

TEACHER RESOURCES:

TOOLS TO ENGAGE STUDENTS IN PLACE-BASED LEARNING ACTIVITIES

Curricula and Lesson Plans

Hawai'i-based

- **'Ōhi'a Project**

Grades: K-8

Subjects: Native Species, Water Cycle/Watersheds, Invasive Species, Forests, Wetlands

Summary: The goal of the 'Ōhi'a Project is to assist Hawaii schools in implementing effective environmental education curricula to aid teachers and students in making informed choices for our island environment.

Organization: Moanalua Gardens Foundation

Link: http://www.mgf-hawaii.org/HTML/Resources/out_of_print.htm

- **PRISM**

Grades: K-8

Subjects: Hawaii-centered curriculum that focuses on the Hawaiian marine and terrestrial environments, and living Hawaiian culture.

Summary: The PRISM Program provides a scaffolded life science curriculum for grades K-8 that meets the needs of busy classroom teachers with easy-to-understand lesson plans.

Organization: Partnership between UH Hilo's [Tropical Conservation Biology and Environmental Science Program](#) and [Education Department](#) and Hawaii Island K-8th grade schools.

Link: <http://hilo.hawaii.edu/affiliates/prism/curricula.php>

- **Hō'ike o Haleakalā**

Grades: 9-12

Subjects: 5 Modules: Alpine/Aeolian, Rain Forest, Coastal, Marine, Invasive Species

Summary: The Hō'ike o Haleakalā curriculum is designed to engage students in the study of the native Hawaiian ecosystems. Each lesson, game, and group activity relates to State of Hawai'i science standards. Lessons can be taught singly or together, as an entire semester-long course.

Organization: Partnership between Maui teachers and field biologists (& Maui Invasive Species Committee)

Link: <http://www.hoikecurriculum.org/>

- **Project Aloha 'Āina**

Grades: 3-12

Subjects: Wetlands, Ahupua'a and Lo'i, Stream Life, Conservation, Coral Reefs, Gardening, Landforms, Forests

Summary: Each grade level focuses on a different part of the ahupua'a with an emphasis on Hawaiian values and learning from Hawaiian traditional knowledge. Units align to HCPS III and the State Common Core Standards.

Organization: Pacific American Foundation, <http://www.pacificamerican.foundation/>

Link: <http://ulukau.org/gsd12.81/cgi-bin/cbalohaaina6?l=haw> (Grd. 6 link, other grades can be found by searching "aloha 'āina" on ulukau.org)

- **Natural Enquirer**

Grades: 6-8

Subjects: The research you will read about in this Natural Inquirer was conducted by scientists working at the Institute of Pacific Islands Forestry, or IPIF. Located in Hilo, HI, scientists at IPIF study a range of environmental topics in Hawai'i and the Pacific Islands.

Summary: A middle school science journal. All of the research in this journal is concerned with nature, trees, wildlife, insects, outdoor activities and water. First students will "meet the scientists" who conduct the research. Then students read special information about science, and then about the environment. Students will also read about a specific research project, written in a way that scientists write when publishing their research in journals. Students become scientists when they do the Discovery FACTivity, learning vocabulary words that help in understanding articles.

Organization: Natural Inquirer

Link: <http://www.naturalinquirer.org/The-Hawaii-Pacific-Islands-Edition-i-33.html>

- **Hawaiian Watershed Adventure Board Game**

Grades: 3-12 (and younger if leader can assist with reading)

Subjects: Watersheds, Aquifers, Forest Function, Erosion

Summary: In this lesson students learn about Hawai'i's watersheds through a fun and interactive board game. They will be introduced to the components that make up a watershed and some of the problems our watersheds face including erosion, browsing animals, invasive species and pollution.

Organization: Hawai'i Island Natural Area Reserves System (DLNR-DOFAW)

Link: <http://threemountainalliance.org/teachers/> (under Resources)

- **Watershed Friends Native Mask Activity**

Grades: K-8 (adaptable)

Subjects: Native Species, Ecosystems, Food Web, Mauka-Makai, Cultural Knowledge

Summary: Native species masks are a fun craft project for keiki of all ages! The back of each mask includes information on the species the mask represents. In this activity students learn about different species and elements that are a part of our native ecosystems, color and decorate their mask, then learn about Hawaiian food web interactions by playing a fun game!

