

AISS

Aquatic Invasive Species

BRAZILIAN ELODEA



brazilian elodea

COMMON NAME: Brazilian Elodea

This is also called Brazilian waterweed. It is extensively sold in the aquarium industry usually under the name “anacharis”.

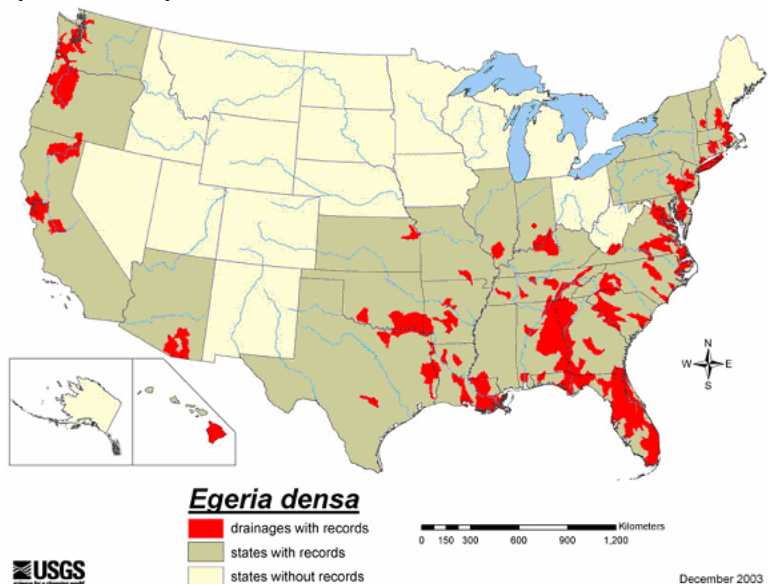
SCIENTIFIC NAME: *Egeria densa*

Brazilian elodea is in the frogbit family, Hydrocharitaceae.

DISTRIBUTION: Brazilian elodea’s native range includes some regions of Brazil to coastal areas of Argentina and Uruguay. Currently it has been introduced into New

Zealand, Australia, Denmark, Germany, France, Japan, Chile and the United States. In the United States this plant has been reported in Washington, Oregon, California, Arizona, Texas, Oklahoma, Kansas, Missouri, Arkansas, Louisiana, Alabama, Mississippi, Georgia, Florida, Tennessee, Kentucky, Illinois, Indiana, South Carolina, North Carolina, Virginia, Connecticut, Pennsylvania, New Jersey, New York, Vermont, New Hampshire, Massachusetts, Delaware, Maryland and Hawaii.




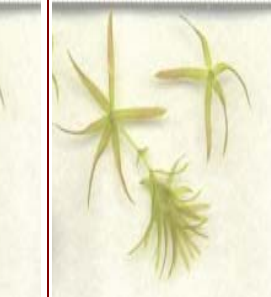
Indiana: While some private ponds in Indiana have reported Brazilian



elodea infestations recently, the first invasion into a public body of water did not occur until 2004. Griffy Lake near Bloomington, Indiana contained a dense population of the invasive species in 2004. This is the northernmost invasion of this plant known in the Midwest.

DESCRIPTION: Brazilian elodea is a submerged perennial that can reach lengths of six feet. This plant can live rooted or free floating at depths of up to 20 feet. The green leaves are whorled with usually four leaves per node. Each leaf is 1-1¼ inch long with a linear oblong shape approximately 5 mm wide. The margins of the leaf are very finely toothed and can only be seen with a hand lens. The flowers of Brazilian elodea have three white petals and three green sepals. These large showy flowers are what make this plant an attractive ornamental. The flowers emerge above the waters surface via long stalks that grow from the leaf axils. One may confuse Brazilian elodea with another exotic weed, hydrilla (*Hydrilla verticillata*). Hydrilla will have rough teeth on the underside of the leaves where Brazilian elodea will not. There is also a native species of elodea found in Indiana, American elodea (*E. canadensis*), which looks somewhat like Brazilian elodea.

Identification Characteristics of the Hydrocharataceae

Character	<i>Egeria densa</i> Brazilian elodea	<i>Elodea Canadensis</i> American elodea	<i>Hydrilla</i> (monoecious) Hydrilla	<i>Hydrilla</i> (dioecious) Hydrilla
Leaves per Whorl	4 (3-5) 	3(2) 	5(2-8) 	4-5 (2-8) 
Serrated Edges Visible	With magnification	With magnification	Distinct on older plants	Distinct
Leaf Size	Up to 4cm	Up to 1.5 cm	1-2 cm	1-2 cm
Flowers	Male only, up to 2 cm	Tiny, male and female on separate plants	Male and female on same plants, to 1 cm	Only female plants in US, to 1 cm
Tubers Present	No	No	Yes	Yes

LIFE CYCLE BIOLOGY: In its native range you will find Brazilian elodea in slow moving, shallow waters. It is also found in lakes, rivers and streams outside of its native range. It grows best in somewhat acidic lakes that are enriched. This exotic elodea is

larger and more robust than our native elodeas. All accounts seem to point out that all introductions found in the U.S. are male plants. Since no female Brazilian elodea is found in the U.S. it can only reproduce by vegetative means. It does not use seeds, underground rhizomes, or tubers for reproduction; rather fragmentation is its method for spread. Only fragmented pieces of this weed that have double nodes can produce a new plant. There are two growth periods that are each followed by a period of decay. It hits its first growth spurt in spring. It flowers in late spring and then it experiences some decay of the tips and branches. During the summer months it branches profusely creating a dense mat. It hits another growth spurt in fall and again flowers followed by decay. It overwinters on the bottom in an evergreen form.

