

TST Invasive Plant Training 2024



Invasive Plant Characteristics



Non-native plant species



Could cause negative impacts to humans, animals, and ecosystems



Can establish quickly and easily (especially on disturbed sites)



Can cause widespread negative economic, social, and environmental impacts

UNWANTED

Not all invasive species are equal. In fact, a small number of invasive species are responsible for a lot of the damage.



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

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 out-compete 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: Multisite - See following page(s) for details.
SFI Product Groups: Logs.
Scope of Activities: 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, 2011
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

Legislation:

Forest & Range
Practices Act
(FRPA)



Regulation:

Invasive Plants
Regulation

References

Forest Planning &
Practices
Regulation (FPPR)

FRPA sec.47:

Measures must be carried out to prevent the introduction or spread of invasive plants

FPPR sec.17:

Requires that the above is addressed in a Forest Stewardship Plan (FSP)

IPR:

Specifies invasive plant species for the purpose of the above

FSP Measures



FOREST STEWARDSHIP PLAN BCTS SEAWARD (TLASTA) FSP 2017-~~22~~24

FSP ID #: 625



CONSOLIDATED TO INCLUDE AMENDMENT #1 FOR MARBLED MURRELET.

APPROVED AMENDMENT DATE: MARCH 14, 2024

APPROVED DATE: 31 MARCH 2017 EXTENSION APPROVED DATE: 17 MARCH 2022. SECOND EXTENSION APPROVED DATE: MARCH 27, 2024

TERM: 31 MARCH 2017 TO 30 MARCH 2022 TERM EXTENDED TO: 28 MARCH 2024. TERM EXTENDED TO SEPTEMBER 26, 2024.

Forest Stewardship Plan Holder:	Location:	Mailing Address:
BC Timber Sales, Seaward - tlasta Business Area, Port McNeill Timber Sales Office	2217 Mine Road, Port McNeill	PO Box 7000, Port McNeill, BC, V0N 2R0 Tel. 250.956.5000 Fax: 250.956.5045

- 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)
- Do not brush or mow a FSP priority species.
- 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 Priority Species for TST



Scotch broom



Knotweeds



Yellow Flag Iris



Purple Loosestrife



Giant Hogweed

FSP Priority Species
under current TST FSP for
Invasive Plant Measure

Priority Species - Knotweeds (*Fallopia & Polygonum* spp.)



- 4 species in BC:
 - Bohemian
 - Giant
 - Himalayan
 - Japanese.
- **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.

Identification of Knotweed



Himalayan



Bohemian



Japanese



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.

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.



Sign from Sooke

- 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

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](#)

Flowers –
Yellow (sometimes
red marking)

Stems –
Has no spikes

Smells -
No smell



Report to BCTS if gorse is identified

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

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

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* -

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



Guidance around Equipment:

1. Best management practice is to work in uninfested sites before moving to infested sites. Known log dump sites with pre-existing 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).
4. 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
5. 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.



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 respire without photosynthesis, depleting energy reserves.
- **Consult the Coastal Invasive Species Council for advice.**

