



Parrotfeather

Myriophyllum aquaticum Vellozo Verdcourt

Background

Parrotfeather, a native of South America, has been distributed widely in North America because of its popularity as an ornamental aquatic plant. When introduced into natural systems parrotfeather forms dense stands that can dominate the flora of shallow lakes and streams.

Earliest records of parrotfeather on the west coast of North America are from southern California in 1912. There are reports that the plant was introduced into natural systems in the San Francisco Bay area to maintain a population for horticulturalists. The earliest record of parrotfeather in Washington is 1944.

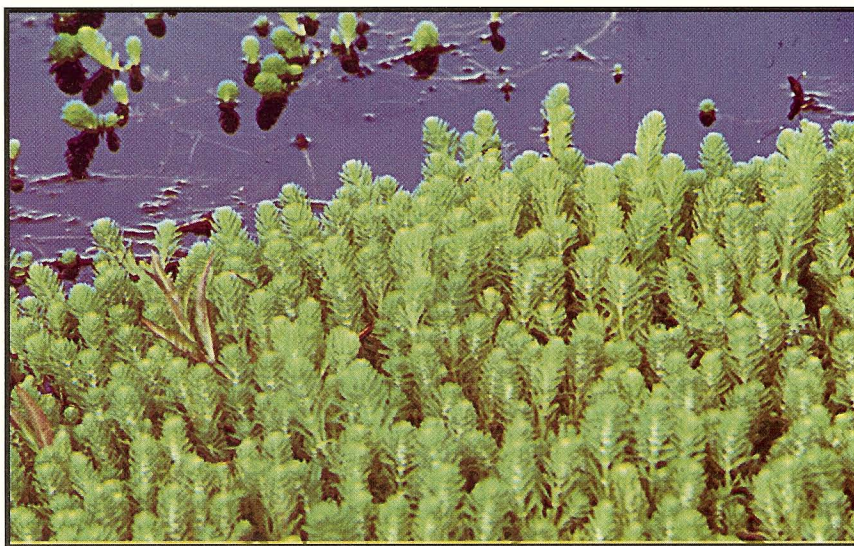
Parrotfeather is currently widespread in coastal areas from San Francisco to Washington, in California's Central Valley, and the Willamette Valley in Oregon. In Washington, major infestations are in southwestern counties, including the Chehalis River. Scattered populations can also be found in Puget Sound lowland lakes. Parrotfeather has not been reported east of the Cascades in Washington.

Identification

Parrotfeather is easily identified by its bright green emergent foliage that grows above the water surface. Emergent stems are typically unbranched, with whorls of finely dissected leaves. In crowded stands the emergent stems can be up to 25 cm (10 inches) long.

Flowers are inconspicuous. The small, white flowers are located in the axils of emergent leaves. Parrotfeather is dioecious, male and female flowers occur on separate plants. Only female plants are present in North America.

Parrotfeather also has a submersed growth form. Submersed leaves are typically a reddish color, and are more finely dissected than the emergent leaves. Submersed leaves have a feathery shape, much like other *Myriophyllum* species, however, submersed leaves of parrotfeather are typically larger and more finely dissected than other milfoils. Submersed leaves are most commonly present in winter months, when freezing kills emergent stems. After emergent growth is established, submersed leaves are quickly shed.



Parrotfeather has distinctive emergent stems that are bright green.

Biology and Ecology

Parrotfeather has a "creeping emergent" growth form. As the emergent stem elongates, lower leaves are shed and new shoots and roots form at the nodes. Because the emergent stems have access to atmospheric carbon dioxide, parrotfeather is probably the most productive milfoil species.

Parrotfeather stands can develop dense mats of floating, leafless stems (rhizomes) in the upper part of the water column. The rhizome mat and the emergent stems shade the lower water column and reduce phytoplankton production in infested waterbodies.

Parrotfeather infestation can dramatically alter an aquatic ecosystem. Metabolic activities of the plant can lower dissolved oxygen concentrations and pH. These changes in water chemistry, as well as the physical effect of the dense plant beds, degrade the habitat value for fish and other organisms.

Since only female plants are present in North American populations, parrotfeather does not set seed. Parrotfeather is dispersed



Parrotfeather can entirely cover a small pond or shallow lake.

only by stem/rhizome fragments. Rhizomes can survive periods of drawdown provided dessication is not too severe.

Control

Parrotfeather can be managed with physical and chemical techniques.

however, emergent leaves have a waxy cuticle that limits uptake of foliar-applied herbicides. Translocation of systemic foliar, and water-applied herbicides is limited and repeat applications are required for control.

In deeper water, parrotfeather can be physically removed by hand or with a me-

chanical harvester. In shallow (< about 30 cm or 12 inches) water the adventitious roots may reach the sediment making physical removal difficult. Stem fragments produced in physical removal may spread the infestation.

Covering parrotfeather with plastic or other material after drawdown may be effective if large areas can be covered. Covers may have to be maintained for extended periods because of the persistence of the rhizomes.

As with all invasive plants, control is most easily achieved when it is performed before the plants establish large stands.

Additional Information

Nelson, E.N. and R.W. Couch, 1985. History of the introduction and distribution of *Myriophyllum aquaticum* in North America. pp. 19-26. In: Proceedings of the First International Symposium on Watermilfoil (*Myriophyllum spicatum*) and Related Haloragaceae Species. 23-24 July, Vancouver, B.C.

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The submersed growth form of parrotfeather is present when freezing temperatures kill emergent stems.