

AUSTRALIAN BIOLOGICAL RESOURCES STUDY



# FLOODPLAIN FLORA

A flora of the coastal floodplains  
of the Northern Territory, Australia

I. D. Cowie, P. S. Short & M. Osterkamp Madsen

Parks & Wildlife Commission of the Northern Territory



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*Extract:* **Onagraceae**

## ONAGRACEAE

*Herbs*, more rarely shrubs or trees. *Leaves* alternate, opposite or whorled, commonly simple and entire or toothed but sometimes lobed or pinnatifid; stipules absent to well-developed. *Flowers* bisexual or sometimes unisexual, actinomorphic or zygomorphic, epigynous, often 4- or 5-merous, solitary or in bracteate or ebracteate spikes, racemes or panicles. *Calyx* with petals usually as many as sepals and conspicuous, sometimes absent. *Stamens* commonly twice as many as sepals and often in 1 or 2 whorls; anthers tetrasporangiate and dithecal, opening by longitudinal slits; pollen in monads or tetrads. *Gynoecium* usually of as many carpels as the sepals or petals and united to form a compound ovary; ovary with as many segments as carpels; ovules (1) several to many in each locule; style with a wet or dry, capitate or 4-lobed stigma. *Fruit* a capsule, berry or nut. *Seeds* 1–numerous; embryo more or less straight; endosperm absent.

A family of mainly temperate and subtropical regions with about 17 genera and 675 species worldwide. Two genera in NT, one on the floodplains.

Taxonomic reference: Thompson (1990).

### LUDWIGIA L.

Annual or short-lived perennial *herbs* or herbaceous shrubs. *Stipules* present. *Leaves* simple, alternate, entire. *Flowers* solitary, axillary (in Top End taxa), bisexual, actinomorphic, bracteolate. *Sepals* free, valvate, 4 or 5, persistent. *Petals* as many as sepals, caducous, yellow or white, imbricate. *Stamens* as many as or twice as many as sepals. *Anthers* versatile. *Disc* present, hairy. *Ovary* inferior; hypanthium not extending beyond ovary; locules equal in number to sepals; placentation axile; ovules in 1 or more series in each locule; style stout; stigma turbinate to somewhat globose, shallowly 4- or 5-lobed. *Fruit* persistent, indehiscent but seeds released by breakdown of fruit wall. *Seeds* numerous, either free or embedded in corky tissue of fruit.

A genus of c. 80 species with four known for NT.

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|----|--|------------------------|
| 1  | Plant with prostrate stems, rooting at nodes and with spongy floats; seeds embedded in fruit tissue..... | <b>L. adscendens</b>   |
| 1: | Plant erect; seeds free at least in upper half of fruit.....   | 2                      |
| 2  | Seeds of lower half of fruit embedded in tissue (1:) .....   | <b>L. hyssopifolia</b> |
| 2: | Seeds all free .....   | 3                      |
| 3  | Fruit less than 10 mm long; stamens and sepals 4 or 5 (2:).....  | <b>L. perennis</b>     |
| 3: | Fruit more than 20 mm long; stamens 8; sepals 4 .....  | <b>L. octovalvis</b>   |

**L. adscendens** (L.) Hara

Perennial rooted aquatic *herbs* with floating stems; adventitious roots and white, spongy, spindle-shaped floats at nodes; vegetative parts glabrous or sparsely hairy with short and long, simple, hyaline hairs. *Stipules* persistent, ovate, *c.* 0.5 mm long. *Petioles* 3–40 mm long. *Leaf blades* elliptic, oblanceolate, spatulate or obovate, 11–80 mm long, 4–34 mm wide, L:W 1.8–2.7; base attenuate; apex obtuse with dark swollen gland on abaxial surface. *Flowers* in upper axils, pubescent on upper part of ovary and calyx. *Pedicels* 6–26 mm long. *Bracteoles* persistent, subopposite, *c.* 1 mm long, inserted about middle of ovary. *Sepals* 5, narrowly triangular, 5–10 mm long. *Petals* white to pale yellow or yellow at base, obovate, 8–14 mm long. *Stamens* 10. *Fruit* brown, cylindrical, obscurely 10-ribbed, 22–27 mm long, *c.* 3 mm wide. *Seeds* *c.* 2 mm long, embedded in fruit tissue. *Flowering & fruiting*: all year depending on moisture availability. Plate 24, Fig. 21 (*Wightman 12; Cowie 1279*).

