

## Brazilian waterweed (*Egeria densa*)

**History:** Brazilian waterweed is native to Argentina, Brazil, Paraguay, and Uruguay and was introduced to North America through aquarium trade. It was first reported in New York in 1893. In addition to being a popular aquarium plant, it is frequently used for biology education and research. It is now widely distributed throughout the world and found on all continents except Antarctica.

**Identification:** A member of the Hydrocharitaceae family, Brazilian waterweed is a freshwater, perennial herb. It generally roots one to two meters below the water surface, but can root up to seven meters below the surface. It is a bushy plant with dense whorls of bright green leaves (Figure 1). Each whorl has four to eight leaves and leaves are one to three centimeters long. The leaves are minutely serrated and linear (Figure 2). The undersides of the leaf midribs are smooth and have no teeth. Stems are erect, cylindrical, simple or branched, and grow until they reach the water surface where they form dense mats.

**Impacts:** Stems can form dense monocultures over large areas and produce substantial biomass relatively quickly (Figure 3). A Brazilian waterweed invasion can alter aquatic systems and crowd out native aquatic plants. Additionally, Brazilian waterweed can decrease water flow and cause clogging of equipment, affecting irrigation, drinking water supply systems, and hydroelectric generation systems.

**Habitat:** Brazilian waterweed grows in standing or slow-flowing freshwater systems. It especially thrives in warm, slow-moving water that has high nutrient availability.

**Spread:** Brazilian waterweed reproduces both by seed and vegetatively in its native range, although only vegetative reproduction has been reported in North America. Vegetative reproduction primarily occurs by fragmentation, in which fragments take root and grow when two or more nodes are present. Since Brazilian waterweed fragments easily, it can spread to new areas through the movement of plant fragments by boats or other water recreational equipment. Brazilian waterweed also spreads when people dump their aquarium plants into water bodies.

**Management:** Brazilian waterweed has not been reported in Montana, but it is currently being considered for listing as a regulated plant (Priority 3). It is present in nearby states like Idaho, Washington, and Oregon. It is unknown whether it would be able to establish in the relatively cold climate of Montana; freezing is reportedly lethal. Since aquatic plants can be very difficult to eradicate or control, prevention followed by early detection and rapid response is critical for management in Montana. Control of established plants is possible with herbicides such as diquat, fluridone, and penoxsulam. Mechanical removal as the only control measure of well-established populations is believed to be ineffective. However, control of small populations by mechanical means may be effective if fragments and roots are completely removed.



Figure 1. Plant with dense whorls of bright green leaves.



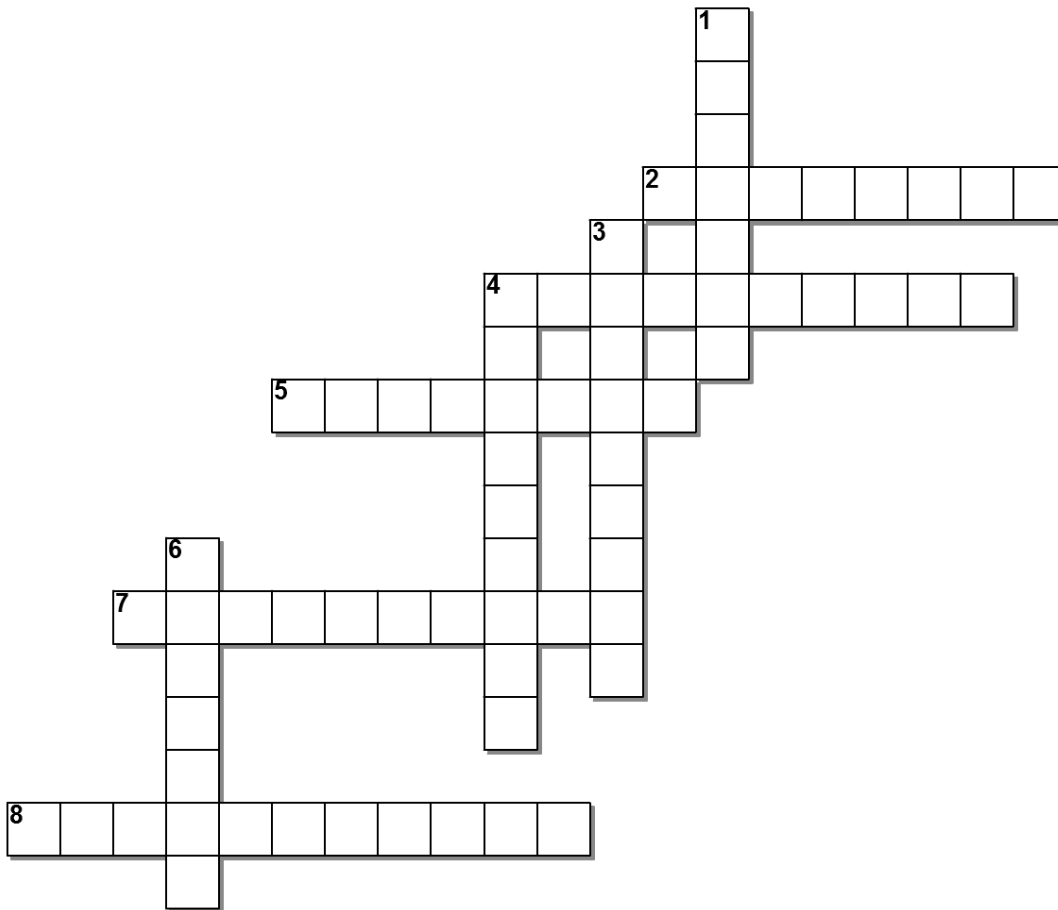
Figure 2. Linear leaves with serrated edges.



Figure 3. Brazilian waterweed forming a dense mat.

## Test your knowledge of Brazilian waterweed

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**Across:**

- 2 Hard to imagine in July, but this type of weather may kill Brazilian waterweed
- 4 Best management action for Brazilian waterweed in Montana
- 5 This trade is allegedly responsible for the introduction of Brazilian waterweed to North America
- 7 Type of reproduction that Brazilian waterweed employs in its introduced range
- 8 Scientific name for Brazilian waterweed

**Down:**

- 1 Leaf arrangement of Brazilian waterweed
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- 4 Brazilian waterweed life history
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Solutions are posted to the MSU Extension Invasive Rangeland Weed website:

<http://www.msuextension.org/invasiveplantsMangold/extensionsub.html>

