

English name: Foothill Sedge

Other English names: Split-awn Sedge

Scientific name: *Carex tumulicola* Mackenzie

Other scientific names: N/A

Family: *Cyperaceae* (Sedge Family)

Risk status

BC: vulnerable (S3S4); yellow-listed

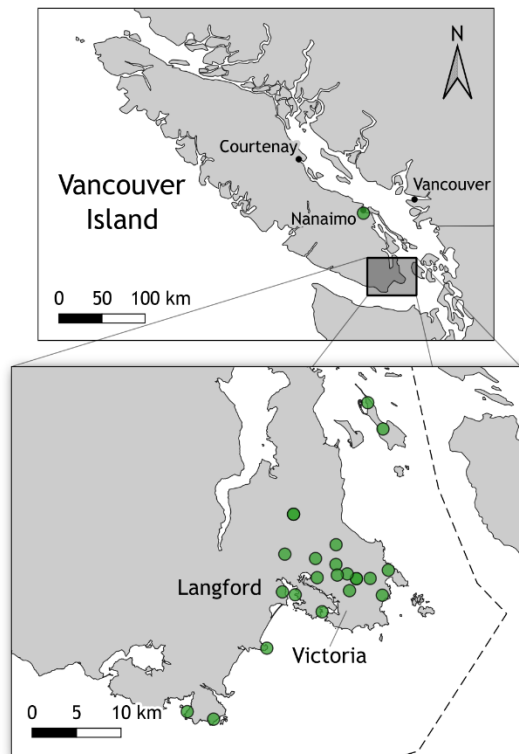
Canada: Special Concern

Global: secure (G4)

Elsewhere: Washington, Oregon, and California– reported (SNR)

Range/Known distribution: In Canada, Foothills Sedge is known from near-coastal areas of eastern Vancouver Island including one location near Nanaimo, and 22 in the Victoria area from the Saanich Peninsula to Rocky Point. Its range continues south through the San Juan Islands and the Puget Trough of Washington State; the Coast Mountains and the Willamette Valley of Oregon; to the Coast Ranges, Sierra Nevada, and Channel Islands of California.

Field description: Foothill Sedge usually forms moderately dense to somewhat loose tufts but may occasionally form a rhizomatous sod. The flowering stems are usually 15-70 cm tall. The leaves are narrow (1.5-2.0 mm wide) and slightly bumpy (papillose) above. The inflorescence consists of 3-10 spikes; the lower spikes are distinctly separate while the upper spikes are crowded together. The bracts below the lowest spike are long – often exceeding the inflorescence – while the bracts below the middle and upper spikes are barely noticeable. Each spike has a dense cluster of male flowers at the tip and up to 10 brownish perigynia below. The lance-shaped perigynia are evidently beaked and have sharp (sometimes in-rolled) margins. The perigynia are 3.5 – 5.0 mm long and slightly less than half as wide. The are about the same length as



Distribution of *Carex tumulicola*
● Confirmed Sites

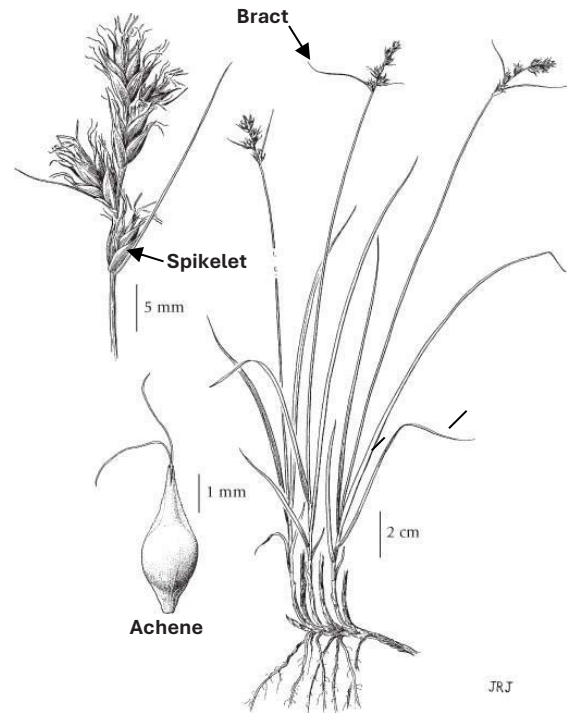
Carex tumulicola – Foothill Sedge

the pistillate scales but somewhat narrower. The achenes are lens-shaped and elliptic and bear two styles.

