

TKC Leaflet: May 2007 Newsletter

FRONT

Where Science & Humanities Meet

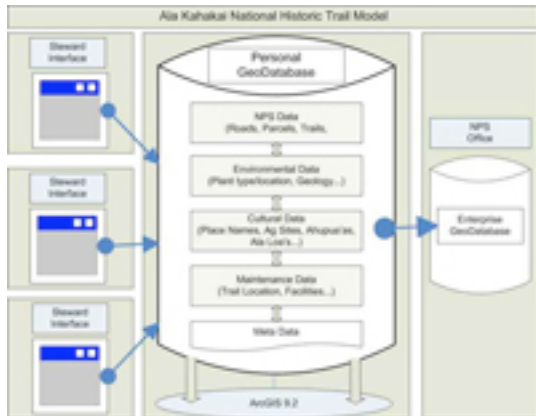


Image: Based on the system design by University of Redlands MS GIS student Robert Williams, trail stewards working with the Ala Kahakai National Historic Trail will gather and input data about various features associated with the trail into private, local databases. Part of this local data will be uploaded into the central steward database and made available to the Park Service and the public as appropriate. This data will be combined with NPS data for general park management purposes, while stewards will continue to maintain ownership of their own data collection.

New technology has been the basis for groundbreaking scientific research from the cellular level all the way to the cosmic level of human understanding. So, too, new technology has profoundly impacted disciplines within the Humanities. A prime example is Geographic Information Science (GIS) technology, which has the potential to transform our understanding of our world. By overlapping data from multiple disciplines, researchers can create a much richer understanding of "place." Natural resource data, cultural data, historical data, geographic data, and land use data can be combined to create a multi-dimensional database, which can be utilized to preserve knowledge and make that knowledge accessible to users within a variety of contexts. The potential of such a database to inform resource management decisions is immense.

The Kohala Center has recently been awarded a National Endowment for the Humanities planning grant to establish a GIS database to integrate scientific data about Hawai'i Island with Hawaiian cultural knowledge. The Kohala Center's proposal was one of sixteen projects selected from across the country as part of the new Digital Humanities grant-making program. These projects explore innovative uses of technology for the advancement of education, public outreach, and research in the Humanities.

Read more about the "[Digital Collaboratory](#)" project.

Karen Kemp: TKC's New Senior Scientist



Photo: Karen Kemp (**left**) with the President of ESRI, Jack Dangermond (**center**), and the President of University of Redlands, Stuart Dorsey (**right**). They are pointing at the location of Kemp's new home on Hawai'i Island. The poster was created by 2005 MS GIS student Andrew Land.

Matt Hamabata, The Kohala Center's Executive Director, is pleased to announce the appointment of Dr. Karen Kemp as a Senior Scientist with the Center. Kemp joins a select group of esteemed professionals who have an ongoing relationship with The Kohala Center and its work at the intersection of Western science and Hawaiian culture. Kemp was a Professor of Geographic Information Science (GIS) and Director of the International Masters Program in GIS at the University of Redlands, in Redlands, California, from 2000 to 2005. Kemp will oversee the [Digital Collaboratory](#) project, a multi-phase project which has received initial funding from the National Endowment for the Humanities (NEH). Kemp is among the foremost Geographic Information Systems (GIS) scholars in the nation, and she works at the frontiers of this new technology. Karen employs GIS technology at the intersection of science and culture, where she has helped to design new strategies for integrating different kinds of data – both cultural and scientific.

"I'm delighted to have had the good fortune to be introduced to The Kohala Center just as they were beginning to think about how GIS could support their mission. They share my vision of GIS as much more than a simple tool. Rather they, too, see it as an opportunity for bringing together many different perspectives and individuals in a context of sharing and mutual discovery about this amazing place we live in. I really appreciate the nimbleness and astuteness of the small, focused leadership team at The Kohala Center - and the possibilities this gives us to pursue grant opportunities like the one we were successful with at the NEH." – Dr. Karen

Kemp Read more about [Karen Kemp's vision](#) for integrating the world views of Hawaiian scholars and environmental scientists using GIS as the common ground.

