

South American Waterweed: An Exotic Invasive Plant

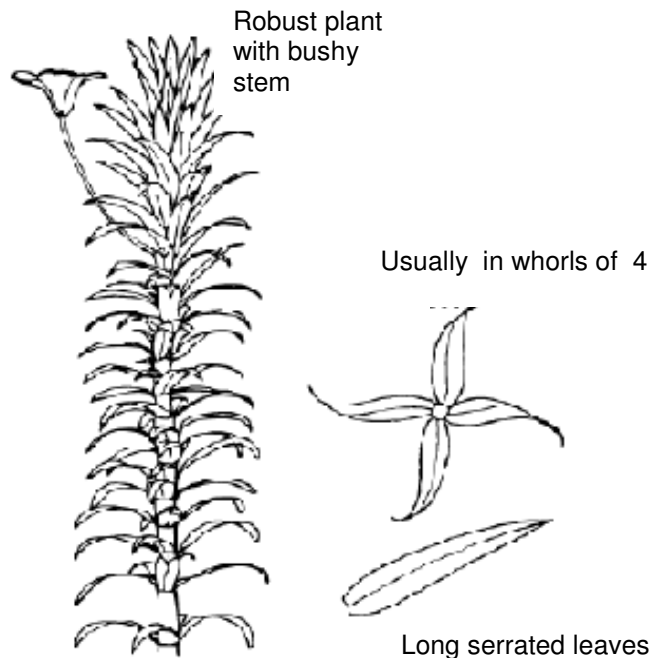
Egeria densa



Description

- *Egeria densa* is a robust submerged aggressive invasive aquatic plant. *E. densa* is a perennial monocot originally from South America and is often called Brazilian Waterweed.
- *E. densa* is very leafy and the majority of its biomass is located near the water's surface.
- The strap-shaped leaves are bright green, 1" long and ¼" wide, and the tips end in a point. The leaf margins have small serrations that can be seen with a hand lenses, but no teeth are present on the lower midrib of the leaf. Leaves are arranged in whorls of 4-8, but most often occur in whorls of 4.
- The dense stems are bright green with branches sprouting from double nodes on the stem.
- *E. densa* is dioecious (male and female flowers on separate plants), however, seed germination has not been reported in the United States, and no tubers are produced.

South American Waterweed



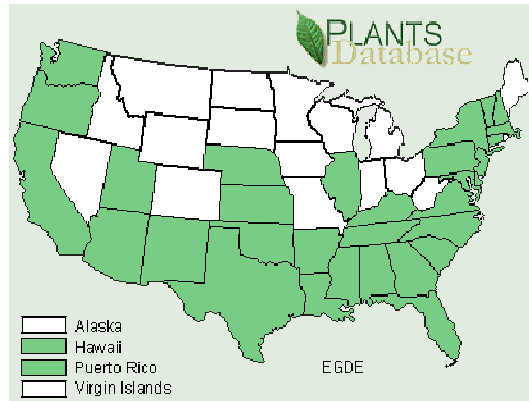
Habitat

Egeria densa is a very hardy and persistent species that has established itself in a wide range of aquatic habitats.

- Tolerates a variety of habitats and water conditions, including oligotrophic (nutrient poor) and eutrophic (nutrient rich) lakes.
- Prefers slow moving acidic waters and is less tolerant of high temperatures than other invasive species.

Distribution Map

Egeria densa



Reproduction

Although seeds are produced, in the United States, the main method of reproduction for *E. densa* is vegetative.

- *E. densa* fragments easily and where double nodes have formed, roots or stems can develop.
- Small white flowers with 3 petals develop on a stalk that can extend 1" above the waters surface.

Impacts and Threats Posed by South American Waterweed

E. densa is a highly competitive plant that is capable of rapid growth and spread. *E. densa* can displace native species, reduce biodiversity, limit recreation, diminish aesthetic value, and decrease water quality and flow.

- Dense stands of *E. densa* can hamper fishing, boating, swimming and other activities and the loss of recreational and aesthetic value can cause a decline in surrounding lake property value.
- *E. densa* may form thick monocultures that often do not provide ideal habitat or food for native wildlife. These native wildlife populations may be forced to relocate or perish, ultimately resulting in a loss of biodiversity and a disruption in the balance of the ecosystem.
- When the large stands of *E. densa* die, their decomposition can create anoxic (low oxygen) conditions in the water which may result in fish kills.
- Dense stands of *E. densa* trap sediments, slow water flow in irrigation channels and waterways.
- Sediment levels increase with increasing *E. densa* abundance.

