

MARINE SKILL REPORT SUBMITTED TO THE
UNIVERSITY OF HAWAII MARINE OPTION PROGRAM

Scarcity of a Resource:

The Cause of Conflict Between
Recreational Gill Net Fishermen and Pole Fishermen

Submitted by,
Leslee Yasukochi

Advisor
Jan Auyong-Titgen
Ocean Recreation and Tourism Specialist
UH Sea Grant Extension

Report Date
May 3, 1986

PREFACE

In 1978, a conservation management program was implemented along the coastline of Waikiki, Hawaii. The program was called the Kapuku Management Plan. Kapuku translated into English means "to restore life". The goal of the Kapuku Management Plan is to restore the marine life which once dwelled there. To achieve this goal, the beach area from Kapahulu Avenue to Diamond Head Lighthouse is alternately opened and closed to fishing, spearing and netting every 2 years. During the 2 year open period, only pole fishing is allowed for the first year. Netting and spearing is permissible during the second year.

According to data collected by the Division of Aquatic Resources, the 2 year closure of the Kapuku Management Plan area allowed the fish population to recover nearly 300 percent.¹ Biologically, the Kapuku Plan seems to be successful.

Socially, the fishermen are the people who are directly affected by this Kapuku Plan. There has not been any study conducted about how the fishermen are affected by the Kapuku Management Plan. Therefore, Jan Auyong-Titgen of the University of Hawaii Sea Grant Extension proposed to conduct a study which would deal with the fishing habits and attitudes of recreational fishermen who use the Kapuku management area. This study would determine to what extent the fishing effort shifts to adjacent or different areas or whether fishing effort is reduced or maintained during closure periods of the management area. The study would also try to quantify the recreational fishermen's value of the sport in relation to their value of the fishing resource.

Data collected for the Sea Grant study was obtained by questionnaire. This is how I became involved with the study. I was hired by the

University of Hawaii Sea Grant Extension to be a questionnaire interviewer.

Data was collected from June to August 1984. I went out to areas between Kahala Beach and Honolulu Harbor and interviewed the people fishing there. The questions asked were directly from the 1984 Fishing Study Questionnaire. (Appendix 1). The questions on the questionnaire, asked the fishermen about their fishing habits and their feelings about fishing. It also asked the fishermen how they felt about the Kapuku Management Plan.

In the month of June, I interviewed fishermen outside of the Kapuku management area since it was closed until July. During July and August, all interviews were conducted within the Kapuku management area. After 2 1/2 months of interviewing fishermen, the information from the questionnaires were entered into a computer. Analysis of the data was to be done by my advisor.

Most of my learning and experience came directly from interviewing many fishermen. It was very interesting to listen to what their opinions were about fishing and conservation. Many older fishermen complained about fishing on Oahu. They have seen the decline in the amount of fish in the ocean and say there is not much fish left to be caught.

One issue that many of the fishermen felt very strongly about was the use of gill nets and how this method was too efficient in catching fish. It takes too many fish at one time and leaves nothing for the pole fishermen. Since this issue seemed to be a big problem to many pole fishermen I decided to find out more about the problem. This lead me to write a paper about the cause of conflict between gill net fishermen and pole fishermen.

INTRODUCTION

As you walk along the beach areas on Oahu today you hear "old time" fishermen talking about the good 'ole days. They recollect how there used to be so many fish in the ocean. Many fishermen claim this is no longer true. The fish resource has diminished greatly over the years. Many shoreline pole fishermen have complained that the shoreline gill net fishermen and the use of gill nets have contributed to the depletion of the fish resource.

This has lead to a conflict between shoreline pole fishermen and shoreline gill net fishermen. The pole fishermen say that the gill net fishermen are indiscriminant, they catch whatever happens to swim into the net. Gill netters seem to be too efficient, and tend to take any type of fish which also includes the smaller fishes needed to reproduce for the next generation.

The conflict seems to be of more concern to the pole fishermen because they are the ones who feel they are losing out. The pole fishermen are competing for fish along with the more efficient gill net fishermen.

What causes the conflict between these two groups of fishermen is the scarcity of the fish resource. When there is a limited resource which different groups of people depend on, each group blames the other for taking more than their share. When net fishermen catch an excess of fish, the pole fishermen complain that nothing will be left for them to catch and that this is not fair! In order to try and solve this conflict the causes of the fish scarcity must be prevented, and only then would the conflicts subside. If there were enough fish in the ocean for all user groups, then

no one would complain and there would not be any conflicts.