Talking about Energy



Photo: Comet Hale-Bopp, the great comet of 1997, over Indian Cove. Credit & Copyright: [Wally Pacholka \(Astropics\)](#).

"I'd like to say that the 51st state is the state of denial. It's as though a huge comet were heading for us and nobody wants to talk about it. We're just about to run out of petroleum and there's nothing to replace it." – Kurt Vonnegut, speaking to The Associated Press in 2005

For several years The Kohala Center has been trying to turn the tide of dependence on imported fossil fuels by engaging stakeholders in meaningful discussions about Hawai'i Island's energy future. In 2003 and 2004 The Kohala Center sponsored a series of Hawai'i Island Energy Roundtable meetings at which stakeholders and policy makers discussed the energy challenges and opportunities facing Hawai'i Island. Since that time HELCO held its third Integrated Resource Planning process and the Hawai'i County Council has authorized a County of Hawai'i Energy Sustainability Plan. The Kohala Center is working with the County Department of Research and Development to suggest and analyze Plan recommendations.

As a continuing part of this process, The Kohala Center is sponsoring a free public talk entitled "**Options for a Sustainable Energy Future in Hawai'i County**" in Hilo on May 22 and in Kona on May 23. [Learn more](#)

Food System Project



Image: Food sovereignty logo designed by Solomon Enos.

Although Hawai`i is the most isolated landmass in the world, we only have an 8-day supply of food in the islands. We rely on imports for more than 90% of the food we consume. For the people of Hawai`i to become better prepared, safer, and more secure, we must increase the amount of food that we produce and consume locally. To limit the Island's dependence on imported foods, we must change the way our agricultural lands are used, the way food is produced, and the way locally produced food is marketed and distributed.

In collaboration with the Rocky Mountain Institute, Hawai`i SEED, and a diverse coalition of organizations, businesses, and government agencies, The Kohala Center is mounting the Hawai`i Island Food Security Symposium (HIFFS) in October 2007, to generate awareness of local food security issues and to think through strategic actions that will improve the viability of sustainable agricultural ventures. The symposium will bring together nationally recognized experts in the field of sustainable agricultural technology, policy, and financing with leaders of Hawai`i Island's public and private sectors. HIFFS will help coalesce the energy, ideas, and people that are needed to shift the future of Hawaiian agriculture towards more local, sustainable food production. For more information on HIFFS, contact Betsy Cole at cole@kohalacenter.org.

Read the [Island of Hawaii Food System Project Report](#), prepared by the Rocky Mountain Institute, for background on current food production on the Island and for ideas about how to stimulate greater local market share.

Ho`ea Ea Food Sovereignty Conference



Image: Ho`ea Ea Conference logo, designed by Solomon Enos and colored with added text by K-Designs.

"*Ma Ka hana ka 'Ike.*" (It is by doing that we gain knowledge.)

From June 14 – 17, the University of Hawai`i-Hilo Campus will host a unique gathering focused on food sustainability: [Ho`ea Ea: Return to Freedom: A Food Sovereignty Conference](#). A collaborative of food communities from Kaua`i to Hawai`i Island, including students, farmers, professors, scientists, and traditional practitioners from a variety of disciplines and a diversity of cultures, will participate. The goal is to develop partnerships, plan strategies, and implement innovative solutions to build self-sufficiency and food sovereignty within our island communities. "*Ho`ea ea*" means a spiritual, physical, and cognitive pathway toward greater well-being and self-sufficiency. The conference focuses especially on youth participants, with the goal of strengthening connections between youth, the *'aina* (land), food, farmers, and communities.