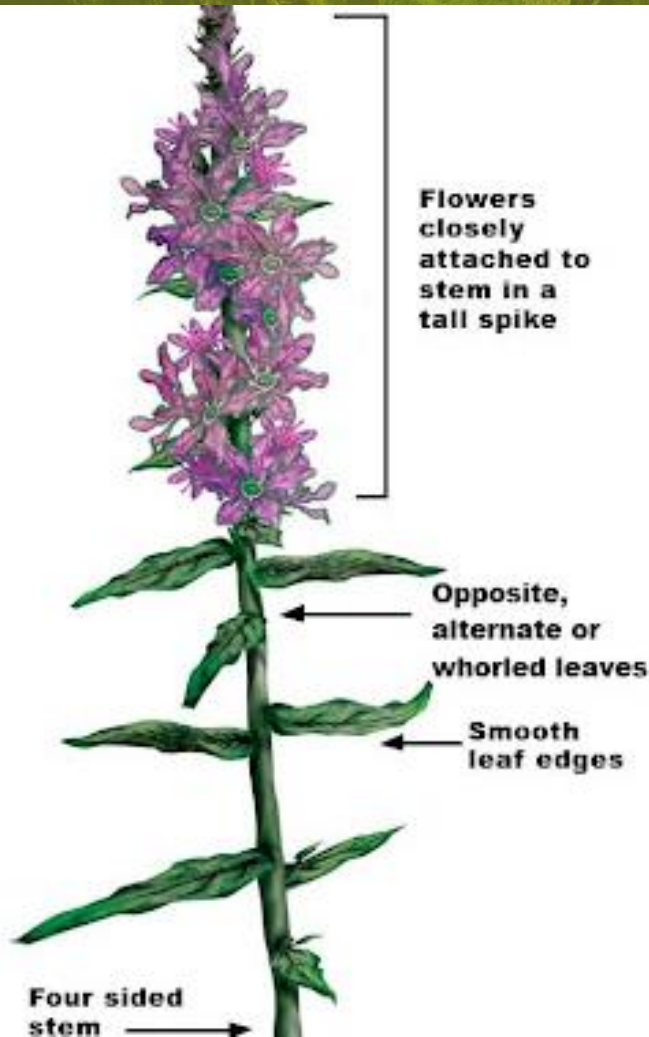


Purple Loosestrife *Lythrum salicaria*



- 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



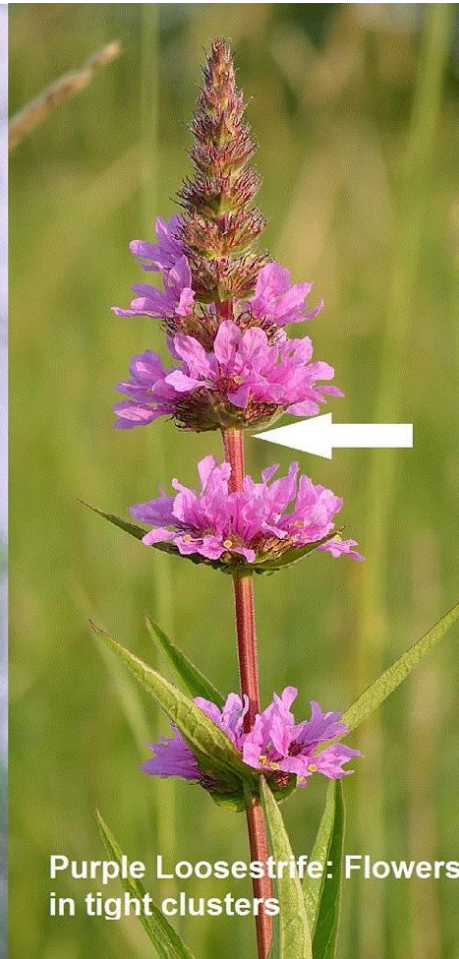
- **Flowers:** Flowers have 5-7 pink/purple petals (~10mm long) along vertical spikes at the top of stems.
- **Stems:** Woody at base, between 0.5-2.0 m in height. Square and may have short hairs.
- **Leaves:** Arranged in opposite to whorled formation along stem. 3-10 cm long. Stalkless (sessile), sometimes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

Purple Loosestrife vs. Fireweed



Fireweed: flowers widely spaced

Fireweed



Purple Loosestrife: Flowers in tight clusters

Purple Loosestrife

Fireweed: 4-petaled 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.

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.



- 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.

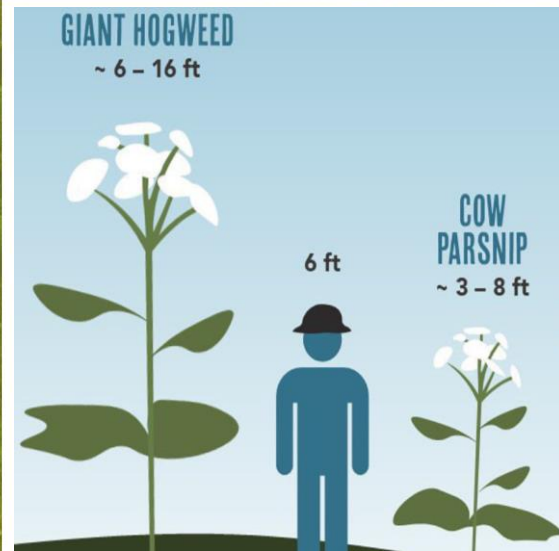
- **Consult the Coastal Invasive Species Council for advice.**

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

Giant Hogweed vs. Cow Parsnip



Giant Hogweed

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

Leaf Comparison



Cow Parsnip

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 Parsnip

Underside of leaf has a felt-like texture and is abundantly covered with white soft woolly hairs.

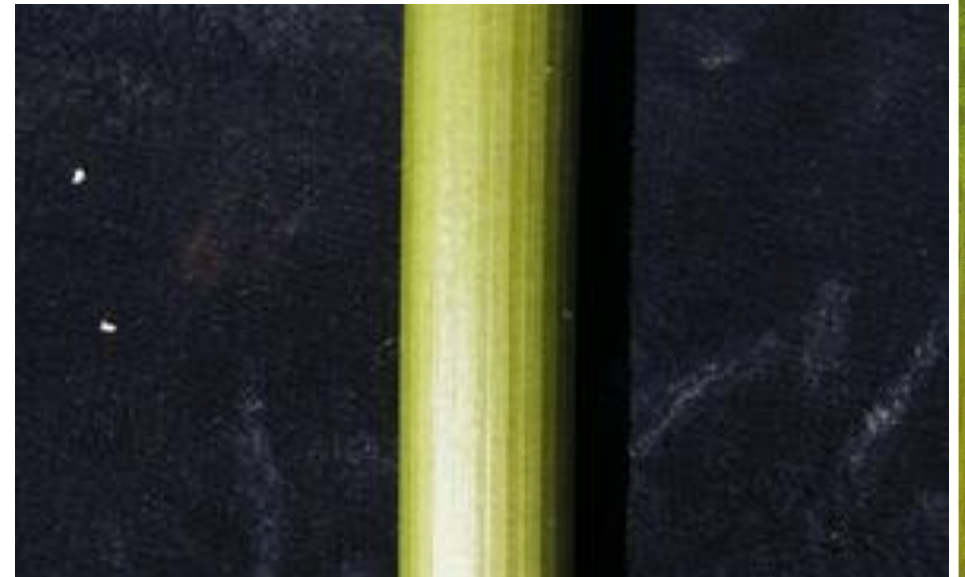
Giant Hogweed vs. Cow Parsnip



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

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.

Reporting

- Report all occurrences of priority 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



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 species.

