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### Invasive Species: Terminology

A **native species** is one that naturally occurs in an area:

- a plant/animal that has lived and evolved in a certain place for a long time, is part of the natural ecosystem
- adapted to local conditions, co-evolved with other species, predators, diseases, & climate factors



Kinnickinnick, a native ground cover plant.

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### Non-Native but Not Invasive



Not all non-native or introduced species are invasive!




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### Invasive Species: Terminology

**Invasive Plant:** any invasive alien plant species that has the potential to pose undesirable or detrimental impacts on people, animals, or ecosystems.

**Noxious Weed:** refers to those invasive plant species listed under the *BC Weed Control Act* Regulation.




Oxeye Daisy

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### Invasive Species: Four Defining Characteristics

**1. Prolific seed producers**



Purple loosestrife



Himalayan Balsam

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**isc** Invasive Species:  
Defining Characteristics

**2. Seeds spread easily and effectively**



Hound's tongue burrs




Thistles


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**isc** Invasive Species:  
Defining Characteristics

**3. They grow rapidly under many conditions - form dense stands, displace slower growing plants.**



English Ivy




Hoary alyssum

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**isc** Invasive Species:  
Defining Characteristics

**4. Usually free of the natural predators / grazers / diseases found in their native range.**



Orange hawkweed



Spotted knapweed

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**isc** Why Care?

**INVASIVE SPECIES**  
Why should you care?




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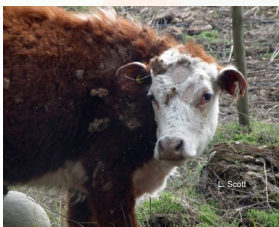
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*Why Care?  
Economic Impacts*

**Agriculture & Ranching**

Invasive plants reduce crop quality by:

- replacing target crops
- tainting crops with spines, toxic plants, inedible forage
- Some (tansy ragwort, hound's tongue) can poison livestock; burrs injure/ reduce value




Burdock burrs on livestock

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*Why Care?  
Economic Impacts*

**Reduction in Property Values**



European Fire Ants



Japanese knotweed grows through fence from neighboring property

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*Why Care?  
Economic Impacts*

**Transportation**

The Ministry of Transportation invests \$1.3 Million each year on invasive plant control.

- Cutting invasive plants to re-establish sightlines
- condemning infested gravel pits
- Repairing knotweed damage: roots can grow up to 20m!



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*Why Care?  
Economic Impacts*

The estimated annual impact of invasive species is ~\$30 billion-\$20 billion in the forest sector....  
(CFIA)

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**isc** *Why Care?*  
*Environmental Impacts*

**Biodiversity**

*BC is home to more species of living things than any other province:*

- **70%** of Canada's nesting bird species
- **72%** of Canada's land mammal species
- **50%** of Canada's amphibians, **41%** of reptiles
- **60%** of Canada's plant species, 73% of mosses and liverworts
- **40,000 +** species of insects, spiders and mites

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**isc** *Social / Cultural Impacts*

- Pose health and safety risks
- Reduce recreational values/  
close parks, trails
- First Nations culture




**Invasive plant removal on Tobacco Plains Reserve**

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**isc** *Why Care:*  
*Implications to Forestry*

Any land-based activity that transports soil / mud or exposes soil can lead to invasive species spread.



*Land-based Forestry Activity*

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**isc** *Pathways & Vectors:*  
*Forestry*

Invasive plants establish and spread in 2 major ways:

- 1. Disturbing soil**
- 2. Moving seeds and plant parts** to new places, becoming a pathway for new infestations



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**isc** *Pathways and Vectors:  
Examples*

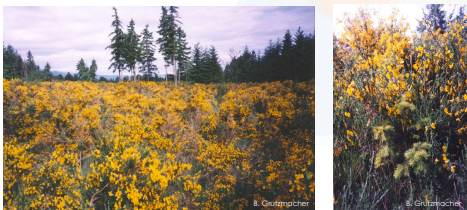
Equipment  
Machinery / Vehicles  
Mud  
People  
Wind / Water  
Animals



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**isc** *Why Care:  
Implications to Forestry*

