

# Seawords

August, 2001 • Volume XV • Number 7



## Aloha and Welcome Back!

MOP at Mānoa is alive and well. In the last few months, we have transferred administratively to the College of Natural Sciences (CNS) and have been warmly welcomed and supported there. Funding from the CNS, MarBEC, SOEST, and last year's fundraiser will allow us to maintain services in the coming year.

Details for moving into new space and restoring positions remain to be worked out, but this fall will mark a major recruiting effort to restore enrollment in the program as MOP celebrates its 30th year of operation.

Extramural funding for special projects is either in hand or anticipated from National Science Foundation, National Marine Fisheries Service, National Marine Sanctuaries Program, Office of Naval Research, Naval Historical Center, Hawai'i Division of Aquatic Resources, Hawai'i Department of Labor and Industrial Relations, Pacific Whale Foundation. We are

assisting with plans of the CNS to introduce a B.S. in Marine Biology.

The new UH President, Evan Dobelle, has taken interest in MOP and is scheduled to visit for a briefing with Interim Chancellor Deane Neubauer in October. MOP's cross-disciplinary, statewide programs seem to coincide well with many of the plans Dr. Dobelle has articulated. We will particularly look to his leadership for strategies to strengthen the systemwide efforts.

A "MOP Planning Group" has morphed into an initiative to organize a MOP Alumni Association, incorporating "Friends of MOP." The President will be Anne (Orcutt) Bailey, Vice-President Tom Iwai, Treasurer Carrie Matsuzaki, Secretary Barbara Lee, and Events Coordinator Jeff Kuwabara. This group will assist in promoting MOP to the community, schools, ocean industries, and UH students and faculty.

A new MOP Brochure has been identified as a first priority along

with finishing up a new web page. A major task of the group will be to update the alumni database — contact information, job histories, evaluations of MOP's impact, etc. Statewide we expect to see a representative "chapter" on each major island as well as probably a "Pacific Northwest" entity.

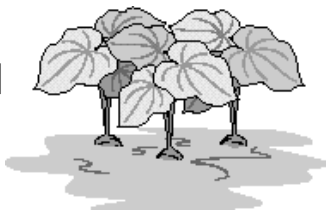
In the coming year, MOP will contribute its support to QUEST, the Symposium on the Maritime Archaeology and History of Hawai'i and the Pacific, the MarBEC education program (MSURF. teacher workshops, science fair awards), the Oceans 2001 Conference in November, the North American Society of Oceanic History in May, the UH Symposium 2002 for undergraduate research, and the Maritime Archaeology Techniques course next summer.

It looks like another busy year!

**Sherwood Maynard,**  
*Director*

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**No July edition of  
Seawords was produced  
this year, so the August  
issue follows June.**



**MOP would like to thank  
Makai Ocean Engineering  
for their donation to the  
MOP Miracle Fund.**

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## UH Mānoa MOP Events

- August 4th Work in the Lo'i (Taro Patch) with MOP. 8:00 a.m. to 12:00 p.m. Meet at HIG 215 at 8:00. Wear clothes that you don't mind getting dirty.
- August 8th REU Symposium, beginning at 2:00 p.m., will be held at MSB 100. Call UHM MOP for information.
- August 10th Summer Session II ends
- August 11th Snorkel and Underwater Camera Trip to Hanauma Bay. 8:00 a.m. to 1:30 p.m. Meet at HIG 215 - the day begins with basic camera instruction. Sign up by August 8th at the UHM MOP office.
- August 12th Summer Commencement
- August 16th MOP Booth at H. R. Erdman Frosh Camp - Volunteers needed. Please contact the UHM MOP office.
- August 17th Hawai'i Statehood Day (Holiday)
- August 19th Shark Tagging Field Trip at HIMB. Sign up by August 13th.
- August 23rd Fall MOP Coordinator's Meeting at Kauai Community College
- August 25th Hike to Mānoa Falls. An easy 1.5 mile hike along a well-worn path. Call the UHM MOP office for more information.
- August 27th First Day of Classes
- August 30th Student Orientation at UH Mānoa MOP, HIG 215. 4:00 p.m.
- September 3rd Labor Day (Holiday)
- September 4th LCC MOP Meeting at MS 102. Guest speaker is Frank Stanton, who will talk on the "Results of the August 2001 NOS Research Cruise to the Northwestern Hawaiian Islands."
- September 15th Annual "Get the Drift and Bag It". A sign-up sheet will be available at the UHM MOP office for volunteers.
- November 12th Veterans' Day (Holiday)

### Frosh Camp Volunteers Needed

Mānoa MOP needs volunteers to help out on Thursday, August 16th, 1:30-4:30 p.m. MOP will join the Atherton YMCA at Camp H.R. Erdman Frosh Camp! This is a great opportunity to let incoming freshmen know what MOP is all about. Please call 956-8433 or stop by at HIG 214 to sign up.

2

### Seawords Volume XV, Number 7 August, 2001

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Seawords is a monthly newsletter of the Marine Option Program at the University of Hawai'i. Opinions expressed herein are not necessarily those of the Marine Option Program or of the University of Hawai'i.

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**For more information on MOP events contact your local MOP office. Pre-registration is required for all field trips.**

# UPCOMING EVENTS AROUND HAWAII



## Biotechnology Industry Interns Fall 2001 - Spring 2002

The Biotechnology Internship Program (BIP) is part of Hawaii's Millennium Workforce Development Initiative, administered by the Department of Labor and Industrial Relations (DLIR). By placing advanced community college students, juniors, seniors and graduate students (enrolled in Hawaii colleges and universities) into local biotechnology firms, we hope to better prepare them for relevant employment by adding a dimension of industry-based practical experience to their degree preparation.

The program includes placements in the Fall 2001 and/or the Spring 2002 Semesters. Selected Hawai'i biotechnology firms willing to host interns have furnished preliminary information, which is posted at <http://www.marbec.org/education/bip2002.asp>.

