

Lasthenia glaberrima

English name Rayless Goldfields

Scientific name *Lasthenia glaberrima*

Family Asteraceae (Aster)

Other English names Smooth Goldfields

Other scientific names *Lasthenia minima*

Risk status

BC: critically imperilled (S1); Red-listed; Conservation Framework Highest Priority – 1 (Goal 3, Maintain BC diversity)

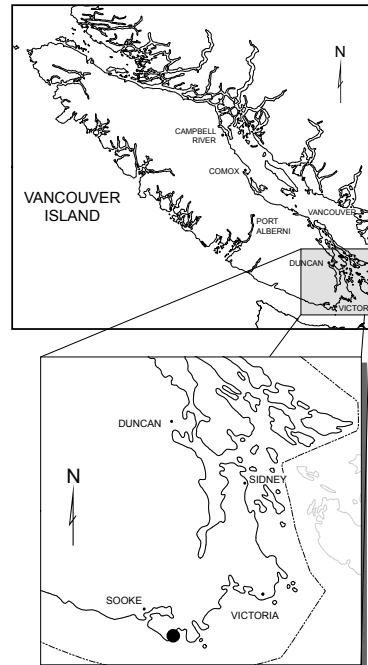
Canada: critically imperilled (N1); COSEWIC – Endangered (2008)

Global: secure (G5)

Elsewhere: Washington – critically imperilled (S1), listed as threatened;
California and Oregon – reported (SNR)

Range/Known distribution

Rayless Goldfields ranges from Vancouver Island south, to central California, mostly west of the Cascade Mountains. The nearest United States record is from Klickitat County in southern Washington. In Canada, Rayless Goldfields is known from a single population near Victoria, British Columbia.



Distribution of *Lasthenia glaberrima*
● Recently confirmed sites

Lasthenia glaberrima

Field description

Rayless Goldfields is a fibrous-rooted annual plant with sprawling to erect, simple to freely branched, hairless stems. Its leaves are **opposite**, 2-10 cm long, linear, and lack teeth. The flowering structure consists of numerous flowering heads that are erect at full bloom but may bend down after flowering. Each bell-shaped flower head is 5-7 mm long and consists of an involucre (outer ring) of 5-10 **fused, hairy, pointed leaf-like bracts**, and numerous individual flowers tightly packed on a cone-shaped base within the bracts. The outer ring of 6-13 ray flowers have **inconspicuous pale yellow, petal-like structures** which may be easily overlooked. The inner (disc) flowers are more numerous, pale yellow and lack showy petal-like structures. The fruits (achenes) are less than 4 mm long, linear, and hairy. Each fruit bears a cap of up to 10 narrowly **tapered to elliptic scales**.

IDENTIFICATION TIPS

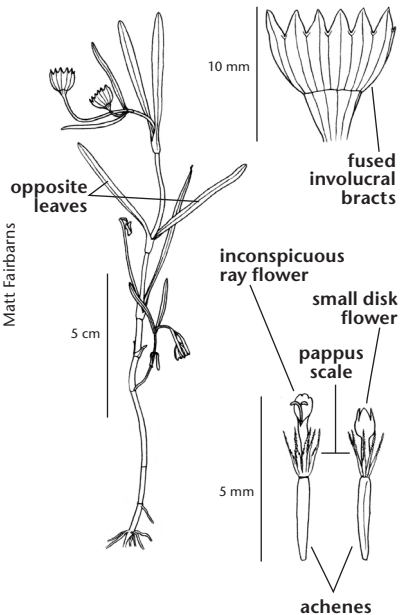
Rayless Goldfields is small and can be easily overlooked. It is the only annual plant on southeastern Vancouver Island with yellow composite flower heads, fused bracts below each head, and opposite leaves.



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Matt Fairbairns



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Life history

Rayless Goldfields is a short-lived annual. Germination begins in April and ends in early May. Flowering begins in early May and peaks by mid-month. The species is self-fertilizing, which is unusual within the genus and may explain the inconspicuous nature of the peripheral ray flowers. Plants tend to produce several heads although some smaller plants produce as few as 1 or 2 heads. The plants will continue to grow until they succumb to summer drought, usually by late May or June. Seed dispersal begins in mid-May and most plants have shed their fruits by late June. The tapered scales on the achenes are unlikely to aid in wind-dispersal but probably help attach them to the fur of passing mammals. It is possible that seeds are dispersed by birds that may pick up the seeds in their feet and/or feathers from muddy soils.

Habitat

Rayless Goldfields generally occurs in wet open places, often in muddy vernal pools or on muddy ground on perched water tables. The single British Columbia site is a rock-bound vernal pool on a shoreline rocky bluff about 15 m above sea level. The vernal pool begins to moisten with the first rains in late summer or early fall and remains saturated or inundated for long periods through the winter and early spring. The soil gradually dries out with the onset of summer drought and is quite dry from mid-June to late August or early September. Annual herbaceous species dominate the site, including Water Meadow-foxtail* (*Alopecurus geniculatus*), Large Water-starwort (*Callitriche heterophylla*), Narrow-leaved Plantain (*Plantago elongata*), and Rayless Goldfields itself.

Why this species is at risk

The only place Rayless Goldfields has ever been found in British Columbia is in a public park (East Sooke Regional Park, near Sooke) in an area that has been subject to frequent foot traffic. Annual population counts have never exceeded 200 individuals and the species fails to germinate in some years. The extreme rarity of this species in Canada makes it highly vulnerable to extirpation, although it is possible that additional sites may be found. Vernal pools are fragile habitats that are vulnerable to alteration. The main threats to the species include human disturbance from trampling, and activities that would alter the hydrology of occupied sites, such as soil compaction and trail construction, although the site in East Sooke Regional Park is now enclosed within a low fence that discourages casual trampling. The pond has been heavily overgrown with invasive grasses such as Water Meadow-foxtail* which compete for moisture and space. Tree and shrub species, such as Nootka Rose (*Rosa nutkana*) and Scotch Broom* (*Cytisus scoparius*), also encroach on the outer edges of the site and may provide competition and shading, although they are unlikely to overtake this low-lying seasonally wet site. As an annual species, Rayless Goldfields is more likely to be affected by climate change than many other species. Climatic

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fluctuations that affect annual temperature and rainfall patterns may affect factors such as moisture availability, germination timing, and seedling survival, potentially leading to population declines.

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. Please refer to the introductory section of this manual.**

Public and private landowners should be made aware of new populations of this species if they are discovered, and appropriate management practices suggested. Management needs include protecting the natural hydrology of the occupied site, limiting access to sensitive habitat, and removing invasive species. Regular inventories should be conducted to monitor the status of the population in East Sooke Park and identify any negative impacts. Efforts should also be undertaken to search for new populations.

References

- COSEWIC. 2008. COSEWIC assessment and status report on the rayless goldfields *Lasthenia glaberrima* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 20 pp. www.sararegistry.gc.ca/status/status_e.cfm.
- Hitchcock, C.L., A. Cronquist, M. Ownbey and J.W. Thompson. 1955. Vascular Plants of the Pacific Northwest. Part 5: Compositae. University of Washington Press, Seattle.

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.

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