

Water Primrose, or Floating Primrose Willow

Ludwigia peploides

Origin: Tropical and subtropical America

Background: Water primrose, known commonly by its scientific name *Ludwigia peploides*, is an invasive aquatic perennial that has invaded many waterways, most notably throughout France, and is now an emerging concern in the United States.

In 2003, *L. peploides* was first observed on the Peconic River. Prospect Park in Brooklyn is the only other site on Long Island where it has been found growing wild. This plant's ability to quickly reproduce, coupled with the damaging effects it has on native species, prioritizes the removal of *L. peploides* from the Peconic Estuary System. Since the arrival of the water primrose in the Peconic River, recreation in Peconic Lake has been impaired—the dense mats of vegetation make boating and fishing nearly impossible.



Ludwigia on Peconic Lake. Photo by Marilyn Jordan.

Habitat: Ditches, riverbanks, ponds, slow moving streams, and along margins of lakes and reservoirs. The major growth requirement for this species is submerged roots.

Ecological Threat: The water primrose poses many ecosystem threats due to its rapid and extensive growth. French studies indicate that *Ludwigia* species are able to double their biomass in 15 to 20 days in slow-flowing waters and in about 70 days in rivers, allowing for the rapid destruction of native ecosystems. This species can quickly block waterways, interfering with human uses of water systems such as boating, swimming, and fishing. Water primrose also reduces biodiversity and degrades water quality by decreasing pH and dissolved oxygen content. Because its leaves are above the water surface, *Ludwigia* does not add much oxygen, if any, to the water column and shades out submerged plants below that could add oxygen to the water column.

Description and Biology:

Plant: Floating aquatic perennial herb of the Evening primrose, or Onagraceae, family, sometimes forms mats. Flower bearing stems are weakly upright with lance-shaped leaves. Stems have little to no hair. The stems are purple in color and are rooted, but most of the stem floats on the surface of the water.

Leaves: Leaves occur alternately on the stem, and are net-veined (as opposed to grass-like leaves which are parallel veined). The leaves are elongate with smooth outer margins, and have long petioles.

Flowers, fruit, and seeds: Flowers are approximately one inch wide with five petals, and occur on stalks 1 to 5 cm long. Foliage may differ according to growing area. The fruit is a cylindrical capsule containing many seeds, which are yellowish, oval, and less than 1 mm long.

Dispersal: Fragmentation of stems is the main mode of dispersal. The role of seeds in dispersal has not been studied extensively, but seeds have been germinated in the laboratory.

Identification: *Ludwigia peploides* may be mistaken for swamp loosestrife (*Decodon verticillatus*) when not in flower. The two plants can be distinguished from one another by their leaves. *Ludwigia* has leaves that alternate up the stem, while swamp loosestrife has leaves that occur opposite one another.

Prevention and Control: *Ludwigia* must be pulled manually before it establishes a large colony. It is wise to place filters downstream from the infestation before pulling to prevent the further spread of the species. Once all plant matter is removed it should be placed in two garbage bags and left out in the sun for several days. No effective biological control methods have been found for this species. As with all invasive species removals, solutions suitable to individual sites must be implemented.

Native Alternatives: Unfortunately, the water primrose is still being sold as a decorative species. Never purchase or plant *Ludwigia peploides*. Try a native alternative, such as marsh marigold (*Caltha palustris*) instead, and help protect the Peconics!