Scotch Broom competes with a coastal Douglas-fir plantation and creates fire hazard

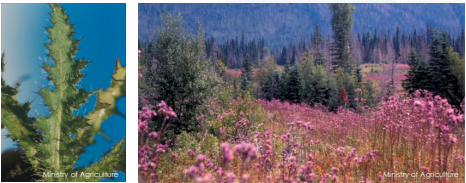


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*Scotch Broom*

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**isc** *Why Care:  
Implications to Forestry*

Marsh Plume Thistle grows to 2m tall, can cause vegetation/snow press and can increase fire hazard in plantations. It's also painful to walk through.

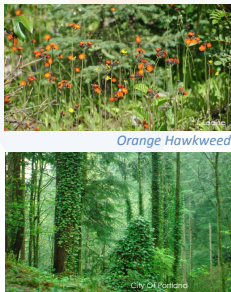


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*Marsh Plume Thistle*

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**isc** *Implications for Forestry*

- Shade-tolerant invasive plants **compete with regeneration**
- persistent** / difficult to manage once established
- Compete** with native plant species



*Orange Hawkweed*  
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**isc** *Implications to Forestry*

- Disease
- Decrease tree integrity



*Emerald Ash Borer*




*White Pine Blister Rust*

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**isc** *Why Care: Worker Safety Hazard*


WorkSafeBC released a **Toxic Plant Warning** about Giant Hogweed



**Severe skin damage from Giant Hogweed (*Heracleum mantegazzianum*)**

**What is Giant Hogweed, and where is it found?**  
Giant Hogweed (scientific name: *Heracleum mantegazzianum*), also known as the Giant Cow Parrot, is a large perennial biennial for more than one meter tall in the Pacific Northwest. It forms large, dense, upright, hollow, and very toxic stems that are made to look like the stems of the native and common *Heracleum* plants, but the Giant Hogweed and Giant Cow Parrot are much more toxic and can cause severe skin damage.

**Which parts of the plant are poisonous?**  
The leaves are considered to be the most of the skin, stems, and leaves. Giant Hogweed is listed as a poisonous plant with the Canadian Poisonous Plants Information System.



*Giant Hogweed*

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**isc** *Legislation*

- BC Forest & Range Practices Act (FRPA)**
- Weed Control Act**
- Integrated Pest Management Act (Provincial)**
- Seeds Act (Federal)**
- Wildlife Act- Controlled Alien Species Regulation (Provincial)**
- Local Government Acts (Regional)**
- Community Charter Acts (Municipal)**
- Professional Codes of Ethics**



Forest and Range Practices Act: Forest Stewardship Plans

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**isc** *Best Practices: Overview*

- Once established, **invasive plants are difficult to control** and spread quickly
- Focus is on **Prevention; & Management** - ensure that invasive plants cannot escape to new areas




**Best practices** aim to be compatible with current forest management operations – 8 in total

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**isc** *Best Practices*

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

Choose from two easy ways to report invasive species electronically - fast, easy and effectively!

**Report-A-Weed App**      **Report-Invasives-BC App**

The mobile Report-A-Weed BC app is available free of charge for iPhone and Android platforms. It lets you report weed sightings anywhere in BC, in just a few simple steps. Your report will go to BC Invasive Plant Specialists, who will coordinate follow-up activities with the appropriate local authorities.

The mobile Report-Invasives BC app is available free of charge for iPhone, iPad, and Android platforms. It includes all the plants from the Report-A-Weed app, plus 125 species in 6 additional categories. Your submissions will be sent directly to B.C. specialists on that invasive species.

This app can be used offline to create submissions or send images; complete the report, click Submit and the report will be sent as soon as you are back in cell coverage.

At the same time, the app will automatically upload your photos to the cloud.

Check for plants by common names, scientific names or by flower colour.

Use multiple-image galleries for all 255 colour codes.

Send through images of the same flower colour (e.g. red) can have several a plant with yellow flowers, you can then scroll through all the other plants with yellow flowers!

And the Report-Invasives app can be used offline to create submissions. The report will be sent as soon as you are back in cell coverage.

