

Glossary

Aloha (a lō ha): Hawaiian word meaning love, compassion, peace, mercy, or connection. Also used today for both hello and goodbye.

Degraded (dē grā dād): Being in a worse condition than before.

Dense (den(t)s): Marked by compactness or crowding together of parts.

Ecosystem (ē kō sis tēm): A system made up of an ecological community of living things interacting with their environment especially under natural conditions.

Elevation (el ə vā shən): Height above sea level.

Endangered (en dān jərd): Being in danger or peril.

Endangered species (en dān jərd spē sēs): A species of animal or plant in danger of becoming extinct or dying off.

Hardwood (hārd wud): The wood of a tree without cones.

Invasive species (in vā siv spē sēs): A plant or animal species not native to an area and with the potential to harm the native environment.

Mentor (men tōr): To tutor or to teach.

Native (nā tiv): Plant or animals species living or growing naturally in an environment.

Restoration (res tə rā shən): The act of bringing back to an earlier condition.

Restore (rē stōr): To bring back to an earlier or normal condition.

Tropical (trāp ə kəl): Of, in, or like the tropics, a region of Earth close to the Equator.

Accented syllables are in **bold**. Definitions and marks are from <http://www.merriam-webster.com>.

FACTivity



Time Needed

1 class period.

Materials

- “Left High and Dry” article, one for each pair of students (or one per student).

The question you will answer in this FACTivity is: If people are able to restore **degraded** ecosystems, is it acceptable to destroy them for our temporary use?

You will answer this question by doing a case study. See “Thinking About Science” for information about case studies. First, read the background information below for this case study. Then, follow the procedure for small group debate and class discussion.

Background

There is a small island off of the coast of the Southeastern United States that is protected by a shore protection law. This law protects the beach and sand dunes of the island. Signs warn visitors not to walk on the dunes, and visitors can be fined if they do so.

The sand dunes are home to millions of species of plant and animal life. They form a natural buffer and protect upland homes, hotels, and other buildings from the tides, winds, waves, and storms. Morning glory vines, ghost crabs, sea gulls, Spanish bayonets, and sea oats all make their home in and around the sand dunes. Many shorebirds lay eggs directly on the sand in the dune area. Even the threatened loggerhead turtles come ashore during the summer months to lay their eggs in the warm sands. The dunes are extremely fragile, and the plants that hold the sand in place are easily killed by foot traffic. All of these communities are protected by the law. It is the goal of the people that own the island to promote the preservation of these natural habitats.

Recently, however, the people responsible for the island allowed a large film company to use almost 5 acres of the island's sand dunes to film an action movie. The movie set had to look like it was in a tropical location. The island is located just north of the tropical zone. To make the dune area look tropical, the existing dunes had to be changed. The film company covered the existing dunes with 4 feet of new sand, covering all the plants and animals living there. They used trucks and machines to create a brand-new dune area. They brought in palm trees from a tropical area and planted them in the new sand.

The people responsible for the area said that it was okay to allow the film company to destroy the existing sand dunes. They made this decision because the film company said they would restore the sand dunes to their original condition when they finished filming. The people responsible for the area said the film company might even make the area better

than it was before because some invasive plant species had been growing on the dunes.

Members of a citizens' organization that opposed the change to the existing dunes said that no one had documented what the existing area was like before the film company changed it. Because of lack of evidence, no one knew exactly what they had changed. The citizens' organization did not like the fact that plants and animals had been covered with new sand in a protected area, and that the people responsible for the area did not respect a law intended to protect the dunes.

Method

For this case study, your teacher will divide the class into groups of four students. Two students in each group will take the managers' position that the destruction of the dunes was acceptable, as long as the film company agreed to restore the area. The other two students will take the citizens' position that just because a fragile natural area that is protected by law can be restored, that does not mean it should be destroyed in the first place. With your partner, you should spend 10 minutes thinking about your position and writing out your argument. Then, debate and discuss your position with the other group.

Thinking about this case study and about the restoration of the tropical dry forest, answer the question posed at the beginning of this FACTivity. In a class discussion, consider the restoration of degraded ecosystems. What is similar and different about the restoration of the dry tropical forest and the sand dunes? From these two case studies, what can your class conclude about ecosystem restoration?