is rented out or used as a home office.

ESTATE PLANNING TOOLS

Estate Planning Priorities

The changes in the new tax law will allow farm families to protect between \$1,250,000 and \$4,000,000 from federal estate taxes. This dovetails with five key priorities that should be emphasized when implementing your estate plan:

1. Do your plan before a crisis occurs.
2. Make certain that you have implemented the appropriate estate planning tools and selected the appropriate parties to manage your affairs in the event of disability or death.
3. Be aware of the pitfalls of a long-term stay in a nursing home. Understand the Medicaid rules so that your family can protect your assets.
4. Estate taxes can be reduced or eliminated with the implementation of an estate plan orchestrated by a sophisticated estate and elder law attorney.
5. The timely and costly probate process can be eliminated by the use of Revocable Trusts and proper beneficiary designation.

Family Farm as a Protected Resource

For those in the state of Maryland, the family farm and surrounding land contained in one deed may be a protected resource if it is the primary residence of the community (well) spouse under Medicaid rules. Residents of other states need to check the Medicaid rules in their states.

No Tax on Transfers to A Limited Liability Company

Transfers of real estate to a limited liability company (LLC), limited liability partnership or corporation may avoid recordation tax. The owners of the new entity must be the same people and it must be demonstrated that it is a business property. This is done by showing a lease arrangement between the property owners and the farming entity. It can aid a farm family in its gift giving activity. The discounting of the value of the gift due to the donee's lack of control and lack of ability to sell his or her interest must also be considered.

Health Care Directives

Everyone needs to implement simple tools to be used during one's lifetime. An advanced health care directive (AHCD) gives your family the right to control your health care decision making. The family will have broad discretion in withholding or withdrawing treatment, food and hydration in order to avoid keeping you alive on life support systems. In Maryland, we no longer utilize living wills since a new allowing an AHCD was implemented in 1993.

Powers of Attorney

A power of attorney (POA) is a critical document since it allows a designated loved one to control your financial activities. In some states, a great deal of specificity in a POA is needed for the POA to be useful. In Maryland, for example, a 1985 case, King v. Bankerd, defines these needs. The right to make gifts, sign tax returns, cash in life insurance policies, sell a boat, or withdraw money from your IRA are examples of the specific rights that must be enumerated in the POA.

Simple Will

A simple will may be all that is necessary to pass your assets at death if you meet the following scenario:

1. Your estate is less than \$625,000. This amount might increase annually, according to Table 1.
2. Most of your assets pass by beneficiary designation such as an IRA or life insurance policies.
3. You have limited real estate holdings or few heirs so that a life estate deed may be appropriate.

Complex Estate Planning

For estates valued at more than \$625,000, your planning and need for sophisticated documents increases. You now have an estate tax problem. You will be taxed at a rate of at least 37 percent, and possibly as high as 60 percent.

Making gifts to your loved ones should be considered.

- a. You can give away \$10,000 during a calendar year to any person.
- b. The unified tax credit has a cash equivalent value of \$625,000 and can be given away at anytime during your lifetime or when you die.
- c. Unlimited gifts also may be made for educational and medical purposes provided they are made directly to the institution.
- d. Keep in mind that all gifts must be made at fair market value never at farm use value. The donee of the gift retains your cost basis which could cause a large capital gains tax when the asset is sold.
- e. In recent years, the IRS has allowed business owners and farm families to reduce the value of a gift when the donee receives a fractional non-controlling interest. The rationale is that the donee lacks control of the business, family farm or parcel of real estate. The marketability of the fractional share is greatly diminished. A discount of 25 to 40 percent on the value of the gift is normally allowed by the IRS provided it is guided properly by a knowledgeable estate planner.

If you are married, it may be best to divide your estate in order to conquer your tax problem. A spouse who is a U.S. citizen can leave his entire estate to the surviving spouse free of federal estate taxes. The spouse can utilize the marital deduction to avoid estate taxes at the first death. A problem is created since the deceased spouse wasted the Unified Tax Credit (UTC) equal to a cash equivalent of \$625,000. The surviving spouse has only its UTC to use.

For a couple with an estate of \$1,250,000, the unnecessary tax to heirs at the second death is \$235,000 due nine (9) months from the date of the second death. In order to avoid this mistake, each spouse must have assets equal to the UTC placed in his/her own name or titled in a revocable living trust (RLT). In the case of IRA's, annuities or insurance policies, it is wise to review the beneficiary designation. In many cases, the primary beneficiary should be the spouse and the secondary should be the testamentary (created at death) trust.

Within the framework of your will or RLT, you create a testamentary trust to hold an amount equal to the UTC. These funds may be subject to state inheritance taxes (1 percent for lineal descendants, 10 percent for non-lineal descendants) but will not be subject to federal estate taxes. The spouse and family members will have the right to income with priority given to the spouse. The spouse should have a right each calendar year to withdraw 5 percent of the principal of the trust and additional principal for his/her health support or welfare.

Planning for The Children

At the surviving spouse's death, the assets will flow to the children. There are a number of options available:

- a. The assets can be distributed outright to a child.
- b. The assets can be held in further trust until the children attain a specific age (25 or 30).
- c. The assets can be distributed in equal installments over a period of years (10 percent per year over ten [10] years).
- d. For a disabled child, the assets should be held in a special needs trust for his/her lifetime so that he is not denied governmental benefits.
- e. For well to-do-children or children who have drug, alcohol or financial problems, the assets can be held in trust for a child's lifetime.

If a child predeceases you, it is imperative to create a trust for your grandchildren. Otherwise, they will have a right to their share of the assets at age 21. Typically, the funds are held in trust until they attain a specific age (age 25 or 30).

Considerations With a Second Marriage

In the case of a second marriage, great care must be taken in order to protect both the children of the first marriage and the new spouse. Initially, it is wise to implement a prenuptial agreement in order to establish each party's rights to his/her respective assets. It is critical to note that the Medicaid rules do not recognize such agreements so that both spouses' assets are resources to be

considered if one party is institutionalized. Frequently, we create a Qualified Terminable Interest Trust (QTIP) under a spouse's will or RLT. In this way, the spouse can use the marital deduction and place funds in a testamentary trust for the benefit of the new spouse. At the surviving spouse's death, the funds will pass to the original spouse's children. The QTIP trust also is used in cases where the surviving spouse is not good at managing assets.

Use of Revocable Trusts

The proverbial question is whether to use a RLT or a will as your primary estate planning tool. A RLT is preferable in most cases involving farm families and business owners. Management of the real estate and farming activities can be controlled in the RLT. A co-trustee or successor trustee can be appointed to step into your shoes if you become disabled. At the time of your death, the co- or successor trustee can continue to manage your affairs while experiencing a dramatic reduction in the cost of handling the estate. The RLT avoids probate. This translates into both time and cost savings to the family.

