Care & Maintenance

Knowing how to care for your native riparian species is key to the success and survival of these plants in their first few years of establishment. This is a summary of how to identify, care, monitor and maintain your riparian species.


Sweet gale


Hardhack


Salmonberry


Black Twinberry

Summer months require the following care after planting:

- leave soaker hoses on for 2 hours or hand-water during the permitted watering times (morning/evening) 3 days per week minimum;
- mulch with leaf litter around the "well" created at each plant base to retain moisture.

If the following summer season is dry, plants will need continued watering. One season of root growth may not be enough for the plants to survive harsh environmental stressors such as drought.

Plant Maturity & Maintenance

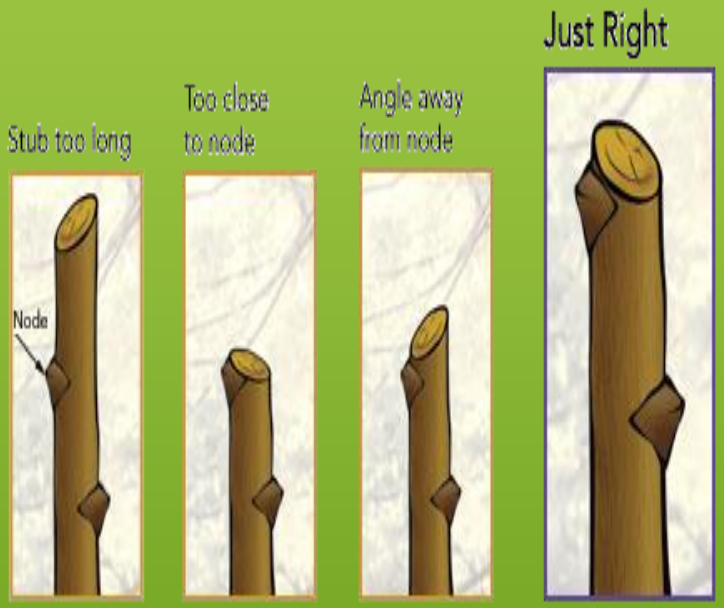
The riparian restoration was designed so that each plant will mature and co-exist with its neighboring plants over the long term. On average, there will be 1-2 metre spacing between plants. They will grow to fill the space. Undisturbed riparian areas are naturally dense thickets in wetlands.

However, if you prefer pruning is an acceptable option. Cutting just above the nodes on stems promotes new growth below the cutting.

Did you know? Using a thick layer of organic mulch not only reduces evaporation and minimizes water use, it also keeps the soil cool and conditions the soil as it breaks down!

Monitoring & Maintenance

How to prune riparian vegetation



Monitoring

Monitoring riparian plantings can be as simple as a visual check or as elaborate as one that documents a variety of plant attributes. The CSSP team conducts a **Riparian Health Assessment (RHA)** during the following fall and spring to monitor:

- plant survival rates;
- changes in the riparian area covered by vegetation;
- invasive plant competition;
- reduction of bare ground/beach;
- transition of maturing pioneering species and understory vegetation.

Photo-point monitoring (taking precisely replicable photos of resources that require long term management) will also be conducted on a yearly basis to collect long-term data on riparian restoration.

Maintenance

Maintenance, the act of correcting deficiencies that have been identified during monitoring. It is most easily accomplished if attended to on a regular basis before problems get out of hand. Maintenance activities will be specific to each site.

In general, to maintain riparian plantings:

- control weeds and invasive species;
- address erosion problems before they become severe;
- address infertility problems that start to appear (yellowing of leaves, poor growth, etc.);
- control grazing by animals.

Did you know? Common rock salt and vinegar is an environmentally friendly way to treat weeds! Weed controllers, such as round-up-ready, are toxic to the environment and detrimental to fish and wildlife health.

Identification

Foreshore species are wetland shrubs found along lake and river margins, mostly at low elevations. Some species such as Sweet Gale can tolerate being fully submerged in water year-round. Upland species are woodland shrubs that prefer drier soils and are found in the upper reaches of the riparian area. Below is a description of the most common plants used by CSSP.