Applications, which are due August 27th, can be obtained either at this website or through the UH Mānoa MOP office. A selection committee will announce winners by August 31st, and then interviews will be held the week of September 4 with final selections by September 7.

At the end of the semester, student must submit a written report to be evaluated by the industry mentor and a faculty mentor. By mutual consent between the student and mentor, projects may continue through Spring Semester with an additional stipend and additional credits.

From the internship program, students can expect to acquire up-to-date industry knowledge, skills, and networking not available on campus. Although this program is administered by the UH Marine Option Program and the Marine Bioproducts Engineering Center, students can be placed in all areas of biotechnology statewide.

For more information or to apply, contact Sherwood Maynard at the UH at Mānoa MOP office, 2525 Correa Road, Honolulu, HI 96822. Phone: 956-8433; fax: 956-2417; e-mail: [mop@hawaii.edu](mailto:mop@hawaii.edu).

## Waikiki Aquarium Educational Classes & Activities

Preregistration is required for all activities. Please call Mark Heckman or Carol Hopper in the Education Department for registration materials. Phone: 923-9741, Monday to Friday, 8:00 a.m.- 5:00 p.m. For more information on these events, visit the Waikiki Aquarium's web site at: <http://www.waquarium.org>.

### Aquarium After Dark

August 24th 7:00 to 9:00 p.m.

Do fish snooze? Come down to the aquarium for an after-dark flashlight tour. Youngsters must be accompanied by an adult. \$7 for adult, \$6 for child (\$6/\$5 for members).

### Exploring the Reef by Day

Saturday, August 18th, 8:00 to 10:30 a.m.

Explore shoreline, reef flat, and tidepool habitats with the experts. Participants must provide their own transportation to field sites. Minimum age is 5 years. Youngsters must be accompanied by an adult. \$8 for adult, \$7 for child (\$7/\$6 for members).

### Kahuku Shoreline Hike (for Adults)

Sunday, August 19th 8:00 to 1:00 p.m.

This hike along Kahuku shoreline introduces the ecology of intertidal benches, beaches, and dunes, and the geology of this coastline's fossil limestone. \$10 per person (\$8 for members).

## DLNR — Division of Aquatic Resources

### Brown Bag Lecture Series — noon to 1:00

**Chris Kelley**

**August 16, 2001**

*Bottomfish Management in the main Hawaiian Islands, How Are We Doing?*

**Bill Walsh, Leon Hallecker, et alia**

**September 20, 2001**

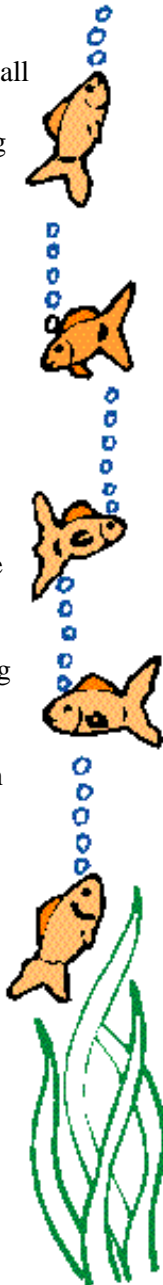
*West Hawai'i Reef Fish Studies: Has Designation of No Take Areas Had an Effect?*

All Brown Bag Lectures will take place at DLNR's Board Room, 1151 Punchbowl Street, Room 130. For more information contact Athline Clark at (808) 587-0099 or visit: <http://www.state.hi.us/dlnr/dar/brownbag.htm>

## Mermaids of Hawai'i

**August 10th and 11th, 8:00 p.m.**

Come see the 31st annual summer water show, "Rainbow Magic," on the second floor of the Holiday Inn Waikiki, 1830 Ala Moana Boulevard. Great family entertainment, with synchronized swimming set to modern, Hawaiian, and classical music. For more information, contact Alice Roberts at phone: 538-3255; e-mail [mermaidshi@aol.com](mailto:mermaidshi@aol.com).



# Fish Auction

By Lauren Collins

In the early hours before dawn on a Saturday morning it would seem as though most of the world should be sleeping. However, the dark sky can be deceiving to those uninitiated into the world of Honolulu's Fish Auction. Gathering in front of 117 Ahui St. at Kewalo Basin on Saturday, July 22nd, MOP took a journey into that territory. Rubbing sleep from their eyes, they arrived just in time for the 5:30 a.m. starting bell. It was astounding to realize that the workers had already been up for hours unloading fish and setting up.

Upon entering the auction, one has to push through a wall made of heavy strips of plastic that holds the cold in and keeps the heat and the flies out. The floor is lined with rows and rows of fish covered in ice and lying on metal pallets. The pallets are low to the ground and can be moved easily from one location to another with hand trucks.

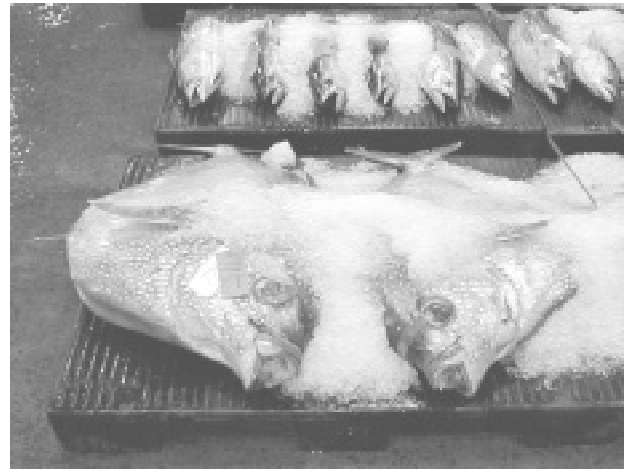
A variety of fish of all sizes, shapes, and colors can be found. The selection varies from day to day, sometimes even including creatures such as sharks. Some of the most prevalent fish sold at the auction are the ahi, or yellowfin (*Thunnus albacares*), and the bigeye (*Thunnus obesus*) tunas, as well as the aku and broadbill swordfish (*Xiphias gladius*). The fish are taken very good care of, because any type of damage can make them lose value.