Selecting a Successor Trustee

Choosing a successor trustee is no easy matter. A family member can be selected provided he has the best business and investment acumen. Another key element in the selection process is the trustee's veracity and ability to get along with other family members. In certain cases, this trustee should be paired with a professional trustee (bank or brokerage firm). Where family members do not get along or where there is no person to fill the fiduciary position, then a professional trustee is mandated.

MEDICARE AND MEDICAID

Medicare

Medicare is not a panacea when it comes to a long-term care scenario. If you have spent three days in the hospital and your level of care is skilled then you may be fully covered for a nursing home stay of 20 days. From day 20

through 100, you will endure a substantial co-payment of in excess of \$94 per day. Your medigap coverage will kick in to pay the co-payment provided you are still in need of skilled care.

Many farm families who have done the proper estate planning stand to lose everything because they have failed to do adequate lifetime medical planning. Keep in mind that your assets can be transferred to a loved one even after you enter a nursing home.

Medicaid

Medicaid rules applicable to estate planning include these:

- a. Jointly held assets are deemed to be those of the institutional party. You can rebut this presumption by showing that your funds were used to purchase the assets.
- b. All assets of a couple are aggregated in order to determine Medicaid eligibility.
- c. Jointly-held assets with a child or sibling can be dangerous to your financial health. If the child or sibling incurs a liability, lawsuit, or goes bankrupt, your assets can be lost. If he goes into a nursing home, you can lose your asset. If the child or sibling of your jointly-held asset dies, you will be liable for an inheritance tax.

To qualify for Medicaid, there are three important tests:

1. You must spend down to a level of impoverishment (\$2,500).
2. You must have a level of care known as nursing facility service (NFS). This is a level between intermediate and skilled care.
3. You must not have income above a specific cap level (\$1,400 per month). This applies in certain states like Delaware, Florida, Colorado and New Jersey but not in Maryland.

Institutional Spouse (IS)

For a single person to qualify for Medicaid, he can retain the following resources:

1. \$2,500 on the first of the month when you apply for Medicaid.
2. An irrevocable burial trust.
3. A burial plot.

4. A residence, but a lien will be placed on the property.
5. A whole life insurance policy with a \$1,500 face value and unlimited term life insurance.
6. Income of \$40 per month.

Community Spouse (CS)

For couples where there is a well spouse, certain resources may be retained by the CS:

1. Your residence regardless of the value and possibly the family farm.
2. An auto valued at \$4,500 unless there is a medical or work related need in which case the value of the auto is unlimited.
3. An irrevocable burial trust.
4. Personal effects, including home furnishings, etc.
5. Whole life insurance with a \$1,500 face value and unlimited term life insurance.
6. One-half (½) of the eligible resources not less than \$16,152 not to exceed \$80,760.
7. A burial plot.
8. Income of between \$1,327 and \$2,019 per month.

Planning Options

Medicaid planning should be done only under the guidance of a well trained elder law attorney. There are numerous income, estate and gift tax issues and a phalanx of sophisticated Medicaid rules that must be navigated before you can successfully protect your resources. The problems are increased significantly when a family farm and business are involved. Planning techniques that can be employed include:

1. Remove the name of the institutional spouse from exempt resources like the family farm and other investment assets.
2. Purchase a new automobile.
3. Purchase items for the home like a new sofa, carpeting, draperies or a television.
4. Make needed repairs to the home such as purchasing a new hot water heater, storm windows, dishwasher or fixing the roof or driveway.
5. Pay off all outstanding debts and mortgages.
6. Transfer the house to a disabled child, a sibling who owns an interest in your home and who has lived with you for one year, or to a child who has cared for the institutional spouse for two years and but for the care of the Institutional Spouse would have been placed in a nursing home.

7. The Community Spouse can purchase a specifically created annuity paying income to the well spouse for his lifetime. Note this does not work in an income cap state!
8. Make gifts to your loved ones. This will trigger a transfer penalty. In Maryland, for example, for each \$3,000 transferred, there is a one (1) month penalty. This penalty can be unlimited. If properly structured, you can make a gift and wait 36 months and thereafter apply for Medicaid and the assets that were transferred will be protected.
9. If a child or loved one pays for your nursing home care, he will receive a tax break on his/her income tax. He can use the Institutional Spouse as a personal exemption and receive a medical expenses' deduction for prepaying for the cost of the care.

APPENDIX A. ESTATE PLANNING MADE EASIER

KEY ISSUES

1. Pre-crisis planning
2. Management
3. Protect assets from long-term care problems
4. Estate taxes
5. Avoid probate

A simple will is useful in the following situations:

1. Estate less than \$600,000. This value will increase each year according to Table 1.
2. Real estate laden
 - a. Life estate deed with powers
 - b. Life estate deed without powers
3. Assets are passed outside of probate by designating a beneficiary.
4. Testamentary trust used for children, parent or charity.

For Estates more than \$625,000, it is more complicated and the following should be considered:

1. Estate tax problem
 - a. Tax to 60 percent level
2. Disclaimer trust will
 - a. Simple will
 - b. Surviving spouse can disclaim for nine months

- c. Credit shelter (disclaimer trust) is part of will
 - d. Flexibility for surviving spouse
 1. Doesn't work with second marriage
 2. No good in estates with real estate
 - e. Beneficiary designations are critical
 1. Primary is spouse
 2. Secondary is trust
 3. Avoids probate
 - f. Trust provides spouse with access to principal
 - g. Priority for income from trust to spouse
3. Use of revocable living trusts
 - a. Great management tool
 - b. Can offer asset protection
 - c. Must transfer assets to trust
 1. Both spouses trustees
 2. Avoids probate
 - d. Tax planning available
 1. Need for disinterested trustee
 2. Less flexibility on asset allocation
 3. Watch income tax on retirement plan distribution
 - e. Provide testamentary trust for children
 1. Outright to a child
 2. Distribute at ages 25-30-35

3. Self liquidation trust
4. Special needs trust for disabled children
5. Generation skipping
 - a. Problem child
 - b. Well-to-do child
6. Trust for grandchildren if child dies prematurely
- f. Q-Tip trust to protect inheritance for children
 1. Estate more than \$600,000
 2. Second marriage
 3. Spouse not good at managing funds
- g. Who is the trustee?
 1. You
 2. Family member as alternate fiduciary
 3. Professional as co-trustee or alternate

