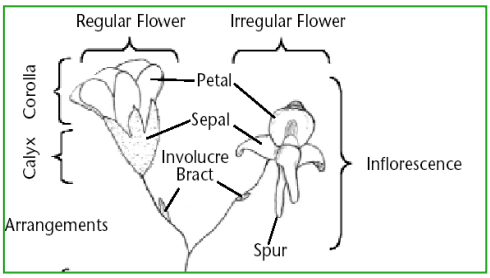
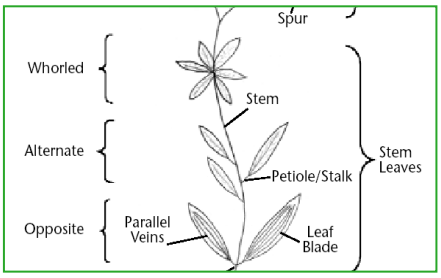
BC's Coast Region: Species & Ecosystems of Conservation Concern
Vancouver Island beggarticks (*Bidens amplissima*)

Global: G3, Provincial: S3, COSEWIC: SC, BC List: Blue

Notes on *Bidens amplissima*: A member of the family Asteracaea ("asters"), this wetland annual has over 85% of its global range in BC. Morphologically similar to several other species of beggarticks, the genetic makeup of *B. amplissima* suggests that it only recently evolved from two closely related species - "nodding" and "three-parted" beggarticks, and may be the result of hybridization. Once thought to be endemic only to extreme southwestern BC, this species has recently been discovered in Washington State.

Plant Anatomy





Description

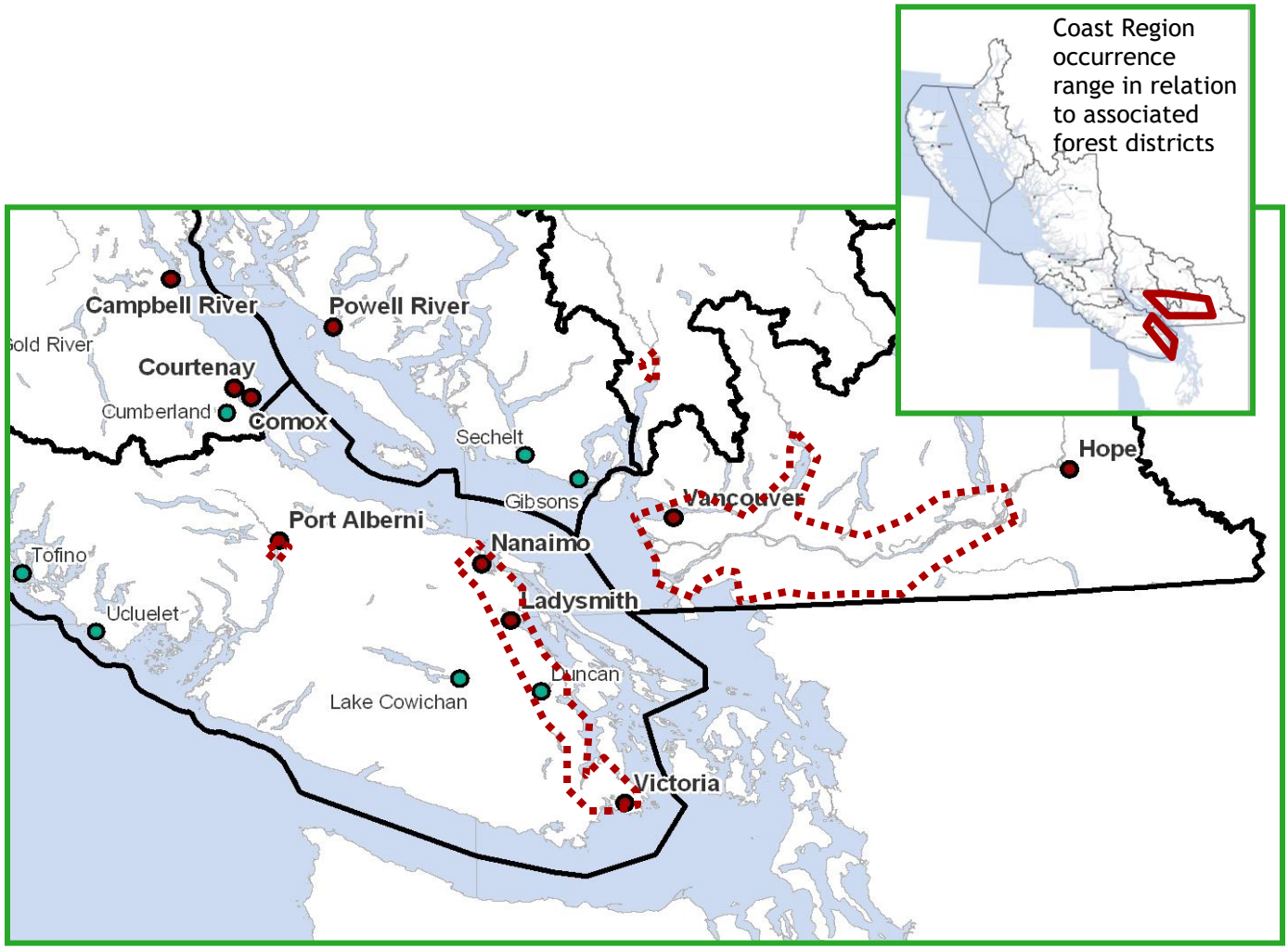
Height to approximately 1 m. An annual herb with erect branching stems. Both stems and flower stems (inflorescence) may be smooth to slightly hairy. The toothed, opposite leaves are 8-20 cm long and range from un-lobed to deeply three-lobed. The short leaf stalks are sometimes slightly winged. The 6-9 yellow ray-petals of the flowers are clustered at the ends of branches. Two rows of short, green, leaf-like involucre bracts (modified leaf) surround each head. Numerous tiny single-seeded fruits (achenes) develop on each head after flowering. Achenes are tan or brown coloured, 5-7 mm long and wedge-shaped, each with 2-4 barbed needle-like appendages (awns) that assist in seed dispersal by hooking onto fur, feathers or clothing.