The intention of this paper is to identify the causes of fish scarcity. Then we know what to prevent in order to reduce the scarcity of fish which in turn would reduce conflicts between different gear user groups such as gill net and pole fishermen. Many of the causes of fish scarcity could be argued over repeatedly, but these causes seem to be most significant:

1. Damage due to overfishing
2. Lack of strict enforcement
3. Lack of funding for education and enforcement

DAMAGE DUE TO OVERFISHING

Since many shoreline pole fishermen complain about the lack of fish as compared to earlier years, this must mean that people are noticing a reduction of fish in the ocean. This could mean that the fish are being caught faster than they can multiply, and may be in the process of being overfished.

One of the main reasons for overfishing is due to population growth. The population of Hawaii in 1900 was 154,001, it increased to 1,038,700 in 1984.² Since there has been an increase of the population in Hawaii, there are also more fishermen catching fish. There also tends to be more fishing pressure within a limited area, so eventually the resources are depleted. An example of this is in the Waikiki area. With the increased population on Oahu, the Waikiki coastline experienced increased fishing

pressure and there was an observed decrease in the amount of fish. Many fishermen stated that the fishing was not as good as it used to be.³

Population growth implies an increase in food needs. For coastal communities, the ocean is a natural food source. Many families go fishing to lower their grocery bills. The demands for seafood products are great and in many instances the demand exceeds the ability of the species to replenish its supply. When the resources run low there are increased conflicts between user groups such as the gill netters and pole fishermen. One blames the other for taking more than his share. Previously there was courteous co-existence of different fishermen; now there is tension, fear and secrecy.

A good example of the conflict between gill net fishermen and pole fishermen is when it comes to fishing for food. The pole fishermen complain that the gill net fishermen catch too much in the nets which spoils fishing for them. In a newspaper article a Kauai fisherman stated that monofilament gill nets are so effective that they deprive shore casters and other pole fishermen of the opportunity to catch any fish at all.⁴ Information gathered by the Division of Aquatic Resources (DAR) in the Waikiki-Diamond Head area showed how efficient monofilament gill nets can be. When this area was closed to fishing from 1978 to 1980, the fish population there increased by nearly 300 percent. When the area was opened for pole and line fishing in 1981, the number of fish dropped by only 20 percent. Whereas in 1982, within four weeks of the area being opened to gill nets, the number of fish dropped to what one DAR spokesman described as "close to what it was before closure".⁵ But the gill net

fishermen say that the only reason they go fishing is so they can feed their families. The gill net fishermen say they have a right to take the fish. But eventually if they keep on taking the fish so efficiently, there will not be any left for their children in the future.

With the increase in population, people become selfish and they do not think about the future. Immigrants are part of Hawaii's growing population who are exerting some pressures on local fishery resources. There are two types of immigrants. One type of immigrant is one who comes to make a better living in a new country. These immigrants are usually from South East Asian countries or the Pacific Isles, which are heavily dependant on their marine resources for food. These countries are located near the ocean so subsistence fishing is important. The diet in these countries consists of a lot of fish. Immigrants arriving in Hawaii discover the marine resources and selfishly take as much as possible. Many do not give a thought to any fishing regulations.

Hawaii's immigrants are unaware of the State's fishing rules and regulations. Many take more than the regulated pole and line catch limits. Since gill netting is a highly effective method for catching fish, the immigrants tend to favor this method. This creates a lot of conflict, especially with the local pole fishermen because the immigrants take everything in their nets. They do not understand that there may be less fish left for the less efficient pole fisherman.

In Monterey, California there was a fisheries problem with the immigrants. Many Vietnamese left Saigon after its fall and dreamed of

continuing their fishing occupation in the United States. When they recolonized in Monterey however, they were faced with two major setbacks: old, poorly equipped boats and insufficient knowledge of U.S. and California fishing regulations. Many of the Vietnamese used gill nets up to one mile long which was two or three times as much as that used by the local fishermen. Such extensive gill net were used to catch enough fish to pay for their large crews and feed large extended families. They used methods to trap as many fish as possible in a given area, and left nets unattended for long periods of time. They also set gill nets in areas where the incidental catch of non-target species would be quite high (Kronman, 1985).

