Question and Answer Responses
Hawaii Coral Reef Fishery Management Workshop
November 6 & 7, 2003
Koolau Golf Course, Kaneohe

Q & A's Day 1

Status of Coral Reef Fisheries

Notion that fishermen are reluctant to submit data – what can be done to improve compliance by fishermen and how can we help fishermen understand the responsibility of participating reporting – getting over the fear?

Way to get better information from fishermen is to provide more feedback – There is a good response when management agencies show that they are using the information, which the fishermen provide. It will help teach the fishermen how their information is used and why it is important to them – what is good for – and to give them a product. Present the information at public meetings – get it out to the public. Commercial fishermen literally harvest public trust resources; they have a responsibly to file accurate catch information.

Other things that can be done: Need to be strict -- that licenses can be put in jeopardy if they don't report. Trip logs can be required to fill out prior to trips – if a fishing boat does not a trip log on file then a citation can be written. It doesn't take much to get the word around that reporting is important and that someone is looking over your shoulder to make sure that it happens. If fishermen want to be treated like profession, they have to act like professionals (do what is required).

Interested in health and the recovery of coral reefs that depend on certain reef fish species. (Tangs) How many surgeonfish do we need in near shore waters to have a healthy reef? How many herbivores are needed to maintain a healthy ecosystem? (Ecosystem sustainability)

Managing for the health of a fishery may not always be for the health of the ecosystem. A targeted species – stats can be robust for individual species but species diversity can be changing on the reef. This is a concern for the aquarium fisheries. Value is going down. Yellow tang is becoming fished less and people are switching over to other species. Current fisheries management is focus on species-specific stock management; current thinking is that you need to embrace the system as a whole using ecosystem approaches. NOAA has ecosystem-based management as one of the major goals for agencies – WPRFMCS working to integrating ecosystem-based management approaches into fishery management plans. How to exactly do this is a struggle, but people are working on it.

Feather duster worms – are we seeing direct damage to habitat through their removal?

No real information on this. Most feather duster worms are collected from Kaneohe Bay. Hammer chisel operation to remove the animals. There are laws on the books against habitat destruction (damage, break, take corals), which expresses intention to protect habitat from fish harvesting.
Alien and invasive species – FWD is on it.

Parrot fish and spearfishing. What information is being collected on recreational nighttime sprearfish of parrotfish?

They rarely get data at night. Data collectors get up early to try to capture this information, when the divers come in. Spearfishing – uhu fishing is a concern of people. Fishermen are smart they know what people are on the lookout for. It is really hard to get this information especially on a "please, may I look" basis.

Current Management Initiatives

Is there any consideration in DLNR reconsidering minimum net mesh size? As sizes minimum changed, mesh did not change.

Have considered it, DLNR is looking to do a mesh size comparison study – do a computer simulation – fish body shape length proportions and try to come up with something that would also be a good demonstration size. West Hawaii has adopted a larger mesh size 3 inches. It is important to look at.

Minimum size requirements for fisheries – it is relatively manpower intensive to enforce these regulations. Does Hawaii have the number of enforcement personnel to be checking compliance to these regulations? Is there a chance of being caught?

There are more fishermen than enforcement officers. We have had officers bringing in undersize fish; there is some enforcement – but you need acceptance by the public of the regulations. This is why we are making common sense rules that people will accept. Education part is equally important. All these things are needed. Want to make an effort on the information side. Heard about a guy into catching an undersize fish and another fishermen talked him into tagging it could study. We also did a joint campaign on the new regulations. People got it. It was not as difficult as it was thought it would be; some comments included A) why not sooner b) why not more. Unlike commercial fishermen, non-commercial fishermen they can only inspected if there is probable cause. The state is getting more information, but in order to enforce complex laws- DOCARE is hobbled – they can only request to look at the legislature is looking into the????

Species of Special Concern

Dilemma about the size of marine protected areas (MPAs), take the argument for Waikiki to protect ulua the MPA's need to be bigger, then fishermen would object say that DLNR are locking up more of the area … for the tourists, What kind of spillover effects can you get from a spawning

for population spread out?

Ratio of reserve size to home range of fish – protect enough of resident individuals that you build population and eventually spillover of juveniles and adults may happen. Waikiki home ranges of ulua and weke? Home range is larger and you do not get effective protection. If you put the net in the right place you can catch the whole population within the reserve. You need to have a size, which helps build up the biomass… they need to protect a large proportion of the resident fish.

You get more "bang for the buck" in MPAs if they are established for reproductive output rather than adult spillover. Theoretically they are trying to enhance reproductive output. Spillover should be byproduct.

Stock enhancement in MPAs or conservation areas… What do you see as the role of artificially created habitats?

In terms of DAR Artificial Reef Program, they have not been targets for any the species of special concern talked about today – only put in areas where there was no relief. Some resources do utilize these habitats. There are restrictions to areas where artificial reef can be placed.