5. Residence (a lien will be imposed against it)
6. \$40 per month income

Excludible Assets with Surviving Community Spouse

- a. Home - no limit value
- b. Auto - \$4,500
- c. Irrevocable burial fund
- d. Personal effects
- e. Life insurance \$1,500
- f. One-half of the eligible resources not to be less than \$16,152 or exceed \$80,760
- g. Burial plot
 - I. Between \$1,327 and \$2,019 monthly income
 - ii. Watch Income cap states

General Misunderstandings

1. Pitfalls
 - a. Joint tenancy protects family assets
 - b. Titling assets in spouses name offers protection
 - c. A prenuptial agreement will protect your assets
 - d. Medicare pays for nursing home care
 - e. Title assets in children's name
2. Problem - re: transfer assets to children of family
 - a. Bankruptcy of family member
 - b. Death of family member
 - c. Lawsuit against transferee
 - d. Dispute with child or sibling
 - e. Impoverishment
 - f. Loss of control of assets

MEDICAL ASSISTANCE ISSUES

Medicare

1. Skilled level of care
2. 3 days prior to hospitalization
3. Coverage limited to 20 days full reimbursement

Level of Care

1. Skilled
2. Intermediate
3. Custodian
4. NFS

Activities of Daily Living

1. Medicating
2. Transferral
3. Feeding
4. Toileting
5. Dressing

Impoverishment

Institutional Spouse

Excludible Assets with No Surviving Spouse

1. Retain \$2,500
2. Medical insurance
3. Irrevocable burial fund
4. Burial plot

Planning techniques to protect assets

1. Gifts to family members
2. Remove name of institutional spouse from assets
3. Purchase new auto
4. Purchase personal property
5. Repairs to home
6. Move to more valuable home
7. Obviate outstanding debt
8. Purchase an annuity
9. Have children pay for nursing care
 - i. Personal exemption
 - ii. Medical deduction 7.5 percent rule
10. Transfer to disabled child

11. Transfer residence to sibling where both own residence
12. Retitle assets in community spouse's name

Unlimited Transfer Penalty Period for Asset Transfers

1. Begin on date of deemed transfer
 2. Calculation based on \$3,000 per month
 3. Transfer penalty begins in month of last transfer.
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1997 Taxpayer Relief Act Impact on American Farmers and Ranchers

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Abstract: The Taxpayer Relief Act of 1997 offers all of us a number of interesting, but complex, opportunities to save income taxes. This article summarizes the principal provisions of the law that are of general interest to taxpayers.

Keywords: Income Tax 1997 amendments, capital gains.

INTRODUCTION

The Tax Relief Act of 1997 (TRA97) has been proclaimed by President Clinton and Congress to be a great benefit to all taxpayers. The act does contain many benefits specific to agriculture and all taxpayers in general, but beware of the fine print. Many of the benefits phase in gradually over the next 10 years and many taxpayers will not meet the strict tax benefit requirements. It all sounds great, but truly, the "devil is in the details." The following summary of TRA97 creates an awareness of potential tax savings available to agricultural producers. However, you should contact your tax preparer to determine if your individual situation meets all the requirements.

CHILD TAX CREDIT

The Act provides taxpayers a maximum child tax credit of \$500 (\$400 for 1998) for each qualifying child. A qualifying child is an individual that can be claimed as an exemption, who is under the age of 17 (determined at the close of the calendar year in which the taxpayer's taxable year begins), and who is a child, a stepchild or eligible foster child of the taxpayer. For higher income taxpayers, there is a phase-out of the child credit. The credit is reduced by \$50 for each \$1,000 that the taxpayer's modified Adjusted Gross Income (AGI) exceeds \$110,000 for married taxpayers filing jointly, \$75,000 for single taxpayers, or \$55,000 for married taxpayers filing separately. The Act provides a complex formula for

determining the limitations on the amount of the credit and whether it is refundable.

This formula depends on whether the taxpayer has 3 or more children and interacts with the earned income credit (EIC). The child tax credit applies to taxable years beginning after December 31, 1997.

EDUCATION INCENTIVES

The Act provides taxpayers with a HOPE Scholarship credit plus a Lifetime Learning credit. The HOPE credit equals 100 percent on the first \$1,000 of qualified tuition and fees, plus 50 percent of the next \$1,000 of such expenses paid. The HOPE credit is not available for the purchase of books. The HOPE credit is only available for a student pursuing a course of study on at least a half-time basis. The HOPE credit is disallowed if the student has been convicted of a felony drug offense.

The Lifetime Learning credit is a non-refundable credit equal to 20 percent of qualified tuition expenses not exceeding \$5,000. For taxable years beginning on or after January 1, 2003, the dollar amount increases to \$10,000. The credits have AGI phase-out amounts and are indexed for inflation. For a taxable year, a taxpayer may elect with respect to an eligible student the HOPE credit, the 20 percent Lifetime Learning credit, or the exclusion from gross income for certain distributions from an education individual retirement account (IRA). Qualified tuition and

fees for purposes of the Lifetime Learning credit include tuition and fees incurred with respect to undergraduate or graduate-level (and professional degree) courses. The Lifetime Learning credit is also allowed with respect to any course of instruction at an eligible educational institution (whether enrolled in by the student on a full-time, half-time, or less than half-time basis) to acquire or improve job skills of the student. The HOPE credit is effective for expenses paid after December 31, 1997 (in taxable years ending after such date), for education furnished in academic periods beginning after such date. The Lifetime Learning credit is applicable to expenses paid after June 30, 1998 (in taxable years ending after such date), for education furnished in academic periods beginning after such date.

The Act provides an above-the-line deduction for interest paid on student loans. In 1998, the maximum amount is \$1,000; \$1,500 in 1999; \$2,000 in 2000; \$2,500 in 2001 and thereafter. The deduction phases out at income levels beginning at \$40,000 for individuals and \$60,000 for joint returns (indexed for inflation beginning after 2002). The deduction is allowed only with respect to interest paid on any qualified education loan during the first 60 months in which interest payments are required. No deduction is permitted for taxpayers who may be claimed as dependents on another taxpayer's return. The deduction of student loan interest applies only to qualified education loans incurred on, before, or after the date of enactment, but only with respect to any loan interest payment due and paid after December 31, 1997, and the portion of the 60-month period after December 31, 1997.

Beginning in 1998, the 10 percent early withdrawal tax penalty on IRA distributions would not apply to distributions from IRAs. The taxpayer must use the amounts to pay qualified higher education expenses (including those related to graduate-level courses) of the taxpayer, the taxpayer's spouse, or any child, or grandchild of the taxpayer or the taxpayer's spouse. The provision would be effective for distributions after December 31, 1997, with respect to expenses paid after such date for education furnished in academic periods beginning after such date.