A language barrier also contributed to the total fisheries problem. Few Vietnamese could understand the California fishery laws. Although U.S. fishermen claimed they (immigrants) pretended not to understand and just disregarded the regulations. Domestic fishermen frequently reported that the Vietnamese were depleting Monterey Bay's fisheries stock (Kronman, 1985). Therefore immigrants coming to a new country should be informed of the fishery regulations before they are allowed to fish.

A second type of immigrant may also cause overfishing. This "immigrant" could be an industry, company or government who introduces new technologies and developments. Frequently new and more efficient types of fishing equipment are developed which displace traditional or old techniques rapidly.

Such has been the way in the Micronesian island of Palau. The colonial government no longer promotes a subsistence lifestyle which

incorporates traditional conservation laws or ethics into a management plan. Instead, the economics of trade and the value of money were introduced. Thus inducing many Palauans to earn money through fishing to conveniently purchase goods and services. In order to maximize their fishing effort, some Palauans purchased boats and sophisticated equipment. Consequently, to pay for the equipment, more fish had to be harvested resulting in the overfishing of nearshore fishery stocks (Johannes, 1981).

What occurred in Palau is similar to what is happening to the gill net in Hawaii. New technology has changed the traditional gill net's fiber content from heavy linen thread to the almost invisible monofilament. The monofilament is much more difficult for the fish to see which could dramatically increase the total number of fish to swim into the net. Consequently, the monofilament gill net is very efficient leading to harsh criticism by the pole fishermen. The statewide catch average for fishing reports that net fishing lands an average of 4 fish per hour. Whereas for pole and line fishing, 1.28 fish are caught per hour. These differences are dramatically illustrated by accessing the catch over a typical 4 hour period with 16 fish caught per hour for net fishing and 5 fish per hour for pole fishing.⁵ These statistics support the belief that net fishing is indeed more efficient than pole fishing.

Net fishing is quantity fishing. It is designed for schools of fish or several kinds of fish in one area. Catches are usually many or none versus a few fish a good pole fishermen can land. Many pole fishermen believe gill net fishing leads to overfishing because the catch is indiscriminate.

All catches include a variety of fish sizes, many of which are undersized and unedible fish that eventually die in the net. When too many undersized fish are caught, less viable fish remain to sustain the population.

Therefore less fish are left to grow to catch size limit for the pole fishermen. This factor greatly contributes to the scarcity of the fish resource.

A factor which also relates to overfishing in Hawaii, is that the shoreline sea waters belong to the public. In the state constitution it is written,

Section 3, Article X, Sea Fisheries: All fisheries in the sea waters of the State not included in any fishpond or artificial enclosure shall be free to the public, subject to vested rights and the right of the State to regulate the same.

When an area is open to the public, the ownership of the resource is held in common. So a large amount of people have independent rights to the resource. But problems arise when the total use or demand upon the resource exceeds the supply. Problems and conflicts occur when there is a commons because if any one user increases his catch of the limited resource, it leads to unfavorable effects on others.⁶ So it is to the advantage of the fisherman to catch all he can because he himself cannot control the fishery. What he does not take, someone else will. This matter is associated with the well known statement:

"Ruin is the destination to which all men rush, each pursuing his own best interests in a society that allows freedom of the commons."⁷

A good example of this problem is when a fisherman discovers a terrific fishing spot unknown to others. The fisherman will carefully manage his favorite spot until others discover the grounds. When others find out about the area, there is no longer an incentive for self-management. The fishing pressure will increase rapidly as more fishermen learn about an area. There is no sense trying to control fishing by this individual any more because a larger catch would remain for someone else. Consequently, everyone tries to catch as many fish as possible, which leaves less fish remaining to replenish the original supply. This is when we experience overfishing.

One problem discussed in a newspaper article, states that "the problem is in state policy... The statutes provide for free and equal access for everybody (in the ocean). The concept was fine when Hawaii only had a population of 500,000 and didn't have all these different user groups in contact in the water. But conditions have changed."⁸

Presently many fisheries are persuading governments to change from open to limited access fishing areas. This must be done to insure that the fish supply can restore itself. An example of a limited access plan is the experimental Kapuku Plan in Hawaii. In the Waikiki-Diamond Head Beach area there is a two year fishing moratorium followed by two years of allowed fishing. This was initiated to allow the area to restore itself of wildlife during the two year banned period. Prior to the closing of the area, there was a fish density of 114 pounds per acre. After the two year ban it had increased to 450 pounds per acre.⁹ This indicates that limited access to an area can reduce the scarcity of fish. Therefore, government

must now step in and take control over the fisheries to prevent the public from destroying it. Self regulation hasn't worked so now the government must control the fisheries for the benefit of the people.

