



Hoolei ia Pae Aina
November 19-20, 2010
Hawaii Convention Center, Honolulu, Hawaii

Challenges to Resource Management

In an effort to inform its Hawaii Archipelago Fishery Ecosystem Plan (FEP), the Council hosted a series of State-wide public meetings in 2009 and 2010. Community fishery workshops introduced new federal fishery management initiatives related to quota based management, marine spatial planning, resource monitoring, community grants and recreational fisheries. These workshops also provided opportunities for communities to identify and discuss local fishery and marine resource issues. The workshops featured several community dependent resource monitoring and research programs through which communities monitor marine resources and collect valuable scientific information.

The Ho'olei Ia Hawaii Pae 'Aina Puwalu series continued the Council's efforts to engage indigenous and fishing communities to formalize a community consultation process and integrate traditional fishery conservation and management into the Hawaii FEP. The island puwalu series, built on outcomes from the Ho'ohanohano I Na Kupuna series held in 2006 and 2007, featured the five *Aha Kiole* "process" criteria of adaptive management, consultation process, a code of conduct, education, and eligibility criteria.

The collective scope of community resource issues identified through these public meetings varied greatly by island and moku. Examples of the diversity include:

- Impacts from offshore aquaculture in Kona and Lanai;
- Injection wells and nitrification in Maui;
- Coastal development on Molokai;
- Conflicts between fishing and tourist based activities in coastal waters off Oahu; and
- Concerns over access to and utilization of fishery resources off Niihau

There were, however, some common issues that were consistently raised throughout the State, such as:

- Loss of fresh water into the ocean
- Channelization of streams and sedimentation
- Impacts of invasive species (taape, roi, algae)
- Access to shorelines (development) and resources (marine closures)
- Restrictions on harvest (sea turtles); and
- Access to and participation in the resource management process.

The issues raised through these meetings make up the challenges that lie ahead in resource management. Underlying the scope of issues is a recurring theme tied to the governance of our coastal and marine resources. To facilitate discussion on how best to address these issues, four summary documents have been prepared grouping the issues into the following general categories: User Conflicts, Coastal Development, Water Use and New Technologies.

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Challenges to Resource Management: Issues related to Coastal Development in Hawaii

There is no free lunch. Every action results in gain and loss. Resource management is a balance between conservation and utilization. What should be important in the decision-making process for resource management? If resources are managed for the benefit of the community, then the most important factor in the decision process for natural resource management is whether the decision will benefit the community most likely to be affected by the management decision.

Coastal development is the acceleration and concentration of human economic activities along the coasts that interferes with and disrupts ecological integrity of the coastal zones. Humans are part of the ecosystem.

In the island puwahu, the concern about coastal development was a concern about community development and how the community could participate in the process. The conflict portrayed in the media of implacable developer pitted against rabid anti-development forces seems much milder in the trenches. If the discussion of coastal development was broached in the island meetings it was in the context of community development and the main criticism was the lack of engagement and consultation with community for any initiative involving changing the land use of an area. In fact the lack of consultation and engagement was the greatest concern in the island communities.

Coastal development is the acceleration and concentration of human economic activity along coasts that we perceive to interfere with and disrupt the acknowledged natural balance of coastal zones achieved over time with long term habitation. To some coastal development is desired and necessary. To others, it is wrong and must stop. But as evidenced by participants in moku, puwahu and other meetings there is a majority of people that do not subscribe to one extreme or the other. The arguments for and against are both tribal and individualistic. The tribal arguments are based on the perception of public ownership of coastal property: "the development will benefit the community" and "keeping it undeveloped will benefit the community." Individual arguments are based on the concept of private property and the right of the property owner to alienate his property. In a democracy the body politic of uncommitted is swayed by these arguments so one point of view becomes the majority point of view and action will move in that direction.

The economic potential of the development of coastal areas maintains the pressure for proceeding with coastal development. Even the development of a public park poses potential impacts to the perceived or imagined environmental equilibrium of a site. The reality is that environmental forces are dynamic and changing. So the effort then is to determine the

acceptable and preferred use of a coastal area while acknowledging that there will be impacts. And, what are the acceptable knowable impacts of that use?

The native Hawaiian community, throughout all puwalu activities, was opposed to using culturally significant areas for development that would disturb burials, block traditional access and hinder traditional uses. This is supported by the Hawaii Constitution, case law and in regulation.

