

ALIEN INVADERS CHALLENGE

AN INVASIVE SPECIES CHALLENGE
FROM THE BC PROGRAM COMMITTEE



This challenge was a joint project between the Invasive Species Council of BC (bcinvasives.ca) and BC Girl Guides.

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INTRODUCTION TO THE ALIEN INVADERS CHALLENGE

What Are Invasive Species?

Invasive species are non-native species to an ecosystem that cause economic or environmental harm to native species, and can spread rapidly to new areas.

Native species are adapted to local conditions, and have co-evolved with other competing species, predators, diseases, climate factors and other aspects of a region, and are part of a natural, balanced system. However, invasive species can move into a habitat and completely take over from the original native species, as they don't have the competition, natural predators and diseases to keep them under control. Without these controls to slow them down, these species may grow faster and bigger than the native species they are competing with, and in time, can change the original habitat completely.

Many people are surprised to learn that some of the plants they have in their gardens or see along roadsides or in parks are invasive. Some examples of introduced invasive plants in British Columbia are: yellow flag iris, Eurasian milfoil, purple loosestrife, orange hawkweed, and leafy spurge. Animal species that are invasive in BC include grey squirrels, American bullfrogs, red-eared slider turtles and European starlings.

People are the main cause of invasive species entering BC – sometimes on purpose, and sometimes by accident. Therefore, by learning about them and taking action to prevent their spread, we can do a great deal to preserve our native species and habitats, and protect our ecosystems, economy and society. You can help make a difference!

Objective

The objective of the Alien Invaders Challenge is to introduce Girl Guides to invasive species, educate them about invasive species in their communities, and promote actions they can take. Using this knowledge, the girls can find ways to make a positive impact on their communities by participating in activities that will both educate the community and eradicate invasive species in an effort to promote and provide a safe environment for native plant and animal species to thrive.

Challenge Requirements

To earn the Alien Invaders Challenge, you need to complete activities from this challenge booklet, or alternate related activities. Sparks must complete at least 3 activities, Brownies and Guides complete 4 activities and all other branches must complete at least 5 activities. Please select activities that are at the appropriate level for your branch. Rangers and Adults can earn the challenge by leading a younger branch through it.

	Sparks	Brownies	Guides	Pathfinders	Rangers/ Adults
Minimum number of activities required.	3	4	4	5	5

When you have fulfilled the requirements, complete the **BC Crests Order Form** found on the BC Girl Guides website <http://www.bc-girlguides.org/> (click on Program > Challenges & Activities > Provincial Challenges). Instructions on how to order the crests are provided on the form.

Program Connections

Each activity in this booklet includes a list of program connections - areas of the girls' regular program for which the Alien Invaders challenge meets the requirements. These program connections are intended as guidelines to help you fit the challenge into your regular program planning. In some cases, the challenge activity is very similar to an activity in the program area; in other cases, the challenge activity could be used as an alternative to activities mentioned in the program area. In all cases, remember that the girls' program is intended to be flexible: if an activity meets the objectives of the program area, and if it is interesting and challenging for the girls, by all means give them credit for it as part of their program requirements.

The lists of program connections are also not exhaustive. If you find another program area that is covered by an activity in this booklet, don't hesitate to give the girls credit for it.

The Ranger program encourages in-depth exploration of topics of interest. Many of the activities in this booklet are relatively short and simple — so that busy Guiders can easily incorporate them into unit meetings — and offer only a very superficial taste of the subject matter. That makes it difficult to draw direct connections between these activities and the Ranger program. However, because the Ranger program is also very flexible and self-directed, Rangers can certainly take any of these activities and expand or combine them to meet the objectives of one of the program areas. Rangers who are working in units can also plan and lead any of these activities for younger girls.

ALIEN INVADERS CHALLENGE: TRACKING SHEET

Minimum number of activities per branch.	Sparks	Brownies	Guides	Pathfinders	Rangers/ Adults
	3	4	4	5	5

Choose each activity from a different section. You must include one field trip or service activity.

Scavenger Hunts

- Biodiversity ABC Scavenger Hunt
- Invasive Plant Photo Scavenger Hunt
- Weedy Scavenger Hunt

Active Games

- From Here, From Away
- We Are Being Invaded
- Invader Tag
- Nests
- Algae, New Zealand Mud Snail, Trout
- Create Your Own Game
- Life Size Board Game

Creative Activities

- No Hitchhikers! Aquatic Invasive Species Role Play
- Invasive Plant Dress up & Fashion Show
- Invader Creator
- Invader Puppet Show
- Make Believe Weeds
- Invasive Species Sing-a-long
- "Alien Invasion" Invasive Species Interview
- Invasive Bake Off Competition

Discovery Activities

- Native/Non-Native Plant Collage
- Native Plants: Know Your Neighbours
- Invasive Plant Field Guide Page
- Invasive Plant "Wanted" Poster
- Invasive Animals: Brochure
- Invasive Species Community Fair / Presentation
- Invasive Species: Careers
- Mapping Invasive Species in Your Community

Field Trips / Service Projects (required)

- Site Visit: Invasive and Native Species
- Invasive Species Community Weed Pull
- Invasive Species: A Site Tour and Management Plan
- Field Trip to an International Airport

Other Invasive Species Activities

Alternate activities that meet the objective of this challenge.

- _____
- _____
- _____
- _____

ACTIVITIES

Scavenger Hunts

Biodiversity ABC Scavenger Hunt

Practice observation skills and get to know your local “natural” neighbourhood or park.

Supplies

- Biodiversity ABC Scavenger Hunt sheets

Directions

1. Provide each girl with an alphabet checklist from A to Z. Give a few examples of things in nature that they could match to the letters: e.g. Ant, Bark, Clouds, Dirt, etc. For Sparks you can choose to use the included picture scavenger hunt list.
2. Set some guidelines (do not select human-made things, do not pick live plants, leave things the way you found them, stay on trails to prevent erosion) and physical boundaries (explain where the girls can go).
3. Using the Scavenger Hunt Checklist, go out on a neighbourhood scavenger hunt. Find and draw or list something in nature for each letter of the alphabet on the Scavenger Hunt Checklist.
4. Have the girls work to categorize their lists into living and non-living things. Discuss with the girls what are some characteristics of living (e.g. respond to the environment; grows; reproduces; etc.) and non-living things.

Program Connections

Sparks: **Going Outside:** Nature Walk, **Being Healthy:** Additional Activity: Outdoor Meeting, **In My Community:** Neighbourhood Walk, **Going Camping:** 20 Minute Hike

Brownies: **Key to My Community:** 1. My Neighbourhood (walk)
Key to the Living World: 1. Wondrous Walks, 2. Plant Life, 7. Seasons Come and Seasons Go

Guides: **Related interest badge:** Happy Hiking
Beyond You: Explore the Outdoors and Nature: 1. Outdoor Activity
Beyond You: Learn About Our Environment: 1. Explore the Environment, 3. Observe Plants, Insects, etc. at a Body of Water, 4. Explore Plants, Animals, etc. in Their Natural Environment

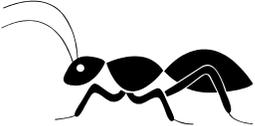
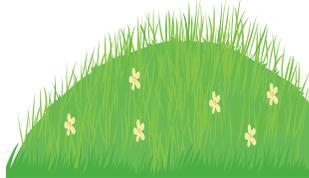
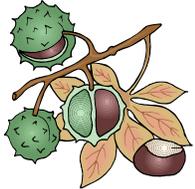
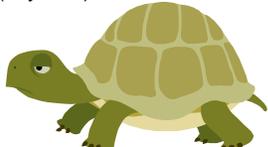
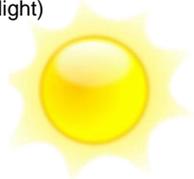
Related interest badges: Naturalist (1-4), Outdoor Adventures (1, 4, 6, 7), Outdoors in the City (2, 6), Hiking (1, 2, 7)

Pathfinders: **Let's Take it Outside: Up Close and Personal with Nature**

Rangers: **Environment, Outdoors & Camping:** 7. Take a Hike, 14. Urban Wildlife

Biodiversity Scavenger Hunt

Can you find these items in nature?

My name:		Ant 	Bird 
Caterpillar 	Dirt 	Evergreen tree 	Feather 
Grass 	Honey bee 	Insect (any kind) 	Jumping insect or animal 
Knot on a tree 	Leaf 	Mud 	Nut 
Orange leaf 	Pinecone 	Quiet animal (any kind) 	Rock 
Spider web 	Tree 	Ultraviolet rays (sunlight) 	Vine 
Weed 	X marks the spot (a place to hide treasure - could be a hollow log) 	Yellow flower 	Zzzz – a dormant tree (it is sleeping and doesn't have leaves) 

Biodiversity Scavenger Hunt Checklist

Write or draw something that you find in nature for each letter of the alphabet.

My name:		A	B
C	D	E	F
G	H	I	J
K	L	M	N
O	P	Q	R
S	T	U	V
W	X	Y	Z

Weedy Scavenger Hunt

This is a good activity to do as a bridging activity, to help younger girls with the scavenger hunt. If you do not have a field guide for your area, see the Online Resources section of this document.

Directions

1. Girls will go on a scavenger hunt to look for things specifically related to plants that are weeds. Discuss the rules and boundaries for the scavenger hunt. Explain that the girls are not to pick anything, leave things the way they found them, stay on trails (to prevent erosion), and stay within physical boundaries (explain where the girls can go).
2. Have the girls work in pairs to search and record what they find: they can check off items or draw them.
3. After they have had enough time to explore and search an area, gather the girls together and discuss their findings.
4. Explain what native plants are and what invasive plants are. Then point out to the girls examples of native plants and invasive plants in the area. Discuss the beneficial and harmful impacts or effects of several of the plants (e.g. thorns that can injure animals / beautiful flowers that attract bees and hummingbirds).

Supplies

- Weedy Scavenger Hunt sheets
- clipboards
- pencils
- plant / weed field guides for your area
- an area outdoors with a diversity of native and invasive plants

Program Connections

- Sparks:** **Going Outside:** Nature Walk, **Being Healthy:** Additional Activity: Outdoor Meeting, **In My Community:** Neighbourhood Walk, **Going Camping:** 20 Minute Hike
- Brownies:** **Key to My Community:** 1. My Neighbourhood (walk)
Key to the Living World: 1. Wondrous Walks, 2. Plant Life, 7. Seasons Come and Seasons Go
Related interest badges: Saving Our Plants and Animals, Happy Hiking
- Guides:** **Beyond You: Explore the Outdoors and Nature:** 1. Outdoor Activity
Beyond You: Learn About Our Environment: 1. Explore the Environment, 3. Observe Plants, Insects, etc. at a Body of Water, 4. Explore Plants, Animals, etc. in Their Natural Environment
Related interest badges: Naturalist (1-4), Outdoor Adventures (1, 4, 6, 7), Outdoors in the City (2, 6), Hiking (1, 2, 7)
- Pathfinders:** **Let's Take it Outside: Up Close and Personal with Nature**
- Rangers:** **Environment, Outdoors & Camping:** 7. Take a Hike, 14. Urban Wildlife

Weedy Scavenger Hunt List

Find the following...

- five different shades of green
- a plant with sharp spines or thorns
- a plant that smells pleasant (has a nice scent)
- a plant that smells unpleasant (has a bad odour)
- a plant with a leaf that has been chewed or partially eaten
- an insect on a plant
- a plant with no other plants growing near it
- a plant growing in a dry, rocky or sandy area
- a plant with three different sized leaves on it
- a seed that can stick to your clothes
- a seed that might be blown by the wind
- a seed that might be eaten by an animal
- an example of a weed
- a plant that is not a weed

Invasive Plant Photo Scavenger Hunt

If you do not have a field guide for your area, see the Online Resources section of this document.

