



BCTS Seaward Invasive Plant Training 2025









Invasive Plant Characteristics





These six invasive species alone caused an estimated \$65 MILLION in damage in 2008.

social, and environmental impacts

Invasive Plant Effect on Environment





They damage forests

Native plant species often take decades to grow, slowly creating intricate, deep, and healthy root systems in the forest floor. In contrast, invasive plants often grow rapidly with weak, shallow, or tap roots. When they outcompete native species, environments become more susceptible to erosion, landslides, and damaging sediment run-off.

They damage coastal areas

Marshlands, wetlands, and tidal zones are critical ecosystems. Just as human kidneys extract waste from our blood and balance bodily fluids, wetlands can clean the water that flows through them, mitigate large flood events and recharge underground aquifers. When invasive aquatic plants are introduced, they quickly crowd out native species that act as natural filters, and disrupt the delicate symbiotic system.

How Invasive Plants Affect Environment





- Replace native vegetation through competition for water, nutrients, and space.
- Reduce soil productivity
- Impact water quality and quantity
- Degrade range resources and wildlife habitat
- Threaten biodiversity
- Alter natural fire regimes
- Introduce diseases

BCTS Certification - SFI Commitments





SFI[®] Forest Management Certificate

This is to confirm that KPMG Performance Registrar Inc. has examined the procedures of

BC Timber Sales

P.O. Box 9507 Stn. Prov. Govt., Victoria, British Columbia V8W 9C2

and determined that the Company has conformed with:

the SFI 2022 Forest Management Standard (Section 2, SFI 2022 Standards and Rules)

Type of certificate: SFI Product Groups: Scope of Activities:

 ate:
 Multisite - See following page(s) for details.

 ups:
 Logs.

 see following page(s) for details.

This certificate is provided subject to applicable terms and conditions for its use in the agreement between KPMG Performance Registrar Inc. and the holder thereof. Certification does not assure regulatory compliance or continued conformance with the applicable standards by the holder.

 Certificate Code:
 PRI-SFI-FM-057

 Original Certificate Issue Date:
 September 12, 201

 Re-certification Date:
 March 31, 2022

 Certificate Revision Date:
 December 21, 2023

 Expiry Date:
 March 30, 2027





Shawn Ellsworth President KPMG PRI 777 Dunsmuir Street Vancouver, B.C., Canada V7Y 1K3

SFI 2022 Forest Management Standard

Invasive Plants within SFI Objectives:

- 2 Forest Health and Productivity;
- 4 Conservation of Biological Diversity

With connections to Objectives:

- 9 Climate Smart Forestry
- 13 Training and Education

Provincial Legislation & Regulation Overview



Weed Control Act and Regulations Requires land occupiers to control noxious weeds

Forest Range and Practices Act (FRPA) and Regulations

Invasive species measures must be included in Forest Stewardship Plans (FSPs)

Integrated Pest Management Act and Regulations Controls pesticide use through Pest Management Plans

Regulations Under FRPA





FSP Measures





FOREST STEWARDSHIP PLAN BCTS SEAWARD (TŁASTA) FSP 2024-29

FSP ID #: 1000



APPROVED DATE: NOVEMBER 26, 2024 FRM: November 26, 2024 to November 25, 2029

Forest Stewardship Plan Holder:

BC Timber Sales	Location:	Mailing Address:
Seaward - tłasta Business Area,	2217 Mine Road,	PO Box 7000,
Port McNeill Timber Sales Office	Port McNeill	Port McNeill, BC, VON 2R0
		Tel. 250.956.5000
Strait of Georgia Business Area,	370 S Dogwood St,	370 S Dogwood St,
Campbell River Timber Sales Office	Campbell River	Campbell River, BC, V9W 6Y7
		Tel. 250.286.9300

- Train staff and contractors in ID.
- Report Invasive Plant sightings via Invasives BC app
- Minimize ground disturbance
- Prompt revegetation of exposed soil (seedlings, grass seed)
- BCTS species specific management plan (developed as we encounter invasive plants associated with our primary forest activity), which may include recommendations to target or avoid brushing or mowing of invasive plants.
- Clean ground-based equipment when leaving infested sites.
- Inspection of material sources (e.g., rock pits) prior to use.
- Develop a plan to mitigate spread of known sites and for sites identified post-harvest that are associated with FSP holder's primary forest activities.

FSP 1000: Applicable Invasive Plants



- FSP priority species are unchanged;
- To be consistent with section 47 of the FRPA:

 Now also needing to manage for Invasive Plants listed in the FRPA Invasive Plants Regulation (IPR) list
 i.e. not just the FSP priority species of past FSPs)

IPR, invasive plants species



Weed Species	Scientific name	
Anchusa	Anchusa officinalis	
Baby's breath	Gypsophila paniculata	
Black knapweed	Centaurea nigra	
Blueweed	Echium vulgare	
Brown knapweed	Centaurea jacea	
Bull thistle	Cirsium vulgare	
Canada thistle	Cirsium arvense	
Common burdock	Arctium minus	
Common tansy	Tanacetum vulgare	
Dalmatian toadflax	Linaria dalmatica	
Diffuse knapweed	Centaurea diffusa	
Field scabious	Knautia arvensis	
Giant knotweed	Polygonum sachalinense	
Gorse	Ulex europaeus	
Hoary alyssum	Berteroa incana	
Hoary cress	Cardaria draba	
Hound's-tongue	Cynoglossum officinale	

These invasive plant species are listed within the FRPA Invasive Plants Regulation and apply to the FSP Measures.

Hound's-tongue	Cynoglossum officinale
Japanese knotweed	Polygonum cuspidatum
Leafy spurge	Euphorbia esula
Marsh thistle	Cirsium palustre
Meadow hawkweed	Hieracium pilosella.
Meadow knapweed	Centaurea pratensis
Nodding thistle	Carduus nutans
Orange hawkweed	Hieracium aurantiacum
Oxeye daisy	Chrysanthemum leucanthemem
Perennial pepperweed	Lepidium latifolium
Plumeless thistle	Carduus acanthoides
Puncture vine	Tribulus terrestris
Purple loosestrife	Lythrum salicaria
Rush skeletonweed	Chondrilla juncea
Russian knapweed	Acroptilon repens
Scentless chamomile	Matricaria maritima
Scotch broom	Cytisus scoparius
Scotch thistle	Onopordum acanthium
Spotted knapweed	Centaurea maculosa
St. John's wort	Hypericum perforatum
Sulphur cinquefoil	Potentilla recta
Tansy ragwort	Senecio jacobaea
Teasel	Dipsacus fullonum
Yellow Iris	Iris pseudacorus
Yellow starthistle	Centaurea solstitialis
Yellow toadflax	Linaria vulgaris

DRAFT Seaward FRPA IP list – overlap with FSP

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within the BCTS	Diffus
Seaward FSP Area	Giant
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	Harris

*based on Invasives BC Inventory.

Area

Grey shaded IPs = occurrences outside of BCTS Seaward Operating Areas.

