



Origin	South America
Description	Spawling perennial, forming floating mats on water surface or in shallow water, extending many meters across the water surface. Also grows on land. Toxic for cattle. Very serious weed threat, adaptable plant, difficult to control.
Leaves	Opposite, glossy spear-shaped, 2–7 cm long. Margins entire.
Flowers	Single, white, papery, pom pom-like on stalks that arise from the leaf axils. 1.2–1.4 cm diameter.
Stem	Completely hollow when growing in water, reddish-brown colour on land.
Roots	Extensive root system to 1 m deep.
Dispersal	Does not produce viable seed in Australia. Able to regenerate from fragments, spread by contaminated soil, earth-moving machinery, boating equipment, water. Also spread by misguided use as culinary herb.
Control	Manual removal, foliar spray glyphosate at 10 ml/L (aquatic use only). Spray with metsulfuron-methyl at 1 g/10L water in terrestrial situations only. Multiple, repeat applications are necessary. Notify your local weeds officer for more advice.



Origin	South America
Description	Cabomba is strictly aquatic and completely submerged except for its flowers and occasional floating leaves. The roots attach to the bottom of the water body and stems can be up to 10m long, but usually range up to 5m.
Leaves	Opposite, submerged, fan-like and feathery.
Flowers	Raised 1–4cm above the water surface on stalks. Milk-white, pale yellow or purplish (usually white petals with yellow centres), and appear to have 6 petals (3 of these are sepals). Flowers emerge from the water during the day and recede into the water overnight. The raised flowers are often the first visible signs of an infestation.
Stem	Seasonally purple to 10m long, break easily when disturbed, creating thousands of fragments, all capable of spreading and reproducing.
Dispersal	Has spread by seed in N.T. Usually spreads by fragments.
Control	Currently registered herbicides are only partially effective. Draining of a water body can be effective, particularly in smaller dams or retention ponds. Stems and leaves must be exposed until they and the substrate are completely dry. Care must be taken to ensure that Cabomba is not spread to other water bodies in the drained water. Shading can be created by floating blankets made from builders' black plastic. This must be maintained over a period of 3 or 4 months to kill plants. Manual removal can be useful for small infestations or as a follow-up method to remove regrowth. It requires plants to be pulled up by the roots, either while wading through shallow water or by diving.



- Origin** North America, South Asia and Europe
- Description** Hygrophila is a mat-forming herb, growing up to 1.5 m high in shallow water, forming mats around the margins of freshwater lakes and watercourses.
- Leaves** Opposite, 18 cm long and 3 cm wide with prominent midrib. Hairy underneath.
- Stems** Upper stems are 4-angled, erect and rarely branched, lower stems are prostrate and root at nodes. Stems may have a red to purplish colour.
- Flowers** Inconspicuous white flowers in whorls in leaf axils, all year.
- Fruit** The fruit capsules are about 7 mm long, spindle-shaped and inconspicuous.
- Seed** Seeds are pale brown, flattened, round, about 0.3 mm wide and become sticky when wet.
- Dispersal** Spreads by fragments and by water-dispersed seed. The sticky seed may also adhere to wildlife, machinery, watercraft and humans. Spreading stems sprout new growth from nodes when in contact with soil.
- Control** Mechanical or hand removal for small, isolated infestations. Take care to dispose of the material appropriately; avoid fragmenting the plant and leaving behind pieces that could start new infestations. Prevent livestock access to reduce risk of spread. Foliar spray with glyphosate at 10 ml/L (aquatic use only). Metsulfuron-methyl may also be used at 1 g/10L water. Don't spray directly onto water surface. Don't spray more than 3 times/yr, avoid water pollution.

HYMENACHNE

Hymenachne amplexicaulis

Weed of National Significance

Noxious Weed Class 1



- Origin** South and Central America
- Description** Hymenachne is a semi-aquatic perennial erect grass that can grow in water up to 2m deep. It prefers swampy situations such as riverbanks and seasonally flooded areas.
- Leaves** Leaf blades are 20–35 cm long and 2–3 cm wide. A distinctive characteristic of Hymenachne is that the base of the leaf blade clasps around the stem.
- Stems** Hairless, up to 1.6m tall and containing a white pith. Submerged stems quickly produce roots from nodes.
- Flowers** The flower-heads are spike-like and cylindrical, about 8 mm wide and up to 40 cm long. The plant flowers in summer and autumn.
- Dispersal** Reproduces by seed, broken stem fragments and stolons. A large number of viable seeds are produced and require contact with waterlogged or moist soil for at least 48 hours before germination can occur. Germination can occur all year round. Stolons run along the ground and produce roots at each node, forming a new plant. Seeds and broken fragments of plant can be carried to new locations by floodwater and will take root in moist soil. It thrives in nutrient-rich water. Also dispersed in mud attached to waterbirds or in contaminated stock feed.
- Control** Manual or spraying with glyphosate at 10 ml/L, max. of four times per year.