Any research of where the omilu are during different sizes? Such as 1,3, 21 inches, ect?

There was a fishing tournament to determine if there was a spatial different – turbid areas inside Kaneohe bay are where the little guys (juveniles) were found, they are not really found outside of these areas. Omilu move to more exposed reefs areas, as they become adults. Seasonal fluctuations. Where are they in Johnson atoll and NHWI where there are no estuaries? They are in the sandy shoals and are probably not coming from Main Hawaiian Islands. Shallow sheltered areas. Maybe in areas where you have ground water entering the ocean.

Concern about the health of the coral reefs and role of species. Down the road it seems there is important role to see there is an adequate population of grazer fish. Do you have any ideas about range of these fish? Surgeonfish and others?

Those unlike the omilu have very small home ranges. Preferred daytime forging areas then travel a few feet/meters to a sleeping place. Waikiki has high relief near a lot of macro algae. Food is very near sleep.

Q and A Day 2

Hawaii MPA

Comment – evaluation on MMA should be on effectiveness and efficiency.

Kapu areas, no-take, most difficult to implement. What have not look at these one that have been around for 25 year efficiency and effectiveness? There is general agreement that we move this forward to all the islands, there was legislation, not fully supported by DNLR. Any comment?

Legislature and bills – a lot of discussion on bills for and against. The largest opposition came from fishing public while there was some discussion with in division it was internal not public. Not answering the question

Regards to commercial landing? Decline of landing due to ciquatoxin? This is a dynamic situation; non-fisherman impact.

1998 was fear of ciquatera. That is definitely contributing, but not a significant impact.

If there are other environmental impacts – needs to be stated so that people don't think that the problem is all fishery related.
Is 13% inclusive of only areas inaccessible by fishermen (Marine Life Conservation Districts) or does it include the military places?

It is official state designations only.

What is the amount of closed areas if you include the military area?

Even what you perceive as an inaccessible areas, if conditions are right people will be there fishing. Very few areas are totally inaccessible in Hawaii.

You can view these harder to get to areas as being more conducive as being MPA's – use all the elements to better describe what is seen as MPA types. Use these areas as study areas. Resistance will be less in those areas that are harder to get to by the general public.

In west Hawaii, they at first wanted these FRA's in sandy areas, but they would not have been effective. See how many young fish are coming back… the genetic variability of the young of the year is less, which means they are coming back from a selective group or certain areas. Some areas may be more productive in the reproductive recruitment sense. Precautionary approach is need when you first set up MMA's. For example if you want to have areas where replenishment may occur, then the most inaccessible areas may not be the best place so you may also need include accessible areas MMA design.

How are MPA designated in State of Hawaii? Does the state decided or is it a community process? How long are these places closed?

Officially established by statue or DLNR. They are closed until there is some need to review them or determine if regulations need to be changed. There are some areas like Waikiki are alternating between opened and closed.

There is no set time limit. Usually closed with intent that they will not be open. The state has a open public process – through hearings and public forums.

Marine Managed Areas From other Pacific areas

Participant used to go to Guam frequently and would snorkel and see little fish but recently he was able to see more fish. Tumon Bay now has schools of fish and within the reserve hook and line fishing is still conducted.

They (the reserves) are working, but fishermen are the only ones targeted, tourist can still step on the corals, "bird man" did his thing (a big launch was built out into the reserve that he could fly off of), and developers can still do their thing. Fishermen have taken proactive steps – they see that the reserves work and they believe in them; they police themselves and the co-op promotes not fishing near the reserves. Traditional fishing for hook line throw nets were allowed for elders because it was a traditional fishing place – currents are easy, and

Many of these areas exemplify something we all need to take home – bottom up management works! Issue about right or privilege to fish. It is a responsibility! These other areas have pointed out how communities can guide government and form partnership. We are talking about trying to restore fisheries – you have to also focus on other issues – such as land management. It is really difficult to get fishermen to come even to fishery related public meetings. How do you get them to come to land use issue meetings? Any insight?

Joeli – maybe the way that Fiji has done things can help guide us. Start consultation at the village level (community, county, church ect.) – it is easier to identify users in a smaller localized place. You have to start at level where you can win their confidence through having key people support the project/program. They will buy into what you are asking them to do if they trust you. People will come because they believe in what they you are doing – that is the right thing to do. Maybe you should identify areas and work with the people within that area – and try to get the people mobilized at that level – once people are close enough they do

Buy the beer and tell them to come… but chiefs the council control the village when a meeting is called everyone should be there. If there is closely nit organization in which the people respect the "chiefs", it will work.

We have to be responsible Wiamanalo advocating for restoration of water flow restore mechanisms for fish to reach the sea. The Government does not have CZ plan – there is no enforcement on how much a person can take what is done with it.