Look's Like?

The closely related nodding beggarticks (*B. cernua*), also a wetland species, often overlaps in habitat and distribution. However these two species show variation in micro-habitat preferences with *B. amplissima* preferring to grow in wetted edge areas and *B. cernua* found in standing water. Given water levels often fluctuate in wetland habitats, the plant leaves, flowers and especially achenes of these two species are a preferred method for identification. Achenes of Vancouver Island beggarticks are more broadly wedge-shaped (concave with wide bases), compared to the more narrowly wedge-shaped (convex with narrow base), achenes of nodding beggarticks.

Nodding Beggarticks

Distribution Vancouver Island beggarticks is endemic to the Pacific Northwest, found only in coastal areas of southern British Columbia[1] and Washington State. In BC this species occurs on Vancouver Island from the southern tip north to Campbell River (Beaver Lake, Glen Lake, Colquitz Creek, King's Pond, Swan Lake, Rithet's Bog, Somass River delta, Ladysmith Bog, Comox Estuary), in the Squamish River estuary (Howe Sound) and in the Fraser Valley Lowlands (Jericho Park, Richmond Nature Park, Dow/Delta Slough, Iona Island, Woodward Island, Douglas Island, Minnekhada, Pitt Lake, Elgin Park and the Aldergrove Department of National Defense Property).



Vancouver Island beggarticks (*Bidens amplissima*), known and potential range of population occurrences (red-dotted line) for the Coast Region

[1] A single occurrence has been documented in the Royal BC herbarium records from the Kimsquit River Estuary north of Bella Coola but this remains unconfirmed.

Habitat Preferences

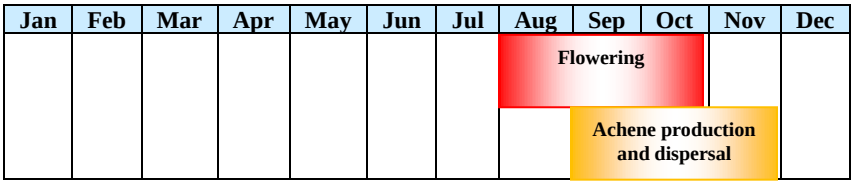
This species is found along the shoreline of marshes, wet meadows, bogs, ditches, stream banks, and lake margins. It also occurs within tidal zones of the Fraser River, where the soil is regularly inundated and drying out between tides.

Critical Features

Vancouver Island beggarticks is specific to wetland verge or edge habitats where seasonal fluctuations in water levels (high in winter and drawn down and drying in summer), occur to allow for seed set and germination. This species does not persist well in areas where wetland plant communities support high levels of cattail and invasive tall grasses (e.g. invasive reed canary grass species), which form dense root mats with thick layers of annually decaying leaf litter inhibiting seed germination. Plants occur where waterfowl congregate; seeds are dispersed via bird feces deposition and on plumage. As well the foraging behavior of waterfowl helps to reduce competitive vegetation.