EDUCATION INDIVIDUAL RETIREMENT ACCOUNTS

The act allows taxpayers to establish education IRAs, meaning trusts or custodial accounts created exclusively for the purpose of paying qualified higher education expenses of a named beneficiary. Annual contributions to education IRAs may not exceed \$500 per beneficiary, and may not be made after the beneficiary reaches age 18. The contribution limit is phased out for certain high-income contributors. No contribution may be made by any person to an education IRA during any year in which any contributions are made by anyone to a qualified State tuition program on behalf of the same beneficiary. Until a distribution is made from an education IRA, earnings on contributions to the account are not subject to tax. In addition, the bill provides that distributions from an education IRA are excludable from gross income to the extent that the distribution does not exceed qualified higher education expenses incurred by the beneficiary during the year the distribution is made, regardless of whether the student is enrolled in classes on a full-time, half-time, or less than half-time basis. However, certain room and board expenses are qualified higher education expenses only if the student incurring such expenses is enrolled at an eligible educational institution on at least a half-time basis. The earnings portion of an education IRA distribution not used to pay qualified higher education expenses is included in the gross income of the distributee and generally is subject to an additional 10 percent tax penalty. However, prior to the beneficiary reaching age 30, the bill allows tax-free (and penalty-free) rollovers of account balances from an education IRA benefiting one family member to an education IRA benefiting another family member. The provisions governing education IRAs apply to taxable years beginning after December 31, 1997.

SAVINGS AND INVESTMENT INCENTIVES

Individual Retirement Arrangements

The Act increases the adjusted gross income AGI phase-out limits for determining eligibility to make deductible contributions to an IRA over a period of years. For single taxpayers the range is as follows:

Taxable years	Phase-out Range beginning in:
1998	\$30,000-\$40,000
1999	\$31,000-\$41,000
2000	\$32,000-\$42,000
2001	\$33,000-\$43,000
2002	\$34,000-\$44,000
2003	\$40,000-\$50,000
2004	\$45,000-\$55,000
2005 and thereafter	\$50,000-\$60,000

For taxpayers filing joint returns, the range is as follows:

Taxable years	Phase-out Range beginning in:
1998	\$50,000-\$60,000
1999	\$51,000-\$61,000
2000	\$52,000-\$62,000
2001	\$53,000-\$63,000
2002	\$54,000-\$64,000
2003	\$60,000-\$70,000
2004	\$65,000-\$75,000
2005	\$70,000-\$80,000
2006	\$75,000-\$85,000
2007 and thereafter	\$80,000-\$100,000

Under prior law, a spouse not covered by a retirement plan could not make a deductible IRA contribution if the other spouse was covered by a qualified retirement plan. The Act provides that a non-covered spouse can make a deductible IRA deduction. However, the maximum deductible IRA contribution for an individual who is not an active participant, but whose spouse is, is phased out for taxpayers with AGI between \$150,000 and \$160,000.

The Act establishes a new type of nondeductible IRA, called the "Roth IRA." If the Roth IRA is invested for more than 5 years and withdrawn after age 59.5, the earnings are not taxable. The maximum contribution that can be made to a Roth IRA is phased out for individuals with AGI between \$95,000 and \$110,000 and for joint filers with AGI between \$150,000 and \$160,000. The Roth IRA is not subject to the current minimum distribution requirements at age 70.5 and contributions can be made after that age. Only taxpayers with AGI of less than \$100,000 are eligible to roll over or convert a current IRA into a Roth IRA. In 1998, all or part of a current IRA can be rolled into a Roth IRA with the income tax spread over a four-year period. The bill retains present-law nondeductible IRAs where the

earnings are tax-deferred until withdrawn. Thus, an individual can make contributions to either a deductible IRA, the current non-deductible IRA, or a Roth IRA. In no case can contributions to all an individual's IRAs for a taxable year exceed \$2,000. In most situations, the Roth IRA will yield better financial returns than either a current deductible or non-deductible IRA. Also, the early withdrawal penalty for distributions from an IRA before age 59.5 does not apply to distributions from any IRA for first-time homebuyer expenses. The provision applies to payments and distributions in taxable years beginning after December 31, 1997. In addition, effective for taxable years beginning after December 31, 1997, the IRAs assets may be invested in certain platinum coins and in certain gold, silver, platinum, or palladium bullion.

Capital Gain

The Act reduces the maximum capital gains rate for individuals from 28 percent to 20 percent (10 percent for taxpayers in the 15 percent bracket), effective May 7, 1997. Real estate depreciation recapture generally will be taxed at a maximum rate of 25 percent. The present maximum 28 percent rate will be retained for collectibles and, effective July 29, 1997, for assets held between 1 year and 18 months. Beginning in 2001, the 20 percent rate drops to 18 percent (10 percent drops to 8 percent) for assets purchased on or after January 1, 2001, and then held for 5 years. An existing asset can qualify by paying the tax or marking to market value. Caution: Does it make sense to recognize gain and pay tax on an appreciated asset in 2001 to hold the asset an additional 5 years to get a 2 percent reduction in capital gain rate?

Sales of Personal Residence

No tax is owed on the gain from the sale of a principal residence up to \$250,000 (single return), \$500,000 (joint return) effective May 7, 1997. Taxpayers must have owned and lived in the home for 2 of the last 5 years. This provision replaces the over age 55 exclusion of \$125,000 of gain and the IRC §1034 rollover of gain into a replacement residence. The new provision has no age requirements and can be used as often as every 2

years. However, any depreciation taken on a portion of the personal residence used for a home office or other business purpose, after May 7, 1997, will result in taxable income if the personal residence is later sold at a gain.

Alternative Minimum Tax

The Act repeals IRC §56(a)~(6), which was the basis for the IRS position that installment sales income for deferred payment contracts were subject to the alternative minimum tax effective for contracts after 1987. Thus, qualified farmers are eligible to use the installment sales method of accounting for both regular tax and alternative minimum tax purposes.

Generally, farmers sell crops in the fall with a portion of the payment to be received the following year. High prices, traditional marketing practices, and a shortage of storage have provided an incentive for farmers to enter into contracts that lock in these high prices, transfer title, which avoids storage costs, and receive payment in the following tax year. If the contract meets the deferred payment contract requirements, the income is reported for regular tax purposes in the next year when the money is received. A valid deferred payment contract can not be assigned or used as collateral for a loan. Also, the contract must not allow any legal right to the money until the next year. Farmers should ignore IRS Notice 97-13, which allowed taxpayers until the due date for 1997 farm tax returns to change their method of accounting and pay AMT on deferred payment contracts.

The United States tax court has recently decided a case in favor of William and Vivian Loomis, farmers that the IRS said should pay AMT on their deferred payment contracts. Farmers may be able to claim a refund if they voluntarily paid AMT on deferred payment contracts. Many farmers were audited by IRS and paid the tax. Other farmers may have paid tax as a result of an IRS appeals settlement or court case decided before the new law was passed.

