

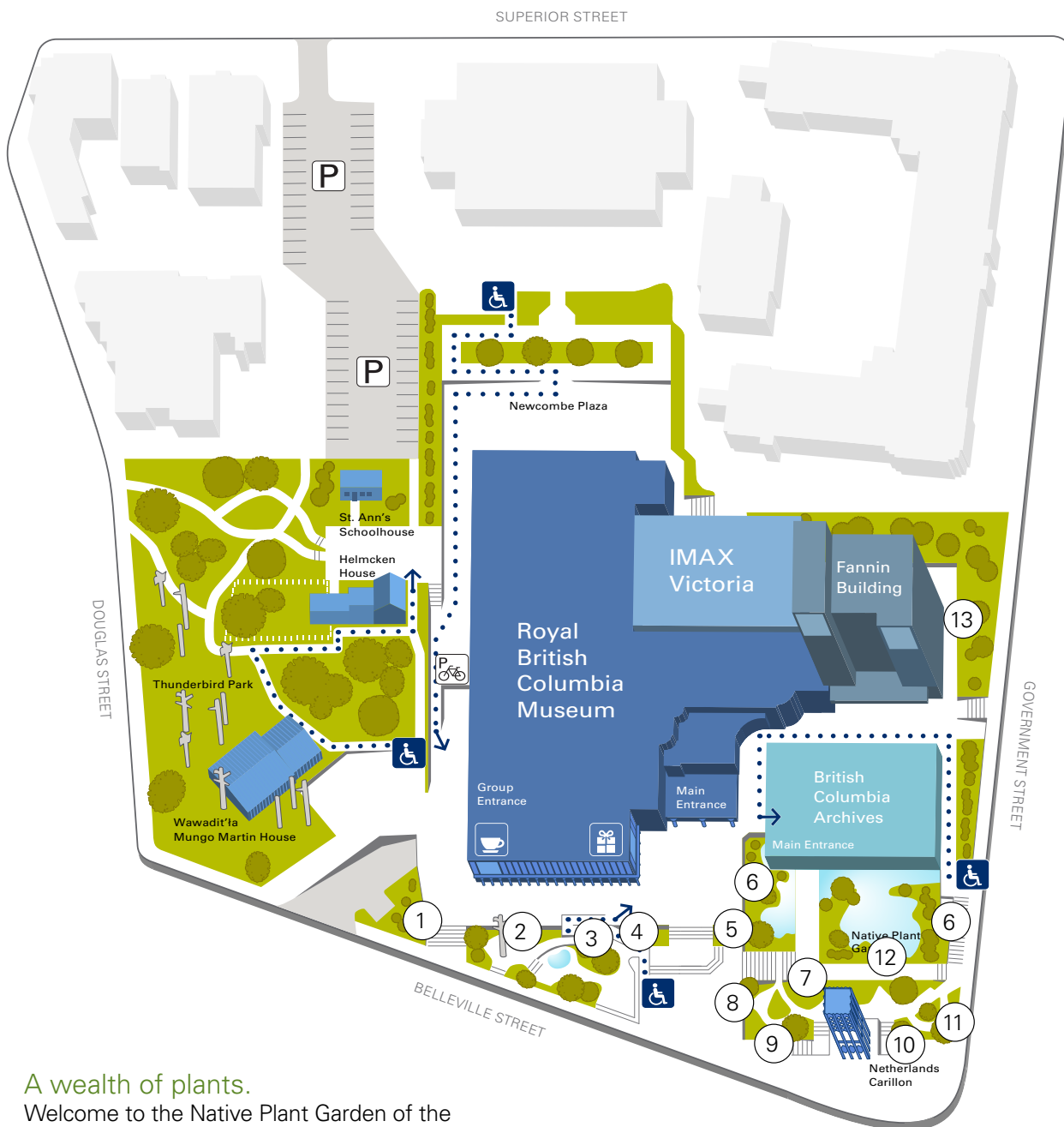
NATIVE PLANT GARDEN BROCHURE

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ROYAL BC
MUSEUM





A wealth of plants.

