



The Extinction Crisis at Home

Lesson Plan for Grades 4-5

Focus Question

How do invasive species affect our native forest (plants and animals)?

Lesson at a Glance

Using the *Maoli Nō* DVD and the 'Ōhi'a Project, an environmental education guide book of Hawai'i, student will focus on the theme of *mālama* (caring) and discover ways people disrupt the ecological balance and ways of restoring *lōkahi* into the Hawaiian Islands. They will learn from a guest speaker and field trip to gain hands-on experience on controlling invasive species.

Key Concepts

The introduction of invasive alien species to Hawai'i has disrupted native Hawaiian forests and ecosystems. As a result, some native species have gone or are going extinct. Controlling the spread of invasive species and replanting with natives are necessary steps to ensure that native species exist for future generations.

Objectives

- Students will describe at least one alien invasive species in Hawai'i
- Students will describe ways the native forests have changed due to invasive species.
- Students will describe how controlling invasive species and planting natives assist in the restoration process.

Subject Areas

Science and Social Studies

Time

Approximately two weeks

Materials

- Pre-test/Post test on vocabulary words
- KWL (Know, Want to know, Learn) chart
- Poster paper
- Art media (paint, crayons, colored pencils)

- “An Innocent Introduction” (refer to ‘Ōhi‘a Project, gr. 4-6, pg. 5-83-85)

Teacher Background

The Hawaiian Islands are home to a diverse array of unique and fascinating plants and animals. Before the arrival of people, all plants and animals were native to the islands. When people arrived they introduced many plants and animals. Since Western contact in 1778, the rate of plants and animals has increased dramatically. In the last 200 years, more species of plants and animals have been introduced to Hawai‘i than any other place in the world! Scientist estimate that 4,600 to 8,000 species of plants have been introduced to Hawai‘i; of these about 900 have naturalized or established. Today, almost all lowland areas in Hawai‘i are dominated by introduced species and that many native Hawaiian species are endangered and are found in remote areas.

Standards and Benchmarks

Science: Interdependence – Students describe, analyze, and give examples of how organisms are dependent on one another and their environments.

- Identify how plants and animals depend on each other, in the exchange of oxygen, carbon dioxide, and nutrients.
- Explain how organisms respond to a constantly changing environment.

Social Studies: Environment and Society - Students demonstrate stewardship of earth’s resources through the understanding of society and the physical environment.

- Analyze the consequences of human modification of the physical environment in Hawai‘i, the United States, and other parts of the world, and implement a plan of action to address the consequences.

Procedure

Preparation (Anticipatory Set/Motivation)

Prepare the students by listing the vocabulary words (below) and discussing the meanings of these words. Then play the following songs on the *Maoli Nō* DVD - ‘*I‘iwi Polena* by Kekuhi Kanahele and/or *Manu ‘O‘o* by Harry Na‘ope and Gary Haleama‘u. As they watch the video and listen to the songs, have them reflect on the vocabulary words.

Vocabulary:

Eradication	Species
Restore	Adaptation
Conservation	Ecosystems
Invasive	Interdependence
Alien	Extinct
Introduced	Threatened
Endemic	Native
Mālama ‘Āina	Lōkahi

Day 1 – KWL chart (What students KNOW, what students WANT to know, and what students LEARNED)

- Have students brainstorm what they know and what they want to know about invasive species.
- Pre-test on vocabulary words.

Day 2 – Read “An Innocent Introduction” aloud to students.

- In small groups of 4-5 students, discuss the problem of the story, illustrate the monster with special adaptations, and write a solution to the problem.
- Have students present their illustration and their recommendation to the problem.

Day 3 – Invite a guest speaker from your island Invasive Species Committee or other specialist on native/invasive species to come to your class. (Students from your local college or university are great resources, too.) Ask the speaker to make a presentation on:

- native plants and animals of Hawai‘i (using *Maoli Nō* DVD, if desired)
- names of several invasive species and focus on those in our community.
- problems posed by invasive species.
- Possible solutions to these problems – including restoration with native plants
- How students and the community can be involved in solutions

Day 4 – 6 - Invasive Species Research

- Divide student into small groups of 4-5 students. Have them choose an invasive species in their community to research (e.g. Coqui frog, Miconia, Strawberry guava – waiawī, etc.).
- Have students use information from guest speakers’ presentation, Internet, and resource books to create informational poster on an invasive species.

Day 7 – Presentations

- Have students present their report and poster on an invasive species.
- Play the *Maoli Nō* DVD – *Aloha Mai Au I Ku‘u ‘Āina* by Kumu John Lake

Day 8 – Backyard Field Trip (Service Learning Project)

- Involve students in a hands-on activity to control an invasive species in their community. (Seek advice from your local Island Invasive Species Committee.)

Day 9 – Complete KWL chart

- Ask students to answer the question, “What have you LEARNED?” Write responses on the KWL chart.
- Conduct a post-test on vocabulary words.

Assessment:

- Pre/Post test on Vocabulary words
- Invasive species research report
- Participation in Service Learning Project

Resources:

- *Maoli Nō – Truly Native* DVD
- ‘Ōhi‘a Project – grades 4-6 “E Mālama ‘iā Hawai‘i”
- Island Invasive Species Committees (see below)
- Native Plant Propagation Division

Island Invasive Species Committees

Kaua‘i Invasive Species Committee

Chairperson: Tim Flynn

Phone: 808-246-0684

E-mail: kisc@verizon.net

O‘ahu Invasive Species Committee

General Information/ Public Relations, Rachel Neville

Phone: (808) 286-4616

Fax: (808) 973-9781

E-mail: oisc@hawaii.edu

MoMISC

Moloka‘i/Maui Invasive Species Committee

Contact Lori Buchanan at (808) 553-5236 (Moloka‘i), or via e-mail at

lbuchanan@tnc.org.

MISC

Maui Invasive Species Committee

Public Relations and General Information

Phone: (808) 573-MISC (6472); e-mail: miscpr@hawaii.edu

BIISC

Big Island Invasive Species Committee

Julie Leialoha (BIISC Manager)

E-mail: leialoha@aloha.net