

**Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve Internship
Final Report to:**

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Spring 2004
IS 497: Ocean Internships and Research

Introduction

The Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve (Reserve) was established in December 2000 to “ensure the comprehensive, strong, and lasting protection of the coral reef ecosystem and related marine resources and species...of the Northwestern Hawaiian Islands” (Executive Order 13178). The Reserve stretches 1200 nautical miles long and is approximately 100 nautical miles wide, making it the second-largest marine conservation area in the world. The relatively pristine marine ecosystems of the Northwestern Hawaiian Islands (NWHI) provide a picture of what the Main Hawaiian Islands may have once looked like: an abundance of large, predatory fish; healthy coral and algal reefs; nesting ground for thousands of green sea turtles.

The Reserve is managed under the National Oceanic and Atmospheric Administration's (NOAA) National Marine Sanctuary Program (NMSP) and is currently going through a process to be designated a National Marine Sanctuary. There are currently 13 sanctuaries within the NMSP, including the Hawaiian Islands Humpback Whale NMS. The Executive Order that established the Reserve directs the Department of Commerce to begin the process to designate a National Marine Sanctuary in the Northwestern Hawaiian Islands (Clinton, 2000). One of the advantages of becoming a sanctuary is having more secure resources and funding into the future with the National Marine Sanctuaries Program than the current Reserve does. Additionally, the Reserve, “which was established by Executive Order, can easily be amended, changed, or revoked by any future President” (NOAA, 2004b).

In the next year, Reserve staff will be working with the Reserve Advisory Council and the public to gather input on a proposed for a sanctuary in the NWHI (NOAA, 2004b). The public will be given an opportunity to comment on a draft environmental impact statement and management plan for a proposed sanctuary. In the next several months, Reserve staff and contractors will be working on developing these documents and preparing to engage the public in this process.

In the Reserve's operations and in the sanctuary designation process, the Reserve often works with other agencies with jurisdiction and/or interest in the NWHI. The State of Hawaii's Department of Land and Natural Resources manages Kure Atoll and waters from zero to three miles out from the approximate center of emergent lands in the NWHI. The United States Fish and Wildlife Service manages the Midway Atoll and Hawaiian Islands National Wildlife Refuge. The Office of Hawaiian Affairs also has an interest in the NWHI because they are ceded lands and are very important to Hawaiian history and culture. The Western Pacific Regional Fisheries Management Council is concerned with fishery management plans for the NWHI.

One of the activities of the Reserve is to help people learn more about these islands so that they can learn about and

appreciate the NWHI and also provide thoughtful input on if and how NWHI ecosystems should be protected. Because the islands are so remote and their ecosystems so fragile, the Reserve's education projects have focused on "bringing the place to the people, not the people to the place" (Northwestern Hawaiian Islands Multi-Agency Education Program, 2004). These projects will continue through the sanctuary designation process. These education efforts include a website (NOAA, 2004a), videos, classroom curricula, and public presentations.

For two years the Reserve has partnered with the Polynesian Voyaging Society, US Fish and Wildlife Service, Bishop Museum, and many other groups on an education and outreach project called *Navigating Change* (Northwestern Hawaiian Islands Multi-Agency Education Program, 2004). The *Navigating Change* project focuses on teaching people about the Northwestern Hawaiian Islands and ways to care for them by caring for the places we live. The voyaging canoe *Hokule'a* will be sailing to the NWHI in May 2004 and *Navigating Change* messages and activities will be incorporated into the sail. One of the major components of this project is a series of teachers' workshops on the NWHI and *Hokule'a*. Other activities that are planned are referrals to a website about the NWHI and teleconferences between the *Hokule'a* crew and classrooms using *Navigating Change* curricula.

Since the summer of 2002, I have worked as a graduate intern for the Reserve. During this period I have participated in a month-long research trip to the NWHI, developed education products including videos and classroom curricula, written media releases and other documents, and assisted with meeting planning and other activities. This semester I wanted to add another element of formality to the internship by producing a written report of the work I've done and earn credits at the University of Hawai'i for the internship.

Management Plan

One of my main assignments for the semester was to work on two sections of the management plan for the proposed national marine sanctuary for the Northwestern Hawaiian Islands. In March, staff members were assigned management plan sections based on their expertise and interests. The two issue-based sections I was assigned to relate to the impacts of Native Hawaiian subsistence, cultural, and religious practices and reducing the risk of alien species spreading in the Northwestern Hawaiian Islands.