Before the fish are laid on the pallets to be sold, they are tagged with the name of the boat that caught them, as well as their weight in pounds. When they are purchased, a ticket representing the buying company, as well as the price it was purchased for, is placed on the tag. Most of the fish come from Hawaiian fishing boats fishing in local waters. A board posted near the entrance of the room lists the boats that have brought in fish that day.

The first fish to be sold are the tuna. A slit is cut above their tail so that the buyers can test the quality of the fish that they are planning to purchase. Each buyer inserts his hand into the fish and removes a piece of flesh to examine it more closely. They squish the meat in their hands to test for firmness, oil or fat content, texture, color, smell, and even sometimes taste. Fish with the highest quality go first, to be made into sushi and sashimi. Many of the best fish don't even make it to the auction — they are consigned almost immediately off the docks.

The fish are sold individually, and each is usually auctioned off in less than a minute. The auctioneer starts with a certain price per pound, and then the buyers begin bidding. Overall it is a fairly silent affair, with the communication being done through body language. As the auctioneer moves down the rows the purchased fish are quickly carted off and replaced by a pallet of new unsold fish. Most of the buyers are from local markets and restaurants. The fish sold in the morning can easily end up in a dinner that night.

After being sold, the fish are quickly loaded onto the



A pair of opah waiting for the auctioneer.

buyers' ice-laden trucks heading to destinations throughout Hawai'i, although others go as far as Japan. They are kept covered in ice to ensure freshness, and, since they are never frozen, constantly need fresh coats of ice.

Recently the FDA has increased health regulations, causing a smaller auction in Hilo to shut down. Now, the Honolulu Fish Auction is the only place to see such an event in Hawai'i. The United Fishing Agency has run the fish auction successfully for over 20 years. They make sure that things always run smoothly. The floor is constantly hosed down to get rid of waste and any dirt. Although most of the purchasers have a commercial license, anyone is able to buy a fish.

Visitors are welcome, although they must stay out of the way of the carts that are constantly propelling pallets of fish across the floor. Currently, plans are underway to move the auction to Honolulu's proposed Commercial Fishing Village on Pier 38, which would make the auction even more visitor friendly. The auction is held Monday through Saturday, beginning at 5:30 a.m. and concluding when all the fish are sold, which is usually around mid-day. The Honolulu Fish Auction was a great way for all of the MOPers to learn a little bit more about where the fish you purchase in the supermarket comes from. September will feature our visit to the Pacific Ocean Producers.



The group of bidders follows the auctioneer from fish to fish.



# Spring 2001 Interns

by Brian Richardson and Lacy Lynn

In spring 2001, UH Mānoa MOP placed four internships with the Pilot Biotechnology Interns Program (PBIP) and two with the Whale Sanctuary. Sherwood Maynard, MOP director, pointed out that “The basic idea behind the internship program is that if Hawai‘i is going to diversify its economy, it has to expand the skills of the workforce.”

The four students with PBIP were engaged in four very different projects at biotechnology industry sites around Oahu.

Jill Dean, a Mānoa MOP student, worked at the Oceanic Institute’s Feed Program where she investigated the gut contents of the Pacific white shrimp, *Litopenaeus vannamei*, to determine its dietary habits. Jill conducted her experiments using a microscope equipped with a digital camera and epifluorescence. Analyzing the pictures for the types and size ranges of phytoplankton ingested, she hoped to better understand what these shrimp consume which will lead to better shrimp feed formulations and cost efficiency. Jill’s mentor was Dr. Olivier Decamp.

Ricelle Agbayani, who just graduated from UH Mānoa, worked at the Hawai‘i Agricultural Research Center. In her internship, she studied green fluorescent protein injected into papayas, hoping that this process could be used as a tool to track pathogens in the papayas. Fluorescent protein was used because it was a visible means to detect the success of the injection. Ricelle’s mentor was Dr. Judy Zhu.

Lauren Hirao, a senior in Biology, worked at the Hawaii Biotechnology Group. In her project, Lauren studied Dengue Fever, a virus which is transmitted by mosquitoes, and in particular created and tested a vaccine on mice. One of skills that Lauren obtained, as she says, was “how to sacrifice mice using a pencil. It’s not for faint-hearted people,” she quickly added. Lauren’s mentor was Dr. Michael Lieberman.

Christopher Lai-Hipp, a student at Kapiolani CC and UH Mānoa, worked at Radiant Research for the first part of the semester and moved to the Hawai‘i



Ricelle moving samples for her study of papaya.

Agricultural Research Center for the last part. This intern project focused on helping to test pharmaceutical drugs to acquire FDA approval. In the process, over 4,000 compounds were tested, five were tested on humans, and only one was ultimately approved. Christopher’s mentor at Radiant was Jason Lefringhouse. At HARE Chris assisted with a study to define the papaya genome with Dr. Roy Ming.

Two other interns, Michele Quesada and Venesse’ Melendrez, assisted the Oahu office of the Hawaiian Islands Humpback Whale National Marine Sanctuary with their annual whale count, which occurred in the middle of February. The whale count involves hundreds of volunteers from around the Hawaiian islands, who collect data during a four-hour period that is used to track whale activities and estimate their population. While whales can be seen in Hawaiian waters from early September through to late May, the peak migration is in February and March. Michele, a MOP student at LCC, is using this project for her MOP Certificate and made a presentation at the MOP Student Symposium held in May of this year.



Jill (to the right), helping Olivier Decamp (left) and Gary Karr (center) of the Oceanic Institute analyse the diet of the Pacific White Shrimp to better understand their feeding patterns.



Lauren working on a vaccine for Dengue Fever.