Organization: 'Imi Pono no ka 'Āina, Three Mountain Alliance

Link: <http://threemountainalliance.org/teachers/> (under Resources)

- **Fun Foam Stamp Art Activity**

Grades: K-12

Subjects: Native Species, Mauka-Makai, Cultural Knowledge, 'Ōlelo No'eau

Summary: Fun Foam stamp project illustrates 'ōlelo no'eau and mauka makai (land and sea) connections through stamping. Try out this fun and inexpensive craft project with your class!

Organization: 'Imi Pono no ka 'Āina, Three Mountain Alliance

Link: <http://threemountainalliance.org/teachers/> (under Resources)

- **Watershed Model**

Grades: 5-7, adaptable

Subjects: Watersheds, Sediment, Erosion, Forest Function, Natural Resources

Summary: Create a mini-watershed using diatomaceous earth and a spray bottle for rain.

Explore how watersheds are formed geomorphically and watch how sediment is carried in this system. Examine the changes to a Hawaiian watershed over time and how these changes affect the watershed. Apply problem solving skills to natural resource management

Organization: East Maui Watershed Partnership

Link: http://www.eastmauiwatershed.org/wp-content/uploads/2011/06/Demo_Kit.pdf

National

- **Project WILD/Project WILD Aquatic**

Grades: K-12

Summary: Project WILD is a wildlife-focused conservation education program for K-12 educators and their students. Emphasizing wildlife because of its intrinsic value, Project WILD addresses the need for human beings to develop as responsible citizens of our planet.

Organization: Council for Environmental Education

Link: <http://www.projectwild.org/>

- **Project Learning Tree**

Grades: K-12

Summary: PLT teaches students how to think, not what to think about complex environmental issues. Recognized as a leader in environmental education for 40 years, PLT enhances critical thinking, problem solving, and effective decision-making skills.

Organization: American Forest Foundation

Link: <https://www.plt.org/> (national) <http://dlnr.hawaii.gov/dofaw/education/plt/> (Hawaii trainings)

- **Project Noah**

Grades: K-12

Summary: Project Noah is a fun way to explore and document wildlife. The purpose of the project is to mobilize and inspire a new generation of nature lovers using an app for devices (cell phone, iPad, etc) for people of all ages to share their nature encounters. The app has evolved into a powerful global movement for both amateurs and experts. The name “Noah” is an acronym that stands for networked organisms and habitats.

Organization: National Geographic

Link: <http://www.projectnoah.org/>

Environmental Education & Outreach Programs: Hawai'i Island

- **Three Mountain Alliance/ 'Imi Pono no ka 'Āina**

Location: Hilo and Keauhou, Ka'ū (Volcano)

Activities: Native Forest Restoration: Community and school groups participate in conservation management with 'Imi Pono through native plant propagation and reforestation on TMA member lands. Over the last several years, thousands of native seedlings have been planted by volunteers.

Grades: 6-12

Contact: Lahela Camara, 'Imi Pono Program Coordinator, lahelacamara@gmail.com
<http://threemountainalliance.org/teachers/> application: <http://threemountainalliance.org/wp-content/uploads/Keauhou-Restoration-Application.pdf>

- **Ka'ū Forest Reserve**

Location: Ka'ū

Activities: The Ka'ū Forest Reserve consists of 61,641 acres. The Outreach and Education Program is designed to provide educational opportunities that will aid in strengthening the connection of people to the environment.

Grades: All ages

Contact: Nohea Ka'awa, Education and Outreach (Ka'ū) kaawa.nohea@gmail.com
<http://dlnr.hawaii.gov/forestry/frs/reserves/hawaii-island/kau/>

- **The 'Alalā Project**

Location: Keauhou, Ka'ū (Volcano)

Activities: Keauhou Bird Conservation Center (KBCC): Participants tour the KBCC to learn about Hawai'i's critically endangered birds, including extinct-in-the-wild 'alalā, as well as learn about the efforts being taken to protect them.