Twinflower


Oceanspray


Mock Orange


Indian-plum

Upland Riparian Species

Oceanspray (*Holodiscus discolor*)

- flowers white to cream, turn brown and remain on plants over winter
- up to 4m tall
- habitat dry to moist, open sites, open woods, thickets, clearings, logged areas; mostly at low to middle elevations

Mock Orange (*Philadelphus lewisii*)

- up to 3m tall
- flowers white, usually 2-3cm broad, very fragrant
- varying habitats, open forests and forest edges on moist rich sites, to open bushy areas on dry, rocky soils

Indian-plum (*Oemleria cerasiformis*)

- shrub or small tree, 1.5-5m tall
- one of the first plants to flower in the spring
- flowers greenish-white, about 1cm across, male and female flowers on separate plants
- edible but bitter fruit, with a large pit
- habitat dry to moist, open woods, stream banks

Did you know? As much as 85% of the food budget of small streams is directly dependent on over stream riparian vegetation! Bacteria and stream invertebrates consume leaf litter, which in turn provide food for fish.

Identification

Kinnikinnick (*Arctostaphylos uva-ursi*)

- trailing shrub, ground cover
- flowers small pinkish-white
- edible bright red berries; leaves smoked by First Nations
- habitat sandy and well-drained exposed sites, dry rocky slopes, dry forests and clearings

Red Flowering Currant (*Ribes sanguineum*)

- up to 1-3m tall
- flowers white to rose color, clusters of 10-20 or more
- fruit blue-black, unpalatable round berries with glandular hairs, white waxy bloom
- habitat dry open woods, rocky slopes at low to mid-elevations

Saskatoon (*Amelanchier alnifolia*)

- shrub to small tree 1-5m tall
- fruit dull red becoming purple to nearly black, edible, sweet, berry-like miniature apples
- habitat well-drained soils, rocky shorelines, bluffs, meadows, forest edges, dry to moist open forests, roadsides

Identification

Foreshore Riparian Species

Nootka Rose (*Rosa nutkana*)

- spindly to 3m tall, with a pair of large prickles at the base of each leaf
- flowers pink rosette
- edible purplish-red, round 'hips' or "rose-hips" form in the fall, good for tea
- habitat wide-range, from dry to wet, very resilient species

Red-osier Dogwood (*Cornus stolonifera*)

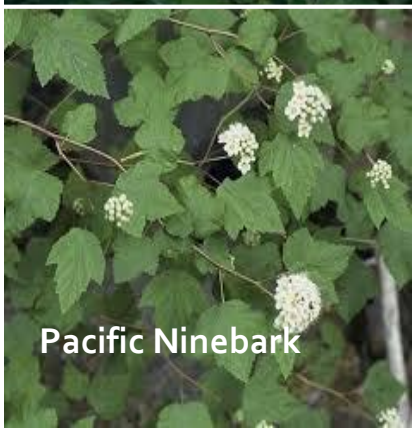
- freely spreading shrub with many stems, 1-6m tall, bright red stems in fall
- flowers white to greenish, small 2-4mm long
- fruit white but occasionally blue-tinged, small berry-like drupes, bitter and inedible
- habitat moist soil, typically in swamps and streamside forests and scrub, also open upland forests and thickets

Pacific Willow (*Salix lucida*)

- shrub or small tree, 4-11m tall
- cuttings can be propagated, roots systems will sucker
- habitat streamside thickets, lakeshores and wetland margins, forest edges and wet openings, clearings; low to middle elevations

Did you know? Riparian vegetation prevents erosion by increasing soil cohesion and binding stream banks in place!