Conference activities include cooking, classes on bio-fuels and alternative energy, learning about sustainable and organic agriculture practices, discussions on food policy and social justice, and hands-on demonstrations of composting and vermiculture (using worms to make soil). Participants will also have the opportunity to visit one of many cultural sites around the island on Saturday, June 16. Site visit options include harvesting vegetables, preparing a pig for the *imu* (roasting pit), making soil from compost, cooking lunches for school children, exchanging seeds, and practicing Hawaiian taro

culture protocols. *Ala carte* registration options are available for those wishing to attend individual events. Youth scholarships (ages 12-24) are available and organizations are encouraged to send two of their most experienced/committed young people. For more information and registration information, visit [Hands Turned to the Soil](#).

Sharing Results



Photo: Connections Public Charter School students create a giant green sea turtle as part of the “Honu Project” performance artwork in 2006. Image courtesy of [Connections Public Charter School](#).

“Social Marketing, or how to communicate significant results to the public so that they can make informed decisions and take appropriate action, is a key part of applied science and how to make a difference for the future of our planet.” – Betsy Cole, Deputy Director of The Kohala Center

More than 50 teachers and students from schools around the island met at the ‘Imiloa Astronomy Center for a full-day this April – not to explore the wonders of the vast universe, but to share the results of their year-long science projects here on Hawai‘i Island. The teachers were all the recipients of science grants from The Kohala Center’s [Hawai‘i Meaningful Environmental Education for Teachers \(HI-MEET\)](#) program, funded by the National Oceanic and Atmospheric Administration (NOAA). From understanding why ocean currents dump tons of plastic and other trash on the pristine shores of South Point, to analyzing how an accumulation of cigarette butts can impact the pH of ocean water at Honaunau, to considering the potential side-effects of residual lime from coqui frog eradication efforts as it leaches into tidepools at Kapoho, HI-MEET teachers and their students delved into some of the issues impacting their own back yards – the coastal environments around Hawai‘i Island. Learn more about the results presented by teachers and their students at the first-ever [HI-MEET Science Symposium](#).

Knowledge through Nature



Photos: (Left) Campers spent a day in Kohala helping out in a *lo`i* (taro plot) and enjoying beautiful waterfalls. **(Center)** Nohe and Jai Vinayaga and Philip Mothes make paper with artist Rita Cowell. **(Right)** Dakota Charles taking a break underneath a hapu`u tree fern on a hike through the lush forest in the Nature Conservancy's Kona Hema Preserve.

"Here are a few snaps from our exciting caving, exploring, hiking, and camping adventures earlier this spring." - Megan Dehning, TREE Center Hawai`i Youth Outreach Coordinator

The Kohala Center is pleased to announce two summer camps for students

entering 4th – 9th grades, offered by [TREE Center](#) right here on Hawai`i Island. TREE Center Hawai`i's summer camp "**Knowledge through Nature**" is a five-day, four-night residential (tent camping) program which focuses on Hawai`i's diverse ecological heritage. Situated in *mauka* (upcountry) forest lands, this camp combines hikes, ecological games, orienteering, teambuilding activities, service projects, arts, and crafts to develop participants' connections with the land and with one another. Each day includes a time for individual silent reflection, during which students find their own quiet space where they can write or draw in their journals. In the evenings, campers enjoy stargazing, night hikes, games, and performing original skits. Campers are provided three nutritional meals a day, courtesy of the camp cook. All programs are staffed by experienced camp directors, youth leaders, and volunteers.

Summer Camp Session 1 runs from June 12-16, and Session 2 is from July 16-20. Partial scholarships are available for qualified youth to help defray the cost of camp. High school seniors are eligible to apply for the paid Youth Leader positions, and high school sophomores and juniors are invited to apply for "Youth Leader in Training" internship positions. Camper and Youth Leader application forms are available at www.treehawaii.org.

Kahalu`u Success Stories



Photo: Great volunteers - some of the many Reef -Teachers at Kahaluu Bay (**from left to right**): Vince Carr, Cindi Punihaole, Patti Carr, Samantha Birch (Reef -Teach Instructor), Dottie Moore, Judy Tarbet, Christine Sheppard, Chris Lochman, Jim Bausano, and Andrew Walsh.

