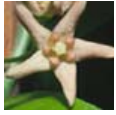




Invasive Plant Atlas of New England

Catalog of Species Search Results



[:: Catalog of Species Search](#)



Salvinia molesta

(Giant salvinia
Water fern
Salvinia
Kariba weed
Aquarium watermoss)

[Common Name\(s\)](#) | [Full Scientific Name](#) | [Family Name Common](#) | [Family Scientific Name](#) | [Images](#) | [Synonyms](#) | [Description](#) | [Similar Species](#) | [Reproductive/Dispersal Mechanisms](#) | [Distribution](#) | [History of Introduction in New England](#) | [Habitats in New England](#) | [Threats](#) | [Early Warning Notes](#) | [Management Links](#) | [Documentation Needs](#) | [Additional Information](#) | [References](#) | [Data Retrieval](#) | [Maps of New England Plant Distribution](#)

COMMON NAME

Giant salvinia
Water fern
Salvinia
Kariba weed
Aquarium watermoss

FULL SCIENTIFIC NAME

Salvinia molesta Mitchell

FAMILY NAME COMMON

Water fern family

FAMILY SCIENTIFIC NAME

Salviniaceae

IMAGES



Habit



Sporangia



Habit in Water

NOMENCLATURE/SYNONYMS

Synonyms: None

DESCRIPTION

Botanical Glossary

Salvinia molesta is a free-floating aquatic fern that lacks roots. This plant has two types of leaves, emergent and submerged. The emergent leaves are green and obovate in shape. They measure around 2.2 cm (1 in.) long and 1.3 cm (0.5 in.) wide at maturity. On the surface of the leaves are many hairs that split and then rejoin at the tips, forming a cage like structure (some sources say that they resemble egg beaters). These hairs are water repellent. The submerged leaves are brown and feather-like in appearance, and are often mistaken for roots.

Salvinia molesta has three stages of growth. In the first stage of growth, the emergent leaves are very small and lay on the surface of the water. In the second stage, the leaves start to curl at the edges. Finally, when the plants become tightly packed, the leaves take a more vertical position and pack together in chains.

Egg-shaped sporocarps that contain sporangia, which in turn contain the spores, are found within the submerged leaves. However, this plant is thought to be sterile in the United States, so often there are no spores in the sporangia.

SIMILAR SPECIES

Salvinia biloba Raddi (Giant salvinia)

Salvinia herzogii de la Sota (Giant salvinia)

Salvinia auriculata Aubl. (Eared watermoss)

Salvinia minima Baker (Water fern)

Salvinia molesta is part of a complex of extremely similar-looking species that include *S. biloba*, *S. herzogii*, and *S. auriculata*. All of these species are on the Federal Noxious Weed List.

Salvinia molesta also appears similar to *S. minima*. The key feature that differentiates these two species is that *S. minima* lacks the "egg beater" shaped hairs of *S. molesta*. Instead, the hairs of *S. minima* branch into four at the tips, but do not reunite at the top.

REPRODUCTIVE/DISPERSAL MECHANISMS

Salvinia molesta reproduces vegetatively by means of stem fragmentation. Since these plants are small, they can be easily moved by means of boats or waterfowl from one water body to another.

DISTRIBUTION

Salvinia molesta is native to Brazil. It has become invasive in many other parts of the world, such as Australia, New Zealand and Africa. In the United States this plant has been collected from North Carolina south to Florida and west to Texas, Arizona, California and Hawaii.

HISTORY OF INTRODUCTION IN NEW ENGLAND

Salvinia molesta has not yet been reported in New England.

HABITATS IN NEW ENGLAND

In its current range in the United States, *Salvinia molesta* is most often found in the calm waters of lakes and ponds. It can also be found in roadside ditches, slow-moving rivers, streams and water gardens. It cannot tolerate brackish water.

THREATS

Salvinia molesta is on the Federal Noxious Weed List due to the economic and environmental threats it poses. This plant is a rampant grower and can double its population in a week to ten days. It forms impenetrable mats (up to 3 ft. thick) that block sunlight and reduce oxygen in the water. It makes fishing, boating, swimming and other recreational activities impossible. It has had major detrimental impacts elsewhere in the world, which makes preventing its further spread in the United States a priority.

EARLY WARNING NOTES

Salvinia molesta is not yet reported in New England. Any sightings of this plant should be reported immediately.

