Specialist Bees & Their Host Plants in BC

Why this forage resource?

Native bees and native plants evolved in mutual relationships with each other over the last 100 million years. While the peril of honeybee populations has captured public attention, native bees are in even greater danger because they are not explicitly cared for by human beings. "In the last decade pollinators, particularly bees, have come to the forefront of conservation importance due to their integral link to pollination, food supply and overall ecosystem health" (Sheffield and Heron, 2018, pp. 45)[1]. Loss of habitat is a threat to all species.

Bee diversity and plant diversity are one and the same. The best way to protect pollinators is by protecting wild populations (plants and bees). Urban gardens can help by reducing fragmentation, thereby supporting the evolution, adaptation and connectivity of native species.

Wild bees need wild plants

Specialist bees rely on specific plants to supply the pollen needed to feed their offspring. Without their host plant, specialist bee populations can disappear. Landscapes that support specialist bees also benefit generalists (including honeybees), who have less restricted floral palates. This resource focuses on specialist bees that occur in one of BC's most populated ecoregions. The lists were developed with reference to Jarrod Fowler's work on pollen specialist bees.[2]

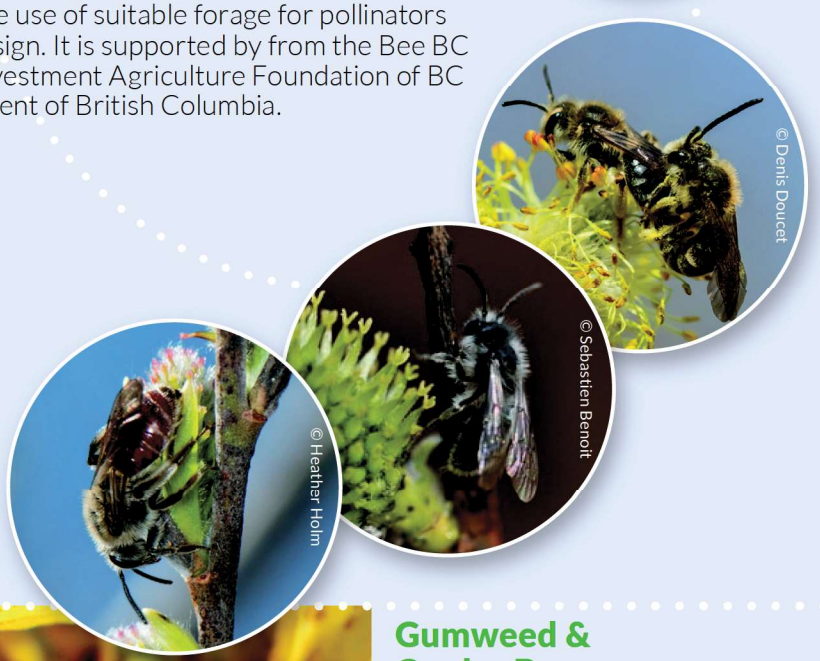
1. Sheffield, C.S. and J. Heron, 2018. The bees of British Columbia (Hymenoptera: Apoidea, Apiformes). J. ENTOMOL. SOC. BRIT. COLUMBIA 115: 44-85.

2. Jarrod Fowler, 2016, Specialist Bees of the Northeast: Host Plants and Habitat Conservation. https://jarrodfowler.com/pollen_specialist.html

This forage resource aims to inspire a greater appreciation of plant-bee relationships and to promote the use of suitable forage for pollinators in conservation and planting design. It is supported by from the Bee BC Program, as delivered by the Investment Agriculture Foundation of BC with funding from the Government of British Columbia.

Willows & Mining Bees

We recommend any native willow, regardless of species, which supports numerous Andrena specialists (7 on the coast, 14 in the interior). Like other early flowering trees and shrubs, willows are a lifclinc for all spring pollinators, in this case both specialists and generalists.



Gumweed & Carder Bees

In the interior, *Grindelia squarrosa* supports about 16 specialist bees. On the coast, *Grindelia integrifolia* supports 4. One bee that is commonly found on gumweed, on the coast and in the interior, is the variable carder bee, *Dianthidium subparvum* (left).
This solitary bee creates nests of pebbles cemented together with sticky resin.

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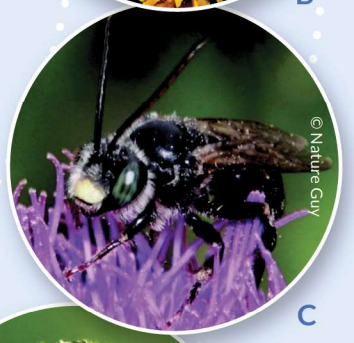
TOP 10 PLANTS FOR SPECIALIST BEES ON THE PACIFIC COAST

	PLANT	COMMON NAME	BEE OF INTEREST
1	*Astragalus collinus*	rattle milk-vetch	***Megachile melanophaea*** A
2	*Grindelia integrifolia*	entire-leaved gumweed	***Dianthidium subparvum*** B
3	*Solidago lepida*	western Canada goldenrod	***Colletes fulgidus***
4	*Potentilla anserina*	common silverweed	***Panurginus ineptus***
5	*Cirsium brevistylum; C. edule*	clustered thistle; edible thistle	***Melissodes rivalis*** C
6	*Erigeron philadelphicus*	Philadelphia fleabane	***Osmia coloradensis*** D
7	*Symphyotrichum subspicatum*	Douglas' aster	***Megachile fidelis*** E
8	*Ranunculus occidentalis*	western buttercup	***Andrena caerulea*** F
9	*Penstemon serrulatus*	cascade beardtongue	***Osmia brevis*** G
10	*Salix spp.*	any native willow	***Andrena frigida***

A

B



C

D

E

F

G

BC has a nationally significant bee fauna.

At nearly 600 species, BC harbours ²/₃ of Canada's known bee species. Most native bees are solitary and build their nests in the ground or in cavities. Each species has its own habitat, forage, and nesting preferences. This forage resource focuses on specialist bees, who rely on specific plants to complete their life cycles.

Specialist bee populations are at risk when they are poorly understood. Lack of understanding of population distributions or specific floral relationships poses a risk to specialist bees because:

- critical habitat may be lost;
- forage plants may not be included in planting plans;
- new / invasive plant or bee species may spread disease or compete for growing, foraging and nesting sites.

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Like all undomesticated species, native plants evolved and adapted to a particular area or ecoregion over many generations.

Unlike cultivated forms, native plants are open-pollinated by native pollinators, and grow true to seed. Knowing native plants is a good way to know your ecoregion. Many of the plants recommended in this forage resource have better success when started from seed. Fortunately, this is also more economical.

DESIGN: H. MacASKILL
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IAF Investment Agriculture Foundation

British Columbia