

BC's Coast Region: Species & Ecosystems of Conservation Concern

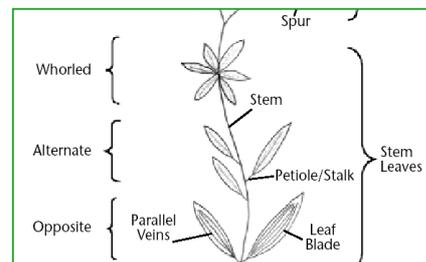
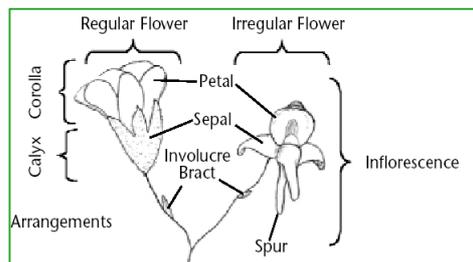
Tall Bugbane (*Actaea elata* var. *elata*)

Global: G3 Provincial: S1 COSEWIC: E BC List: Red, Identified Wildlife



Notes on *Actaea elata* var. *elata*: A member of the family Ranunculaceae (“buttercups”), this species was formerly identified under the genus *Cimicifuga*. Members of the genus *Actaea* are also known by the common name “baneberry”, a group of plants whose waxy shiny red or white berries are highly toxic and cause damage to cardiac tissue when consumed by mammals, but are not toxic to birds which consume and disperse the seeds through their

Plant Anatomy



Description

Height up to 2 m. Plants feature large compound “maple-like” leaves and numerous (50 to 900), tiny white flowers clustered on branched bottlebrush-like flower spikes (racemes). Rhizomes are short, dark and tuberous. The alternate leaves are divided into threes Occasionally five to seven), with 9-17 lobed leaflets, each up to 18 cm long. Small, semi-dormant plants with single leaves can also occur and easily miss detection. The flowers of tall bugbane lack petals and instead attract pollinators with numerous showy white stamens. Each flower is surrounded by five tiny sepals. Unlike other members of the genus *Actaea*, fruits are green pod-like structures (up to 1 cm long) that remain on the plant long after flowering and split open in fall or winter to release about a dozen reddish-brown seeds.

Look's Like?

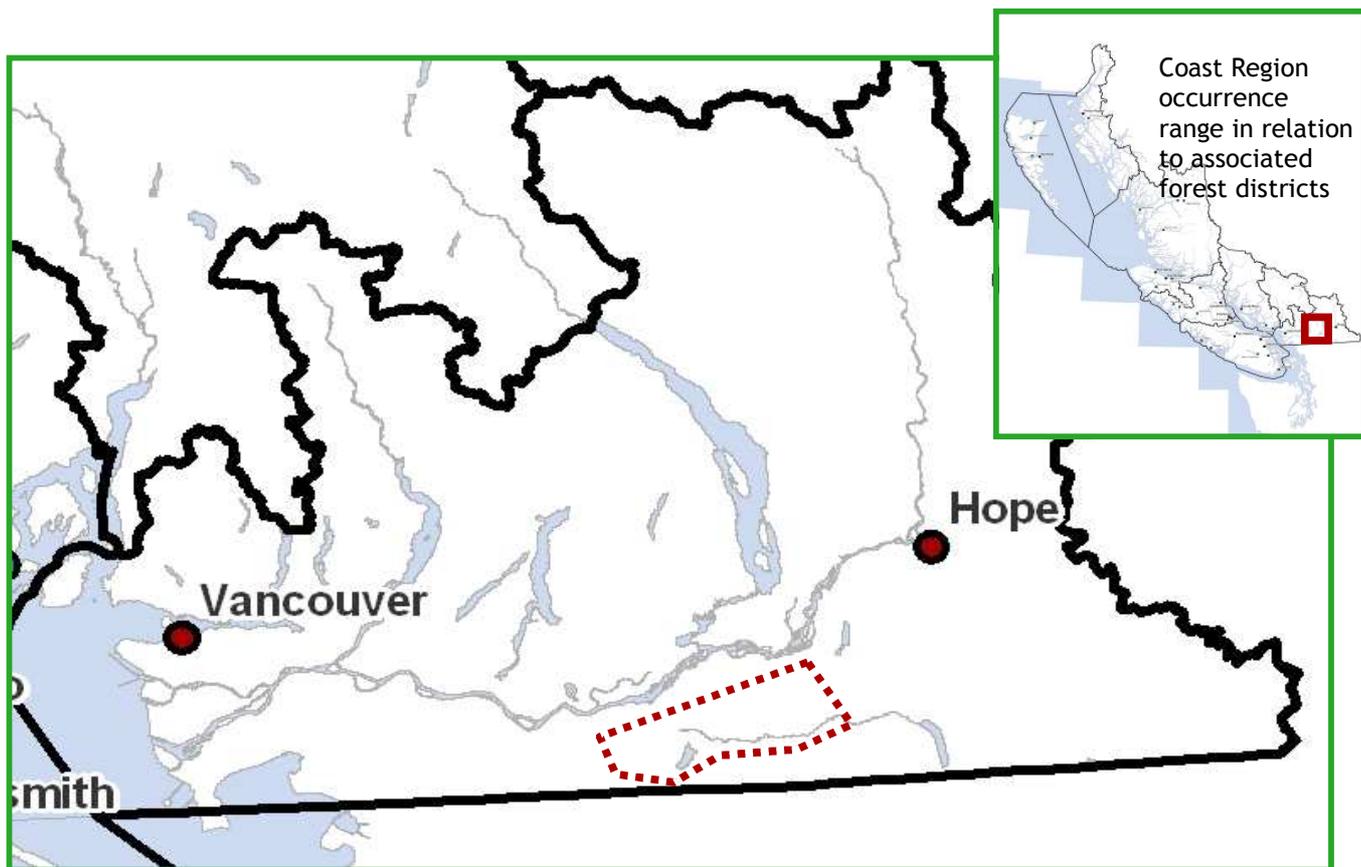
Young plants may be confused with the more wide-spread red baneberry, which has similar looking leaves. Leaflets are broader in tall bugbane (wider than they are long), the reverse of red baneberry (where leaflets are longer than wide). Distinction between the two species is more easily done when plants are mature. Flowers of tall bugbane occur in narrow spikes and the fruits are pod-like. Flowers of baneberry occur in rounded clusters and the fruits are white or red berries.



