Going… Going….Gone!

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**Subject:** Environmental Science

**Duration:** 20 minutes

**Key Vocabulary:** Native, Invasive Species, Endangered, Extinct, Competition

**Objectives:** The students will be able to 1) Define the vocabulary terms listed above; 2) Understand the impacts that invasive species have on native species; 3) Identify native and invasive species found in NY.

**Method:** Students will participate in an activity which demonstrates how native species can be outcompeted by invasive species.

**Background:**  An **invasive species** is defined as any non-native plant, animal or micro-organism that causes or is likely to cause harm to the economy, environment and or human health. A **native species** is defined as any plant, animal or micro-organism that is originally found in an area or region without the involvement of human activity or intervention.

The US Fish and Wildlife Service estimates that there are currently 50 thousand **non-native species** in the US and of that 4,300 are considered to be invasive species. Invasive species **out-compete** native species and reduce the health of an **ecosystem**. Although species competition is normal, competition from invasive species can reduce available habitat and interrupt food webs which can lead to the endangerment or **extinction** of native species; this is because unlike native species, invasives lack natural **predators** allowing their populations to rise quickly giving them an advantageous edge over natives**.** Invasive species have aided in the decline of 49% of the species on the Endangered List. When a species is **endangered** it means that their population size has become so small that they are close to extinction (meaning that all of the individuals in a group of species have died).

**Game Set-up:** Every student will be given a species card necklace; some will be native species while others will be invasive species found in NY. There are a total of 15 native species and 9 invasives (all of which can be replicated if class size is larger). Each student will also receive tokens which will be used throughout the game to symbolize resources such as food, water, and shelter and to demonstrate competition for resources between natives and invasives.

Students will wear their species card necklaces and stand in a circle around the presenter. The presenter will explain the background listed above to make sure that students understand the impacts that invasives have on natives and to make sure they learn the vocabulary words **(listed above in bold).** After the introduction the presenter will explain the rules of the game.

**Rules of the Game:**

The presenter will read off various survival scenarios that demonstrate different ways that invasive species can be introduced to an area and the types of native species they impact. Whenever a species is impacted by an invasive species the student wearing the impacted species card puts one of their tokens in a container in the center of the circle or gives it to the presenter (some invasives may also be impacted). Once students get down to only 2 tokens they are considered to be endangered and must sit down; this is to demonstrate how invasives can threaten native species. All players still continue to play the game until all of their tokes are gone and they are considered extinct.

Once all of the Survival Scenarios have been read, students will notice that most of the native species are now sitting down and considered to be endangered or extinct while all the invasive species are still standing. This will help to show how native species are outcompeted by invasive species.

To presenter will recap on the learned concepts and ask the players questions:

1. What do you notice about the native and invasive species?
2. How do native species become endangered?
3. In what ways are invasive species spread?
4. How can you help slow the spread of invasive species?
5. What is an invasive species? Give an example.
6. What is a native species? Give an example.
7. What does it mean to become endangered or extinct?
8. Why would it matter if a species became extinct?
9. In what ways does nature and all of the species in it impact our lives?