LACK OF STRICT ENFORCEMENT

Indeed the government does have the power to control the fisheries for the public. Although they do make reasonable rules and regulations to conserve and control the fisheries, the rules must be enforced. Lack of strict enforcement is a leading cause for the scarcity of fish resources in Hawaii.¹⁰ The fish resource belongs to everyone and therefore some people have become greedy. Illegal methods are used to catch fish since the fish resource is scarce. People have become lazy and have resorted to the easiest way to catch fish.

A common complaint regarding gill net fishermen, despite using more efficient monofilament nets, is the use of gill nets with an illegal mesh size less than two inches.¹¹ One Waianae akule fisherman said in a newspaper article that illegal netting of undersized fish severely depletes fish stocks.¹² When this type of netting occurs, many times an enforcement officer is not there to issue a citation and by the time an enforcement officer does get there, the illegal gill net fisherman is gone. This is a big problem, there are not enough enforcement officers to cover the job which needs to be done. In 1983, there were 48 field officers in the state of Hawaii which were charged with checking thousands of acres of state lands and ocean areas for fishing, hunting, state parks and

forestry violations and protecting wildlife sanctuaries, conservation districts and natural area reserves. Many of the officers have too many duties so only a fraction of their time ^{could} be put to actually going out and checking for fishing violations (Markrich, 1984). There are only 15 enforcement officers on Oahu to cover the coastline area of 112 statute miles. As one land department official stated in a newspaper article, "For all practical purposes, enforcement of marine laws, bag limits and other fish conservation measures is practically non-existent."¹³ Another comment stated, "Much of the hard work done... to explain ocean management to the public is no longer done because the state's few wildlife resource agents struggle to do all that is expected of them. What's the point of training people to be game wardens and then use them to give parking tickets in state parks?"¹⁴

The people of Hawaii are not afraid to violate the rules and regulations because of the lack of enforcement and because violation penalties are not severe. This is a major deficiency in Hawaii's fisheries management program. If people do not obey the rules which protect the resources for everyone, it will lead to depletion of the resource. This once again leads to conflicts between people who depend upon fishing for subsistence.

In ancient Hawaiian times, conservation of resources were very important. If any of the rules or regulations (then called tabus) were broken, the penalty would be death. Such a severe penalty would be unimaginable today, but somekind of stiffer penalties need to be established.

Enforcement officers can never be at all locations where there are violators, even with an increased amount of enforcement officers. There must be more public information and marine education programs developed. Programs in public schools that deal with fisheries conservation and curriculum that teach concern for protecting our natural resources should be increased greatly.

With increased education in conservation and fisheries management people will then understand why we need these important rules and regulations. They need to understand that these rules and regulations are made not only to restrain the people, but made for the people's own benefit. As stated by Johannes in his book,

"When fishermen do not understand the purposes of fishing regulations or perceive them as being imposed arbitrarily by outsiders they are not liable to look on them with favor or obey them voluntarily. There is a major advantage to regulations that have a precedent based on local custom; they are liable to be viewed with relative sympathy by fishermen."¹⁵

Attitudes of the people must be changed. People must learn that eventually if they do not obey the rules and regulations of a resource it will be severely damaged or even destroyed. The attitude of "every man for himself" and "get as much as you can", cannot go on forever. Everyone must work together to insure productive resources for all.

One instance where fishermen learned that conservation was truly important was at the Pacific Mackerel Fishery in California. For years the commercial and recreational fishermen resisted management of the

fishery. Meanwhile the fishery continued to decline until there was little or nothing for the opposing sides to fight over. It was only then that the competing sides began thinking about the value of the resource itself. So both sides agreed on a solution to the problem – a moratorium on commercial fishing. Eventually, due to the agreement of both sides, there was an improvement of the mackerel fishery (Martin, 1983).

Public education and enforcement officers must work together to get the public to show some commitment to the ocean resources. People must take it upon themselves to obey the laws and willingly try to conserve the resources. This is a very hard deed to accomplish, but any type of effort to conserve a resource is worth the try.