Supplies

- digital camera or cell phone or tablet
- paper, pencils, clipboards
- local invasive plant field guide

Directions

1. Head out on a scavenger hunt to search for invasive plants, and take your *Local Invasive Plant Field Guide* along (or another resource such as local pamphlets or the Report-A-Weed BC app, which is free to download on your phone). Park naturalists, gardeners, farmers, ranchers and local government employees can help identify what plants are invasive and where they might be located.
2. **Note:** make sure you know about any plants that might be dangerous or hazardous to touch. Discuss the general safety precautions to take and describe any hazards you might come across on the scavenger hunt. Make sure to stay on the trails and do not touch any plants.
3. Take pictures (or draw) of as many invasive plants as you can find (at least three species each). Write down what the species name is, where you found it, and the date. Find out more about the area and if any community or environmental groups are working to manage the invasive plants.
4. Added challenge: put together an online or printed booklet of the photos everyone took, and add it to your local invasive plant field guide.

Program Connections

- Sparks:** **Going Outside:** Nature Walk, **Being Healthy:** Additional Activity: Outdoor Meeting, **In My Community:** Neighbourhood Walk, **Going Camping:** 20 Minute Hike
- Brownies:** **Key to My Community:** 1. My Neighbourhood (walk)
Key to the Living World: 1. Wondrous Walks, 2. Plant Life, 7. Seasons Come and Seasons Go
Related interest badges: Saving Our Plants and Animals, Happy Hiking
- Guides:** **Beyond You: Explore the Outdoors and Nature:** 1. Outdoor Activity
Beyond You: Learn About Our Environment: 1. Explore the Environment, 3. Observe Plants, Insects, etc. at a Body of Water, 4. Explore Plants, Animals, etc. in Their Natural Environment
Related interest badges: Picture This (2), Hiking (1, 2, 7), Naturalist (1-4), Outdoor Adventures (1, 4, 6, 7), Outdoors in the City (2, 6)
- Pathfinders:** **Let's Take it Outside: Up Close and Personal with Nature**
- Rangers:** **My Music, My Movies and More: Camera Crazy:** 3. Photo Shoot
Environment, Outdoors & Camping: 6. Our Local Environment, 7. Take a Hike, 14. Urban Wildlife
Explore Your Creativity: 13. Photo Essay

Active Games

From Here, From Away

Directions

1. Start by discussing safety. Explain that the girls will be moving from one area to another so they need to watch where they are going and not bump into anyone.
2. Put up signs in two areas about 10 metres apart: one - "from here", one - "from away". Tell the girls that you are going to hold up a picture of a plant or animal, and they are to run safely to the "from here" sign if it is a native plant or animal or to the "from away" sign if it is an introduced plant or animal. Define "from here" as a plant or animal living in this ecosystem for hundreds or thousands of years. Define "from away" as plants or animals being introduced or brought in from somewhere else by humans in the last two hundred years or so.
3. Explain that some terms such as "native", "indigenous," and "from within its normal range" all mean "from here". Other words such as "foreign", "exotic", "introduced," "from outside its normal range", "aliens", "weeds" all mean "from away".
4. Show all the picture cards before beginning the game, identifying if they are native (from here) or invasive (from away) species.
5. Hold up a picture of a plant or animal and say its common name (e.g. Himalayan blackberries). Give the girls time to think, then say "go". The girls should run to the sign, which indicates from here or from away. Tell them to make up their own mind and not be swayed by the group. The group is not always right!
6. After the dust has settled, discuss whether the plant or animal was from here or from away. Repeat the process for fifteen or twenty plants and animals. You will probably find that the girls are more aware and knowledgeable of animals than of plants. It is always worth reminding them of the importance of plants in the ecosystem!
7. After the running game, have the girls work as a group to categorize the pictures of plants and animals into the two groups: from here or native and from away, or introduced. Lay the pictures out on the floor under the two signs.
8. Encourage discussion and ask the girls if they have seen any of the plants and animals that are in the pictures in their community.

Supplies

- 15 – 20 pictures of plants and animals, including some native and non-native species and some invasive species. Use the images included at the end of the document or find images in old calendars, nature magazines or online.
- From Here / From Away signs
- large play area

Program Connections

Sparks: **Going Outside:** Outside Active Game, **Being Healthy:** Active Game

Brownies: **Key to Active Living:** 2. Outdoor Action

Key to the Living World: 1. Wondrous Walks, 2. Plant Life

Related interest badges: Go For It, Saving Our Plants and Animals

Guides: **Discovering You:** **Stay Fit and Healthy:** 4. Active Game

Beyond You: Learn About Our Environment: 4. Game About Animals and Environment

Related interest badges: Fitness Fun (5), Ecology (6), Naturalist (1, 2), Plants and Animals (5)

- Pathfinders:** **Creating Your Future: We're a Team:** 4. Get Active!
Let's Take it Outside: Up Close and Personal with Nature
Living Well: Active Living: 4 & 6. Get Active.
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 8. Going Natural,
14. Urban Wildlife
Healthy Living: 33. Your Interests

We Are Being Invaded!

Practice observation skills and get to know your local “natural” neighbourhood or park.

Directions

1. Girls spread out in an indoor or outdoor area so most (not all) of the girls are still able to touch if they stretch out their arms and legs. The group represents a local forest (for BC it would be temperate rainforest or boreal forest) or grassland area.
2. Explain to the girls that introduced or foreign plant species are those that are brought by humans or animals into areas where they did not exist previously. An invasive species is one that can outcompete native species and can take over the habitat of the native species.
3. Select one girl to be an invasive plant. (Ask the girl to select which plant she would like to be. It should be from her local region – you can have her select something from the list of Invasive Species included at the end of this document).
4. Place a dot sticker (or piece of tape) on one hand of the girl who was selected to be an “invasive plant”.
5. Explain that native plant species are those that naturally inhabit an area. Ask the rest of the girls to select a native plant that they would like to be (they can choose from the list of Native Plants included at the end of this document); they all stay in one place to “put down their strong roots”, wave their arms to represent branches blowing in the wind, and spread their seeds.
6. The invasive plant can “shoot” seeds, like a Himalayan balsam plant (also known as Policeman’s helmet). To do this the girl can move one arm and one leg and stretch out.
7. If a native plant gets touched, she will turn into an invasive plant and get a sticker on her hand. She will also be able to stretch out an arm and a leg and touch other plants in the area, turning them into invasive plants. This can be represented by passing out stickers to each new invader.
8. Stop the game when most of the plants have been turned into invasive plants. Ask all the invasive plants to sit down and the native plants to remain standing.
9. Discuss with the girls what happened during the game. Discuss what would happen to the birds, mammals and insects that depend on the native plant species for food and shelter if these native plant species all died because of the invasive plant species.

Supplies

- large “dot” stickers or pieces of masking tape
- large play area

Program Connections

- Sparks:** **Going Outside:** Outside Active Game, **Being Healthy:** Active Game
- Brownies:** **Key to Active Living:** 2. Outdoor Action
Key to the Living World: 1. Wondrous Walks, 2. Plant Life
Related interest badges: Go For It, Saving Our Plants and Animals
- Guides:** **Discovering You: Stay Fit and Healthy:** 4. Active Game
Beyond You: Learn About Our Environment: 4. Game About Our Environment
Related interest badges: Ecology (6), Endangered Species (3, 4), Naturalist (1, 2)
- Pathfinders:** **Creating Your Future: We’re a Team:** 4. Get Active!
Let’s Take it Outside: Up Close and Personal with Nature
Living Well: Active Living: 4 & 6. Get active.
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife

Invader Tag

Directions

1. Tell the girls they are going to play the role of native plants in a given community. Discuss the region you live in and name some of the native trees, shrubs and other plants that live there. Have the girls decide which plant they'd like to be. (Refer to the Native Plants section at the end of this document.)
2. The markers serve as the boundaries of the community (e.g. the field, forest, etc.) and the plants can grow anywhere they choose within the boundaries.
3. Discuss with the girls the types of invasive plants found in your region (refer to the Invasive Plants section at the end of this document), and their impacts. Discuss the characteristics that make a plant invasive.
4. Choose one girl to be an invasive plant, such as English ivy, knotweed, hawkweed, or another that is common in your area. Introduce this plant into the area anywhere she wishes to grow. The invasive plant is going to grow, spread and reproduce rapidly by tagging native plants and forming a long "vine" or chain (girls holding hands).
5. "Native plants" are free to run anywhere in the boundaries of their community to escape the effects of the invader. Of course, plants are not mobile in nature, but they must compete with invasive plants for soil, nutrients, space, sunlight and water, and running is a simulation of this competition for resources.

When the invasive plant tags a native plant, the two join hands and tag another plant. The third plant joins hands and becomes part of the invasive vine or population. **Note:** only the girls at the ends of the vine can tag other plants.

6. The vine continues to grow as other native plants are tagged and join hands. Once a vine has six girls, it "reproduces" by splitting apart (or use four girls if your group is smaller). The two new invasive plant chains can then both tag native plants, and each time it grows to six girls, it splits apart again.
7. The climax comes when there is only one native plant left in the area: alas there is no escape! The last native plant tagged can be the "introduced" invasive plant in the next round. Play as many rounds as time permits.

Program Connections

- Sparks:** **Going Outside:** Outside Active Game, **Being Healthy:** Active Game
- Brownies:** **Key to Active Living:** 2. Outdoor Action
Key to the Living World: 2. Plant Life
Related interest badges: Go For It, Saving Our Plants and Animals
- Guides:** **Discovering You: Stay Fit and Healthy:** 4. Active Game
Beyond You: Learn About Our Environment: 4. Game About Our Environment
Related interest badges: Fitness Fun (5), Ecology (4-6), Naturalist (1, 2)
- Pathfinders:** **Creating Your Future: We're a Team:** 4. Get Active!
Let's Take it Outside: Up Close and Personal with Nature
Living Well: Active Living: 4 & 6. Get Active.
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
Healthy Living: 33. Your Interests

Supplies

- large play area for girls to run
- flags or cones to mark out boundaries

Nests

The nesting sites of Lewis's Woodpeckers are taken over by European Starlings and this is threat in BC. Introduced from Europe, the European Starlings are "brood parasites". This means that they lay their eggs in the nests of Lewis's Woodpeckers and the woodpeckers end up raising the European Starlings' offspring without knowing it. Most often the starling's offspring will survive and the woodpecker's offspring will not. The Lewis's Woodpeckers are at risk because they are losing their nesting sites to this invasive species. The woodpeckers will not return to their nest if a starling has occupied it or pooped in it.

Supplies

- handkerchiefs or pieces of cloth to represent nests
- bin for nests

Directions

1. Pick one girl to be the European Starling.
2. The rest of the girls are the Lewis's Woodpeckers. Have all these girls tuck a "nest" into the back of their pant waistband.
3. The starling girl will run around and try to grab the nests of the woodpecker girls.
4. Captured nests are dropped off in a bin located by the Guider.
5. When a woodpecker girl has her nest stolen, she has to perform a selected task in order to get a new nest. Some ideas for tasks include:
 - give a characteristic of an invasive species (e.g. reproduces rapidly; has no natural predators; are aggressive, etc.)
 - name some other invasive species to BC (e.g. English Ivy, giant hogweed, knapweeds, knotweeds, marsh plume, purple loosestrife, Scotch broom, sulphur cinquefoil, yellow-iris, Himalayan blackberry, Scotch thistle, leafy spurge, oxeye daisy, common burdock, hounds tongue, orange hawkweed, diffused knapweed, yellow star thistle)

OR some ideas for tasks related to Guiding include:

 - state the Promise
 - state the Law
 - state the Motto
 - tie a Reef Knot
6. Continue playing until all nests have been stolen, or for a specified amount of time.

Program Connections

- Sparks:** **Going Outside:** Outside Active Game, **Being Healthy:** Active Game
- Brownies:** **Key to Active Living:** 2. Outdoor Action
Key to the Living World: 1. Wondrous Walks, 2. Plant Life
Related interest badges: Go For It, Saving Our Plants and Animals
- Guides:** **Discovering You: Stay Fit and Healthy:** 4. Active Game
Beyond You: Learn About Our Environment: 4. Game About Our Environment
Related interest badges: Fitness Fun (5), Ecology (4-6), Endangered Species (2-5), Naturalist (2, 3)
- Pathfinders:** **Creating Your Future: We're a Team:** 4. Get Active!
Let's Take it Outside: Up Close and Personal with Nature
Living Well: Active Living: 4 & 6. Get Active.
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
Healthy Living: 33. Your Interests

Algae, New Zealand Mud Snail, Trout

New Zealand Mud snails are invasive to freshwater ecosystems in BC. They feed on algae. Trout will eat New Zealand Mud snails, but because these organisms are not usually part of the trout's diet, the snails pass right through the trout's digestive tract alive, so the trout do little damage to the snails' populations.