Weed Species	Scientific name	Applicable OAs	Applicable FDUs
Blueweed	Echium vulgare	N/A (Bella Coola)	(CNC)
Bull Thistle	Cirsium vulgare	VN, HB, PH	NVI
Canada Thistle	Cirsium arvense	AP	SCC
(Common) Burdock	Arctium minus (Arctium Spp.)	NA	(NVI, CNC)
Common Tansy	Tanacetum vulgare	HB	NVI (NVI)
Dalmatian Toadflax	Linaria dalmatica	DL	SCC
Diffuse Knapweed	Centaurea diffusa	N/A (Port McNeill, Bella Coola)	(NVI, CNC)
Giant Knotweed	Polygonum sachalinense	РН	NVI
Hoary Alyssum	Berteroa incana	N/A (Bella Coola)	(CNC)
Hound's-tongue	Cynoglossum officinale	NS	SCC
Japanese Knotweed	Polygonum cuspidatum	РН	NVI
Meadow Hawkweed	Historium allegelle, et Historium ann	DH.	NVI
(or yellow hawkweed)	nieracium pitosetta of nieracium spp.	FN	
Meadow Knapweed	Centaurea pratensis	N/A (Hw19)	(NVI)
Nodding Thistle	Carduus nutans	N/A (Bella Coola)	(CNC)
Orange Hawkweed	Hieracium aurantiacum or Pilosella aurantiaca	VN, PH	NVI (CNC, SCC)
Oxeye Daisy	Chrysanthemum leucanthemem	VN, PH, HB	NVI
Purple Loosestrife	Lythrum salicaria	РН	NVI
Russian Knapweed	Acroptilon repens	KG(F)	SCC
Scentless Chamomile	Matricaria maritima	VN	NVI
Scotch broom	Cytisus scopariu	VN, HB, PH, KG, CV, HL, DL, PL, GV	All
Scotch Thistle	Onopordum acanthium	DC	CNC
Spotted Knapweed	Centaurea maculosa	N/A (Bella Coola)	(CNC)
St. John's wort	Hypericum perforatum	VN, PH	NVI
Tansy ragwort	Senecio jacobaea	N/A (Bella Coola)	(CNC)
Yellow Iris	Iris pseudacorus	РН	NVI

DRAFT Seaward FRPA IP list – not occurring in FSP Area

These plants currently do not occur within the BCTS Seaward FSP Area

*based on Invasives BC Inventory.

Weed Species	Scientific name	
Anchusa (Common Bugloss)	Anchusa officinalis	
Baby's breath	Gypsophila paniculata	
Black knapweed	Centaurea nigra	
Brown knapweed	Centaurea jacea	
Field Scabious	Knautia arvensis	
Gorse	Ulex europaeus	
Hoary Cress	Cardaria draba	
Leafy Spurge	Euphorbia esula	
Marsh (Plume) Thistle	Cirsium palustre	
Perennial Pepperweed	Lepidium latifolium	
Plumeless Thistle	Carduus acanthoides	
Puncture Vine	Tribulus terrestris	
Russian Skeletonweed	Chondrilla juncea	
Sulphur Cinquefoil	Potentilla recta	
Teasel	Dipsacus fullonum	
Yellow Starthistle	Centaurea solstitialis	
Yellow Toadflax (common)	Linaria vulgaris	

BCTS

BC Timber Sales

FSP Priority Species for TST





FSP Priority Species under current TST FSP for Invasive Plant Measure



Giant Hogweed

Priority Species - Knotweeds (Fallopia & Polygonum spp.)



- 4 species in BC:
 - Bohemian
 - Himalayan

- GiantJapanese.
- Reproduces through fragmentation
- Often found in riparian areas, stockpiled material, derelict land, road/railway right of ways and gardens.
- Can tolerate a range of soil types and climates which means that it has the potential to spread much further.

BC Timber Sales

Identification of Knotweed







Giant

Flowers: Small, white/green flowers grow in plume-like, branched clusters along the stem and leaf axils (joints).

Stems: Green, hollow, upright, bamboo-like with red/brown speckles. 1-5 m in height. Dense thickets.

Leaves: Predominantly heart-to triangular shaped on all species except Himalayan, which are elongated and tapered.

Priority Species: Knotweeds

Impact







- Damages infrastructure.
- Displaces riparian vegetation
- Grows rapidly forming monocultures, outcompetes native species.
- Lacks the root hairs to bind soil, resulting in erosion and sedimentation along streams and rivers.
- Impedes recreational access to waterbodies.
- Impacts sightlines on roads.

Priority Species: Knotweeds

Management





- If Knotweed, or potential knotweed, is observed; do not disturb and report to BCTS.
- Knotweed will not be treated on site without BCTS engaging a QRP to develop a site specific management plan.
- Mechanical control such as smothering, cutting or mowing can worsen spread; therefore do not cut or mow (includes road maintenance).
- Foliar application of herbicide is the BC's preferred method

Sign from Sooke

Scotch Broom Cytisus scoparius





- Brought to BC from Scotland in 1850s by Captain Walter Grant who planted it in Sooke. Native to Mediterranean.
- Planted as a bank stabilizer during road development, and as crate packing material for gold camps.
- Nitrogen-fixer, allowing it to establish on poor soils.
- Establishes on well-drained, exposed mineral soil.

Identification





Flowers: Yellow and pea-like; may have a red marking in the middle.

Stems: Woody and 5-angled; 1-3 m tall shrub.

Leaves: Stalked lower leaves are composed of three leaflets; un-stalked upper leaves are simple.

Identification: Broom versus Gorse



Flowers – Yellow

Stems –

Has spikes (prickles) on mature plants

Smells – Like coconut oil





Gorse (left)Scotch Broom (right)Picture and video from Salt Spring Island - Video

Report to BCTS if gorse is identified

Flowers – Yellow (sometimes red marking)

Stems – Has no spikes

Smells -No smell



Priority Species: Scotch Broom



Impacts





- Can be a serious competitor to conifer seedlings.
- High density infestations can increase wildfire fuel loads, increasing wildfire intensity.
- Photosynthetic stem allows year-round growth, leading to displacement of native species.
- Can impact log dump operations

Management





General Management:

- Do not pull established plants or expose soils with existing seed bed.
- Do not transport or move plants with seed pods outside of the known scotch broom infested areas
- Minimize soil disturbance and cover exposed soil with TST grass seed
- For a site with a few plants that are not yet established without seed bed:
 - Pull and dispose of newly generating plants without seeds or in area without established seed bed (i.e. plants never produced seed pods).
 - Make sure to mark area with Invasive Plant Ribbon
- Plants with seeds or areas with established seed bed must be cut at base or below ground. Preferably cut when flowers are out but not yet gone to seed.
- Most sites will require a management plan for scotch broom specific to the site that will include disposal plan to ensure BCTS primary forest activities do not introduce or spread scotch broom.

Consult the Coastal Invasive Species Council for advice.

