

Sanctuary Advisory Council
Forty-seventh Meeting
Wednesday, January 17, 2007
1:00 p.m. to 5:00 p.m.
Honolulu International Airport
Inter-Island Conference Center

FINAL MINUTES

Attendance

Primary Council Members Present:

Cindy Barger, John Barylsky, Bob Bruck, Jim Coon, Bill Friedl, Lou Herman, David Hoffman, Becky Hommon, Eric Kingma, Marc Lammers, Teri Leicher, Sherrie Myers, Terry O'Halloran, Sara Peck, Jeanne Russell, Dale Sarver, Mike Stanton, Cheryl Sterling, Mark Young

Alternate Council Members Present:

Keeley Belva (for `Aulani Wilhelm), Hank Janpol, Steve Juarez, Jill Komoto, Liz Kumabe, Barbara Nowak, Adam Pack

Excused:

Athline Clark, Liz Corbin, Kimokeo Kapahulehua, Bill Kiene, Jerry Norris, Glenn Soma, Don Thornburg, Chris Yates

Others Present:

HIHWNMS: Christine Brammer, Mary Grady, Naomi McIntosh, Jean Souza, Jeff Walters, and Paul Wong

PUBLIC: Kathy Bryant, Randy Cates, Neil Sims, Leonard Young

Distributed Materials

- Meeting Agenda
- Table of Contents
- Final Meeting Minutes (05/18/06)
- Action Item Report
- Sanctuary Manager's Report
- State Co-Manager's Report
- Hawai'i County Report
- Honolulu County Report
- Maui County Report
- Aquaculture Working Group Report
- Draft FAQ – HIHWNMS Management Plan Review
- Draft Phase I Timeline – 5 Year Management Plan/Regulatory Review
- Draft Phase II Timeline – 5 Year Management Plan/Regulatory Review

- Draft Report on HIHWNMS 2002-2007
- Research Needs for Offshore Aquaculture Development in Hawai'i
- 2007 Council Member Directory

Call to Order

The purpose of this meeting is to introduce new members to the Council and continue planning efforts for the year.

Council Chair Terry O'Halloran called the meeting to order at 1:00 p.m. Teri Leicher took role.

Approval of Meeting Minutes

The minutes from the Council's September 6, 2006 meeting were read and approved at 1:20 p.m.

Public Forum

There were no public comments at this time.

Presentations

Kona Blue Aquaculture—Neil Sims, Kona Blue

Neil Sims provided background information on Kona Blue and the company's mission to expand the sustainable production of farmed fish. He addressed recent publications that warn of the decline of natural populations and the federal government's goal of aquaculture expansion. The presentation can be found on the website Kona-kampachi.com.

Kona Kampachi is the species *Seriola rivoliana*. Currently the company has six cages in a central grid, 14 anchors and mooring lines for stabilization, and is located .5 mile offshore on a sand bottom. Juveniles (5g to 100g) are now all reared in submersible nursery cages and then move to other cages. Growth offshore has exceeded expectations and so far over 475,000 fish are stocked in offshore cages.

The company conducts ongoing monitoring of their cages in relation to fish health, water quality, adjacent coral reef ecosystems, and marine mammal interactions. Water quality sampling and analysis is done by a third party, and there is a data repository at the harbor. To date the most significant interaction has been recurring bottlenose dolphins (between one and five individuals). The company monitors marine mammals and reports observations immediately to NOAA Fisheries and DAR. Whale activity that has been observed between 2005-2007 appears negligible: one between cages and another ailing whale resting in the cage area. Monk seals have been sighted around cages on two instances and were thought to be attracted by escapees. There are occasional instances of spinner dolphins passing within 100m.

Kona Blue wants to expand its market throughout the chain of Whole Foods stores. The company has 12.5 million in investment and 42 employees. Their

goal is to increase production without increasing fish densities by expanding their locations through technology and cage design. Their goal is to find another site with less exposure to the current.

The preferred expansion site is one to two miles north of their existing site and in the same depth profile of 200-250 feet. Another option is to move further west; however this area is more exposed to current. Makolea Point is the revised proposed expansion site (further north than original proposal). Kona Blue plans to use the following: (1) sub surface grid, similar to existing structure; (2) wider spread of cages, to minimize cumulative impacts; and (3) single or double-file across the current.

Discussion

Council members recommended looking at alternative sites outside of the sanctuary. Lou Herman recommended that the research committee and conservation committee evaluate siting criteria. Determining offshore aquaculture affects on marine mammal behavior at the site versus a control area is a complicated research project. Neil Sims stated that research could take a long time to determine effects and result in an insurmountable stumbling block. Concerns that were raised were water quality monitoring locations, total surface area of 240 submerged acres (more than double the existing project), length vs. width for mooring lines, and sound issues. Action: Terry encouraged the aquaculture working group and other committees to evaluate the proposed expansion and provide recommendations to management.

Whale Disentanglement Program—David Mattila, HIHWNMS

David Mattila provided the council with an overall update of the sanctuary's disentanglement program. The initial comparison of entanglement scarring is currently higher than in 2002. The sanctuary and NOAA Marine Mammal Health and Stranding Response Program have conducted health assessments and body condition of whales that have been entangled. This year's research focus includes the following: continue support of research on dive profiling and reactions to sound; support breath collection to determine pathogens; test assessment parameters; and continue in water, full body imaging for scarring and health assessment. In Hawaii, over 70 people were trained in five disentanglement training sessions. A website for entanglement reports is also being developed by the sanctuary team. In 2007, there have already been six confirmed entanglements, four of which were humpbacks (two on Oahu, two on Maui) one spinner dolphin and one bottlenose dolphin. The sanctuary staff have given disentanglement trainings in Baja and Alaska, where they were able to attach a telemetry buoy. In addition, David provided an update of his research on humpbacks in American Samoa. The feeding origins for this population are still unknown. Initial surveys of these islands indicate there is a possible similarity in distribution of whales as Hawaiian humpbacks (more densely concentrated in certain areas than others). David also stated that there have already been two confirmed shipstrikes in Hawaii this season, possibly three, one of which involved a calf.

Five-Year Re-proposal of the Sanctuary—Naomi McIntosh, HIHWNMS

Naomi discussed the five-year re-proposal to the governor and how the Management Plan Review (MPR) process has been divided into two phases. During Phase I the sanctuary will submit its existing management plan and regulations to the governor in September of 2007. Upon approval from the State of Hawai'i, Phase II will follow and may involve a full management plan review with a public scoping process if appropriate resources are allocated. The Phase I re-proposal will include a report on the accomplishments of the existing sanctuary and emerging issues as well as a report on an initial assessment of additional resources for possible inclusion within the sanctuary. The council will have the opportunity to provide input in this process. Naomi asked the council to think of ideas on how to improve this process, what resources to involve, and how to build in community involvement. Action: The council will follow up during the retreat on the re-proposal to the governor and the MPR and give input on the SAC's involvement in this process. The council will also have the opportunity to give comments to improve the documents that will be submitted to the governor.