Supplies

- a large area with a center and two end lines

This activity is similar to Rock, Paper, Scissors.

Directions

1. Divide the girls into two teams.
2. Team 1 stands on one end line. Team 2 stands on the opposite end line.
3. Each team will decide whether they will be one of three organisms: algae, New Zealand Mud snails or trout. Once the team has decided, everyone on the team will be the same organism.
4. Everyone on the team lines up near the centre of the playing area and faces the other team.
5. As a team, everyone counts to three out loud together. Both teams at the two end lines will do this at the same time.
6. On "three", each team will reveal its organism.
7. Algae will lie on the ground. New Zealand Mud snails will crawl on the floor. Trout lay on the ground, putting their hands together in front of them and moving them side-to-side like a fish swimming.
8. Trout defeat New Zealand Mud snail; New Zealand Mud snails defeat algae; Algae defeat Trout.
9. The winning team runs after the other team, trying to tag them before they reach their safe zone (the opponent's end line).
10. Girls who are tagged will join the team that tagged them and return to their new end line.
11. The game starts again with the huddle in which each team decides what organism to be.
12. After several rounds, have the girls think of another invasive species and its associated food chain (e.g. Humans, American bullfrogs, native frogs or toads).

Program Connections

- Sparks:** **Going Outside:** Outside Active Game, **Being Healthy:** Active Game
- Brownies:** **Key to Active Living:** 2. Outdoor Action
Key to the Living World: 1. Wondrous Walks, 2. Plant Life
Related interest badges: Go For It, Saving Our Plants and Animals
- Guides:** **Discovering You: Stay Fit and Healthy:** 4. Active Game
Beyond You: Learn About Our Environment: 4. Game About Our Environment
Related interest badges: Ecology (4-6), Endangered Species (2-5), Naturalist (2, 3)
- Pathfinders:** **Creating Your Future: We're a Team:** 4. Get Active!
Let's Take it Outside: Up Close and Personal with Nature
Living Well: Active Living: 4 & 6. Get Active.
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife

Create Your Own Game!

This activity is intended for Pathfinders or Rangers.

Supplies

- information on invasive plants and animals

Directions

1. Play one or two of the Invasive Species games listed in this challenge for younger girls (e.g. *We are Being Invaded!*, *Invader Tag*, *Nests* games).
2. Research some invasive plants, insects and animals found in your area, and design an active game for Sparks, Brownies or Guides to play.
3. The game should have the girls learn something about invasive species and their impacts, be active, fun and engaging for the specific age group. Research the groups' age, abilities, interests, the local regions' invasive species, how they got here and how to best prevent / manage / control them.
4. Try out the game with your unit, then host it with a group of Sparks, Brownies or Guides to try it out. Get their feedback to make it better.
5. Additional challenge: publish the game as part of your groups' activity booklet / present it to Girl Guides of Canada for possible adoption as a game. Send it in to the Invasive Species Council of BC! We'd love to see it!

Program Connections

- Pathfinders:** **Finding the Path: Bridging the Gap:** 3. Help Girls in Other Branches Complete Program
Creating Your Future: We're a Team: 4. Get Active!
Let's Take it Outside: Up Close and Personal with Nature
Living Well: Active Living: 4 & 6. Get active.
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
Explore Your Creativity: 30. Your Interests
Leadership and Management: 2. Leading Children, 23. Make Learning Fun
Healthy Living: 4. Pass it On

Life Size Board Game

This activity is intended for Pathfinders or Rangers.

Directions

1. In groups of 2-3, design and create a life-size board game to model the effects of Invasive Plant Species on a plant community. This board game can be used to teach younger girls (e.g. Brownies or Guides) about Invasive Species.
2. Make up the rules for your board game.
3. The path of the board game will be made out of cardstock laid out on a tarp. The girls become the playing pieces. Some ideas for the spaces on the path include:
 - Some of your seedlings were eaten by squirrels. – Move back 2 spaces.
 - Fertilizer runoff from a farm gave you an abundance of nutrients. – Move forward 2 spaces.
 - Your seeds have successfully been transferred by an animal, on a hiker's boots, camping gear, truck tires, or the wind. – Move forward 3 spaces.
 - You outcompeted another plant for light and water. – Move forward 2 spaces.
 - You just got dumped from a home aquarium into a local pond and are spreading like crazy – Move forward 2 spaces.
 - You just colonized a new field. – Move forward 3 spaces.
 - A group of Girl Guides held an invasive plant pull. – Move backward 4 spaces.

Supplies

- tarp
- coloured cardstock
- pencil crayons
- permanent markers
- tape

Program Connections

- Pathfinders:** **Finding the Path: Bridging the Gap:** 3. Help Girls in Other Branches Complete Program
Let's Take it Outside: Up Close and Personal with Nature
Exploring a Theme: Puzzle Me: Additional Activity
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
Leadership and Management: 2. Leading Children, 23. Make Learning Fun

Creative Activities

No Hitchhikers!

Aquatic Invasive Species Role Play

Girls role-play the part of lake inhabitants and the aquatic exotics that displace native species. Props are used to help demonstrate how aquatic exotic species enter a lake or river system, the negative effect they have on the native species, and the things people can do to stop the spread of aquatic species.

Directions

1. Begin by laying out the rope in a large circle. Have the ends of the rope lead away to represent a stream feeding into the lake.
2. Gather around the “lake” and give a general overview of aquatic invasive species.

“Script” - This large circle represents a lake and creek that feeds it and there are native rainbow trout that live in this lake. This activity looks at invasive species that are invading lakes and rivers in BC by hitching a ride with us, and there is no stopping them, unless we do something about it. You will play the part of the inhabitants of this lake and learn about aquatic species.

3. Two girls are each given a picture of a trout and taken to the middle of the lake. Drop 12 paper plates on the ground inside the “lake” and “creek” (food plates) that represent the favourite food of the trout (6 plain plates) and favourite sleeping spots (6 plates with an “x”). Explain that the trout eat and sleep all over the lake. Have the volunteer trout “swim” around the paper plates pretending to eat or sleep.
4. Next, introduce the Eurasian milfoil by first showing the girls the picture and explaining how to identify it and the harmful effects it has on the habitat. Choose a small group of girls (1-2) as “Eurasian milfoil” and explain how it is spread - show the picture of boat, motor and trailer, and read through some of the information on the Eurasian milfoil info sheet (see below the photo). Use the boat with trailer photo to explain how milfoil gets tangled in the trailer and boat propeller.
5. Have the milfoil volunteers move the rope that represents the lake one or two steps closer to the centre of the circle, to represent the loss of habitat for the trout. They can stand inside the “lake” as well. Note that there is still space for the trout to sleep and eat.
6. Show a photo of a yellow flag iris. Have 1-2 girls be yellow flag iris volunteers. Give them a package of “seeds” to show how careless gardeners initially helped to spread

Supplies

- pictures of several aquatic species - zebra mussels, Eurasian milfoil, didymo, yellow flagged iris
- 2 pictures of a trout
- picture of a boat/trailer and boat with potential mussel locations
- bait bucket
- seed packet
- paper plates - 12 (6 marked with an “x”)
- long rope for lakeshore boundary, and for creek that feeds into it - can use people for lake/creek boundary if there are enough present.

yellow flag iris. Have them move into the lake, forcing milfoil further into the lake and covering several food plates.

- Next, choose several girls to be “didymo”. Talk about how it is spread, and show them the photo. Have the didymo volunteers move in closer, pushing in milfoil and iris, and covering more of the food and sleeping areas (stand on the paper plates).

Each time a new species is introduced and the volunteers take a step forward, the prior groups must take a step forward as well, ultimately covering up all the paper plates and surrounding the trout. Have the girls think about how the habitat for the native animals is reduced.

- The final invasive species are the zebra mussels. Use the boat and zebra mussel pictures to show how it is spread. Have the rest of the girls act as zebra mussel volunteers - give one a bucket to represent water in the motor of a boat, and have them pretend to dump it into the lake. Now have all the mussels move into the lake, causing other invasive species to move in further, and covering all food and shelter.
- Talk about what has happened to the lake and the trout. Ask the girls how each exotic species is spread, and discuss what is being done in BC to stop the spread of invasive species.

Program Connections

Sparks: **Going Outside:** Additional Activity

Brownies: **Key to the Living World:** 1. Wondrous Walks, 2. Plant Life

Related interest badges: Saving Our Plants and Animals, I Can Be

Guides: **Discovering You: Discover Your Creativity:** 3. Dramatic Presentation

Beyond You: Learn About Our Environment: 3. Learn About Water, 4. Game About Our Environment

Related interest badges: Ecology (2, 4-6), Endangered Species (2-5), Naturalist (1, 2), Water (6, 7)

Pathfinders: **Let's Take it Outside: Up Close and Personal with Nature**

Rangers: **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife

Explore Your Creativity: 30. Your Interests

Invasive Species #1: Eurasian Milfoil



- accidentally introduced to North America from Europe.
- first discovered in BC in Okanagan Lake in the 1970's.
- It spread primarily by boats as they move between lakes.
- can form thick underwater stands of tangled stems and vast mats of vegetation at the water's surface; in shallow areas it interferes with water recreation (boating, fishing, swimming)
- The plants also crowd out native water plants.
- A key factor in the plants success is its ability to reproduce through stem fragmentation and runners. A single segment of stem and leaves can form a new colony. Fragments clinging to boats and trailers can spread the plant to other lakes.
- Milfoil may become entangled in boat propellers or may attach to keels and rudders of sailboats. Stems can become lodged among any watercraft apparatus or sports equipment that moves through the water, especially boat trailers.
- Milfoil degrades water habitat and wild trout populations by reducing the diversity and abundance of native plants, as well as associated invertebrate populations.
- **Prevention: Clean off all weeds from boats and trailers.**

Invasive Species #2: Yellow Flag Iris



- found in wet areas, growing in ditches, irrigation canals, marshes, stream and lake shorelines and shallow ponds.
 - currently distributed in BC's southern interior, has quickly spread throughout the Okanagan valley, lower Similkameen valley, Christina Lake & isolated sites in the West Kootenays.
 - reproduces quickly through seed dispersal and horizontal root systems, creating thickets in the water like cattails; several hundred flowering plants may be connected underwater, and fragments can form new plants when they break off & drift downstream.
 - sold in nurseries/on the Internet for wet areas & well-mulched soil
 - seeds disperse in the wind and water; popularity of the plant in the market exacerbate efforts to contain new infestations.
 - Dense stands can force out native wetland species, threatening plant and animal diversity.
 - dense rhizome masses (underground stems) trap sediment, reducing water flow, affecting native fish, plants & animals.
- Warning: can also sicken livestock if ingested, though it is generally avoided by grazing animals. Contact with the resins can cause skin irritation in humans.**

Invasive Species #3: Didymo (rock snot)

- It is an invasive freshwater algae.
- It can form a thick blanket extending two to three kilometers in length across freshwater streams or riverbeds that prevent insects that fish eat from living in their natural habitat.
- Its impact includes a reduction of fish spawning habitat, it changes species composition and invertebrate populations, restricts waterflow and causes a depletion of dissolved oxygen in water due to decomposition.
- It is believed to be spread through felt-soled waders worn by some anglers.
- It cannot be eradicated once it is in the water.
- **Prevention - avoid felt soled waders. Also check equip for clumps of algae before leaving a waterway. Clean gear by flushing for one minute using very hot water, or soaking for 20 minutes in 113f water. Or soak for one minute in a 2% bleach solution. Dry boots and equip for at least 48 hours. You can also freeze them overnight.**

Invasive Species #4: Invasive Zebra Mussels

- Zebra mussels are small, fingernail-shaped mussels native to Asia.
- They can produce up to 1 million eggs per year.
- They were first discovered in Lake St. Clair in the Great Lakes system in 1988.
- Invasive mussels have now spread to all parts of the Great Lakes and across the southern U.S. Zebra mussels clog water systems and irrigation.
- They have severely reduced and eliminated native mussel species.
- Microscopic larvae may be carried in boat wells or bilge water.
- Adults can also attach to the hulls of boats that sit in the water.
- **Prevention - clean, drain dry - refer to photo of boat with mussel sites**