One of the major concerns people have for the Northwestern Hawaiian Islands region is preventing the introduction of alien species to the area. The remoteness and relative inaccessibility of the NWHI has helped to prevent the introduction of some alien species to the area. At the same time, these qualities make controlling alien species once they've been introduced

difficult and are another reason to emphasize prevention. Many alien species have the potential to become invasive, displacing native species and altering or destroying habitat. Once established, invasive species can be costly and may be impossible to eradicate completely. While few alien species are established in the waters of the NWHI, there are thousands more that threaten to invade this relatively pristine marine ecosystem through a variety of vectors (e.g. vessel ballast water, equipment, debris, and deliberate or accidental release). If appropriate prevention and control measures are not taken, alien species will continue to spread and may cause significant damage to the ecosystem.

In my research for this section, I have not found a lot of information specific to the waters of the Northwestern Hawaiian Islands. One of the documents that has been very helpful is the *State of Hawai'i Aquatic Invasive Species Plan* (State of Hawai'i Dept. of Aquatic Resources, 2003). This document was released by the State of Hawai'i Department of Land and Natural Resources and various Federal, State, industry, and non-profit organizations in 2003. The plan identifies feasible, cost-effective management practices for preventing the introduction and spread of alien species in Hawaii's waters. While some issues from the plan will not be applicable to NWHI or to the proposed sanctuary's jurisdiction, many of the strategies and objectives from the State of Hawai'i Aquatic Invasive Species Plan could be appropriate for proposed sanctuaries management plan.

During public scoping meetings in 2002, the Reserve collected thousands of comments on the proposal for a national marine sanctuary. Many of these address Native Hawaiian subsistence and other cultural practices within a proposed national marine sanctuary in the NWHI. The executive order establishing the Reserve also provides protections to these practices and says these should be allowed within the Reserve (Clinton, 2000).

My section on Native Hawaiian subsistence, cultural, and religious uses is much less straight forward than the section on invasive species. Native Hawaiian subsistence comes with the responsibility to care for and give back to the "resource." In addition to providing food, Native Hawaiian subsistence also includes the passing on of traditional knowledge practices and spiritual reconnection with the NWHI environment. I am working on this section with another staff member and we still need to do more research on this issue.

One of the challenges in beginning to write sections of a management plan is deciding what information needs to be included in it and what should be left out as reference or supplementary information for a more specific plan later. This summer I will continue to refine what I have written and will consult with experts who can provide advice and additions to what I've already written. I will also begin to develop strategies and actions for each of the sections I've been assigned. Developing appropriate evaluation measures will be part of this work. Later these sections will be taken to subcommittees of the Reserve Advisory

Council for comment.

Panelist at Native Hawaiian Education Association Convention

In March, I attended the Native Hawaiian Education Association's annual convention at Windward Community College. I was invited as a panelist for a session called "Hawaiians Working in the Environment." Most of the panelists were former interns with the University of Hawaii Hawaiian Internship Program and all of us are now working in environmental conservation. Most of the people who attended the session were teachers looking for ways to engage their students in environmental work. Toward the end of the session, the audience asked that we come and talk to their students, especially their younger students. They also stressed the importance of experiential education in getting kids excited about learning and caring for the environment.

The session reminded me of the value of this and other internship programs for getting students experience in environmental work. The stories my fellow panelists told were illustrative of how internship experiences can lead a person into a career she hadn't seriously considered before. Internships can also help to give a student the experience and confidence needed to get certain jobs. In the last year I've co-supervised three high school interns at the Reserve office and plan to continue mentoring younger students. I know that as I advance in my career I will continue to support mentoring and internship programs for young people interested in conservation.

Proofread Draft ROP

One of the less exciting tasks I've had this semester is proofreading the Draft Final Reserve Operations Plan that was released to the public in April 2004. Even after the document had been reviewed by several people, there were still typos and formatting issues that needed to be fixed. In school and at work, I've read many dissertations and management plans and whenever I find this kind of error I am distracted from the important content in these documents. This exercise reminded me of the importance of getting other people to review important documents I write. I'm just at the beginning stages of my MA thesis and know that after working with it so closely, I won't be able to see many of the errors that are obvious to anyone else.

One of the challenges I had with this proofreading task was checking that all the Hawaiian words in the document were properly spelled with the appropriate diacritical marks. While I'm familiar with many of the words used, I am not fluent in Hawaiian and needed to rely on the dictionary and a fluent coworker to confirm the spelling of many words. Some of the words are not included in any Hawaiian dictionaries and are not used in conversation; some are only seen in references to the Northwestern Hawaiian Islands. For several years now I've had the goal of increasing my proficiency in the Hawaiian language. Doing this work makes me want to continue studying Hawaiian so that I can have more confidence in my research and work and

can have a better understanding of my culture.

Navigating Change Hokule`a Voyage

During April I scheduled teleconferences between students and the voyaging canoe Hokule`a. Often I played phone tag with teachers as they have little time during the work day to use the phone or check their email. Making contact with teachers has been one of the most frustrating challenges I've had. These teleconferences have already begun and teachers and students have given positive feedback for the program. Another challenge has been rescheduling some teleconferences because Hokule`a's departure was delayed due to poor winds.