Reports and Updates

Chair's Report:

Mr. O'Halloran asked the council members to review the Action Item Report (see attachment 1).

Sanctuary Manager:

Naomi McIntosh submitted a written report (see attachment 2).

Sanctuary Co-Manager:

No report was submitted. Sanctuary Co-Manager Dr. Jeffrey Walters distributed the new ocean outreach products to prevent and minimize collisions that included a sticker and brochure. He also notified the council that signs to reduce collisions were placed on the board for any comments. The sanctuary has also completed public service announcements about boater and whale safety.

Naomi also took a moment to introduce John Barylsky, the new NOAA Office of Law Enforcement (OLE) representative to the council and to thank them for their hard work and support.

Hawai'i County:

Sara Peck, Hawai'i County Representative, submitted a written report (see attachment 3).

Honolulu County:

Bill Friedl, Honolulu County Representative, submitted a written report (see attachment 4).

Kaua`i County:

No report was submitted.

Maui County:

Cheryl Sterling submitted a written report (see attachment 5).

Discussion

Jeff notified the council that the Boater Workshop will be repeated on Maui with the goal to improve attendance. The recommendation for vessel speed limits at 13 knots or less to minimize serious injury to humpback whales was discussed. Ideas on sending the boater safety brochure were brainstormed: fishing news, fishing shows, showboat traders, sporting good stores and tackle shops were all mentioned. Council members also suggested again that boat tour operators should go through a training curriculum. If they have been through training program with OLE it may help take the fear factor out of operating during whale season. Cindy Barger requested copies of brochures.

Sara thanked Nancy and Allen for participation in cultural awareness education at the Preserve America Community.

Conservation Committee:

Lou Herman, Conservation Committee Chair, did not have anything to report but discussed the Maui Pump Don't Dump issue and that there have been protests in front of the sanctuary and misquotes about loopholes distributed in flyers. The council discussed the huge progress that has been made in this issue over the last two years with two pump-out facilities in Lahaina and the pump-out truck in Maalaea. Action: The Executive Committee will discuss the Pump Don't Dump issue and determine whether further action is necessary.

Education Committee:

Jeanne Russell submitted a written report (see attachment 6).

Research Committee:

Marc Lammers, Research Committee Chair, did not have a written report but discussed the research committee meetings on aquaculture and on Farsounder that were held since the last council meeting.

Aquaculture Working Group:

Aquaculture Working Group Chair, Mike Stanton, submitted a written report (see attachment 7).

Unfinished Business:

Aquaculture Development response letter from John Corbin was just received and the Executive Committee will review.

Jeff discussed the composition of SAC and that the council should reconsider membership voting roles. Jeff will follow up with State partners to discuss their

voting roles. The Council Charter is due for an update in October but may be delayed to be in accordance with the MPR. Action: The Executive Committee will evaluate the composition of the council.

New Business

The Research Committee has drafted research priorities for offshore aquaculture in Hawaii base on evidence in other areas of the world (see attachment 8). There is a need to identify funding that is available and a need for peer-reviewed scientific literature on the subject. Jeff mentioned that the methodology that Justin is using on the Big Island will not be able to statistically infer anything besides gross changes.

Ideas for a more collaborative relationship with the aquaculture industry to determine solutions include involving the company to draft research ideas. Marc Lammers motioned to accept priorities as listed with their options. Jim Coon seconded the motion. Cindy Barger offered a friendly amendment to the document that these are recommended research priorities and not regulatory conditions. The council voted to accept this amendment.

Neil recommended that researchers from the council go out to the site and offered to set up a more extensive program within his staff of monitoring the site. He would like the council to be involved in designing research studies before and after the development to ensure studies are done properly by his company.

A discussion on aquaculture continued; main issues raised included: year to year site variability, a comparison between peer-reviewed research and site monitoring, and the need for involving the aquaculture industry in the Aquaculture Working Group discussions.

Action: The Aquaculture Working Group and Research Committee will further evaluate research priorities on aquaculture.

Public Forum

There were no public comments at this time.

Announcements

The annual retreat dinner will be held from 5:30-7:00 p.m. this evening. There will be a NWHIMNM forum on February 1st.

Adjournment

Council Chair, Terry O'Halloran, adjourned the meeting at 5:05 p.m.

Sanctuary Advisory Council
2006 -2007 Action Item Report

ACTION: The Chair asked for volunteers to serve on the Selection Committee to review applications that were received for the open seats on the Council. (9/6/06)

Status: Mary e-mailed a thank-you note the members who volunteered and solicited additional participation from other Council members. A total of 9 council members volunteered and ballots and criteria were sent out. New council members were selected in December 2006. (1/1/07) COMPLETE

ACTION: Mike Stanton asked the Council for Aquaculture Working Group liaison volunteers on the islands of Oahu, Maui, and Kauai. (9/6/06)

Status: Bob Bruck has volunteered for the island of Maui. Mary has sent out an additional e-mail inquiring about volunteer liaisons on 9/8/06.-- PENDING

ACTION: Mike Stanton also asked if the Aquaculture Working Group could share strategies with the Channel Islands Council. (9/6/06)

Status: Naomi will contact Bill Douros, West Coast Regional Superintendent, regarding the Sanctuary's efforts to address aquaculture in other west coast sanctuary sites. --PENDING

ACTION: The Research Committee will hold a meeting on constituent recommendations regarding the Superferry. (9/6/06)

Status: The Research Committee held a meeting with FarSounder on 11/27/06 to obtain information on forward-looking sonar. --Ongoing

ACTION: The Council will provide a historic record of SAC's exchange with Hawaii Superferry. (9/6/06)

Status: Mary will review the Sanctuary's files and draft a record of exchange. The Conservation and Research Committees will work on this record. A record of exchange was compiled in October and November of 2006. Mary will provide this record to the Conservation and Research Committees to review. -- PENDING

ACTION: The Council asked the Coordinator to distribute the draft position on proposed spinner dolphin rulemaking to the whole council for their comments and consideration. (5/18/06)

Status: Keeley emailed it to the Sanctuary Advisory Council members on 5/23/06. Marc Lammers is collecting comments and making the revisions for the Council's approval. (6/7/06) Edits were made to the position and the council voted and approved the final draft on 9/6/06. The Council's position was sent to Chris Yates, the Regional Administrator of the Protected Resources Division at NOAA Fisheries. (9/6/06) COMPLETE