# Maritime Archaeology on Lana'i

by Brian Richardson

On Friday, July 13th, students from this summer's Lana'i Island Shipwreck Expedition, otherwise known as the Maritime Archaeology Techniques course (ANTH 668 / OEST 668), met in the Marine Science Building to present the results of their work.

The Maritime Archaeology Techniques course, which is a flagship course for the UH Maritime Archaeology and History Graduate Certificate Program, was once again taught by Hans Van Tilburg, a graduate student with the history department at UH, a frequent lecturer, and MOP familiar.

The course began at the Mānoa campus of the University of Hawai'i, where students were trained to use a wide variety of tools and instruments, and were taught important archaeological and analysis skills.

Following these preliminary days in the classroom, the group travelled to the north shore of the island of Lana'i to research the maritime cultural resources of Shipwreck Beach. Students and staff camped at Awalua, a remote site for 11 days, from June 24th to July 4th, while

investigating some of Hawai'i's historic 19th and 20th century wreck sites. This is the first time areas of Lana'i's fringing reef have been surveyed in any systematic manner. As Hans has pointed out in earlier presentations, to date there has never been a serious cultural survey for these elements of Hawai'i's maritime past.

The students split into three teams. The first team, headed by MAH alum Don Froning, was called "Don's misfits." The second team, headed by Suzanne Finney, another MOP alumna, was called "the lost patrol." The third team, headed by Meagan Moews, who is also a MAH alumna, was called "lau-wiliwili-nukunuku-'oi'oi," which everyone quickly shortened to the "Iwno." The students also received invaluable help from Linda Harrington, the expedition's cook, and MOP alum Jeff Kuwabara, who was in charge of water safety.

On July 13th, following the field trip and the analysis of the data back at UH Mānoa, the final presentations were given.

Ken Corbett began the presentations by describing the survey site. The north shore of Lana'i is not easy to reach by land, and hazardous to reach by sea. There are very few paved roads on Lana'i, and most of the trip from the airport to the shore was over dirt and rocky roads. The students surveyed almost nine miles of the beach. Ken noted that the combination of unpredictable and strong winds, of strong currents, and a shallow, fringing reef help explain why the north shore of Lana'i has been such a common

place for ships to wreck.

Jeff Adams then described the maritime history of the area — a maritime cultural landscape. The goal here was to consider all of the factors contributing to the site, such as trade patterns, weather patterns, tides, resources, cultural practices, economic activity and so on. What was happening on the shore is as much a factor as what was happening in the ocean. All of these factors help explain not only why ships were wrecked, but also why ships were in the area to begin with. Of course, not all of the shipwrecks were dramatic losses. As Jeff pointed out, beginning in the late 19th century, many old or damaged ships were intentionally abandoned and allowed to wreck off of Lana'i. This practice has been stopped, although ships continue to stop at the beach unintentionally.

Trisha Drennan described the first days of the fieldtrip, which, she noted, were following up on a previous maritime archaeology trip to Shipwreck Beach. While the first day was taken up with setting up the camp, the second day was spent producing a general survey of the beach and using hand-held GPS instruments to locate various sites that would become the focus of later study. Distances were computed, baselines were established, maps were produced, and the students went to work on the beach and in the water.

Jennifer Singleton described the measured sketchings that the students made in the water. The drawings were made on tablets, and were designed to capture specific objects. The objects were also



Unidentified ferro-cement wreck at Shipwreck beach, on the north coast of Lana'i. Photo by Hans Van Tilburg.



Scattered debris from an unknown ship, with a boiler and an engine offshore. Photo by Hans Van Tilburg.

located relative to the baseline, so that different objects could be located in the larger site. After a day's work, the crews would consolidate all the data collected in their notebooks, which could then be taken back to the lab for further analysis.

Danielle LaFleur summarized the results from her team, "the lost patrol." Objects were located, drawn and, if possible, photographed. Some of the ships that were found were modern (they had permit stickers, fiberglass rudders, and so on). In a place like this, one of the problems is in determining what pieces fit with what ships. There are fasteners and piles of wood everywhere.

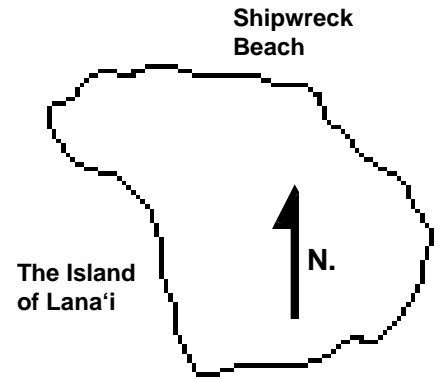
Ryan Ashton then summarized the results from his team, "lau-wiliwili-nukunuku-'oi'oi," who studied, among other things, a pool that, while initially thought to be for aquaculture, was in fact a keiki pond. The primary ship that the team studied, which dated from between the 1930s and the 1950s, was presumed to be either an oiler or a water tanker. Ryan noted how weather conditions and ocean movements could move very large pieces of the ship around. As the ship was being studied, the constant pounding of the waves also had to be contended with.

Following Ryan, Eric Johns summarized the results from "Don's misfits". They also found a wide assortment of flotsam and jetsom, including containers, flotation devices and surfboards. The team found a large boiler and double-compound engine from a steamship.

Kelly Gleason discussed the findings from the survey. The groups all tackled separate sites, which taken together suggested the importance of Shipwreck Beach as a maritime archaeological site. As the different pieces of ships were located and described, it became possible to connect the different pieces together, and not only to help identify the different pieces, but also to help identify the different ships.

One of the ships that was discovered, according to Stephanie Mulick, was the S.S. *Hornet*, which became an inter-island shipping vessel in 1926. The ship was dismantled and intentionally beached on Lana'i at the end of 1927. Most of the wooden hull likely disintegrated, but many of the metal components, from engine parts to fasteners, have survived.

