

Toothcup meadow-foam
Rotala ramosior
Lythraceae (Loosestrife Family)

- Status: Red / Endangered
- Best Survey Time: July to September
- General Habitat: Foreshore

RANGE

- Found in North America from British Columbia, Ontario (where it is also rare) and throughout most of the continental USA
- In B.C., known from two sites near Kamloops and two extant locations in the vicinity of Osoyoos

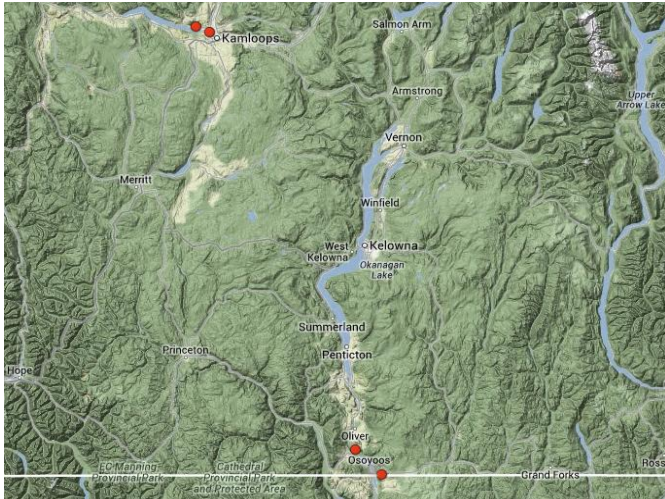


Figure 1 B.C. distribution of *Rotala ramosior* (adapted from BC CDC 2013)

HABITAT

- Open to semi-shaded, usually sandy, swales and flats with seasonally wet soils in riparian habitats in the Bunchgrass Biogeoclimatic Zone
- Also found in mudflats along lakeshores, receded pond margins and sandy backwater river channels
- Associates include spike-rushes (*Eleocharis* spp.) sedges (*Carex* spp.), hairy water-clover (*Marsilea vestita*), common witchgrass (*Panicum capillare*) and awned cyperus (*Cyperus squarrosus*)



Figure 2 Seasonally flooded mudflat habitat near Osoyoos, B.C.



Figure 3 Seasonally flooded habitat near Kamloops, B.C.

LIFE HISTORY

- Annual species that grows each year from seed, germinating following water drawdown in June or July, and flowering from summer to early autumn
- Fruiting occurs from August into October, plants die following first frosts, and seeds are released into seed bank when capsules dry and split open
- Does not reproduce vegetatively, so population survival depends on seeds and seed bank
- Seed dispersal by water, waterfowl or small mammals
- May be subject to annual population fluctuations due to varying environmental conditions

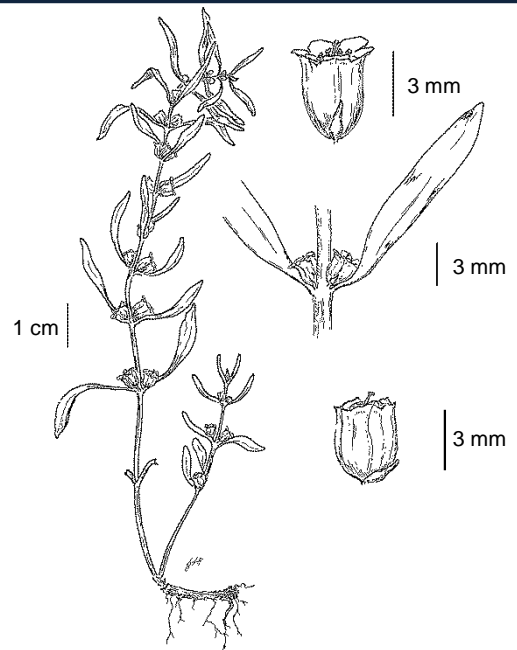


Figure 4 Illustration of *Rotala ramosior* (Douglas et al. 1999)

Rotala ramosior (continued)

DESCRIPTION

General

- Small, hairless, annual herb
- Stems usually erect or somewhat decumbent, often branched near their bases
- From 5 to 15 cm tall from a small fibrous root

Leaves

- Leaves arranged in opposite pairs along stem
- Leaves smooth edged, lanceolate or oblanceolate, from 1.5 to 3 cm long, tapering towards stem to form a short stalk or petiole
- Basal leaves absent at maturity

Flowers

- Flowers tightly arranged in the leaf, with usually one flower per axil, 1.5 to 2.5 mm long and bell-shaped
- Petals 1 mm long, usually pale lavender to nearly white
- Stamens and styles short, not exerted from corolla

Fruits

- Elliptic 4-chambered capsules, larger than the flowers and almost round at maturity, 3 mm long



Figure 5 Typical plant showing both flowers and capsules

IDENTIFICATION TIPS

- Characterized by its small stature, short-stalked non-clasping leaves, and often singular flowers tightly arranged in the leaf axils
- May be confused with scarlet ammannia (*Ammannia robusta*), a related but generally taller plant of similar habitats with clasping unstalked leaves, generally more than one flower in each leaf axil, and styles that are slightly exerted beyond the calyx
- European water-purslane (*Lythrum portula*) has decumbent stems that root at nodes, broadly oblong leaves and long calyx lobes that surpass corolla



Figure 6 Small plants with developed capsules in the leaf axils

GENERAL THREATS AND GUIDANCE

- **Avoid development in areas with known occurrences of *Rotala ramosior* through project relocation or redesign**
- Protect seasonally flooded riparian habitat from disturbance and development, including exclusion of livestock and ATVs through fencing and/or signage, and consider restoration including invasive plant removal following professional advice
- Provincial methods for when and how to conduct rare plant surveys, as well as guidance on mitigation measures for this species can be found in *Guidance for Plant Species at Risk in the Okanagan: Foreshore, Riparian & Wetland Developments*
- Report any sightings to the BC Conservation Data Centre (cdccdata@gov.bc.ca) and MFLNRO Ecosystems Section (josie.symonds@gov.bc.ca)

REFERENCES

- BC Conservation Data Centre. 2013. <http://a100.gov.bc.ca/pub/eswp/>
- Douglas et al. (editors). 1999. *Illustrated Flora of British Columbia*. Vol. 3. BC Min. Environ., Lands and Parks, Min. For., Victoria, B.C.
- Douglas and Oldham. 1999. *COSEWIC status report on the toothcup *Rotala ramosior* in Canada*. Committee on the Status of Endangered Wildlife in Canada, Ottawa, O.N.
- Mattrick. 2001. *New England Plant Conservation Program Conservation and Research Plan: *Rotala ramosior* (L.) Koehne*. New England Wildflower Soc.
- National Toothcup Recovery Team. 2008. *Recovery strategy for Toothcup in B.C. and Ontario*. BC Min. Environ., Victoria, B.C., and Ontario Min. Nat. Res., Peterborough, O.N.
- NatureServe. 2010. <http://www.NatureServe.org/explorer>

ACKNOWLEDGEMENTS

Rotala ramosior Plant Species at Risk Fact Sheet developed by Josie Symonds based on content produced under contract by Terry McIntosh and review comments from Brenda Costanzo, Orville Dyer and Curtis Bjork