Identification



Slough Sedge (*Carex obnupta*)

- densely tufted, purplish and with shredded sheaths
- leaves are flat with margins rolled under
- habitat marshes, swamps, bogs, stream-banks, lakeshores, wet forest openings, meadows and clearings; common at low elevations

Hardhack (*Spirea douglasii*)

- many branches, up to 2m tall, young growth reddish-brown, often forming thickets
- flowers pink to deep rose, numerous in long narrow clusters; clusters of several small, smooth, pod-like follicles remain on the shrub after the leaves have fallen
- habitat stream banks, swamps, lake margins and damp meadows

Pacific Ninebark (*Physocarpus capitatus*)

- up to 4m tall
- flowers white, small about 4mm long
- habitat wet, somewhat open spaces, occasionally on drier, shrubby sites; low to middle elevations
- many consider this to be highly poisonous

Did you know? Riparian vegetation can slow water velocity and also increase soil's capacity to absorb water, helping to prevent winter flooding while augmenting summer streams flows!

Identification

Sweet Gale (*Myrica Gale*)

- aromatic wetland shrubs to 1.5m tall
- spread by suckers
- habitat lake/river margins, wetlands; mostly at low elevations

Salmon Berry (*Rubus spectabilis*)

- branching to 4m tall with scattered prickles
- flowers pink to reddish-purple
- orange berries, edible and delicious
- habitat moist to wet spaces; often abundant along stream edges at low elevations

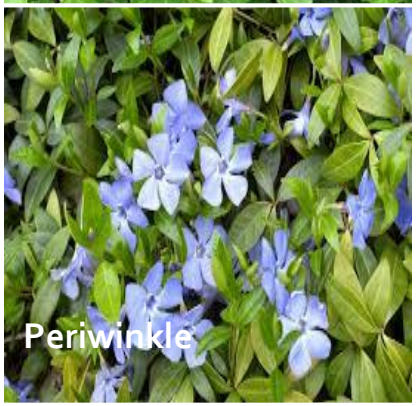
Sitka Willow *(Salix sitchensis)*

- shrub or small tree 1-8m tall
- leaves bright green and sparsely silky on upper side, satiny with short hairs pressed flat underneath
- habitat streamside thickets, lakeshores and wetland margins, forest edges and wet openings, clearings; low to middle elevations

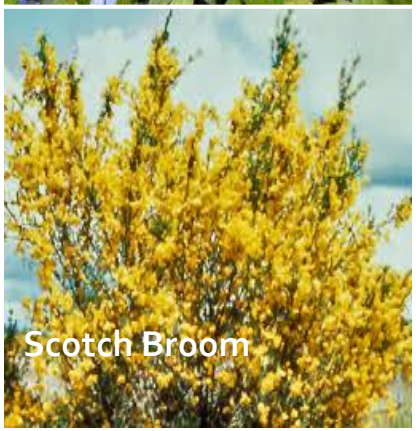
Did you know? Riparian vegetation moderates water temperature, creating a microclimate that is warmer in winter and cooler in summer. It also filters water and increases water purity by reducing bacteria and chemicals.

Invasive Species

English Ivy (*Hedera helix)*
***Impact*:** English Ivy is a highly invasive species that thrives in our climate. Ivy often forms thick mats of vegetation that smother native plants. English Ivy grows very quickly, up to 4m a year, and can be spread by birds.
***Management*:** Vines that grow as groundcover can be hand-pulled, bagged and disposed of off-site. Vines growing up trees should be cut about 1m above ground level to kill the upper portions, which can be left to decay on the tree or removed when brittle. It is important to pull seedlings before they become established.



Periwinkle (*Vinca minor)*
Impact: Periwinkle is a trailing groundcover that has lilac blue flowers. Rooting at nodes, it forms mats and extensive infestations, even under forest canopies. Periwinkle persists in shady areas of second-growth forests, usually near the site of the original planting.
Management:_Periwinkle can be removed mechanically by digging out or by lifting up the runners with a rake and mowing the plants. Take care to remove all of the plant, as the stems root easily wherever nodes touch the ground. Periwinkle also is controlled by cutting the plants in early to late spring.