Scotch Broom BMP – For TSL Holders & Road Contractors

BCTS BC Timber Sales

INVASIVE PLANT MEASURES FOR PRIMARY FOREST ACTIVITIES:

Identification of Scotch Broom: take note of plant characteristics to ensure you have the correct identification.

Flowering: April - to July* - bright yellow pea like flowers, sometimes with reddish orange markings

Seed Set: can begin as early as April- October* -

*theses times vary depending on weather and location on the Coast







Guidance around Equipment:

- Best management practice is to work in uninfested sites before moving to infested sites. Known log dump sites with pre-exisitng scotch broom are Strachan, North Strachan, Schwartzenberg and Havannah Channel.
- 2. Equipment relocated to/from other regions may be importing/exporting new problem or known plants in your area. Equipment must be cleaned before transport if coming from an area with a known infestation; avoid moving unclean equipment to a new work location; when finished at Schwartzenberg, Strachan Bay, North Strachan or Havannah Channel, equipment must be cleaned prior to leaving site.

Equipment Washing: Set up a pressure/power wash station (ie: wajax pump) to clean equipment, remove mud (soil) and plant parts (i.e. seeds) from all vehicles and equipment before leaving an infested site; the machines are vectors (carriers), plant parts are likely to hitchhike on boots, clothing, equipment, vehicles and road building materials. Scotch broom is most commonly transported as seeds in dirt.

- 3. It is very important to minimize traffic in and out of the infested area and to ensure machine cleaning occurs when leaving site so infestation does not spread.
 - Take precautions while working in and around infestations to minimize risk of spread (i.e.: plan traffic routes, avoid unnecessary travel).
- Avoid infested sites for staging, camp site (may require float camp), parking and log sorting, both in the bush and in storage yards.
 - If staging elsewhere, ensure equipment and workers do not transport seeds or plant materials between sites
- Material sources (rock pits, quarries) must be inspected to ensure there are no invasive plants on site. Rock sources must be clean (free of invasive plants) when used in road activities.
- 6. Any bare soil areas (other than road prism) will need to be revegetated at the end of the project. Seed used must be native seed/agronomic grass seed that is grade of Common No. 1 Forage Mix or better. The seed will be free of invasive species as ensured by obtaining a "Certificate of Seed Analysis".

Known log dump sites with pre-existing scotch broom are:

- Strachan,
- North Strachan
- Schwartzenberg
- Havannah Channel

This one-page handout for active operations should be included in all TSL and all Road Contract EMS Binders.



Yellow (Flag) Iris Iris pseudacorus





- Introduced to North America in 1800s as an ornamental plant.
- Native to Europe, western Asia, and North Africa.
- Habitats include ditches, irrigation canals, marshes, stream and lake shorelines and shallow ponds.
- Planted in wastewater ponds to absorb heavy metals.
- Reproduction is typically by fragments of rhizomes that break off.



Identification







- Flowers: 3 small yellow petals facing up and 3 larger ones drooping down. May be streaked with brown/purple veins. May have several flowers on each stem.
- Leaves: Flattened, sword-like, 2-3 cm wide, up to 1 m in height.
- It is the only 'wet-footed' yellow iris.

Priority Species: Yellow Flag Iris

Impacts





- Clogs ditches and irrigation canals.
- Can make livestock sick if ingested.
- Creates dense stands that out-compete native species, such as: cattails, sedges, and rushes that are used by many birds for nesting.
- Can reduce the capacity for water storage in temperate wetlands.



Management







- Treat before seed set.
- Avoid hand pulling, digging or cutting. It can lead to spread by fragmentation.
- For populations <1 m² dig up and remove manually.
- Laying heavy rubber matting as a benthic barrier causes plants to respirate without photosynthesis, depleting energy reserves.
- Consult the Coastal Invasive Species Council for advice.



Purple Loosestrife Lythrum salicaria





- Noted as arriving in BC in 1915.
- Primarily found in wetlands, lake and river shores, ditchbanks, marshlands, freshwater tidal flats and riparian meadows.
- Can tolerate a range of growing conditions including partial shade, calcareous and acidic soils, and standing water.
- Can produce up to 2.5 million seeds per plant, that can remain viable for up to 20 years.
- Could be confused with fireweed.



Identification





- Flowers: Flowers have 5-7 pink/purple petals (~10mm long) along vertical spikes at the top of stems.
- Stems: Woody at base, between 0.5-2.0 m in height. Square and may have short hairs.
- Leaves: Arranged in opposite to whorled formation along stem. 3-10 cm long. Stalkless (sessile), sometimes covered in fine hairs.

Priority Species: Purple Loosestrife

Purple Loosestrife vs. Fireweed





Fireweed: 4-petalled widely spaced flowers. Somewhat wavy leaf margins. Produces windborne seeds. Typically found in drier areas than purple loosestrife.

Purple Loosestrife: 5-7 petalled flowers in tight clusters. Does not produce windborne seeds. More typical in wetlands and riparian areas.

Priority Species: Purple Loosestrife

Impacts





- Tends to grow as a monoculture, reducing diversity, causing declines in native plant and animal species.
- Provides little food or habitat value.
- Can impede waterflow and raise water tables
- Restricts waterfowl access to water.
- Largely ecological impacts make it difficult to quantify economic impacts, therefore making it difficult for managers to decide on the resources that should be utilized.
- Researchers concerned about the recruitment of pollinators to this plant instead of native plants. Lower pollination of native species and poorer quality honey.

Management





- Mechanical control is generally ineffective, though small infestations can be removed by hand by pulling from base or digging (before seed set). Reproduces through fragmentation, ensure that you remove all plant parts.
- Bag or tarp plant parts that have been removed before transportation.
- Herbicides should be used as the plant begins to flower to minimize seed production.

Glyphosate has restricted uses adjacent to water in BC.

 Consult the Coastal Invasive Species Council for advice.

Giant Hogweed Heracleum mantegazzianum





- Prefers rich, damp soil and can grow in varied light conditions.
- Most common along roadsides, right of ways, ditch-lines, vacant lots, river and stream banks.
- Often confused with cow parsnip.

Giant Hogweed vs. Cow Parsnip





Size Comparison

Giant Hogweed

 Large plant up to 6 m in height. Huge flowerheads (umbels) up to 1 m wide.



Cow Parsnip

 No greater than 3 m in height. Umbels only up to 20 cm wide.

Giant Hogweed vs. Cow Parsnip





Giant Hogweed

Large, very deeply lobed leaves w/ jagged edges (up to 2.5 m long)

Leaf Comparison



Cow Parnsip

Relatively wide leaves for their smaller size (~40 cm long). Less lobed and jagged.

Giant Hogweed vs. Cow Parsnip





Giant Hogweed

Underside of leaf is smooth or slightly scaly.

