

Water Shield information

Provided by Sam Friedman, Botanist, FWS

Among our most easily identified floating-leaved aquatic plants is water-shield, *Brasenia schreberi*, of the family Cabombaceae (some place it in the Nymphaeaceae). It is widely distributed, and occurs in 42 states, including Alaska, and the majority of Canada. The species is also native to Central America, northern South America, the West Indies, Asia, Africa, Australia, and beyond.

Water-shield leaves are oblong and three- to four-inches long. Its leaf stalk (petiole) attaches in the middle of the leaf, umbrella-like, and extends to the muddy bottom where it originates from a running stolon.

Preferred habitat includes relatively clear lakes, ponds, and slow moving streams. In our area, it is found north of Lake Pontchartrain, most commonly in waterways rich in tannins. Water-shield prefers rather shallow water up to six feet deep.

The petioles and undersides of the leaves are maroon, and they are coated with a gelatinous film. This clear, slimy, jelly-like substance is slippery, but not sticky. No other floating leafed plant in our area has this characteristic. Oddly, it is difficult to find information on the function of the slime. You might assume it protects the petioles and leaves from certain underwater predators.

Water-shield flowers are emergent, dull purple, and bloom in late spring and summer. Small beetles and/or the wind pollinate them. Each flower's ten or more fruit are small, ovoid, and each contains two seeds that are released underwater when the fruit tissue decomposes. The plants also commonly reproduce asexually as the stolon grows through the substrate.

Water-shield is known to have phytotoxic (toxic to plants) properties. They kill certain algae and bacteria, as well as some vascular plants. This allelopathic (plant killing) nature may explain why the water around their colonies is usually clear and open.

The Japanese and Native Americans utilize(d) water-shield for food. They harvest the unfurling leaves as they ascend through the water column. The species also has medical applications, with the astringent qualities of the leaves used to treat boils and related infections.

The creeping rhizomes and young leaves were used for food by Native Americans. The Japanese use the young leaves and stems in salads and miso soup. The starchy roots can be peeled, boiled and eaten or dried and stored or dried then ground into flour. But they must be peeled or they are too bitter to eat. Nutritionally per 100g weight the Water Shield has 135 calories and is 9.5% protein; 2.7% fat; has 24.3 carbs; 1.4 grams fiber; 122 mg of calcium; 311 mg phosphorus; 27 mg Iron; Vitamin A; 27 mg; thiamine; 135 mg; niacin, 0.41; vitamin C, 0.5 mg.

A number of animals, including certain ducks, feed on water-shield. Because it grows densely, while leaving exposed water surface due to its relatively small leaf size, water-shield communities tend to have abundant submerged animal communities. They are good for "perch jerking."

The only negative I have heard is that their growth inhibits swimming. I can attest, however, along with my botanical mentor, the late Dr. John Thieret, that swimming through a dense growth of water-shield is an exhilarating experience!