Another task I had this semester was compiling information to use during the voyage in our education programs. During the sail, a Reserve representative will be on board the canoe. Some of what she will do is talk to students during teleconferences and emailing back daily journals documenting what the crew is seeing along with some information about the areas. Because it can be difficult to write at sea, and the representative will have limited time to use the computer, we wrote some of the text ahead of time.

I also helped to prepare reference cards for the crews of Hokule`a and her escort boats. These cards included information on the depths at which fishing is not allowed for each island/atoll in the NWHI and recommendations for avoiding interactions with species like Hawaiian monk seals, sea turtles, and sea birds. The most important lesson I learned while preparing these cards is that for people to understand fishing regulations, they need to be clear and easy to understand. Right now, fishing boundaries are confusing and there are gaps that don't appear to make any sense. Some of these issues might be addressed as regulations in the NWHI are reviewed.

In May I traveled to Kauai to help prepare Hokule`a for the voyage. One of the main tasks I had was helping to scrub the canoe's hulls. The main purpose in doing this is to remove as much algae as possible and decrease the possibility of introducing alien species to the Northwestern Hawaiian Islands. I also helped to give another orientation for the crew on fishing and protected species in the NWHI.

Communications Training

In March, representatives from the National Marine Sanctuaries Program's communications branch came to Honolulu to hold a training for Reserve staff. One of the goals of this training was to improve the quality of presentations by the staff and to increase our confidence when speaking publicly. There are many occasions when this kind of training will be especially useful: presentations at Reserve Advisory Council and other public meetings, presentations at interagency meetings, teacher

workshops, and press interviews.

One of the most useful activities we did was video recording one-minute impromptu responses to simple prompts like "What's your favorite movie?" or "Talk about a teacher who impressed you." We reviewed the video after everyone had been filmed and talked about the strengths and weaknesses of each speaker. I found that I need to work on my pauses and "um"s, but that otherwise, I wasn't as bad as I had thought.

We later did a similar exercise simulating a television interview. The goal of this exercise was to practice articulating "messages," or the ideas we want an audience to hear and, ideally, remember. This has been very useful in discussions with people about the Navigating Change program. There are many things we can say about how interesting or "cool" the NWHI are, but the "take home" messages that we want people to remember and act on are more complex and sometimes need rehearsing to explain.

CPR and First Aid Training

One of the training activities I took part in this semester was Red Cross CPR (cardiopulmonary resuscitation) and First Aid certification. I've been trained in the past, but my certification was expired. In order for me to be an "active" scientific diver with the University of Hawaii, I need to keep this certification current. In the future I will be training and testing to become a NOAA certified diver and will also need First Aid and CPR certification for that. Becoming a NOAA diver will allow me to use NOAA equipment and participate in research dives for the Reserve.

The training brought a greater awareness of safety to our office. We realized we didn't have an official first aid kit in the office and after the class ordered one. We also learned about how to help some of our coworkers with severe allergies if they have a reaction. I also plan to get certified in infant CPR because I have a two month old niece living with me. I will encourage my family to do the same.

Community Presentations

As written in my proposal for the internship, I had planned to do at least three community presentations during the semester. Because of time constraints and added responsibilities, I was not able to complete all of these. The only presentation I had scheduled with a local high school was cancelled due to SAT testing and could not be rescheduled. During the summer I will be working full-time for the Reserve and will probably be able to do more of these presentations then.

Other Activities

Some of the other tasks I had at work were answering phones and helping with organizing office files and supplies. I also helped to gather Reserve email contacts for an informational listserv and make corrections to the Reserve's database of constituent's and partner's addresses.

Materials and Budget

All the materials I needed to complete this project were available at the Reserve Office. A computer with internet access, printer, copier, LCD projector, paper, pens, and telephone were the main supplies I needed. These supplies are covered in the Reserve's annual budget. My salary for the semester was approximately \$4500.

Additional costs which I did not anticipate when my initial proposal was submitted were for my airfare to Kaua'i to prepare Hokule'a and the crew for the voyage. This cost was approximately \$140.

Conclusion

I've found that writing a report of the work I did over the semester has helped me to see the accomplishments I've made over the semester. Because I only work part-time for the Reserve, I sometimes don't get to commit myself fully to a particular project. I know that I work hard and get a lot done, but still sometimes feel like I'm not accomplishing much. Keeping a record of my activities helped to me to see how the work I do fits into "the big picture" of Reserve projects.

I plan to continue working for the Reserve in the summer and until I graduate. I have not yet decided whether I will pursue employment with the Reserve (or sanctuary) after earning my degree. I do know that I want to continue working to improve Hawaii's environment and communities.

Resources

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