

# Invasive Species Activity

**Class Length:**

1 hour 15 minutes

**Class size:**

Up to 30 participants

**Class Location:**

- Tavern, red barn, or learning center for the game
- Sensory garden and surrounding wood lot area

**Materials:****Opening Game:**Per five person group:

5-cups  
2-plastic knives or sticks  
1-binder clip  
3-plastic forks  
1-plastic spoon  
10 red pom-poms  
12 black pom-poms  
10 white pom-poms  
25 bingo chips

**For discussion (and potential removal):**

Visual examples of invasives  
Invasive Map  
8-10 pairs scissors  
25 pairs of work gloves

**Objectives:**

- Use tools and equipment appropriate to scientific investigations S.IP.05.13, S.IP.06.13 S.IP.07.13
- Manipulate simple tools that aid observation and data collection; S.IP.03.14, S.IP.04.14
- Describe the effect humans and other organisms have on the balance of the natural world S.RS.03.18, S.RS.04.18, S.RS.05.17, S.RS.06.17. S.RS.07.17
- Communicate and present findings of observations and investigations S.IA.03.13, S.IA.04.13, S.IA.05.13, S.IA.06.13, S.IA.07.13
- Describe helpful or harmful effects of humans on the environment E.ES.03.52
- Use evidence when communicating scientific ideas S.RS.03.15, S.RS.04.15
- Describe how human beings are part of the ecosystem of the Earth and that human activity can purposefully, or accidentally, alter the balance in ecosystems. L.EC.06.41

**Class Set-up:**

- Inspect tools

**Safety Precautions:**

- Ensure participants know that they must always stay with the group throughout the program.
- All must demonstrate responsibility in using and carrying tools properly.
- Participants must use personal protective equipment as provided.

10. Inform them that they will be learning about and tasting invasive species. We will discuss the pros and cons of each plant. Certain plants can be removed. Let the students know they will be helping Tamarack Camps remove an invasive species during the rest of the class. (Show them the pictures of which species you will be targeting.) It is up to you to decide which species you will remove.

List of potential plants to discuss:

- Garlic mustard
- Autumn olive – and remove
- Pokeweed – and remove
- Knotweed
- Common buckthorn – and remove
- Purple loosestrife
- Flowering rush (if near marsh area)
- Multiflora rosa
- Honey suckle

## **Garlic Mustard**

**Benefits:** Abundant food source for a variety of wild life and insects, as well as humans. One of the first food sources of the spring season, flowers for pollinators. Vitamins A, C, E, potassium, calcium, iron, and omega 3 fatty acids. Boosts immune system function.

**Drawbacks:** Spreads by seed and can self-pollinate, allelopathic (sends out a chemical that inhibits other plants to grow), takes over areas and blocks other plant growth

## **Autumn Olive**

**Benefits:** Fixes nitrogen in the air and makes it available in the soil for other plants, food source for wildlife such as birds and insects, and humans. High in vitamin C. 5-15% more antioxidant lycopene than tomatoes (great for your skin!).

**Drawbacks:** Alters the soil biology in areas, causing certain plants native to the space unable to grow. Spreads fast and chokes out other plants growing in the area. Easily spread by seed from animal droppings.

## **Pokeweed**

**Benefits:** Food source for birds. Flowers for pollinators. Natural plant dye. Young leaves and stems in the spring while they are completely green are edible after boiling thoroughly twice. Habitat for birds and insects.

**Drawbacks:** Habitat insects that cause damage to farm crops. Extremely poisonous roots, berries and seeds – it is best to just not ever consume pokeberry, even the young leaves and stems. Long tap root makes it hard to get rid of. Aggressive and persistent spread and growth. Easily spread by seed from animal droppings.

## **Common buckthorn:**

**Benefits:** Food source for wildlife. High nitrogen content means leaves can be useful in compost piles. Habitat for birds. Can make dyes of out of the bark and young berries. Dried berries and bark in small doses can be used to alleviate constipation.