Identification tips: Within its range in Canada, no other sedge has the same combination of lens-shaped achenes with two styles, multiple spikes which each have male flowers near the tip and female flowers below, and more than 2 but fewer than 12 perigynia per spike.



Carex tumulicola



Life history: Foothill Sedge remains green throughout the summer drought. It flowers in the late spring or early summer and its seeds ripen in August. The seeds germinate in the spring, but seedlings are rarely observed. Patches spread by tillers (offsets from the parent plant) and by short rhizomes (underground stems that give rise to shoots a short distance from the main clump). Patches appear to be very long-lived. Connections within patches may break down, leaving independent but genetically identical clumps.

Foothill Sedge appears to be quite resilient to grazing by deer and introduced rabbits.

Habitat: In Canada, Foothill Sedge usually grows on moderately-well to well-drained meadows and Garry Oak woodlands, less than 50 m above sea level. Douglas-fir (*Pseudotsuga menziesii*) may be present but is rarely abundant. Nootka Rose (*Rosa nutkana*) and Common Snowberry (*Symphoricarpos albus*) are often present. Foothill Sedge rarely thrives in areas with dense shrubs. The herbaceous layer is generally well-developed, and the leading native species may include camas (*Camassia* spp.), Pacific Sanicle (*Sanicula crassicaulis*), California Brome (*Bromus carinatus*), California Oatgrass (*Danthonia californica*), Blue Wildrye (*Elymus glaucus*), other sedges (*Carex* spp.) and, in semi-shaded areas, Yerba Buena (*Clinopodium douglasii*) and Mountain Sweet-Cicely (*Osmorhiza berteroi*).

Why the species is at risk: Many sites have been lost to residential, agricultural, and commercial development and these losses continue.

At many sites, invasive shrubs such as Scotch Broom* (*Cytisus scoparius*), One-seed Hawthorn* (*Crataegus monogyna*), and Laurel Daphne* (*Daphne laureola*), have become abundant, reducing light at ground level and thus threatening shade-intolerant species such as Foothill Sedge.

Invasive grasses and forbs are often unable to establish in dense tufts of Foothill Sedge but where the tufts are looser, invasive herbaceous plants can outcompete it for moisture, nutrients, and germination sites. Common co-occurring invasive herbaceous competitors include Orchard Grass* (*Dactylis glomerata*), Common Velvet Grass* (*Holcus lanatus*), Smooth Brome* (*Bromus hordeaceus*), Sweet Vernal Grass* (*Anthoxanthum odoratum*), Colonial Bentgrass* (*Agrostis capillaris*), Ribwort Plantain* (*Plantago lanceolata*), Sheep Sorrel* (*Rumex acetosella*), and Common Vetch* (*Vicia sativa*).

Fire suppression has allowed native trees and shrubs to flourish in former meadows and woodlands; their shade also suppresses Foothill Sedge. Mowing, to maintain trails or to reduce fire hazard, can lead to a gradual decline in Foothill Sedge (although in some places, regular mowing controls shrubs like Common Snowberry and thus may allow Foothill Sedge to persist).

What you can do to help this species: Management practices should be tailored to the needs of the site. Potential management tools will depend on the specific circumstances and may require experimentation prior to implementation. Before taking any action, expert advice should be obtained, and no action taken without it. Public and private landowners should be made aware of new populations of this species if they are discovered, and appropriate management practices suggested.

Foothill Sedge can be helped by protecting its habitat from development, by removing invasive species (particularly woody species) and by controlling shrub and tree ingrowth.

References

- Broadlick, K., and J.D. Bakker. 2020. Increasing germination of 2 upland sedges *Carex inops* spp. *inops* and *Carex tumulicola*. *Native plants Journal* 20:253–266.
- COSEWIC. 2022. COSEWIC assessment and status report on the Foothill Sedge *Carex tumulicola* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 34 pp. (<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>)
- Parks Canada Agency. 2013. Recovery strategy for the Foothill Sedge (*Carex tumulicola*) in Canada. Species at Risk Act Recovery Strategy Series. Parks Canada Agency, Ottawa. vi + 26 pp

For further information, contact the Garry Oak Ecosystems Recovery Team, or see the web site at:
www.goert.ca

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*Refers to non-native species.