ACTION: Marc Lammers will draft a position paper regarding the spinner dolphin regulations for the Research and Conservation committees to review. He will present it for the council's comments at the May council meeting. (3/16/06)

Status: Marc will work on drafting the paper. (4/7/06) Marc obtained comments and drafted the final version of the position for the Council to review on 9/6/06. (9/6/06) COMPLETE

ACTION: The Conservation Committee would address concerns about the lack of pump-out facilities in small boat harbors. (3/16/06)

Status: Council Coordinator will email the Conservation Committee the letter that was written by the council regarding pump out stations. Naomi will provide the committee with an update from the Sanctuary. The committee will develop a response to Pump Don't Dump. (4/7/06)--PENDING

ACTION: The council chair will send a letter to government agencies reminding them to send a representative or an alternate to the council meetings. (3/16/06)

Status: Council Coordinator will work to draft a letter for Terry to send out. (4/7/06)

ACTION: The SAC Chair asked to establish a fundraising working group. (1/12/06)

Status: A call with the director of NMSF, the SAC Chair, and Sanctuary staff was held on 27 February 2006. Naomi will provide the Council with an update on fundraiser opportunities. (9/6/06)--PENDING

ACTION: It was requested to invite a representative from NOAA General Council to a future meeting to give a presentation regarding information on vessel strikes. (1/12/06)

Status: Paul Ortiz, NOAA General Council representative, was invited to attend the May 18th and September 6th meeting, but could not attend due to a scheduling conflict. He will be invited to a Council meeting in the future. (8/31/06)--PENDING

Attachment 2

Hawaiian Islands Humpback Whale National Marine Sanctuary Advisory Council Manager's Report January 17, 2007

Council Updates

Council Performance Measure Tracking Plan and the Council Performance Measure Reporting Spreadsheet.

Council Coordinator Mary Grady prepared and submitted a report to HQ's on the Council's contributions over the past year to the NMSP's Performance Measures for Advisory Councils. This information will be due Dec 31 on an annual basis, based on a calendar year, every year through 2010 (at which time the measure will be revisited). Mary will provide an update on the report during the Council retreat.

Sanctuary Selection

The Sanctuary completed its selection to fill 7 of 15 non-governmental seats on the Sanctuary Advisory Council. The seats included primary and alternate members for Business/Commerce, Citizen-At-Large, Commercial Shipping, Conservation, Ocean Recreation, Tourism, and Whale Watching (see attached)

The Sanctuary Advisory Council's Research Committee held a meeting on November 27th at the Hawaii Kai offices on Oahu. Dr. James Miller of FarSounder, Inc. presented information to the Research Committee on the use of 3D Forward Looking Sonar Systems for marine navigation in order to prevent shipstrikes.

Education and Outreach

September 2006

Get the drift and Bag it

On September 16th, the Hawaiian Islands Humpback Whale National Marine Sanctuary participated in the annual "Get the Drift & Bag It" anti-litter campaign by sponsoring a tour of the Ahihi-Kinau Natural Area Reserve. As part of the Community Work Day project aimed at clearing trash and marine debris from shorelines around the county, the sanctuary and the Ahihi-Kinau Natural Area Reserve conducted a cleanup of the reserve by foot and kayak. As part of the project, reserve ranger Joe McDonald also offered a guided tour of cultural sites and habitats for native species within the reserve.

The Sanctuary also helped coordinate a cleanup of the Ala Wai Boat Harbor and Magic Island area on the island of O'ahu. From 8:00am to 11:00am 48 NOAA staff, friends, and family from around the island, representing the NOAA Weather Service, Fisheries

Service, and Ocean Service, helped to clean-up hundreds of pounds of trash from the waters and shorelines around this area. Data collection results are pending.

On September 12th the Sanctuary Education Center in Kihei, Maui was the venue for a training of all Maui turtle stranding network volunteers and potential new volunteers. The training was attended by 30 new volunteers and was conducted by Cody Hooven, a Turtle Stranding Specialist from Oahu

Also in September, Alastair Hebard and Jerry Stowell hit the road for the first time this school year doing a series of outreach classes for the Montessori School of Maui. The focus was on learning the different phyla of marine invertebrates to make future trips to the local tide pools are more engaging. In addition, the Sanctuary continued its partnership with Kihei Charter School conducting fishpond monitoring and data collection on site. The Sanctuary also sponsored a lecture on invasive limu, Meghan Dailer, a UH limu researcher presented a hands on lecture/workshop to 30 people at the Maui site's Education Center. In addition, The Sanctuary also hosted a limu workshop led by Meghan Dailer for 12 workshop attendees on limu identification. The volunteers measured the biomass (weight) of limu washing up on beaches, and set and monitored transects in the fishpond and adjacent waters by snorkeling. The data collected will be used by the University of Hawaii to assess seasonal algae blooms and phase shifts between species.

The sanctuary participated in the kickoff event for the City and County of Honolulu's Earth Month Prevention Campaign which promoted the City and County's upcoming video and photography contest to students and teachers from the west side of Oahu. The sanctuary worked alongside the NOAA Marine Debris Program to host an information booth and speak to students about possible subject areas for their projects. The contest will culminate at the 2-day Earth Day event being planned for April of 2007.

Sanctuary staff member Christine Brammer worked with software development firm NextLevel Software to develop an interactive web-based game based on humpback whale migration and threats to humpback whales. This Flash game will be hosted on the National Marine Sanctuary Program's website upon completion. Headquarters staff member Valarie Thorpe is also providing assistance to this project.

The sanctuary and NOAA's Marine Debris Program partnered to assist with Chevron's Family Day event by providing outreach activities to teach children about humpback whales and the effects of marine debris. Over 300 children took part in the large family day event which was held near the refinery in Kapolei, Oahu.

October 2006

Maui Sanctuary education staff focused on further promoting local marine science field and outreach activities through a mass mailing of our education activities brochure to all Maui schools and by attending the annual Maui private school institute day, a gathering of all private school teachers for sharing and information. During the day, Alastair Hebard highlighted our hands-on, technology-backed programs. New teacher contacts were made, expanding our reach into the local education community.

The Oahu staff participated in the first annual Hawaii Fishing and Seafood Festival which was held at Honolulu Harbor's Pier 38, home of the new Honolulu Fishing Village. The event was sponsored and coordinated by the Pacific Islands Fisheries Group with support from a variety of other sponsors. The sanctuary worked with other NOAA offices (National Weather Service and Pacific Services Center) to share a space that was sponsored by the NOAA Fisheries Pacific Islands Regional Office. The event was a huge success with over 60 vendors taking part and thousands of people attending.

