

Phillips 6/3/16

HALE CREEK ENVIRONMENTAL FIELD DAY - JUNE 20 (RAIN DATE JUNE 21)

"Design an Invasive Species" Activity - 30 minutes

Materials: Art supplies, items to make 3-D figures (i.e. pipe cleaners, paper towel/toilet paper rolls, scissors, glue, tape, construction paper, google eyes, buttons, fake flowers, etc.)

Intro: Discuss what an invasive species is, give three examples of species and the characteristics that make them successful invaders - terrestrial, aquatic, forest pest

Terrestrial example - Giant hogweed

- Need to be careful when removing - sap combines w/ sunlight to cause burns and lesions on skin
- Can grow in full sun or partly shaded conditions
- Can live to be 25 years old and
- Large taproots store energy resources deep underground, sometimes making treatment of hogweed difficult by either cutting it down or applying chemicals
- Average plant produces between 20,000 and 100,000 seeds
- Seeds can stay alive for 5 years
- Giant hogweed shades out surrounding plants with its height and tight growth pattern

Aquatic example - Spiny water flea

- No native predators due to long spiny tail
- Reproduces in large quantities
- No known control except prevention
- Disrupts food chain in lakes by preying on the same food source as many small fish

Water chestnut

- Difficult to eat due to spiny nutlet
- Changes water chemistry - lowers oxygen levels for native fish and crustaceans
- Replaces native plants like tape grass
- Blocks light from reaching the deeper water depths

Forest pest example - Hemlock woolly adelgid

- Lays eggs twice annually - one in spring, one in early summer
- Due to warmer winter temperatures in recent years, some adelgids are able to survive the winter in the Northeast
- No native predators sufficient to keep the population in check in New York, although some predators are being imported from Washington State for research purposes

Activity Description:

- Students will gain a basic understanding of invasion ecology, what make some species successful invaders
- Students will work in small groups (3 per group for a total of 5 groups) to design their own invasive plant, pest, or animal
- Present 'new' species to the larger group, explain its characteristics and how those make the species likely to outcompete its native neighbors

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PROCESS NOTES

15 students per group, ~100 students total
30 minutes per activity

| Minutes | Activity | Notes |
|---------|---|--|
| 0-5 | Introductions, overview of invasive species and give ~3 examples of species and their adaptations/characteristics that make them ideal invaders | Olivia ask students if they know what an invasive species is, give overview of topic, Regina/Meg/Olivia each give one example of a species |
| 5-6 | Explain the "design a species" activity | Meg give explanation |
| 6-22 | Break into groups of 3, students use art supplies to create a unique invasive species utilizing their knowledge of invasion ecology and what types of features make a species able to outcompete native species | Regina/Meg/Olivia go around to groups and help where needed, keep students focused |
| 22-30 | Students present their species to one another, wrap-up, answer any questions | Regina moderate presentations, keep track of time |