"Calling upon our community for volunteers to upgrade our Kahalu`u Pavilion and become Reef-Teachers has made a big difference in the 'feeling' that people now have when they visit Kahalu`u Bay. There is a sense of pride, a sense of place, and a sense of ownership there. Reef-Teachers embrace the visitor as they educate them about Reef-Etiquette and then ask them to join in and teach others what they have learned. We have many, many people within our community who want to take care of our `aina

(land). *A`ohe hana nui ke alu `ia!* (It is no great task when done together by all!)” - Cindi Punihaole, The Kohala Center’s Outreach and Volunteer Coordinator

Donations of goodwill, volunteer hours, paint, and funding continue to pour in to support the Kahalu`u Bay Restoration Project. The latest contribution came from The Lion's Club of Kona, which delivered four brand-new, six-foot picnic tables to Kahalu`u Beach Park on April 20, the day before Earth Day. The "Picnic Table Project" was chaired by Lion Glenn Uchimura. Lions involved in this project were Ralph Fukumitsu, Merna Izawa, Takeo Izawa, Maurice Kahawai`i, Nathan Kurashige, Kazumi Oshita, Robert Punihaole Sr., Stan Tokunaga, and Ed Yap.

Now is your chance to come and enjoy the new picnic tables, the freshly repainted pavilion, and the only smoke-free beach park in the County. On the last Saturday of each month, from 10am - 2pm, the community is invited to share Hawaiian culture and science at Kahalu`u Bay Park and Pavilion. Enjoy demonstrations, music, and presentations. Reef-Teachers will be on hand to educate folks about the importance of coral reefs to our island way of life. Hope to see you there on Saturday, May 26!

Iris Markam, a UH-Hilo student and a 2004 participant in the [Brown University Environmental Leadership Lab \(BELL Hawai`i\) Program](#), is one of the volunteer Reef-Teachers at Kahalu`u Bay. Inspired by the successes at Kahalu`u Bay, Iris has decided to try to set up a similar Reef-Etiquette program at Richardson’s Beach Park in Hilo. Read more about [Iris Markham](#) and her ambitious new project.

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[Digital Collaboratory](#)



The “Digital Collaboratory” project will be a partnership among The Kohala Center, the Redlands Institute in California, the Edith Kanaka`ole Foundation, Hawai`i Community College, and the National Park Service — Ala Kahakai National Historic Trail. Faculty from Yale University and Cornell University will also be involved. The proposed “Digital Collaboratory” will provide a common ground for fostering cross-disciplinary research and ultimately incorporate a geographically-referenced knowledge management system for use by humanities scholars, scientists, planners and land managers, teachers, students and the general public.

Partners will work on a plan to integrate Western scientific data about Hawai`i Island with Hawaiian scientific and cultural knowledge. Some of the data, however, will be password protected to respect the wishes of those who hold knowledge that can be conveyed only under special circumstances and only with special permission.

“The ‘Collaboratory’ that we hope to build in partnership with The Kohala Center and Redlands Institute is perfect for our knowledge base here in Hawai`i,” says Kekuhi Kealiikanaka`ole Ohaililani, Executive Director of the Edith Kanaka`ole Foundation. “It will help organize knowledge in such a way that is respectful of our home environment and culture, and it will help bring Western and Hawaiian approaches in ongoing contact with each other in ways that recognize the contribution of each to scholarship and daily life. We know this contact will generate new knowledge that will enhance the life of the world.”

For more information on the “Digital Collaboratory” project, contact Greg Smitman at 808-887-6411 or via email at gsmitman@kohalacenter.org.

Linking Worlds
By Dr. Karen Kemp



Photo: Karen Kemp roasting coffee at a friend's coffee farm in Holualoa. "It's not GIS, but it's something I enjoy doing here. This was his first year with cultivated trees so the harvest was very small. Total production was about 11 ounces roasted. I helped to do all the production by hand and I figure the cost was about \$1000/lb. Hopefully the costs will be lower next year!"