KIDNEY LEAF – MUD PLANTAIN

Heteranthera reniformis



- Origin** North America, South Asia and Europe
- Description** Kidney Leaf – Mud-Plantain is an aquatic plant that grows in shallow water, usually less than 20 cm deep. Kidney Leaf – Mud-Plantain forms dense mats that usually emerge 10–30 cm above the water surface.
- Leaves** The majority of leaves are alternately arranged along the stems, but some are occasionally grouped into clusters (i.e. rosettes). The bright green and glossy leaves are borne on stalks 2–13 cm long and are kidney-shaped (1–4 cm long and 1–5 cm across).
- Stems** The underwater stems produce roots at their joints, particularly where they come into contact with soil, while other stems usually spread across the water surface.
- Flowers** The flowers are arranged in short clusters (i.e. racemes) 1–5 cm long that emerge from two small sheath-like structures. Each cluster contains 2–10 small flowers, which bloom approximately three hours after sunrise and wilt by early afternoon. The delicate white or pale blue flowers have six petals (3–6.5 mm long), with one of the petals having yellow or greenish markings at its base.
- Fruit** The fruit is a small capsule containing 8–14 tiny winged seeds less than 1 mm long.
- Dispersal** Reproduces by seed as well as vegetatively. Seeds and plant fragments may also be dispersed in mud that becomes attached to animals and vehicles.
- Control** No herbicides are registered for control. Mechanical or hand removal. Dispose of the material appropriately; avoid fragmenting and remove all plant parts from site.

PARROTS FEATHER

Myriophyllum aquaticum



terry inkson



- Origin** South America
- Description** Submerged to emergent perennial herb. Can be floating or attached. Grows very well in nutrient rich waters, forming dense stands that impede water flow.
- Leaves** All leaves in whorls, hairless with blade of submerged leaves to 4 cm long, emergent leaves 2.5–3.5 cm long, 0.5–0.8 cm wide, crowded towards tip. Emergent leaves blue-green, in whorls of 4–6; leaves toothed with 18–36 teeth.
- Stems** Stems spreading and erect, hairless, to 5 m long and to 5 mm wide, rooting at lower nodes.
- Flowers** Male and female flowers produced on separate plants. Only female plants found in Australia. Flowers grow in leaf axils, have 4 triangular white sepals, 0.4–0.5 mm long; petals absent.
- Fruit** No fruit produced in Australia.
- Dispersal** By stem fragments.
- Control** Physical removal. Draining and drying where possible. No herbicide registered for control.



Origin	South America
Description	Perennial free floating fern that forms dense mats with multi-branched horizontal stems. Individual plants are 5–30cm long and invade still or slow-moving water bodies.
Leaves	Opposite, light green, oval to heart shaped with hairy surface covered in complex waxy hairs about 1 mm long. Leaves are flat and as small as 10 mm by 5 mm. The submerged modified leaves act like roots and consist of short brown hairy stalks ending in hairy filaments up to 50 cm. Occurs as three distinct growth stages: Primary – isolated plants, small, flat, oval leaves. Secondary – Leaves start to fold at midrib. Tertiary – Crowded plants, leaves folded at midrib.
Flowers	No flowers.
Fruit	No fertile spores.
Dispersal	Disperses by fragments. Floodwater and human activity (boating, fishing, dumping).
Control	Difficult. Mechanical and manual removal. Biological control success varies across the state. The Salvinia Weevil (<i>Cyrtobagous salviniae</i>) has produced spectacular results in the Clarence and Richmond river systems in nutrient rich water conditions during spring and summer (warm weather).

WATER HYACINTH

Eichhornia crassipes

Noxious Weed Class 3 & 4 in North Coast LGA's



terry inkson

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| Origin | South America |
| Description | Free-floating fleshy perennial water weed to 65 cm tall, forming dense rafts of vegetation across still or slow-moving water bodies. |
| Leaves | Glossy bright green, can be tinged a rusty yellow on the edges. Up to 60cm long (including the petiole), narrow and erect in dense infestations. Leaves are thick stemmed, circular and up to 30cm in diameter in open water. The stems may be 50 cm long and contain air, which enable the plant to float. |
| Stems | Two types of stems: Erect stems up to 60cm long, with flowers and horizontal vegetative stems (stolons) 10 cm long, which produce new daughter plants. |
| Flowers | On upright spike, pale blue/lavender with a yellow and purple centre, 4 to 7 cm across in showy clusters. Flowers spring–summer. |
| Seed | Ovate to oblong, ribbed to 1 mm long. May remain viable for up to 20 years. |
| Roots | Fibrous and featherlike. In deep water trailing below the plant up to 1 m long. In shallow water the roots may take hold in the substrate of mud or sediment. |
| Dispersal | Reproduces by seed and horizontal stems (stolons). Most rapid dispersal happens by stolons that grow into daughter plants. Water flow and human activity disperse the infestation. |
| Control | Manual removal for early stage of infestation. Foliar spray for large infestations with glyphosate (aquatic use only) at 10 ml/L. Prevent spread after flooding by mechanical removal while plant matter is on land. |



Origin	Asia, Africa, equatorial America, possibly native in N.T.
Description	Perennial aquatic herb to 20cm above water level with feathery roots. Looks very much like an open head of lettuce.
Leaves	Pale green leaves are ribbed, wedge-shaped and form a rosette. They are spongy to touch and have a velvety appearance due to the small thick hairs that cover them. Leaves to 15cm long and to 8cm wide.
Flowers	Inconspicuous, whitish-green, on small stalks hidden amongst leaves.
Fruit	The fruit is a greenish berry, 5–10mm in diameter. Fruit are green at first then mature to a brown colour and are about 2mm long.
Seed	Four to fifteen oblong shaped seeds occur in each berry.
Roots	A large number of unbranched feathery roots up to 80cm long are submersed in water beneath the leaves of the plant.
Dispersal	By seed and fragments. Plants produce stolons, and each produce a new plant at the end. Seeds, seedlings and mature plants are moved by water and wind.
Control	Physical removal is effective for small infestations. Water lettuce plants cannot survive for long out of the water and can be removed by either raking or being pulled to the bank with an encircling rope. Once removed, plants must be allowed to dry out and break down. Foliar spray glyphosate (aquatic use only) at 10ml/L.