At the same time, the app will automatically upload your photos to the cloud.

Check for species that are species, scientific names, or by flower colour in sets of plants.

Use multiple-image galleries for all 255 species on the list.

Click on a plant with a checklist map of BC that displays the list must have common names and



*Report-A-Weed (www.reportaweedbc.ca)*

**isc** *Best Practices*

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



*Scotch Broom beside storage culverts.*

**isc** *Best Practices*

**3. Work in un-infested sites before moving to infested sites.**



*Hitch-hiker plant parts and seeds can start new infestations.*

**isc** *Best Practices*

**4. Clean equipment before moving to a new work site or region.**



*Invasive plants can travel far and be introduced to pristine environments.*



**isc** *Best Practices*

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



*Scotch broom in gravel pit*

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**isc** *Best Practices*

6. Minimize soil disturbance and maintain native vegetation.



*Every cut into previously undisturbed soil and vegetation increases the likelihood of infestation.*

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**isc** *Best Practices*

7. Promptly eliminate infestations resulting from forestry activities.



*Herbicide crew treating Scotch broom in plantation.*

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**isc** *Best Practices*

8. Re-vegetate disturbed sites promptly.



*Revegetated area with native seed mix.*

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**isc** *Reporting*

**Report Priority Invasive Species**

- **Report-Invasives BC** apps for [iPhone and iPad](#) or [Android](#)
- **Report-A-Weed BC** apps for [iPhone and iPad](#) or [Android](#)
- The **Report-a-Weed** tool in the online **IAPP Map Display** application
- Our [online report form](#)
- **Invasive Mussel Reports:** BC Conservation Officer Services Hotline: **1-877-952-7277**

[www.for.gov.bc.ca/HRA/invasive-species](http://www.for.gov.bc.ca/HRA/invasive-species)

**IAS**

**BEST PRACTICES**  
FOR PREVENTING THE SPREAD OF INVASIVE PLANTS DURING FOREST MANAGEMENT ACTIVITIES  
A Toolkit Guide for Forest Owners

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# Top Invasive Species Spread Through Forestry Activities

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**isc** *Invasive Plants*

**Blueweed**

**Common Tansy**

**Hawkweed Species**

**Common Bugloss**

**Hoary Alyssum**

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**isc** *Invasive Plants*

**Knapweed Species**

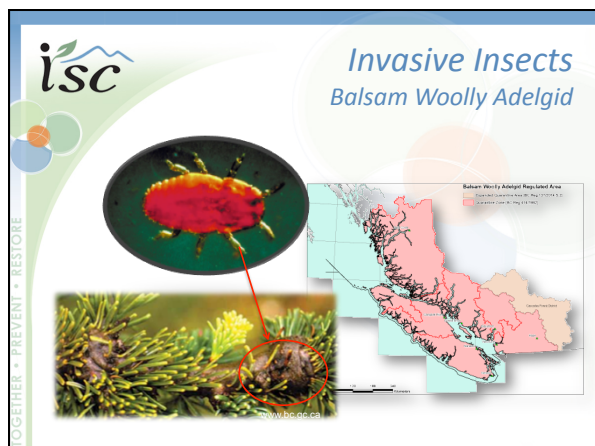
**Rush Skeletonweed**


**Tansy Ragwort**

**Marsh Plume Thistle**

**Scotch Broom**

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## Summary

- Invasive species have and can have serious impacts on BC's forests
- There *is* **legislation** in place that emphasizes invasive species management
- **Several key actions** that forest managers can take to prevent introduction and spread and contain known infestations
- **Tools and resources / workshops** available to support IS management




## Thank You!

Sue Staniforth  
Education & Outreach Manager  
Invasive Species Council of BC

Email: [education@bcinvasives.ca](mailto:education@bcinvasives.ca)  
Phone: 250-655-6300  
Web: [www.bcinvasives.ca](http://www.bcinvasives.ca)

*Discussion and Questions!*



## Discussion

- Are Invasive species on your radar at work?
- If so, why?
- Which species are the most prevalent/ concerning?
- What are some tools / resources to deal with them?
- Needs / Wish list?