Some of the recommendations that were made, which were presented by Veronika Knierim, included the need to collect and organize much more local oral history about the beach. Many people have lived in the area all of their lives, and are an invaluable source for further archaeological research. Another important recommendation was to do further archival research, especially in naval archives, to determine the identity of the ships in the area and help explain why the ships ended up on the beach. Finally, Veronika pointed out that the current survey was a non-intrusive survey, and that if archaeological technology improves, it may be appropriate to



carry out intrusive surveys on some of the sites. At this point, however, it is better to leave the sites undisturbed.

Hans Van Tilburg, the instructor for the course, offered the closing remarks. He emphasized again the variety and intensity of shipwrecks in the area. But Shipwreck Beach is not the only place to find shipwrecks, and it is important for a comprehensive inventory of submerged archaeological sites to be created.

One of the big surprises, for Hans, was the number of bombs, and the evidence of bombings, that could be found on the beach. The Navy's use of Hawaiian waters for military exercises has been a long-term, state-wide issue, and as archeologists it is important that this never be forgotten. As he ended, Hans described the experiences on Lana'i, and in particular the helpfulness and hospitality of the people on Lana'i.

Stay tuned for next summer's course, which may bring students back to this treasure trove of archaeological fieldwork. A report of this year's fieldtrip is also being prepared. A copy will be made available in the MOP library, and anyone who is interested in obtaining a copy should contact Hans at <hkvant@hawaii.edu>.





# Shark Chum

by Robin Quijano-Reuse, UHM MOP Student Coordinator

On Sunday, July 15th, a group of MOP students (Jessica Brayton, Susan Cooper-Alletto, Jill Dean, Michelle Eckerman, Brian Greene, Keith Kaneko, Michelle McGurr, and myself) and friends of MOP students (Collen, Guy, Jesse, Mark, Nick, and Valerie) helped by doing Hammerhead Shark (*Sphyrna lewini*) Tagging Research. Kanesa Duncan, our group leader, and two other assistants (Jim and Eric) helped throughout the evening. Our large group split into three smaller groups, and we headed to Kaneohe Bay in three boats. The boats went to different areas of the bay; one to the south, one to the middle, and one to the north.

I went to the north side of the bay with Kanesa, Jessica, Mark, Valerie, and Nick. I felt great while we motored over to our spot, but when we anchored my equilibrium took a turn for the worst. Kanesa explained all of the steps that would occur to catch and tag the hammerhead pups as feelings of dizziness and nausea began to wash over me. When Kanesa finished her

explanation, she passed out the handlines, Mark cut the squid, and Jessica passed pieces of the squid to everyone. We all baited our hooks and let them over the side. Everyone was in good spirits, chatting and laughing, while I felt worse with each passing minute. A half-hour passed and no one caught anything, so we moved to another location. Needless to say, I was relieved to be moving again.

In the next spot, we anchored, baited our hooks, threw them over, and waited again. Five minutes passed, and I caught a pup. While looking down over the boat and pulling up my hand line, it finally happened, I got the dreaded ocean disease. We got the pup on board and took the hook out. Kanesa then proceeded to call out letters and numbers, Jessica frantically wrote everything down, Mark weighed the hammerhead, Nick watched in awe, and Valerie screamed and got as far away from the pup as she could. After Kanesa released the pup back into the water, my stomach let loose a new flavor of shark chum. A

couple minutes passed while the chum slowly drifted to the bottom, then everyone else started to catch pups, one after the other. I didn't fish anymore, I just hung over the side of the boat feeling lousy. The others weighed and measured 15 hammerheads. A few got away while students were trying to bring them on board. I was grateful when Kanesa said our thirty minutes were up and we were going to be moving to calmer water.

At our last spot, I still felt woozy. Moreover, we weren't catching any hammerheads. Kanesa asked if I had any more chum left over, and everyone started laughing. FINALLY, the time had come for us to head back to Coconut Island. The two other groups were already docked when we got in. I was delighted to be on land; the others were contented and tired. We all ate some snacks and talked story to see how many hammerheads each boat caught. One boat caught 40 pups and the other caught 17 pups. I was pleased to hear that no one else got the dreaded ocean disease.

The evening ended with smiles and jumper-cables. The next hammerhead tagging will be held Sunday, August 19th. Contact the UH Mānoa MOP office for more information.

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## Bits and Pieces

For the first time in 140 years, the 30-ton steam engine of the shipwrecked Civil War Ironclad, USS *Monitor*, broke the surface of the Atlantic Ocean. The NOAA team and scores of Navy divers worked around the clock for 28 days to free the engine from 240 feet below the surface of the ocean. The engine was placed on a barge and will be brought to the Mariners' Museum where it will be placed in a 93,000 gallon steel tank so conservators can begin a 10-year process to preserve the historic engine. For more information, visit the Mariners' Museum web site at <http://www.mariner.org/monitor>.

Kevin Johnson, a geologist with the Bishop Museum, and a group of other scientists have been researching Kilauea's underwater volcanic activity. What they found was a rugged landscape that indicated the often catastrophic, if hidden, activity of Hawai'i's most active volcano. For more information, visit the website <http://www.punaridge.org>.

Congratulations to the Waikiki Aquarium, whose virtual tour was selected as one of the "Digital Dozen" by the Eisenhower National Clearinghouse for Mathematics and Science Education (ENC) website. For more information on the ENC, visit their web site at <http://www.enc.org>. The Waikiki Aquarium's virtual tour can be accessed through <http://www.waiaquarium.org>.