Scotch Broom *(Cytisus scoparius)*
Impact: Scotch broom is an aggressive invader in our region, especially in open or disturbed ecosystems. Broom is successful because it fixes its own nitrogen from the air, is drought tolerant and builds up a long-lived "seed bank" in the soil. Broom quickly fills open areas, forming dense stands and choking out native plants.
Management: Remove the young plants before they flower, in order to prevent the development of a soil seed bank. If pulling disturbs the soil, cut the stems at soil level. This should be done with larger plants. Damaging the cut stem with a brush blade or axe can reduce re-sprouting. Care should be taken when moving branches so that seeds are not deposited.

Did you know? Invasive plants and animals are the second greatest threat to the earth's biodiversity after habitat loss? Biodiversity means a greater number of species. The greater the diversity, the greater the chance of natural sustainability.

Invasive Species


Daphne

Daphne (*Daphne laureola)*
Impact: Daphne is a small shrub, up to 1.8m in height, and is similar to a rhododendron with leaves that are glossy, dark green, and oval in shape. Its flowers are greenish-white, and it produces shiny, black berries that are poisonous to humans. This highly toxic plant excludes the growth of other plants. Its ability to alter soil chemistry may prevent normal forest succession.
Management: Removal of this plant before it seeds is most effective. Gloves should be worn when working with it, as the bark, sap, and fruit contain toxins which can cause severe skin irritation. Ideally in the spring, pull plants from moist soil and cut larger plants as close to the ground as possible.


Himalayan Blackberry

Himalayan Blackberry (*Rubus discolor)*
Impact: Blackberry thickets crowd out native species and alter soil chemistry, which inhibits other plants from growing. If allowed to dominate, this species of blackberry can choke most competition.
Management: young plants up to 1m tall, can be removed by hand-pulling and/or using weed wrenches. This should be done before the seeds set and is easier in moist soil. Remove as much of the root system as possible to minimize sprouting. Older plants can be removed by using a pick mattock, brush cutters, machetes, etc. Large, established patches can be controlled by cutting new growth.


St. John's Wort

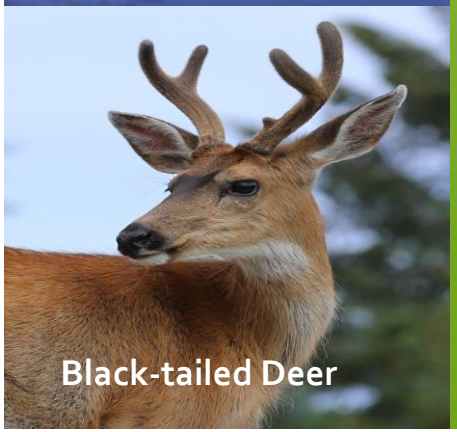
St. John's Wort *(Hypericum perforatum)*
Impact: St. John's Wort is not only invasive, but is toxic to livestock. It is a vigorous competitor in pastures, rangelands and natural areas. Roots are long and deep and can continue to sprout a few feet underground!
Management: Repeated cultivation destroys this invasive. It is not found in any cultivated crop. Mowing several times to prevent maturation helps control the plant.

Did you know? Scotch Broom seeds can remain viable in the soil for up to 30 years. A single plant can live to be up to 20 years!

Herbivory


Elk


Beaver


Black-tailed Deer

Herbivory is the consumption (grazing) of plant tissues by animals, which can have a negative impact on plant growth and reproduction. Grazing encourages natural selection, thereby favoring the evolution of plants that develop defense mechanisms. Many foreshore and upland riparian species, such as Nootka rose, have developed thorns to deter animals from grazing, while others are subject to heavy grazing. The following riparian plants are especially prone to herbivory:

- Sweet Gale
- Red-Osier Dogwood
- Indian Plum
- Crab Apple
- Red Elderberry
- Saskatoon

Stucco wire cages placed around susceptible plants, reduce damage from grazing. Depending upon plant growth and prevalence of wildlife, the caging should remain on for one to two seasons. Once the plants have established deep root systems and have good access to water, growth will increase and the plants will outgrow their cages. At this stage the plant is large enough to sustain some natural herbivory. This is "nature's pruning".

Did you know? Beavers have been Canada's national symbol for over 300 years, can swim up to 8km/hr., and their teeth never stop growing! This is why they are constantly gnawing on wood; it wears down their teeth!