

Poa annua

ANNUAL BLUEGRASS

ENGLISH NAMES Annual bluegrass, annual meadowgrass, low speargrass
SCIENTIFIC NAME *Poa annua*
FAMILY Poaceae or Gramineae (Grass)



Photo Credit: © JAMIE FENNEMAN/E-FLORA BC

Annual bluegrass is a low-growing, tufted, annual winter grass and is common in lawns, fields and roadsides.

RANGE/KNOWN DISTRIBUTION

Annual bluegrass is native to Eurasia and has become naturalized around the globe. Its current range includes Europe, Asia, Africa, Australia and New Zealand, North, Central and South America, and the sub-Antarctic Islands. It is common throughout British Columbia, especially in the southwest of the province.

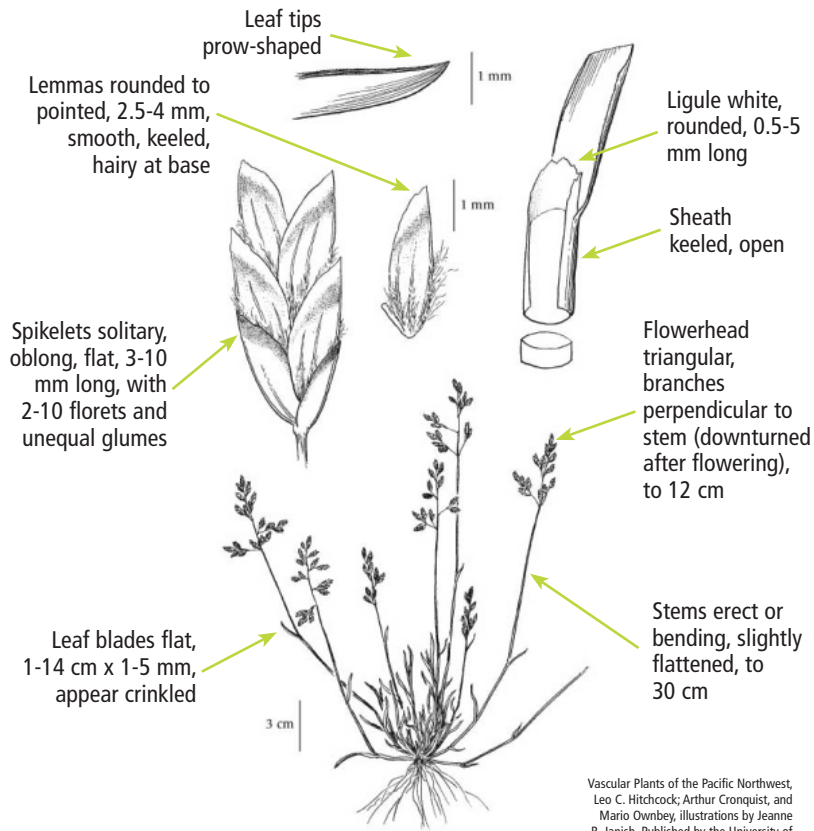
IMPACTS ON GARRY OAK AND ASSOCIATED ECOSYSTEMS

Non-native grasses are present in most Garry oak ecosystems and may cover a combined total of 50-80 percent of the landscape. Annual bluegrass readily reseeds and colonizes bare soil, forming a dense rhizomatous mat that inhibits the establishment of native species. As a winter grass, it develops early in the season, aggressively out-competing native species for light. 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.

FIELD DESCRIPTION

Annual bluegrass is a hairless tufted grass that is low, spreading and densely-clumped. Leaves are mostly basal and are a paler green compared to other grass species. Flowerheads are whitish-green and the margins of glumes and lemmas are purplish on some specimens. It

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can often be recognized by the fact that it is one of the earliest grasses to flower. Expert consultation may be required as grass identification can be difficult.

LIFE HISTORY

The habit of annual bluegrass varies from behaving like an annual (var. *annua*) to behaving more like a perennial (var. *reptans*). The annual variety is a true winter grass and is one of the earliest grasses to flower. The seeds begin to germinate in late summer to early fall, peaking in mid to late fall. The perennial variety can germinate at almost any time of year and is triggered when soil temperatures fall below 20°C. The seeds can lie dormant in the soil for years if conditions are not suitable. Seed heads will form in seedlings as little as 6 weeks old and viable seed production can begin only a few days after pollination.

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HABITAT

Annual bluegrass is found in dry to moist soils, but prefers moister sites where it can survive year-round. This grass prefers full sun to partial shade and is usually found on slopes having southern aspects. In British Columbia, it is found on slopes up to 1,500 metres in altitude. It can survive in areas having compacted soils, but will not tolerate acidic soils. Typical habitats include open forests, streambanks, lawns, gardens, agricultural fields, roadsides and other highly disturbed areas.

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 or careful hoeing can be effective in early spring before the seed sets. However, this is very labour intensive and is feasible only when patches are small. Disturbance to the soil should be minimal.

BIOLOGICAL CONTROL: Some successes have been reported in managing annual bluegrass with the bacterium *Xanthomonas campestris* pv. *poae* and the rhizobacterium *Pseudomonas putida*. A negative relationship has also been reported between annual bluegrass and the amount of arbuscular mycorrhizal (AM) fungi in the soil. However, it must be cautioned that the reverse was found for creeping bentgrass (*A. stolonifera*), another species also found in this manual, and is likely true for other invasive species as well.

CHEMICAL CONTROL: Broad-spectrum herbicides can limit the growth of annual bluegrass but are not effective as the sole method of control. Complete control has not been achieved due to the high genetic variability of the species; while some varieties may be affected by one herbicide, others may be tolerant. *Herbicides should only be used*

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with extreme caution, and under expert advice, in sensitive Garry oak ecosystems.

OTHER TECHNIQUES: Annual bluegrass will withstand cutting or mowing and set seed even when cut to as low as 1 mm. 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.

PREVENTATIVE MEASURES: Soil disturbance, and compaction, and the use of fertilizers should be avoided in natural areas. Encourage plant nurseries, gardeners and farmers to stock and use native or non-invasive species, and to avoid using non-native grasses such as annual bluegrass. Isolate any affected areas until the infestation can be brought under control. Equipment, clothing and animals should be checked and cleared of seeds when leaving the area.

PERSISTENCE: Annual bluegrass seeds can remain dormant in the soil for as many as 6 years.

SELECT REFERENCES

Christians, N. 2006. Control options: What's next for *Poa annua* control? *Grounds Maintenance* March 2006: 28-31.

Gange, A. C., D. E. Lindsay, and L. S. Ellis. 1999. Can arbuscular mycorrhizal fungi be used to control the undesirable grass *Poa annua* on golf courses? *Journal of Applied Ecology* 36: 909-919.

Gough, R. E. and R. Carlstrom. 1999. Wheat gluten meal inhibits germination and growth of broadleaf and grassy weeds (abstract). *Hortscience* 34 (2): 269-270.

Youngner, V. B. and F. J. Nudge. 1968. Chemical control of annual bluegrass as related to vertical mowing. *California Turfgrass Culture* 18: 17-18.

A comprehensive annotated bibliography of literature specific to annual bluegrass is available at www.goert.ca.

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