The community, in large part, was concerned that development also causes pollution to enter the waters and asked for ways to mitigate that. They recognized that hardening of the coasts and waterways invited coastal degradation and the health of streams and waterways and while hardening of streams protected property from flooding and inundation the same effects could be achieved by increasing setbacks that allowed natural processes to continue and maintain the health of these environments.

The native Hawaiian community was concerned that rezoning and the land utilization processes have not worked in their favor resulting in losses in traditional access, traditional gathering rights and traditional practices. They recognized that these losses constituted a loss of their culture, disinheritance from the bountiful ecosystem achieved through traditional management of natural resources.

The community demonstrated the difficulty achieving a balanced use of natural resources. On O`ahu, the `Ewa community wanted the benefits of urban and suburban development. They also wanted preservation of their coastal and ocean resources. The right management action would be to achieve the acceptable compromise for the community.

What the engagement with the community through this most recent series revealed about coastal development is that the community is interested in coastal development *as* community development and the community wants to be involved at every level of the process from inception to implementation. The community expressed a desire for better representation in the zoning and land use policy-making initiatives.

There was not a rejection of coastal development but a desire for a more measured approach where the community is involved with the process and is able to influence the process. The community is requesting:

- Opportunities to consult on coastal development,
- Participation in the coastal development plan for their coastal area,
- Access to information and data about the areas being proposed for development,
- Mitigation for the impacts of development during the construction phase and monitoring of the environment after completion,
- Recommendations for alternatives to consider.

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Challenges to Resource Management: Impacts of User Conflicts over Hawaii's Coastal and Marine Resources

Issues involving user conflicts was a common topic heard at the community meetings held throughout the State. User conflicts vary among communities but are mainly centered on coastal, marine and fisheries resource issues as different segments of the community competed for common ocean space, natural resources or competing interests. As Hawaii's resident and visitor populations continue to grow, user conflicts between different segments of the community have evolved to become more frequent, intense and common across all islands. Managing user conflicts has resulted in a myriad of rules, regulations and management regimes across local, state and federal levels. These can be seen in zoning approaches applied in heavily used coastal environments (swimming, jet skis, dive tour operators, etc.), permitting activities at parks and other public areas and offshore zoning to separate the small-boat troll fishery and the longline fishery.

Community user conflicts heard ranged from harbor allocation issues to offshore fishing gear conflict. The process to address and resolve these issues are driven by legal and jurisdictional responsibilities of local, state and federal agencies. Processes in place differ between government levels and are further differentiated between individual agencies. For example, counties use a permitting process and zoning to control public and private activities. The State, through its Board of Land and Natural Resources and Chapter 91 rule making process, promulgates changes to and new rules that govern fishing activities. At the federal level, fishery policy is developed through the Council's community based advisory structure that results in recommendations to the Secretary of Commerce.

User conflicts heard at the Council's community meetings fall into a few categories, which examples are provided below.

Direct Community Interactions:

- 1) Hawaii's fishing community has been supported by the State of Hawaii through the placement and monitoring of up to 55 Fish Aggregation Devices (FADs) throughout the main Hawaiian Islands. These floating buoys help to aggregate pelagic fish which are targeted by the local small boat fleet. FAD placement is key to the success of the FAD attracting and holding fish. Numerous comments were heard during several community meetings about the FADs being lost due to collisions with barges being towed between islands. Other conflicting activities include diving and jigging versus trolling around FADs.
- 2) Akule is the single most important near-shore fish to the local seafood consumers and fish retailers, representing ---% of all the nearshore fish commercially caught. The bulk of the fishery is caught using surround and seine nets as schools accumulate in specific nearshore coastal waters in the morning. The development and growth of the tourist based ocean activities, such as swim with the dolphins, jet skis, wind surfing, kite surfing and near-shore

activates, directly impacts this fishery by scattering schools before fishermen can deploy their gear.

Community conflicts resulting from Policy.

- 1) Pupukea or Shark's Cove on the north shore of Oahu was designated a Marine Life Conservation District by the DLNR prohibiting fishing within its boundaries. The initial MLCD allowed pole and line fishing which was a popular place for local residents to catch akule or halaluu. The rule was later changed to prohibit all fishing which resulted in the area being dominated by commercial scuba diving operators using the site for teaching scuba classes. DLNR's mission clearly prioritizes recreational activities over commercial uses of state public resources. However, in Pupukea MLCD, commercial operations has overtaken recreational activities as a direct result of DLNR reclassifying its MLCD.
- 2) The State of Hawaii allocates a percentage of harbor wharf space for different uses. As new tourist based ocean users have developed, the percent allocated to the fishing community has decreased. Communities have identified this as one of the problems impacting their ability to continue fishing operations.

