

*caught underneath boats and spread the weed from one location to another. Also, aquarium contents should be dumped on the ground, not in a body of water or down a drain. A plant suspected of being hydrilla should be taken to the local County Agricultural Commissioner.*

### How to identify hydrilla

*A number of plants resemble hydrilla. The best method of identifying the plant is to look at the leaves. Hydrilla has two to eight leaves per whorl along its long branching stems. The length of the leaf is five to seven times the width. The leaves are spear-shaped with sawtooth edges and small spines on the underside of the leaf on the center vein, and the leaf margins are serrated which differentiate it from elodea, a harmless plant.*

### pick up photos of leaves

Waterweed  
ELODEA CANODENSIS MICHX

Hydrilla  
HYDRILLA VERTICILLATA ROYLE

Egeria  
EGERIA DENSA

THE ABOVE PHOTOGRAPHS ARE PROVIDED TO ILLUSTRATE THE DIFFERENCE BETWEEN HYDRILLA AND OTHER AQUATIC PLANTS.

*Gray Davis, Governor  
State of California*

*Mary D. Nichols  
Secretary for Resources*

*Ray Tsuneyoshi, Director  
Department of Boating and Waterways*



### For more information

*California Department of Boating and Waterways  
2000 Evergreen Street, Suite 100  
Sacramento, CA 95815-3888  
(916) 263-1331*

*California Department of Food and Agriculture  
(916) 654-0462*

# BOATER ALERT: HYDRILLA



***What is hydrilla and  
what can you do  
to help in the  
eradication of this  
aquatic pest?***

## What is hydrilla?

*Hydrilla is an extremely prolific non-native aquatic weed, considered by many to be a "biological pollutant," which threatens the economic and recreational well-being of water systems in California. Hydrilla has already infested millions of acres of lakes, rivers and irrigation systems throughout the United States. Thought to have been imported originally for aquarium use, it was first found in a Florida river and drainage canal in 1960.*

*Hydrilla was first discovered in California in 1976 at a 35-acre pond in Marysville. Since then, there have been more than 30 infestations discovered in 16 counties throughout the state. Hydrilla, which looks like a common aquarium plant, is quarantined from entry into the state. However, it is currently present in Northern and Central California, including a newly discovered infestation in 43,000-acre Clear Lake. It is possible that the Clear Lake infestation can migrate to Cache Creek, and in high water years, into the Sacramento-San Joaquin Delta, which could ultimately cause damage to 65% of the state's water supply.*

## Effects of hydrilla infestation

- ◆ *waters may become unnavigable*
- ◆ *overheated boat motors are common*
- ◆ *fishing in shallow waters becomes impossible*
- ◆ *fish populations may become stunted*
- ◆ *alteration in fish predator-prey kills*
- ◆ *massive fish kills may occur due to depression of dissolved oxygen concentration*
- ◆ *changes in water quality*
- ◆ *loss of wildlife habitats*
- ◆ *clogging of rivers, streams, canals and ditches occurs, impacting agricultural, domestic and industrial uses*
- ◆ *prevents the use of water systems for recreation*
- ◆ *drownings occur due to entanglement*
- ◆ *impacts the economy of surrounding community*
- ◆ *depresses water-site property values*

## How hydrilla reproduces and spreads?

*Hydrilla can form new plants from fragments containing one or more whorls of leaves. Therefore even small pieces attached to propellers, boat trailers and pieces in live bait wells and bait pails can lead to its spread within a lake or to other waterways when boats are relaunched. Hydrilla usually doesn't form seeds, but it is so efficient in using low light levels and available nutrients that the fragments can produce large stands of plants in a few months.*

*In the late summer to early winter, hydrilla also produces structures called "tubers" from shoots that grow down into the bottom mud. Studies have shown that a single fragment of hydrilla can form thousands of tubers in one growing season. The tubers can last for several years before sprouting, although many sprout the first spring after they're formed. These long-lived reproductive structures make hydrilla very difficult to eradicate because even the removal of top-growth will not harm tubers once they have been formed. The presence of tubers also requires safe and proper disposal of dredging spoils.*

## How is hydrilla eradicated

*Both chemical and non-chemical methods, including physical removal and biological agents, are required to eradicate hydrilla. Generally, after the plant infestation is identified, Komeen, an aquatic herbicide registered for use in potable water, is applied to all water within the treatment zone to kill top growth. The treated weeds will drop below the water's surface within 3-7 days, and complete elimination of the plants should be evident within six weeks. Although the top growth is removed, treatments must be continued for several years since tubers will sprout each spring unless they are physically removed by dredging or complete*



PICTURED ABOVE, HYDRILLA DEVELOPS DENSE MATS THAT PRODUCE A BLANKET OVER THE WATER SURFACE. HYDRILLA FRAGMENTS CAN GET CAUGHT UNDERNEATH BOATS AND SPREAD THE WEED FROM ONE LOCATION TO ANOTHER.

*excavation of the bottom. For this reason complete eradication usually takes 6 to 8 years when excavation and dredging are not feasible. Areas treated may later be used for swimming, fishing and even drinking. Boating in these areas may be temporarily off-limits during treatment.*

## What can you do to prevent the spread of hydrilla?

*The spread of hydrilla from one body of water to another can be greatly reduced if boaters remove all aquatic weeds from boats, trailers and fishing gear before leaving lakes, rivers, ponds and streams. Fragments can get*