IF YOU ARE A NEW USER:

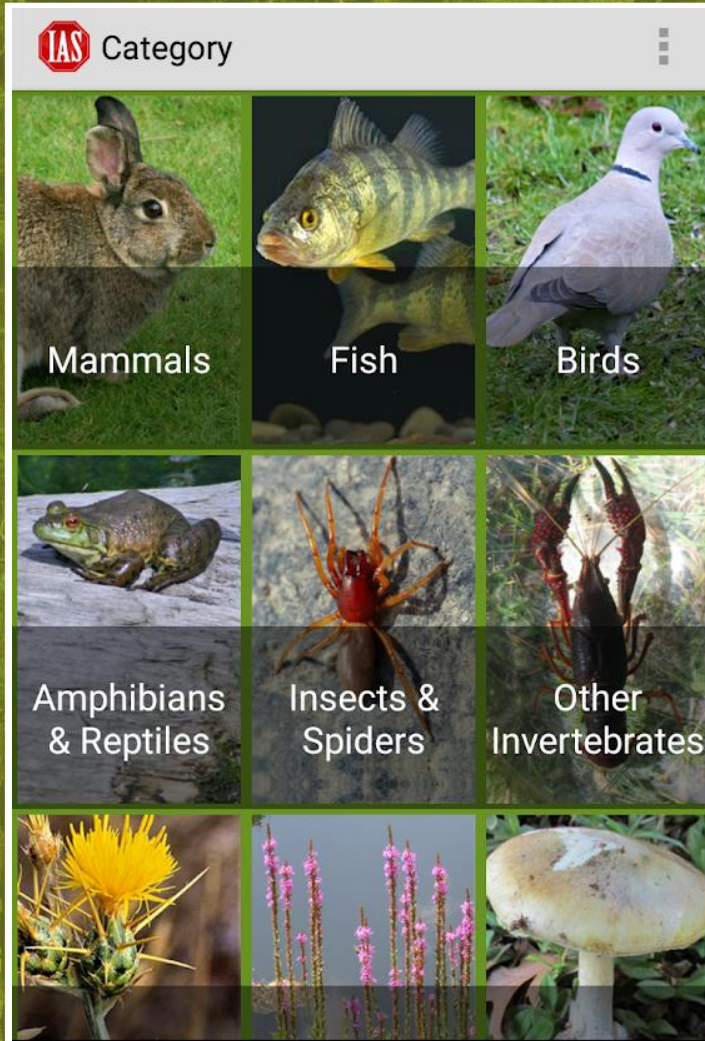
To request access: click the "REQUEST ACCESS" button at the top of the page and fill out the request access form. Please note that the employer and funding agency information provided will be used to autofill those fields into the activity forms, therefore it is important you complete the full access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

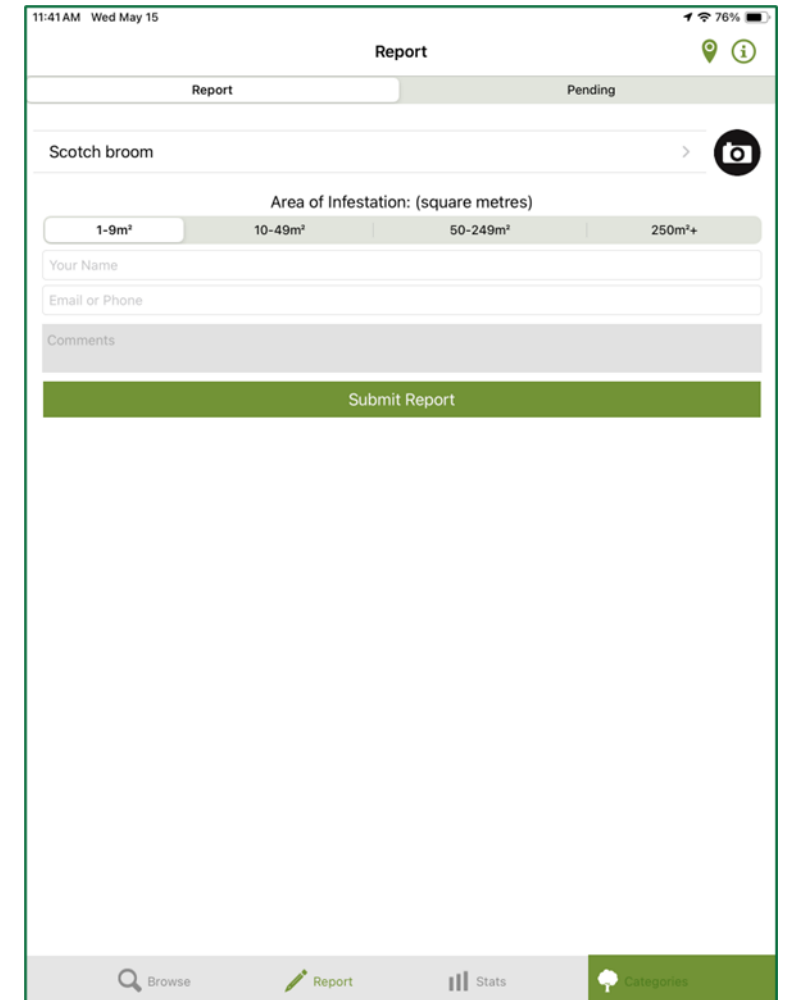
To update or change your account details: log in and then choose "update my info" from the person icon on the top right.