LACK OF FUNDING FOR EDUCATION AND ENFORCEMENT

Funds are needed if the government or any agency is to conserve a resource for the people. Money is a necessity for just about everything we need and do. Money is needed by the government to control and regulate the fisheries. This is a major problem in Hawaii because there is a lack of funding due to budget restrictions. According to state enforcement chief Maurice Matsuzaki, budget restrictions have limited the enforcement division's ability to deal with problems.¹⁶ If there are only minimum funds available, there will only be minimal enforcement and education available to control overfishing. Since overfishing is a cause of fish scarcity in Hawaii, the conflicts which arise due to the depletion of fish will continue unless more funding is made available. Thus there will be continued conflicts between different gear user groups such as

recreational gill net fishermen and pole fishermen.

In order to try and increase the funds which are available to the fisheries management section, recreational fishing licensing has been suggested. By licensing all recreational fishermen, a better understanding of the amount and types of pressure being placed on the nearshore ocean resources can be developed. Also, by assessing a minimum fee of five dollars each, the revenues from fishing licensing could amount up to 1.2 million dollars. This revenue could then go toward improved enforcement and marine education which in turn could solve many existing problems.

Another alternative could be to increase fines for disobeying fishing laws. Stiffer fines would make the violator think twice before disobeying fishing laws. But there could be a problem with this alternative because presently, money from paid fines go to a state general fund instead of going directly to fisheries management or the enforcement section. If the paid fines could go directly to help the fisheries by increasing enforcement and marine education, then this alternative would work out well.

CONCLUSIONS

In conclusion, conflicts between different gear user groups such as recreational gill net fishermen and pole fishermen, results from the lack of fish. Conflicts and depletion of the fish resource will continue to develop unless certain measures are taken to improve the situation in the very near future. Few conservation measures have been successfully implemented yet more are needed. Everyone in this state needs to be

informed and made aware of the diminishing resource and discover ways to prevent it from disappearing. We must all join forces to protect our valuable resources for the people now and for future generations.

ENDNOTES

¹Markrich, Mike. Waikiki Pole Fishing Allowed For A Year As Ban Ends. Honolulu Star Bulletin and Advertiser. 1 July 1984. p. G-1.

²Department of Planning and Economic Development. State of Hawaii Data Book 1985. A Statistical Abstract. November, 1985.

³Department of Land and Natural Resources, Division of Fish and Game. Plan of Action For the Implementation of the Kapuku Plan of Management. State of Hawaii. March 1977. p. 27.

⁴Markrich, Mike. Commercial Gill Netting Blamed For Decline of Akule On Kauai Reefs. Honolulu Star-Bulletin and Advertiser. 9 March 1986. p. A-22.

⁵Department of Land and Natural Resources, Division of Fish and Game. Plan of Action For the Implementation of the Kapuku Plan of Management. State of Hawaii. March 1977.

⁶Hardin, Garrett and John Baden. Managing the Commons. W. H. Freeman and Company, San Francisco. 1977. p. 157.

⁷Hardin, p. 16-30.

⁸Markrich, Mike. The Answer is More Sea-Going Officers; The Question is Who. Honolulu Star-Bulletin and Advertiser. 31 May 1985. p. E-6.

⁹Markrich, Mike. Waikiki Pole Fishing Allowed For A Year As Ban Ends. Honolulu Star-Bulletin and Advertiser. 1 July 1984. p. G-1.

¹⁰Markrich, Mike. Ocean Conservation: Enforcement Problems Run Deep. Honolulu Star-Bulletin and Advertiser. 27 May 1984. p. A-7.

¹¹Markrich, Mike. Net Maker Finds Traditional Netting. After All. Honolulu Star-Bulletin and Advertiser. 13 May 1984. p. A-6.

¹²Markrich, Mike. Ocean Conservation: Enforcement Problems Run Deep. Honolulu Star-Bulletin and Advertiser. 27 May 1984. p. A-7.

¹³Markrich, p. A-7.

¹⁴Markrich, Mike. The Answer is More Sea-Going Officers; The Question is Who. Honolulu Star-Bulletin and Advertiser. 31 May 1985. p. E-6.

¹⁵Johannes, Robert E. Words From The Lagoon. University of California Press. 1981. p. 84.

¹⁶Markrich, Mike. Ocean Conservation: Enforcement Problems Run Deep. Honolulu Star-Bulletin and Advertiser. 13 May 1984. p. A-7.

