

Bent Spike-rush (*Eleocharis geniculata*)

Cyperaceae (Sedge Family)

Status: Red / Threatened ■
 Best Survey Time: Jul to Sep ■
 General Habitat: Foreshore ■

RANGE

- Sporadic distribution in the tropics, north to the southern United States, and scattered disjunctively north to Ontario and British Columbia
- In B.C., currently known only from a single site on private land in the south Okanagan Valley

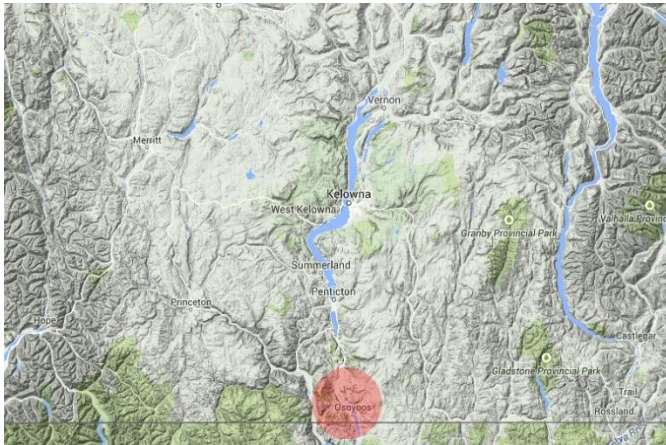


Figure 1 B.C. distribution of *Eleocharis geniculata*; specific location occurs on private land and is kept confidential

HABITAT

- Sandy mudflats along seasonally receding lakeshores and sloughs in the Bunchgrass Biogeoclimatic Zone
- Associates include other spike-rushes (*Eleocharis* spp.), sedges (*Carex* spp.), and numerous other “at risk” species, including thyme-leaved spurge (*Chamaesyce serpyllifolia*), toothcup meadow-foam (*Rotala ramosior*), scarlet ammannia (*Ammannia robusta*), hairy water-clover (*Marsilea vestita*), and cyperus (*Cyperus* spp.)



Figure 2 Typical mature *Eleocharis geniculata* individual



Figure 3 Single plant occurring with few competing species in habitat that was previously inundated by early-season high water

LIFE HISTORY

- Annual or short-lived perennial maturing in late summer
- Germination and development depend on the recession of spring high water levels, exposing the mudflats and sandy shorelines on which the species depends
- Mature achenes are produced in the early fall, and float to new sites during the winter inundation period or distributed by waterfowl
- May not appear in some years due to persistent high water levels



Figure 4 Herbarium specimen showing close-up of spikes, scale and achenes

Eleocharis geniculata (continued)

DESCRIPTION

General

- Tufted annual or short-lived perennial with arching culms (stems) up to 30 cm long

Leaves

- Leaves present as tight, persistent sheaths around base of fertile culms

Flowers

- Flowers in terminal, more or less oval spikelets less than 1 cm long, with 20 to 35 red brown scales, each 1.5 to 1.7 mm long
- Perianth (sepals and petals) reduced to brown bristles, varying in length from scarcely developed to surpassing the achenes

Fruits

- Mature achenes, shiny black, about 1 mm long and 0.4 to 0.6 mm wide
- Tubercles (projection at top of achene) broadly conical in shape, pale in colour, up to 0.2 mm long



Figure 5 Robust plant with many dense, arching stems

IDENTIFICATION TIPS

- Bent spike-rush is most similar to purple spike-rush (*Eleocharis atropurpurea*), a name that was for many years misapplied to these south Okanagan plants
- True purple spike-rush was recently found near Sicamous, B.C. and differs primarily in having smaller, more narrow tubercles, smaller achenes that are usually pinched just below the tubercle, and white perianth bristles
- Ovate spike-rush (*Eleocharis ovata*) and blunt spike-rush (*E. obtusa*) are similar in appearance and habitat, but their achenes are brown, not shiny black
- Mature achenes are essential to confirm species within this group of spike-rushes

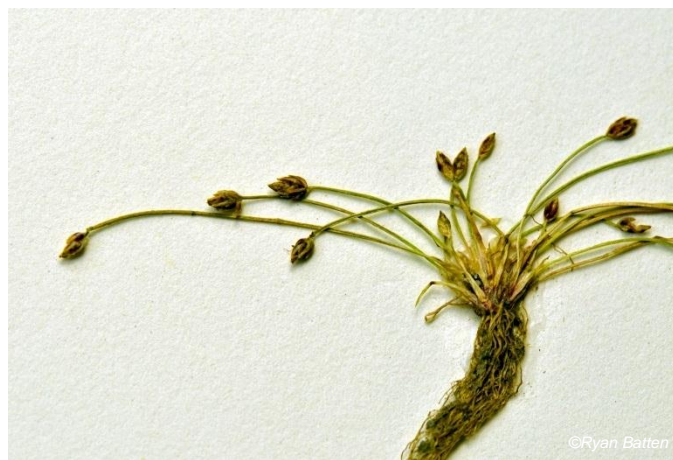


Figure 6 Photo of a herbarium specimen that has preserved the characteristic geniculate (i.e., abruptly bent) appearance of this species

GENERAL THREATS AND GUIDANCE

- **Avoid development in areas with known occurrences of *Eleocharis geniculata* through project relocation or redesign**
- Protect lakeshore habitats from disturbance and development, including the exclusion of livestock and ATVs through fencing
- Ensure the maintenance of the natural hydrological cycles, as the species depends on a receding shoreline habitat
- Monitor the effect of invasive species and the impact that grazing geese and other waterfowl are having on the health of known populations
- Follow provincial methods for when and how to conduct plant species at risk surveys
- Follow provincial policy and guidance on how to avoid, minimize, restore and offset impacts to plant species at risk and their habitats
- Report any sightings to the B.C. Conservation Data Centre (cdccdata@gov.bc.ca) and FLNR Ecosystems Section (josie.symonds@gov.bc.ca)

REFERENCES

- B.C. Conservation Data Centre. 2014. <http://a100.gov.bc.ca/pub/eswp/>
- Douglas et al. (editors). 1999. *Illustrated Flora of British Columbia*. Vol. 4. B.C. Min. Environ., Lands and Parks, and Min. For., Victoria, B.C.

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