Baneberry (fruits & flower cluster)

Distribution

Elevation up to 1600 m. At the extreme northern edge of its range in BC, tall bugbane is endemic to the Pacific Northwest, occurring from southwestern British Columbia to southwestern Oregon. In BC it is found only within the Chilliwack River valley at low to mid elevations. All 10 known sites occur within the western half of the valley, mostly from Vedder Mountain and Elk Mountain. However suitable habitat occurs throughout the valley and undiscovered populations likely exist. Naturally rare throughout its range, populations in BC are small and scattered, sometimes having as few as one individual plant.



Tall Bugbane (*Actaea elata*), known range of population occurrences (red-dotted line) for the Coast Region

Habitat Preferences Understory plants commonly associated with tall bugbane include devil’s club, dull Oregon grape, salmonberry, sword fern, foam flower and vanilla leaf. Tall bugbane is often found near creeks and streams or on seepage slopes in conjunction with habitat occupied by Mountain Beaver. This plant will occasionally colonize clearcuts and road verges, although persistence on these more disturbed sites appears limited.



Tall bugbane occurs in moist, shady, forested communities dominated by Douglas fir, bigleaf maple, western redcedar and western hemlock.

Critical Features This species appears to have improved productivity in broad-leaved forest associations. Deciduous forest components, especially big-leaf maple (and sometimes red alder), provide the perfect combination of shade, light and moisture retention to support the soil and moisture regimes preferred by this species. This species is absent from young managed forests (less than 30 years old), where there are few canopy openings and competition with other plant species is high. The sporadic distribution of tall bugbane is likely due to its low seed germination and dispersal rates. The heavy seeds are poorly adapted for dispersal and the flowers are less attractive to pollinators than competing species.

Seasonal Life Cycle

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
						Flowering					
							Fruit production and seed dispersal				

Although plants can spread through rhizome development reproduction is primarily through seed. Individual plants can persist in a semi-dormant stage with only one or two leaves for several years without flowering at all.

Threats

- ◆ Even productive populations in BC are exhibiting unexplained continued decline. Combined with sporadic distribution tall bugbane is extremely vulnerable to random events such as drought, intense forest fires, overgrazing by herbivores and natural population variations.
- ◆ Forest management, agricultural practices, introduction of invasive plant species and other impacts of human disturbance activities appear to be the main threats to tall bugbane in BC, contributing to habitat loss, negative changes to associated forest communities and fragmentation.
- ◆ Management activities such as brushing and herbicide application can lead to extirpation of local populations.
- ◆ With its limited ability to produce viable seeds, this species is further threatened by adverse impacts to its pollinators, mainly bumblebees and honey bees. Wild bees are vulnerable to pesticide use, disease and the destruction of their nests during logging activities.
- ◆ Although sold in nurseries as a garden plant, tall bugbane is also used for traditional medicines making its already small population vulnerable to overharvesting.

Conservation & Management Objectives

- ◆ Apply conservation and management objectives for this species as set out in the “Recovery strategy for Tall Bugbane (*Actaea elata*) in British Columbia” (under review). Integrate complimentary objectives and protective measures as identified in the “Accounts and Measures for Managing Identified Wildlife - Accounts V. 2004 Tall Bugbane *Cimicifuga elata*.”
- ◆ Collection activities should be limited and apply practices identified in the Province’s “Voucher Specimen Collection, Preparation, Identification and Storage Protocol: Plants & Fungi.” Inventory activities should consider approaches and references identified in E-Flora’s Protocols For Rare Vascular Plant Surveys.

