

Agrostis capillaris

COLONIAL BENTGRASS

ENGLISH NAMES Colonial bentgrass, common bentgrass, browntop
SCIENTIFIC NAME *Agrostis capillaris*
FAMILY Poaceae or Gramineae (Grass)



Colonial bentgrass is a matted and densely tufted perennial grass with fine leaf blades and open flowerheads.

Photo Credit: © JAMIE FENNEMAN/E-FLORA BC

RANGE/KNOWN DISTRIBUTION

Colonial bentgrass is native to Europe, central Asia and northern Africa. It has been intentionally introduced to many regions of the world, likely for use as livestock fodder and in erosion control. It has since become naturalized throughout Asia, Australia and New Zealand, western and eastern North America, Greenland, Central and South America, as well as the sub-Antarctic islands. In British Columbia, it is common on southern Vancouver Island and the southwestern part of the province, becoming uncommon further East and North.

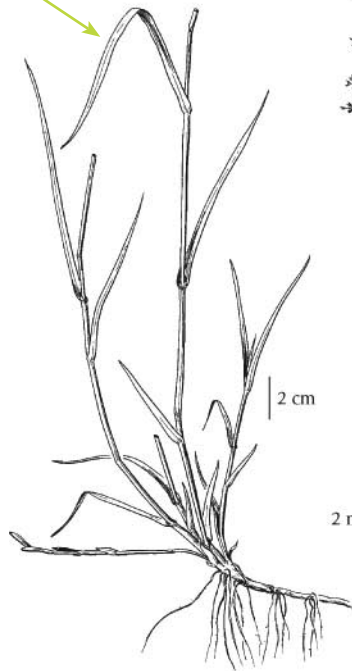
IMPACTS ON GARRY OAK AND ASSOCIATED ECOSYSTEMS

Non-native grasses are present in most Garry oak ecosystems and may cover a combined total of 50-80 percent of the landscape. Colonial bentgrass produces abundant seed and readily establishes on bare soils. It produces dense rhizome and sod mats that inhibit the establishment of native species. Competition for water continues throughout the year, becoming critical during the dry summer months. As the grasses die off, they form a dense litter layer that blocks light and thus suppresses the regeneration and establishment of native species. The litter also provides fuel and creates conditions for detrimental high-intensity fires. As it decomposes, nitrogen is added to the soil, favouring the growth of the non-native species. These grasses can also be a medium for the introduction of harmful fungi, viruses and nematodes. Combined, these effects can significantly change the plant composition, reducing available habitats and food sources for some rare plant and animal species.

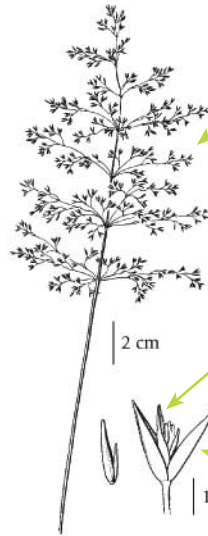
INVASIVE SPECIES IN GARRY OAK AND ASSOCIATED ECOSYSTEMS IN BRITISH COLUMBIA

AGROSTIS CAPILLARIS

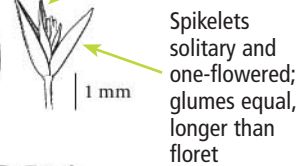
Leaf blades flat to folded (rolled when young), narrow, 1-15 cm x 1-5 mm



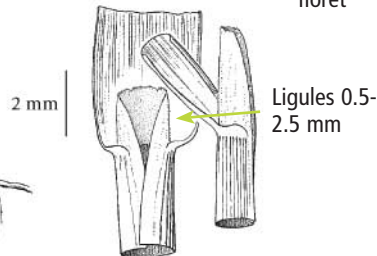
Flowerheads open and branched, 1-20 cm x 1-12 cm



Lemna shorter than glumes, with short awns or awnless



Spikelets solitary and one-flowered; glumes equal, longer than floret



Ligules 0.5-2.5 mm

Vascular Plants of the Pacific Northwest, Leo C. Hitchcock; Arthur Cronquist, and Mario Ombey, illustrations by Jeanne R. Janish. Published by the University of Washington Press (1969).