## New Contact Numbers

David Pence, Diving Officer

Direct Line (voice mail) .....956-6420

Cell Phone.....342-8871

Home (after-hour emergencies,  
party invitations) .....239-4418

E-mail: .....<dpence@hawaii.edu>

Kevin Flanagan, Assistant Diving Safety Officer

Direct Line (voice mail) .....956-6617

E-mail: .....<kflanaga@hawaii.edu>

Diving Safety Office

Main line (rings all offices

— no voice mail).....956-9643

UH Diving Safety Fax number..956-6592

UH Diving Medical Officer

Hawai'i Hyperbaric Treatment

Center.....587-3425

The area code for all numbers is (808)

Mailing addresses are unchanged



# The Diving Safety Office

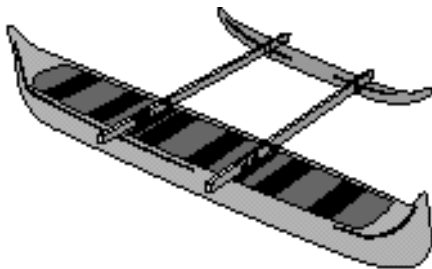
The UH Diving Safety Program needs to  
statistics on our diving activity to

If you have any dive logs from the  
000 please send them to us ASAP.  
would like to be able to accurately  
flect the activity and the size of our  
program. If you need an updated log  
form you can find it on our web  
site at <<http://www.hawaii.edu/ehso/diving/uhlog.xls>>. You can  
fill it out, save, and e-mail it as an  
XL file. For more information,  
contact Kevin Flanagan, Assistant  
Diving Safety Officer at the  
University of Hawai'i, at phone:  
(808) 956-6617; e-mail:  
<kflanaga@hawaii.edu>.

## MOP Courses at Windward Community College

**Anthropology 330**  
(cross-listed Hawaii/Pacific 330)  
*Science & Technology in Pre-  
Contact Hawai'i*

The course, which combines a study of  
Hawaiian voyaging and ethnobotany,  
will be taught Friday afternoons, 2:30 -  
5:00 at Imiloa, room 123. For more  
information, contact the instructor at e-  
mail: <hodgson@hawaii.edu>.



**Biology 200 Coral Reefs**

Introduction to the biology, ecology and  
geology of stony corals and the reef  
structures they build. Emphasis will be  
on Hawai'i's coral reefs, but  
comparisons will be made among reefs  
from other areas. There are two sections  
of BIOL 200 scheduled: Tuesdays and  
Thursdays, 8:15 to 9:30 a.m. or  
Wednesday evenings, 6:00 to 9:00 p.m.

**Biology 200L Coral Reef  
Laboratory & Field Studies**  
(2 credits)

Laboratory and field studies of the  
biology, ecology, and geology of stony  
corals and the reef structures they build.  
The course meets on Saturdays, 9:00  
a.m. to 3:00 p.m. and is an excellent  
preparation for students interested in  
QUEST. We will do the species IDs as  
well as provide an introduction into reef  
survey methods (among other things).

## Fall 2001 Courses

**Dr. Craven's OEST 480**  
— *Sea Systems I* —  
has been reinstated at  
Mānoa for this Fall.

**Dr. Julie Brock's ZOOL**  
**691H has been**  
**cancelled.**

For more information on the WCC  
Biology courses, e-mail David  
Krupp at <kkrupp@hawaii.edu>



## EMPLOYMENT

### East Maui Watershed Partnership Coordinator

Please send applications to: Director of Human Resources, Research Corporation of the University of Hawaii, 2530 Dole Street, Sakamaki Hall D-100, Honolulu, HI 96822. Electronic resume packets may be submitted via <<http://www.careergiant.com>>. Applications will be accepted until August 13.

### Observer Biologists

Saltwater Inc. is currently seeking eight more candidates for our Sept. 3, 2001 training class. Observers need a Bachelor's degree with a major in one of the biological sciences from an accredited four year college or university with at least 30 semester hours in any combination of scientific or technical courses, of which at least 6 semester hours are in marine science or fisheries. Observers need to be physically fit and certified by a physician to work as an observer aboard Hawaii-based Pelagic Longline Vessels. Observers also must be U.S. citizens, or have legally resided in the United States continuously for at least the past five years. Please call Randy Munro at 536-4407 for more information or to receive an application form.

### Public Policy Representative The American Institute of Biological Sciences Washington D.C.

Public Policy Representative for the nonprofit scientific organization, the American Institute of Biological Sciences <<http://www.aibs.org>>, and one of its member societies, the American Society of Limnology and Oceanography <<http://www.aslo.org>>. This is a new full-time salaried position, created by joint funding from AIBS, ASLO, and a number of other members in the AIBS federation of more than 80 scientific societies and organizations. The successful candidate will be a broadly trained scientist with demonstrated effectiveness in public policy circles. The individual will work with the Executive Directors and other AIBS/ASLO staff, including the existing AIBS Senior Public Policy Representative, to track, analyze, report on, and act upon legislative, regulatory, and other public policy issues in the U.S. and Canada. Subject areas cover most areas of organismal and integrative biology (AIBS), with a focus on aquatic sciences (marine, estuarine, fresh water, and wetlands; ASLO). Position will remain open until filled. For more information, visit either of the websites above.

### Aquarium Maintenance

Marlee Breese is looking for SCUBA certified students to help maintain the aquarium at the new Duty Free Shoppers building. For more information, contact Marlee at e-mail <[mbreese@lava.net](mailto:mbreese@lava.net)>.

### Physics Teacher McKinley High School

McKinley High School is in need of a qualified Physics teacher for this school year. For more information, contact the school at 594-0400. The position involves three sections of PSCS and two sections of Physical Science.

### Oceanit Inc. Electronics

Oceanit Inc. is a major local consulting firm which conducts environmental studies and monitoring. They are seeking a recent graduate with electronics experience to help them design, fabricate, and repair unique circuits and equipment to support their program. The position is full time and could lead to permanent employment. Starting salary would be between \$25,000 and \$30,000. For more information, contact Robert Bourke at phone: (808) 531-3017; e-mail: <[rbourke@oceanit.com](mailto:rbourke@oceanit.com)>.

## VOLUNTEERING

### Hanauma Bay Education Program

Volunteers are needed to staff beach desk and visitors' center. Duties include leading interpretive talks, answering general questions and promoting proper environmental etiquette. For information contact Jennifer Barrett at 397-5840 or e-mail: <[jjbarrett@msn.com](mailto:jjbarrett@msn.com)>.

