River Bulrush
Bolboschoenus fluviatilis
Cyperaceae (Sedge Family)

Status: Red / Not Assessed
Best Survey Time: July to September
General Habitat: Wetland

RANGE

- Widespread in southern North America, from Alberta to the Maritime provinces, south to Maryland and west to Oregon (USA)
- In British Columbia, known from Osoyoos Lake area in the south Okanagan Valley and from one occurrence near Hesquiat on Vancouver Island

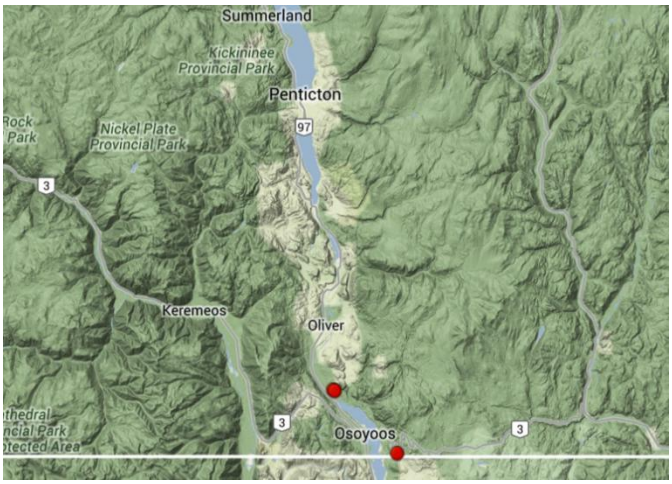

Figure 1 Thompson Okanagan Region distribution of *Bolboschoenus fluviatilis* (BC CDC 2013)

HABITAT

- Open marshes alongside rivers, oxbows and lakeshores in the Bunchgrass and Coastal Western Hemlock Biogeoclimatic Zones
- May also be found in fresh to brackish marshes in quiet water, sometimes >1 m deep
- Common associates include hard-stemmed bulrush (*Schoenoplectus acutus*), wetland grasses and sedges (*Carex* spp.)

Figure 2 Marsh habitat north of Osoyoos Lake, B.C.

Figure 3 Close-up of triangular stems on sterile plant

LIFE HISTORY

- Perennial species that mainly grows vegetatively by rhizomes, although colonization of open areas by seed may occur
- Flowers in late spring and achenes mature in summer, although flowering stems are uncommon and patches may be completely vegetative

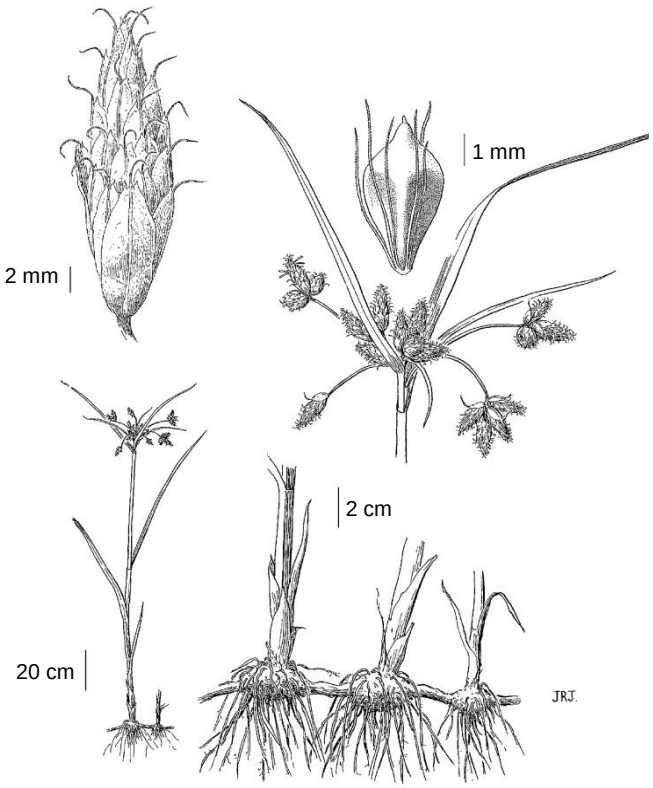

Figure 4 Illustration of *Bolboschoenus fluviatilis* by Jeanne R. Janish (Hitchcock et al. 1969)

DESCRIPTION

General

- Tall, usually from 1 to 2 m, perennial wetland plant with sharply triangular stems
- Grows from tubers that are present along underground rhizomes, sometimes forming extensive, dense patches
- Flower production within patches is uncommon; patches are nearly completely vegetative

Leaves

- Several long, flat leaves, up to 40 cm long and from 7 to 18 mm wide

Flowers

- Flowers produced at tops of stems and surrounded by a series of well developed leaf-like bracts
- Numerous flowers clustered together forming egg or spindle shaped, usually pointed spikelets
- Most spikelets borne singly or in small clusters at ends of 3 to 8 cm long branches that flare out from top of the stem; other spikelets sometimes clustered in a compact group at base of bracts

Fruits

- Three-sided achenes produced by each flower

IDENTIFICATION TIPS

- Characterized by sharply triangular stems, distinctly triangular achenes, and open inflorescences with clusters of spikelets extended away from the stem
- Easily confused with seacoast bulrush (*B. maritimus* var. *paludosus*), a more common species also with triangular stems and clusters of spikelets at tops of the stems, some of which may also be extended away from stem on short branches; seacoast bulrush is usually smaller in stature with narrower leaves, two-sided or lens-shaped achenes, and frequently produces sessile spikelets that are tightly clumped at the ends of the stem; this species is also most common in wetland habitats with higher salinity, particularly along the edges of saline depressions and ponds
- Readily separated from hard-stemmed bulrush (*Schoenoplectus acutus*) and American bulrush (*S. pungens* var. *longispicatus*) by the numerous leaves along its stems and the series of leaf-like bracts at the base of the flowers
- Also readily separated with small-flowered bulrush (*Scirpus microcarpus*), which has well developed stem leaves but its spikelets are much smaller and always at ends of small branches

Figure 5 Close up of single flowering plant in otherwise sterile patch

GENERAL THREATS AND GUIDANCE

- **Avoid development in areas with known occurrences of *Bolboschoenus fluviatilis* through project relocation or redesign**
- Protect open riverine, oxbow and lakeshore marsh habitats from disturbance and development, including exclusion of livestock through fencing, and consider restoration including invasive plant removal following professional advice
- Because patches are often mostly sterile, careful searching for flowering stems is essential for identification
- 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 (cdcdata@gov.bc.ca) and MFLNRO Ecosystems Section (josie.symonds@gov.bc.ca)

REFERENCES

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