Reporting via InvasivesBC

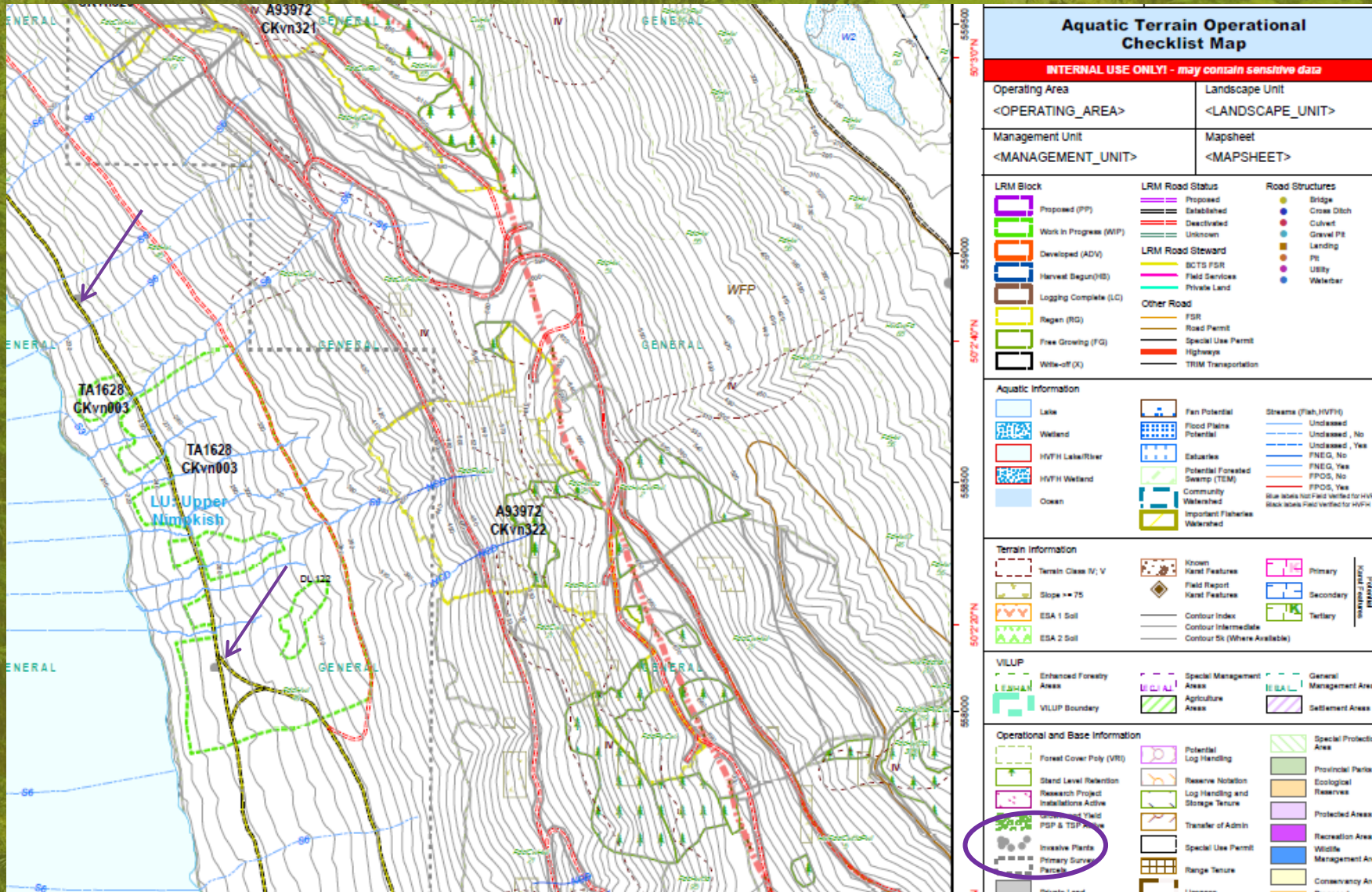


Reporting via

- BCTS Field staff and MPAD to report via the app if they encounter invasive plant in field.
- If a submission is made to IAS:
 - BCTS staff notify their supervisor
 - MPAD notifies their BCTS contract coordinator, so we are aware of the submission.
- TSL Holder and Road Contractors do not report via app; but instead tell BCTS representative
- FSP Requirement – Report within one year of observation

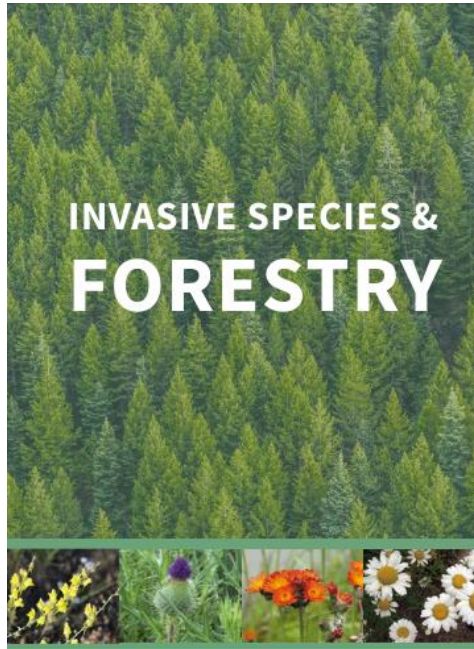


Known Sites – Aquatic Checklist Map



- LRM Aquatic Handover Checklist will indicate if an invasive plant site has been recorded
- If recorded go into Invasives BC to see what plant was identified and when
- If it's an FSP Priority Species, then it will need management

