

## **Oversight Hearing**

**May 23, 2001**

### **Guam Testimony: Presentation and Recommendations to Subcommittee on Fisheries Conservation, Wildlife and Oceans**

**Chairman, Congressman Wayne Gilcrest.**

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#### **Guam MPA Goals and Objectives**

1. To restore and sustain depleted coastal resources, focusing especially on food resources.
2. To develop community understanding and partnerships in managing coastal resources.
3. To maximize the benefits

#### **Background**

Guam is the most Southern island in the Marianas Archipelago. Guam is 212 square miles in area and located 13 degrees north of the equator in the Western Pacific. Guam hosts lush fringing coral reefs consisting over of a thousand species of fish, over 300 stony coral species and thousands of other invertebrate species.

In the mid-1980's, this small unincorporated US Territory experienced a significant economic boom that placed tremendous additional pressure on the coral reef ecosystem. We began to see more than a million tourists annually. Guam experienced large scale development focused on tourism. Guam began to experience increased problems with sedimentation, herbicides, pesticides, storm water discharges and recreational user conflicts. Utilities failed to keep up with the growth, causing regular power outages and sewage treatment exceeding capacity. The demand for food to feed the growing tourism industry went haywire and traditional and subsistence fisheries quickly became commercial to meet this demand. Coastal fishery stocks were exhausted quickly and catch per unit of effort plummeted. Habitat loss, overfishing and size overfishing were destroying the health of the coastal environment.

In 1986, the Division of Aquatic and Wildlife Resources determined that fish stocks were beginning to show signs of decline. Over a 15 year period there had been a 70% decline in harvest and catch per unit of effort (CPUE) values. The decision was made that actions were needed to stop the declines of the coral reef fishery and begin restoration. An evaluation of practical approaches was made and it was determined that regulation of fisheries and attention to restoring water quality were two primary threats that needed priority treatment. After evaluating potential fishery management tools a study was conducted to identify suitable sites to establish marine preserves. The study looked at 60 sites and targeted setting aside 20% of Guam's shoreline and adjacent reef area with a final goal of protecting 10% the shoreline and adjacent reef protected. The results of this study were based on criteria that included habitat diversity, species richness,

usership, enforceability, cultural practices and economic benefit. Nine areas were selected, 5 permanent sites and 4 rotating areas (2 open for two years and two closed for two years and then rotated) In 1987, a was put forward but was not well received within the Agency. The predominate conflict, was the inclusion of a ban on SCUBA spearfishing. It took four years to fine tune this document and the removal of the ban on SCUBA spearfishing before the proposal was administratively approved. The proposal was circulated among various Government agencies for general comment. There were considerable comments from the other agencies and this caused significant changes to the proposal. The agencies included in the review were: Guam Visitors Bureau, Guam Environmental Protection Agency, Guam Department of Public Works, Guam Bureau of Planning, Guam Department of Land Management and the Guam Port Authority. The proposal included several key changes. A huge definition section to eliminate uncertainty, greater regulation on commercial fishing, proposed marine fishing licenses, limitations on imports and exports of aquatic species, 5 proposed permanent marine preserves, 4 rotating marine preserves, greater regulation of invertebrates and a freshwater fishing license.

In December of 1993, three public hearings were held; one North (Dededo), one Central (Agana), one South (Merizo). The hearings were well attended at Merizo and Agana. Public notice was poor prior to the first hearing and the Dededo hearing was therefore poorly attended. There was a lot of hostility and opposition presented toward licensing, preserves, and the regulation of imports and exports. There were 1031 testimonies (written or oral) of which 971 were against and 60 in favor of the proposal. Out of the 971 nay sayers, 650 of these were the result of a fisherman opposed group call "Inekton Y Pescadores". These testimonies were reviewed and incorporated into a new draft. Each of the individuals who opposed the proposal was contacted and their issues were discussed to determine is there was a solution to their concerns. Several meetings were held with the leaders and membership of "Inekton Y Pescadores". In many cases the fishermen did not believe the decline data and a number of them challenged the data. After considerable revision and community contact, the hearing process was restarted. The new package removed licensing, removed regulation of imports and exports and reduced the number of preserves back to 5 permanent sites. This changes to the preserve areas proposed were largely due to an agreement with the fisherman group to drop the rotating areas because the accepted the decline data an the marine preserve concept. In July of 1995 a second round of three hearings was held. During this process one community asked that a temporary preserve that was removed be made into a permanent preserve (Achang Marine Preserve in Merizo). This effort was well received. The comments were reviewed, appropriate changes made to the proposal and the proposal submitted to the legislature. At the legislature, a number of changes were made: One preserve was removed (Anae Island), the freshwater fishing license was rewritten to apply only to "non-resident aliens", and the existing misdemeanor penalty law was rewritten to allow the Department to create their on penalty structure. In rewriting the penalty section the severability section was removed. Although flawed, this document became Public Law 24-21. The Governor signed Public Law 24-21 in May of 1997. A legal opinion was rendered that made parts of the proposal unconstitutional and others severely flawed. Again the Agency went through the triple A process and held a hearing proposed to correct these flaws. In January of 2000 the fishing regulation package became fully enforceable after 14 years.