Invasive Plant Dress up & Fashion Show

Directions

1. After the girls have learned about some invasive species in BC, they can create their own make-believe species, using dress-up clothes and accessories (e.g. hats or gloves). The girls will put on an Invasive Species fashion show to highlight some of the characteristics that make a plant invasive.
2. Review with the girls the characteristics that make a plant species invasive:
 - they are usually prolific seed producers – they produce thousands of seeds at a time!
 - their seeds spread easily and effectively: e.g. have sticky burrs to allow them to stick to the furs of animals for easy transport, can blow in the wind, exists as tumbleweeds, can float on water, are found inside tasty fruits which birds and animals like to eat
 - they establish and spread quickly – they have fast growing roots and stems, they shade out other plants (they outcompete other plants for resources such as sunlight, water and nutrients)
 - they often have characteristics that help them survive: e.g. some have toxic sap that prevents other plants from growing nearby, and animals from eating them; many have prickly or hairy stems and leaves or seeds
3. Review some of BC's invasive plant species to get ideas for their own make-believe species. Some suggestions include:
 - Hounds-tongue (has burr-like seeds that stick to clothes/ animals)
 - Himalayan blackberry (has sharp thorns, fast growing stems, tasty berries)
 - Policeman's helmet / Himalayan balsam (have exploding seed pods)
 - Knotweeds (are fast-growing, large leaves shade out other plants, grow 2 – 5 metres high!)
 - Giant hogweed (has toxic sap can cause burns, grows fast 2 – 5 metres tall, shades out other plants)
 - Leafy spurge (crowds out grassland plants, huge root systems, sap stops other plants from growing nearby)
 - Thistles (has prickly leaves and stems, seeds blow in the wind on little parachutes)

Supplies

- information on invasive plants of BC: website pictures and field guides
- paper and pencils for drafting up a make-believe species
- old hats and/or gloves for dress-up – many colours
- Velcro
- string
- soft wire or pipe cleaners (for stems or plant parts)
- tissue paper or wrapping paper (to make flowers and fruits)
- balloons (as fruit and seed holders) – *be aware of latex allergies*
- fluff or feathers (to represent seed “parachutes”)
- small bits of paper from a hole punch or confetti (to represent seeds)
- small pony beads or marbles (to represent seeds)
- small plastic bags (to represent seed holders/fruits)
- anything you can think of that would represent some aspect of an invasive species (flowers, leaves, roots, stems, mouthparts, legs, etc.)

4. Girls then create, using craft and clothing items, a hat or outfit that represents a make-believe invasive species, with at least 2 characteristics that make it invasive (e.g. it spreads lots of seeds around, it has prickly leaves, etc.). Have the girls be as creative and crazy as they like, and make up a name for their species too: e.g. "Wicked Wanda Weed that has huge prickles and shoots poison sap at other plants!"
5. Host an Invasive Species Fashion Show and have the girls describe their species to the group: take photos and share them with your local regional weed committee and with the Invasive Species Council of BC!

Program Connections

- Sparks:** **Going Outside:** Additional Activity, **Exploring and Experimenting:** Additional Activity
- Brownies:** **Key to the Living World:** 2. Plant Life
Key to the Arts: 1. Act it Out (make costumes)
Related interest badges: Saving Our Plants and Animals, Super Crafts, I Can Be
- Guides:** **Discovering You: Discover Your Creativity:** 6. Creative Activity of Choice
Beyond You: Learn About Our Environment: 6. Environment Activity of Choice
Related interest badges: Ecology (5, 6), Fashion (5), Art Production (1,2)
- Pathfinders:** **Let's Take it Outside: Up Close and Personal with Nature**
Girl Stuff: Girls Just Want to Have Fun: 4. Express Yourself Through the Arts
Girl Stuff: Fashion Sense from Head to Toe: 2. Fashion Show
My Music, My Movies and More: The Arts from A to Z: 6. Craft
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
Explore Your Creativity: 17. Behind the Masks, 19. Being Crafty

Invader Creator

Directions

1. First, have the girls brainstorm about the things that make a plant species invasive:
 - They are prolific seed producers - they make lots and lots of seeds!
 - Their seeds spread easily and effectively – often the seeds have hooks or spines that stick to passing animals and people (like burrs), or they are designed to blow in the wind – like dandelion and thistle seeds – and travel long distances. Some invasive plants spread quickly from their roots and stems as well.
 - They establish and spread quickly – they grow fast, and sometimes grow on top of other plants, shading them out (like English ivy vines).
2. Next, have the girls think about what they would like their make-believe invasive species to look like: What colour will it be? What will its flowers and seeds look like? How will it spread itself around? Where would it like to live? How is it an invasive plant?
3. Using craft materials, recycled materials, wool, cloth, modeling clay, etc. - draw or paint, build a collage, or make a model of your own invasive plant species!
4. Have fun! Have the girls name their plant whatever they would like, and display them to one another, talking about their characteristics. Share these creations or photographs of them with your local weed committee if possible!

Supplies (suggestions)

- wool
- felt
- cloth
- wire
- glue
- scissors
- straws
- recycled plastic milk / egg / yogurt cartons
- paint
- modeling clay

Program Connections

- Sparks:** **Going Outside:** Additional Activity, **Exploring and Experimenting:** Additional Activity
- Brownies:** **Key to the Living World:** 2. Plant Life
Related interest badges: Saving Our Plants and Animals, Super Crafts
- Guides:** **Discovering You: Discover Your Creativity:** 1. Create Something
Beyond You: Learn About Our Environment: 6. Environment Activity of Choice
Related interest badges: Art Production (1,2), Ecology (6), Creative Craft (8)
- Pathfinders:** **Let's Take it Outside: Up Close and Personal with Nature**
Girl Stuff: Girls Just Want to Have Fun: 4. Express Yourself Through the Arts
My Music, My Movies and More: The Arts from A to Z: 6. Craft
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
Explore Your Creativity: 19. Being Crafty

Invader Puppet Show

Directions

1. Use paper bags, socks, balloons, gloves or popsicle sticks to make a puppet of an invasive plant species. Make sure to include features like seeds, roots and stems. Think about what features would allow these invasive species to easily spread their seeds to a variety of different environments.
2. Using the same supplies, make a puppet of a native plant species that the invasive plant species is trying to outcompete.
3. Set up a puppet show to illustrate the interaction between the invasive species and the native species. Show how the invasive species just comes in and takes over the ecosystem so that it is unfavourable for the native species to thrive in their natural environment.
4. Have a narrator for the puppet show. Create dialogues for the puppets to show how the invasive species are so successful because they reproduce rapidly, aggressive and can outcompete the native species for resources (eg. water, food, sunlight, etc.). If it is difficult for the girls to concentrate on talking and moving their puppets at the same time, suggest that they write down the dialogue first.
5. Encourage the girls to improvise as they construct characters and narratives.

Supplies

- paper bags
- balloons
- socks
- popsicle sticks
- lunch bags
- gloves
- paper
- pencil crayons or felts
- glue
- hot glue gun
- stickers
- sparkly glue
- pom poms
- feathers

Program Connections

- Sparks:** **Going Outside:** Additional Activity, **Exploring and Experimenting:** Additional Activity
- Brownies:** **Key to the Living World:** 2. Plant Life
Key to the Arts: 1. Act it Out
Related interest badges: Listen to This, Saving Our Plants and Animals, Super Crafts, Puppet Play
- Guides:** **Discovering You: Discover Your Creativity:** 1. Create Something, 2. Use Fabric, Thread or Yarn to Create Something, 3. Dramatic Presentation
Discovering You: Understand How to Be Responsible: 5. Take Care of Puppet for Two Weeks
Beyond You: Learn About Our Environment: 6. Environment Activity of Choice
Related interest badges: Ecology (6), Performing Arts (1, 7), Art Production (1,2)
- Pathfinders:** **Let's Take it Outside: Up Close and Personal with Nature**
Girl Stuff: Girls Just Want to Have Fun: 4. Express Yourself Through the Arts
My Music, My Movies and More: The Arts from A to Z: 6. Craft
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
Explore Your Creativity: 16. It's Child's Play

Make-Believe Weeds

Directions

1. The girls will use scientific terms and concepts to create an imaginary or make-believe invasive plant. Encourage the girls to freely express their knowledge of plants through art.
2. Brainstorm with the girls the different parts of a plant, and the different homes or habitats where plants grow.
3. Talk about adaptations: the different characteristics that specific plants have to enable them to live, grow, reproduce and spread in their environment.
4. Tell the girls they will be creating their own invasive plant species. They should decide on:
 - plant habitat: where it will live - temperate rainforest, boreal forest, wetland, pond or stream edge, field, desert
 - number of seeds it produces
 - seed dispersal methods: e.g. blown by the wind, attach to fur, fall to the ground, ejected from seed pod, stuck in mud on boots, tires, consumed inside a fruit, then dispersed by birds or other animals
 - colour of flower
 - number of flower petals
 - defense method: e.g. armed with thorns or spines, sticky, bad taste, hairy
 - common name of your make-believe weed

Then, have the girls create a model of their make-believe weed.

5. Cut a length of coat hanger or other wire for the main stem. Ask a Guider to help with this step.
6. Wrap pipe cleaners around the main stem to attach secondary stems, which may be opposite (stems are directly across from one another) or alternate (the stems alternate on each side).
7. Dip coloured tissue paper into a thin solution of dilute glue and spiral the tissue paper around the coat hanger wire to hold the pipe cleaners in place. Wrap the tissue paper neatly to produce a smooth stem, otherwise, the stem will have texture.
8. Bend the plant stems into desired shapes.
9. Attach leaves by creating a leaf stem on each leaf. Wrap a small amount of tissue paper to hold the stem in place. Girls should continue this process to build the stem, leaf structure, and flowers, and seed pods or fruits.
10. Have the girls display their creations for the unit, district, or to the community.

Supplies

- assortment of construction, crepe, or coloured tissue paper
- scissors
- stapler
- markers
- sequins
- ribbon
- rick-rack, cotton
- paper scraps
- raffia
- aluminum foil
- beads
- glitter
- coat hanger wire or other stiff wire for stem
- long, green or brown pipe cleaners
- liquid glue (dilute glue with one-half water)
- paint brush
- modeling clay (for the base of the plant)

Program Connections

- Sparks:** **Going Outside:** Additional Activity, **Exploring and Experimenting:** Additional Activity
- Brownies:** **Key to the Living World:** 2. Plant Life
Related interest badges: Saving Our Plants and Animals, Super Crafts
- Guides:** **Discovering You: Discover Your Creativity:** 1. Create Something.
Beyond You: Learn About Our Environment: 6. Environment Activity of Choice
Related interest badges: Ecology (6), Art Production (1, 2), Creative Craft (8), Plants and Animals (4)
- Pathfinders:** **Let's Take it Outside: Up Close and Personal with Nature**
Girl Stuff: Girls Just Want to Have Fun: 4. Express Yourself Through the Arts
My Music, My Movies and More: The Arts from A to Z: 6. Craft
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
Explore Your Creativity: 19. Being Crafty

Invasive Species Sing-a-long

Directions

Write a song, poem, or rap song about invasive species!

1. Divide the girls into groups and have each group choose to write about specific plants or animals, native and invasive species, the special characteristics that make a species invasive, a certain favourite animal or plant that is being impacted by invasive species (e.g. camas flower/ broom; red squirrel / grey squirrel; salamander / bullfrog; lark / starling) where and how species came to BC, or focus on the impacts that these species have or can have in your local region, and elsewhere in BC.
2. Have some fun – the song lyrics can be set to a favourite tune, or make up one of your own.
3. Add some hand movements or even a dance step – the Invasive Species Shuffle!
4. Have the girls perform and share their songs with the whole unit.