Competing use of ocean space:

- 1) Hawaii is the only State with operational offshore aquaculture facilities. Numerous communities have identified the placement and operation of these offshore aquaculture facilities as a major concern. Issues raised by the community include:
 - a. Displacement of fishermen at known fishing grounds/koa
 - b. Escapements of diseased fish/competing with native species
 - c. Environmental impacts from nutrient loads/waste
 - d. Lack of local economic benefits

Such conflicts are anticipated to become more common as Hawaii's economy, industries and population continues to expand, particularly in the neighbor islands where the population growth has lagged behind that of Oahu. Existing government regulatory structures and processes through which user conflicts are addressed are often done so in isolation and segmented. Nationally, the Obama Administration has launched a new initiative to develop coastal and marine spatial plans that build on and improve existing Federal, State, local, and regional decision making and coordination. These regional plans hope to enable a more integrated, comprehensive, ecosystem-based, flexible, and proactive approach to planning and managing sustainable multiple uses across sectors and improve marine resource conservation. This initiative is consistent with the Western Pacific Council's place-based archipelagic ecosystem approach to fisheries and marine resource management and efforts to engage communities, local, state and federal agencies, and other organizations with interests in managing and conserving Hawaii's coastal and marine resources.

From the community's perspective, many management structures and regulatory processes now in place lack opportunities for direct input in the policy develop process. The new federal initiative for MSP may aid in federal and national policy coordination and community consultation, but the integration and coordination of local and regional bodies to support cross jurisdictional conflicts and issues will still need to be addressed.

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CHALLENGES TO RESOURCE MANAGEMENT: Developing Technologies and its Impacts on Natural Resources and the Communities of Hawaii

Hawaii is the most isolated group of islands on Earth. With its closest neighbor 2,500 miles away, Hawaii is in need of creating sustainable energy and food resources in case of natural or man-made events (e.g. hurricanes, tsunami, dock worker strike, etc.). Many technologies are being introduced to the islands in hopes of meeting these needs and reducing the islands' dependence upon imported goods and services. Creating Hawaii-based sources for energy and food sustainability also creates local jobs and invests in our own economy.

Through numerous meetings across Hawaii, the communities voiced concerns regarding the technologies being developed in achieving sustainability in the islands. Most of the continuing concerns were regarding plans for energy sustainability and food production (i.e. aquaculture) in the islands, although there are certainly other plans that may arise in the near future. These two items, energy and aquaculture, need to be addressed for both the sustainability of the islands and the communities it supports.

Energy in Hawaii is currently being produced through a multitude of sources including renewable ones such as the wind, sun, geothermal, and ocean. However, the State of Hawaii depends on fossil fuels such as oil to generate 90 percent of its energy¹. While crude oil prices continue to climb, so does the bill for gas and electricity for the people of Hawaii. Hawaii's Clean Energy Initiative (HCEI), a partnership between the US Department of Energy and the State of Hawaii, has a goal of meeting 70% of the State's energy needs with clean energy by 2030². Through efficient renewable energy resources, HCEI hopes to reduce Hawaii's dependence upon imported petroleum and keep a large portion of the \$7 billion spent on energy in Hawaii. To alleviate the situation, the State is looking into additional renewable sources of energy, including additional wind farms, solar farms, Ocean-Thermal Energy Conversion (OTEC), wave energy, sea water air conditioning, and biofuels.

Most of the energy needs come from the island of Oahu and many of the plans to develop additional energy sources to feed the increasing needs of the island through projects on islands such as Molokai and Lanai. A plan for the island's largest wind farm is proposed for the island of Lanai with 100-200 turbines over approximately 12,000 acres intended to supply up to 20 percent of Oahu's electricity demand through an underwater cable from Lanai to Oahu³. Another project to help curb electricity demand in Oahu is also being considered for Molokai

¹ Pacific Business News, October 11, 2010, "DBEDT Serious about Hawaii's energy Future"

http://www.bizjournals.com/pacific/blog/2010/10/dbedt_gets_serious_about_hawaiis_energy_future.html

² <http://hawaii.gov/dbedt/info/energy/Document.2010-03-01.1302>

³ http://www.lanaiwind.com/index.php?option=com_content&view=article&id=53

and has canceled its plans to develop a wind farm on Hawaiian Homestead land and is negotiating with Molokai Ranch⁴.