I started working in GIS in the mid-1980s, but really got into the field when I moved from Canada to the US in 1988 to begin my PhD at the University of California at Santa Barbara (UCSB). That was the year that the NSF established the National Center for Geographic Information and Analysis (NCGIA) at UCSB. The NCGIA was a very important organization for the advancement of GIScience in the US through the early to mid 1990s, so I was fortunate to be part of it from the beginning.

From the start we knew how significant the GIS technology was, and we were at the front of the wave and promoting it strongly. My contribution is mostly visible in the NCGIA Core Curriculum in GIS, which I edited with Professor Michael Goodchild (perhaps the foremost GIScientist in the US). It was published in 1990, we distributed over 1500 copies from the NCGIA, and it was translated into several other languages and distributed by several national distributors worldwide. It made a major contribution to advancing GIS education in universities worldwide through the 1990s.

When I started doing research in GIScience, I focused on understanding how environmental modelers conceptualize the phenomena they study in order to help design GISystems that match their world view. I saw how their world view impacted how they collected and digitized their data. My intention was to help make the link between the tool and their research and data collection activities more seamless. That was a challenge, but sufficiently doable that I was able to complete my PhD dissertation on the topic.

About ten years ago I started working with humanities scholars as they became interested in how GIS could help them. Humanities scholars, of course, see the world very differently than scientists, particularly with respect to their generally more concentrated focus on changes through time rather than over geography, and their often-fuzzy understanding of where things were.

I have been working with the Ala Kahakai National Historic Trail (AKNHT) for several years now. Initially, I was able to encourage some of my GIS Masters students from the University of Redlands to undertake thesis projects on the theme of building a GIS framework to support the 50 or so trail steward groups who will manage the trail segments along its 170+ mile length. Through a succession of such projects, we have been able to work through some designs for the mini-GIS's that each group will use to inventory and manage the resources along their trail segment in such a way that each mini-GIS will connect to the full GIS the NPS will use to oversee the trail. We've got designs for paper and pencil "GIS" for those who don't want to bother much with the technology, all the way through to fully configured professional GIS for the few technically rich steward groups. Now I am working with Aric Arakaki, AKNHT Superintendent, to find a way to fully fund that aspect of the project as a community education and support network.

With the recent National Endowment for the Humanities (NEH) grant to The Kohala Center, I have the opportunity to work with both Hawaiian scholars and environmental scientists to find ways to integrate their various world views using GIS as the common ground.

There are two main challenges in doing this. First there is the challenge of adding a temporal component to GIS. The GIS world has only recently started to find ways to include time as a component of geographic databases and to analyze spatio-temporal data. Since the evolution of the Island's peoples and landscape is an important part of the story, figuring out how to capture and store a record of change over time is a fundamental issue we will have to solve. The second challenge is the geometric imprecision of the shape and location of places and geographic objects. Humans are very capable of understanding and working with concepts that are digitally imprecise, but computers are by design, very precise. We will need to find a way to allow the natural imprecision to reside compatibly and seamlessly in our GIS infrastructure.

This first phase of the Digital Collaboratory is a planning phase and funding is for only six months or so. The objective of the first phase is to begin to articulate both the challenges and the possible means of designing our

intended geo-collaboratory. Thus, the first phase will begin with a preliminary period during which the project partners will share asynchronously documents and ideas about the issues we face. We'll do this using a web page portal, which I hope to have up and running in the next couple of weeks. In August, the second phase will kick off with a workshop at which all the partners will meet face to face to share our various perspectives and brainstorm about how to realize our vision. That should put us in a good position to prepare some very convincing proposals for prospective funding organizations.

It will take perhaps two years for implementation of the geo-collaboratory infrastructure. But data collection and entry will be a continuing project - in order to capture the universe of data everyone will want to put into it!