Leaf Comparison



Cow Parnsip

Underside of leaf has a feltlike texture and is abundantly covered with white soft woolly hairs.
Giant Hogweed vs. Cow Parsnip





Giant Hogweed

- Covered with rough white hairs all over stem, but mainly at base of stalk
- Extensive & prominent reddish-purple blotches

Stem Comparison



Cow Parsnip

Covered with felt-like, soft white hairs

Priority Species: Giant Hogweed

Impacts







- Undesirable: large size, prolific seed production and vigorous growth.
- Roots do not hold soil as well as a complex of native species: increased erosion.
- Highly toxic sap damages DNA and changes the way skin protects itself from UV light.
- Can cause hypersensitivity to sun resulting in burns, blisters & scars.
- Skin can still be affected months after exposure.

Management





- If Giant Hogweed, or potential Giant Hogweed, is observed; do not disturb and report to BCTS.
- Giant Hogweed will not be treated on site without BCTS engaging a QRP to develop a site-specific management plan.

Refer to WorkSafe BC Guidelines. PPE must be worn when handling this plant!

Consult the Coastal Invasive Species Council for advice.

Identification of Invasive Plants that may occur within the FSP Area.



INVASIVE SPECIES & FORESTRY



PREVENTING THE SPREAD OF INVASIVE SPECIES DURING FOREST MANAGEMENT ACTIVITIES

A POCKET GUIDE FOR BRITISH COLUMBIA'S FOREST WORKERS



2024 EDITION

https://bcinvasives.ca/wp-content/uploads/2021/09/BMP-Forest-Management-Activities-2024-1.pdf

The following invasive plant species occur within the FSP Area, (as per Invasives BC) and may be encountered during Primary Forest Activities.

The presented plant identification information is derived from the Invasive Plant Best Management Practices - For Forest Managers and Field Workers (2024 Edition).

Hard copies of these can be ordered or may be available (ask BCTS Planning Forester) and can help during field identification.

BLUEWEED Echium vulgare





Description: Upright, tap-rooted plant up to 1.0m in height. Adapted to rocky, gravelly habitats like roadsides, gravel pits. **Flowers:** Short, arched branches covered on upper side with purplish-blue, funnel-shaped flowers.

Leaves: Stem leaves are lance-shaped and alternately arranged. Stems: Stiff hairs with swollen reddish bases are found along the stem. Stem hairs are prickly and can irritate skin.

Other ID Tips: Forms a rosette in year one.

Distribution: Found growing in rangelands, pastures, waste and disturbed areas, and along roadsides and railways; particularly on coarse, sandy to gravelly soils.

To kill the plant, dig out or sever taproot at least 5cm below soil surface. Limit or stop seed production.



BULL THISTLE Cirsium vulgare

BCTS BC Timber Sales



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Description: This weed can grow to 3.0m tall, with branches spreading up from erect stems.

Flowers: Flowers are found clustered at the end of the branches. They are 4–5cm wide, pinkish to dark purple, and covered with spines.

Seed/Fruit: The brown, shiny seeds have a top of white, soft hairs. Leaves: The leaves are alternate and deeply lobed, with spines at the lobes and tips.

The base of each leaf surrounds the stem with spiny wings.

Stems: The stems are erect and branched.

Other ID Tips: This weed has a short, fleshy taproot. Skeletons have nodding heads.

Seedlings: In the first year, these plants form a rosette.

Distribution: Found growing in disturbed, riparian, and waste areas; pastures, forests and along roadsides.

Competing vegetation limits bull thistle introduction and spread. Re-vegetating disturbed areas is the best defense.

CANADA THISTLE Cirsium arvense

BCTS BC Timber Sales



J F M A M J J A S O N D

Description: A prickly upright plant up to 1.2m tall, often forming dense stands.

Flowers: Purplish-pink, less than 2.5cm across, without sharp spines.

Leaves: Stalkless, alternate, dark green leaves, with spiny lobes. Stems: Prickly, hollow.

Other ID Tips: Forms a rosette in its first year.

Distribution: Found on moist, rich soils on roadsides, right-ofways, cultivated fields, pastures, and other open areas.

Highly invasive plant. Incomplete pulling or cutting can stimulate remaining roots to re-sprout and worsen infestations. Continual, repeated cutting or pulling will deplete root reserves.

COMMON BURDOCK Arctium minus







Description: Upright, tap-rooted plant up to 3m high. Found on roadsides, ditches, riparian areas, grasslands and forests. **Flowers:** Globe-shaped purple flowers, to 2.5cm in diameter, on short stalks. Covered in hooked green bristles.

Leaves: Basal leaves are rhubarb-like. Upper leaves are alternate, with wavy or toothed edges. Leaves have woolly undersides. Stems: Upright, grooved, and highly branched.

Other ID Tips: Forms a rosette in year one. Mature flower heads form a bur, which allows seeds to be spread throughout the year.

Distribution: Found growing in farmyards; waste, disturbed, and riparian areas; pastures, rangeland, forests, grasslands, fallow fields, and along fence lines, field margins, roadsides, and railways.

First year rosettes are easily hand-pulled. Deep roots of mature plants require digging to remove as much root as possible. Preventing dispersal of burs is particularly important.

COMMON TANSY Tanacetum vulgare

BCTS BC Timber Sales



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Description: Bushy perennial growing up to 1.8m tall. Common on disturbed areas, streambanks, and roadsides.

Flowers: Flat-topped clusters of 'button-like' yellow flowers, at the top of stems.

Leaves: Alternate, dark green, fern-like leaves.

Stems: Mature plants have several branched stems that can be reddish, and somewhat woody near the base.

Other ID Tips: Forms a rosette in year one. Leaves and flowers aromatic when crushed.

Distribution: Found growing in pastures, riparian, waste, and disturbed areas, open forests, meadows, gardens, grasslands and along roadsides, field margins, and railways

Small plants can be easily hand-pulled. Use shovel to loosen soil for more complete root removal. Plants can regrow from severed roots and cut stems may still produce viable seed.

TOADFLAX Dalmatian *Linaria dalmatica* Yellow *Linaria vulgaris*





J F M A M J J A S O N D

Description: Pretty, waxy-leaved, yellow-flowered plants up to 1.2m tall. Commonly found on dry sites like gravel pits, road shoulders, and cut banks.

Flowers: Bright yellow snapdragon-like flowers with a long spur. Leaves: Pale-green, waxy leaves are stalkless with a pointed tip. Stems: Branched or unbranched.

Other ID Tips: Yellow toadflax has leaves pointed at both ends, and is shorter – up to 60cm in height.

Distribution: Found growing in waste and disturbed areas, cropland, pastures, grasslands, open forests, rangeland, and along roadsides and railways.

Incomplete root removal/cutting can stimulate remaining roots to re-sprout and worsen infestations. A commitment to regular, repeated cutting/pulling is required for this control method.

KNAPWEED Diffuse Centaurea diffusa Spotted Centaurea stoebe





J F M A M J J A S O N D

Description: Heavily branched plants 1.0m to 1.5m in height. Found on dry roadsides, gravel pits, disturbed sites, and in fields. **Flowers:** Small white, pink or purple flowers atop spiny bracts. **Leaves:** Deeply lobed, hairy, grayish-green leaves. Form rosettes in their first year.

Stems: Single main-stem that divides into bushy, spreading branches on a mature plant.