**Drawbacks:** Host of soybean aphid and alfalfa mosaic virus that will cause oat rust disease. Allelopathic tendencies (sends out chemical that inhibits other plants from growing). Leaves and berries are high in nitrogen – invasive earthworms break down the material fast, destroying beneficial fungi and leaving the soil exposed which allows more buckthorn seed to germinate quickly. The berries are poisonous. Seeds easily spread by animal droppings. Grows in all different types of habitats

## **Purple Loosestrife:**

**Benefits:** Flowers for pollinators. Filters and removes toxins in the air, breaks them down into inert components, and returns to the soil. Combats pollution! The leafy parts of the plant contain tannins and salicarin which have a drying effect and help reduce swelling. The flowering tops have a moistening effect. The plant is helpful with intestinal infections,

mouth sores, nose bleeds, bacterial issues and so on. Some people apply a mixture of flower and water to varicose veins and eczema. Flowers can be used as a natural dye.

**Drawbacks:** Spreads rapidly and replaces native plants. Seeds can sit dormant in the soil for years before they germinate. Can produce 2.7 million seeds per year per plant. Can spread by its roots to create colonies.

### **Flowering Rush**

**Benefits:** Tubers can be peeled and boiled as a food, dried and powdered to use as a thickener in soups (the tubers are over 50% starch!).

**Drawbacks:** Outcompetes native plants for resources, and spreads in aquatic areas which could impede the use of boats.

### **Multiflora Rosa:**

**Benefits:** Rosehips and leaves high vitamin C, food for birds. Rosehips are high in carotene and essential fatty acids, and vitamin E - great for your skin! Flowers can be used for flower essences (fragrance!). Nectar for bees.

**Drawbacks:** Grows in dense thickets, self-pollinating, not a good plant for a pollinator habitat – and can grow and spread quickly.

### **Honeysuckle – you can tell if its invasive by this fact: they bare their flowers and fruits all along the branch, while native honeysuckle ONLY bare at the branch tips**

**Benefits:** Flowers provide nectar for pollinators and birds, berries provide food source for birds and animals. Good for aromatherapy, headache relief and respiratory system as a tea, protects against viral and bacterial infections due to its anti-inflammatory properties.

**Drawbacks:** leaves are not a food source for insects and many birds rely on insects for food, takes over native plant areas and suppresses their growth so habitats and food sources for birds, butterflies, and many others are not available. Seeds are spread easily by animal droppings or on the feet of animals.

## **Safety Precautions:**

- All students must wear gloves when removing any plants
- All students must repeat and display that they understand proper holding of tools
- There will be no running or throwing of any type of material in any of the spaces
- We will be aware and respectful of other spaces
- **Under no circumstances are students allowed to ingest any plant unless given specific approval from facilitator**

## **Activity – Invasive Removal: (35-40 minutes)**

Take them for a tour around the sensory garden, show them what work was done (forest bath path, removal of invasive species and planting of native species), why we did it, and what it means for the area.

Discuss removal methods—pulling seedlings or shallow-rooted plants out when soil is moist, digging out larger plants, mowing or cutting vegetation back if possible, controlled burns, or herbicides.

Take students on a plant walk of the area. This will take up most of the time as you stop at each area with edible foods and allow them to taste. Share with them the information about the pros and cons of each plant.

If there is still time at the end of class break into teams of 3 (cutter, 2 pullers). Positions will rotate throughout activity. The “cutter” cuts the plant as low to the ground as possible. Then the “pullers” will remove the cut down branches and pull them to a designated stacking area, out of sight. If plants can be uprooted from pulling that is even better.

- If there is still time after the program, allow students to wander the space, and tell them to search for plants that they think, based off our program, are invasive. Have them pick a leaf or draw a picture and bring it back to discuss.

## **Conclusion: (5-10 minutes)**

Ask students how invasive plants can alter the ecosystem. Ask how we might reduce invasive species from colonizing. Ask them if now that they know there are benefits to invasive species, do they find it as easy to remove these plants from an environment if they are not over abundant? What about animals? Ask them if learning about how there are wild foods in nature triggers an interest to learn more about their local environment and the different life forms that exist within it.

## **Class Tear-Down:**

Pack up the invasives game if you didn't do so with the students. Be sure everything is in working condition and ready for use for the next program. If any tools are damaged or needing replaced, notify your supervisor.

Be sure to have all cut brush neatly pulled out of the way. Return all equipment original source, cleaning anything as needed. Tools should not have soil on them, nor should they be put away wet. **Put in a maintenance request to remove brush. Update the invasive map with the area you cleared.**