Options for a Sustainable Future



Photo: Ulu Garmon (**left**) from the Edith Kanaka'ole Foundation (EKF) showed Yale graduate students Claire Gagne (**center**) and Michael Davies (**right**) these coastal ponds so that she could describe the dynamic, varied, and interconnected aquatic life that is supported by the island. Yale students visited with EKF representatives as part of their cultural orientation to Hawai'i Island, to help give the group a better understanding of Hawaiian culture and spiritual beliefs in preparation for their work on the Hawai'i Energy Sustainability Plan.

"Options for a Sustainable Energy Future in Hawai'i County" will be held in Hilo on Tuesday, May 22, at 6:30 pm at 'Imiloa Astronomy Center, and on Wednesday, May 23, at 6:30 pm at the Outrigger Keauhou Beach Resort. These free public talks will feature [Marian Chertow, Ph.D.](#), Director of the [Industrial Environmental Management Program](#) at Yale's School of Forestry and Environmental Studies, and Jeremiah Johnson, Ph.D. in Environmental Engineering from Yale. Both are members of the team of

consultants, which also includes four graduate students from the Yale School of Forestry and Environmental Studies, who are working with The Kohala Center and the County Department of Research and Development to draft the County Energy Sustainability Plan.

Over the past year, The Kohala Center and the County Department of Research and Development have been working to create an energy strategy for Hawai'i Island that will improve energy self-sufficiency, reduce environmental impact, and insulate Hawai'i residents from wild fluctuations in oil prices. Consultants have been taking a hard look at the following areas: improving transportation efficiency and the utilization of alternative transportation fuels; improving residential and commercial building efficiency; improving public sector energy use, including County buildings and the Department of Water Supply; identifying opportunities for energy storage; identifying opportunities for demand side management; and identifying opportunities to increase renewable energy generation, such as solar water heating, solar photovoltaics, biofuels, geothermal, and wind.

The preliminary results of the Hawai'i Island Sustainable Energy Initiative will be presented to the public at these open meetings. Members of the audience will be invited to provide feedback on the preliminary results, to discuss how to further integrate energy recommendations with the Community Development Planning process, and to help to shape the final energy plan that will be submitted to the County Council.

Pete Hoffmann, Chair of the Hawai'i County Council recently had the opportunity to review the preliminary recommendations from the consultants: "I want to move immediately to enact as many of these worthwhile and useful strategies at Council as possible, in order to achieve the County's Energy Sustainability Plan goals. Several of the preliminary proposals are doable now. We can begin as soon as we write up the legislation. By starting now, we can achieve energy sustainability for the Island within our lifetime," Hoffmann said.

Science Symposium



Photo: HI-MEET teachers and students at the April 19, 2007 Science Symposium at Imiloa Astronomy Center in Hilo.

The year-end Science Symposium was an opportunity for participating teachers from six schools, along with some of their students, to come together to share their projects with a community of their peers and to evaluate options for future HI-MEET funding, should it become available.

Greg Smitman, Kohala Center Business Manager, asked the roomful of teachers and students if they would participate in another year of the [HI-MEET Program](#) if The Kohala Center were able to obtain adequate funding. Every hand in the house went up.

At the end of the first-year effort, there was no doubt that teachers really appreciated the expert mentoring in how to design project-based science curriculum for their students, and yet still work within the time constraints of the school day. Personal guidance from mentors helped teachers to connect their custom-designed project to DOE standards and substantiate student progress toward these objectives (called General Learner Outcomes).

Several teachers reported that they could not have participated without much-needed funding to hire substitute teachers. While the substitute covered the rest of their daily classes, the HI-MEET teachers and participating students journeyed into the field to do scientific research. Grant funds also provided necessary science materials, transportation to field sites, and the means to document student learning, including video cameras. Several projects involved interdisciplinary teams of teachers who incorporated concepts from their HI-MEET science projects into the larger context of social studies, art, and community action.



Photo: Photos from Connections Public Charter School's South Point clean-up. "Trashy Rock" in the foreground by Ira, a Connections middle school student.