Two distinct procedures are available for farmers to claim a refund. First, tax returns filed within the last 3 years can be amended by filing Form 1040X. This form requires an explanation of the

reason for the change. Simply state that the Tax Relief of 1997 repealed AMT for installment sales retroactive to 1987. Second, for taxes paid within the last 2 years, the IRS Form 843 can be used to file a claim for refund. The dollar amount of the claim is not required to hold the statute open for refund. The Form 843 may be marked "Protective Claim for Refund of AMT." IRS will calculate the amount of the refund. Caution: There is no provision to extend the 3-year statute for filing an amended return, or the 2-year window to request a refund from the date tax was paid. If a farmer paid AMT on a deferred payment contract, act now to secure a refund.

AMT Repealed for Small Corporations

Corporations (both farm and non-farm) with gross receipts of less than \$5 million will be exempt from the AMT beginning in 1998. To qualify, a corporation must have average gross receipts of \$5 million or less for the 3 years prior to its 1998 tax year. To continue to qualify after 1998, or to qualify for the first time as a small business, the company's 3-year average gross receipts can not exceed \$7.5 million. If a business fails to qualify in a later tax year, it will apply the AMT rules to income, deductions, and transactions from the failure year and all future years.

AMT Depreciation Adjustment

The Tax Relief Act of 1997 allows the same recovery period for both regular tax and AMT purposes. Previously AMT required a longer alternative MACRS recovery period. This change conforms the recovery period to one period for both for assets placed in service after 1998. However, if a non-farm taxpayer selected a 200 percent MACRS depreciation method, it would create an AMT adjustment because 150 percent MACRS method for AMT would result in less depreciation. The new law conforms regular tax and AMT recovery periods, but does not conform depreciation methods. Thus an AMT depreciation adjustment would be possible for a non-farm taxpayer. Because the 1988 Tax Act limits farmers to 150 percent MACRS for all property used in the trade or business of farming, a farmer's depreciation method would be the same for both regular and AMT purposes. Thus, the AMT

depreciation adjustment for farmers is eliminated, but only for assets purchased after 1998. Don't throw away the AMT software yet.

Estate Tax

The present-law Federal estate tax exemption of \$600,000 is increased to \$625,000 for decedents dying and gifts made in 1998; \$650,000 in 1999; \$675,000 in 2000 and 2001; \$700,000 in 2002 and 2003; \$850,000 in 2004; \$950,000 in 2005; and \$1 million in 2006 and thereafter. These amounts are not indexed for inflation. After 1998, the \$10,000 annual exclusion for gifts, the \$750,000 ceiling on special use valuation, the \$1 million generation-skipping transfer tax exemption, and the \$1 million ceiling on the value of a closely-held business eligible for the special low interest rate are indexed annually for inflation.

Estate Tax Exclusion for Qualified Family-Owned Businesses

For estate tax purposes beginning in 1998, an executor may elect to exclude the value of certain qualified "family-owned business interests" if such interests comprise more than 50 percent of a decedent's estate and certain other requirements are met. The decedent or a member of the decedent's family must have participated in the business for 5 of 8 years before death. Also, a qualified heir must participate in the business for 5 of 8 years during the 10 years after death. Also, during the 10-year period after death the estate tax benefits will be recaptured if assets are sold to other than a qualified heir. To meet the before and after participation requirements decedents or heirs must be involved in the physical production and/or management of agricultural production to a level that makes the earnings from that production subject to self-employment tax. Farmers who "rent out" farm assets to draw social security benefits in 4 of the 8 years before their death, may not qualify, unless they or a qualified family member meets the 5 of 8 year participation requirements. The exclusion for family-owned business interests may be taken only to the extent that the exclusion for family-owned business interests, plus the amount effectively exempted by the federal estate tax deduction, does not exceed \$1.3 million.

Reduction in Estate Tax for Certain Land Subject to Permanent Conservation Easement

An executor may elect to exclude from the taxable estate 40 percent of the value of any land subject to a qualified conservation easement. It must meet the following requirements: (1) the land is located within 25 miles of a metropolitan area or a national park or wilderness area, or within 10 miles of an Urban National Forest; (2) the land has been owned by the decedent or a member of the decedent's family at all times during the three-year period ending on the date of the decedent's death; and (3) a qualified conservation contribution of a qualified real property interest was granted by the decedent or a member of his or her family. The maximum exclusion for land subject to a qualified conservation easement is limited to \$100,000 in 1998; \$200,000 in 1999; \$300,000 in 2000; \$400,000 in 2001; and \$500,000 in 2002 and thereafter. The exclusion for land subject to a qualified conservation easement may be taken in addition to the maximum exclusion for qualified family-owned business interests (i.e., there is no coordination between the two provisions). Debt-financed property is eligible for this provision to the extent of the net equity in the property.

Installment Payments of Estate Tax Attributable to Closely Held Businesses

For estate tax installment payments, a 2 percent interest rate applies to tax on \$1 million in taxable value of the closely held business assets above any federal exemption. The remainder of such taxes is subject to interest at a rate equal to 45 percent of the rate applicable to underpayments of tax (this rate is now approximately 8.5 percent), and all interest paid on the installment basis are made nondeductible. Taxpayers currently deferring taxes can make a one-time election to receive similar treatment.

Estate Tax Recapture from Cash Leases of Specially-Valued Property

If land in a farmer's estate is worth more for non-farm uses, the land can be valued at farm use if a qualified heir operates the land for 10 years after death. The Act clarifies that the cash lease of

special use valued real property by a lineal descendant of the decedent to a member of the lineal descendant's family, who continues to operate the farm or closely held business, does meet the qualified farm use test. Under prior law such cash leases triggered recapture or immediate payment of estate tax at the higher non-farm use value.

Livestock Sales Effect Earned Income Credit

The Tax Reform Act of 1996 added two new classes of "disqualified income." Farmers that receive more than \$2,200 of capital gain net income and net passive activity income are not eligible for earned income credit. Interest, dividends, net rents, and royalties are also disqualified income. IRS interpreted capital gain net income to include gains realized on the sale of draft, breeding, dairy, and sporting livestock. Thus, a farmer who sold cull cows of more than \$2,200 was not allowed EIC. Provisions in both the House and Senate versions of the 1997 legislation were designed to fix the problem. Those changes were not included in the final bill. For 1997, breeding cow sales could knock out the EIC. Possible Solution: sales of breeding livestock are reported on Form 4797 based on the farmer's intended breeding use. If, after the decision was made to cull breeding cows, these same cows were sent to the feedlot or fattened on pasture, they may be held for sale in the ordinary course of the farmer's trade or business. Caution: additional self-employment tax must be weighed against savings from the earned income credit.