Other ID Tips: Spotted knapweed flowers are usually pink to purple, and have black tipped bracts.

Distribution: Found growing in well drained soils, waste and disturbed areas, gravel pits, trails, pastures, gravel pits, grasslands, rangelands, and along roadsides and railways.

Taproot may be hand-pulled from moist soil. Remove as much of the root system as possible.

KNOTWEED Japanese, Giant, Bohemian *Reynoutria spp.* Himalayan *Polygonum polystachyum*





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Description: Large, woody, bamboo-like shrubs grow 1-5m in height. Found

in moist to wet areas like roadside ditches and riparian areas.

Flowers: Small, white/green flowers grow in plume-like, branched clusters along the stem and leaf joints.

Leaves: Variable. Japanese: spade-shaped; Giant: larger, heartshaped; and Himalayan: lance-shaped, pointy.

Stems: Reddish-brown, hollow stems form dense thickets. Other ID Tips: Japanese leaves zig-zagged along stems. Bohemian is a hybrid of giant and Japanese knotweeds.

Distribution: Found growing in disturbed and waste areas, gardens, yards, riparian ecosystems, and along roadsides.

A single plant can have roots extending 20m in all directions; as little as 0.6g of rhizome can produce a new plant in six days. Do not disturb patches and redistribute material during road or skid trail construction.

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HOARY ALYSSUM Berteroa incana





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Description: Slender plant from the mustard family, growing up to 1.0m in height. Found on disturbed sites, especially roadsides, pastures and embankments.

Flowers: Small white almost spherical flowers at the end of stems. Leaves: Greyish, hairy leaves clasp the upper portion of stems Stems: Stems are covered with star-shaped hairs.

Other ID Tips: Seed pods are a distinct oval shape with a pointy tip.

Distribution: Found growing in pastures, waste and disturbed areas, forage crops, yards, lawns, grasslands, rangeland, and along roadsides and railways.

Taproot may be hand-pulled from moist soil. Remove as much of the root system as possible.

HOUND'S-TONGUE Cynoglossum officinale





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Description: A taprooted leafy plant, up to 1.2m in height, found along roads, trails and in meadows.
Flowers: Small, reddish-purple flowers with five petals.
Leaves: Rough, hairy leaves from10-30cm in length.
Stems: Hairy; usually branched near the top.
Other ID Tips: Forms a rosette in its first year. Seeds are small hooked 'burs' which cling to clothing and animals.
Distribution: Found growing in forested areas, grasslands, pastures, cropland, rangeland, disturbed and waste areas, and along roadsides.

First year rosettes can be easily hand-pulled. Deep roots of mature plants require digging to remove as much root as possible. In southern B.C., control of sites can be achieved through a root-attacking biological control weevil.

HAWKWEED Orange Pilosella aurantiaca



Yellow Hieracium spp. Called Meadow Hawkweed (Hieracium pilosella) in the IP Plants Regulation.



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Description: Fast-spreading, hairy plants, up to 60cm in height. Found on grasslands, lawns, roadsides and other disturbed sites. **Flowers:** Orange or yellow clusters, atop slender, unbranched stems.

Leaves: Hairy leaves are arranged in a rosette. Few to no leaves found on stem.

Stems: Stems are covered with bristly hairs, which are black on orange hawkweed.

Other ID Tips: Above ground runners root and grow new plants. Plants produce a milky juice when broken.

Distribution: Found growing in a wide range of habitats, including in forests; forest clearings; pastures; lawns; riparian, waste, and disturbed areas; grasslands; yards; cultivated and fallow fields; rangeland; and along roadsides and railways.

Highly invasive plants. Mowing before seed set will limit seed production, but may encourage spread by runners. Prevent spread and consult your Regional Invasive Plant/Species Committee.

KNAPWEED Meadow Centaurea debeauxii Black Centaurea nigra; Brown Centaurea jacea





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Description: Species similar, upright, branched, up to 1 m in height. Found on dry roadsides, disturbed sites and in fields.

Flowers: Large pink to purple-red flowers supported atop comblike bracts ranging from light to dark brown.

Leaves: Lower leaves long-stalked and shallowly lobed, covered with long to cobwebby hairs. Form rosettes in their first year. Stems: Single main-stem dividing into branches and somewhat hairy.

Other ID Tips: Leaves are undivided, unlike other knapweeds. Distribution: Found growing in pastures, meadows, grasslands, riparian areas, forest edges, clearcuts, industrial sites, vacant lands and along roadsides and railways.

Taproot may be hand-pulled from moist soil. Remove as much of the root system as possible. Dispose of bagged flowering plants into garbage.

NODDING THISTLE Carduus nutans





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Description: Solitary stem or several branched stems from a single base, up to 2.4m in height, with nodding flower heads. Found on dry roadsides and disturbed sites.

Flowers: Large (5cm), reddish purple flowers above spiny-tipped bracts, nodding when mature.

Leaves: Deeply lobed with spiny, edges, winged at stem. Overwinter as rosettes.

Stems: Smooth with no spines.

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Other ID Tips: Similar to plumeless thistle but has no spines on stem.

Distribution: Found growing in waste and disturbed areas, pastures, meadows, rangeland, and along roadsides.

Repeated hand-pulling or cutting prior to flowering will help reduce seed production. Expansion of nodding thistle populations in southern B.C. has been reduced through biological control agents.



OXEYE DAISY Leucanthemum vulgare





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Description: Upright plant growing up to 1.0m in height in dense clumps. Common along roadsides, in fields and in disturbed areas. Flowers: Daisy-like flowers on the end of each stem branch. Leaves: Alternate, and decreasing in size up the stem. Upper leaves are stalkless with wavy to toothed edges. Stems: Smooth to sparsely hairy, and branched. Other ID Tips: Similar to the ornamental shasta daisy and invasive scentless chamomile.

Distribution: Found growing in pastures; gardens; forage crops; waste, disturbed, and fallow areas; grasslands; rangeland; meadows; and along roadsides and railways.

Pull or cut prior to seed set. Pulling or cutting during or after flowering will disperse seeds. Plants will continue to flower and grow if soil is not shaken from roots.

PURPLE LOOSESTRIFE Lythrum salicaria

BC Timber Sales



J F M A M J J A S O N D

Description: Competitive perennial plant, with showy purple flowers. Thrives in moist habitats, such as ditches, ponds, and wetlands.

Flowers: Spike of purple flowers found at the upper end of stems. **Leaves:** Leaves are lance-shaped and can vary in arrangement from opposite to whorled.

Stems: Stiff smooth stems are square in cross-section.

Other ID Tips: Purple loosestrife is sometimes confused with native fireweed, but purple loosestrife does not produce windborne seeds and is generally found growing adjacent to water or in moist soil areas.

Distribution: Found growing in freshwater wetland habitats, gardens, and along roadsides in wet ditches.

Highly competitive. Purple loosestrife may be pulled from base of plant but it can re-grow from root fragments.