"Our school is about caring for our community. If we cannot get out into our community, then we cannot malama (care for) Hawai'i. We want to get down to the ocean and help with the issues there. This grant helped us to do that."
– Nicole Anakalea, Hawaiian Culture & Language and Social Studies teacher at Kanu o ka `Aina New Century Public Charter School

Based on the hypothesis that giving teachers the means and the knowledge to successfully take their kids out into the field to do science will result in positive learning outcomes, the HI-MEET Program was a resounding success. Teachers liked the simplicity of the grant application process and the ability to utilize grant funds to overcome resource constraints like a lack of supplies or the means to order supplies mid-year.

Students remarked on how much they enjoyed **experiencing** the ocean currents, the beautiful marine creatures, and the factors that are causing degradation of the marine environment **for themselves** – rather than just reading about them.



Photo: Teacher India Young, student Mtume Msikizi (holding one of the lookboxes he designed and constructed in the school shop), and fellow 10th grade students at Kea`au High School discuss their HI-MEET project.

"The best part about this project is having the freedom to just jump into the water and experience hands-on education. This was our first field trip this year, so thank you for giving us the chance to get out in the field and have some fun." – Mtume Msikizi, 10th grader at Kea`au High School

Students collected data from around the island, measured water quality, pH, and species distribution using quadrant transects. They also picked up a lot of trash, including diapers, construction materials, and beverage containers.

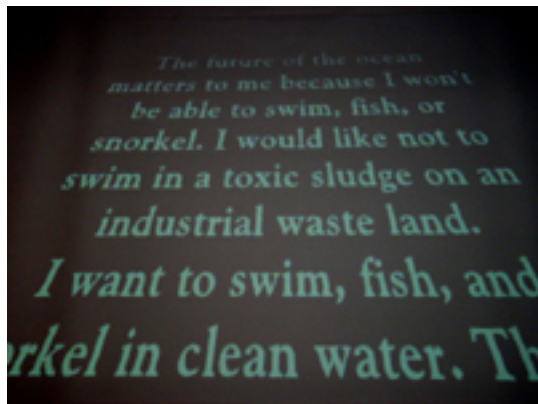


Image: Slide from Nicholas Grogg's animated film.

"I learned that the ocean is a lot more messed up than I thought it was." – Nicholas Grogg, 7th grader at Connections Public Charter School and creator of an animated film about ocean pollution.

Students learned to problem solve in the field in order to resolve communication issues (a **big** challenge while in the ocean), inventory issues, and personal preparedness issues. Students from the various schools shared some of the problems their project groups encountered, and how they solved these issues to complete their projects.

"After their field work, students assessed themselves using a rubric that Steve Coffee (Kohala Center HI-MEET Project Manager) provided. Most came back with perfect or near perfect scores. We were on time, very satisfied with our outcomes, and most students felt that they learned a lot." - India Young, Science teacher at Kea`au High School

Students met with long-time residents of the places they visited to learn how

marine resources have changed as a result of human impacts. They learned about respect and about treating the environment as if they were a guest in someone else's home.

"We started out listening to a lady who lived near Punalu`u her whole life tell us all about it. She told us that this beach has always been a nesting ground for hawksbill turtles, only nowadays they stay in the water and don't come up on the shore because they don't like all the people." – Lauren Kerr & Analee Brown, Connections Public Charter School

Students learned what some of the major threats to Hawai`i's marine environments are, and how to give voice to these problems and educate others through films, artwork, letters to public officials, and connecting to larger environmental advocacy efforts.

"Owning a beach is like owning the air, people like me will not be able to swim on the beautiful black sand beach without paying a sum. Also I think that our fragile marine life will be disturbed, and maybe in the future you'll think, 'Hey, I could have saved this species from endangerment if I would have just supported Ka`u preservation.' I hope this letter will help you to make the right decision to help support the preservation of the Ka`u coast."
- Aubrey Leung, 7th grader at Connections Public Charter School, excerpt from a [letter to Mayor Harry Kim](#)



Photo: "The Moonlight Only Shines in Darkness" by Travis Collins, student at Connections Public Charter School. *"It will be a long journey to clean up our beaches but it is worth it. It will be beautiful in the end, if we clean up our mess,"* said Travis in explaining the motivation for this painting.