Grades: 4-12

Contact: Lea Ka'aha'aina, Education & Outreach lea.kaahaaina@gmail.com
application: <http://threemountainalliance.org/wp-content/uploads/Keauhou-Restoration-Application.pdf>, www.alalaproject.org (coming soon)

- **Hawaii Island Hawksbill Turtle Recovery Project**

Location: Hawaii Volcanoes National Park

Activities: The Hawaii Island Hawksbill Turtle Recovery was founded in 1989 to monitor and protect nesting hawksbill sea turtles. Hawksbill sea turtles are critically endangered with only 140 nesting females documented. The project offers in-class presentations and activities in order to help educate Hawaii's children about the rarest sea turtle of the Pacific.

Grades: all grades

Contact: Lauren Kurpita, Project Coordinator, Lauren_Kurpita@contractor.nps.gov, 808-985-6090

- **Big Island Invasive Species Committee**
Location: Hilo, (BIISC works across Hawai'i Island)
Activities: Learn about invasive species and BIISCs work to prevent, detect, and control them. BIISC works island-wide protecting our native forests, communities, and agriculture from new and ongoing threats.
Grades: service learning field trips for 7th and up, and classroom presentations for 3rd and up.
Contact: Franny Brewer, Communications Director, fbrewer@hawaii.edu
<http://www.biisc.org/>
- **Mauna Kea Forest Restoration Project**
Location: Hilo and Mauna Kea field sites
Activities: Help restore habitat for the palila, a critically endangered bird found only on Mauna Kea. Website offers news and updates, as well as volunteer opportunities assisting with restoration efforts.
Grades: Service learning trips grades 6th and up; classroom presentations, grades 1st and up.
Contact: DLNR.RestoreMaunaKea@hawaii.gov
- **Hawai'i Island Natural Area Reserves System**
Location: Hilo and NARs across Hawai'i Island
Activities: Learn more about Hawai'i Island's most unique ecosystems. The diverse areas found in the NARS range from marine and coastal environments to lava flows, tropical rainforests, and even an alpine desert. Within these areas one can find rare endemic plants and animals, many of which are on the edge of extinction.
Grades: service learning field trips for 7th and up, and classroom presentations for 3rd and up.
Contact: Anya Tagawa, Outreach and Education Specialist, Anya.H.Tagawa@hawaii.gov
<http://dlnr.hawaii.gov/ecosystems/nars/hawaii-island/>
- **Hawaii Volcanoes National Park**
Location: Volcano
Activities: Ranger-led, grade level curriculum-based programs for school groups visiting Hawai'i Volcanoes National Park. Topics focused on geology, forest ecology, and Hawaiian culture. Ranger-led programs are currently offered on Tuesdays and Thursdays ONLY and begin at 9:30 a.m.
Grades: K-12
Contact: Noah Gomes noah_gomes@nps.gov, 808-985-6019
<http://www.nps.gov/havo/learn/education/planafieldtrip.htm>
- **Ho'ala ka Makana'ā- Ka'ūpulehu Dryland Forest**
Location: Ka'ūpulehu, Kona
Activities: Ho'ala Ka Makana'ā, a land-based education program, is a collaborative cultural ecology, outreach, and stewardship project at the Ka'ūpulehu dryland forest on the leeward side of Hualālai mountain. Service learning and education programs are available.
Grades: All Ages
Contact: Yvonne Yarber Carter, Outreach Education Programs Coordinator
<http://www.drylandforest.org/ho%E2%80%98ola-ka-makana%E2%80%98ka%E2%80%98lehu-dryland-forest>

