



## Aquatic Plant Identification and Management Workbook, Series 3

The *Aquatic Plant Identification and Management Workbook Series* is designed to acquaint pond owners in Maryland with naturally-growing aquatic plants and the general means for managing their growth. Aquatic plants play an important role in the natural ecology of ponds: they provide food and shelter for many fish, aquatic animals and other wildlife, and they provide oxygen, which can benefit fish production.

Sometimes, however, growth gets out of hand and the plants become so numerous they interfere with the intended

use of the pond, for example, fishing, swimming, boating — they are then called aquatic weeds. When this occurs, control measures often become necessary.

The suggested chemical controls in this workbook series are intended as guidelines and must not replace directions on chemical labels. Separate fact sheets display each of the aquatic plants in this series and are available from the Maryland Sea Grant Extension Program or your local Cooperative Extension Office.

### SUBMERSED VEGETATION

# Widgeon Grass

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**V**ascular flowering aquatic plants are seedbearing and are characterized by a system of conductive and supportive tissue. They can be classified into several broad categories of vegetation: floating, submersed, emergent, and terrestrial. This fact sheet focuses on widgeon grass, a submersed aquatic plant.

Submersed plants are underwater vegetation usually found in deeper waters. Completely submersed, they are usually rooted to the bottom, lack rigid cell structures (making them appear limp), and often grow up to the water surface. Flowers, when present, often extend above the water surface in spikes.

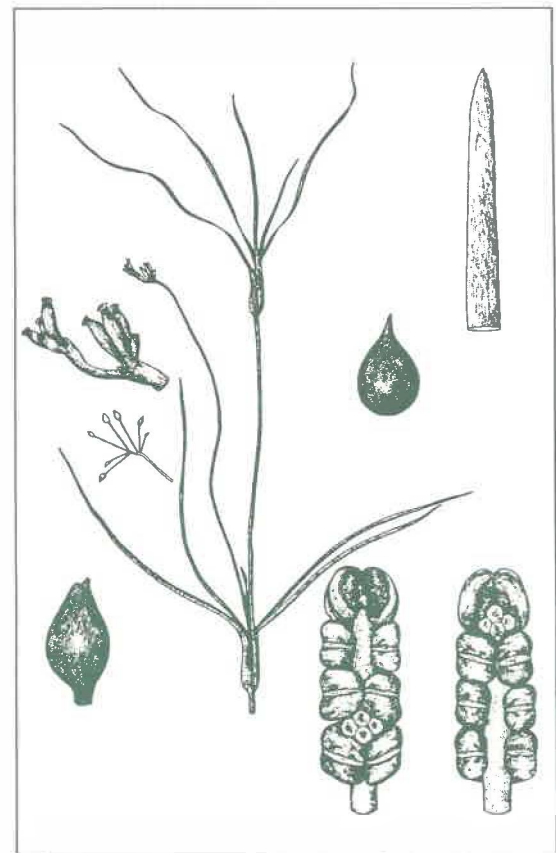
#### WIDGEON GRASS

(*Ruppia maritima*)

Widgeon grass, or ditch grass as it is also known, is another one of the more important submersed aquatic vegetations found in Maryland. It is important to wildlife and

waterfowl as a food source and as a protective cover and nursery area for small fish and invertebrates. The plant tolerates a wide range of salinity and can be found from almost full strength saline water to shallow brackish water ponds, rivers, and estuaries. It is one of the few species of submersed aquatic vegetation that thrives in alkaline waters. The plant is also tolerant to cool weather and grows well during the fall months.

Widgeon grass is often found living in areas with other submersed aquatic vegetation including eelgrass (*Zostera marina*) and horned pondweed (*Zanichellia palustris*). When not in bloom or without seeds, *Ruppia* is often confused with horned



Submersed Vegetation: Widgeon Grass

Credit: IFAS, University of Florida, Gainesville

pondweed and sago pondweed (*Potamogeton pectinatus*). Having alternate leaves, it can be distinguished from these other two plants because Horned pondweed has whorled or opposite leaves, and sago pondweed is found in bushy clusters.

As a food source for wildlife and waterfowl, all parts of the plant are consumed. With over 33 reported animals feeding on the plant, it is listed as one of the more important species of submersed aquatic vegetation in Maryland. Diving and puddle ducks feed on *Ruppia*, as do geese and a variety of shorebirds.

Widgeon grass is most often found in sandy substrates but occasionally can be found in areas with soft muddy bottoms. Problems associated with overgrowth are usually confined to infestations in small ponds and drainage canals especially where there are high concentrations of fertile, organic soils such as in a marsh, hence the name ditch grass. It also has been a problem in the cooling water systems of power plants.

