INVASIVE SPECIES COUNCIL of BC
Education Activity
Native and Invasive Plants: An Exploration!

Grade Level: K - 4
Subject Areas: Science, Visual Arts
Duration: 1-2 class periods

Description: Students classify pictures of native and non-native animals and plants, then participate in activities at various stations to explore native plants.

Learning Objectives
Students will be able to:

- recognize that there are many different types of plants
- distinguish between native and non-native species
- recognize some native plants and their key features
- explore and compare differences in native plants
- recognize connections of wildlife and people to native plants

Materials

- Pictures or species cards of native and non-native plants and animals
- poster board or somewhere to post the pictures
- leaves of native plants, possibly live samples and other plant materials (see Important Notes: *Live Samples and Collecting*).
- magnifying glasses
- art supplies: cardstock, glue, mactac or laminating materials, colour cards such as paint samples from a paint store.

Procedure

Period 1:
1. Gather a collection of pictures of native and non-native plants and animals. Students can help by bringing pictures from home: often old calendars and greeting cards have good images for use. If you need help finding pictures of native plants, check out The Native Plant Society of BC's website:
http://www.npsbc.ca/photogallery.html
Download the invasive plant TIP Sheets and photos from the ISCBC's website:
http://bcinvasives.ca/resources/tips

2. Discuss the meanings of native and non-native species with students - use examples of animals they know such as elephants and tigers versus deer and cougar. Which animals belong here? Introduce the concept of native plants with similar examples that they might immediately recognize.

3. Classify the pictures or species cards in your collection – either as a whole group or in smaller groups. Create collages, posters or a bulletin board of collections of native and non-native species. You may want to create separate collections for plants and animals, or just focus on plants.

Period 2: Plant Station Exploration
1. Set up plant stations around the room for the students to rotate through. See the list of suggestions below. Note: Use a field guide for your region to make sure the plants you select are native.

Station 1: Native Plant Study
Objectives: To compare and observe native plants
Method: Plant matching activity
Procedure: Provide live samples of plants and match plant photos to the live samples. Magnifying glasses can also be used to encourage observations. You can also include non-native plants at this station. (see Important Notes: Live Samples and Collecting).

Station 2: What is Native?
Objectives: To identify and reinforce the concept of native and non-native plants.
Method: Sort pictures of plants into native and non-native species.
Procedure: Provide pictures of easily identified plants that students should be able to sort into native and non-native species. Choose obvious examples of non-native species for younger children (examples: palm trees, exotic flowering plants, cactus).

Station 3: A Rainbow of Plants
Objectives: Compare and observe different colours in native plants.
Method: Match colour cards to pictures or live samples of native plants.
Procedure: Provide pictures or live samples of plants and colour cards (i.e. from a paint store) and ask students to match the cards to colours they find on the plants.

Station 4: Shape Hunt
Objectives: Recognize different shapes of flowers and leaves of native plants.
Method: Matching shapes to create native plants
Procedure: Provide pictures or illustrations of native plants and cards with shape outlines. Match the shapes to the flowers. (Examples of shapes and plants: circle – wild rose, heart – bleeding heart, star – salmonberry, egg-shaped – salal leaf, bell-shaped – salal flower) Addition: crayon rubbings for shapes can be made from different shaped plant leaves.

Station 5: Wildlife Connection
Objectives: Recognize and identify ways that wildlife use native plants.
Method: Match pictures of wildlife with native plants they might use.
Procedure: Provide pictures of plants with specific features that students would be able to connect with wildlife. Provide cards of wildlife (pictures or illustrations with names for older students or toy creatures if available) and ask students to match the creatures to a plant they might use. (Suggestions: bees to flower, beaver to small tree, squirrel to acorn/oak tree, bird to a bush with berries…) Include a picture of a person to promote the idea that we are part of the natural system as well!

Station 6: Plant Creations
Objectives: Explore native plants through art and use of senses.
Method: Create an art project using plant materials.
Procedure: Provide native plant materials with paper, glue and other appropriate art supplies and allow the creative juices to flow! (Suggestions for materials: fallen dried leaves and needles, fallen or dried flowers, cones or pieces of cones.)

Important Notes: *Live Samples and Collecting*.

It is important to model stewardship of native plants and natural areas to students. The following are some guidelines for the collection of native plant materials:

- Bring live samples of native plants from a nursery or garden. Please do not remove native plants from natural areas.
- Collecting native plant materials such as leaves, flowers and other parts of plants in a sensitive manner. Collect materials in small amounts (or from different areas), materials that have already fallen or collect no more than 5% of fruit, seeds or cuttings from a plant to ensure sufficient parent materials for natural propagation, food and habitat for wildlife.
- It is illegal to collect from any national, provincial, regional or local park (without a permit).
- Do not collect intensively from the same area.
- Avoid disturbance to the area you collect from including avoiding trampling of other plants and spread of invasive species.