Kauai Programs Coordinator Jean Nishida Souza presented a 40-minute powerpoint presentation on Humpback Whale Conservation in and around Kauai to about 60 members of the Mokihana Club, a 101-year, all-female service organization. While a handful of members had prior interactions with the sanctuary program, much of the audience was new.

The Oahu sanctuary staff took part in the University of Hawaii at Manoa's Campus Sustainability Fair to promote environmental protection of Hawaii's resources. The sanctuary worked alongside its partner organizations, the University of Hawaii's Marine Option Program and the NOAA Marine Debris Program, to spread messages about current efforts to protect humpback whales and to promote upcoming sanctuary internships to students on campus. Approximately 20 campus organizations and others took part in this event, which attracted about 150 people.

As a follow-up to an earlier presentation at Baldwin High School by Alastair Hebard and Jerry Stowell, the school's ROTC unit visited the site to participate in an activity on Hawaiian fishpond ecology by looking at plankton and the pond's algal species. Students also helped to remove some of the nuisance blooms from the pond. The Montessori School of Maui also had a follow-up site visit to the nearby tidal flat and concluded their visit by looking into the water quality/runoff situation that prevented them from going swimming.

The first meeting of the Teacher Advisory group for the Marine Curriculum Project spent Saturday on Coconut Island, off Oahu's windward coastline. The group will provide advise to the sanctuary on what the schools need, what is going to make it work for the teachers, and how they want the products delivered, including teacher training. The group consisted of 24 classroom teachers, University of Hawaii Institute of Marine Biology grad students, the Department of Education, and Pacific Resources for Education and Learning staff.

The first two meetings for the new Ocean Awareness Training program were held in Kihei and Lahaina. Over 80 people participated in this exciting six-week program that will prepare them to act as volunteer naturalists. Participants ranged in age from 15-70, and all who complete the training and pass a test will be eligible to volunteer on whale watch tours, kayak trips, and other outdoor activities with the Sanctuary. Several tour companies have even enrolled their staff to get this training, and interest has been expressed for a subsequent offering early next year. The Sanctuary's Maui office is the lead for this program in collaboration with other partners including the state Department

of Aquatic Resources, and the Hawaii Tourism Authority, Maui Reef Fund, University of Hawaii's Marine Option Program, The Coral Reef Alliance, and others. Course content includes information about Hawaii's ocean and land resources, Hawaiian culture, and communicating to the public.

The Maui office hosted 24 second graders from Haiku Elementary. Alastair Hebard worked with the students on a sand project at a neighboring beach. Other school groups visiting the site included two of the local charter schools.

30 people participated in a Coral Reef Alliance Informal Education Workshop for Sustainable Tourism at the Sanctuary's Maui Education Center. Most participants work in the tourism industry. The sanctuary was a co-sponsor.

Sanctuary staff completed their third Main Hawaiian Island education cruise aboard the NOAA Ship HI'IALAKAI. In four days, three islands (Big Island, Maui, Moloka'i), and four ports (Hilo, Kona, Lahaina, and Kaunakakai) were visited, giving an extraordinary hands-on marine science experience to approximately 140 students and teachers. The cruise was a great success with participants learning about plankton and food chains, live rock and biodiversity, water quality, as well as exploring and experiencing the many capabilities of the ship and its crew. The on-board education staff comprised Maui education specialists Alastair Hebard and Jerry Stowell, Maui volunteer coordinator Emily Carlson, State marine conservation specialist David Nichols, and West Hawaii programs coordinator Justin Viezbicke, and two graduate student researchers from the University of Hawaii's Hawaii Institute of Marine Biology.

November 2006

Sanctuary Curriculum Development Director Patty Miller and West Hawaii Programs Coordinator Justin Viezbicke conducted a teacher workshop sponsored by Outrigger Hotels in Kona, Hawaii. Twenty teachers participated in a half-day workshop incorporating marine science, writing and art activities. Topics focused on turtles, humpback whales and reef habitats.

The Sanctuary's Ocean Awareness class featured Ed Lyman, the marine mammal response manager. The class is part of a six-week training for volunteers who will be certified to conduct outreach for the site. Ed gave a riveting presentation about humpback whales to two groups of over 60 people. There will be two more classes before the training is completed, and over 100 volunteers will potentially be certified.

Over 120 eager first graders from Kihei Elementary School visited the Maui Education Center to learn about turtles and whales. Staff members (including the acting programs coordinator and the administrative assistant who were drafted to lead learning modules) and volunteers helped the kids make their own turtles and whale tails while learning about these endangered species.

The final Ocean Awareness classes were held at two locations on Maui, Kihei and Lahaina. Over 100 people were enrolled in the course, although not all completed the training last week, but will need to make up classes missed. Since the classes were

videotaped, all will have the opportunity to complete the course, take the final exam, and receive certificates of completion. Sanctuary volunteers who complete the course will be eligible to participate in the site's naturalist program, and could be placed on tour boats, kayak tours, beach information stations, and other outreach opportunities.

23 Montessori School first graders learned about whales and turtles in a visit to their class by education specialists from the Maui office.

Forty eighth-grade students from Kihei Charter School visited the Maui education center and conducted studies in the adjacent fishpond.

The Maui site hosted a monitoring day for the ongoing *Limu* project sponsored by the University of Hawaii. The project is centered the fishpond adjacent to the Maui site to study the growth of *limu* (seaweed) in Maui coastal waters. The project utilizes the Sanctuary's Citizen Scientist Corps of volunteers who work with participants from the University each Sunday to monitor growth cages deployed in the fishpond.

Volunteer Coordinator Emily Carlson and Acting Maui Programs Director Nancy Daschbach conducted an outreach on the island of Lana`i November 18. Along with 3 volunteers, the group ferried over to the neighboring island to participate in an event that centered on the free distribution of turkeys to all the island's families by Trilogy Expeditions, an annual "community give back" that the tour company provides. Four non-profit organizations were invited to participate, including the sanctuary. Jim Coon, owner of Trilogy, is the Sanctuary Advisory Council vice-chair for the site.

Emily Carlson and Nancy Daschbach also held an introductory meeting with the Activities Director for the Westin at Ka`anapali Ocean Resort. Discussions centered on developing a weekly presentation at the hotel where our naturalist corps volunteers would present the site's 45-Ton Talk, featuring humpback whales, to the hotel's visitors. Other topics included naturalist training for the Westin staff, additional program ideas, and the possibility of expanding to the other three Westin properties on Maui, including the Sheraton Grand Wailea. A follow up meeting with the General Manager secured a three month, one night/week program slot for staff and volunteers at the hotel. In return, the hotel may reprint needed site materials.