PATHWAYS/HISTORY: In 1893 Brazilian elodea was first collected in the United States from Millneck, Long Island. In 1915 this plant was being sold as a good plant to add oxygen to your water. Brazilian elodea is still widely found in the aquarium and water garden industries sold under its “alias” Anacharis. The most abundant populations of Brazilian elodea are on the East coast.

DISPERSAL/SPREAD: The spread of Brazilian elodea in the past was primarily by the aquarium and water garden industry. This weed was widely sold for its oxygenation capabilities, and for its attractive flowers. When people wanted to dispose of these plants they would just release them into open water. When it becomes established in public waters, dispersal can occur from water recreationists who unknowingly transport fragments from one body of water to another. Since Brazilian elodea can reproduce via fragmentation, one plant can easily be dispersed over an entire body of water just from recreational disturbances. It has the ability to spread 100 acres per year. In drought years it can spread faster, and in years with heavy rains it seems to grow at a slower rate.

RISKS/IMPACTS: Once Brazilian elodea has been introduced into a lake it grows rapidly and creates dense mats on the waters surface. These mats will crowd out native plants that don't grow as quickly. It can impede boating, fishing, swimming, and other aquatic recreation activities. The mats are unsightly and provide poor habitat for fish. When overabundant, it can cause fish population imbalances. It will form a monotypic stand that can become so dense that water movement is restricted. The fragmented pieces can clog water intake pipes. It will cause fluctuations in water quality, and it traps sediment. And finally, it is very expensive to control it when it reaches nuisance levels.

MANAGEMENT/PREVENTION: Control of aquatic weeds is difficult and eradication sometimes can be an unrealistic goal. Before any type of management technique can be implemented there needs to be a positive identification of the plant. Some native plants look similar to Brazilian elodea so it is important to have proper identification.

Since it appears as though the invasion of Brazilian elodea into Indiana has just begun, it is possible that this plant can be eliminated from the state. While there are many methods available to control aquatic plants, the method most suitable for complete and fast elimination is chemical control. There are no herbicides that are selective for Brazilian elodea, which means that a treated body of water may lose some native plants as well.

The chemical fluridone has reduced Brazilian elodea populations in Washington, and Diquat complexed copper mixtures have also been shown to reduce populations.

Like all invasive species, the key to preventing their spread is knowledge! You can help by practicing a few good techniques for stopping the spread of Brazilian elodea and any other aquatic invasive plants.

- ✓ Rinse any mud and/or debris from equipment and wading gear and drain any water from boats before leaving a launch area.
- ✓ Remove all plant fragments from the boat, propeller, and boat trailer. The transportation of plant material on boats, trailers, and in livewells is the main introduction route to new lakes and rivers.
- ✓ Do not release aquarium or water garden plants into the wild, rather seal them in a plastic bag and dispose in the trash.
- ✓ Consider using plants native to Indiana in aquariums and water gardens.
- ✓ If you detect this plant in a lake, pond, or stream, please contact the Indiana Department of Natural Resources, Division of Fish and Wildlife.

REFERENCES:

Anacharis-Warning! What is it? How do I identify it? South Carolina Department of Natural Resources. 3 Aug 2004.
<water.dnr.state.sc.us/water/envaff/aquatic/img/anacharisalert.pdf>.

Bradley, Kevin. Brazilian Elodea or Egeria: *Egeria densa*. Virginia Tech. 3 Aug. 2004.
<www.ppws.vt.edu/scott/weed_id/eldde.htm>.

California Boating Launches Egeria Densa Control Program. 2003. State of California Department of Boating and Waterways. 5 Aug 2004.
<www.dbw.ca.gov/Egeria.htm>.

Egeria densa-Brazilian elodea-A Problem Aquatic Plant in the Western USA. 16 June 2004. The Western Aquatic Plant Management Society. 26 July 2004.
<www.wapms.org/plants/egeria.html>.

Non-Native Freshwater Plants: Brazilian elodea. 24 Feb 2003. Washington State Department of Ecology. 26 July 2004.
<www.ecy.wa.gov/programs/wq/plants/weeds/egeria.html>.

Ramey, V. and A. Murray. Nonindigenous Aquatic and Semi-Aquatic Plants in Freshwater Systems. 2004. University of Florida. 3 Aug 2004.
<aquat1.ifas.ufl.edu/mcplnt1k.html>.

Tu, Mandy. Early Detection and Cooperation Prevents the Establishment and Spread of a Sever Invasive Plant Pest into the Connecticut River. July 2002. The Nature Conservancy. 3 Aug 2004. <tncweeds.ucdavis.edu/success/ct001.html>.

Vermont Invasive Exotic Plant Fact Sheet. 2003. Vermont Agency of Natural Resources and The Nature Conservancy of Vermont. 3 Aug 2004.
<www.anr.state.vt.us/dec/waterq/lakes/docs/ans/lp_ansfs-ed.pdf>.

Weed Index: Hydrocharitaceae. Environment Bay of Plenty Regional Council. 26 July 2004. <www.envbop.govt.nz/weeds/weed2.asp>.

Whatcom Weeds. Whatcom County Noxious Weed Control Board. 26 July 2004.
<www.co.whatcom.wa.us/publicworks/pdf/weeds/brazilian_elodea2.pdf>.

PHOTOGRAPHS compliments of the Washington Department of Ecology

Last updated 3/05