## IDENTIFICATION

*Ruppia* is a delicate perennial that has straight, thread-like leaves (up to 5 inches) that are alternately arranged along a slender, branching stem. The leaves produce a sheath at its base and come to an acute point at its tip. It has an extensive root system which includes creeping rhizomes (underground stems) that are extensively branched. Widgeon grass can grow up to 3 feet in length or be so short that the plants appear as a carpet of leaves without stems.

One of the distinguishing characteristics of the plant is the cluster of four to six black, oval fruits with pointed tips (1/2 to 1 inch long) that develop at the end of a stalk where the flowers were previously produced. The flowers are present from July through October, and consist of two tiny flowers encased within the sheathing base of the leaves. The flowers are perfect (have both male and female parts on the same flower) and, when mature, they extend toward the surface by elonga-

tion of the peduncle (stalk). Pollen is released and floats on the surface until it comes in contact with the pistils and fertilization occurs. Asexual or vegetative reproduction can occur by new growth forming from the extensive rhizome system.

## CONTROL

When chemicals are used to control aquatic vegetation, certain precautions must be followed. Always read the label and follow the directions. It is best to spot treat areas where widgeon grass is first sighted in early spring before the growth gets too extensive. Determine the water uses and any use restrictions associated with the chemical control. Obtain all necessary permits. Make sure you have properly identified the aquatic plant and have chosen the correct chemical control. Mix and apply the chemical according to the label directions. Keep the necessary records – they are required by law. Finally, monitor the water for dissolved oxygen and pH shifts after treatment to determine

**CHEMICAL CONTROL.** The following is a table of chemicals labeled to treat widgeon grass. The table was compiled from information gathered from the aquatic chemical industry. *Inclusion in the table does not imply endorsement by the University of Maryland nor by the authors.* Omission of chemicals is a result of oversight on the authors' part or of new label registration. The table is for comparison purposes only and is not intended to replace the chemical label. Labels are subject to change; therefore, always check the label for treatment sites, rates, and precautions before purchasing or applying any chemical. **Do not use the table for treating aquatic plant problems.**

Widgeon Grass ( <i>Ruppia</i> spp.)				
Chemical Name	Chemical Type	Application	Restriction	Comments
Casoron 10G	Dichlobenil	70-150 lb/acre	do not use water for irrigation, livestock, or drinking no fishing – 90 days	do not use in commercial fish or shellfish waters
912 Aquatic Weed Killer	Diquat dibromide	1 pint in 100 gal water as a top dressing	livestock watering, spraying, irrigation, swimming – 10 days drinking – 14 days	do not use in muddy water
Aquashade	Blue & Yellow Dye	0.25 gal/acre ft	not for human consumption	more effective in depths over 2 ft

the effectiveness of the treatment and whether any fish kill occurs. Heavy plant die-off can cause oxygen depletion, while heavy growth can cause pH shifts on a daily cycle.

### REFERENCES AND FURTHER READING

Godfrey, Robert L. and Jean W. Wooten. 1979. Aquatic and wetland plants of the southeastern United States. The University of Georgia Press, Athens.

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Traver, David P., John A. Rodgers, Michael J. Mahler, and Robert L. Lazor. 1978. Aquatic and wetland plants of Florida. Special Publication, Florida Department of Natural Resources, Bureau of Aquatic Plant Research and Control. Tallahassee, Florida.

### FOR FURTHER INFORMATION

For general information about the Maryland Sea Grant Extension Program, visit the web:

<http://www.mdsg.umd.edu/MDSG/Extension/index.html>

For technical questions, contact an extension agent or specialist at one of these locations:

Maryland Sea Grant Extension  
University of Maryland  
Wye Research and Education Center  
P.O. Box 169  
Queenstown, MD  
Telephone: (410) 827-8056

Maryland Sea Grant Extension  
University of Maryland  
Chesapeake Biological Laboratory  
P.O. Box 38  
Solomons, MD 20688  
Telephone: (410) 326-7356

Maryland Sea Grant Extension  
University of Maryland  
Cooperative Extension Service  
NOAA Chesapeake Bay Office  
410 Severn Ave., #107A  
Annapolis, MD 21403  
Telephone: (410) 267-5674

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### FOR ADDITIONAL COPIES

Copies of Maryland Sea Grant Extension workbooks on aquatic plants, including color photographs for use in identifying species, are available on the web at:

<http://www.mdsg.umd.edu/MDSG/Extension/Workbooks>

Additional copies of printed workbooks are available from the Maryland Sea Grant College Program, 0112 Skinner Hall, University of Maryland, College Park, MD 20742-7640.

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**NOTE:** Because of the ecological role and sensitivity of aquatic vegetation, as well as Baywide efforts to restore this important resource, the state does not permit the use of chemical control in tidal waters, and greatly restricts their use in nontidal, flowing waters. Acquaint yourself with all regulations governing plant control activities, and obtain all necessary permits. Non-chemical means should be utilized where practicable.



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