December 2006

The Sanctuary launched its new ocean etiquette campaign focused on reducing boater collisions with humpback whales with a series of events in December. This is a collaborative effort led by our State Sanctuary co-manager, and also involves NOAA Fisheries, NOAA Office of Law Enforcement, and the Sanctuary Advisory Council. A statewide series of seven boater workshops on four islands was launched with the first two on Oahu. At the workshops, conducted by Jeff Walters and Ed Lyman, boaters learn to safely and legally operate on the water during whale season. Workshops were held on the islands of Hawaii, Kauai, and Maui. Sherrie Myers of NOAA Office of Law Enforcement participated in most of the workshops. In addition, a new brochure has been printed that provides guidelines and regulations for whale protection and human safety. An updated ocean user handbook has also been printed.

Maui education staff conducted a workshop for a group of 11 from the Waena Special Education class. In addition, they conducted a field study with 30 students from Kihei Charter School.

The Sanctuary's "Citizen Scientist Program" sponsors once a month Saturday morning snorkel that encourage volunteers to then get out into the water participate in reef monitoring activities, in partnership with the Reef Environmental Education Foundation (REEF). 12 volunteers braved a rainy day in December to conduct the REEF survey at Malauaka Beach.

100+ Students had the ocean brought to them over two consecutive outreach efforts as Alastair Hebard and Jerry Stowell brought coastal plankton samples, microscopes and computers up to the upcountry middle school, Kalama Middle School. Students learned about primary productivity, ocean food chains and sustainability as they got to explore and identify the contents of the sample. The outreach efforts were well-received as funding in the public schools for field trips is difficult to come by.

Alastair Hebard also conducted a career talk to a class of juniors and seniors at Kamehameha Schools.

The Maui office hosted a volunteer orientation and potluck for approximately 50 sanctuary volunteers. Emily Carlson, volunteer coordinator for HIIHWNMS, did an orientation for them to the programs she has been developing, and began signing up volunteers for upcoming whale watches, outreach events and other activities.

Jerry Stowell and Alastair Hebard oversaw 30 Maui Prep School 2nd and 3rd graders to learn about coral reefs. Students created a classroom-sized food web and then watched as missing key elements made it collapse. Students also created their own coral reef pop-ups. On Thursday, 20 middle school students from Sacred Hearts Elementary got an introduction into marine research, and learned how to conduct fish counts and transects along the fishpond wall. The Students also were taught how to identify the ponds limu (seaweed) species.

Emily Carlson, Volunteer Coordinator at the Maui Office, conducted the first meeting with a newly formed group of mentor volunteers. These "senior" volunteers will be available to new volunteers who will shadow them during outreach activities. New and inexperienced volunteers will be required to commit to some shadowing before being allowed to conduct any outreach activities themselves.

Jerry Stowell and Emily Carlson collaborated to present a 45-Ton Talk at the Ka'anapali Resort. Several volunteers also attended, to "shadow" Stowell and learn how to present the talk. The Resort is a new partner with the Maui office, and has requested weekly talks for their guests.

January 2007

Two groups of 25 first graders from a holiday school program called “Kama`aina Kids” visited the Maui office and engaged in whale activities with Alastair Hebard, Jerry Stowell and Sanctuary volunteers.

Ed Lyman and Maui office volunteer Kate Eifler assisted at the Whale Quest information booth during the Mercedes Invitational Golf Tournament at Kapalua. Whale Quest, an annual event held in February. Sanctuary staff, including Steve Gittings from NMSP headquarters, will participate in Whale Quest.

Bill Henderson, Vice President of Business Development for the new Ocean Network, met with Maui staff Nancy Daschbach and David Mattila (in lieu of Regional Superintendent Allen Tom who was off-island) to visit the site. The Ocean Network will be based in Honolulu and is scheduled to start broadcasting January 15. It will feature ocean content, and their goals include ocean advocacy and ocean “edu-tainment”.

A group of 40+ seniors visited the Maui office this week to engage in ocean related activities as part of the ElderHostel program.

Science and Rescue

Scientists explain the safest way to save entangled whales

Each year about 300,000 whales and dolphins die from entanglement in fishing gear or buoy lines worldwide. The threats are everywhere almost any rope or net in the ocean can trap a whale, Ed Lyman, marine mammal response coordinator conducted a public seminar at Moss Landing Marine Laboratory and training workshops in partnership with the Gulf of the Farallones, Cordell Bank, Monterey Bay and Channel Islands National Marine Sanctuaries, NOAA’s Marine Mammal Health and Stranding Network and NOAA Fisheries Office of Protected Resources. The workshops helped to deliver NOAA’s message that people who don't have extensive training in marine mammal rescue should not attempt to save an entangled whale.

A report of a entangled bottlenose dolphin was made to the Maui office. Because the report was late and incomplete, no response was initiated.

The first report this season of an entangled whale was received at the Maui office on November 1. This is very early for sighting a whale, let alone sighting an entangled one. Ed Lyman, the site’s marine mammal response manager, took the call and determined that it was a credible report. A boat captain who runs a whalewatch in the winter made the report. The whale was reported off Pearl Harbor. A Oahu response team was assembled to be transported by the US Coast Guard to the site. Fortunately we were able to "stand down" as the animal freed itself. Photographs confirmed that it was a humpback and there was marine debris on it. The most likely scenario is that it was "playing" with the debris, not an uncommon activity for marine mammals to their peril, and was temporarily entangled but subsequently freed itself. This event points out the timeliness of the Sanctuary’s upcoming training refresher courses for each island that Ed Lyman had been planning to conduct.

The sad loss of a young humpback whale appeared to have occurred over a three-day period during November. A humpback yearling, an early arrival this year from the northern feeding grounds, was reported off the west coast of the island of Hawaii in grave distress, being harassed by a host of large tiger sharks. Over several days, Justin Viezbicke, marine mammal conservation coordinator tracked the animal until it finally succumbed on Monday, November 13th. High boater traffic near the whale (and up to 18 large sharks actively feeding on the dying animal) raised serious concerns and subsequent action may be taken against the worst offenders, including some who chose to snorkel nearby! Jeff Walters was quoted in islands newspapers and on local TV stating the state's concerns. The carcass was eventually towed out to sea and sank.