A common species from India to China and N Australia (NT, Qld). Common on Top End floodplains, from the Daly River floodplain to Arafura Swamp. Grows around channels and billabongs, on floating mats, in back-water swamps, and to a lesser extent on open clay floodplains. In the terrestrial state on drying wetland margins all parts are smaller, more densely pubescent and rarely fertile.

**L. hyssopifolia** (G.Don) Exell

Annual erect *herbs* to 0.8 m, rarely taller; stems finely ribbed, often reddish; plants glabrous or with sparse, minute hairs on stems, underside and margins of leaves, ovary and calyx. *Stipules* persistent, minute. *Petioles* 1–6 (22) mm long. *Leaf blades* lanceolate to elliptic, 10–90 mm long, 1–20 mm wide, L:W 4.2–7.8; base attenuate; apex acute. *Flowers* shortly pedicellate. *Bracteoles* persistent, subopposite, inserted about middle of ovary, minute. *Sepals* 4, narrowly triangular, *c.* 3 mm long. *Petals* yellow, elliptic to obovate, 1.8–2.5 mm long. *Stamens* 8. *Ovary* 4-ribbed, somewhat quadrangular. *Fruit* more or less sessile, reddish brown, cylindrical, 12–24 mm long, *c.* 1.5 mm wide, weathering to 4 persistent ribs. *Seeds* yellowish to pale brown, lenticular, 0.5–0.7 mm long, those from basal part of fruit dispersed with persistent buoyant structures. *Flowering & fruiting*: all year depending on moisture availability. Figs 3, 21 (*Henshall 3622*).

Africa to India, Malesia, Oceania and N Australia (NT, Qld). Now considered a pantropical weed. Common in northern NT, extending from Keep River to eastern Arnhem Land. Grows on coastal floodplains, stream margins and other moist habitats; on sand or clay.

**L. octovalvis** (Jacq.) Raven

Annual or short-lived perennial, herbaceous *shrubs*, 0.4–2 m tall; stems quadrangular, forming aerenchymatous tissue at base when in water; vegetative parts, ovary and calyx densely hairy with erect, hyaline, simple and septate hairs, rarely subglabrous. *Stipules* obscure. *Petioles* 2–8 mm long. *Leaf blades* linear, narrowly elliptic to lanceolate, 60–165 mm long, 2–35 mm wide, L:W 5–35; base attenuate; apex acute to attenuate. *Flowers* shortly pedicellate. *Bracteoles* persistent, inserted at base of ovary, minute or rarely foliaceous. *Sepals* 4, elliptic to lanceolate, 7–13 mm long, falling as fruit matures. *Petals* yellow, obcordate, 6–12 (20) mm long. *Stamens* 8; anthers hairy or glabrous. *Fruit* shortly pedicellate, brown, more or less cylindrical, 8-ribbed, 20–55 mm long, 3–6 mm wide, weathering to 8 persistent ribs. *Seeds* free, brown, somewhat globular, 0.6–0.9 mm diam. *Flowering & fruiting*: Apr.–Nov. Plate 25, Fig. 21 (*Fensham 1273*).

Pantropical; throughout N Australia (WA, NT, Qld, NSW). In NT extending into the arid zone. Common in the Top End and in a variety of seasonal or perennially moist habitats as well as floodplains and has been recorded from floating mats. Worldwide a highly variable species. In NT a distinctive form associated with floodplains differs from the typical form by being shorter, subglabrous and narrow-leaved.