Concern about putting these projects (traditional knowledge) into the schools – teach the children what you have to offer make sure it gets out to

education. Our area our children don't even know what our fish look like. **Fish have an intrinsic value to the planet. What's the most valuable fish in the world?**

Big fish that people like to look (the real big hump head wrasse in Palau)– what's to encourage the recreational fish? It is hard to balance between. MPA's on Guam are mostly ecotourism.

In Guam during the papio run – the kids rod and real for them. Manny took his son to the place where he used to fish. – When he was a kid the water was about knee high, this year water was about 2 inches high at high tide. (runoff changing the habitat)

How much/how long did you collect data before implementing MPA is your districts and who conducts the ecotourism industry in your areas?

Samoa – 3 years ago village based community management. Surveys were done before program 11 villages did surveys and studies by coral biologist and scientist - co-management approach.

Guam – 95% businesses are non-local – mostly Japanese, if you are not Japanese, you can't be involved. 20 years of data collection. Creating a community based collection system

Fiji – they did not survey prior to this activity the people have to let us know that they want resource management. When they start the program they do baseline studies.

<u>Enforcement and Community Involvement</u>

Please expand on statement made that once field forum program was implemented. Your caseload went from 100 to 0. Was it complaints or real prosecuted cases and how many related to the marine environment?

Complaints coming in not all aquatic, some hunting and boating, ect. We know a little about what every division does, for example at a fish and wildlife forum it would have been on a totally different set of complaints. This program implemented 1 year ago – there were so many complaints out there we had to try something – education aspect seemed to work to the best. There was the fear thing; advertising to the public went well. We solicited solutions from the public. Ex. State park – kids riding in late at night with loud music, ruining facilities. Community wanted gate – and help out and damage and complaints went down.

We are doing this to pass on resources to future generations; where are they? Why are not in this room? We need to not only take what we know and pour into the brains of children and they will become responsible. But if we give them problems to solve they will come up with different ways to

respond or rectify problem. How can we get students involved in helping with issues?
A lot education but there is a big gap between kids and older people. There is not much addressing this gap. We have a different social structure – loss of village style of life. Village system seems to involve everyone.
It is disturbing that the laws we need are not there- in reference to the turtle thing – what do you think DLNR ought to do? There seems to be a lot of public hearing but Islands can completely agree on one thing. What can be done to make this more effective?

One thing would be to establish an environmental court so that prosecution can specifically address these issue

Other than Kailua, how enforceable or unenforceable are lay/gill net rules?

Currently the laws are difficult in that actual observation of soak time has to be done – there is 4 hour set time and that begins when the officer first see the net. If the net is in the water, it may not be seen. Nets should be mark. Some of the laws we have are not perfect; they can be changed. They are not in stone, but it is process to get them changed. Gill nets are hard to enforce. When they respond to a violation or potential – they are looking at from court perspective they need to be there for the entire four plus hours – the public has to testify in court that it was there for longer than four hours and it was not checked. One minute over four hours is in violation. They issue citations do not have to make the arrest – give them a court date then type report and file photographs and prepare information for court. At court, all elements must be in place. Hilo has 4 officers a day for everything. They are spread thin on a daily basis – it's hard to sit in one place for four hours.

<u>Impacts from Alien Species (& Disease) on Coral Reefs</u>

Mentioned feeding preference for alien algae – expand?

Bring fish and algae into lab and examine pair wise species. Feeding preference. Eating ~7g algae per day. In the field, fish may be taking epiphytes from surface of algae. Indication that surface of algae has been changed due to grazing. Branches of algae are tightly packed. Further onto reef flat, evidence of non-grazed algae present.

Capiphycus isn't preferred by fish; Urchins like them a lot.

Fishing strategy by fishermen, to reduce effort of labor - they try to bring a school of fish farther up in the water column (~50 fathoms). At night, fishing strategies are the same. Taape/Opaka naturally occupy certain strata, however are being brought up into different strata in the effort of bringing schools closer to the surface when fishing them. What size

hooks? Larger hooks will not catch taape. What effort was used to insure that the experiment considered all of these variables?

Much of the fishing was done by a commercial fisherman. He used standard fishing techniques. Researchers tried to use the same techniques as local fishermen. All factors were considered (i.e. time of day). Based on results in the study, both taape and opaka were most active at biting hooks at the same time of day – evening. Varying hook sizes were use and the results logged.

Taape Study by Dr. Parrish, et al. is available. Did you factor in the cycle of the moon?

The data was not broken down into cycles of the moon. We could go back and do that. It was hard to come up with a consensus of best time to fish when talking to fishermen. Deciphering all of the variables becomes difficult when looking at locations in the entire state.

Flipchart question at the beginning of Day 2

How can we improve our outreach and consultation with the Fishermen?

- Have meetings/discussion at boat harbors and piers or nearby sites
- Promote vents sooner with more lead time
- Enforcement should be at site where fish are funning monitoring activity there, reinforce size limits
- Increase number of enforcement officers on all islands increase enforcement pay scale.