Treatment of Livestock Sold on Account of Weather-related Conditions

Under prior law, farmers could use either of two provisions to defer gain recognized on the sale of livestock sold on account of drought. IRC §451(e) allows farmers to postpone reporting of gain from the sale of livestock for one year. The other provision allows farmers to postpone gain from dairy, draft, or breeding livestock if like animals are replaced within two years, IRC §1033 (e). Gain is postponed only for sales in excess of normal sales, and is subject to other requirements (see Farmer's Tax Guide, Pub 225). The 1997 act expands these present-law exceptions to livestock

sold on account of flood or other weather-related conditions. The provisions are effective for sales and exchanges after 1996.

Income Averaging

Income averaging for farmers is allowed on a temporary basis for three years only starting in 1998, 1999, and 2000. Farmers can elect to remove all or part of current (1998) farm income from total taxable income and spread it over the three years. Tax would be based on the marginal rate effective in the last three years. The provision applies only to income tax and would not change self-employment tax.

Net Operating Losses and Business Credits

The Act modifies net operating loss (NOL) carryback and carryforward rules. The NOL carryback period is reduced to two years (from three years) and increases the NOL carryforward period to 20 years (from 15 years). The three-year carryback is retained for NOLs attributable to casualty losses of individuals and NOLs of farmers and small businesses attributable to losses incurred in Presidential declared disaster areas. The provision is effective for NOLs arising in taxable years beginning after the date of enactment. The act also reduces the carryback period for the general business credit to one year (from three years) and extends the carryforward period to 20 years (from 15 years). The provision is effective for credits starting in taxable years beginning after December 31, 1997.

Self-Employed Health Insurance Deduction

The Act increases the deduction for health insurance of self-employed individuals. The deduction is 40 percent in 1997, 45 percent in 1998 and 1999, 50 percent in 2000 and 2001, 60 percent in 2002, 80 percent in 2003 through 2005, 90 percent in 2006, and 100 percent in 2007 and thereafter. The business percentage is taken as an adjustment to gross income with the remainder allowed as a medical expense on Schedule A (Itemized Deductions).

Home Office Deduction: Clarification of Definition of Principal Place of Business

The Act expands the definition of "principal place of business" to include a home office that is used by a taxpayer to conduct administrative or management activities of the business, provided that there is no other fixed location where the taxpayer conducts substantial administrative or management activities of the business. As under present law, deductions will be allowed for a home office only if the office is exclusively used on a regular basis as a place of business and, in the case of an employee, only if such exclusive use is for the convenience of the employer. The provision applies to taxable years beginning after December 31, 1998. This new provision may allow a farmer who lives in a town near the farm to deduct home office expenses. The business portion of the home must be used regularly and exclusively for record keeping, management, marketing, and other administrative activities.

The Tax Relief Act of 1997 provides significant tax savings for many farmers. Although complex requirements and phase-in rules must be met, this law offers the most generous tax planning opportunities of any recent tax legislation. Encourage farm clients to get their records "up-to-date" before year-end to take advantages of these planning opportunities. Tax benefits, like the \$1.3 million estate tax exclusion, will require long-term tax and business organization planning, but the potential tax savings may be well worth the effort.

Integration of Natural Resources Income Opportunities into Whole Farm Operations

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Abstract: Multiple products and values have been a part of our agricultural and natural resources production systems since the beginning of modern civilization. Early on, these products supported a hunting and gathering lifestyle, but in more contemporary times, they support integrated farming and ranching practices. Promoted primarily as a supplementary source of income, the intentional blending of natural resources production into whole farm operations also supports increased biological diversity and rural development. Moreover, the inclusion of natural resources production systems into whole farm operations fosters subcultures around diverse commodities. Included in the mix are Christmas tree growers; fruit and nut gatherers; domestic and wild mushroom producers, and pine straw producers.

Keywords: agroforestry, integrated farming operations, alternative forest products, alternative natural resources incomes, rural economic development.

INTRODUCTION

Let me begin by thanking the conference planners and organizers for their work in scheduling and conducting this conference. Let me also express thanks to the excellent speakers who freely gave of their time and talents to prepare and deliver remarks for this conference. Lastly, let me thank the many participants. Their engagement was a mainstay to this conference and this engagement should not be taken lightly. I applaud all of you for your insights, your wisdom and your commitment to share and learn, and hopefully utilize recommendations and ideas from this assembly.

For my portion of the program I must note that I took a speaker's prerogative and changed the title. The original title "Integration of Natural Resources into Farm and Woodlot Management" left me a little puzzled, thus for purposes of personal clarification and understanding I changed the title to read "Integration of Natural Resources Income Opportunities into Whole Farm Operations."

PERSONAL TESTIMONY

For me, this isn't impractical or unwise, for I have personal experience integrating natural resources income into whole farm operations. As a kid on a small crop and livestock farm in east-central Missouri, I was familiar with the fiscal benefits of gathering and selling firewood, cedar posts, black walnuts, blackberries and gooseberries. Granted, most of these activities supported adolescent spending habits, but nevertheless the income was real.

Since leaving the farm, I have witnessed the steady integration of natural resources income opportunities into whole farm planning. As a service forester in Kansas, I often worked with landowners to establish new, or thin existing natural stands of black walnut for nut production. I also worked with landowners on assorted Christmas tree, campground, and fee fishing operations.

As Multiple Use Coordinator for the Southern Region of the U.S. Forest Service, I worked with landowners on wildlife enhancement projects, and timber, forage, and cattle operations. Here, the most significant experience was observing and

providing counsel to the multiple resource management strategies of the 1981 National Tree Farmer of the Year. This gentleman intentionally intermingled forage and cattle with his timber and row crop agriculture programs. A side benefit was a thriving quail and deer leasing enterprise. A nearby neighbor with a similar operation successfully added naval stores to his mix.

RESOURCE ADVISOR AND PUBLIC POLICY LIMITATIONS

When visiting with these landowners, I often heard that the most limiting aspect to their programs was the single commodity and discipline focus of most of the resource advisors in their service area. Most often the public agency resource advisors, providing oversight for their farm plans, discouraged rather than encouraged resource integration. In short, these landowners felt that they had to “go it alone” when branching into non-traditional ways of farming, ranching and timbering (Biles, et. al.).

