

# Anthoxanthum odoratum

SWEET VERNALGRASS

|                 |   |
|-----------------|---|
| ENGLISH NAMES   | sweet vernalgrass, large sweet vernal grass |
| SCIENTIFIC NAME | Anthoxanthum odoratum                       |
| FAMILY          | Poaceae or Gramineae (Grass)                |



Photo Credit: ©JOHN M. RANDALL/  
THE NATURE CONSERVANCY

Sweet vernalgrass is a perennial, tufted grass that has a sweet vanilla scent, especially when dry.

## RANGE/KNOWN DISTRIBUTION

Sweet vernalgrass is a native of Eurasia that was introduced to North America in the late 1700s as a meadow grass. It has escaped cultivation and now ranges along the east coast of North America from northern Florida to southern Canada, and on the west coast from northern California to Vancouver Island. It is found throughout the range of Garry oak ecosystems in British Columbia, especially in the south.

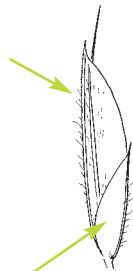
## IMPACTS ON GARRY OAK AND ASSOCIATED ECOSYSTEMS

Non-native grasses such as sweet vernalgrass are present in most Garry oak ecosystems and may comprise over 30 percent of the vegetation. These non-native grasses can form a dense litter layer that blocks light and can suppress the regeneration of native plants. Litter from the vernalgrass adds nitrogen to the soil, favouring the growth of non-native plants that are adapted to high nitrogen levels.

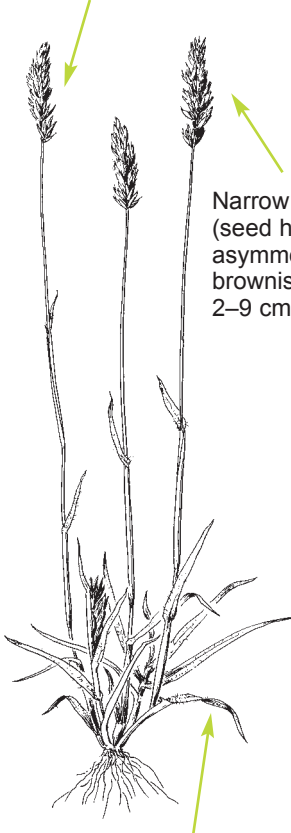
Sweet vernalgrass can alter the composition of native plant species found in a Garry oak ecosystem. This can reduce available habitats and food sources for some rare and endangered animal species. It contains allelopathic chemicals that suppress the growth of other plant species, and competes aggressively for water and nutrients with other grasses and forbs, especially in spring. Ironically, phosphorous from the decomposing roots of sweet vernalgrass appear to favour and encourage the growth of other grass species.

ANTHOXANTHUM ODORATUM

2 sterile lemmas  
(bract around flower),  
hairy, 3 mm long. Fertile  
lemma firm, hairless.



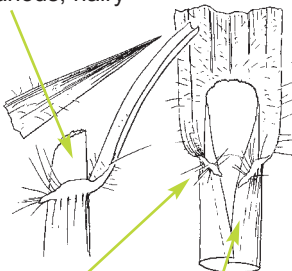
Each spike (flower head) contains  
many spikelets approximately  
6.5–8.5 mm long



Glumes (bracts)  
sharp-pointed

Narrow panicle  
(seed head),  
asymmetrical,  
brownish-yellow,  
2–9 cm long

Ligule (projection from  
sheath) 2–3 mm long,  
membranous, hairy



Auricles  
(projecting lobe  
on sheath) hairy

Sheath open, margins  
overlapping, smooth

Blade (leaf) flat, somewhat  
hairy towards the base, 3–7  
mm wide, upper surface ridged

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## FIELD DESCRIPTION

Sweet vernalgrass is a tufted perennial, with hollow, hairless stems, 30–60 cm tall. It can be distinguished from other grass species by its sweet, vanilla scent (especially when dry) and early flowering. Annual vernalgrass (*A. puelli* or *A. arisatum*) is a smaller non-native annual grass. Expert consultation may be required as grass identification can be difficult.

## LIFE HISTORY

Sweet vernalgrass reproduces from seeds. It grows rapidly and flowers early in the spring, forming distinct, identifiable clumps that wither by mid-summer. Individual leaves are short-lived, lasting only about 19 days. Its roots are fibrous and shallow, found mainly within the top 10 cm of soil.

Sweet vernalgrass produces a vast quantity of seeds (60–1,250 seeds per plant every year) that may be blown a short distance by wind. Most seeds germinate within the first year. It does not spread vegetatively.

## HABITAT

Develop a long-term, realistic program for invasive species removal before undertaking any work. Before taking action, expert advice should be obtained. Please refer to the introductory section of this manual.

Sweet vernalgrass colonises poor soils and dry, open habitats such as lawns, pastures, meadows, woodlands, open forests, rock outcrops and roadsides. It prefers soils that are low in phosphorus.

## MANAGEMENT

Small patches of sweet vernalgrass should be removed before it can spread. If the infestation is already large, the highest priority should be placed on control or removal in the areas of highest conservation value, such as areas with rare or endangered plant species.

**PHYSICAL CONTROL:** For small patches of sweet vernalgrass, hand pulling or careful hoeing can be effective in early summer before the seed sets, but this is very labour intensive. It can also be difficult, as non-native grasses will likely be mixed with native species. Carefully identify native and non-native species before starting removal of non-native grasses. Avoid disturbing the soil or trampling of native plants.

**BIOLOGICAL CONTROL:** No known biological agents are available.

For more information contact the Garry Oak Ecosystems Recovery Team, or see the website at [www.goert.ca](http://www.goert.ca)