Protecting Our Native Forests

Summary
During the next two lesson periods, students will put together a short story on protecting Hawaii’s native forest. During the first activity, students will construct the characters and background scenes for the story. The teacher will put together the final products to make a storybook or turn it into a short film. During the second activity, students will read the storybook or watch the movie and discuss the importance of conserving native habitats.

Objectives
• Students will work as a team and each contributes to complete the project of a short film or storybook.
• Students will be able to show the purpose for conservation of native forest habitats using story telling.

Materials
Construction paper
Coloring materials
Printouts of character examples for students to draw
For making movie:
Scanner/camera, film-editing program (e.g. iMovie), digital sound recorder.

Making Connections
Conservation cannot happen without the support of the public; therefore, good communication must be established between conservationists and the public. One effective source of communication is the media. In this lesson, students learn to work as a team to create a short film or a storybook, which both can be used as effective tools for reaching out to a broader audience.

Teacher Prep for Activity
Decide what story to tell, and how to tell it (in the form of movie or storybook). Consider how much experience you have using computer editing programs, and how much time you have to do all the preparation. To save time, use the example story, “Mrs. ‘Amakihi Builds a Nest (see pgs. 6-10).” Or create your own story with your class. Remember to keep the story short, since even a simple story will run 8 or 9 pages long.

The next step is to plan out each scene/page (see example in Supplemental Materials). Sketch each scene on paper and write the story next to it. After finishing the scenes, list all the characters and objects in each scene. At this point, it might be necessary to simplify the story to make the tasks more manageable.
Next, prepare the art materials for making the movie/storybook. Print the outlines of characters on the construction paper for students to color.

Finally, prepare the story line for students to read. Go over the lines with students ahead of time, and make sure they can read loudly and clearly. On the day of the lesson, remember to bring a digital sound recorder (some laptops have built-in sound recorder) to record the students. Note: it is almost necessary to have a helper to conduct this lesson. While one person is helping the students with the artwork, the other person records the students reading the story. It will take considerable time after the class to put together the story, especially if you decided to make a movie.

**Background**

Hawaiian honeycreepers are endemic (native to and found only in the area) to the Hawaiian Islands. They experienced a long isolation from the rest of the world, and many species have developed very specialized traits for their environment. When humans arrived in Hawaii, anthropogenic activities and introduced animals caused many changes and destructions to native habitats. Since the majority of Hawaiian forest birds were specialized to particular habitats, many species could not adjust to alterations or loss of their habitats. Eventually many Hawaiian forest bird populations declined or went extinct. Further, introduced diseases such as avian malaria and pox devastated and confined the surviving native forest bird populations from recovering.

While the story of Hawaiian native forest birds is a sad one, the future of native birds is hopeful and exciting. Many studies were conducted on the interaction between Hawaiian birds and the introduced avian diseases. The efforts led to a better understanding on the resistance against diseases. Habitat restoration and conservation work are being carried out in numerous conservation areas such as the Forest Reserves, Natural Reserve Areas, and the National Parks. Most of it all, the public is showing more interest in the conservation of native bird species. However, the work on preserving Hawaii’s bird species does not stop here. The future of the Hawaiian native forest birds depends on the continuation of the past work and further understanding of the species.

**Vocabulary Explained**

**‘Amakihi** is a species of Hawaiian honeycreepers. They eat mainly nectar from numerous types of flowers, including introduced plants. They also glean the bark of the tree to find insects. ‘Amakihi are found on most of the major islands in Hawai’i. Some populations of ‘amakihi have developed resistance to avian malaria. And the resistant populations can be found in the lowland forests where malaria is prevalent. See photo on page 2.

**‘Elepaio** is a species of Hawaiian forest bird and related to flycatcher family. They are curious and often fly in close range to a hiker to investigate. They can be found in a wide range of native forests on O’ahu, Kaua’i and Hawai’i.
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*Ôhia* is the most common native tree found in Hawai‘i. The scientific name for ohia is *Metrosideros polymorpha* due to its many growth forms found in different habitats (poly = many, morpha = morph or form).

*Hāpu‘u* is a native tree fern that is found in the rain forest.

**Native animals** colonized the Hawaiian Islands naturally. While endemic and indigenous both describe native species, endemic animals are found only in Hawai‘i and indigenous animals are found in Hawai‘i and other parts of the world.

**Introduced animals** are animals that were brought to Hawai‘i by people intentionally or unintentionally.

**Procedure**

**Activity 1:**

1. Tell the students that, as a class, they will make a movie (or storybook) on our native forest. In order to make this movie (or book), each student needs to do his/her part as a storyteller.

2. Assign roles to students. For the sake of consistency, provide templates for the characters (see Supplemental Materials).

   NOTE: If you are making a movie, make sure the characters and background scenes can fit on the surface of a scanner (otherwise, you will need to take a digital photo of each scene). If you have experience with image editing programs (see Resources for a list of free programs), you will only need one drawing of each character and background scene. Once you scan in the drawings, you can manipulate them and reuse the same drawing for multiple scenes. Otherwise, you and your class will have to construct the characters and background scenes for every scene/page. If you are making a storybook, you may choose to make the size of the drawings bigger because you will not be scanning them (see Teacher Prep section).

3. If you are making a movie, you may want to have each student reads a section of the story while you record him/her with a digital sound recorder.

4. Put together the movie or storybook before the next lesson (it might take a few days).

**Activity 2:**

1. Before viewing the movie or reading the storybook, have the class sit in a circle. Introduce the vocabulary and have a discussion on why we need to protect the native forest. Have the students paired up with one another and discuss the question with their partners.