BCTS BC Timber Sales

KNAPWEED, Russian Rhaponticum repens



Description: Upright plant up to 1.0m in height, often forming dense colonies.

Flowers: Single, pink to purple flowers are urn-shaped. Bracts are green at the base with a white, slightly hairy tip.

Leaves: Lower stem leaves are alternate, longer and deeply lobed. Upper leaves are toothed and decrease in size toward the top of the plant.

Stems: Upright, stiff, branched, and covered in soft grey hairs. Other ID Tips: Roots are black, scaly and creeping. Distribution: Found growing in pastures; grasslands; disturbed, waste, riparian, and cultivated areas; and along roadsides and railways.

Highly competitive plant. Incomplete pulling or cutting can stimulate remaining roots to re-sprout and worsen infestations. Continual, repeated cutting or pulling will deplete root reserves.



SCENTLESS CHAMOMILE Tripleurospermum inodorum





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Description: Small, bushy plant up to 1.0m in height. **Flowers:** Daisy-like and scentless, up to 3cm in diameter. **Leaves:** Feathery, and alternate.

Stems: Smooth, often reddish-purple, and highly branched near the top.

Other ID Tips: Fibroustaproot. Often found in wildflower seed mixes.

Distribution: Found growing in disturbed and waste areas, cultivated fields, pastures, perennial forage crops, and along roadsides.

Single plant can produce 1,000,000 seeds. To hand-pull, loosen the soil using a shovel, then pull from plant base.

BCTS BC Timber Sales

SCOTCH BROOM Cytisus scoparius



J F M A M J J A S O N D

Description: Taprooted evergreen shrub up to 3.0m in height. Common on roadsides, cutblocks and disturbed areas throughout southern and coastal BC.

Flowers: Bright yellow pea-like flowers, sometimes with red markings.

Leaves: Lower leaves are stalked and have three leaflets; upper leaves are simple and un-stalked.

Stems: Five-angled and ridged, woody, and brown to green. **Other ID Tips:** Flat seed pods have fine hairs on edges. **Distribution:** Found growing in disturbed, riparian, and waste areas; pastures; grasslands; open forest; and along roadsides and railways.

Small plants should be gently pulled from moist soil. Ensure all roots are removed. Large plants may be cut off as close to the soil surface as possible, without causing soil disturbance.

SCOTCH THISTLE Onopordum acanthium





J F M A M J J A S O N D

Description: Spiny thistle up to 3.0m in height. Found in disturbed areas, ditches and rangelands.

Flowers: Many single violet flowers on up to 5cm long branches. Bracts are spiny.

Leaves: Very hairy, large, lobed leaves with sharp yellow spikes. Stems: Numerous branched stems with spiny, hairy wings running down the length.

Other ID Tips: Forms a rosette in the first year, and has a fleshy taproot.

Distribution: Found growing in waste and disturbed areas, pastures, fields, riparian areas, and along roadsides and field margins.

An extremely large and distinctly grey coloured thistle. Deep roots of mature plants require digging to remove as much root as possible. Limited distribution outside the North Okanagan area.

ST. JOHN'S-WORT Hypericum perforatum





J F M A M J J A S O N D

Description: Branched, up to 1m in height, with sticky seeds.
 Found on dry and acidic rangeland, roadsides and disturbed sites.
 Flowers: Bright yellow, 5-petalled, numerous.
 Leaves: Opposite, oval, small, covered with transparent dots.
 Stems: Smooth, upright, and branched.
 Other ID Tips: A deep root system finds water when scarce and spreads underground to produce new shoots.

Distribution: Found growing in grasslands, pastures, forests, disturbed and waste areas, and along roadsides.

Repeated hand-pulling or cutting prior to flowering will help reduce seed production and deplete root reserves. Biological control has been the primary treatment method for this species across southern B.C. for over twenty-five years.

TANSY RAGWORT Senecio jacobaea





J F M A M J J A S O N D

Description: Ragged looking plant up to 1.0m in height. Found on roadsides, fields, disturbed and riparian areas.

Flowers: Yellow, daisy-like flowers are borne in clusters at the top of stems.

Leaves: Alternate leaves are deeply cut and almost ragged, and covered with web-like hairs.

Stems: Mature plants have branched stems (often purple).

Other ID Tips: In the first year it forms a rosette with 10-20 leaves. Crushed leaves have an unpleasant odour.

Distribution: Found growing in grasslands, cultivated land, waste and disturbed areas, pastures, rangeland, woodlands, and along roadsides.

Seeds are viable for up to 20 years. Small plants can be easily hand-pulled. Use shovel to loosen soil for more complete root removal. Plants can regrow from severed roots and cut stems may still produce viable seed.

BCTS BC Timber Sales

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YELLOW FLAG IRIS Iris pseudacorus



J F M A M J J A S O N D

Description: Showy, upright plant up to 1.5m in height. Grows in wet areas like ditches and irrigation canals. Widely sold in nurseries. **Flower:** Iris-like yellow flowers.

Leaves: Long, sword-like leaves with bases that fold and clasp the stem in a fan-like fashion.

Other ID Tips: Forms green pods with hard, dark brown, smooth seeds, which can float.

Distribution: Found growing in ditches, shallow ponds, wetlands, gardens, and along the margins of still and slow-moving water courses.

Dig and pull as much of the rhizome system as possible and dispose of away from water bodies, preferably a landfill site. Re-visit site at least once per year for several years and repeat treatment. If digging is not possible, flowers, leaves and seed heads may be cut off and disposed of to reduce plant vigour and limit seed spread. Repeat cutting regularly.

Reporting





Welcome to the InvasivesBC Application BETA! To gain full access to the InvasivesBC application, please submit an access request

REQUEST ACCESS

InvasivesBC is British Columbia's province-wide mapping and data collection system for invasive specie

IF YOU ARE A NEW USER:

To request access: click the "REQUEST ACCESS" button at the top of the page and fill out the request access form. Please note that the employer and funding agency information provided will be used to autofill those fields into the activity forms, therefore it is important you complete the full access form with your current employer and all potential funding agencies. An active DIR or Business BCEID is required to request access.