Management Methods

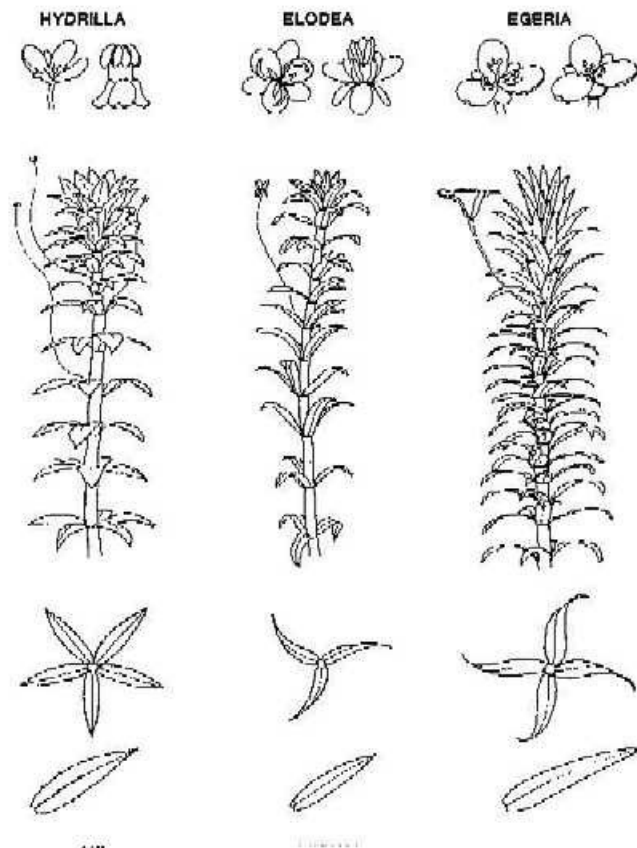
Management methods currently include mechanical methods, herbicides, drawdowns and barriers.

- Although harvesting can greatly reduce the *E. densa* biomass in a water body, harvesting causes fragmentation. *E. densa* spreads primarily by fragmentation, and fragments created by mechanical harvesting may drift downstream or attach to boats and wildlife and create new infestations elsewhere.
- Treatment with Diquat and Fluridone have been effective measures of control. However, herbicides require permits, must be applied by a licensed applicator and herbicides may impact non-target native plants or animals.
- Drawdowns can be an effective control method if the drawdown is sufficient to allow sediments to freeze. Drawdowns may have downstream impacts and may affect fish, reptiles, amphibians and aquatic organisms.
- Benthic barriers may be used in small areas including swimming beaches, boating lanes and around docks. The barriers restrict light and upward growth but can have a negative impact on benthic organisms, and need to be properly anchored and maintained.
- The only potential biological control known, the fungus *Fusarium ssp.*, has shown promising lab results but field trials, have yet to be completed.

Other Information

- *E. densa* is on the Massachusetts Prohibited Plant List (as of January 1, 2006).
- Informational websites:
<http://aquat1.ifas.ufl.edu/> (Center for Aquatic and Invasive Plants)
<http://dnr.metrokc.gov/wlr/waterres/smlakes/weed.htm> (Washington State King County)
- Some pet stores sell South American Waterweed under the names *Anacharis*, Brazilian Waterweed and *Elodea*.
- *E. densa* was first documented in Massachusetts in Abington in 1940.
- *E. densa* may be confused with the native Common Waterweed (*Elodea*) or non-native Hydrilla (*Hydrilla verticillata*). *Egeria densa* is more robust, leafy, and larger than either Hydrilla or *Elodea*.
 - Common Waterweed has leaves that are small and arranged in whorls of three.
 - Hydrilla has small leaves arranged in whorls of 4-8 with distinctly serrated leaf margins.

South American Waterweed compared to Elodea and Hydrilla



References:

1) Literature References:

- <http://www.mass.gov/dcr/waterSupply/lakepond/geir.htm> (GEIR)
- <http://www.ecy.wa.gov/programs/wq/plants/weeds/aqua002.html> (WA State King County site)
- www.wapms.org/plants/egeria.html (Western Aquatic Plant Managers Society)
- <http://webapps.lib.uconn.edu/ipane/browsing.cfm?descriptionid=17> (IPANE site)

2) Photographs were obtained from:

- <http://plants.ifas.ufl.edu/egdepic.html> (cover photo and line drawing)

3) The distribution map was taken from:

- http://plants.usda.gov/cgi_bin/topics.cgi (USDA Plant Atlas)

For more information please contact:

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Or visit the Lakes and Ponds web site at: <http://www.mass.gov/lakesandponds>

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