Welcome to the Native Plant Garden of the Royal British Columbia Museum, a living collection of BC native plants. The map shows where you can find the plants highlighted here, as indicated by the numbered stations. Some stations test your knowledge of botany with questions; answers are at the end.

Our garden was established in 1968 with plants transplanted from the wild as well as purchased. It is most colourful from early March to September. Many of the plants are from coastal BC and a few are from the interior. There are a few rare species and some that are used by BC First Nations. You may find plants in our display to grow in your own garden.

STATIONS

1. Grasses are great.
2. Fancy ferns: Ostrich fern (*Matteucia struthiopteris*).
3. Tasty berries.
4. Powerful medicines: Cascara (*Rhamnus purshiana*).
5. Sand dune plants.
6. Temperate coastal rainforest.
7. Sex in the garden: a natural hybrid (*Arctostaphylos x media*).
8. June-plum (*Oemleria cerasiformis*).
9. Ponderosa pine (*Pinus ponderosa*).
10. Dry interior British Columbia meadow.
11. Rarest of the rare: Garry oak meadow.
12. Wetland plants.
13. Wild food—Camas bed on side of legislature.

1. Grasses are great.

You have encountered grasses several times today. We eat grasses as cereals (oats), bread (wheat) or sweetener (sugarcane). We drink them (beer from barley), use them as tools (bamboo chopsticks) or even wear them (bamboo fibre in clothing). We sweep our floors with them (brooms) and use them in our washrooms (bamboo fibre tissue). We walk on them (lawns). We even breathe them (oxygen produced by photosynthesis in their leaves). Displayed here are some of BC's 250 grass species. How are they similar? How are they different?

2. Fancy ferns: Ostrich fern (*Matteucia struthiopteris*).

The 'fiddlehead' fronds of this fern unroll into typical fern leaves. Ferns reproduce by spores, not by seeds. They are classified by their leaf shape and by the arrangement of brownish 'sori' that produce spores on the lower leaf surface. How many species can you find here? Do you know why ferns must grow in moist environments?



Figure 1. Lower surface of Sword fern leaf. The round structures are 'sori', where the spores are produced.

3. Tasty berries.

Many berries are delicious but some are poisonous. Familiar edible berries include tomatoes, cucumbers, bananas and blueberries. British Columbia has more than 25 species with edible berries and the most common are species of the Heath family in the genus *Vaccinium* (blueberries and huckleberries). The small shrubs here are different species of *Vaccinium*. The Rose family also has many edible berries, such as Saskatoon, blackberry and raspberry.

4. Powerful medicines: Cascara (*Rhamnus purshiana*).

Liquid extracts or powdered tablets of Cascara bark are used to relieve constipation by First

Nations and in hospitals. In the mid-twentieth century wild populations declined sharply in BC as people collected bark for the pharmaceutical industry. It is a powerful laxative and you need good knowledge and experience to administer it. Plants produce molecules that chemists could never imagine; many are an important source of medicine.



Figure 2. Cascara leaves; the flowers are small and not colourful.

5. Sand dune plants.

BC's coastline has some spectacular sandy beaches. As the sand is shifted by wind and water, sand dune plants stay in place, anchored by their roots and long horizontal stems. Growing in clumps, they trap blowing sand. Here are some common beach plants such as dune grass, beach pea, seashore lupine, sea pink and silver weed.

6. Temperate coastal rainforest.

Some of the world's most extensive temperate coastal rainforest occurs in British Columbia. Our two cedar species (red and yellow) are distinguished by the shape of their cones.



Figure 3. Female cone of Western redcedar (*Thuja plicata*) one of the dominant coastal tree species. See if you can find the other species of cedar. The leaves will look similar, but the female cone is round.

7. Sex in the garden: a natural hybrid (*Arctostaphylos x media*).

The 'x' in the latin name for this plant signifies that this shrub is a hybrid. We planted its parents decades ago. Their beautiful bell-shaped flowers open at the same time and bees transported the pollen from one species to the other. The seeds formed by this cross-pollination then grew into plants that are a natural hybrid. The parents are both here, can you find them?