There is attached addendum that provides more of the specifics on the fishery statistics that was used to justify the establishment of the marine preserves.

## **Lesson Learned**

1. The community needs to be part of the plan in establishing Marine Preserves.
2. Be sure to have sound baseline data and well developed monitoring plans that preferable include the

public.

3. Marine Preserves must be well defined, well enforced and goals and objectives clearly understood.

### **Recommendations**

1. Marine protected areas work in place with stocks that have been depleted and species that are not highly migratory. Federal programs should encourage and fund the development of such systems within state jurisdictions.

2. There is still no clear law that protects coral reefs federally. There are many laws which are used to attempt to do this but this is a piece meal approach to the issue.

3. Loss of established protected areas can be critical to the long term recovery of ecosystems. There needs to be a programs that provides funding to address short and long terms negative impacts to these declared critical resources.

4. Deliverable must be simple, closely monitored and reported to the public.

5. Cultural and Socio-economic components of marine preserve have been severely unaddressed in many cases and this needs attention.

6. The no-take issue needs to focus on biological sustainability and be sensitive to cultural and traditional uses.

7. The term MPAs needs to imply some type of significant resource protection and management at the sustainable level. A stricter definition would be acceptable but nothing less.

**November of 1991**

## **JUSTIFICATION FOR PROPOSED AMENDMENTS**

### **TO THE FISHING REGULATIONS**

The following document addresses the sequence of events and justifications for the proposal to modify the Department of Agriculture's fishing regulations. The following information has been provided for reference:

### **BACKGROUND**

The Department of Agriculture, Division of Aquatic and Wildlife (DAWR) is delegated the responsibility to control and regulate fish and game in and about Guam under Title 5, Guam Code Annotated (GCA) in Section 63102.

Guam has gone through a rapid economic growth over the last 10 years and this has had a significant impact on the health and use of Guam's marine resources. Historically our coastal marine resources were used primarily for subsistence fishing and has always been an important part of the social fabric. Westernization has steadily shifted the use of these resources toward recreational and commercial activities. These changes coupled with a growing tourism industry, diversified water recreation. This resulted in many new coastal users and many new coastal environmental impacts. The end result of these increased user was

user conflicts between fishermen and swimmers, divers, boaters, jet skiers, windsurfers, etc. The economy also made it possible for more residents to afford boats, making access possible to more remote, seldom utilized coastal areas. Fishing itself also changed through the introduction of modern rods and reels, more powerful spear guns, the use of SCUBA gear, the use of monofilament nets and underwater flashlights. Increases in population and diverse ethnic groups also changed the levels and types of pressures on these resources. Finally, poor land management practices degraded water quality all around Guam, negatively affecting the health of the coral reef habitat and interfering with reproduction processes. Wildland fires, poor erosion control plans for proposed developments, extended droughts, storm drainage, pollution and storm surge all have caused significant habitat loss in recent years and pose greater risks for the future. All of these factors have increased the pressure on the fragile marine resources surrounding Guam and justify the need to take some proactive measure to protect and restore the coastal natural resources.

DAWR has been monitoring the fisheries resources around Guam for over 20 years and has recently determined that the near shore fish resources are presently showing trends of rapid decline. Table 1 shows total harvest by method per year for the nearshore fishery during the years from 1986-91: Table 2 shows the top ten families of fish harvested over the same period and Table 3 the total harvest (lbs.) by fishing method over the same period. This time period from 1986 to 1991 was selected because the data gathering methodology was changed in 1986 to include night surveys. For this reason a shorter data set had to be utilized. The information presented represents shoreline fishing and excludes fishing from a boat, but method trends in the reef boat based fisheries are similar. This information is also based on an expansion of samples and therefore is limited in its application to looking at trends.

### **Total Harvest by method**

The total harvest by method values present in Table 1, show declines across the 6 year time period in all categories. Logic would tell you that this is likely to be a stock decline because you would not expect all fishermen in all group to suddenly be less able to catch fish. This is an important first step defining a potential resource depletion and potential stock management need.