BIBLIOGRAPHY

- Department of Land and Natural Resources, Division of Fish and Game.
Plan of Action for the Implementation of the Kapuku Plan of Management. State of Hawaii. March 1977.
- Department of Planning and Economic Development. State of Hawaii Data Book-1985. A Statistical Abstract. State of Hawaii. November 1985.
- Hardin, Garrett. and John Baden. Managing the Commons. W.H. Freeman and Company, San Francisco, 1977. Proceedings of the First Annual Marine Recreational Fisheries Symposium. Sport Fishing Institute, Washington D. C., 1976, p.83-92.
- Johannes, Robert E. Words From The Lagoon. University of California Press, 1981.
- Kronman, Mick. In California...Vietnamese Fishermen Persevere Against Adversity. National Fisherman, March 1985, p. 9-11.
- Markrich, Mike. Commercial Gill Netting Blamed For Decline Of Akule On Kauai Reefs. Honolulu Star-Bulletin and Advertiser. 9 March 1986. p. A-22.
- Markrich, Mike. Net Maker Finds Traditional Netting, After All. Honolulu Star-Bulletin and Advertiser. 13 May 1984. p. A-6.
- Markrich, Mike. Ocean Conservation: Enforcement Problems Run Deep. Honolulu Star-Bulletin and Advertiser. 27 May 1984, p. A-7.
- Markrich, Mike. The Answer is More Sea-Going Officers; The Question is Who. Honolulu Star-Bulletin and Advertiser. 31 May 1985, p. E-6.
- Markrich, Mike. Waikiki Pole Fishing Allowed For A Year As Ban Ends. Honolulu Star-Bulletin and Advertiser. 1 July 1984, p. G-1.
- Martin, Edwin P. Commonality Between Commercial and Recreational Fishermen. Proceedings of the Eighth Annual Marine Recreational Fisheries Symposium. Sport Fishing Institute, Washington D.C., 1983.

1984 FISHING STUDY QUESTIONNAIRE

1. Considering all the fishing you did during the past 12 months, about how many days did you spend doing the following types of fishing?

Number of days saltwater boat fishing?.....

Number of days saltwater fishing without a boat?.....

Number of days freshwater fishing?.....

2. During which months do you fish the most? (CIRCLE as many as apply)
ALL JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

3. When do you usually go fishing? (Check as many as apply)
() on weekdays () on weekends/holidays () on vacations
() daytime () night () good weather () any weather

4. Please indicate the 3 areas in which you fish most often. (MAP) _____
Why are these areas preferred? _____

5. Please indicate the 3 areas in which you fish the least. (MAP) _____
Why are these areas least preferred? _____

6. Do you belong to any fishing clubs or associations? () yes () no
If yes, which ones? _____

7. BELOW IS A LIST OF VARIOUS REASONS WHY PEOPLE GO FISHING. Please indicate how important each item is to you as a reason for fishing:

| REASONS: | Not at all Important | Slightly | Moderately | Very | Extremely Important |
|---|-------------------------|----------|------------|------|------------------------|
| To be outdoors..... | 1 | 2 | 3 | 4 | 5 |
| For family recreation..... | 1 | 2 | 3 | 4 | 5 |
| To experience new and different things..... | 1 | 2 | 3 | 4 | 5 |
| For relaxation..... | 1 | 2 | 3 | 4 | 5 |
| To be close to the sea..... | 1 | 2 | 3 | 4 | 5 |
| To obtain fish for eating..... | 1 | 2 | 3 | 4 | 5 |
| To get away from the demands of other people..... | 1 | 2 | 3 | 4 | 5 |
| For the experience of the catch..... | 1 | 2 | 3 | 4 | 5 |
| To test my equipment..... | 1 | 2 | 3 | 4 | 5 |
| To be with friends..... | 1 | 2 | 3 | 4 | 5 |
| To experience natural surroundings..... | 1 | 2 | 3 | 4 | 5 |
| To get away from the regular routine..... | 1 | 2 | 3 | 4 | 5 |
| To obtain a "trophy" fish..... | 1 | 2 | 3 | 4 | 5 |
| For the challenge of the sport..... | 1 | 2 | 3 | 4 | 5 |

8. Which type of group listed below do you usually fish with:
() family () friends () by myself () family and friends () co-workers

9. Who was the most influential in teaching you to fish?
() self () spouse () grandparents () parents () siblings () other relative
() friends () other _____