A wetland species with a distinct preference for silty, alluvial soils, Vancouver Island beggarticks occurs in open, moist habitats at low elevations.

Seasonal Life Cycle



Seed dispersal likely continues over the winter after initial production in summer and fall.

Threats

- Although most populations are believed to be relatively stable and at least 10 out of the 44 known occurrences have good viability, declines in areas of suitable wetland habitat from urban development pose one of the most significant threats. One of the largest populations in BC (Hull's Field, Langford) was partially destroyed by highway development.
- Water level and flood management activities on private and publicly managed lands alter natural seasonal flow regimes needed for this species to propagate.
- While this species tolerates a certain level of mowing and trampling, damage to sensitive wetland habitats and soils along with wildflower collection from recreational activities may impact the viability of various populations depending on the degree or frequency of activity.
- Invasive grass species (e.g. introduced reed canary grass species) as well as invasive plant management and wetland restoration activities can adversely impact populations where this species is not adequately identified and measures for its protection taken.
- Fisheries enhancement activities that require maintenance of high water levels may adversely impact the persistence of this species and impact seed banks.

Conservation & Management Objectives

- Investigate complimentary conservation and management objectives for this species and its habitat that occur in the "Recovery Strategy for Multi-species at Risk in Vernal Pools and Other Ephemeral Wet Areas in Garry Oak and Associated Ecosystems in Canada." Integrate recommendations for protection identified in the "COSEWIC Status Report on Vancouver Island Beggarticks (*Bidens amplissima* Greene) in Canada."

- 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:

- Maintenance of natural seasonal variation in water levels is critical. Avoid creating fixed, managed water levels, which may allow competing plant species to spread.
- Maintain open canopy and low herbaceous cover. Overgrown sites require cutting back of shrubs and saplings (in late fall post breeding bird window). On some sites, occasional mowing may be required after flowering and seed set. Do not mow between April and September.
- Avoid digging or construction activities that can alter shoreline habitat, which harbours important seed banks and provides a critical seed source in adverse years.
- Create buffer zones around populations to minimize access by people and animals (e.g. livestock where they are an issue). Suitable buffer sizes will be dependent on slope, water table movement and adjacent land use. Fencing and or signage about the sensitivity of wetland communities and rare species is essential for education and awareness effectiveness.
- No-disturbance zones that restrict recreational activities such as trail building, hiking, boat launching and storage within buffer zones are an effective means of protection for wetland communities overall. While some disturbance is required to maintain open areas necessary for this species to persist, too much disturbance can compact soils and reduce overall viability.
- Employ integrated pest management strategies that minimize the need for herbicides applications. This is particularly a concern when beggarticks occurs near golf courses or gardens where herbicide use is common. Water bodies near populations should be protected from chemical impacts since this species often occurs on gently sloping ground and is influenced by surface and ground water flows.
- Effective long-term control and reduction in competition from invasive or aggressively spreading vascular plants (e.g. introduced grasses as well as native wetland species such as cattail, often used in wetland restoration) must form part of strategies to protect and recover populations. Disturbance to rare plant species and communities must be minimized during control activities.

This species is listed under the Federal Species at Risk Act (SARA) and may 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 January 14 2009] Conservation Status Report: *Bidens amplissima*. B.C. MoE.
E-Flora. 2010. [Internet] Electronic Atlas of the Plants of British Columbia
Klinkenberg, Rose. 2010. [Pers. communication]
Klinkenberg, B., and R. Klinkenberg. 2001b. COSEWIC Status Report on Vancouver Island Beggarticks (*Bidens amplissima* Greene) in Canada. Comm on the Status of Endangered Wildl in Can, Ottawa.
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
Parks Canada Agency. 2006. Recovery Strategy for Multi-species at Risk in Vernal Pools and Other Ephemeral Wet Areas in Garry Oak and Associated Ecosystems in Canada. In Species at Risk Act Recovery Strategy Series. Ottawa: Parks Canada Agency. 73 pps.
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 Consultants and Matt Fairbarns 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/
*[1]Original 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 August 2010.**

Image Credits Vancouver Island beggarticks: Chris Lee, Vancouver Island beggarticks (flower close-up): Brian Klinkenberg, Nodding beggarticks: Jamie Fenneman, Habitat: TLC The Land Conservancy, 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.