## SCHOLARSHIPS

### UH Sea Grant

The Hawai'i Sea Grant Program has received one-time funding from NOAA to foster student careers in environmental fields for Native Hawaiians and Pacific Islanders. The primary focus of these funds is to enhance education, training, and research opportunities for students that will facilitate their entry into careers in environmental fields. For more information on the program, visit <<http://www.ed.gov/ocr/minorityinst.html>>. Proposals must be received by 5:00 p.m. on August 8, 2001. Proposals (original and six copies) should be submitted to: Dr. Gordon Grau, Director Sea Grant College Program, University of Hawai'i, 2525 Correa Road, HIG 238, Honolulu, HI 96822.

### UH Symposium 2002 Project Scholarship Fund

Awards will be based on academic qualification and the quality of proposed research, study or research training. Applicants must ensure that their proposed research is feasible within the proposed academic time-frame. Any undergraduate working on a creative, scholarly, or research project under the supervision of a faculty member or other expert can apply. Successful applicants will receive a \$500 stipend for a year. For more information, contact the UH Mānoa MOP office. Awardees are required to present their work at a Symposium on April 27th, 2002.

## INTERNSHIPS

### Oceanic Institute Internship

Opportunities in research programs and other capacities. To apply, send proposal letter indicating program preference, available time, and if it is for school credit. Send your proposal to The Oceanic Institute, Attention Gary Karr, Training & Education Coordinator, Makapuu Point, 41-202 Kalaniana'ole Hwy, Waimanalo, HI 96795-1820; fax: 259-5971; e-mail: <[gkarr@teligentmail.com](mailto:gkarr@teligentmail.com)>. For more information, visit the Oceanic Institute website at <<http://www.oceanicinstitute.org>>.

### The Friends of He'eia State Park

The Friends of He'eia State Park (a nonprofit environmental organization in Kaneohe) is looking for undergraduate students for Summer and Fall Semester 2001 as environmental education interns. Interns' duties include developing, teaching, and supervising classes in various fields such as marine biology, ethnobotany, geology, and environmental preservation. Interns may be eligible to receive a stipend and/or credit hours. Please contact them at 247-3156 for more information.

### United Fishing Agency

United Fishing Agency is offering internship opportunities for students interested in fish wholesaling, marketing, etc. For more information contact Brooks Takenaka, phone: 536-2148; e-mail <[btakenaka@netscape.net](mailto:btakenaka@netscape.net)>.

### Hawai'i Public Radio Research Assistant Internship

The unpaid internship is available year round in six-month increments. Training begins September 2001. HPR has two internships available.

The first internship is a Research Assistant for *Pacific Currents*, which is a half-hour weekly radio news magazine broadcast on Hawaii Public Radio. It explores science, conservation, technology, culture and the environment in the Pacific Region. Production of the magazine is a cooperative effort between Hawai'i Public Radio and Environment Hawai'i. The intern will assist editor and producer of *Pacific Currents* with research and fact checking. Candidate will also help maintain appointment, interview and production calendar, as well as assist in the collection of news clippings and background information.

The second intern will help maintain the HPR webpage, including the community calendar and the news department website. The position also involves archiving feature materials.

For more information on either of these internships, contact Kayla Rosenfeld, Newsroom Director, at phone: (808) 792-8250; e-mail: <[hprnews@lava.net](mailto:hprnews@lava.net)>.

The Student Conservation Association has a listing of internships available across country. Visit their web site at <<http://www.sca-inc.org>>.

# CONFERENCES & CALLS FOR PAPERS

## **Hawaii Congress of Planning Officials** **September 12th to 17th, 2001 - Honolulu, HI**

The conference, being held at the Hilton Hawaiian Village, is entitled "Sustainable Communities: One Place, One People, One Vision." The conference will include exhibits, guest speakers and workshops. For more information, contact the conference organizers at e-mail: <prc@hawaii.rr.com>.

## **Society for Hawaiian Archaeology Conference** **October 5th to 7th, 2001 - Maui, HI**

The conference, which will be held at Maui Community College, will cover a wide array of topics relating to archaeology throughout Hawai'i. A fieldtrip is also planned for October 5th. For more information, contact Theresa Donham at e-mail: <tee@maui.net>.

## **Asia-Pacific Marine Biotechnology Conference** **October 21 to 24, 2001 - Honolulu, HI**

The conference, co-sponsored by the Asia-Pacific Society for Marine Biotechnology (APSMB) and the Marine Bioproducts Engineering Center (MarBEC), will include papers on aquaculture biotechnology, algal biotechnology, photobioreactors, genetics, ecology and marine microbiology, marine natural products, environmental biotechnology and extremophiles. Visit the conference web site at <<http://www.MarBEC.org/APMBC>> for additional details and an on-line registration form. Early discounted registration rates apply until August 15, 2001. For more information, e-mail: <apmbc@marbec.org>.

## **Wetlands Regulatory Workshop** **October 29 to November 2nd, 2001 - Atlantic City, NJ**

This workshop will investigate contemporary wetland regulatory issues. The workshop strives to increase dialogue and foster partnerships between federal, state, and local regulatory agencies, non-governmental organizations and the regulated community. Abstracts are due by June 29, 2001. For more information, e-mail <spagnolo.ralph@epa.gov>.

## **Going to Extremes: Seabed Mining and Biotechnology** **October 31st to November 3rd, 2001 — Hilo, HI**

Being held at the Hilo Hawaiian Hotel, the conference will present cutting-edge advancements in seabed exploration, development, and research specific to marine minerals. For more information, phone: 956-9772, or visit <[http://soest.hawaii.edu/Hurl/umi\\_2001](http://soest.hawaii.edu/Hurl/umi_2001)>.

## **Oceans 2001: An Odyssey of Ocean Exploration** **November 5th to 8th, 2001 — Honolulu, HI**

Conference and exhibition will be held at the Hilton Hawaiian Village. Topics will consider advances in science and engineering in the ocean environment or address ocean economic, policy or education issues. The advance registration deadline is September 24, 2001. For more information, e-mail: <oceans@jspargo.com> or visit the conference website at <<http://www.Oceans2001.com>>.