Supplies

- paper
- pens / pencils

Program Connections

- Sparks:** **Going Outside:** Additional Activity, **Going Camping:** Campfire Songs
- Brownies:** **Key to the Living World:** 2. Plant Life
Key to Camping: 5. Sing and Shout
Related interest badges: Saving Our Plants and Animals, Share Your Talent for Music
- Guides:** **Discovering You: Discover Your Creativity:** 6. Creative Activity of Choice
Beyond You: Learn About Our Environment: 6. Environment Activity of Choice
Related interest badges: Campfire Leading (6), Ecology (4, 6), Music Fan (8), Singing (additional activity)
- Pathfinders:** **Let's Take it Outside: Up Close and Personal with Nature**
Girl Stuff: Girls Just Want to Have Fun: Additional Activity
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
Explore Your Creativity: 30. Your Interests

"Alien Invasion"

Invasive Species Interview

Directions

1. Divide the girls into groups of 2-3. One girl will be the News Reporter and the other girl(s) will be the Invasive Species.
2. Create a skit with the scenario of a live News Hour Report. The News Reporter interviews the Invasive Species after the Invasive Species has just invaded an area and destroyed the ecosystem. The interview should describe what characteristics the Invasive Species possess in order to be successful at outcompeting the Native Species.
3. The News Reporter will also interview another girl who will play the role of the Native Species. (Native vs. Invasive species ideas: camas flower/ broom; red squirrel / grey squirrel; salamander / bullfrog; lark / starling).

Program Connections

- Sparks:** **Going Outside:** Additional Activity
- Brownies:** **Key to the Living World:** 2. Plant Life
Key to the Arts: 1. Act it Out
Related interest badges: Listen to This, Saving Our Plants and Animals, I Can Be
- Guides:** **Discovering You: Discover Your Creativity:** 6. Creative Activity of Choice
Beyond You: Learn About Our Environment: 6. Environment Activity of Choice
You and Others: Build Skills in Communication: 5. Explore Drama
Related interest badges: Ecology (4, 6), Endangered Species (3, 4, 5), Reporting (3, 6)
- Pathfinders:** **Let's Take it Outside: Up Close and Personal with Nature**
My Music, My Movies and More: The Arts from A to Z: 1 or 2. Drama
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
Explore Your Creativity: 30. Your Interests

Invasive Bake Off Competition

Directions

1. Most people do not realize that Himalayan blackberries are an invasive species. In a group of 2-3 girls, go outdoors and pick some Himalayan blackberries in late summer or early fall. (Currently found in BC in the Lower Mainland, Sunshine Coast, Fraser Valley, Gulf Islands, central to southern Vancouver Island, Queen Charlotte Islands, the Okanagan, and the West Kootenay areas.)
2. Decide as a group what you would like to bake with the blackberries. Blackberry pie? Blackberry crumble? Blackberry cobbler?
3. Once a decision has been made, find a recipe for a pie, a crumble, etc. on the Internet or in a recipe book.
4. Gather all the ingredients that you will need to bake this delicious blackberry creation. Make the blackberry treat at home, in a unit meeting or at camp.
5. If you've made them at home, bring the blackberry creations to the unit meeting so you can taste each creation. Vote on which one tastes the best! Discuss the characteristics that make blackberries such successful invaders (hint: how many scratches did you get picking them?!).

Supplies

- Himalayan Blackberries (invasive species)
- baking Ingredients and supplies for a crumble, pie, tart or cobbler
- oven

Program Connections

- Sparks:** **Going Outside:** Additional Activity, **Being Healthy:** Additional Activity: Explore Fruits
- Brownies:** **Key to Active Living:** 3. Fabulous Food
- Guides:** **Related interest badges:** Food Power, Be a Chef, Saving Our Plants and Animals
- Discovering You: Discover Your Creativity:** 6. Creative Activity of Choice
- Beyond You: Learn About Our Environment:** 6. Environment Activity of Choice
- Related interest badges:** Ecology (6), Outdoor Cooking (if done outdoors) (1), Tasty Treats (1, 2, 7)
- Pathfinders:** **Let's Take it Outside: Up Close and Personal with Nature**
- Girl Stuff: Girls Just Want to Have Fun:** 3. Cooking Night
- Living Well: We Are What We Eat:** 4. Fruit & Vegetable Taste Test
- On My Own: Now You're Cooking:** Additional Activity
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
- Healthy Living:** 17. Fun and Fancy Fare

Discovery Activities**Native / Non-Native Plant Collage****Directions**

1. Make a collection of pictures / drawings of native and non-native plants found in your region. Use magazines or pictures from websites for pictures to cut out.
2. Discuss the meanings of native and non-native species. Native plant species are those that naturally inhabit an area, while non-native plant species have been transported into the area, where they did not exist before, by humans or animals. Provide some examples for the girls. For example, tulips (native to southern Europe and the Middle East, cultivated in Holland) and tiger lilies are native to BC. Himalayan blackberries and oranges are examples of non-native species, while local huckleberries and blueberries are some examples of native plant species.
3. Discuss the difference between an invasive species and a non-invasive species.
4. Classify the pictures and create a collage of collections of native and non-native plant species, labeling all plants and identifying the invasive ones with a special symbol or icon.

Supplies

- gardening magazines and/or calendars, or some pictures from the internet of native / non-native plants in
- scissors
- glue sticks
- construction paper
- markers

Program Connections

Sparks: **Going Outside:** Additional Activity

Brownies: **Key to the Living World:** 2. Plant Life

Related interest badge: Saving Our Plants and Animals

Guides: **Beyond You: Learn About Our Environment:** 4. Explore Plants

Related interest badges: Ecology (2, 6), Naturalist (1, 2), Art Production (1), Picture This (3)

Pathfinders: **Let's Take it Outside: Up Close and Personal with Nature**

Rangers: **Environment, Outdoors & Camping:** 6. Our Local Environment, 8. Going Natural, 14. Urban Wildlife

Native Plants: Know Your Neighbours

Practice observation skills and get to know your local “natural” neighbourhood or park.

Directions

1. Go on a walk to explore the native plants in your area: visit a local park or natural area and bring along a native plant field guide to help with the identification.
2. Learn to identify three native plants in your region, and choose a favourite one.
3. Make a page about your favourite native plant species for a little booklet with drawings and facts about the native plants of your area British Columbia. Draw its leaves, stem or trunk, flowers and fruits.
4. On your booklet page, answer the following questions: What is a native species/plant? What colour are the native plants' flowers and fruit? What does it need to survive (e.g. temperature range, type of soil - acidic or basic, amount of water, amount of sunlight)?
5. Include some facts about your plant. Find out where it likes to live (e.g. in shady areas, in direct sunlight, in damp areas, in dry areas, along the coast, high in the mountains), what wildlife are associated with the plants (e.g. what eats it, uses it for habitat), and anything special about it. Also find out if it is threatened by any invasive plant species.
6. When everyone has completed their page about a plant, put all the pages together into a booklet. Share your booklet and information with another unit, and go on a walk together to identify the native plants.

Supplies

- native plant field guide
- pencil
- pencil crayons / markers
- notebook or paper / clipboards
- outdoor area with a variety of native plants

Program Connections

Sparks: **Going Outside:** Additional Activity

Brownies: **Key to the Living World:** 1. Wondrous Walks, 2. Plant Life

Related interest badge: Saving Our Plants and Animals

Guides: **Beyond You: Learn About Our Environment:** 1. Nature Study, 4. Explore Plants

Related interest badges: Ecology (6), Endangered Species (2, 3, 4, 6), Naturalist (1-4)

Pathfinders: **Let's Take it Outside: Up Close and Personal with Nature**

My Music, My Movies and More: Rembrandt & Company: 5. Outdoor Sketching

Rangers: **Environment, Outdoors & Camping:** 6. Our Local Environment, 8. Going Natural, 14. Urban Wildlife

My Favourite Native Plant

Common Name:	Scientific Name:
Picture of Plant	Leaf or Bark Rubbing
Identifying Characteristics: (e.g. flower colour, type of fruit, shape of leaves and seeds, how seeds spread)	
What it needs for survival: (e.g. temperature range, type of soil – acidic or basic, amount of water & sunlight)	
Where it likes to live: (e.g. shady areas or direct sunlight, damp or dry areas, on the coast or in the mountains)	
Wildlife associated with the plant: (e.g. what eats it or uses it as a habitat?)	
Is it threatened by any invasive species? By what?	
Your favourite thing about the plant:	

Invasive Plant Field Guide Page

Directions

1. Discuss the difference between native, introduced and invasive plants.
2. Select an invasive plant from your region and make a page for a *Local Invasive Plant Field Guide*.
3. Draw a picture of the plant and include its colour, size, shape, where it came from, where it is found, how it spreads or disperses its seeds, how many seeds it produces a year, if it has any predators or pests that feed on it, and what native species and environments it impacts. Also include any safety hazards that the plant might possess: e.g. if it has spines or burrs, if its sap is toxic or dangerous to touch.
4. In the field guide, include examples of what to do if you find the invasive plant species.
5. When everyone has completed their page, compile all the pages together into a booklet and make a Field Guide for your area.

Supplies

- paper
- markers / pencil crayons
- information on invasive plants: field guide or from internet

Extension for Pathfinders and Rangers

1. Older girls can complete this task by supporting a younger Guiding level with developing a local field guide for invasive plants.
2. Add your own page to the field guide.
3. Take photos to supplement the drawings in the field guide.
4. Once the pages for the field guide have been completed, develop, compile and publish a field guide (e.g. using a computer program to scan/insert/layout each page and print them).

Program Connections

- Sparks:** **Going Outside:** Additional Activity
- Brownies:** **Key to the Living World:** 2. Plant Life
Related interest badge: Saving Our Plants and Animals
- Guides:** **Beyond You: Learn About Our Environment:** 4. Explore Plants
Related interest badges: Ecology (2, 6), Naturalist (1-3), Computer Skills (if using a computer program) (5, 6, 7)
- Pathfinders:** **Let's Take it Outside: Up Close and Personal with Nature**
My Music, My Movies and More: Rembrandt & Company: 5. Outdoor Sketching
Exploring a Theme: Computer Whiz (if using a computer program):
3. Create a Brochure or Newsletter Using Desktop Publishing
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife

Invasive Plant Guide

Common Name:	Scientific Name:
Picture of Plant	Leaf or Bark Rubbing
Identifying Characteristics: (e.g. flower colour, type of fruit, shape of leaves and seeds, how seeds spread)	
What it needs for survival: (e.g. temperature range, type of soil – acidic or basic, amount of water & sunlight)	
Where it likes to live: (e.g. shady areas or direct sunlight, damp or dry areas, on the coast or in the mountains)	
Any Predators or pests that feed on it:	
Native Species or environments it impacts	
Safety hazards: e.g. spines or burrs, if its sap is toxic or dangerous to touch.	
Directions for what to do if you find this plant and want to remove it.	

Invasive Plant “Wanted” Poster

Directions

1. Discuss the difference between native, introduced and invasive plants. Select an invasive plant from your region and make a “Wanted: Dead or Alive” Poster about it.
2. Include examples of how the four main distinguishing features of invasive plants are represented.

Supplies

- poster paper
- markers / pencil crayons
- paints & paintbrushes
- field guide to invasive species or information from internet

There are four main distinguishing features of invasive plants:

- a. they are usually prolific seed producers (many produce thousands of seeds)
 - b. their seeds spread easily and effectively
 - c. they establish and spread quickly
 - d. they lack natural predators and diseases that generally keep them their population under control in their native locations
3. On your poster, include the plant’s common and Latin name (“known as”). The common name is the name that the plant is usually called by, while the Latin name is its scientific name (genus species). For example, purple loosestrife is known as *Lythrum salicaria*.
 4. The poster should also include characteristics (colour, shape, size, etc.), “Crimes committed” (impacts it has on the ecosystem), “Last seen” (where it is found), and draw a picture of the plant. Add as much humour as you’d like! Share your “Wanted” poster with your community: ask to make a display in your local community centre, library or mall.