Another technology being looked at to help with meeting energy needs includes OTEC, which uses the temperature difference that exists between deep and shallow waters to run a turbine generator to produce electricity⁵. A demonstration in Hawaii was highly successful and the only one ever built back in the 1970s, and contracts are continuing to be awarded to develop this technology. Currently, the US Department of Energy has contracted Lockheed Martin, who is working with Makai Ocean Engineering in Honolulu and other universities and companies in the development of this technology⁶.

Many in the community are for reducing Hawaii's dependence on fossil fuels and for energy conservation but are concerned with the costs to both the people and the natural resources. Some concerns voiced at the Council's Puwala meetings around the State in 2010 are:

- Wind farms destroy the panoramic views of some of the most beautiful parts of the Hawaiian Islands which is both important to the residents and tourists;
- The placement of the wind farms could damage archaeological, cultural, and historical resources in the area;
- Placement of the new technologies could impede access to the areas to hunting, fishing, and other traditional uses;
- Cables used to transfer the energy could affect fish habitat, corals, and other marine features;
- OTEC concerns include changing water temperatures in the area and thus the species composition in the water column, entanglement or "sucking in" of marine mammals and other marine organisms, and restrictions from fishing around the area.

Food was produced sustainably for the indigenous people of Hawaii through farming, fishing, and fishponds prior to western arrival. The increase in population, destruction of fishponds, increased fishing pressure, and loss of farm lands, has made Hawaii dependent upon imports for food. However, aquaculture, or the cultivation of aquatic/marine resources, is being looked at to supply sustainable protein to the islands.

Currently, the State of Hawaii is host to the only offshore aquaculture operations in the US, with cages off of Oahu and Hawaii Island. These operations are located within the State of Hawaii waters (inside 3 miles) and are regulated by the Department of Land and Natural Resources. Plans for additional operations are in different stages of the approval process and are proposing offshore cages at Lanai and Kohala on Hawaii Island. There is also interest in tuna ranching, where tuna is caught and "grown out" in fish pens instead of raised from egg/larvae in hatcheries then grown out in cages.

As with energy development technologies, sustainable food production technologies face similar concerns from the community:

⁴ <http://www.themolokaidispatch.com/wind-energy-developer-negotiating-molokai-ranch>

⁵ http://en.wikipedia.org/wiki/Ocean_thermal_energy_conversion

⁶ http://www.hawaiisenergyfuture.com/Articles/Ocean_Energy.html#OTEC

- Impeded access to traditional gathering sites (i.e. fishing Ko'a);
- Jobs created are technical and locals aren't qualified;
- Escapes from operations harming ecosystem;
- Competition with wild-caught fisheries;
- Pollution from feed and waste, injection wells, etc;
- Operations taking from the community and not giving back;

To help Hawaii achieve true sustainability and to wean itself off of imported energy and food sources, these new technologies need to be developed and used properly. The concerns of the community are rooted in their experiences in dealing with developing technologies and need to be addressed in the planning stages early and often, and not considered/dismissed at the end. Developing a system of natural resource management joining traditional land and ocean uses based on traditional land delineations and consultation through the community (i.e. the proposed aha moku system) may be able to address the concerns while still being able to move towards a sustainable Hawaii.

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**Challenges to Resource Management:
Impacts of Water Use on Ocean Resources and
the Community in Hawaii**

The most important natural resource for any island community is water. This is especially true for all of the islands in the State of Hawai'i. In the many community meetings held on resource management in the past decade the critical issue of water constantly came up by every facet of the community. Critical issues over water have been prominent in the struggle by Native Hawaiians who need water to survive in their cultural and subsistence practices; by farmers who need water for agricultural purposes; by fishermen who need water so that spawning fisheries can survive; and by the general public who need water in every facet of their lives.