David Mattila attended an international workshop on South Pacific humpback whales with researchers from Oceania and Eastern Australia hosted by the Secretariat of the Pacific Community in Noumea, New Caledonia. The purpose of the workshop was to decide how to quality screen, score and rank several thousand photo identification images taken of humpback whale tail flukes in the region from 1999 and 2004. This was done in preparation for comparing the images taken in Oceania with those from Eastern Australia, in order to determine the demographic structure of the breeding populations and to estimate rates of exchange between breeding grounds. Matching of the photographs will take place over the winter and the results will be presented at the 59th annual meeting of the International Whaling Commission meeting in Anchorage, AK this spring. This is a part of the ongoing comprehensive assessment of Southern Hemisphere humpback whales. For his part, David gave two presentations on the opening day, which was devoted to presentations by various government officials, and by the researchers invited to participate from around Oceania, New Zealand and Australia. The Sanctuary's small effort in American Samoa was well received. It is beginning to look like we may have a "hot spot" there compared to other breeding grounds throughout Oceania, even though the densities are much lower than Hawaii.

David Mattila recently chaired a workshop on large whale health assessments, held in Olympia Washington (December 8-9). The workshop was a partnership between NOAA Fisheries National Marine Mammal Health and Stranding Response Program, the Hawaiian Islands Humpback Whale National Marine Sanctuary and the State of Hawaii. The goal of the workshop was to develop visual (and other) tools to assess the health of "free-swimming" humpback, bowhead and gray whales. Participants included veterinarians, pathologists and field biologists from as far away as Barrow Alaska, Russia, Asia, Mexico, Canada and the U.S.

Ed Lyman conducted a disentanglement training on the Big Island in December, in which we had 3 new people attend.

Also in December, Ed Lyman conducted boater safety overview aboard the *Seacat* for Maui office staff, but high winds prevented them from getting out on the water.

Humpback whale season is just beginning in Hawaii, but already there have been reports of entangled animals and collisions with vessels. In December, the Maui office received a

report of an entangled whale near Molokini islet, a popular snorkeling and diving site. Ed Lyman mounted a preliminary search, but he and his team were unable to relocate the animal. In January, an Oahu-based disentanglement team out of the National Marine Fisheries Services office unsuccessfully attempted to free an entangled spinner dolphin. That same week, two collisions were reported, one off Kaua`i, and one presumed collision off Lahaina, Maui. In both cases, the whales sustained injuries. In the Maui case, a tour boat captain reported seeing an injured humpback calf whose injuries were consistent with a recent boat collision, but there was no actual report of the collision itself.

Partnerships

The Maui staff responded to two distressed green sea turtles in the past week. The first turtle brought in was missing three of its flippers, presumed a result of one or two tiger shark attacks. This large male was shipped to Oahu, where it is receiving care from the National Marine Fisheries Service. The second turtle was found dead near the Maui Prince Hotel. Two turtle response volunteers brought the animal to the Kihei sanctuary facilities for disposition. Alastair Hebard and state Department of Lands and Resources staff member Joe Fell-McDonald (a previous Maui sanctuary staffer) assisted the volunteers. As per protocol, the carcass was measured, bagged and placed in a freezer. Eventually it will be sent to Oahu for incineration.

Miscellaneous

The Maui office is still assessing structural damage to the sanctuary facilities in Kihei after the October 15, 6.7 magnitude earthquake that hit just off the Big Island. Initial assessment showed some cracks in several of the dry wall seams of the office building and the roof of the main building is also leaking. The roof leaks were discovered after a second incident of heavy rains the following day. The rains flooded streets and dumped tons of sediment into nearshore waters, much of it still evident as “red water” in the site’s adjacent native Hawaiian fishpond.

Acting Maui Programs Coordinator Nancy Daschbach participated in the South Maui Recreation Focus Group, which discussed five ocean recreation activities: surfing, snorkeling, diving, kite surfing and kayaking. Participants included representatives from state and county government, local tour operators and NGOs. This meeting was a requirement of the Hawaii Coastal Management’s ocean recreation theme.

Nancy Daschbach also attended a meeting of the Governor’s Maui Advisory Council, which hosted Hawaii Department of Land and Resources Director Peter Young. Mr. Young updated the group on the department’s activities and responded to their questions. He spoke favorably about both Hawaii sanctuaries, and was effusive in his comments about the Northwestern Hawaiian Islands Marine National Monument. He also noted that the Hawaiian Islands Humpback Whale sanctuary contributed funding to the County of Maui to help support truck-based sewage pump-out services at Maalaea Harbor for vessels that potentially would have disposed of their waste in sanctuary waters. Approximately 100 people attended the meeting, and more than 15 offered public

testimony, many in favor of increasing the support and presence of the state Division of Conservation and Resources Enforcement, one of the leading issues of the evening.

The Sanctuary began receiving reports of humpback whale sightings in late October and in preparation for up to 10,000 whales returning to Hawaii this winter, the sanctuary staff participated in an on-the-water training in Kaneohe Bay on the island of Oahu. The training consisted of specific hands-on activities in ocean safety, small boat deployment and operations, whale disentanglement protocols and procedures. The in-house trainers were sanctuary co-manager Jeff Walters, state marine conservation specialist David Nichols, and operations coordinator Paul Wong. Trainees were superintendent Naomi McIntosh, SAC and management plan coordinator Mary Grady, and Kauai programs coordinator Jean Souza.

The site hosted Director Dan Basta in November at the Maui office. Dan conducted a tour of the new building, and was briefed on key site programs. Superintendent Naomi McIntosh led the tour of the building, joined by Oceanic Companies, Inc. President Peter Howard, the construction contractor for the new facility.

The Maui office hosted Secretary of Commerce Carlos Guitierrez and VADM Conrad Lautenbacher and their entourage for a BBQ on Friday December 8, and for a whale watch with Trilogy.

On December 4 and 5th, the Honolulu Sanctuary staff hosted visitors from Korea on their first stopover of their 2-week visit off the NMSP. They will continue on to Silver Spring, FKNMS, GFNMS and MBNMS to learn more about the various programs and activities of the NMSP. In addition to learning about HIIHWNMS and NWHIMNM, the visitors also toured Hanauma Bay Nature Preserve to learn how a highly visited MPA is managed. They also had the opportunity to get on the water with a local whale watch company and see one of the few whales that have arrived early for the winter season. The visits of Won Duk Yoon (Dr.) Ocean Research Team, National Fisheries Research and Development Institute; Yung Young Ja - Marine Policy Bureau, Ministry of Marine Affairs and Fisheries ; and Hong-Sig Yang - Deputy Director, Maritime Affairs and Fisheries Division was organized by Brady Phillips.

Nancy Daschbach and Alastair Hebard attended a safe boating around whales presentation by Greg Kaufman of the Pacific Whale Foundation (PWF). The presentation was well attended by PWF staff and some commercial and private boaters.