FIELD DESCRIPTION

Colonial bentgrass is a low-growing, matted and tufted grass growing from rhizomes and sometimes stolons. Its stems are spreading and grow to 80 cm long. The entire plant is hairless. It can be distinguished by its narrow leaf blades and open flowerheads. Colonial bentgrass may be confused with creeping bentgrass (*A. stolonifera*), also found in this handbook, and the two will often hybridize. Creeping bentgrass has longer ligules and has stolons. Expert consultation may be required as grass identification can be difficult.

LIFE HISTORY

Colonial bentgrass is a fast-growing perennial grass. It readily colonizes new sites and will initially reproduce slowly by seed. However, once

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established it spreads quickly via its stolons and detached shoots, which readily root and produce new plants. Plant growth occurs primarily in the spring and summer with flowers maturing in July to August. Flowers are hermaphroditic and wind pollinated. Seeds are small and abundant.

HABITAT

Colonial bentgrass thrives at dry to slightly moist sites, though it can also be abundant in wetlands. It is tolerant of highly variable temperatures and occurs at low (coastline) to high (up to 2,200 metres in BC) elevations. It is found in open meadows, grasslands and disturbed areas such as fields, roadsides and urban areas. It can also tolerate shade such as at forest edges.

MANAGEMENT

Management of non-native grasses should focus on the removal of the grasses as well as the accumulated litter layer, while minimizing soil disturbance. Carefully identify native and non-native species before starting any treatment. If the infestation is already large, priority should be given to areas having highest conservation values, such as those with rare species.

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

PHYSICAL CONTROL: Manual removal by hand pulling can be effective in spring or early summer before the seed sets. However, this can be very labour intensive and is feasible only when patches are small. Disturbance to the soil should be minimal. Control by manual removal is difficult since broken stolons will often develop roots and regrow.

BIOLOGICAL CONTROL: No known biological agents are available.

CHEMICAL CONTROL: Populations too large for manual removal can be managed by cautious application of herbicides. Effective control of colonial bentgrass has been achieved with the use of either pre- or post-emergent herbicides. 100% control was achieved with BAS 9052 OH. *Herbicides should only be used with extreme caution, and under expert advice, in sensitive Garry oak ecosystems.*

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OTHER TECHNIQUES: Prescribed burning is not an effective management method for colonial bentgrass as a study in Oregon found abundance of the species to be ten-fold in burned versus unburned areas. Colonial bentgrass can also not be managed by cutting or grazing. Due to its low stature, its relative leaf loss is minimal in comparison to other grass species, and it is thus able to maintain its competitive advantage. Grazing on colonial bentgrass in cultivated plots was even found to increase the abundance of the species.

PREVENTATIVE MEASURES: Soil disturbance and the use of fertilizers should be avoided in natural areas. Equipment, clothing and animals should be checked and cleared for seeds when leaving an infested area. Encourage plant nurseries, gardeners and farmers to stock and use native or non-invasive species, and to avoid using non-native grasses such as colonial bentgrass.

SELECT REFERENCES

Edwards, G. R. and M. J. Crawley. 1999. Herbivores, seed banks and seedling recruitment in mesic grassland. *Journal of Ecology* 87: 423-435.

Hester, A. J., C. H. Gimingham, and J. Miles. 2008. Succession from heather moorland to birch woodland iii. seed availability, germination and early growth (abstract). *Journal of Ecology* 79 (2): 329-344.

Hulme, P. E. 1996. Herbivores and the performance of grassland plants: A comparison of arthropod, mollusc and rodent herbivory. *Journal of Ecology* 84 (1): 43-51.

Smith, R. S., H. Buckingham, M. J. Bullard, R. S. Shiel, and A. Younger. 1996. The conservation management of mesotrophic (meadow) grassland in northern England: 1. Effects of grazing, cutting date and fertilizer on the vegetation of a traditionally managed sward (abstract). *Grass and Forage Science* 51 (3): 278-291.

A comprehensive annotated bibliography of literature specific to colonial bentgrass is available at www.goert.ca.

For more information contact the Garry Oak Ecosystems Recovery Team, or see the website at www.goert.ca