

Daphne / Spurge Laurel (*Daphne laureola*) Control in BC



The Problem:

- an escaped garden ornamental imported from the Mediterranean area and is now enjoying similar climatic conditions on south eastern Vancouver Island, but *without* the pests and pathogens that keeps this species under control in Eurasia
- rapidly colonizing high value ecological areas, displacing native plants, reducing biodiversity, and posing a health risk to the public
- dense stands reduce the amount of light reaching the forest floor, limiting growth potential of native plants
- all parts of the plant contain poisonous compounds. Contact with sap can cause skin irritation and blistering. Consumption of any part of the plant, including berries, can lead to death from amounts as little as 30 grams of bark or 10 berries
- long distance dispersal by seeds by some birds and rodents complicates control/containment efforts

General Characteristics / Identification:

- long-lived (40 years >) but slow-growing shrub
- grows to 1.8 meters (6') tall, but rarely taller than 1.5 m (5') tall
- oblong, waxy, evergreen leaves are clustered in whorls at the end of each branch
- resembles a plant from the Rhododendron family
- fragrant, pale yellow-greenish inconspicuous flowers bloom in clusters at branch tips from February to April and develop into green and then black poisonous berries by early summer, when ripe

Habitat:

- moist, partial to full shady areas with well-drained soil, especially in the understories of Coastal Douglas Fir dominated forests (i.e. in the CDF BEC zone)
- neutral to acid pH, loamy to clay textured soils (e.g. forested lowland areas) but tolerates a wide range of growing conditions

Reproduction:

- both male and female plants exist (i.e. it is dioecious)
- reproduces via single seeded, egg-shaped, black berries that are distributed by fruit-eating (frugivorous) birds and rodents
- also sprouts from shallow underground lateral roots, spreading in all directions from the original plant

General Control Strategy – Prevent Further Spread:

- focus first on areas that see the highest potential use by humans e.g. campground areas
- focus on female (berry producing) plants first and contain seeds/berries
- work from outlying areas of least plant density in towards the centre of the infestation, where plant density is highest
- since plants do not set seed until approximately four years of age, pull or cut plants to ensure that seed is not set (i.e. generally concentrate on large/mature plants before removing smaller plants)

Specific Control Strategies:

Small Plants - when soil is moist, pull individual plants that are <30 cm (12") tall out of the ground being sure to avoid breaking stems off above ground; before plants go to seed ideally

- also use Pulaski to remove as many lateral roots and the tenacious tap root, if possible, while minimizing soil disturbance
- weed-whack large patches of smaller plants, wearing appropriate protection (see Safety section below) noting that high-speed cutters aerosolize plant toxins and can cause respiratory and eye irritation. Avoid damage to native plants
- transplant or plant competitive shade tolerant native plants where soil disturbance has occurred e.g. Dull Oregon Grape (*Mahonia nervosa*) or Tall Oregon Grape (*Mahonia aquifolium*) on richer, moister sites and Salal (*Gaultheria shallon*) or Sword Fern (*Polystichum munitum*) on poorer, drier sites.

Larger Plants – use push or kick bypass loppers to cut the stem of plant beneath the mineral soil surface, below the point where there is a visible colour change from brown stem to orange. Note that stems cut *above* the soil surface will re-sprout after cutting. Also note that other types of loppers are too blunt to cut the plants below ground.

- since there are often significant portions of stem lying horizontally in the duff layer and occasionally runners will poke up – do not cut these, pull them. It is critical to cut the stem below the point where the plant is actually rooted in mineral soil rather than cutting the plants where the stem simply emerges from the duff layer.
- tugging on plants or branches can help distinguish whether the stem is emanating from mineral soil or from woody duff material. In places, you may have to dig through a thick duff layer in order to find the mineral soil, before cutting can occur.
- if the infestation is so dense and/or large (i.e. hectares in size), then use of a mini-excavator with a brush rake attachment may be considered noting that soil disturbance will be significant ensuring the necessity to transplant or plant competitive shade tolerant native plants as indicated in the Small Plants section above, as well as grass seeding using native seed or a grade of agronomic seed that is a grade of Common No. 1 Forage Mixture or better.

Disposal:

- remove cut plants and wrap cuttings in tarps (to avoid distributing berries) and take to landfill
- do NOT compost
- do NOT burn or chip plant parts as noxious chemicals will be released into the air
- do NOT transport plant cuttings inside an enclosed vehicle for the same reason

Monitoring & Follow-up Treatments:

- monitor the treated site(s) every 2 to 6 months in the first year after treatment to remove young seedlings and re-sprouts, noting that a majority of germination will occur in the first two years after removal of adult plants and much lower in subsequent years.
- follow-up hand pulling is critical to ensure killing of re-sprouts and germinating seeds

Safety:

- wear gloves, a long-sleeved shirt, goggles and a breathing mask if using flailing equipment e.g. weed whacker
- avoid direct skin contact with the plant
- avoid eating with unwashed hands
- See Worksafe BC's related Safety Bulletin
http://www.worksafebc.com/publications/health_and_safety/bulletins/toxic_plants/assets/pdf/tp0601.pdf

“A Long Term Commitment is Required for Successful Invasive Plant Management - BE PERSISTENT! “