

You Ain't From Around Here! Exotic Invasive of the Quarter: Water Hyacinth (*Eichhornia crassipes*)

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This quarter, we'll take a look at water hyacinth. According to the Department of Conservation and Recreation, this species isn't officially in Virginia; but the USDA PLANTS Early Detection & Distribution Mapping System shows it being reported in Augusta County, Hampton, and Virginia Beach, so it may very well be unofficially here.

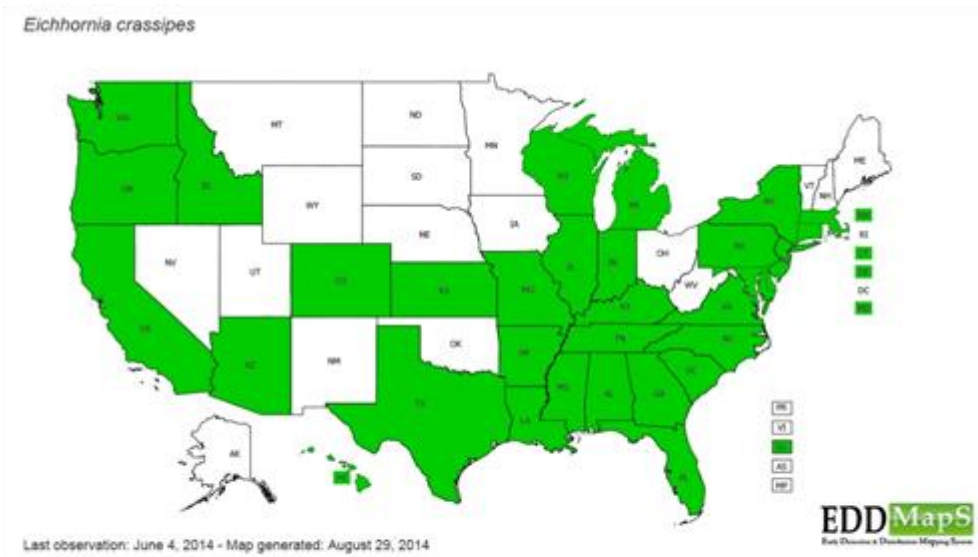
I'll be honest, when I began writing this article, I was totally uninspired and apathetic about water hyacinth. Aside from learning how to identify it during an aquatic plant lab in dendrology in the summer of 1997, I had little knowledge of it. This all changed as I started research for this article. Turns out, water hyacinth does not lack for interesting details. In fact, because of this plant, we almost had hippopotamuses in Louisiana. More on that shortly.

My obsessive Jeopardy watching has given me a strong appreciation for the etymology of words. *Crassipes* is from the Latin *pes* (foot) and *crassus* (foot) – ergo, fat foot. This refers to the inflated petioles at the base of the leaves. These give the leaves buoyancy and keep them afloat.

In addition to etymology, I also enjoy hyperbole. So learning that many aquatic plant scientists consider this to be the worst aquatic plant in the world and that it is one of the fastest growing plants known, certainly piqued my inter-est. While a single plant can produce as many as 5,000 seeds a year (which can remain viable up to 20 years), plants typically reproduce vegetatively from daughter plants that form from the roots. In one study, a single water hyacinth produced 1,200 daughter plants in just four months. Populations have been known to double in two weeks. In SE Asia, there are reports of water hyacinth growing between 6.5 – 16 feet a day. That's faster than kudzu.



Waterways infested with water hyacinth provide little habitat for wildlife species. Photo by Chris Evans, University of Illinois.



Current reported distribution of water hyacinth in the US.

Water hyacinth will grow in a wide variety of aquatic habitats, including lakes, ponds, rivers, wetlands and marshes. It can withstand drastic fluctuations in water level, flow rates, acidity and nutrient levels (although they especially like water with high nutrient content). Water hyacinth does not do well in brackish or salt water.