*Ludwigia*

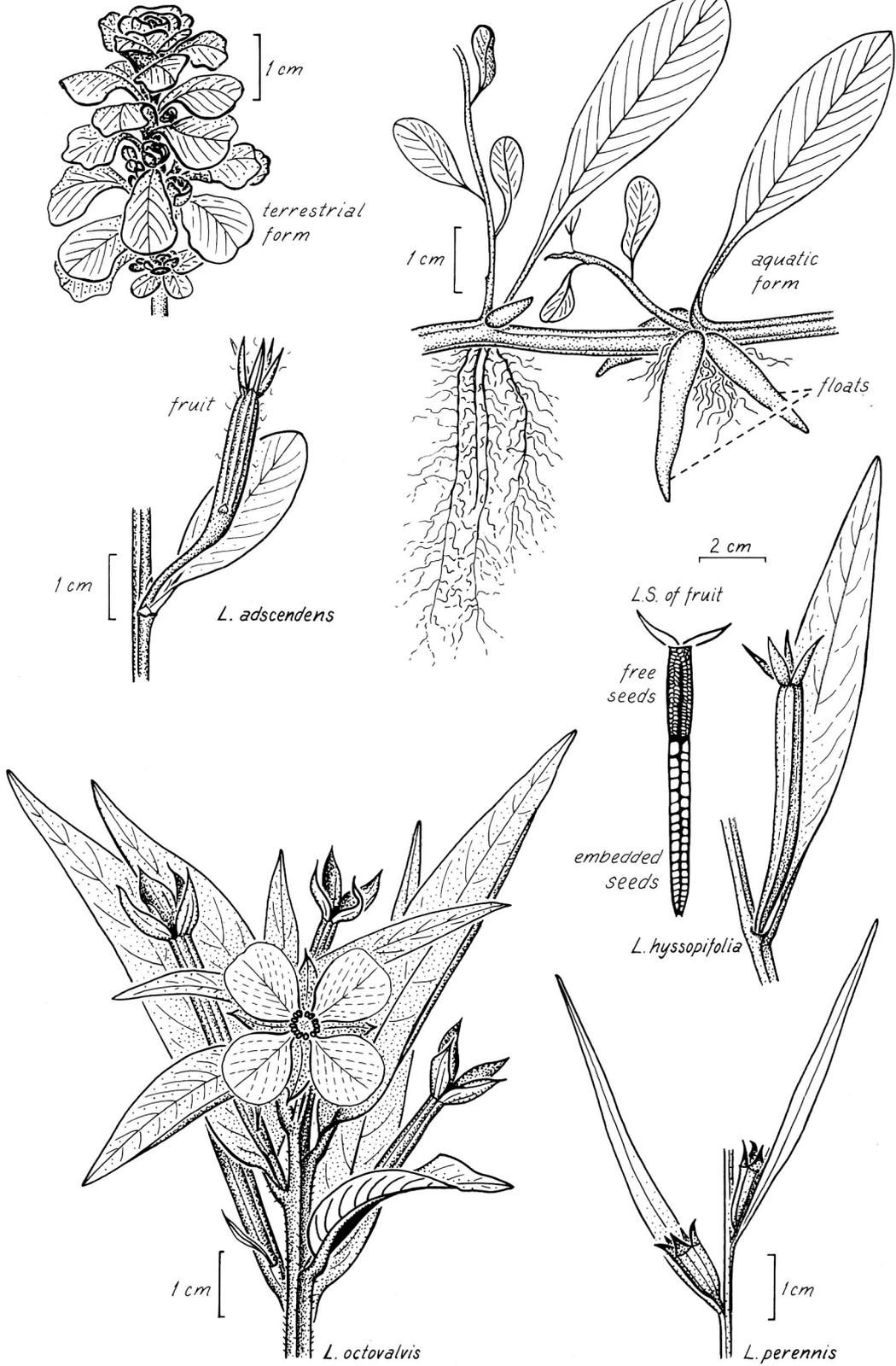


FIGURE 21

**L. perennis** L.

Annual *herbs* to 1 m tall, sparsely hairy with minute, stiff hairs; stems, leaves and calyx sometimes reddish. *Stipules* obscure. *Petioles* to 7 mm long. *Leaf blades* narrowly elliptic to linear, 18–110 mm long, 2–10 mm wide, L:W 11–22; base and apex attenuate. *Flowers* more or less sessile to shortly pedicellate. *Bracteoles* obscure, at base of pedicel. *Sepals* 4 or 5, triangular, 2–3 mm long. *Petals* yellow, obovate, 2–4 mm long. *Stamens* 4 or 5. *Fruit* sessile or almost so, olivaceous to stramineous, somewhat obconic, 4 (5)-angled, 6–9 mm long, c. 3 mm wide. *Seeds* free, pink to brown, ellipsoidal, 0.3–0.5 mm long. *Flowering & fruiting*: Feb.–July. Fig. 21 (*Smith 1101*).

Widespread throughout the Old World tropics and across N Australia (WA, NT, Qld). In NT extending south to Newcastle Waters and perhaps beyond. Common in the Top End in seasonal or perennially moist habitats but relatively uncommon on floodplains where it occurs on black soil.