Under the Hawaii State Constitution and the Public Trust Doctrine, the State's first duty is to protect the fresh water resources (surface and ground) which are part of the public trust. (Hawaii Constitution, Art. XI §7, 1982). The duty to protect public water resources is an imperative precondition to all subsequent considerations, including development and current economic stimulation. Without this Constitutional protection, the natural environment would be irrevocably harmed and the "duty to maintain the purity and flow of our waters for future generations and to assure that the waters of our land are put to reasonable and beneficial uses" would be endangered. Nevertheless, even with Constitutional protection, the water in Hawai'i has been misused, abused, stolen and never truly appreciated by those who have the power to protect and nourish it. Those in "power", governmental leaders entrusted by the general public throughout the decades have not truly understood the importance of fresh water to the health of the ecosystem, both on land and in the sea – concepts by which Native Hawaiians and non-Hawaiians who are kama'aina to Hawai'i have lived and thrived for countless generations.

Watersheds on each island are critical to the residents of the islands. For generations, residents of Hawai'i have worried about the state of the watersheds in their areas. And, for generations, general laws that should be protecting the watersheds have been shown to be inadequate to the task. And, as proven by the Puwalu Series, each island is unique in its natural resources – yet, the health of each island is determined by the water on that island. When the streams from the watersheds are polluted, when the water is cut off from the land and ocean the land suffers and the nourishment we get from the ocean is decimated. Fish and *limu* (seaweed) must have fresh water to spawn and thrive. Fishponds are dependent on fresh water to survive. The host culture, Native Hawaiians are a practitioner people. Their culture and their practices depend upon the resources. The simple fact is that without the existence of a resource upon which to practice, there can be no practice.

The natural resource health of Hawaii, since the arrival of westerners has always been based on the economic wealth of the islands whether it was the sugar plantations, tourism and now development. But these engines that drive Hawai'i have been negligent in their care and

understanding of the source of this wealth – our pure water. Millions of gallons of water have been, and continue to be wasted daily in the common practice of dumping water into the ocean. Today, we pay the price for that kind of waste by an almost decimated water supply and an unbalanced marine resource and shoreline.

Water concerns and the lack of understanding about the water of Hawaii continue to cause disruptions to communities who depend on this water to live and for their livelihoods.

There are many examples of poor judgment on the part of government in dealing with water issues. Oftentimes these examples of flawed laws flare up as in the case of the *Waiahole Water Use Permit, Hawaii Supreme Court, 2000*. The Waiahole case came from the efforts of small family farmers and Native Hawaiians and a coalition of supporters to restore streams originally diverted by Central O'ahu sugar plantations. When the sugar plantations closed in 1995, it sparked a huge legal battle over the diverted water. The coalition sought to return diverted flows to the streams to restore native stream life and to protect traditional and customary Native Hawaiian practices including taro cultivation. Opposing this effort were large agricultural and development interests who wanted the water to go to leeward O'ahu for golf course irrigation and housing development among others.

In Maunaloa, after reconstruction of the Kalaniana'ole Highway, thousands of gallons of water are now re-directed into a sewage system instead of correctly allowing the water to naturally flow into the ocean, as it did in the past. At one time, the Maunaloa Fishpond was the largest in all of the Hawaiian Islands and fed thousands of people. That fishpond depended on the fresh water flowing into it. Now, Maunaloa is rampant with invasive species and the fishery is all but dead.

In the puwala series and community meetings, these issues and others were addressed by Hawaiians statewide and solutions were offered including analysis of the Moku System which provides for adaptive management of natural resources, including water that is site specific; a code of conduct; a way of consultation with those who manage our waters; a method of educating people on the merits of a Hawaiian traditional system of ecosystem management; and an eligibility criteria – a determination of who in the different communities can best assist government in managing our natural resources by integrating proven Hawaiian generational and traditional natural resource management methods with current and contemporary tools and techniques. Hawaiians are a very resourceful people. They have always used the best methods and tools to protect, nourish and sustain the land and ocean upon which they depended for sustenance and life.

Today, communities are examining realistic ways to restore the water flow, and to correct the waste that was done in the past, and still continues today. Part of that correction must include the practical understanding of how communities in their own districts or moku can work with government in the correct ways of assessing and correcting the problem. Another stronger part is to affect governance in looking at the protection and usage of water through the Aha Moku Process.

As stated in the Hawaii Constitution, it is the duty of the people to maintain the purity and flow of our waters for future generations. As stated in the Kumulipo, water is sacred to Hawaiians psychically and spiritually. They are mandated to protect it as their very identities, culture and religion are irreversibly entwined. That should also hold true for everyone who lives in and loves Hawai'i.