Invasive Plants BMP (2024)



INVASIVE SPECIES &
FORESTRY

**PREVENTING THE SPREAD OF
INVASIVE SPECIES DURING
FOREST MANAGEMENT
ACTIVITIES**

A POCKET GUIDE FOR BRITISH COLUMBIA'S
FOREST WORKERS






2024 EDITION



Invasive Plant Best Management Practices For Forest Managers and Field Workers (2024 Edition)

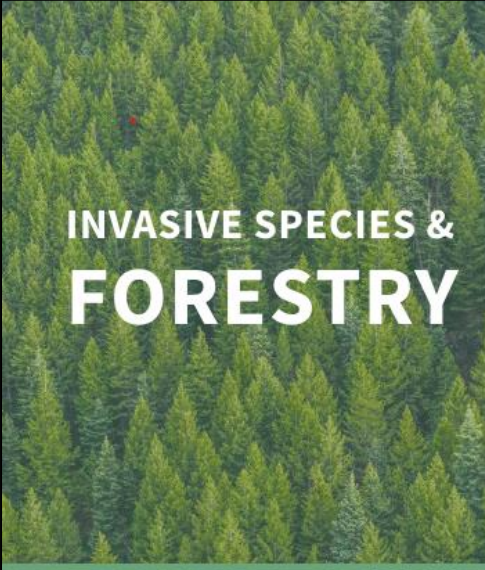
<https://bcinvasives.ca/wp-content/uploads/2021/09/BMP-Forest-Management-Activities-2024-1.pdf>

ISC Resource Library - <https://bcinvasives.ca/resources/publications/>






**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

2024 EDITION




Invasive Species
Council of BC

FACTSHEET
APRIL 2019

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 under their Forest Stewardship Plans. Implementation of these recommendations will benefit from a cooperative approach that involves the support of Provincial Invasive Plant and Species Organizations and additional expertise to provide education, training, technical advice, and provincial and regional coordination.

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

Ecological Impacts of Invasive Plants on Forestry

Invasive plants displace desirable vegetation through competition and aggressive reproduction. Lacking natural 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 soil productivity, water quality and aquatic habitats, forest structure, biodiversity, seedling regeneration, range resources, wildlife habitat, species at risk, wildfire dynamics, culturally important plants, human health, public infrastructure, recreation, and landscape aesthetics.



Management Strategies

Management strategies will vary by invasive plant species and by region of the province. Refer to the accompanying species-specific factsheets for detailed information on management of specific invasive plant species.


Three elements common to all management strategies include:

- Prevention measures that encompass development planning, silviculture, and all operations.
- Establishment of coordinated early detection and reporting systems.
- Application of Integrated Pest Management (IPM) principles

Objectives of this Document:

- Manage and mitigate the impacts of invasive plants by providing roadside maintenance contractors, land managers, and others with information and resources to prevent, detect, and report invasive plants.
- Develop a coordinated approach to invasive plant management for all maintenance contractors, land managers, and others.
- Manage and mitigate the impacts of invasive plants by providing forestry and resource management professionals with information and resources to prevent, detect, and report invasive plants.
- Develop a coordinated approach to invasive plant management for all forest and resource managers.
- Assist in compliance with the Forest and Range Practices Act and the Weed Control Act.





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



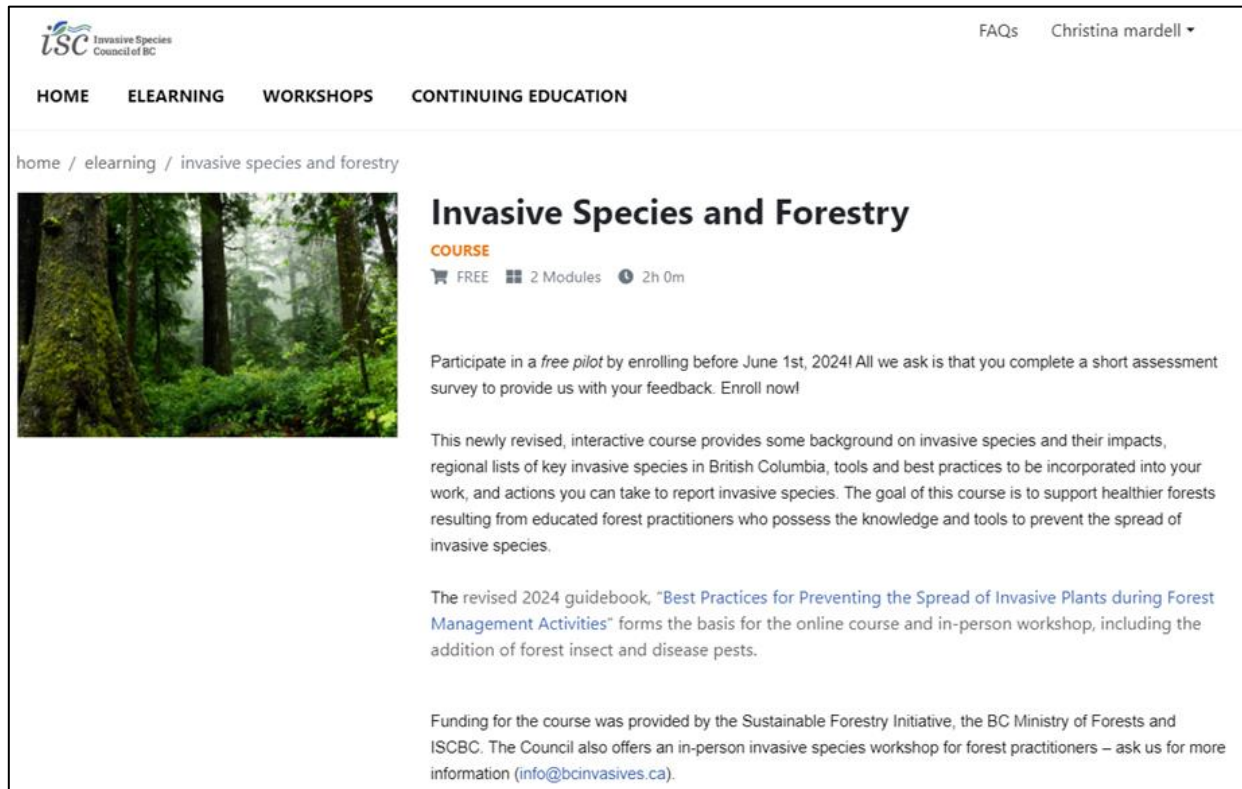
BEST PRACTICES for Managing Invasive Plants on Roadsides

