

KEEP A LOOK OUT

for **NEW AQUATIC INVASIVE PLANTS** in the Midwest!






These species could be spreading in your area. *Early detection and eradication* can prevent an invasion!

To report a sighting, please contact: <http://www.mipn.org/EDRRContacts.html>







FLOWERING RUSH

POND WATER-STARWORT

SWAMP STONE CROP








BRAZILIAN WATERWEED





WATER HYACINTH

REED MANNA GRASS





HYDRILLA



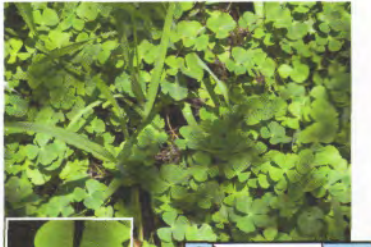



EUROPEAN FROGBIT





INDIAN SWAMPWEED


EUROPEAN WATER CLOVER





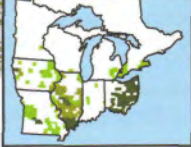
PARROT FEATHER





EURASIAN WATERMILFOIL





BRITTLE WATER NYMPH





YELLOW FLOATING HEART






WATER LETTUCE





WATER CHESTNUT

The maps show current reported distribution in the Midwest, including Ontario.

- Not known
- Isolated (→ = single county reports)
- Locally abundant
- Widespread
-  = Also sold in the aquatic plant trade

Last updated July 2008

See reverse side for species descriptions

Help Stop the Spread of **AQUATIC INVASIVE PLANTS**



FLOWERING RUSH (*Butomus umbellatus*) **Emergent, perennial herb** (can be submersed in deep water). **Emergent leaves** 3 feet tall, stiff, narrow, and triangular in cross-section. **Flowers** with 3 petals and 3 sepals, white or pink, in a distinctive flat-topped spray atop a tall stalk. **Spreads** by rhizomes and root pieces.

POND WATER-STARWORT (*Callitriche stagnalis*) **Perennial herb** with stems from 4 - 12 inches long. **Leaves** opposite, floating or submersed. **Floating leaves** oval or spoon-shaped with 5 - 7 veins, 0.1 - 0.3 inches wide and up to 0.8 inches long. **Submersed leaves** linear, with 1 vein, 0.2 - 0.4 inches long (can resemble floating leaves). **Flowers** tiny, located in the leaf axils. **Fruits** nearly round, 0.06 - 0.08 inches thick with a thin winged margin. **Spreads** by plant fragments and seed.

SWAMP STONE CROP (*Crassula helmsii*) **Perennial aquatic or semi-terrestrial, succulent herb** with round stems 4 - 12 inches long, floating or creeping with roots forming at the nodes. **Leaves** opposite and succulent, 0.2 - 0.8 inches long, 0.03 - 0.06 inches wide, linear-lanceolate to ovate-lanceolate, acute. **Flowers** white or pinkish, with 4 petals born singly, 0.12 - 0.14 inches wide. **Fruits** follicles, with 2 - 5 round, tiny, smooth seeds. **Spreads** by fragments and buds (turions).

BRAZILIAN WATERWEED (*Egeria densa*) **Submersed, perennial herb**. Very bushy, rooted in water up to 20 feet or drifting. Lacks specialized storage organs, such as tubers. **Stem** single or branching. **Leaves** bright green, 0.8 - 1.2 inches long, up to 0.2 inches wide, usually in whorls of 4 - 6 in short intervals along stem (bushy appearance). **Leaf edges** minutely serrated. **Flowers** white, 0.7 - 1 inch across, with 3 petals. **Spreads** by plant fragments.

WATER HYACINTH (*Eichhornia crassipes*) **Free-floating, perennial herb**. **Leaves** entire, round, waxy, up to 6 inches wide, with floating, air-filled petioles, and growing in rosettes. **Inflorescence** a showy spike of 8 - 15 light purple, six-petaled flowers. **Roots** dark purple to black, feathery, and hanging beneath submersed leaves. **Fruit** three-celled capsule, rarely observed. **Spreads** vegetatively by new rosettes formed on floating stolons.

REED MANNA GRASS (*Glyceria maxima*) **Emergent, perennial grass** 1.5 - 8 feet tall. **Stem** unbranched. **Leaves** flat, 9 - 12 inches long and 0.3 - 0.8 inches wide with prominent mid-ribs. **Leaf sheath** closed for most of length. **Leaf edges** with short, stiff hairs, rough to the touch. **Inflorescence** open with many branches (panicle), strongly drooping at maturity with 50+ flattened, egg-shaped spikelets, each with 4 - 10 minute flowers. **Spreads** by rhizomes and seed.

HYDRILLA (*Hydrilla verticillata*) **Submersed, perennial herb** rooted in saturated soil, in water up to 20 feet deep. **Stem** slender, branching, up to 25 feet long. **Leaves** green, 0.6 inches long with pointed tips, in whorls of 3 - 10, 0.13 - 2 inches apart on stem. **Leaf edges** saw-toothed, rough to touch. **Male and female flowers** on separate plants. **Spreads** by plant fragments, buds (turions) and tubers.

