

Marah oreganus

English names Oregon manroot, coast manroot, bigroot, western wildcucumber, old man in the ground

Scientific name *Marah oreganus*

Family Cucurbitaceae (Gourd or Cucumber)

Other scientific names *Sicyos oregana*, *Megarrhiza oregana*, *Echinocystis oregana*, *Micrampelis oregana*

Risk status

BC: critically imperilled (S1); red-listed

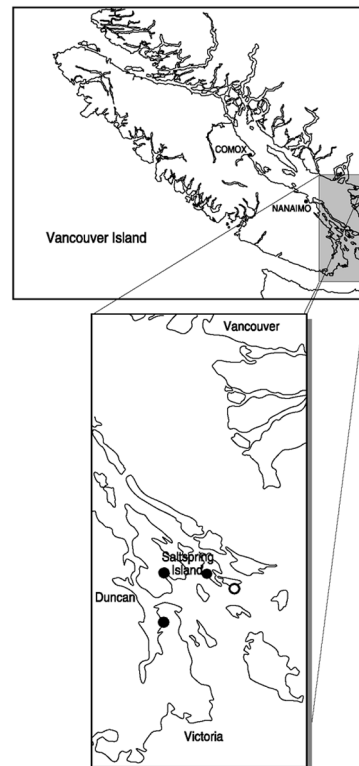
Canada: imperilled/vulnerable (N2N3); COSEWIC: not yet assessed

Global: secure (G5)

Elsewhere: California, Oregon, Washington, Idaho – reported (SNR/SU)

Range/known distribution

Oregon manroot ranges from southwestern British Columbia south to northern California, primarily west of the Cascade Mountains. Infrequently, it is found as far east as the Snake River on the border of Oregon and Idaho. Although there have been reports from Montana, Nebraska and Wyoming, these are likely based on misidentification. In British Columbia, the distribution of Oregon manroot is limited to southeastern Vancouver Island and the Gulf Islands. There are 3 known occurrences, 1 on the Saanich Peninsula, a second on North Pender Island, and a third on Saltspring Island. It has been extirpated from 1 site on South Pender Island.



Distribution of *Marah oreganus*

● recently confirmed sites

○ extirpated site

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Field description

Oregon manroot is a climbing **perennial vine** that grows from a woody, tuberous root. In mature plants, the scaly, tan-coloured tuber can be several meters long. One to several stems grow from the root, each up to 6 metres long. The stems trail on the ground or climb over other vegetation with **branched tendrils**. The **leaves are large** (up to 20 cm long), alternate and **shallowly lobed with a heart-shaped base**. The whitish flowers are 6-12 mm across, bell-shaped, with 5-8 petals. The **male flowers are borne in clusters from the leaf axils and the solitary female flowers occur on short stalks at the base of the male clusters**. The fruit are **green, weakly spiny gourds**, 4-5 cm in diameter with an average of 3-4 large (16-22 mm) seeds inside.

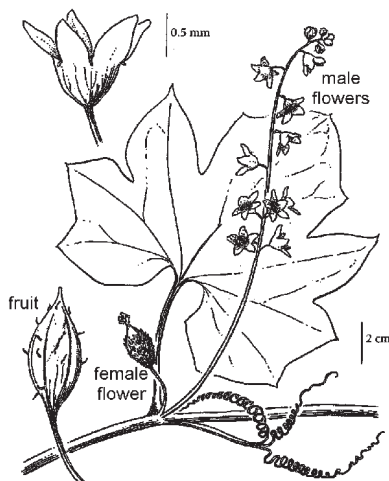
IDENTIFICATION TIPS

The wild cucumber (*Echinocystis lobata*), which is native to eastern North America, has been introduced to southcentral British Columbia. The wild cucumber has globe-shaped fruits and rough seeds whereas Oregon manroot has spherical to football-shaped fruit and smooth seeds.



Matt Fairbairns

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Life history

In British Columbia, Oregon manroot flowers in April and May and the vines are green with ripe fruit in mid-summer. It is not known when the shoots emerge from the tuber: in California, Oregon manroot begins growing in November/December whereas in Washington and Oregon, shoots emerge in early spring.

Studies in California have shown that Oregon manroot is self-incompatible and must cross-pollinate in order to set fruit and produce seed. Pollinators are probably honeybees* (*Apis mellifera*) and smaller native Californian bees (*Ceratina* spp.). Gravity, water, and rodents are known to disperse seed and burial by rodents may improve germination success. In California, seeds germinate in March after a period of cool, moist weather. After the seeds germinate, the shoot grows downward into the soil and splits into one part that swells to form the tuber and a second part that grows back to the surface to become the vine.

The root of Oregon manroot has multiple buds that can produce new plants if the root is broken into pieces. The multiple buds allow the plants to withstand limited mowing or grazing if there are sufficient stored food reserves in the root. Oregon manroot is probably a long-lived plant and may persist for decades or even centuries.

Habitat

In British Columbia, Oregon manroot grows on south-facing rocky slopes, both in deeper soil among rock outcrops and at the edges of mixed woodlands. All of the extant and historic populations are at low elevations, less than 30 meters from the ocean. One of the extant populations occurs on a low bank below a roadside that is dominated by invasive hedge bindweed* (*Convolvulus sepium*) and exotic shrubs. The two other extant populations occur with mixed Garry Oak (*Quercus garryana*) and Douglas-fir (*Pseudotsuga menziesii*) on coarse talus slopes or rocky bluffs with scattered shrubs such as Nootka rose (*Rosa nutkana*), common snowberry (*Symphoricarpos albus*) and oceanspray (*Holodiscus discolor*). The forb layer consists of both native and invasive herbs and grasses. The extirpated population occurred in a cleared pasture that has been overgrown with a second-growth forest of Douglas-fir, western red-cedar (*Thuja plicata*) and red alder (*Alnus rubra*).

Why the species is at risk

All of the British Columbia populations occur in habitat that is highly fragmented by development, invasive species and forest encroachment. Fire suppression has changed the composition of potential habitat. Although established Oregon manroot plants appear to be able to survive

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in degraded ecosystems, competition from invasive species for rooting space, soil moisture, and nutrients may limit the germination and survival of new plants. No seedlings were observed in any of the British Columbia populations. Trampling and possibly grazing by deer and cattle can damage plants, cause soil compaction and alter hydrology. Although the remaining plants are large, in 2006 there were only 18 individuals. The small number of plants may have limited genetic variability increasing their vulnerability to environmental changes.

What you can do to help this species

Management practices should be tailored to the specific circumstances at the site. Potential management tools will depend on the specific circumstances and may require experimentation on artificially established populations prior to implementation. **Before taking any action, expert advice must 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 controlling invasive species and restoring habitat. Existing populations should be monitored on an ongoing basis to determine their viability, as well as for any negative impacts stemming from land development, grazing, altered hydrology and weed encroachment.

References

- British Columbia Conservation Data Centre. Botany Program. 2008. Database containing records of rare plant collections and observations in the province of British Columbia.
- Burrill, L.C. Western Wildcucumber *Marah oreganus* (T. & G.) Howell. A Pacific Northwest Extension Publication. PNW 401. Oregon State University, Washington State University, University of Idaho.
- Donovan, M. 2009. Personal Communication. Botanist, Victoria, BC.
- Schlisling 1969. Seedling morphology in *Marah* (Cucurbitaceae) related to the Californian Mediterranean climate. *American Journal of Botany* 56(5): 552-561.

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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