Students at Connections Public Charter School have mounted an exhibit of their marine-inspired art, called **Hawaiian Deep Blue Ocean**, on display at their school in downtown Hilo throughout the month of May. Students have transformed two large wall panels into the ocean and created dozens of marine animals of paper maché, including turtles, fish, and whales. Then they littered this seascape with trash to illustrate what is happening to the oceans. There is even a small net covered with discarded material entrapping a turtle.

"All that we learn about we boil down into this: we want our students to have an appreciation for life and for all living things. This grant helped us to accomplish this. We took 85 kids out in the field to South Point and to Punalu`u. Thanks to NOAA and to The Kohala Center for this wonderful opportunity." – Grace Chao, Art teacher at Connections Public Charter School

For the Pure Love of It! **By Iris Markam**



Photo: Iris Markham (**top row, 2nd from left**) with the first BELL Hawai`i Program cohort in April 2004.

When I first got involved with The Kohala Center I was a high school senior at Ke Ana La`ahana Public Charter School, in Keaukaha, Hilo. I was given the opportunity to obtain a scholarship from The Kohala Center to pay for [Brown University's Environmental Leadership Lab \(BELL\) Program](#), back in April 2004. I wrote an essay about my love for the environment and about other programs I was also involved in, such as the `Imi Pono No Ka `Aina program at Hawaiian Volcanoes National Park. After writing to The Kohala Center I was awarded the \$1700 scholarship to the BELL Program.

Along with me were three other students from the Island of Hawai`i and visiting students from all over the United States. This two-week excursion was amazing, because I was able to see many places that are hard to access otherwise. I got to interact with students from across the nation and teach

them about our beautiful island. Aside from teaching the students what I knew, I was also learning so much more about Hawai`i that I had never known, and furthering my knowledge in conserving the native environment. When I completed the program I had made many new friends and was even more interested in working for environmental conservation throughout my life.

I believe that the most important thing I learned from BELL was to further my education in conservation of the forest and ocean, in order to restore its beauty and existence so future generations can enjoy and appreciate Hawai'i's native environment. I would definitely encourage other high school students to apply for this educational experience, because it brought my full attention to the issues of our struggling native fauna and flora, both in the forest and in the ocean.



Photo: Iris Markham in the Kaumana Caves in April 2004.

I'm graduating in May from Hawai`i Community College (HCC) with a Liberal Arts degree and an Environmental Studies certificate. For one of my classes this semester (Environmental Issues) I was required to find a volunteer program and sign up for 24 hours of work. Since I was previously involved with The Kohala Center, I decided to ask if they had any openings. They had positions working at Kahalu`u Bay for Reef-Teach. This program sounded fun and interesting, so I picked it as my internship opportunity and have been driving to Kona ever since to help out and gain hours.

I have met so many smart individuals who have inspired me to start up a Reef-Teach program on the Hilo side at Richardson's Park. A program like

this could be helpful for the east side of the island, because our reefs are still thriving and healthy, so we must keep them that way before it's too late. I hope to pass on all the knowledge I have gained to the younger generations and get them involved, because they are the future of Hawai`i. My current vision is to continue my community involvement island-wide, especially on the Hilo side, since there is very little awareness of environmental issues there and starting now will make all the difference.

For the Reef-Teach program in Hilo I am working with community volunteers, such as Jan and Sara Moon, who live in Keaukaha and are very involved within this community. I am also trying to get Ke Ana La`ahana Public Charter School involved, by bringing the students down to Richardson's and working together to begin broadening their awareness. My plans are to graduate first from HCC, then during the summer get the program started with community volunteers. When school starts up again in August, I will be ready to get the kids working. As for my time frame, I have none, because I'm doing this out of pure love, but getting it started as soon as possible is what I'm aiming for.