- Teaching Change- Phenology at Hakalau Forest National Wildlife Refuge**
Location: Hakalau Forest National Wildlife Refuge (East Hawai'i)
Activities: Experiential field immersion at Hakalau Forest NWR. Tour & participate in ongoing restoration activities to highlight the importance of conserving and restoring native habitat. Participate in bird banding to track extent of monthly visitation and use of the refuge by native bird populations. Collect phenology data on midstory and canopy trees. Immersion in native forest to tune senses to touch, sight, and sounds of native plants and their avian pollinators and dispersers.
Grades: 6-12
Contact: Catherine Spina, Youth Conservation Education Associate, cspina@hawaii.edu
Dr. Creighton M. Litton, litton@hawaii.edu
https://www.usanpn.org/files/Teaching_Change_Brochure2_7-16-13_small.pdf
- Hawai'i Wildlife Fund**
Location: Ka'ū
Activities: Hawaii Wildlife Fund (HWF) is a non-profit organization dedicated to the conservation of Hawaii's native wildlife through research, education and advocacy. Volunteer in projects including marine debris removal and anchialine pond restoration. HWF website offers news and updates, as well as volunteer opportunities.
Grades: All ages
Contact: Megan Lamson, kahakai.cleanups@gmail.com
http://www.wildhawaii.org/projects.html#debris_project
- The Kohala Center**
Location: Waimea
Activities: Founded in 2000, the Kohala Center is an independent, community-based center for research, conservation, and education. Their mission is turning research and ancestral knowledge into action, so that communities in Hawai'i and around the world can thrive—ecologically, economically, culturally, and socially. Main areas of interest are energy self-reliance, food self-reliance, and ecosystem health. The Kohala Center provides a diversity of programs such as Hawai'i Island School Garden Network and HI-MEET (Hawai'i Island Meaningful Environmental Education for Teachers).
Grades: K-12
Contact: <http://kohalacenter.org/programs>
- Mokupāpapa Discovery Center- Papahānaumokuākea National Marine Monument**
Location: Downtown Hilo
Activities: The nature and culture of the Northwestern Hawaiian Islands come alive as never before, transporting visitors to this remote ocean wilderness where predators rule the reefs, the skies teem with swooping, screeching seabirds, and the Native Hawaiian chanting of the Kumulipo (a Hawaiian creation chant) sets the mood for exploration and learning. Mokupāpapa features a 3,500 gallon saltwater aquarium, interactive educational exhibits, lifesize models of wildlife found in the Northwestern Hawaiian Islands, artwork inspired by those islands and Hawaiian culture, and many interpretive panels in both Hawaiian and English.
Grades: Open to all ages
Contact: Nakoa Goo, Discovery Center Program Coordinator, nakoa.goo@noaa.gov
<http://www.papahanaumokuakea.gov/education/center.html>

- Pacific Island Program for Exploring Science (PIPES)**
Location: University of Hawaii, Hilo
Activities: The Pacific Internship Programs for Exploring Science (PIPES) is a university level project-based internship program housed within the Office of Research at the University of Hawaii at Hilo. PIPES is committed to increasing the recruitment and retention of local students, especially those of Native Hawaiian ancestry, into fields of study, and ultimately careers, related to the natural resources of Hawai'i and the Pacific region.
Grades: College undergraduates
Contact: Sharon Ziegler-Chong, Director, Pacific Island Program for Exploring Science (PIPES); Unit Leader, Hawai'i Cooperative Studies Unit (HCSU), UHPIPES@hawaii.edu, ziegler@hawaii.edu, <http://hilo.hawaii.edu/uhintern/>
- University of Hawai'i at Hilo Office of Research and Community Partnerships, EnviroScience**
Location: University of Hawai'i, Hilo
Grades: K-12
Activities: With a variety of activities, from Traveling STEAM Days to the summer program, Mānowai o Hanakahi, these outreach efforts seeks to keep the community involved and up to date on environmental opportunities around Hawai'i Island. Mānowai O Hanakahi is environmental summer camp geared towards middle and high school students. Day and overnight camp sessions are available.
Contact: Erika Perry, Education Specialist, hperry@hawaii.edu
<http://stem.uhh.hawaii.edu/>

Online Resources

- Hawaii Environmental Education Alliance: www.heea.org
- State of Hawai'i DLNR-DOFAW: <http://dlnr.hawaii.gov/education/forestry-wildlife/teachers-resources/>
- TMA website: www.threemountainalliance.org
- Hawai'i Nei Art Contest: www.hawaiineartcontest.org
- The 'Alalā Project: www.alalaproject.org (This site is still being developed, but it will go live on Feb 26!)