2. After the discussion, watch the movie or read the storybook as a class.

3. After the watching the movie/storybook, ask the students the same question on why we need to protect the native forest.

**Assessments**

Discussion on conserving the native forest.

Movie or storybook completed.

**Resources**

**For teachers**

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http://www.lifeonterra.com/episode.php?id=50 and

• This episode of video podcast tells the story behind the disease resistance in ‘amakihi. It includes the brief history and recent scientific studies on ‘amakihi.

• This is one of the most comprehensive references of the Hawaiian Honeycreepers. It also includes very detailed (and atheistically pleasing) color paintings from the author.


For Kids
The Ugly Elepaio by Tammy Yee
• A nice adaptation of The Ugly Duckling which features an ‘elepaio that is, in reality, an I’iwi. The artwork is very well done, and the story is engaging for primary students. This book could serve as a good example of story telling, illustration, and prompt children’s interest in learning more about all native birds.

No ka ‘Elepaio Kolohe, The Naughty ‘Elepaio Retold by Malia Kruger
• An adaptation of a traditional Hawaiian tale that is available in both Hawaiian and English. Many native birds make an appearance in the story—again, a good example for the children of illustration, story elements, and a way to get them interested in learning more about native birds.

Hawaii’s Beautiful Birds (Paperback) by H. Douglas Pratt and Jack Jeffrey
• This book is above the reading level of first graders, but they might enjoy hearing the teacher read facts about individual birds to them. Also, the photographs are very nice, and could serve as inspiration for artwork.

Beautiful Birds of Hawaii Coloring Book by Patrick Ching
• A simpler source of information on native bird species than the book listed above. Quality information and the pictures could also help the children with illustrating their book or movie.

Manulii and the Colorful Cape by Kimo Armitage and illustrated by Scott Kaneshiro
• A nice storybook about how feathers were used to make capes for the ali‘i.

Treasures of the rainforest: an introduction to the endangered forest birds of Hawaii by Merryl J. Mulroney
• An introduction to Hawaii’s endangered forest birds, their history, habitats, and behavior, with suggested ways children can assist in conservation efforts.

The Hawaii Department of Land and Natural Resources, Forestry and Wildlife Division (http://www.dofaw.net/) has a wealth of resources for teachers related to endangered forest birds and native forests in general. There are materials suitable for first grade that would supplement
this lesson nicely. And there is also a section for children to explore with an adult: http://www.state.hi.us/dlnr/dofaw/kids/index.html.

**List of free image programs**

**Windows:**
- **Gimp:** http://www.gimp.org/windows/
- **ImageForge:**
- **PhotoScape:** http://www.photoscape.org/ps/main/download.php

**Mac:**
- **Gimp (Mac version):** http://www.gimp.org/macintosh/
- **Seashore:** http://seashore.sourceforge.net/download.php
- **Chocoflop:** http://www.chocoflop.com/

**Extension Activities**

- Students can see the characters in their movie in real life and the impacts of introduced animals during a field trip to nearby national park or forest reserve.
- Students can create a story or movie about the challenges faced by other birds such as the Nene, I’o or Pueo.
- Enlarge the patterns for the story characters and have the students act out the story using the enlarged patterns pasted to cardboard to make puppets. They could also make a simple background on butcher paper by enlarging the scenery patterns provided or using them as inspiration for creating their own.

**Culture/Art/Literature Connections**

This lesson incorporates art and language activities. Students are involved in making a storybook or a short film. They are given an opportunity to be the narrators for a story.
Mrs. ‘Amakihi Builds A Nest

It's spring time in Hawai'i. Mrs. ‘Amakihi wanted to build a nest and she found a nice ohia tree.

But Mr. Cardinal said, “Get! This is MY tree!” So Mrs. ‘Amakihi flew away to another tree.

There she met Tommy the cat, Tommy said to Mrs. ‘Amakihi, “Oh yes, please make yourself at home. I'll even baby sit your kids.”
Mrs. ‘Amakihi’s not a fool. She knew better than to trust a cat. So she kept on flying to find another tree. And she did. “This could be the one!” Said Mrs. ‘Amakihi.

But this place couldn’t get any worse! There were pigs knocking down hapu’u and digging up vegetation. Watching all these made Mrs. ‘Amakihi sad.

An ‘Elepaio passed by and saw Mrs. ‘Amakihi perching there all alone, so he asked, “Mrs. ‘Amakihi, why do you look sad? Is everything ok?” Mrs. ‘Amakihi replied, “No. I can’t find a place to build a nest. Everything here is destroyed.”
So ‘Elepaio took Mrs. ‘Amakihi to a place he knew, a forest reserve where people built fences to keep the pigs out.

They also caught the cats and moved them out of the forest.

And there were plenty of ohia trees for Mrs. ‘Amakihi to choose from. Mrs. ‘Amakihi’s not sad anymore. Because she’s finally got a nest!
Characters for “Mrs. ‘Amakihi Builds A Nest”

Mrs. ‘Amakihi

Heads with different expressions

Normal
Sad
Happy

Bodies in different motions

Flying
Perching

Forester

Mr. Cardinal

Perching
Flying

‘Elepaio

Pig

Tommy the cat

Surprised (in cage)
Background for “Mrs. ‘Amakihi Builds A Nest”

- Ohia tree
- Hapu’a
- Fence
- Nest
- Cage