MANAGEMENT LINKS

[Texas Agricultural Extension Service - Aquaplant](#)

[The Nature Conservancy](#)

DOCUMENTATION NEEDS

Documentation required: Photograph or specimen

Best time for documentation: Summer, early fall

ADDITIONAL INFORMATION

[Integrated Taxonomic Information System](#)

Taxonomic information

[PLANTS Database](#)

General information and map

[USGS Nonindigenous Aquatic Plant Distribution Information](#)

Comprehensive information

[The Nature Conservancy](#)Weed alert for *Salvinia molesta*[Arizona Department of Recreation](#)

Description and picture of this plant

[Texas Agricultural Extension Service - Aquaplant](#)

Photograph, drawing and general information

[Exotic Aquatics on the Move](#)

Background information

[Pacific Island Ecosystems at Risk \(PIER\)](#)

Information about the threat of this species

[Western Aquatic Plant Management Society](#)

Description and images

[United States Army Corps of Engineers](#)

Fact sheet

[National Invasive Species Information Center](#)

Additional links and references

[Invasive.org](#)

Images and links

[Center for Aquatic and Invasive Plants, University of Florida](#)

Images and a map

REFERENCES

Cary, P.R. and P.G.J. Weerts. 1984. Growth of *Salvinia molesta* as affected by water temperature and nutrition. III. Nitrogen-phosphorus interactions and effect of pH. *Aquatic Botany* 19: 171-182.

Cronk, Q.C.B. and J.L. Fuller. 1995. *Plant invaders*. Chapman & Hall, London.

Everitt, J.H., C. Yang, R.J. Helton, L.H. Hartmann, M.R. Davis. 2002. Remote sensing of giant salvinia in Texas waterways. *Journal of Aquatic Plant Management* 40: 11-17.

Fairchild, J.F., A.L. Allert, J.S. Riddle, D.R. Gladwin. 2002. Efficacy of glyphosate and five surfactants for controlling giant *Salvinia*. *Journal of Aquatic Plant Management* 40: 53-58.

Forno, I.W. and K.L.S. Harley. 1979. The occurrence of *Salvinia molesta* in Brazil. *Aquatic Botany* 6: 185-187.

Forno, I.W. 1983. Native distribution of the *Salvinia auriculata*

complex and keys to species identification. *Aquatic Botany* 17: 71-83.

Julien, M.H. and A.S. Bourne. 1986. Compensatory branching and changes in nitrogen content in the aquatic weed *Salvinia molesta* in response to disbudding. *Oecologia* 70(2): 250-257.

Lemon, G.D. and U. Posluszny. 1997. Shoot morphology and organogenesis of the aquatic floating fern *Salvinia molesta* D.S. Mitchell, examined with the aid of laser scanning confocal

microscopy. *International Journal of Plant Sciences* 158(6): 693-703.

Oliver, J.D. 1993. A review of the biology of giant salvinia (*Salvinia molesta* Mitchell). *Journal Aquatic Plant Management* 31: 227-231.

Room, P.M. 1983. "Falling apart" as a lifestyle: the rhizome architecture and population growth of *Salvinia molesta*. *Journal of Ecology* 71: 349-365.

Room, P.M. 1990. Ecology of a simple plant-herbivore system: biological control of *Salvinia*. *Trends in Ecology and Evolution*. 5: 74-79.

Room, P.M. and M.H. Julien. 1994. Population biomass and the absence of the $-3/2$ self-thinning rule in the clonal weed *Salvinia molesta*. *Australian Journal of Ecology* 19(1): 26-34.

Sale, P.J.M., P.T. Orr, G.S. Shell and D.J.C. Erskine. 1985. Photosynthesis and growth rates in *Salvinia molesta* and *Eichornia crassipes*. *Journal of Applied Ecology* 22, 125-137.

Thomas, P.A. and P.M. Room. 1986. Taxonomy and control of *Salvinia molesta*. *Nature* 320: 581-584.

USDA, NRCS. 2001. The PLANTS Database, Version 3.1. (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

DATA RETRIEVAL

Select a task by clicking the radio button and then click "Submit Selection."

- Formatted display as table
- Export as comma-delimited text file

MAPS OF PLANT DISTRIBUTION IN NEW ENGLAND

Select a study area by clicking the radio button and then click "Submit Selection."

- The whole New England area
- One or more states
- One or more counties
- One or more towns (county sub-divisions)

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