IF YOU ARE AN EXISTING USER

To log in: click the person icon at the top right of the page and select 'log in'

To update or change your account details: log in and then choose "update my info" from the person icon on the top right

- Report all occurrences of priority and FRPA listed invasive plants in Seaward BCTS Operating areas (How on next slide)
- InvasivesBC replaces the Invasive Alien Plant Program (IAPP), which was B.C.'s previous provincial mapping and database application in use from 2005-2023.
- InvasivesBC App replaces Report-a-Weed App

Reporting via InvasivesBC





Reporting via 🔝

FSP Requirement – Report within 30 days of observation or reporting to BCTS

41 AM Wed May 15				1 🕈 76% 🔳
		Report		9 (i
R	eport		Pending	
Scotch broom				
	Area of Inf	estation: (square metres)		•
1-9m²	10-49m²	50-249m²	2	50m²+
Your Name				
Email or Phone				
Comments				
		Submit Report		

Q Browse

Report

Stats



Reporting via InvasivesBC



Report any occurrence of invasive plants and priority invasive plants that are identified within the development area and access roads including dump sites, rock pits etc.:

- BCTS staff or Multiphase staff <u>as directed by BCTS</u>, report to Provincial Invasives BC (via the IAS app) within 30 days from when the occurrence is observed.
- BCTS staff, Road Contractors or Multiphase Contractors that are <u>not</u> reporting directly to Provincial Invasives BC, report the observation as soon as possible (not exceeding 2 weeks) to BCTS Practices Forester / Eng. Tech.
 - Practices Forester / Eng. Tech. will submit the reported infestations/sightings to IAS within 30 days from when the occurrence is reported to BCTS (or observed by BCTS staff)

Anyone who submits BCTS sites to IAS is to forward your reporting activities to <u>BCTSTST@gov.bc.ca</u> for tracking purposes

Note – BCTS is using IAS for reporting and no longer using the practice of batch reporting

Known Sites – Aquatic Checklist Map



Aquatic Terrain Operational Checklist Map										
	INTERNAL USE	ONLY! - n	ы	y contain ser	nsitive d	ata				
Operatin	g Area			Landscape	Unit					
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認知	HVFH Wetland		Pol Sw	ential Forested amp (TEM)		FNEG, Yes FPOS, No				
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	Parcels Private Land		Re	nge Tenure		Conservancy Areas Processed				

LRM Aquatic Handover Checklist will indicate if an invasive plant site has been recorded

BCTS

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If recorded go into Invasives BC to see what plant was identified and when If it's an FSP Priority Species or a FRPA listed species, then it will require management.



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Invasive Plants BMP (2024)



Invasive Species Council of BC

Invasive Plant Council Best Management Practices

For Forest Managers and Field Workers (2024 Edition)

A POCKET GUIDE FOR BRITISH COLUMBIA'S FOREST WORKERS

PREVENTING THE SPREAD OF INVASIVE SPECIES DURING FOREST MANAGEMENT

INVASIVE SPECIES &

FORESTRY



ACTIVITIES

BRITISH COLUMERA 2024 EDITIO

https://bcinvasives.ca/wp-content/uploads/2021/09/BMP-Forest-Management-Activities-2024-1.pdf

ISC Resource Library https://bcinvasives.ca/resources/publications/

BCTS **BC Timber Sales**



Invasive Plant Strategy for British Columbia

Strategy for 2024

INVASIVE SPECIES & FORESTRY



PREVENTING THE SPREAD OF INVASIVE SPECIES DURING FOREST MANAGEMENT ACTIVITIES

A POCKET GUIDE FOR BRITISH COLUMBIA'S FOREST WORKERS





Forestry Operations

What Can You Do?

Invasive plants are negatively impacting forestry operations across British Columbia. Forestry professionals, including planners, researchers, operational crews and others have the ability to mitigate these negative impacts by implementing a combination of prevention and management practices. This document provides a summary of forestry best management practices for invasive plants, which licensees are encouraged to use when developing Standard Operating Procedures u their Forest Stewardship Plans. Implementation of these recommendations will benefit from a cooperative approach that involves the support of Regional Invasive Plant and Spec Organizations and additional expertise to provide education training, technical advice, and provincial and regional

The term invasive plant, as used hereafter, includes provincia listed invasive plants and noxious weeds, as well as other alien plant species with the potential to pose undesirable impacts on ans animals or en

Ecological Impacts of Invasive **Plants on Forestry**

Invasive plants displace desirable vegetation through competition and aggressive reproduction. Lacking natura pathogens or predators, invasive plants can spread rapidly through vegetative growth and/or production of vast numbers of long-lived seeds. Invasive plants can negatively affect oil productivity, water quality and aquatic habitats, forest tructure, biodiversity, seedling regeneration, range resource wildlife habitat, species at risk, wildfire dynamics, culturally mportant plants, human health, public infrastructure creation and landscape aesthetics



Invasive Species Council of BC FACTSHEET APRIL 2019



BEST PRACTICES for Managing Invasive **Plants on Roadsides**

A POCKET GUIDE FOR BRITISH COLUMBIA'S MAINTENANCE CONTRACTORS

2019 EDITION





with information and resources to prevent, detect, and report invasive plants Develop a coordinated approach to invafor all forest and resource managers

Assist in compliance with the Forest and Range Practices Ad

Management Strategies

Three elements common to all management

Prevention measures that encome

silviculture, and all operations

region of the pro

systems

invasive plants.

and others.

specific invasive plant species.

Management strategies will vary by invasive plant species and

specific factsheets for detailed information on management o

Establishment of coordinated early detection and repo

Application of Integrated Pest Management (IPM) principl

Manage and mitigate the impacts of invasive plants by providing

with information and resources to prevent, detect, and report

management for all maintenance contractors, land manage

providing forestry and resource management professional

ce contractors, land managers, and oth

Objectives of this Document:

Develop a coordinated approach to invasive plant

vince. Refer to the accompanying species

ent planning

BCINVASIVES.CA / INFO@BCINVASIVES.CA / 1-888-933-3722



Invasive Species Council of BC Online Course Excerpt (May 2024)



FAQs Christina mardell •

HOME ELEARNING WORKSHOPS CONTINUING EDUCATION

home / elearning / invasive species and forestry



Invasive Species and Forestry

🏋 FREE 🔡 2 Modules 🕚 2h 0m

COURSE

Participate in a *free pilot* by enrolling before June 1st, 2024I All we ask is that you complete a short assessment survey to provide us with your feedback. Enroll now!

This newly revised, interactive course provides some background on invasive species and their impacts, regional lists of key invasive species in British Columbia, tools and best practices to be incorporated into your work, and actions you can take to report invasive species. The goal of this course is to support healthier forests resulting from educated forest practitioners who possess the knowledge and tools to prevent the spread of invasive species.

The revised 2024 guidebook, "Best Practices for Preventing the Spread of Invasive Plants during Forest Management Activities" forms the basis for the online course and in-person workshop, including the addition of forest insect and disease pests.

Funding for the course was provided by the Sustainable Forestry Initiative, the BC Ministry of Forests and ISCBC. The Council also offers an in-person invasive species workshop for forest practitioners – ask us for more information (info@bcinvasives.ca).

Acknowledgements

This course was developed by the Invasive Species Council of British Columbia, in partnership with the Sustainable Forestry Initiative, the Western Canada Sustainable Forestry Initiative Implementation Committee, and the BC Ministry of Forests.

Funding for this course was provided by the Sustainable Forestry Initiative, Conservation & Community Partnership Grant Program, the Western Canada Sustainable Forestry Initiative Implementation Committee, the BC Ministry of Forests, and the Invasive Species Council of BC.

Forestry Activities and Invasive Plants



Forestry activities affect the spread of invasive species in two major ways:

10 32 2

As a Vector

Seeds and plant parts hitchhike rides on vehicles, equipment, mud and clothing. As a source of **Soil Disturbance** Exposed soil is an invitation to invasive plants to establish.