Attachment 3

Hawaii Island County Report 9 October 2007 Sara Peck, Representative

Accomplishments:

1. Four ReefTalks and one Sustainable Planning talk were held in West Hawaii, Aug.-Nov 2006. August. = Pioneering Sustainable Open Ocean Fish Farming in Kona by Neil Sims. Sept = Effects of overgrowth of Algae and Limu on Coral Ecosystems by Linda Preskitt. Oct.= How to Avoid the Perfect Storm and Other Marine Weather Hazards by Nezette Rydell, Warning Coordination Meteorologist. Nov.= The Endangered Hawaiian Monk Seal by Justin Viezbicke. October Sustainable Planning speaker was Mrs. Lucia Athens, City of Seattle, Green Building Coordinator. All events were well attended.
2. Three Kawaihae Local Resource Council Meetings were held highlighting these issues of concern: Kawaihae Harbor congestion and the development ongoing and proposed for the area. Harbor changes to accommodate the Super Ferry.
3. Held 2 ReefTeacher trainings for the Kahalu'u Project in collaboration with the Kohala Center. Interesting note >> Approximately 600 people were counted on the beach and in the water during one hour at Kahalu'u Bay in December. That beach and bay are very, very small, about 1/4th the size of Hanauma Bay areas.

Events Attended: All of the above listed under Accomplishments.

- >Four West Hawaii Fishery Council (WHFC) meetings and one WHFC strategic planning meeting Aug-Dec.
- > Advisory Board Meetings for the Kona Soil and Water District, Reef Fund, Chamber of Commerce Environmental Committee.
- > DLNR sponsored meeting with stakeholders re the unregulated human activity at Kahalu'u Bay.

Hot Topics:

LAYNET RULE PUBLIC HEARINGS JAN 16 AND 17 ON ALL ISLANDS. Public testimony will be taken on the amendments proposed for HAR Chapter 13-75, Rules Regulating the Possession and Use of Certain Fishing Gear. See attached PDF on locations and times.

Super Ferry: The Hawaii County Council created a Resolution requiring Hawaiian Super ferry to have an EIS before they come to Hawaii Island to address special needs.

Hawaii County Community Development Planning continues in Puna, North and South Kohala and North and South Kona. The first ever effort for a county to take District and community level input on specific needs AND turn those needs statements into rules under the General Plan Amendments.

Attachment 4

15 January 2007

MEMORANDUM

To: Hawaiian Islands Humpback Whale National Marine Sanctuary Advisory Council

From: Bill Friedl, Honolulu County Council Representative

Subject: County Representative Report

My Council-related activities were limited during the reporting period because of an extended visit to Australia in October/November. Interestingly, whale watching is an up-and-coming industry in parts of the Australian states of Victoria and South Australia, where southern right whales winter in shallow coastal waters for calving, nursing and breeding. In areas such as Logan's Beach near Warrnambool, mother-calf pairs come close to shore and can be viewed from coastal platforms.

On 30 November, I attended the Boater Outreach presentation at the Sanctuary headquarters in Hawaii Kai. The material and presentations were excellent and the program is a credit to the federal and state marine mammal protection programs in Hawaii.

On 19 December, I attended the dinner presentation by T. 'Aulani Wilhelm, Superintendent of the newly designated Northwestern Hawaiian Islands Marine National Monument, at the Hale Koa Hotel. Ms. Wilhelm reported on the status of the Monument and some of the technological challenges presented in surveying, monitoring and managing the largest fully protected marine conservation area on the planet. The presentation was part of the annual December holiday dinner for the Hawaii Chapter of the IEEE Oceanic Engineering Society, PACON International, and the Hawaii Section of the Marine Technology Society. (Incidentally, SAC representative Liz Corbin began her term as President-elect of the Marine Technology Society on 01 January).

On 13 January, I attended the mandatory Site Leader (and Co-Leader) indoctrination and training at the Sanctuary headquarters in Hawaii Kai. A good time was had by all.

Personal Soapbox: While the SAC is meeting this month, the Japanese Scientific Whaling fleet will be harvesting humpback whales in the Southern Ocean as part of their annual investigations. The Japanese seem implacably determined to press the annual harvests in spite of long and loud expressions of international outrage. Given the remarkable and well-accepted "recovery" of the humpbacks in the northern Pacific, could "our" whales be next in line for the Japanese investigators?

Attachment 5

Hawaiian Islands Humpback Whale National Marine Sanctuary Maui County Report to the Sanctuary Advisory Council

January 3, 2007

Events Attended:

September 27 – A meeting was held at the Maui Arts & Cultural Center to provide the community with updated information about the newly designated Northwestern Hawaiian Islands Marine National Monument. The public response was excellent, drawing about 90 participants who were invited to prioritize their issues of concern regarding the monument's preservation and management after the opening presentation.

December 7 – The Sanctuary Education Center in Kihei hosted a first meeting to discuss development of a Voluntary Code of Conduct for Marine Tourism in Maui. The goal is to engage local stakeholders to work collaboratively to create a code that will establish best practices to promote sustainable marine tourism. Representatives of the organization CORAL were on hand to share an inspiring example of the development of a code of conduct in Mesoamerica, and show how it will benefit the marine resources as well as local businesses. Response to this initial session was good, drawing representatives of dive and snorkel operators, boating and kayak companies, and non-profit conservation groups. A follow up meeting has been set for January 11, 4 pm at the Sanctuary Center to determine who will serve on the Steering Committee and the Subcommittees, and first steps to move this initiative forward.

Hot Topics:

One of the Pump Don't Dump (PDD) founders Richard Fairclo met with visiting U.S. Secretary of Commerce in early December. He presented information about the PDD issues and a petition asking the NOAA Sanctuary to initiate rule changes to make it illegal to dump boat sewage in Sanctuary waters. A reply letter to Mr. Fairclo dated December 29, 2006 from U.S. Department of Commerce indicates "that the HIIHWNMS has already initiated a process to review and evaluate its management plan, including consideration of new or amended regulations to better protect humpback whales and their habitat, we have decided not to undertake the rulemaking [your petition] requested." The letter also states that "between now and September 2007, we will be working with state and federal agencies to determine whether NOAA will proceed with additional regulations in the HIIHWNMS."

No other feedback has been received regarding PDD's reception of this letter or next steps. As of December however, they continue to publicize via email list that they are encountering resistance and the Sanctuary Advisory Council (SAC) has not meaningfully responded to a request presented by Dennis Fitzpatrick (another PDD founder) last March that included a draft resolution for the SAC to pass. They also have encouraged coalition members to contact Chair Terry O'Halloran about this proposed resolution.