8. June-plum (*Oemleria cerasiformis*).

Despite its name, this shrub does not produce true 'plums'. June-plums flower as early as February but only half the plants produce fruit. Do you know why? The mature, purple fruits are a favourite of birds.

9. Ponderosa pine (*Pinus ponderosa*).

Ponderosa pine is common in lower elevation, dry forests of the southern interior. Conifers such as cedars, spruce, fir, Douglas fir, hemlock and pine, produce their seeds in woody cones. Pine species differ according to the size and shape of their cones and the number and length of the needles. How many species of pine can you find?

10. Dry interior British Columbia meadow.

Much of the dry interior zone is dominated by open stands of Ponderosa pine with species of bunchgrass including the tall grass growing in the corner at the top of the stairs—bluebunch wheatgrass (*Pseudoroegneria spicata*).



Figure 4. Flowers of spreading dogbane (*Apocynum androsaemifolium*), a common plant in dry habitats. Fibres from the stem could be used to make cordage, although it is not as strong as a related species.

11. Rarest of the rare: Garry oak meadow.

Warm, south-facing slopes around Victoria were once covered by Canada's rarest ecosystem, the Garry oak meadow, restricted to southern Vancouver Island and the Gulf Islands. The remaining five percent of this ecosystem is home to more than 100 rare plant and animal species. Many plants of Garry oak meadows have showy, spring-blooming flowers and seem to disappear for much of the year, but they remain alive as underground bulbs, an adaptation to wet winters and dry summer.



Figure 5–7. Some showy flowers of Garry oak meadows, from top to bottom: nodding onion (*Allium cernuum*), fool's onion (*Triteleia hyacinthina*), large-flowered triteileia (*Triteleia grandiflora*).

12. Wetland plants.

In this area are plants that grow along pond margins as well as in bogs and fens.



Figure 8. Buckbean (*Menyanthes trifoliata*) is a common plant of pond margins and bogs throughout BC.



Figure 9. Flowers from two different buckbean plants. Do the flowers look the same to you?



Figure 10. Stems of tulle or hard-stemmed bulrush (*Schoenoplectus acutus*) are used by First Nations to make baskets and mats that had many functions.

13. Wild food—Camas bed on side of legislature.

The coastal First Nations of BC eat traditional sea foods such as salmon and clams. Around Victoria they also tended and ate delicious camas bulbs, cooked underground for many hours in large pit ovens. Harvested in the summer, they provided an important source of carbohydrates for many months.

Answers:

1. Similar: long narrow leaves with parallel veins. Different: the way the flowers are positioned on the stalks. And yes, grasses do have flowers—that's where seeds are formed, they just aren't very colourful.

2. Ferns must grow in moist environments for the following reason. Spores from the plant in front of you (the sporophyte) don't grow into a similar looking plant. They germinate into a tiny plant—a few millimetres across (the gametophyte), that produces gametes—eggs and sperm. To reach and fertilize the egg, the sperm must swim through a thin film of water on the surface of the gametophyte. The fertilized egg will grow into the plant in front of you, completing the cycle.

There are at least six species of fern in this garden, not all are easily visible.

7. The parents of this hybrid are kinnikinnik (or common bearberry) (*Arctostaphylos uva-ursi*) and hairy manzanita (*Arctostaphylos columbiana*). They commonly form hybrids on Vancouver Island.



Figure 12. Left to right: hairy manzanita, hybrid, kinnikinnik.

8. Male and female flowers of June plum are produced on separate plants; so do holly, papaya and kiwi (the wild kiwi is from China, not New Zealand). In all of these species, fruit only forms on plants with female flowers.

9. There are three species of pine in the Native Plant Garden, six occur in BC.

12. Buckbean flowers have two different forms. Some plants have flowers with long styles—the female part in the centre of the flower—and short anthers—the male parts that produce the pollen. These are called ‘pin flowers’. Other plants have flowers with the opposite arrangement—‘thrum flowers’. The part of an insect’s body that comes into contact with the male part of a thrum flower will contact the female part of a pin flower. This increases the probability that a flower will receive pollen from a different plant, thus promoting outcrossing and maintaining genetic diversity.

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