### **Top Ten Families Caught.**

The top ten families of fish caught as presented in Table 2, merely identifies those families that account for the top ten ranking fish families by pounds harvested. Of the families identified, the surgeonfish family always accounts each year for the number one group in total pounds harvested. This is true primarily because it represents a large number of types of fish, many of which are important food fish (unicornfish, surgeonfish, tangs, etc.). The other families on this list which always make the top ten and are the goatfish, rabbitfish, jacks and emperors. Lastly, there are a couple groups which would either always appear higher on the list or which are not presently on the list but would have been there before. These groups are the parrotfish and wrasses. Notice that in each case there has been a significant decline in harvest. The top ten families of fish harvested annually from Guam's waters make up 70 % or more of the total harvest and often exceeds 80%. True, there are some categories that do not show as marked a decline as these but the trend of decline is consistent throughout. Remembering that these are the key groups, the data presented shows a 60 to over a 80 % reduction in some of the top ten families and these are the most highly prized and traditionally caught fish types. Decline in harvest of key species and shifts in species composition are a second piece of a puzzle that indicates a warning requiring more information.

### **Total Harvest (lb.) by Method by Fiscal Year**

Table 3 three shows steady significant declines in CPUE. This is the critical and final piece to the puzzle showing stock decline and potential collapse for some species. In addition to harvest, it is important that fishing effort be analyzed because if less fish is being caught it could merely mean that less people are fishing or less time is being spent fishing. If less people fish then there should be more fish to catch by less people. This would mean that the catch rate would be high, but in fact the catch rate is also declining. These facts all together indicate that the marine fishery resources have been hurt, but this does not determine how .

Provided is a copy of a Division of Aquatic and Wildlife Resources (DAWR) Annual Report about the yellowstripe goatfish ('Tiao' or Somonette). This report gathers the information that would be needed to manage this fish if necessary. In the process of gathering data it became obvious that Guam's population of yellowstriped goatfish are in trouble. A general problem in managing reef fisheries is not understanding how these resources sustain themselves. Many marine creatures, fish, corals, starfish, etc, release their eggs and sperm into the water to be fertilized. Once fertilized, the gametes go to the open sea at the mercy of the currents. After an extended period of time, for fish 30 to 60 days, provided currents, temperatures, and food were all acceptable, the young swimming larvae will return to Guam. Because of this phenomenon many forms of marine life rely on producing large numbers of gametes in hopes that sufficient numbers will survive to return. With respect to the production of gametes, this process is most dependant on the female population of the species. A few males can produce enough sperm to fertilize many females. Females on the other hand are limited by the number of eggs they can produce. The yellowstrip goatfish provides a good example of the importance of a healthy female population. A six inch female yellowstripe goatfish is just old enough to be mature and can produce about half a million eggs at one time. Because it is young and exerting a lot of energy into growth it probably will not produce eggs more than once a year. On the other hand a 12 inch yellowstripe goatfish would be considered a large old adult. Many people would look at the size and expect that this fish would produce twice as much as the six inch fish. Much to the surprise of many the large fish would produce 45.5 million eggs nearly 90 times more eggs. In addition, this fish could spawn several times during a year producing hundreds of times more eggs. If you review the report provided on the yellowstripe goatfish it paints and ugly picture. This fish has lost 95 % of it ability to produce eggs for Guam. This is because there are very few big fish in the fishery. More than 60 % of the reproductive potential and up to as much as 85 % is vested in the larger fish. This explains why the tiao' (recruiting yellowstripe goatfish) runs are no longer like they were. This is one example of many and they all point to finding a way to preserve resources without losing the culture, food source and recreation.

Before any misunderstandings develops, it is important to remember that no one group or event is being blamed for the decline of fish around Guam. Also, if efforts are taken now there is no reason why these resources can not be restored to be what they once where. Management is a word which often is thought of as a bad thing because immediately it is associated with taking something away from the public. The true meaning of this word is "wise use of resources". The data gathered indicates some significant declines in fish resources. During the hearings, some fishermen questioned this information and there are two important considerations which should be presented: Most of the fishermen that expressed this concern based there doubt on their continued ability to catch fish. We certainly agree that it is still possible to have a good catch. The information presented does not contradict this either, but what it does show is that you can not consistently catch as much or as big a fish on average in the same amount of time as fishermen did just 8 years ago. The differences are not small, they are significant. Second, common sense would tell you that it is a lot less work and headache to do nothing than to go through several public hearing and get badgered for changing the regulations. We would much prefer to have a healthy resource which does not need any regulatory restrictions to protect it. If you observe the systems which have been developed in many other Pacific Island Countries, their regulations are more restrictive. We are behind the times in protecting our

marine resources and the proposed changes should go a long way in protecting the future of our marine resources.

The proposal presented attempts to restore what was lost and maintain uses of resources. Nobody has been excluded from fishing in a traditional way or from catching their favorite fish and this was intentional.

This proposal alone will recover the fishery resources. The government and the public must be diligent about restoring water quality and dealing with pollution or the coral reef habitat will continue to degrade and there will be not place for fish resources to recover. In addition, there are statutory laws that need clarification, revision and creation to address the many changes in coastal use which have occurred recently

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