From these experiences I have learned much. Central to my learning is a greater understanding of state and federal legislative processes, and the determined spirit of entrepreneurs. Ensuing from this background is an assuredness that if federal legislative policy is critical to the wholesale acceptance of integrated forestry operations, many of you young people will be old, and many of us older folks will be dust before laws and policy are in place. Fortunately, if integrated forestry, horticulture, and outdoor recreation maturation follows the rate of agroforestry maturation, many success stories and the research and education to support the practices will likely be in place when the policy is delivered. Moreover, the credit for the emergence of new philosophies and practices supporting integrated operations will largely be attributed to the vision, energy, and determination of a few key individuals. Central to the emergence are the independent entrepreneurs and the public figures who, in the absence of funding dedicated to the subject, have been willing to re-direct scarce research, education, and technical assistance resources to find answers and to meet expressed needs.

Further ensuing is the close parallel between the integration of natural resources income

opportunities into whole farm operations and the forest farming component of contemporary agroforestry (Reitveld). The missing links, however, are the recreational dimensions. Like agroforestry, mixing horticulture, forestry, and outdoor recreation are not new concepts. In one form or another, mankind has, for years, coupled the production of select forest understory crops (e.g. berries and mushrooms), select forest overstory crops (e.g. fruits and nuts), timber, and recreational interest. A general observation is that most private landowners are not familiar with integrated resource management terminology although they recognize many of the practices that fall within the definition. They, in essence, are applied researchers, “going it alone,” and applying their own definition(s) to the subject. Many are also demonstrating financial success, and are fostering a renewed interest in multiple resource and services integration. A complementary component is society’s contemporary interest in sustainable agriculture and forestry land-use systems, diverse local economies, and diverse biological structures.

BARRIERS AND SHORTCOMINGS

Integrated resource management, in spite of its potential, will assuredly face numerous barriers that will likely impede its development and application. The conventional litany will likely be: (1) the practices are unconventional, (2) the practices lack recognition, (3) interdisciplinary concepts cut across agencies, and (4) interdisciplinary concepts cut across disciplines. However, the need and potential for integrated management and alternative incomes throughout the United States is becoming increasingly more documented through scholarly research, and entrepreneurial success stories.

Correspondingly, a host of real and perceived problems relating to education, information, technical assistance, research, and policy must be resolved before the full potential for integrated forest resource management can be realized. These problems include:

Education/Information

- A high level of uncertainty and accompanying risk associated with integrated resource management as an unproven land use system.
- Inexperienced managers and uncertainty of management expertise required.
- A perception that the economic gains from integrated resource management is lower than straight line forestry, horticulture, or recreation enterprises.

Research

- Lack of a strong research, teaching, and Extension infrastructure committed to integrated resource management decisions.
- Minimal opportunities for graduate study which emphasizes integrated processes and minimal employment opportunities for trained resource managers.
- An inability to recruit young scientists due to the absence of funding and a perception that applied, integrated research is not sanctioned or rewarded in academia.

Policy

Presently, there is only the marginal inclusion of integrated forestry practices in current public cost share programs. More specifically, there is a lack of federal policy relating to alternative natural resources income producing practices.

STEPS TO CONSIDER

Should one incorporate horticulture and recreational enterprises into forested areas and into whole farm operations? In my opinion, yes, providing you readily admit that there is a higher cost to management, and that you introduce the incorporation consciously. Dr. David Gross, in the 1990 predecessor income opportunities conference, identified seven steps to follow when

evaluating alternative agriculture and natural resources based enterprises. (1) Assess personal and family considerations. (2) Identify alternatives - what are the possibilities? (3) Marketing - will it sell? (4) Production - can it be done? (5) Profitability - will it make money? (6) Financial feasibility - can you afford to do it? and (7) Making the decision - will you start the new enterprise (Gross). In short, Dr. Gross is suggesting that you do your economic and legal homework, commit to providing a quality product, service or experience, be customer oriented, and be on the lookout for side ventures.

First, on economics—know your cost. It does little good to spend \$100 to produce a cord of firewood if the market will only bear \$80 per cord. Similarly, it does little good to provide recreational fishing for \$3 per pound if it cost you \$5 per pound to produce. Secondly, be prepared for cyclic production. Yields can vary greatly by year, as can access to products. In many areas, the annual yield of pine straw is rather static, but the access to a year's worth of pine straw can be hampered by storms, wet weather, ice, and other problems. Thirdly, where possible, make arrangements to stock pile produce and sell when the market dictates. Properly stored, pine straw and firewood can be held for more than one season. Unfortunately, the products from my adolescent berry picking "business" didn't have a shelf life, thus my business was geared around filling orders.

Pertaining to liability and other legal issues, I would encourage you not to bet the farm. You have heard some good reports on legal aspects and I will not attempt to re-address, except to say, "beware of the new, bizarre, and unexpected." Central to the current climate are food safety issues. You don't want to be found guilty of fostering illness, especially illness that leads to death or incapacitation. For landowners, a 1994 case in California has to cause unrest. There, a lady filed a negligence suit pertaining to an alleged tick bite and the subsequent onset of lyme disease. The defendant ultimately won, but not before spending several thousand dollars (California Court of Appeals). Summarily, you are advised to seek the advice and counsel of a risk management specialist before embarking on your venture, especially if that venture is hosting people on your property.

Concerning quality products and services, I think most people are satisfied if they get a good product or service, or have a good time, at a reasonable cost. You have heard some excellent testimony about a multitude of alternative income product and service businesses, thus I won't elaborate. I will, however, share some other thoughts about disconnects that we may want to try and overcome. For instance, for three years running, my brother and I have teamed to hunt pheasants in Kansas and Iowa. Because of our background, it is foreign to pay for hunting access charges and we have a mental block about accepting those expenses. Consequently, the landowners who contribute to our recreational pleasure, don't fiscally benefit from our travels. However, the firearms, motel, restaurant, oil, and automobile industries benefit greatly from our new found aspects of release.

The Landowner and the Customer

Often, though, when describing our experience, the landowner is principal in our discourse. His or her attitude, the type of cover, the presence or absence of game, and the presence or absence of other hunters are mainstay to our tales, and we haven't paid a dime for that relationship. This situation is compounded by the nation's many aesthetic benefits. Take fall foliage for instance. When was the last time a recreationist paid a landowner for producing colorful dead leaves. In short, if we the producers are going to fully capitalize on the products that we produce, we need to elevate our stature by seeking a more favorable position in the business environment. The most obvious solutions will likely be more favorable tax policies and possibly some venture capital that supports natural resources businesses.

Concerning customer relations, and/or orientation, remember that the customer is always right. Moreover, you need to be "easy to deal with." A business man that I once worked with frequently used this term. This gentleman was in business to move merchandise and he knew how to cut deals. His strength wasn't so much in his deal making skills as they were in his knowledge of the cost of doing business and his genuine interest in serving a customer. He began with a fresh, quality product, an appealing merchandise mart, and a pleasing personality. Secondly, during idle periods

he sorted his produce and offered specials for things reaching the end of their shelf life. Thirdly, he let the customer know, in a genuine way, that he was pleased to have served them. In short, he went the extra mile, and he was rewarded for those steps.