## **Western Society of Naturalists** **November 8th to 12th, 2001 — Ventura, CA**

We will hold symposia, contributed paper and poster sessions at the Clarion Ventura Beach Hotel in Ventura, CA. In addition to a variety of symposia, contributed oral papers, and, of course, the AAH & Presidential Address, this year's meeting will also feature a student poster session and a field trip to the Channel Islands. For more information, visit their website at: <<http://www.wsn-online.org>>.

## **Environmental Management of Enclosed Coastal Seas** **November 19th to 22nd, 2001 — Kobe, Japan**

The 5th EMECS conference will provide a forum for scientists, government officials, industry representatives and members of the general public from all parts of the world to come together to discuss the achievements made so far in the environmental management of enclosed coastal seas and to determine what needs to be done from this point on. Visit the conference website at <<http://emecs2001.jtbcom.co.jp/en/index>>.

## **Second International Conference on Marine Ornamentals: Collection, Culture & Conservation** **November 26 - December 1 — Lake Buena Vista, FL**

Conference will be held at the Wyndham Palace Resort and Spa, in Walt Disney World Resort. For more information, visit <<http://www.ifas.ufl.edu/~conferweb/MO>>.

## **Ocean Sciences 2002** **February 11th to 15th — Honolulu, HI**

Abstract Deadline is November 1st, 2001. Sponsored by the American Society of Limnology and Oceanography the American Geophysical Union. For more information, visit <<http://www.agu.org>>.



## **Solutions to Coastal Disasters Conference 2002** **February 24th to 26th — San Diego, CA**

Conference will bring together coastal planners, managers, scientists, engineers, geologists, economists, oceanographers, meteorologists and others to exchange information relating to coastal disasters. The four main conference tracks are Coastal Storms, Seismic Effects, Impacts on Climate Change and Shoreline Change. For more information, visit <<http://www.asce.org/conferences/cd2002/index.html>>.

## **Phytoplankton Productivity** **March 18th to 22nd, 2002 — Bangor, U.K.**

The conference will include talks on the present state and the future of major topics in both freshwater and marine plankton productivity. For more information, please contact the organizers at e-mail: <conf2002@bangor.ac.uk> or visit the conference web-site at <<http://plankton-productivity.org>>.

## **American Society of Limnology and Oceanography** **June 9th to 14th, 2002— San Diego, CA**

The ASLO 2002 Summer Meeting will provide a forum for researchers to highlight recent advances linking the various sub-disciplines within limnology and oceanography and to examine the potential for new linkages with scientific disciplines that extend beyond the aquatic sciences. For more information, visit <<http://aslo.org/forms/victoria2002.html>>.

## **PACON 2002** **July 21st to 26th, 2002 - Chiba, Japan**

PACON is now accepting papers for next years conference. Submission deadline is February 15, 2002. For more information, contact PACON International, P.O. Box 11568, Honolulu, HI, 96828. Fax: (808) 956-2580; e-mail: <pacon@hawaii.edu>. PACON's website is: <<http://www.hawaiiie.edu>>.

## **Western Pacific Geophysics Meeting** **November 9th to 12th, 2002 — Wellington, New Zealand**

Check the American Geographic Society web site for more information: <<http://www.agu.org>>.

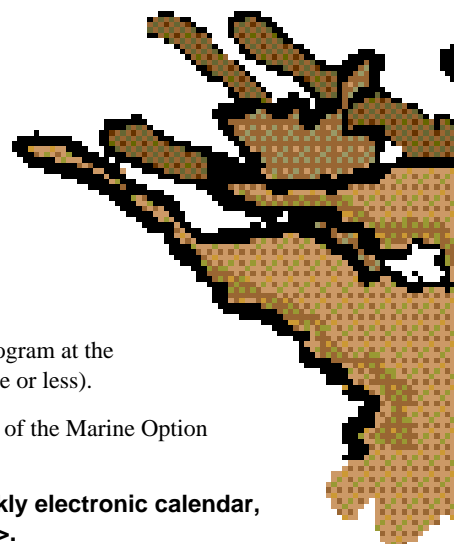


# Contents

Welcome Back .....	1
MOP Activities .....	2
Events Around Hawai'i .....	3
Biotech Industry Interns .....	3
Fish Auction .....	4
Spring 2001 Interns .....	5
Maritime Archaeology Field Course to Lana'i .....	6 to 7
Shark Chum .....	8
Bits and Pieces .....	8
The Diving Safety Office .....	9
Fall 2001 Courses .....	9
Employment, Scholarships, Internships & Volunteering ...	10
Conferences .....	11

## Coming up in the next issues...

MOP Coordinators Meeting in  
Kauai  
Summer Interns



*Seawords* is the newsletter of the Marine Option Program at the University of Hawai'i. It is published monthly (more or less).

Opinions expressed herein are not necessarily those of the Marine Option Program or of the University of Hawai'i.

**If you would like to subscribe to our bi-weekly electronic calendar, please e-mail us at <[seawords@hawaii.edu](mailto:seawords@hawaii.edu)>.**

Suggestions and submissions are welcome. Submissions can include articles, photographs, art work, or pretty much anything that would be of interest to the marine community in Hawai'i and around the world.

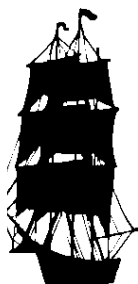
Our web pages are located at <<http://www2.hawaii.edu/mop>>.

Our e-mail address is <[mop@hawaii.edu](mailto:mop@hawaii.edu)>.

The *Seawords* staff are:

Brian Richardson (Editor),  
Lauren Collins (Assistant Editor),  
and Dr. Sherwood Maynard (*éminence gris*).

August 2001



Seawords • Marine Option Program  
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