
Florida Department of Agriculture and Consumer Services
Division of Plant Industry

***Nymphoides peltata*, Yellow Floating Heart, Fringed Water Lily, a Recently Listed State Noxious Weed**

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INTRODUCTION: The perennial, emergent aquatic plant, *Nymphoides peltata* (S.G. Gmel.) Kuntze (Menyanthaceae), has been added to the Florida Noxious Weed and Invasive Species List. This plant was proposed for listing and evidence was presented to the Noxious Weed and Invasive Plant Review Committee. Numerous ecological studies and weed assessments by the United States Department of Agriculture and the University of Florida provided information. *Nymphoides peltata* has not yet altered natural plant communities nor become widely naturalized in Florida, but it is an aggressive pest plant known to develop dense mats that can quickly cover lakes and ponds. This species has become naturalized in 25 states and is regulated in Connecticut, Maine, Massachusetts, Oregon, Vermont and Washington. Adding this species to the list will regulate the introduction of this invasive species into Florida through the nursery trade.

The committee found that the species exhibited the following invasive characteristics:

- vegetative reproduction from plant fragments
- rapid colonization of fresh water bodies
- seed dispersal by birds and flotation
- spread by heavy rains from outdoor water gardens to other water bodies
- persistent roots, rhizomes and leaf fragments that make control difficult after establishment

Restricted light availability to species below the water surface by mats of *N. peltata* reduce habitat for native plants. The decay of this dense vegetation creates low-oxygen conditions in the water below, causing stagnant areas and having negative impacts on water quality, fish and wildlife habitat, and recreational activities such as swimming, boating and fishing. Based on the potential for invasion of natural areas by this species, *N. peltata* is now included on the list of regulated plants in Florida. It is unlawful to introduce, multiply, possess, move or release any noxious weed or invasive plant regulated by the Florida Department of Agriculture and Consumer Services, except under permit issued by the department.

IDENTIFICATION: Yellow floating heart is a rhizomatous perennial aquatic plant (Fig. 1) that is usually rooted in shallow waters, but small vegetative propagules may be free-floating. The leaves typically float on the water surface. Most leaves are alternately arranged, but those toward the end of the stem may be opposite or subopposite. The leaf blades are somewhat leathery, ovate to circular in outline, with a cordate (heart-shaped) base. Leaves are often reddish or purplish below with slightly wavy and shallowly scalloped leaf margins. Clusters of flowers are borne at the distal stem nodes, developing under water then rising above the surface at maturity. Yellow floating heart has a corolla that is golden yellow in color and measures 2.5–4 cm (1–1½ in) wide, with finely fringed petal margins (Fig. 2). The fruit are capsules, up to 2.5 cm (1 in) long, bearing numerous flattened seeds with densely ciliate margins that facilitate attachment to bird feathers, especially those of waterfowl.





Fig. 1. *Nymphoides peltata*, yellow floating heart, a perennial, emergent aquatic.
Photography credit: David Cappaert, courtesy of Bugwood.org



Fig. 2. *Nymphoides peltata*, yellow floating heart, distinguished by its consistently golden yellow flowers. Note the finely fringed petal margins.
Photography credit: Spencer C.H. Barrett, University of Toronto, used by permission.

SIMILAR SPECIES IN FLORIDA: Five species of *Nymphoides* occur in Florida. (*Nymphoides aquatica* and *N. cordata* are native, while *N. cristata*, *N. indica* and *N. peltata* were introduced to Florida through the aquatic plants trade and subsequently escaped from cultivation. All bear flowers with five white petals, except yellow floating heart which has five golden yellow petals. Water lilies in the genus *Nymphaea* are also floating aquatic plants, but they have eight or more petals and numerous stamens.

DISTRIBUTION: Yellow floating heart is native to temperate Asia and Europe and is typically found in still, shallow waters, such as ponds, lakes and canals, but may also occur in slow-moving streams. This species has become naturalized in parts of the eastern, central and western United States and eastern Canada. In Florida, yellow floating heart has thus far escaped from cultivation only in Orange County.

DETECTION AND MITIGATION STRATEGIES: This ornamental species cultivated for ponds is most likely to be found in aquatic nurseries or in lakes or canals where it has been accidentally or intentionally released. The five-petaled yellow flower is distinctive. Mechanical control by hand raking or dredging is difficult because plant fragments from rhizomes, leaves and stems can form new plants. Disturbances caused by boats and flooding increase fragmentation and dispersal of this species. The University of Florida provides information about control of other species of *Nymphoides* (<https://edis.ifas.ufl.edu/ag354>) that could be useful, but consulting your local county Extension agent is strongly recommended if you discover an infestation of this plant.

ADDITIONAL INFORMATION: This species has been known by several earlier names that are no longer accepted, including the following:

- *Limnanthemum peltatum* S.G.Gmel.
- *Menyanthes nymphoides* L.
- *Nymphoides flava* Druce.
- *Nymphoides natans* J. St.-Hil.
- *Nymphoides nymphaeoides* (L.) Britton
- *Villarsia nymphoides* (L.) Vent.

See the DPI publication *Weed of the Month* for more information. <http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Plant-Industry-Publications/Weed-of-the-Month> .

REFERENCES:

- Center for Aquatic and Invasive Plants. 2014.** Crested floating heart -- *Nymphoides cristata*: non-native to Florida. Institute of Food and Agricultural Sciences, University of Florida. Gainesville, Florida. <http://plants.ifas.ufl.edu/node/291> [accessed 2014 September 19].
- Plant Epidemiology and Risk Analysis Laboratory. 2012.** Weed risk assessment for *Nymphoides peltata* (S. G. Gmel.) Kuntze (Menyanthaceae) – yellow floating heart. United States Department of Agriculture. Raleigh, North Carolina. 15 p. http://www.aphis.usda.gov/plant_health/plant_pest_info/weeds/downloads/wra/Nymphoides_peltata_WRA.pdf [accessed 2014 September 18].
- National Biological Information Infrastructure (NBII) and IUCN/SSC Invasive Species Specialist Group (ISSG). 2006.** *Nymphoides peltata*. Global Invasive Species Database. 1 p. <http://www.issg.org/database/species/ecology.asp?si=225&fr=1&sts=sss&lang=EN> [accessed 2014 September 18].
- DiTomaso, J.M. (ed.). 2013.** Weed control in natural areas in the western United States. Weed Research and Information Center, University of California. Davis, California. 544 p. http://wric.ucdavis.edu/information/natural%20areas/wr_N/Nymphoides.pdf [accessed 2014 September 18].
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