Replantica

antica 🕥

Best Management Practices (BMP)

8



Best practices for forest management activities

Your level of responsibility for each practice depends on your role.

Let's go!



BMP 1 – from ISC Invasive Species and Forestry Course

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Incorporate known invasive plant sites into development plans and report new sites as they are discovered.

Early in the planning process, consult the online InvasivesBC database for known invasive plant sites. Inspect work sites and report the size and location of new infestations. Plan activities so they won't create new or spread existing infestations.

InvasivesBC




BMP 2 – from ISC Invasive Species and Forestry Course

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Avoid Infested Areas

BACK

Avoid infested sites for staging, parking, and log sorting, both in the bush and storage yards.

These areas are often already infested with invasive plants. Vehicles, equipment and logs can pick up plant parts and seeds and carry them to new locations.



BMP 3 – from ISC Invasive Species and Forestry Course



Work First in Uninfested Areas

Work in uninfested sites before moving to infested sites.

ВАСК

Schedule work activities to begin in the most pristine sites first, and end in the most infested sites. This can help prevent the spread of invasive plants through equipment and vehicles.



BMP 4 – from ISC Invasive Species and Forestry Course

BCTS BC Timber Sales

Clean Equipment Before Moving

BACK

Clean equipment before moving to a new work site or region. This is important to avoid the risk of spreading plants to other locations.

This is sometimes hard to do. If water is available, it's best to wash all equipment within existing infestations, or at a designated wash site.

If water is not available, inspect vehicles and equipment, remove plant parts, and knock off mud with a shovel, broom or your boots.





BMP 5 – from ISC Invasive Species and Forestry Course

BCTS BC Timber Sales

Use Uninfested Materials

Inspect and ensure that fill and erosion control materials are free of invasive plants before transport and use.

ВАСК

Only use clean materials, such as gravel and other road building materials. Regularly inspect your material sources, such as gravel pits, for any invasive plants. If you can't find suitable clean materials, remove the infested portion of the material to a depth of 30 cm, and use only the clean materials underneath



BMP 6 – from ISC Invasive Species and Forestry Course

BCTS BC Timber Sales

Minimize Disturbance

Minimize any unnecessary soil disturbance.

Every cut made by bladed equipment into undisturbed soil and vegetation increases the likelihood of infestation. Maintain native vegetation as much as possible.

ВАСК

E. Bellamy, Spectrum Resource Group

BMP 7 – from ISC Invasive Species and Forestry Course

BCTS BC Timber Sales

Revegetate Disturbed Sites

Revegetate disturbed sites as soon as possible. Roads, bridges, landings and trails are most likely to host invasive plants if not revegetated quickly.

BACK

Establish ground cover in disturbed areas by seeding with mixtures that are free of weeds. Timing of seeding is critical for success - spring and fall are recommended. Review the **certificate of seed analysis** to ensure the seed lot doesn't contain any contaminants.

Planting large or fast growing stock in cut blocks will also reduce the chance of invasive species taking over the area.



BMP 8 – from ISC Invasive Species and Forestry Course

BCTS BC Timber Sales

Promptly Control Infestations

BACK

Remove invasive plants prior to seed set to prevent build-up of seed banks that will take years to control.

Prioritize treatment of roadsides and landings to reduce inadvertent movement of seeds and plant parts by vehicles and equipment.

Monitor to ensure control efforts are successful and retreat if necessary. Contact the provincial Invasive Plant Specialist in your area to determine the best treatment approach.



Revegetating – Grass Seed



WILLT

"It's not intended to be an exotic plant garden... it's where we used to have the bird feeder." BCTS has grass seed mixture made to meet our FSP requirement for TSL Holders and Road work.

Each bag comes with a tag that is stitched across top of bag as shown on the right.

Contact TST Engineering Dept if you need grass seed.



CUSTOM FORAGE MIX COMMON NO.1 FORAGE MIXTURE VANCOUVER ISLAND COASTAL TRIBAL PERENNIAL RYEGRASS 26.00% CREEPING RED FESCUE 24 00% ALSIKE CLOVER NANOOK HARD FESCUE HUIA WHITE CLOVER 9.00% CLIMAX TIMOTHY 8.00% CANADA BLUEGRASS 4.00% 2.00% RED TOP

LOT# LED-BLND-20-0512 TAGGED FOR: BC TIMBER SALES BAG(S): 40.0 NET WT: 50 LB (22.7 KG) PRODUCT OF CANADA BREITYOUNG, WINNIPEG, MB. "For Planting Purposses Only"





Road Construction and Maintenance

- 1. Inspect gravel pits and material sources for priority invasive plants, and remove priority invasive plant seeds and materials prior to use.
- 2. Where possible, begin work in un-infested areas and move toward infested areas.
- 3. Promptly re-vegetate disturbed areas (using BCTS grass seed) along roadsides, landings, and cleaned culverts.
- 4. All machinery and equipment capable of carrying invasive plant propagules should be cleaned prior to moving on and off site.
- 5. Grade roads in directions that do not encourage spread of seeds away from known, FSP priority invasive plant sites.



Harvesting and Site Preparation

- 1. Re-vegetate all harvested openings by re-establishing an appropriate stand of trees following the stocking standards prescribed in the Forest Stewardship Plan.
- 2. Minimize disturbance and the duration of time the site is left unvegetated. Consider seeding if there is a delay in re-vegetation.
- 3. All machinery and equipment capable of carrying invasive plant propagules should be cleaned prior to moving on and off site.



Silviculture and Reconnaissance Surveys

1. Consult the InvasivesBC or BCTS LRM Aquatic Checklist Map to determine location(s) of known invasive plant locations.

2. Incorporate InvasiveBC spatial data into planning maps.

3. Incorporate detection surveys into existing survey procedures.

4. When a FSP priority or FRPA invasive plant is encountered, follow BCTS reporting requirements and use InvasivesBC

Summary



TST program to achieve EMS and FSP Priority Invasive Plant management requirements:

- <u>Site Plans</u> reviewed by Practices Forester that address FSP measures to prevent establishment and spread of invasive plants.
- The <u>FSP outlines measures</u>, (i.e. identification, reporting, mitigating strategies reducing the spread) for the following priority listed invasive species : Knotweeds, Scotch Broom, Yellow Iris, Purple Loosestrife and Giant Hogweed; and the FRPA Invasives Plant Regualtion species.
- <u>Invasive Plant Awareness Training</u> is delivered to TST-BA and MPAD Contractor on a minimum of every two years.
- TST has developed an <u>Invasive Plant ID and Measure Guide/Pictorial</u> to help LPC's ID, Report, Mitigate and help reduce the Spread of Invasive Plants.
- TST has developed a <u>Scotch Broom BMP</u> (Best Management Practice).
- <u>Surveys</u> are conducted during block development, regeneration establishment and road maintenance to monitor and provide information for further actions if required.
- Reporting via InvasivesBC App





"We never should have waited this long ... Now the weeds have *completely* taken over."

Questions?

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