Program Connections

- Sparks:** **Going Outside:** Additional Activity
- Brownies:** **Key to the Living World:** 2. Plant Life
Related interest badge: Saving Our Plants and Animals
- Guides:** **Beyond You: Learn About Our Environment:** 4. Explore Plants
You and Others: Build Skills in Communication: Poster
Related interest badges: Conservation (4), Ecology (2, 6)
- Pathfinders:** **Let’s Take it Outside: Up Close and Personal with Nature**
My Music, My Movies and More: Rembrandt & Company: 5. Outdoor Sketching
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife

Invasive Animals: Brochure

Directions

1. Develop a brochure to highlight an invasive animal species that is present in your region or has the potential to invade. For example, research an invasive animal species (e.g. insect, mammal, bird, fish: check out the Invasive Species Council of BC's web site for suggestions: <http://www.bcinvasives.ca>).
2. The brochure should contain the following information: describe where the animal came from, the main threats it poses to your region, and list some positive actions and behaviours that describe how we can act to prevent its introduction and/or spread.
3. Then research and list some public outreach and awareness activities that could help bring attention to this species: e.g. posters, door-to-door brochure campaigns, radio announcements, mall or special event booths, Earth Day events, campsite visits, park interpretive programs, beach and boat launch visits, pet store and aquarium visits.
4. See the Clean Drain and Dry program of ISCBC for an example: <http://bcinvasives.ca/resources/programs/clean-drain-dry>.
5. Print several copies of the brochures and scan / send them in to the Invasive Species Council of BC for approval (email the scanned brochure to education@bcinvasives.ca). Once the information has been checked, present them to a local library or community centre for a display.

Supplies

- field guides on invasive animals or information from the internet
- paper
- pens
- craft materials for posters

Program Connections

- Sparks:** **Going Outside:** Additional Activity
- Brownies:** **Related interest badge:** Saving Our Plants and Animals
- Guides:** **Beyond You: Learn About Our Environment:** 4. Explore Animals
You and Others: Build Skills in Communication: Ad or Poster
Related interest badges: Conservation (4), Ecology (2, 4, 6)
- Pathfinders:** **Let's Take it Outside: Up Close and Personal with Nature**
Exploring a Theme: Computer Whiz (if using a computer program):
 3. Create a Brochure or Newsletter Using Desktop Publishing
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife

Invasive Species Community Fair / Presentation

This activity is intended for Pathfinders or Rangers.

Directions

1. Plan and carry out an Invasive Species Fair with your unit. Develop some displays and a presentation to showcase invasive species in your region.
2. Or do a presentation to a garden club/ community group / school group / municipal government in your community, to showcase key invasive species in your region. Help the public identify them, highlight non-invasive garden plants to use instead of the invasive plants that are still sold in garden centres (please see the PlantWise program of ISCBC: <http://bcinvasives.ca/resources/programs/plant-wise/plantwise-resources-background>).
3. Encourage positive behaviours to limit invasive species spread.
4. In your presentation include displays, samples of invasive plants (if possible), pictures, and resources that help gardeners and the public identify them and plant other non-invasive species in their gardens, pictures, and actions people can take to prevent / manage invasive species.
5. If possible, acquire some native seeds and plants to display and sell.
6. Document your presentation through photos and /or video.

Supplies

- poster board
- markers
- plant field guides
- large plastic Ziploc bags (for plant species storage)
- computers for research/ presentation development

Program Connections

Pathfinders: **Creating Your Future: I Have to Give a Speech:** 4. Do a Presentation
Creating Your Future: Event Planning: all
Let's Take it Outside: Up Close and Personal with Nature
Exploring a Theme: Computer Whiz (if using a computer program):
 5. Presentation Using a Computer Program

Rangers: **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife
Leadership and Management: 14. I Propose, 20. Speaking of Leadership (if using Power-Point presentation)

Invasive Species: Careers

Directions

- Develop an interview sheet that includes specific questions about the employee's job, including:
 - their education(course/ degrees they took)
 - their job title and who they work for
 - how long they have done the job for
 - what they do in a "typical" day,
 - what they like best about the job
 - what they like least about the job
 - an interesting thing they have learned or experienced.
- Visit a local agency or site (e.g. government, college or university, environmental group, local or provincial parks, a ranch or farm, an industry group, forestry, mining, hydro operation etc.) and learn of their plan and efforts towards invasive species in the local area.
or
Invite an employee from a local agency or site to your unit meeting to learn about their plans and efforts towards eradicating invasive species in the local area.
- Interview an employee that is involved with working on invasive species management: find out their education, training and experiences.
- If you have done this on your own, share with your group what you have learned.

Supplies

- pen/pencil/paper / clipboard
- contacts of people working with invasive species/ sites. The Invasive Species Council of BC lists regional committees on their website:
<http://bcinvasives.ca/about/partners/bc-stakeholders/regional-committee-map>

Program Connections

Sparks: **Going Outside:** Additional Activity

Brownies: **Key to My Community:** 5. Jobs in the Community
Related interest badge: Saving Our Plants and Animals

Guides: **Discovering You: Discover What's Important to You:** 4. Careers
Related interest badges: Ecology (8), Endangered Species (8), Gardening (5),
Outdoors in the City (5), Career Awareness (2, 5, 6)

Pathfinders: **Creating Your Future: Lending a Hand:** 1. Investigate a Nonprofit Organization, 2. Learn About a Corporately Sponsored Nonprofit Organization
Creating Your Future: Your Dream Career: 1 or 3. Young or Older Woman Talk About Career Options.

Rangers: **Environment, Outdoors & Camping:** 5. A Life Outdoors, 6. Our Local Environment,
14. Urban Wildlife

Mapping Invasive Species in Your Community

Rangers will do a survey using transects or quadrats of a nearby park or natural area, and map existing invasive species.

Background

Monitoring of plant life - both native and non-native - can be done several ways. A popular method is called a quadrat study. A quadrat study is a method to look at what kinds of plants live in an area and how abundant they are. It also can demonstrate how a specific site compares to other sites in a region. Most importantly, these studies can be done over time, and the data compiled and analyzed to reveal changes to the biological composition of an area. This information can be invaluable to scientists, weed managers, and concerned citizens.

Alternately, a simpler method is to use a transect line without the quadrat frames – using a 2m piece of rope placed perpendicular to the transect line. Both methods generate information about the kinds of plant species found in an area and their relative abundance.

Directions

1. Brainstorm what the Rangers know about the plants that live in their region. List as many native and non-native plants as possible.
2. Gather equipment and travel to the park or outdoor natural area, and select a site that looks representative of the vegetation in the area to survey.
3. Explain that the girls will set up a transect line outdoors, count the number of live weed stems in plots along the transect line, and estimate the population of weeds or invasive plants, based on their stem counts. By counting the number of live weed stems within a plot, weed managers can estimate the density of weeds in a study area.
4. Setting up a transect line: A transect line is a straight line laid out randomly or systematically within a study area. Use a 25m rope marked off into metre lengths (use a Sharpie marker) or tape measure and lay it out. The line length often depends on the size of the study area. Scientists often divide the area along the transect line into small plots and observe and record plants that occur within the plots.
5. Place Rangers in groups of two along the transect line every 5 - 10 metres with their field equipment (quadrat or 2m rope; a hand lens; clipboard/paper/pencil, camera, plant field guides). The 2-metre rope should be placed perpendicular to a central point on the transect. (If you do not have enough participants to complete all stations at once, spread them out evenly over the area to be surveyed).
6. Once the Rangers are in place, the data can be recorded: have one girl record, and one to count weeds or invasive plants along the rope, and consult field guides to

Supplies

- field guides to native and invasive plants of the region
- outdoor natural area, park to survey
- 25m tape measure or length of rope
- quadrat frames with legs or a 2m length of rope for each group
- clipboards with pencils
- rulers (to measure size of species)
- student field sheet (on waterproof paper if needed)
- hand lenses
- cameras/cell phones

help identify the plants. If they can't identify a plant, they can draw it and/or photograph it – noting where it was found. Be sure that each study area (@5m.; 10m.; etc.) is numbered and noted on their data sheet.

Have the Rangers consider the following questions

- Native species: What indigenous animals and plants are present? How many are along the rope? Or in the quadrat? Are there any rare or endangered species?
 - Alien species: What invasive or naturalized plants are present? How many? Where are they located and how much space do they occupy?
 - Interrelationships: Is there evidence of interaction among species? Are there signs of predation or competition between native and non-native species?
 - Negative impacts: What harmful effects can be attributed to non-native species? Look for signs of monocultures (plant communities dominated by a single species) and native animals and plants that are crowded out of their homes.
7. Re-create your transect line on a large sheet of paper, drawing the plants that live in the area. Note species abundance and compare the transects. Have Rangers look for plant communities: which plants/animals tend to live together? Which ones are predominant?

Program Connections

Rangers: **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife

Field Trips / Service Projects

Site Visit: Invasive and Native Species

Directions

1. Visit a local garden, plant nursery, garden centre, park or local botanical garden, preferably where there are some native plants.
2. Explore the plants that are for sale or growing there.
3. Have an employee, naturalist or gardening expert talk about several of the exotic, foreign or invasive plants and native plants.
4. Discuss any invasive plants if they are present. Explain the difference between native, non-native or introduced plants, and invasive plants. Purchase some native plant seeds (if possible) or non-invasive plant seeds for the girls to grow.

Program Connections

Sparks: **Going Outside:** Additional Activity, **In My Community:** Additional Activity: Community Outing

Brownies: **Key to My Community:** 1. My Neighbourhood (walk)

Key to the Living World: 2. Plant Life

Related interest badge: Saving Our Plants and Animals

Guides: **Beyond You: Explore the Outdoors and Nature:** 1. Outdoor Activity

Beyond You: Learn About Our Environment: 1. Explore Environment

Related interest badges: Ecology (6), Endangered Species (6), Gardening (5), Naturalist (1, 2, 4), Outdoor Adventures (6), Wildflower (8)

Pathfinders: **Let's Take it Outside: Up Close and Personal with Nature**

Exploring a Theme: Creating a Garden: 3. Visit a Garden Centre, Additional Activity (planting seeds)

Rangers: **Environment, Outdoors & Camping:** 5. A Life Outdoors, 6. Our Local Environment, 8. Going Natural, 14. Urban Wildlife

Invasive Species Community Weed Pull

Directions

1. Get involved with a community garden, local park, or service group, and work with them to remove invasive weeds and plants from a garden or specific area (e.g. a park area, camp ground, local garden, seniors centre garden). The Invasive Species Council of BC lists regional committees on their website:
<http://bcinvasives.ca/about/partners/bc-stakeholders/regional-committee-map>
2. Discuss the tools that you will need for the project, and how to safely use them and care for them.
3. Describe how you will protect yourself from injury (e.g. sunburn, scratches, insect bites, dehydration, any hazards from the plants / weeds) while doing your community weed pull project.
4. Keep track of the numbers and types of invasive plants you remove, and take photos of your group in action.
5. This service project would be a great opportunity for your unit to do a bridging activity with another unit.

Supplies

- gardening gloves
- shovels and trowels
- trash cans/garbage bags
- sunscreen
- insect repellent
- hat
- long sleeved shirt to protect from scratches

Extension For Pathfinders and Rangers

Develop a restoration plan for the garden or area that involves ways to prevent invasive plants from re-establishing in the area. Make sure that the plan specifically targets the invasive plants you have removed: e.g. using plastic or tarps to cover bare earth areas; using mulch to prevent re-seeding; planting native species, ensuring seed mixes do not contain invasive seeds, etc. If possible, work with the community group / local garden centres/ municipality to implement your restoration plan.

Important things to know when removing invasive plants

When removing invasive plants, it's important not to cause further damage to native plants around the area. Please be patient...these plants are so hardy that it could take several years to completely get rid of them in a certain space. Think about planning a long term removal plan with your unit. If you are removing a plant (or plants) from a public park, private property or city/town property, please ask for permission first.

Safety First

Be especially cautious when working on steep slopes, around wildlife and dead trees. ALWAYS have a first aid kit on hand, avoid touching eyes during or after handling and wear proper safety gear such as eye goggles, heavy duty gloves and long shirts and pants. Have your leader assess the site for any potential dangers. If the plant is growing in a sensitive area (rocky slopes, steep slopes or in a sensitive area), please consult professional authorities.