The plants are sensitive to cold temperatures, preferring a range between 54-86° F. Frost will kill the leaves, which may help keep this species under control in cooler parts of Virginia.

Water hyacinth doesn't come from too far away. It is native to tropical and subtropical South America. It has been widely introduced around the world, in North America, Asia, Africa, and New Zealand. In the US, it was introduced in 1884 at the World's Fair in New Orleans. The plants were given away as gifts by a group of visitors from Japan. Since those early days, water hyacinth quickly took hold in the US. It covers lakes and ponds, impacting water flow, blocking sunlight, and starving the water of oxygen. This kills fish and turtles, and breeds mosquitoes and a species of snail known to host a parasitic flatworm that causes snail fever. Fortunately, this isn't a common problem in the US, but it is in developing countries. Also, it has no direct food value to wildlife.

Over the years, some extremely, um, creative, attempts have been made to get this plant under control. The US War Department became involved in eradication efforts and dumped oil over many of the plants (let's not think too much about the residual damage from such a treatment!). But better yet, in 1910, the New Foods Society made a wonderful suggestion that would not only address the water hyacinth problem, but also the meat shortage problem the US was undergoing at the start of the 20th century.

The New Foods Society backed a bill that would introduce hippopotamuses from Africa into the bayous and rivers of Louisiana. The hippos would plump up eating water hyacinth and

then be harvested for food. This was known as the American Hippo Bill and as far as I'm concerned, would have been a win-win for everyone! Unfortunately for foodies, the bill fell one vote short of passing. I know this sounds nuts, but I verified that this is real. There's even a movie in the works called American Hippopotamus, with Edward Norton as one of the producers. I was recently in Baton Rouge and can say with some certainty, Louisiana would be a different place with hippos instead of nutria (the walking trail along the Mississippi River would undoubtedly be less popular). Anyway, enough about hippos.

How to identify water hyacinth

Form: Free-floating perennial plant.

Leaves: Densely veined; thick, glossy, and waxy; dark green; circular to elliptical, up to 6" long and 4" wide; held upright and act like sails; attached to a spongy inflated petiole (helps keep the plant afloat) up to 19" long.

Roots: Underwater; heavily branched; dark and fibrous; up to 50% of the plant's biomass.

Flowers: Six petals, light blue to violet, uppermost petal has a yellow spot; 2-3" long; 8-25 flowers per terminal spike.

Fruit/Seed: Capsule containing up to 450 seeds; seeds are small, oval at the base, and taper; production of seeds and seedlings is rare; seeds can remain viable for 20 years.



Clockwise from right:
Glossy leaves,
attractive purple
flowers, and inflated
petioles are
characteristics to help
easily identify water
hyacinth. Photos by:
Katherine Parys, USDA
ARS, Wendy VanDyk
Evans, and Leslie J,
Mehrhoff, University
of Connecticut.

How to Control Water Hyacinth

Mechanical: Hand-pull all plant parts, being careful not to break the plants (small pieces left behind will form new plants); bag and dispose. Must monitor for several growing seasons.

Chemical: Use a 2% glyphosate solution in a formulation made for aquatic application and spray over the foliage; avoid contact with non-target species.

Biological: Triploid grass carp will eat water hyacinth but also native plant species. You must be prepared to have desired species eaten as well if you choose this method. You may obtain a permit for triploid grass carp from the Virginia Department of Game & Inland Fisheries. Additionally, there are three insects that have been introduced to control water hyacinth. Two are beetles and the third is a moth. Although these insects do help reduce populations, other control methods are usually required.

As with many exotic invasive species, there are mixed messages out there. During my research I found a site called “Caring for your new water hyacinth”. And while the article acknowledges that it is a noxious weed, it also gives detailed information on the growing and fertilization of water hyacinth. To be fair, this site is from Iowa, where winters are severe enough to keep these plants in check. But still, a few warm winters, and who knows? I always say, better to be safe than sorry and stick with planting natives. Because I’m pretty certain the residents of Iowa don’t want hippos in their waterways.

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