At present, there appears to be only 1-2 Maalaea boats that have not begun to pump out. PDD is focusing their next efforts on small dive boat operators launching from the Kihei boat ramp.

Attachment 6

SAC Education Committee Report
By Jeanne Russell
Submitted January 15, 2007

January 11, 2007, Conference Call Meeting, 9:30 a.m.

Attendees: Jeanne Russell, Mary Grady, Chris Brammer, Jean Souza, Jeff Walters, Nancy Daschbach, and Teri Leicher.

At our conference all two main topics were discussed:

- I. Federal Appropriation – At the last minute, Patty was unable to attend the meeting, but Chris was able to give us an update to the best of her ability. Since our last discussion the money has been awarded to the Prell. What is unique about this curriculum is that includes Hawaii marine science in its curriculum. There are to be 60 lessons designed for grades three through eight. As of yet the second phase of the money has not been appropriated. This phase is for the implementation and training of these lessons. These lessons are designed to be used by any public school science teacher.

Questions:

- 1.) Do we have enough money for both phases of the project? If not, how much do we have and what is our target goal?
 - 2.) Is a letter of support from the SAC needed to appropriate more funds?
 - 3.) When is the right time to promote this appropriation as PR for the sanctuary?
- II. Naturalist Training – The Education Committee received an update on the training going occurring on Maui. We discussed if there was a need on the other islands for the same type of training. Chris felt that Oahu did not have such a need. Jean mentioned that Kauai's lecture series are heavily attended. Due to budgetary cutbacks however, Kauai was not able to get any outside lecturers and Jean has been forced to give all the lectures and do all the training. The same goes for Justin on Hawaii.

Jeff mentioned the need to not only teach about marine mammals at these lectures, but there is a need to inform the public about the legal issues, rules and regulations with regard to the whales and the details about what the sanctuary does and what NOAA is. The problem is how to get the knowledge to the people that need it – like the fisherman and boater industry. The second problem is where do we get funding? Right now there is none.

Questions:

- 1) What would be a good way to get knowledge to the boater industry? The Education Committee needs to come up with some creative ways to get the message to the people who need it the most – the ones on the water. Would it be worth creating a DVD on whale behavior with rules and regulations included? How about a beer bash? Education Committee members need to come up with ideas and present them at the next meeting.
- 2) Should we make it a regulation that boaters watch a video or read a booklet on whale behavior and the regulations? Or should we just try to make it more attractive for those who attend workshops by supplying a Certificate of Attendance and/or a sticker for their boat? Mary will look into inviting Clifford Inn of the Department of Boating and Regulation to a SAC meeting or to our next Education Committee meeting.

The next Education Committee meeting is scheduled for February 15, 2007 at 9:30 a.m.

Attachment 7

Aquaculture Working Group Report
HIHWNMS Sanctuary Advisory Council
January 17, 2007

Mike Stanton exchanged e-mails with John Corbin on the latest proposed Research/Aquaculture Working Group suggestions for prioritizing research needs should research funding become approved/available. He was supportive in general of our proposed needs, although stated that a primary requirement will be face-to-face discussions on future aquaculture operators site proposals. He suggested that "placing a few farms in the Whale Sanctuary waters and in partnership with the farmers, studying whale interactions, with appropriate safeguards, checks and balances, would support illuminating research". I asked if a strategic, statewide plan for Hawaiian mariculture development and future planned projects existed. The response is awaited at the time of writing this report. The US Secretary of Commerce Carlos Guitierrez toured Kona Blue Water Farms in December, and offered very favorable comments to the press on his strong support and enthusiasm for future development of Hawaii-based aquaculture business development.

Attachment 8

Research Needs for Offshore Aquaculture Development in Hawai‘i Identified by the Research Committee and Aquaculture Working Group of the Hawaiian Islands Humpback Whale National Marine Sanctuary Advisory Council

There is strong advocacy for continued aquaculture development in offshore areas of the United States; however, research is necessary on the potential effects of large-scale development of aquaculture in areas frequented by marine mammals. Recently there has been interest in NOAA taking the lead in regulating the industry and in fostering development of sustainable aquaculture. The research priorities identified in this paper are intended only as research opportunities and needs not as recommendations for regulatory conditions by local, state, or federal agencies with authority over aquaculture activities.

Recent publications document evidence of potentially harmful effects resulting from aquaculture developments in offshore marine habitats on marine mammals. Studies from Australia, New Zealand, the Mediterranean, and the United States have demonstrated the potential for a change in the spatial and temporal behavior of marine mammals as a result of aquaculture development. In many cases it is difficult to determine the effects due to a lack of baseline information and a lack of support for studies conducted during aquaculture production and after the termination of production.

In an effort to address concerns about the potential impacts of aquaculture activities on marine mammals in Hawaii, the Hawaiian Islands Humpback Whale National Marine Sanctuary Research Committee and Aquaculture Working Group recently identified research priorities related to mitigating the effects of aquaculture development in Hawaii on marine mammals. Of primary concern for the Sanctuary is the potential loss of important habitat resulting from changes in patterns of cetacean use and behavior in areas developed for aquaculture. Consequently, the principal research questions identified relate to the effect of aquaculture development on potential loss of habitat and/or displacement and entanglement. Secondary research questions that should be considered include the potential effects of increased predators in areas developed for aquaculture, waste, harmful algal blooms, increased vessel activity, and noise pollution.

Primary research questions identified by the Committee and Working Group :

- 1) What are the effects of offshore aquaculture development on the use patterns and behavior of nearshore species of cetaceans in Hawai‘i?
- 2) What are effects of aquaculture on entanglement rates of nearshore species of cetaceans in Hawai‘i?

Research objectives should include effective experimental design.

Preferred Research Option: Loss of Habitat/ Habitat Displacement

Method: Conduct surveys of habitat use patterns and cetacean behavior in an area anticipated to be used for aquaculture activities prior to and following the installation of the facility.

Potential Sites: Kona Blue Water Farm's proposed expansion site located offshore of Kona, Hawai'i and other proposed areas of aquaculture site development (e.g. Waianae coast of Oahu).

Alternative Research Option: Entanglement

Method: Conduct surveys to examine habitat use patterns and cetacean behavior near existing areas of potential entanglement as well as control areas. Studies could also include an effort to examine of water column use through tagging. Cameras and/or acoustic recorders could be used to document cetacean occurrence patterns near these locations.

Potential Sites: Offshore mooring buoys in Lahaina, Maui, existing aquaculture facilities off Kona, Hawaii (Kona Blue Water Farms) and south shore, Oahu (Cates International), Fish Aggregating Device (FAD) buoys, or fish cage marker buoys near Kaena point, Oahu.