A POCKET GUIDE FOR BRITISH COLUMBIA'S
MAINTENANCE CONTRACTORS

2019 EDITION

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



The screenshot shows the website for the Invasive Species Council of BC. The header includes the ISC logo and navigation links for HOME, ELEARNING, WORKSHOPS, and CONTINUING EDUCATION. The user is logged in as Christina mardell. The main content area features a breadcrumb trail (home / elearning / invasive species and forestry) and a featured course titled 'Invasive Species and Forestry'. The course is marked as 'FREE', consists of '2 Modules', and has a duration of '2h 0m'. A call to action encourages enrollment before June 1st, 2024, for a free pilot. The course description highlights its interactive nature and focus on background, regional lists, and best practices for forest management. It also mentions the 2024 guidebook as the basis for the course and workshop. Funding information is provided at the bottom, crediting the Sustainable Forestry Initiative, the BC Ministry of Forests, and the ISCBC.

ISC Invasive Species Council of BC

FAQs Christina mardell

HOME ELEARNING WORKSHOPS CONTINUING EDUCATION

home / elearning / invasive species and forestry

Invasive Species and Forestry

COURSE

FREE 2 Modules 2h 0m

Participate in a *free pilot* by enrolling before June 1st, 2024! 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:

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.

Replant.ca

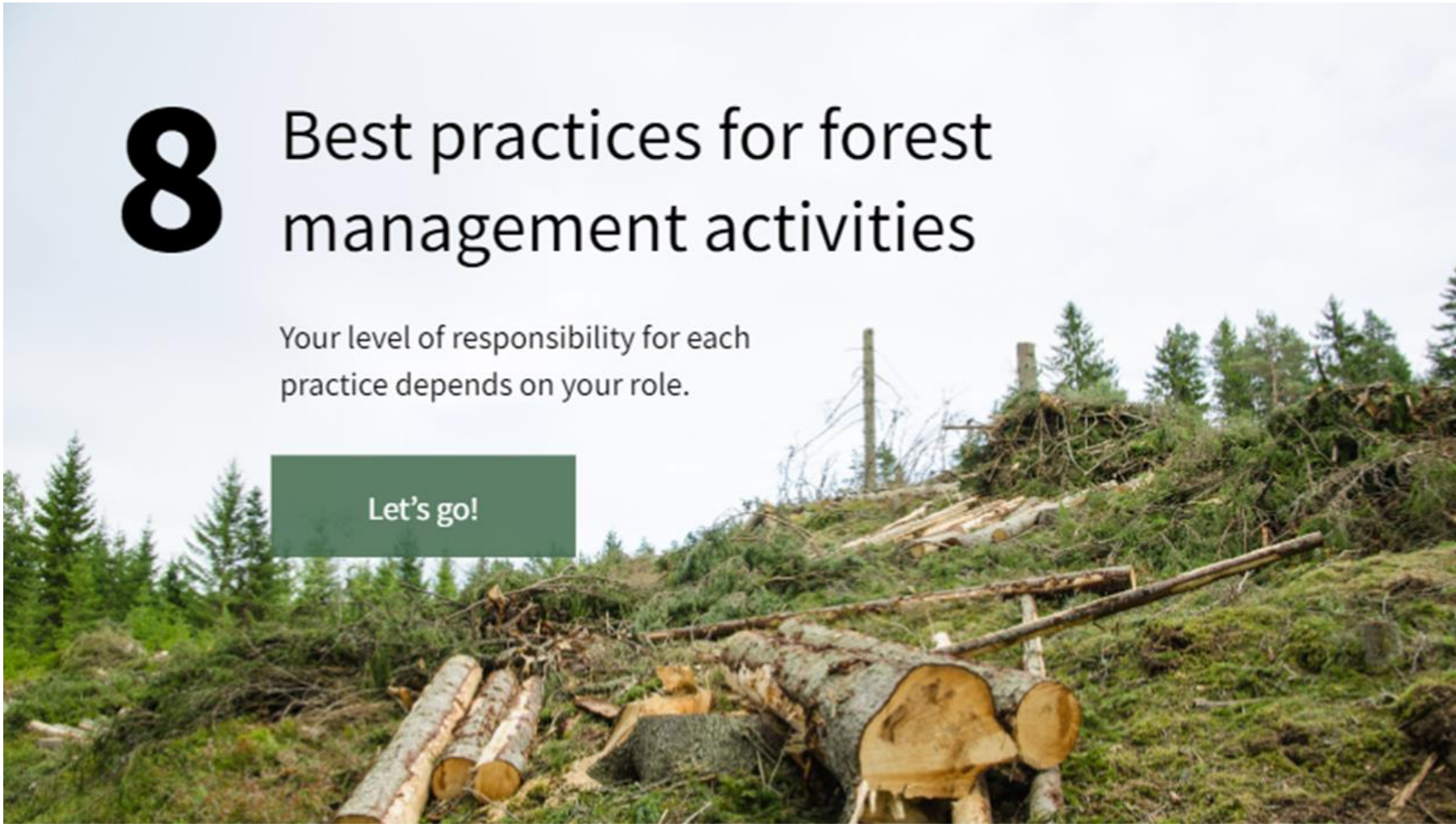
Replant.ca

8

Best practices for forest management activities

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

Let's go!



1

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



NEXT

M. Blackmore

2

Avoid Infested Areas

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.

BACK

NEXT

B. Grutzmacher

3

Work First in Uninfested Areas

Work in uninfested sites before moving to infested sites.

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.

BACK

NEXT

E. Coombs, Oregon Department of Agriculture, Bugwood.org

4 Clean Equipment Before Moving

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.



E. Bellamy, Spectrum Resource Group

5

Use Uninfested Materials

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



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

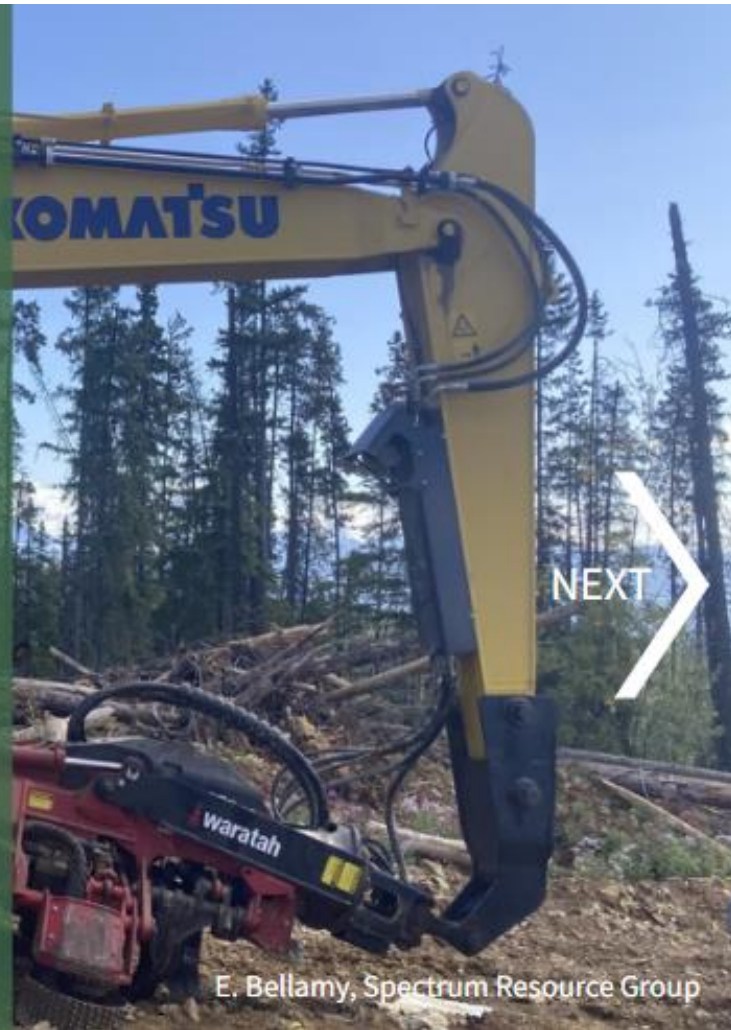


MOT

6 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.

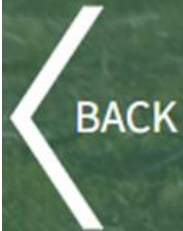


E. Bellamy, Spectrum Resource Group

7

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.



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.



Replant.ca

8

Promptly Control Infestations

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 re-treat if necessary. Contact the provincial Invasive Plant Specialist in your area to determine the best treatment approach.