Pertaining to side ventures, look for flair, fad, demographic, and other opportunities. Most of us can site numerous side line products associated with choose-and-cut Christmas Tree sales. Wreaths, garlands, cones, sleigh and wagon rides, and refreshments are common additions, and in many cases, contribute significantly to the fiscal success of the operation. This is an example of serving a captive audience. Most visitors to choose-and-cut Christmas tree operations are in the mood to decorate and having a ready supply of ancillary products available just makes good business sense.

SUMMARY

In summary, I note that private landowner interest in income opportunities that utilize natural resources continues to increase. For many entrepreneurs, special forest products represent opportunities to supplement their income. For many rural areas, the investment is much larger and more important. Their path to sustainable economic development includes innovative approaches to natural resources conservation, management, and utilization.

We, the professional resource managers, need to assist these communities by encouraging a closer look at our Nation's forests and woodlands as intricate systems capable of sustained generation of diverse goods and services. A few examples that offer encouragement include the Nation's \$350 million wholesale Christmas tree Industry, the Nation's \$22 million retail Shiitake mushroom industry, and the South's \$150 million retail pine straw industry.

Every region of the country offers nontimber commodities and services that represent opportunities for rural entrepreneurs to supplement their incomes. Starting new enterprises can, however, be risky. Therefore, before investing money, time and energy into a potential new venture in special forest products,

entrepreneurs should complete (1) a personal evaluation, (2) a market evaluation, and (3) a project feasibility evaluation. The personal evaluation should walk a potential entrepreneur through his or her reasons and primary goals for considering the special forest products industry. It is important to clearly identify and prioritize these goals and the special resources and skill that an individual can bring to a new venture.

The market and project feasibility evaluations are very critical as well. These steps are made more difficult by the fact that the formal markets for special products are more limited than for more traditional products. This means that market information is more difficult to obtain. Nonetheless, questions about the market to be answered include who will buy the product, what exactly will be sold, and when the harvest and sale will occur.

The project feasibility evaluation addresses the technical and financial feasibility concerns of the potential enterprise. Technical concerns include where and how the products will be found, harvested, packaged, and distributed.

CONCLUSION

The watchword for the future of the special forest products industry will be sustainable harvesting. Research is needed to answer most of the important questions about regeneration, long-term ecological impacts, and user conflicts. Until the pace of research on these nontraditional forest products quickens, guidelines for recommended harvest locations and methods will vary from one region to another. Moreover, for resource professionals there is a shortage of continuing education courses and demonstration areas available for learning and viewing the myriad of integrated forest management concepts being touted. A better understanding of the potential benefits and limitations of integrated practices and under what circumstances to recommend them to landowners is necessary (USDA).

In short, the application potential for alternative forest enterprises face an interesting dichotomy. On the one hand, the application of alternative forest enterprises are dependent upon marketing the concepts. On the other hand, the marketing of alternative forest enterprises are dependent upon the successful application of scientific principles.

Striking a balance between these two variables will largely dictate the future of alternative forest income opportunities in America.

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Exhibitors

EDUCATIONAL AND NON-PROFIT

**Maryland Department of Agriculture
Aquaculture Office
50 Harry S. Truman Parkway
Annapolis, MD 21401
Phone: 410-841-5724
Fax: 410-841-5987**

The MDA-Aquaculture Office: 1) provides a clearinghouse of information pertinent to aquafarmers; 2) coordinates functions of state agencies impacting the aquaculture industry; 3) conducts presentations and provides exhibits for groups, fairs, and trade shows explaining opportunities and potential for aquaculture in Maryland; and 4) Assists in locating property, designing production systems, obtaining permits, financing, and marketing.

**Maryland Forests Association, Inc.
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Incorporated in 1976, MFA serves as an advocate for forest landowners, forestry professionals, and the forest industry by maintaining close liaisons with appropriate state agencies and conservation groups; representing landowner, forester, and forest industry perspectives; supporting conservation education; and providing information on issues relating to forestry in Maryland.

**Maryland Tree Farm Committee
79 Cold Run Valley Road
Berkeley Springs, WV 25411**

There are over 1,500 Tree Farmers, owning approximately 275,000 acres, in the State of Maryland. These landowners, with the assistance from Maryland foresters, practice sound forest management for multiple benefits. The recognition of these Tree Farmers' accomplishments encourages other landowners to manage their forest land.

**Northeast Regional Center for Rural Development
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The Northeast Center for Rural Development (NERCRD) believes that small towns and rural places are the basic building blocks of rural society, and in the context of a global society, they are becoming increasingly complex and multi-dimensional. The Center recognizes that individuals, the foundation of

these rural communities, are capable of growth, development and change, and that rural society can be enhanced by increasing the individual, organizational, and problem-solving knowledge and skills of its residents. Finally, we believe that creating a shared vision for the future of sustainable communities requires democratic participation.

SmartWood
c/o Nancy Lynch
4 Erie Avenue, Suite 302
St. Mary's, PA 15857
Phone: 914-834-4902

SmartWood, a non-profit organization, offers a wide range of certification services to all sectors of the wood and forest products industry. Accredited by the Forest Stewardship Council, SmartWood offers independent, third-party certification services. SmartWood offers a Resource Manager model which makes certification feasible for small landowners. Visit our booth to see how certification can work for you.

The Virginia Forest Landowner Council (VFLC)
c/o Dylan Jenkins
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Phone: 540-231-6391

The Virginia Forest Landowner Council (VFLC) is a voluntary group of state and private natural resources agencies, non-industrial private forest landowners, and forest product companies who seek to promote and improve educational opportunities for Virginia's forest landowners. The VFLC publishes a quarterly calendar of natural resources education programs and sponsors the Virginia Forest Landowner Short Course Series. The series currently consists of three courses: Introduction to Woodland Management, Profitable Timber Marketing and Harvesting, and Introduction to Wildlife Management. The VFLC also coordinates a statewide network of forest landowner education committees who implement the short course series and promote other education events such as field days and forestry and wildlife bus tours. Post-event landowner adoption of best management practices are monitored to assess the effectiveness of educational programming.

Western Maryland Resource Conservation and Development Council
18450 Showalter Road, Suite 111
Hagerstown, MD 21742-1347

The Western Maryland RC&D Council is a private non-profit organization with tax exempt status under section 501(c)3 of the Internal Revenue Code. The Council seeks to promote agricultural sustainability, environmental education, stewardship of our natural resources, rural viability, and economic opportunities in Garrett, Allegany, Washington, Carroll, and Frederick Counties.

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