Program Connections

- Sparks:** **Going Outside:** Additional Activity, **In My Community:** Additional Activity: Community Project
- Brownies:** **Key to My Community:** 1. My Neighbourhood (service project)
Key to the Living World: 2. Plant Life
Related interest badges: Community Counts, Saving Our Plants and Animals, Taking Part
- Guides:** **You in Guiding: Be Involved in Your Community:** 1. Learn About Community Issue, 4. Green Connection Environmental Service Project
Discovering You: Understand How to Be Responsible: 1. Be a Responsible Citizen
Beyond You: Explore the Outdoors and Nature: 1. Outdoor Activity
Related interest badges: Conservation (2, 4, 8), Ecology (6), Outdoor Adventures (7), Outdoors in the City (7)
- Pathfinders:** **Finding the Path: Choose Your Own Direction:** 5. Community Service
Finding the Path: Beyond Pathfinders: 5. Service Project with Rangers
Creating Your Future: We're a Team: 3. Team Up to Serve Others
Creating Your Future: Lending a Hand: 7. Environmental Service
Creating Your Future: Be a Model Citizen: Service Project
Let's Take it Outside: Up Close and Personal with Nature
Exploring a Theme: Our Environment: 4. Earth Day Action to Help the Environment
Rise to the Challenge: Community Service Award: Environmental Awareness Service Project
- Rangers:** **Celebrate Guiding:** 23. Making a Difference
Environment, Outdoors & Camping: 6. Our Local Environment, 10. Get Involved, 14. Urban Wildlife
Commonwealth Award: 3. Service Within the Community (towards 20+ hrs)

Invasive Species: A Site Tour and Management Plan

This activity is intended for Rangers.

Directions

1. Identify a local invasive species infestation, and have the Rangers develop some questions about the site and the species that live there. Include questions about habitat types (e.g. dry, wetland, rocky, alpine, meadow, etc.), key native species, main invasive species, how they got there, their main impacts, any management that exist? Processes occurring?
2. Arrange a tour of the site with a local invasive species committee member, biologist, gardener or naturalist, and interview them about the site, using the questions developed by the group. Write up your findings.
3. Using the information from the site visit, and further research, develop a proposal for management of this infestation.
4. Share your plan with your Guider, and with a local expert or official who works with invasive species (contact the Invasive Species Council of BC), and get their feedback on your proposal.

Program Connections

Rangers: **Environment, Outdoors & Camping:** 5. A Life Outdoors, 6. Our Local Environment, 8. Going Natural, 10. Get Involved, 14. Urban Wildlife

Field Trip to an International Airport

Before the fieldtrip, arrange with officials at the airport for a tour of the Canadian Food Inspection Agency / USDA: APHIS (Animal and Plant Health Inspection Service).

Directions

1. Go on a fieldtrip to an international airport (see http://en.wikipedia.org/wiki/List_of_international_airports_in_Canada for a list of international airports in Canada). You will need to confirm that your chosen airport has an animal and plant inspection service.
2. Have the girls talk and observe the CFIA / USDA Animal and Plant Health Inspection Service.
3. Have the girls prepare a list of questions to ask ahead of time. Find out how they prevent travelers from transporting plants and animals illegally in and out of the country. How does this practice prevent the potential problems and the introduction of invasive species?

Program Connections

- Brownies:** **Key to the Living World:** 2. Plant Life
Related interest badge: Saving Our Plants and Animals
- Guides:** **Beyond You: Learn About Our Environment:** 6. Environment Activity of Choice
Related interest badges: Canadian Guiding (8), Ecology (6), Aeronautics (4)
- Pathfinders:** **Creating Your Future: Your Dream Career:** 1 or 3. Young or Older Woman Talk About Career Options.
Let's Take it Outside: Up Close and Personal with Nature
- Rangers:** **Environment, Outdoors & Camping:** 6. Our Local Environment, 14. Urban Wildlife

SPECIES OF BRITISH COLUMBIA

Native Species

These lists are not exhaustive, but give an idea of some native species in British Columbia.

Native Animals of BC

Search for more information on native animal species online.

<https://www.google.ca/search?q=native+animals+of+british+columbia>.

The Canadian Geographic website includes downloadable animal fact sheets:

<http://www.canadiangeographic.ca/kids/animal-facts/animals.asp?region=bc>

Use these cards in the "From Here, From Away" game, or create your own activity with the cards.

Bald Eagle



Banana Slug



Black Bear



Black Oystercatcher



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Banana Slug: "[Banana slug at UCSC](#)" by Jim Whitehead from Santa Cruz, CA, USA - Banana Slug. Licensed under CC BY 2.0 via Wikimedia Commons.

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Black Oystercatcher: "[Black Oystercatcher](#)" by Alan D. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

Caribou**Common Loon****Coyote****Deer Mouse****Dragonfly****Garter Snake****Photo Credits**

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Coyote: "[Coyote2008](#)" by Macmanes - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

Deer Mouse: "[Deer mouse, Peromyscus maniculatus 8360 lores](#)". Public Domain via Wikimedia Commons.

Dragonfly: "[2013.07.16.-2-Kirschgartshaeuser Schlaege Mannheim-Suedliche Mosaikjungfer-Maennchen](#)" by Andreas Eichler. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

Garter Snake: "[Western terrestrial garter snake juvie](#)" by James Bettaso. Public Domain via Wikimedia Commons.

Grizzly Bear**Harbour Seal****Humpback Whale****Kingfisher****Lewis's Woodpecker****Moose****Photo Credits**

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Harbour Seal: "[Seehund2cele4](#)". Licensed under CC BY-SA 3.0 via Wikimedia Commons.

Humpback Whale: "[Humpback Whale fg1](#)" by Fritz Geller-Grimm. Licensed under CC BY-SA 2.5 via Wikimedia Commons.

Kingfisher: "[Belted Kingfisher](#)" by Kevin Cole from Pacific Coast, USA (en>User:Kevincole) - Belted Kingfisher (*Megaceryle alcyon*). Licensed under CC BY 2.0 via Wikimedia Commons.

Lewis's Woodpecker: "[Melanerpes lewis -California -USA-8](#)" by Alan Vernon. Licensed under CC BY 2.0 via Wikimedia Commons.

Moose: "[Bigbullmoose](#)". Public Domain via Wikimedia Commons.

Pacific Tree Frog**Snowshoe Hare****Sockeye Salmon****Steller's Jay****Western Screech Owl****Yellow Pine Chipmunk****Photo Credits**

Pacific Tree Frog: "[Pacific Tree Frog \(Pseudacris regilla\)](#)" by The High Fin Sperm Whale - Self-taken photo. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

Snowshoe Hare: "[Snowshoe Hare- Alert \(6990916044\)](#)" by Denali National Park and Preserve - Snowshoe Hare- AlertUploaded by AlbertHerring. Licensed under CC BY 2.0 via Wikimedia Commons.

Sockeye Salmon: "[SockeyeSalmonOregonZoo](#)" by User:Cacophony. Licensed under CC BY 2.5 via Wikimedia Commons.

Steller's Jay: "[Stellers jay - natures pics](#)" by Alan D. Wilson, www.naturespicsonline.com - <http://www.naturespicsonline.com/photos/5505?q=jay> (higher resolution version obtained in correspondence with website owner). Licensed under CC BY-SA 3.0 via Wikimedia Commons.

Western Screech Owl: "[Western Screech Owl](#)" by Randy R. Magnuson. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

Yellow Pine Chipmunk: "[Yellow Pine Chipmunk](#)" by USFWS Pacific Southwest Region. Public Domain via Wikimedia Commons.

Native Plants of BC

Use these cards in the "From Here, From Away" game, or create your own activity.

Aster



Black Cottonwood



Bunchberry



Camas



Devil's Club



Douglas Fir



Photo Credits

Aster: "[Alpine aster *Oreostemma alpigenum*](#)" by Dcrrjr - Own work. Licensed under CC BY 3.0 via Wikimedia Commons.

Black Cottonwood: "[Icicle Creek, cottonwood trees](#)" by Jsayre64. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

Bunchberry: "[9 - Bunchberry \(5207679035\)](#)" by Leslie Seaton. Licensed under CC BY 2.0 via Wikimedia Commons.

Camas: "[Camassia quamash 6472](#)" by Walter Siegmund - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

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Douglas Fir: "[Douglas fir \(5733095082\)](#)" by Leslie Seaton. Licensed under CC BY 2.0 via Wikimedia Commons.

Fireweed**Garry Oak****Highbush Cranberry****Horsetail****Kinnikinnick****Labrador Tea**

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Twinflower**Vanilla-Leaf****Western Hemlock****White Spruce**

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Invasive Species

Invasive Animals of BC

This is just a sample of the aliens invading our province. For a more comprehensive list of invasive animal species in British Columbia, visit <http://alienspecies.royalbcmuseum.bc.ca/eng/content/all-species>.

Use these cards in the "From Here, From Away" game, or create your own activity with the cards.

American Bullfrog**California Quail****Chukar Partridge****Common Wall Lizard****Photo credits**

Note: photos not individually credited are from the Invasive Species Council of British Columbia website.

California Quail: "[California Quail mail in Golden Gate Park](#)" by I, Brocken Inaglory. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

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Eastern Gray Squirrel**European Brown Garden Snail****European Cottontail Rabbit****European Starling****Giant House Spider****House Sparrow****Photo credits**

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European Brown Garden Snail: "[Cornu aspersum \(Segrijnslak\)](#)" by Rasbak - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

European Cottontail Rabbit: "[Eastern Cottontail Rabbit \(Sylvilagus floridanus\) \(8778052014\)](#)" by Peter Broster - Eastern Cottontail Rabbit (Sylvilagus floridanus). Licensed under CC BY 2.0 via Wikimedia Commons.

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Giant House Spider: "[Tegenaria duellica](#)" by TheBlob - Own work. Licensed under Public Domain via Wikimedia Commons.

House Sparrow: "[Passer domesticus male \(15\)](#)" by Adamo. Licensed under CC BY 2.0 de via Wikimedia Commons.

Mute Swan**New Zealand Mudsnaail****North American Opossum****Norway Rat****Nutria****Peacock****Photo credits**

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New Zealand Mudsnaail: "[Potamopyrgus antipodarum 2](#)" by Michal Mañas - Mañas M. (2014). "Photo of the day (35): Potamopyrgus antipodarum". Blog about gastropods. Licensed under CC BY 4.0 via Wikimedia Commons.

North American Opossum: "[Didelphis virginiana westerncanada20072](#)" by (Drcyrus) - Own work. Licensed under CC BY-SA 2.1 au via Wikimedia Commons.

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Nutria: "[Myocastor coypus - ragondin](#)" by Philippe Amelant - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

Peacock: "[National bird - Peacock](#)" by Anuomkara - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

Praying Mantis**Red-eared Slider Turtle****Ring-necked Pheasant****Rusty Crayfish****Wild Turkey****Zebra and Quagga Mussels****Photo credits**

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Red-eared Slider Turtle: "[Trachemys scripta elegans 001](#)" by H. Zell - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons.

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Zebra Mussels: "[Moule zébrée Lambersart](#)" by User Lamiot on fr.wikipedia - F Lamiot. Licensed under CC BY-SA 1.0 via Wikimedia Commons.

Invasive Plants of BC

For the purpose of investigating invasive species, there is a lot of overlap among the regions of British Columbia. Therefore, the regions can be combined into three general areas:

1. Northern (excluding the coast)
2. Coastal (includes the Lower Mainland, Vancouver Island and the North Coast)
3. Interior (includes Cariboo/Thompson and Kootenay/Okanagan)

The top most unwanted plants in each area are listed below.