Specific activities should include:

- ◆ Individual populations demonstrate differing productivity characteristics and may need site specific management. Continue research underway to uncover information on population dynamics, life history characteristics, relationships with pollinators and specific habitat requirements.
- ◆ Comparison of the effects of different forest harvesting practices on the long term viability of this species is essential to overall conservation measures.
- ◆ Protect occurrences by a core 50 metre buffer around the perimeter of the population with a further management zone of 200 meters to maintain stand structure and diversity, canopy density and deciduous components, especially bigleaf maple, as well as site hydrology and microclimatic conditions. Larger buffers may be necessary.
- ◆ Minimize the construction of roads, trails, recreational facilities and stream crossings within the management zone. Within the management zone, minimize damage to plants during road maintenance activities, such as grading and brush cutting.
- ◆ Implement integrated pest management practices to reduce the need for, and potential impacts from, invasive management techniques such as broadcast herbicide spraying in and around areas of occurrence, or where high suitability is likely.
- ◆ Education and outreach about this species and its relevance in the management and conservation of forested landscapes is essential, including the impacts of harvesting of plants and seeds by collectors. Signage and fencing as part of overall site management can be applied to reduce grazing or human disturbance and increase seed bank protection.

This species is listed under the Federal Species at Risk Act (SARA) and is Identified Wildlife under the Forest and Range Practices Act. This species may also be subject to protections and prohibitions under the BC Wildlife Act. Habitat for this species may also be governed under provincial and federal regulations including the Fish Protection Act and Federal Fisheries Act as well as Regional and local municipal bylaws.

Content for this Factsheet has been derived from the following sources

- B.C. Conservation Data Centre. 2010. [Internet] [Updated July 19 2005] Conservation Status Report: *Actaea elata*. B.C. MoE.
- E-Flora. 2010. [Internet] Electronic Atlas of the Plants of British Columbia
- Kaye, Thomas N. 2007. [Internet] Taxonomic assessment of *Cimicifuga elata* and its new variety *alpestris* in southern Oregon. Institute for Applied Ecology
- Kaye, Thomas N. 2001. [Internet] Propagation and population re-establishment for tall bugbane (*Cimicifuga elata*). Second year report. Prepared for the Salem District, Bureau of Land Management and Institute for Applied Ecology.
- Knopp, D. et al. 2005. National Recovery Action Plan for Tall Bugbane (*Actaea elata*) in British Columbia, Five Year Plan - 2003 to 2008. Recovery of Nationally Endangered Wildlife (RENEW). Ottawa, Ontario. Draft.
- Mayberry, Rachel J. and Elisabeth Elle. 2009. Effects of forest structure and microhabitat on the distribution and flowering of a rare understory plant, *Actaea elata* *Forest Ecology and Management* 258 (2009) 1102-1109
- Mayberry, Rachel J. and Elisabeth Elle. 2010. Conservation of a rare plant requires different methods in different habitats: demographic lessons from *Actaea elata*. *Oecologia* (2010) 164:1121-1130
- Ministry of Environment, Lands and Parks Resources Inventory Branch. 1999. [Internet] Voucher Specimen Collection, Preparation, Identification and Storage Protocol: Plants & Fungi. Standards for Components of British Columbia's Biodiversity No. 4b
- Tall Bugbane Recovery Team. 2009. Recovery strategy for Tall Bugbane (*Actaea elata*) in British Columbia. Prepared for the B.C. Ministry of Environment, Victoria, BC. 38 pp. (in draft 2011).
- Penny, Jenifer L. and George W. Douglas. 2001. [Internet] COSEWIC Status Report on the Tall Bugbane (*Cimicifuga elata*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa.
- Penny, Jennifer I. 2004. [Internet] Accounts and Measures for Managing Identified Wildlife Accounts V. 2004. Tall Bugbane (*Cimicifuga elata*).
- Polster, D. et al. 2006. [Internet] Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia. Prepared for the BC Ministry of Environment. Victoria (BC).

Prepared by: Pamela Zevit of Adamah Consultants¹ and Matt Fairbairns Aruncus Consulting for the South Coast Conservation Program (SCCP) in partnership with: International Forest Products (Interfor), Capacity Forestry (CapFor) and the BC Ministry of Environment (BC MoE), E-Flora and E-Fauna the Electronic Atlas of the Flora and Fauna of BC, Species at Risk & Local Government: A Primer for BC. Funding for this factsheet was made possible through the Sustainable Forestry Initiative (SFI): <http://www.sfiprogram.org/>
¹Original account prepared by Cindy Sayre.

Every effort has been made to ensure content accuracy. Comments or corrections should be directed to the South Coast Conservation Program: info@sccp.ca. Content updated April 2012.

Image Credits: Tall Bugbane: Thomas N. Kaye, Tall Bugbane flower and seed pods: Brian Klinkenberg, Red Baneberry Flower head: Kurt Stueber Wikipedia, Red Baneberry leaves & fruit: Pamela Zevit, Habitat: brilang Flickr, Plant anatomy graphic: Gilbert Proulx. Only images sourced from "creative commons" sources (e.g. Wikipedia, Flickr, U.S. Government) can be used without permission and for non-commercial purposes only. All other images have been contributed for use by the SCCP and its partners/funders only.