

HYDRILLA VERTICILLATA (L.F.) ROYLE

Hydrocharitaceae/Frog's-Bit Family

Common Names: Hydrilla, water thyme, Florida elodea, waterweed

Synonymy: None

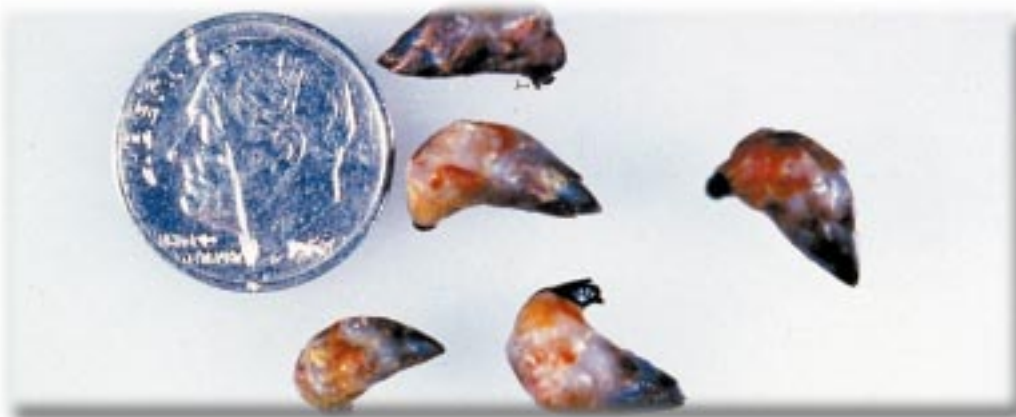
Origin: Warmer regions of Old World

Botanical Description: Submersed, usually rooted, aquatic perennial herb with slender ascending stems to 9m (30 ft) long, heavily branched. Stems from slender rhizomes, these often tipped with a small tuber. Leaves whorled, 3-8 per whorl, 2-4 mm (0.1-0.2 in) wide and 6-20 mm (0.2-0.8 in) long, bearing coarse (visible) teeth along the margins and usually 1-4 small conical bumps along underside of midrib, which is often red. Fleshy axillary buds (turions) often formed at leaf axils, to 5 cm (2 in) long, with 3 sepals and 3 petals, each about 4 mm (0.3 in) long, whitish or translucent, floating at water surface. Male flowers detached and free floating at maturity, with 3 sepals and 3 petals, white to reddish brown, about 2mm long, releasing floating pollen from stamens when flower pops open at water surface.

NOTE: May be confused with another invasive non-native submersed aquatic, *Egeria densa* Planch., Brazilian waterweed, which has close whorls of 3-6 leaves usually 2-3 cm long, with minute teeth on margins and no conical bumps on midrib below.

Ecological Significance: Introduced in Florida waters in 1960 and spreading to all drainage basins in the state by the early 1970's (Langeland 1996). By 1991, found in 41% of Florida's public water bodies (Schmitz *et al.* 1993); by 1994, found in 43% (182), with an estimated coverage of 38,500 ha (95,000 acres) (Schardt 1997). Competitively displaces native submersed plant communities (Haller and Sutton 1975, Bowes *et al.* 1977). In dense stands, alters fisheries populations (Colle and Shireman 1980), causes shifts in zooplankton communities (Schmitz and Osborne 1984), and affects water chemistry (Canfield *et al.* 1983).

KAL



Tubers

Distribution: Found on every continent except Antarctica (Cook and Lüönd 1982). In the United States, dioecious plants (fortunately just 1 sex, female) found in Florida, Georgia, Alabama, Tennessee, Mississippi, Louisiana, Texas, California, and Connecticut; monoecious plants found in Maryland, Delaware, Washington, and Washington, D.C.; both types found in the Carolinas and Virginia (Netherland 1997).

Life History: Readily dispersed by movement of plant fragments (Langeland and Sutton 1980). Can produce up to 6,000 tubers per m² (Sutton *et al.* 1992). Tubers viable for several days out of water (Basiouny *et al.* 1978), for over 4 years in undisturbed sediment (Van and Steward 1990), and after ingestion and regurgitation by waterfowl (Joyce *et al.* 1980). Can produce nearly 3,000 turions per m² (Thullen 1990). Viable seed produced by monoecious plants, but their importance to dispersal not known (Langeland and Smith 1984). Female dioecious plants from Florida found able to cross with monoecious strains and produce viable seed under laboratory conditions (Steward 1993).

WH



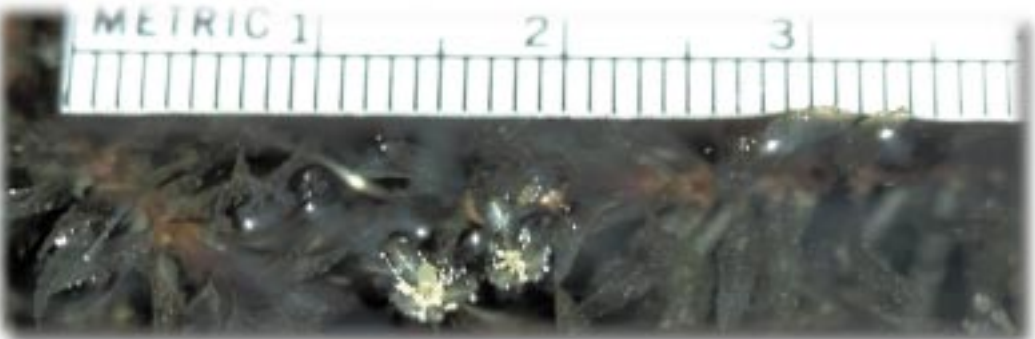
In Lake Trafford, Collier County

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Turions

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Female flowers