CRD

Revegetating – Grass Seed

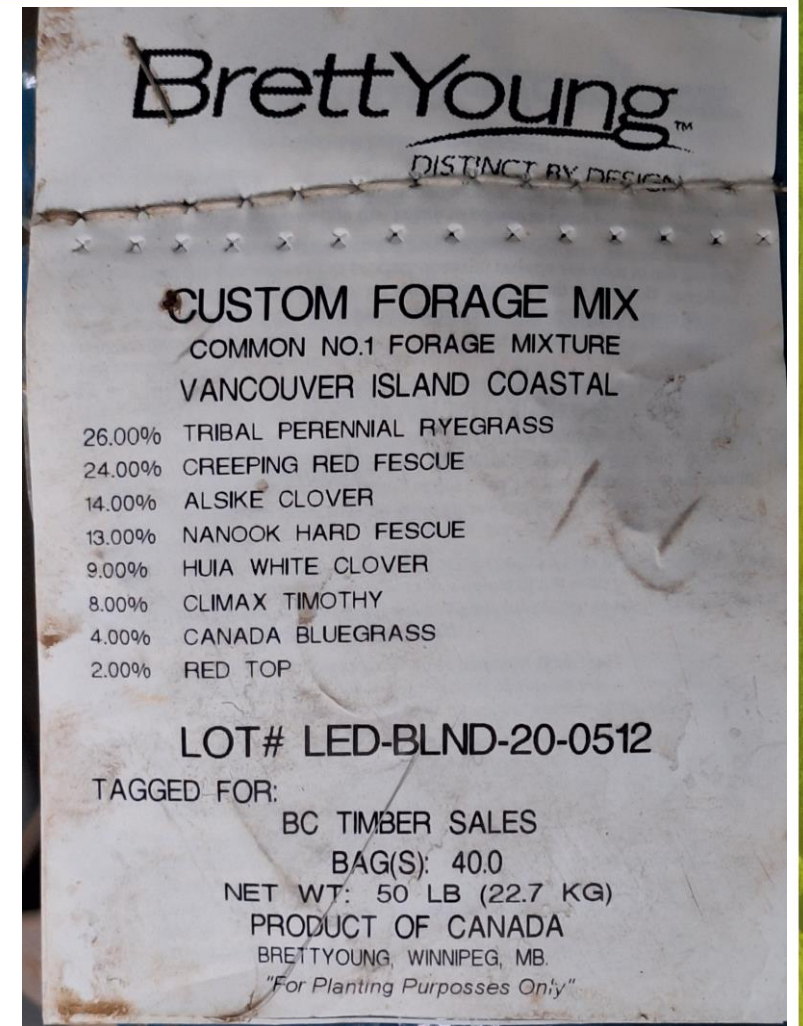


"It's not intended to be an exotic plant garden... it's where we used to have the bird feeder."

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.



Activity Specific Reminders – Road Work

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.

Activity Specific Reminders – Harvesting

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.

Activity Specific Reminders - Silviculture

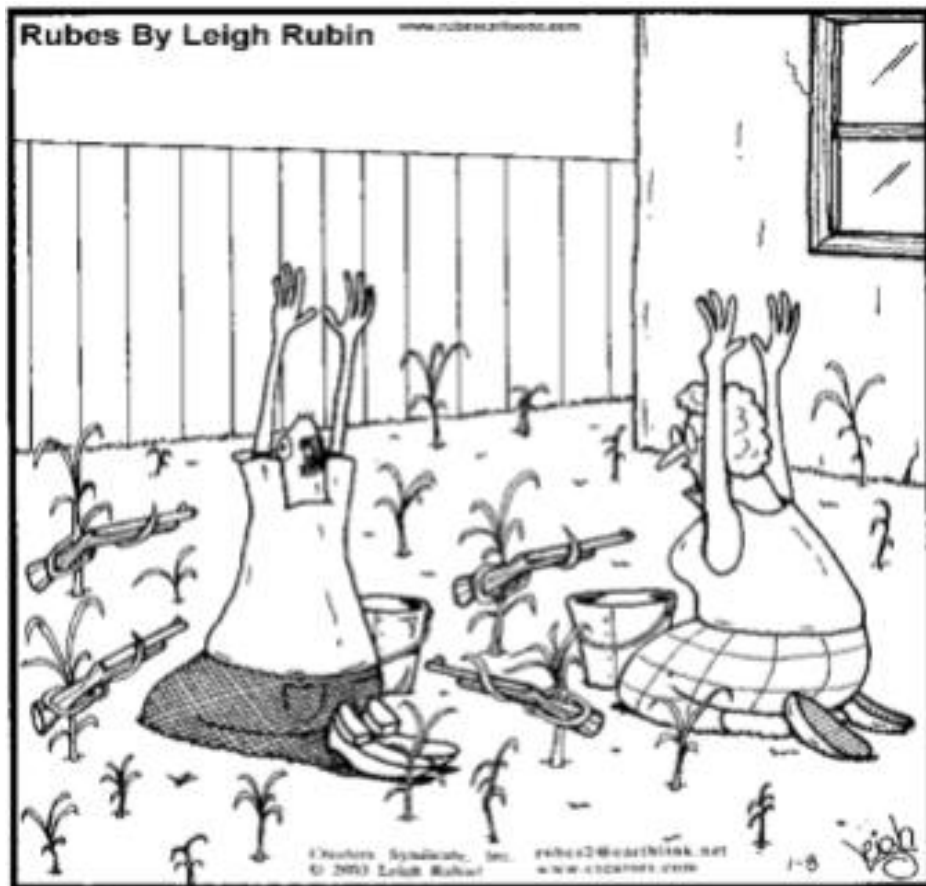
Silviculture and Reconnaissance Surveys

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 invasive plant is encountered, follow BCTS reporting requirements and use InvasivesBC

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

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

Questions?



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