Notes for Teacher: Some Background

A *native species* is one that naturally occurs in an area. A native plant, for example, is a plant that has lived and evolved in a certain place for a long time (i.e. thousands of years) and is part of the natural ecosystem. Native species have co-evolved with other competing species, predators, diseases, climate factors and other aspects of a region and an ecosystem. Native plants are part of a natural balance and a natural system and provide important food and shelter for wildlife.

Non-native or *alien species* are those that do not naturally occur in an area and were likely brought to a place by humans, either accidentally or intentionally. A non-native species has not evolved as part of the native ecosystem and does not have the same balance and place in the ecosystem. Non-native plants have been introduced by humans into ecosystems where they don't belong.
Some non-native species are not invasive – such as tulips or tomatoes – and won't spread beyond our gardens. Some however are called *invasive* because they are able to spread and dominate or push out native species, and have great impacts on the ecosystem.

Invasive species are one of the biggest threats to native ecosystems worldwide. The United Nations Environment Programme states that invasive species are recognized as "one of the greatest biological threats to the environment and economic welfare of the planet. The threat to biodiversity due to invasive alien species is considered second only to that of habitat loss".

Non-native, invasive species are able to out-compete native species for their basic needs such as food, shelter and space. Invasive plants have special adaptations which allow them to spread rapidly. English Ivy (*Hedera helix*) is a good example of an aggressive species that out-competes native species by suppressing other plants, creating a monoculture on the ground, and climbing trees, eventually leading to the death of the trees.

Note: It is important to make sure the plants you are including in this activity are native plants. Plants that grow wild can often fool people as they seem so plentiful, yet they may not be native to the region and may even be invasive. Check a field guide for your region (see Resource section).

Adapted from Project WILD: What's Wild Activity (p. 2-3) , and Wild BC's "Exploring Plants Activity package" (2006).

Educational Resources

Canadian Wildlife Federation. 1995. *Project WILD*. Western Regional Environmental Education Council, Ontario. (Available in BC: www.hctf.ca/wild.htm)

Carle, Eric. 1987. *The Tiny Seed*. Simon and Schuster, New Jersey, USA. (Preschool to Grade 2)

MacDonald, Carolyn and Sue Staniforth. 2005. *Garry Oak Ecosystems of British Columbia: An Educator's Guide*. Wild BC and Habitat Conservation Trust Fund, Victoria, BC.

Staniforth, Sue. 2004. *Leap Into Action: Simple Steps to Environmental Action*. BC Conservation Foundation and Wild BC, Victoria, BC.

Resources and Field Guides for Native Plants in BC

Naturescape British Columbia: Caring for Wildlife Habitat at Home (Series, Kits) http://hctfeducation.ca/resource-room/

Pettinger, A. and B. Costanzo (1996) *Native Plants in the Coastal Garden*. Whitecap Books, North Vancouver, BC (Revised edition 2002).

Turner, Nancy J. (1998) *Plant Technology of First Peoples of British Columbia*. Royal British Columbia Museum and UBC Press.

Johnson, D, L. Kershaw, A. MacKinnon and J. Pojar (eds.). 1995. *Plants of the Western Boreal Forest and Aspen Parkland*. Lone Pine Publishing and the Canadian Forest Service, Canada.

Kershaw, L., A. MacKinnon and J. Pojar. *Plants of the Rocky Mountains*. Lone Pine Publishing

MacKinnon, A., J. Pojar, and R. Coupé. 1992. *Plants of Northern British Columbia*. BC Ministry of Forests and Lone Pine Publishing, Canada.

Parish, R., R. Coupé and D. Lloyd. 1996. *Plants of Southern Interior British Columbia*. BC Ministry of Forests and Lone Pine Publishing, Canada.

Parish, R., R. Coupé, and D. Lloyd, 1999. *Plants of Southern Interior British Columbia and the Inland Northwest*. Lone Pine Publishing,

Pojar, J. and A. MacKinnon. 1994. *Plants of Coastal British Columbia: Including Washington, Oregon and Alaska.*. BC Ministry of Forests and Lone Pine Publishing, Canada.

Pojar, Jim and Andy MacKinnon. 1994. *Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia and Alaska.* Lone Pine Publishing, Vancouver, BC.