Northern Area (N)

- | | |
|-----------------------------------------------------|--------------------------------------------------------------|
| 1. Common Tansy (<i>Tanacetum vulgare</i>) | 9. Oxeye Daisy (<i>Chrysanthemum leucanthemum</i>) |
| 2. Dalmation Toadflax (<i>Linaria dalmatica</i>) | 10. Scentless Chamomile (<i>Matricaria perforata</i> Merat) |
| 3. Diffuse Knapweed (<i>Centaurea diffusa</i>) | 11. Spotted Knapweed (<i>Centaurea maculosa</i>) |
| 4. Field Scabious (<i>Knautia arvensis</i>) | 12. Yellow Hawkweed (<i>Hieracium caespitosum</i>) |
| 5. Hoary Alyssum (<i>Berteroa incana</i>) | |
| 6. Leafy Spurge (<i>Euphorbia esula</i>) | |
| 7. Marsh Plume Thistle (<i>Cirsium palustre</i>) | |
| 8. Orange Hawkweed (<i>Hieracium aurantiacum</i>) | |

Coastal Area (C)

- | | |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1. Giant Hogweed (<i>Heracleum mategazzianum</i>) | 6. Lamium (<i>Lamium album</i>) |
| 2. Knotweed species (all) (<i>Fallopia japonica</i> ; sp.) | 7. Thistles (Canada and Bull) (<i>Cirsium arvense</i>) |
| 3. Daphne Laurel (<i>Daphne laureola</i>) | 8. Blueweed (<i>Echium vulgare</i>) |
| 4. Orange and Yellow Hawkweeds (<i>Hieracium aurantiacum</i> ; <i>H. caespitosum</i>) | 9. St. John's Wort (<i>Hypericum perforatum</i>) |
| 5. English Ivy (any ivy species) (<i>Hedera helix</i>) | 10. Blackberry species (Himalayan and Cut leaf): (<i>Rubus discolor</i> ; <i>Rubus laciniatus</i>) |
| | 11. Purple Loosestrife (<i>Lythrum salicaria</i>) |
| | 12. Yellow Flag Iris (<i>Iris pseudacorus</i>) |

Interior Area (I)

- | | |
|-----------------------------------------------------------------------------------|------------------------------------------------------|
| 1. Purple Loosestrife (<i>Lythrum salicaria</i>) | 7. Leafy Spurge (<i>Euphorbia esula</i>) |
| 2. Diffuse and Spotted Knapweed (<i>Centaurea diffusa</i> , <i>C. maculosa</i>) | 8. Yellow Flag Iris (<i>Iris pseudacorus</i>) |
| 3. Rush Skeletonweed (EDRR species) (<i>Chondrilla juncea</i>) | 9. Tansy Ragwort (<i>Senecia jacobea</i>) |
| 4. Common Bugloss (EDRR species) (<i>Anchusa officinalis</i>) | 10. Hoary Alyssum (<i>Berteroa incana</i>) |
| 5. Puncturevine (<i>Tribulus terrestris</i>) | 11. Orange Hawkweed (<i>Hieracium aurantiacum</i>) |
| 6. Longspine Sandbur (<i>Cenchrus longispinus</i>) | 12. Dalmatian Toadflax (<i>Linaria dalmatica</i>) |

The following information cards identify some of the invasive plants of BC. The cards indicate where the plants are found within BC with an N (Northern Area), C (Coastal Area) or I (Interior Area). Note that some plants can be found in several areas, but are not necessarily listed in the “dirty dozen” for that area. They are still invasive, and still a concern, even if not on the “dirty dozen” lists.

Coloured outlines indicate if the plant is safe for Girl Guides to remove during an invasive weed pull. Green indicates that there are no concerns with removing the plant, yellow indicates that some precautions must be taken, and red indicates that Girl Guides should not attempt to remove this type of plant.

Please note! No invasive plant materials should ever be composted, as their seeds and plant materials can survive most compost temperatures! Please bag all weeds and dispose of them in the garbage.

These cards are meant only to give an overview of invasive species in British Columbia. For in depth information, view detailed fact sheets online.

Photo credits

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Common Tansy



FACTS

- yellow disc flowers that resemble buttons & fern-like leaves
- spreads mainly through seeds and roots
- seeds can remain viable for up to 25 years
- may be toxic to livestock

REMOVAL

- mowing very close to the ground before July and subsequent herbicide treatment
- when hand-pulling, wear gloves & protective clothing

Dalmatian Toadflax



FACTS

- yellow snapdragon-like flowers & pale green heart-shaped leaves
- milky juice appears when stems or leaves break
- mature plants produce up to 500,000 seeds annually
- toxic to animals

REMOVAL

- remove before seeds develop
- get as much root out as possible - dig up roots
- bag & dispose cut flower heads - do not put in compost

Knapweeds



FACTS

- Spotted: purple flowers; Diffuse: white flowers
- reproduce solely by seed; seeds remain viable for over 8 years (maybe up to 15 years)
- flower in late spring, produce seed in summer

REMOVAL

- pull, cut or mow before seeds set
- twist, bend or crimp stems after removed
- if flowers present, bag and remove plants from site
- when possible, remove roots

Field Scabious



FACTS

- escaped ornamental known for attracting butterflies
- long leafless stalks, violet or pink clover-like flowers
- stems are hairy

REMOVAL

- cut or mow before seeds set
- pulling is seldom effective due to long, branched roots

Hoary Alyssum



FACTS

- small white flowers on slender stalks
- plant is covered in star-shaped hairs that are rough to touch, with grey leaves close to the stem
- toxic to horses

REMOVAL

- small populations can be hand-pulled before seeds set
- remove root crown
- seed area with appropriate seed mixture to establish competition

Leafy Spurge



FACTS

- small yellowish-green flowers with distinctive heart-shaped leaves just below the flowers
- narrow leaves spiral around the stem
- produces a compound that inhibits growth of nearby plants
- contains white, milky liquid that irritates skin

REMOVAL

- because of the extensive root system, pulling is ineffective
- do not attempt removal with the Girl Guides

Marsh Plume Thistle



FACTS

- purple flowers clustered at the end of the stem
- spiny single un-branched stems
- spiny and hairy leaves
- parachute-like seeds

REMOVAL

- hand-pull or cut/mow plants before flowering
- if flowers present, bag and remove plants from site

Hawkweeds



FACTS

- 12 invasive species in BC with yellow flowers; 1 with orange flowers
- yellow or orange ray flowers, in clusters
- short, stiff hairs on the stems
- leaves are at the base of the stem
- native yellow species have leaves up their stems

REMOVAL

- dig out leaves and shallow roots
- do not spread any parts as re-growth will occur

Oxeye Daisy



FACTS

- looks like a typical daisy, flower diameter ~ 5 cm
- single to a few erect stems, sometimes branched
- seeds remain healthy up to five years
- crowds out native plants

REMOVAL

- pull or dig up plants
- ensure all roots are removed
- put plants flower side first into clear bag and leave in sun for 2 weeks to kill
- once plant is killed, take to landfill to be buried

Scentsless Chamomile



FACTS

- daisy-like flower about 2-3 cm diameter
- no scent when crushed
- mature plants tend to be bushy
- fern-like leaves, also no scent when crushed

REMOVAL

- mow early and often
- hand-pull small infestations before seeds set
- bury or dispose of plants in a landfill

Giant Hogweed



FACTS

- plants grow up to 5m in height
- numerous small white flowers clustered in a large umbrella-shaped head, up to 1.5m in diameter
- dark green, coarse-toothed leaves, in 3 segments

REMOVAL

- contains a highly toxic sap
- do not attempt removal with the Girl Guides

Knotweeds



FACTS

- small white/green flowers grow in plume-like, branched clusters along the stem
- grow in large, dense thickets
- heart to triangular shaped

REMOVAL

- mow or cut close to the ground, twice per month
- bag all plant parts before removing from site
- all cut plants must be burned or buried deep in a landfill

Daphne Laurel



FACTS

- oblong evergreen leaves
- yellow fluted flowers
- small black berries
- found in Douglas fir forests
- limits growth of native plants; changes soil chemistry

REMOVAL

- all parts of the plant have toxic compounds
- do not attempt removal with the Girl Guides

English Ivy



FACTS

- evergreen vine that is a serious, smothering invasive
- overwhelms other plants; kills trees by ringing them
- no flowers

REMOVAL

- pull by hand
- cut at chest height and remove to the ground
- do not pull from high sections of trees

Lamium



FACTS

- flowers are white/light yellow & are near the stem
- variegated leaves are silver-white with green edges, and serrated
- stems are covered in fine hairs

REMOVAL

- hand-pulling is recommended
- all parts can produce a new plant, so bag and dispose
- do not compost!

Thistles



FACTS

- flowers are white to purple, about 1 cm, in clusters and have a sweet vanilla scent
- leaves have spiny edges
- reproduces with seeds and creeping roots

REMOVAL

- mow when at the bud stage
- regular cutting
- bag all plant parts and remove to a landfill

Bluweed



FACTS

- bright blue, 5-lobed flowers
- hairy stems, painful to touch
- leaves covered in short hairs
- rough seeds stick to clothing, hair and feathers

REMOVAL

- hand pull (wear gloves!) small infestations
- cut large infestations

St. John's Wort



FACTS

- bright yellow flowers with 5 separate petals
- numerous flowers in clusters
- oval shaped leaves covered with transparent dots

REMOVAL

- under biological control throughout the province
- do not attempt remove with the Girl Guides

Himalayan Blackberry



FACTS

- small white to pinkish, 5-petaled flowers, arranged in clusters
- stiff stems (canes) with prickles
- evergreen, large, rounded or oblong leaves
- black, shiny, hairless fruit

REMOVAL

- mow or cut several times per year
- bag all cut plants and burn or bury deeply at landfill

Purple Loosestrife



FACTS

- showy purple flowers with 5-7 petals arranged vertically
- leaves grow opposite one another on the stem
- wetland plant, loves water, even standing water

REMOVAL

- small infestations should be hand-pulled
- pull before seeds set
- remove the entire root to avoid regrowth
- put in sealable plastic bag
- transport to landfill - do not compost

Yellow Flag Iris



FACTS

- creates dense stands in wetlands, and threatens native plants and animals
- showy yellow flowers with 3 sepals that curve backward and 3 petals that point upward

REMOVAL

- can be pulled or cut, but must be repeated annually
- wear gloves and protective clothing as resins can cause irritation

Rush Skeletonweed



FACTS

- flowers are produced along or at the ends of stems
- bright yellow flowers
- leaves are sharp toothed and wither as the plant develops
- lower stems have short hairs, upper stems are smooth

REMOVAL

- hand-pulling or cutting early
- report this weed to your regional weed coordinator

Common Bugloss



FACTS

- found in fields, pastures, roadsides; reduces yield and spoils alfalfa hay
- fleshy, hairy leaves; deep blue flowers produce 4 nut-like seeds; each plant can produce 900 seeds that spread when eaten by animals/ blown in the wind.

REMOVAL

- mature plants have long taproot: dig out all plant parts carefully with shovel or pick

Puncturevine



FACTS

- annual plant, spreads along the ground, forms dense mats
- yellow lowers, many small leaflets; fruit forms tough curved spines

REMOVAL

- Danger: spines can easily penetrate skin, leather, flatten rubber tires.
- Do not attempt removal with the Girl Guides

Longspine Sandbur



FACTS

- also known as burgrass: invasive annual grass usually spreads along the ground
- light green, flattened leaves, seeds round and spikey; hook onto clothing and animal fur
- found in sandy, dry soils, along roadsides

REMOVAL

- dig up plants with hoe or pull by hand: make sure all seeds are bagged and disposed of
- clean clothes, equipment and pets after leaving area

Tansy Ragwort



FACTS

- poisonous bushy plant, many deeply-cut leaves, bright yellow daisy-like flowers
- grows in pastures, hayfields, meadows, roadsides and clear cuts
- contains alkaloids that can poison livestock !
- one plant produces 150,000 seeds

REMOVAL

- dig out entire plant and root sprouts; hand pull if plants small & soil moist. Bag all seeds & plant parts!

Baby's Breath



FACTS

- perennial plant thrives in grasslands, fields, outcompetes native grasses, infests hay crops
- plants produce 10,000 seeds, spreads by rolling like tumbleweed
- used in floral industry; seeds can still develop and spread from cut flowers

REMOVAL

- hand pull plants, removing most of the root
- bag all seeds and plant materials!

Gorse



FACTS

- perennial, evergreen shrub, thrives in sandy, sunny clearings, roadside, fields
- yellow flowers and black seed pods: looks like broom but has sharp pointy spines on stem

REMOVAL

- leaves and stems very spiny - do not attempt removal with Girl Guides
- report sightings to local invasive species council

ONLINE RESOURCES

Invasive Species Council of British Columbia: <http://bcinvasives.ca>

Regional Organizations within BC:

<http://bcinvasives.ca/about/partners/bc-stakeholders/regional-committee-map>

Aliens Among Us – British Columbia’s Recent Plant & Animal Arrivals

<http://alienspecies.royalbcmuseum.bc.ca/>

Bionic Bob to the Rescue (colouring and activity book):

<http://bcinvasives.ca/documents/BionicBob.pdf>

E-Flora BC – Electronic Atlas of the Flora of British Columbia:

<http://ibis.geog.ubc.ca/biodiversity/eflora/>

Report a Weed: <http://www.reportaweedbc.ca/>

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