

Loss of biodiversity threatens both wild and cultivated populations of plants. Botanical gardens, seed banks, and nature preserves all serve as genetic reservoirs of plants and ecosystems. Threats to plants in the wild include habitat loss, overexploitation, diseases, invasive organisms, and climate change.

This tour, marked by numbered signs, will take you through the Perennial Garden and up the Rhododendron Walk, finishing in the Sino-Himalayan Garden. Begin by going down the stairs across from the entrance. At the end of the long planting bed turn right and proceed to the tall ceramic pot opposite the formal pool. **1 - Yellow pitcher (*Sarracenia flava*)**, native to bogs of SE USA, has tall tubular leaves evolved to trap insects for their essential nutrients like nitrogen and potassium. This is one of 9 species of *Sarracenia*, a genus named for late 17<sup>th</sup> C doctor and scientist of New France, Michel Sarrazin, who collected the northeast species *Sarracenia purpurea*.

Threats to bogs and their flora include drainage of wetlands for development and recreation, herbicide use, fire suppression, beaver control, invasive species, collection of seed and plants for the florist trade, and mining of peat bogs for fuel. Bogs are huge carbon sinks and important climate regulators. The enormous reservoir of fuel in a dried out bog can feed devastating, long-lasting fires, as in Russia this past summer. Our local Burns Bog has burned several times and continues to be vulnerable to human activities.

Backtrack to the end of the planted bed and look right at the graceful conifer **2 - Serbian spruce (*Picea omorika*)**, a rare tree endemic to the Drina River valley in Bosnia and Serbia. Though widespread in Europe millions of years ago its range became restricted after the Pleistocene glaciation. It was logged until the early 1900s and now fewer than 1000 trees remain in 60 hectares of forest in Pancic Narodni Nature Reserve in the Tara Mountains. A Great Plant Picks selection, it is valued for its narrow shape, drooping branches, and attractive young purple cones.

Continue to the left, circle around the Stanley Smith Rock Garden and look right for **3 - Rocky Mountain bristlecone pine (*Pinus aristata*)**. This slow growing native of high altitudes in the Rockies of Colorado, New Mexico and Arizona often acquires a twisted form on exposed sites and can live more than 2000 years.

Go left up the stone stairs and under the stone arch. Follow the curving path past the Laburnum Walk and look left for **4 - Russian cypress (*Microbiota decussata*)**, a low growing conifer whose bright green foliage turns purple-bronze in winter. Great Plant Picks values its “delicate, lacy foliage [that] sits in graceful layers...”. *Microbiota* is native to the high mountains of the Sikhote-Alin region of east Siberia which includes a UNESCO World Heritage biodiversity reserve, described as “one of the world’s most distinctive natural regions”.

Walk on and turn left at the entry to the Perennial Garden stopping at the small tree with fuzzy winter buds **5 - star magnolia (*Magnolia stellata*)**, endemic to central Honshu, the main island of Japan. As its wild population continues to decline due to land development and illegal collecting, the species is losing genetic diversity.



Walk through the Perennial Garden and ahead to the Rhododendron Walk. Turn right and proceed to the next stop on your right **6 - paperbark maple (*Acer griseum*)**. Another Great Plant Pick, this popular tree is attractive year-round and prized for the winter interest of its cinnamon brown peeling bark. Its unusual leaves comprised of 3 leaflets give excellent fall colour. Though found in a wide area of central China, its populations are small, very fragmented, and in decline. Watch for other specimens as you walk.

Continue up the walk and look for **7 - Baker’s cypress (*Cupressus bakeri*)**, visible as the second conifer from the path. This slow-growing cypress is native to a few scattered mountain sites in Northern California and southwest Oregon and prefers exposed serpentine or volcanic soils.

Take the path into the Hydrangea Bed to the sculpture at its centre. Just to the left is **8 - Dawson's magnolia (*Magnolia dawsoniana*)**. Note its winter silhouette of zigzag angular branching and the sideways pointing fuzzy flower buds. Native to Sichuan in scattered populations, this magnolia is vulnerable in the wild.

Return to the Rhododendron walk and continue to the entrance to the Canadian Heritage Garden. Follow the country road and at the fence go right to **9 - Jack pine (*Pinus banksiana*)**, the only 2-needled pine of eastern Canada. A small, often twisted and contorted tree that survives the harsh conditions of Canada's vast boreal forests, Jack pine was a favourite of artists like Tom Thomson and the Group of Seven. Rare and threatened at the edges of its range, Jack pine provides the only nesting habitat for an endangered bird, the Kirtland's warbler. The fossil record indicates that Jack pine survived the ice ages in the Appalachian and Ozark Mountains and from there recolonized the north.

Continue on to **10 - Pacific yew (*Taxus brevifolia*)**, a small, slow-growing conifer scattered in western forests. Poisonous to humans, its seeds are dispersed by birds. Drug research from 1967 and FDA approval in 1994 of the cancer drug paclitaxel, better known as taxol, derived from bark stripped from Pacific yew, might have driven this scarce species to extinction had not a synthetic version of the drug been developed.

Just ahead a crossroad to the left takes you to **11 - Garry oak (*Quercus garryana*)**, the key species of an ecosystem that is especially vulnerable because the low- elevation dry, rocky bluffs that are good habitat for Garry oak communities are often prime locations for residential development.

Return to the main path and go to the split rail fence planted with heritage apples and raspberries. Preserving heritage stocks of cultivated food plants is important for the genetic diversity of our crops. **12 - Fameuse (*Malus pumila* 'Fameuse')**, also known as "snow apple", dates back to the earliest French settlements in Canada and may be a parent of the McIntosh apple.



Leave the Canadian Heritage Garden and bear right beside Fern Dell to **13 - Chinese tulip tree (*Liriodendron chinense*)**, a relict species, one of only two remaining, of a once widespread genus. This species is widely scattered in forests in the Yangtze River valley and south to northern Vietnam. Due to its poor regeneration, its numbers have been greatly reduced by extensive logging. The rows of holes on the large limb on the left are the work of a sapsucker woodpecker.

Continue on, turning left at the entry to the Fern Dell and go to the unusual evergreen fern with strap-like leaves **14 - hart's-tongue fern (*Asplenium scolopendrium*)**. Native to both Europe and North America, it is threatened in parts of its North American range. It is most plentiful in Ontario, especially on the forested ridges of fossil rich sedimentary rock included in the UNESCO Niagara Escarpment Biosphere Reserve.

Go up the stairs on your right and turn left up the gravel path. Look on the left for **15 - Korean fir (*Abies koreana*)**, which occurs in the mountains of South Korea and Chenju Island as well as in Sikhote-Alin range of Russia (see tour stop #4 - *Microbiota* ). This Great Plant Pick with its violet-blue cones (produced at young age) is valued as a "stately pyramidal evergreen with gracefully layered branches".

Continue up the path with the Stone Garden on your left and just before the jade bench look right to **16 - Chinese hemlock (*Tsuga forrestii*)**, an Asian relative of our native hemlock. Native to southwest China, it is threatened by increased logging and habitat loss.

The tour ends here. Return down the path and turn left at the paved path which will lead you back down to the garden entrance. To learn more about biodiversity and conservation visit the VanDusen Library or look at these websites: Botanic Gardens Conservation International: [www.bgci.org](http://www.bgci.org), Garry Oak Ecosystems Recovery Team: [www.goert.ca](http://www.goert.ca). For more Great Plant Picks see [www.greatplantpicks.org](http://www.greatplantpicks.org).