EUROPEAN FROGBIT (*Hydrocharis morsus-ranae*) **Free-floating herb**, similar to a miniature water lily. **Leaves** leathery, heart-shaped, 1 - 2 inches wide, smooth-edged with spongy, purplish-red undersides. **Flowers** 0.5 inches across appear singly with 3 white petals and yellow centers. **Roots** 3 - 8 inches long, unbranched, dangle from the underside of each rosette. **Spreads** by fragments and buds (turions).

INDIAN SWAMPWEED (*Hygrophila polysperma*) **Submersed** (partly emersed), **perennial herb**. **Stems** creeping to 6 feet in length, brittle. **Leaves** opposite, round, hairy, with pointed tips, light green to brown or red, up to 3 inches long. **Flowers** small, white with 2 lobes on upper lip and 3 lobes on lower lip, solitary in leaf axils. **Roots** numerous on stem. **Spreads** by plant fragments.

EUROPEAN WATERCLOVER (*Marsilea quadrifolia*) **Herbaceous, perennial fern** with floating or emersed leaves when rooted underwater. **Leaves** composed of 2 double leaflets that give it a four-leaf clover appearance; leaves not hairy. New leaves emerge as fiddleheads. **Spreads** by rhizomes and spores, producing sporocarps that are thick, oval, and hairy.

PARROT FEATHER (*Myriophyllum aquaticum*) **Emergent, perennial herb** with leaves trailing on water surface. **Stems** up to 5 feet long, become erect at the tips and can emerge up to a foot above the water surface. **Leaves** oblong, feathery, 0.5 - 2 inches long, in whorls of 4 - 6 around the stem. **Flowers** inconspicuous, white. **Spreads** by plant fragments.

EURASIAN WATERMILFOIL (*Myriophyllum spicatum*) **Submersed, perennial herb**. Like native milfoils, **stems** slender, whorled by submersed, feathery leaves and tiny flowers produced above the water surface. **Stem** thickens below the inflorescence and doubles its width further down. **Leaves** threadlike, 9 - 21 pairs of leaflets per leaf, typically uniform in diameter. **Flowers** four-petaled or without petals. **Fruits** nut-like bodies, four-jointed. **Spreads** by plant fragments.

BRITTLE WATERNYMPH (*Najas minor*) **Submersed, annual herb** up to 4 feet long. **Stems** slender with many branches. **Leaves** opposite, linear, toothed, stiff, curled, 1 - 2 inches long. **Flowers** small, inconspicuous, and born singly in the leaf axils. **Spreads** by seed and plant fragments.

YELLOW FLOATING HEART (*Nymphoides peltata*) **Rooted, perennial herb** up to 3 feet long with floating leaves. **Leaves** arise from long stalks attached to creeping rhizomes on bottom. **Leaves** heart-shaped to round with wavy margins, purplish underneath. **Flowers** bright yellow, with 5 fringed petals, arranged on stalks of 2 - 5 flowers. **Fruit** a small capsule. **Spreads** by seeds, rhizomes, stolons and plant fragments.

WATER LETTUCE (*Pistia stratiotes*) **Floating, perennial herb**. Resembles a head of lettuce. **Leaves** thick, dull, light green, up to 6 inches long, covered in soft hairs with ridged parallel veins. **Flowers** inconspicuous, clustered on small, fleshy stalk in leaf axils. **Roots** feathery. **Spreads** by producing many secondary rosettes.

WATER CHESTNUT (*Trapa natans*) **Rooted, annual herb** with a leafy rosette that floats on the surface. **Stems** up to 16 feet long, with 2 types of leaves. **Submersed leaves** feathery, whorled along the stem and up to 6 inches long. **Emergent leaves** triangular, 1 - 2 inches long, waxy with toothed edges. **Leaf stems** with bladder-like swelling. **Flowers** small, white with 4 petals. **Fruit** 1 inch wide, hard nut with 4 stout barbs. **Spreads** by seeds and plant fragments.

HELP STOP THE SPREAD OF AQUATIC INVASIVE PLANTS!
AQUATIC INVASIVE PLANTS SPREAD AS WATER GARDEN PLANTS, AS CONTAMINANTS ON NON-INVASIVE WATER GARDEN PLANTS, AS HITCHHIKERS ON BOATS AND OTHER WATER VEHICLES, AND THROUGH DUMPING OF UNWANTED PLANTS OR PLANT PARTS FROM AQUARIUMS.

To stop the spread of aquatic invasive plants, follow these rules: **1) Do not release** aquatic invasive plants into any waters; **2) Rinse your aquatic garden plants** before planting; **3) Keep aquatic plants contained** in your water gardens; and **4) Clean all recreational vehicles and trailers** before leaving any lake or river.

PHOTO CREDITS: Emmet Judziewicz-UW Stevens Point; Bill Smith-WI DNR; Peter Llewellyn; Amy Richard, Vic Ramey, Ann Murray, Bill Haller and Allison Fox - University of Florida/IFAS Center for Aquatic and Invasive Plants; Kim Bogenschutz-IA DNR; Nancy Tessmer-WI; Debbie Maurer, Lake County Forest Preserve District, IL; Robert H. Mohlenbrock @ USDA-NRCS PLANTS Database / USDA NRCS; Carl Farmer; Chester Mehrhoff, L. J., University of Connecticut; W.D. Bakowsky, NHIC Archives.