10. PLEASE INDICATE THE EXTENT TO WHICH YOU AGREE OR DISAGREE WITH EACH OF THE FOLLOWING STATEMENTS ABOUT FISHING.

| FOLLOWING STATEMENTS ABOUT FISHING. | | | | | |
|--|------------------------------|-----------------|----------------|--------------|---------------------------|
| | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Neutral</i> | <i>Agree</i> | <i>Strongly Agree</i> |
| The more fish I catch, the happier I am..... | 1 | 2 | 3 | 4 | 5 |
| A fishing trip can be successful even if no fish are caught..... | 1 | 2 | 3 | 4 | 5 |
| When I go fishing, I'm just as happy if I don't catch a fish..... | 1 | 2 | 3 | 4 | 5 |
| I usually eat the fish I catch..... | 1 | 2 | 3 | 4 | 5 |
| A successful fishing trip is one in which many fish are caught..... | 1 | 2 | 3 | 4 | 5 |
| I would rather catch one or two big fish than ten smaller ones..... | 1 | 2 | 3 | 4 | 5 |
| It doesn't matter to me what type of fish I catch.... | 1 | 2 | 3 | 4 | 5 |
| The bigger the fish I catch, the better the trip.... | 1 | 2 | 3 | 4 | 5 |
| I'm just as happy if I don't keep the fish I catch... | 1 | 2 | 3 | 4 | 5 |

11. Do you mostly try for particular kinds of fish?

()yes ()no

If yes, what species: _____

12. How much did you spend during the last 12 months on fishing supplies? _____

13. Do you make any of your own fishing gear? ()yes ()no What kind? _____

14. How many rod and reel combinations do you own? _____

15. IN THE FOLLOWING QUESTIONS, WE ARE INTERESTED IN YOUR OPINIONS ON FISHING IN HAWAII.

| HAWAII. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|----------------------|----------|---------|-------|-------------------|
| Usually too many people are fishing near by..... | 1 | 2 | 3 | 4 | 5 |
| Net fishing has contributed to a decline in fish.... | 1 | 2 | 3 | 4 | 5 |
| Spear fishing has contributed to a decline in fish... | 1 | 2 | 3 | 4 | 5 |
| The State should stock more fish to improve fishing.. | 1 | 2 | 3 | 4 | 5 |
| There is enough enforcement to protect fishing | 1 | 2 | 3 | 4 | 5 |
| There are too many rules and regulations governing sport fishing..... | 1 | 2 | 3 | 4 | 5 |

16. Have you heard of the Fisheries Mgmt Program for the Waikiki-Diamond Head area?
()yes ()no If yes, can you explain how it works? _____

17. How did you find out about the Program?

()family ()friends ()articles ()radio ()posted sign ()other _____

18. BELOW IS A SERIES OF WORD PAIRS WHICH CAN BE USED TO DESCRIBE FEELINGS ABOUT THE PROGRAM. PLEASE INDICATE THE NUMBER BETWEEN EACH PAIR THAT YOU FEEL COMES CLOSEST TO DESCRIBING HOW YOU FEEL ABOUT THE PLAN. (1 number per pair).

| THE PROGRAM IS | | | | | | |
|--------------------|------------------|-------------|-----------------|----------------|-----------------|--------------------|
| | <i>extremely</i> | <i>Very</i> | <i>slightly</i> | <i>Neutral</i> | <i>slightly</i> | <i>Very</i> |
| Unfair | 1 | 2 | 3 | 4 | 5 | 6 |
| Acceptable | 1 | 2 | 3 | 4 | 5 | 6 |
| Bad | 1 | 2 | 3 | 4 | 5 | 6 |
| Frustrating . . . | 1 | 2 | 3 | 4 | 5 | 6 |
| | | | | | | 7 . . Fair |
| | | | | | | 7 . . Unacceptable |
| | | | | | | 7 . . Good |
| | | | | | | 7 . . Satisfying |

19. Where do you fish when the area is closed? (MAP) _____

20. How often do you go fishing during the closure periods?

() less often () about the same () more often

21. How do you rate fishing in the Waikiki-Diamond Head area as compared to your favorite fishing spots?

() A () B () C () D () F WHY? _____

22. How would you rate the success of the Program in improving fishing in the area?

() A () B () C () D () F

23. In your opinion, should the Program continue? () yes () no

24. Would you suggest any changes? _____

25. THE FOLLOWING QUESTIONS WILL HELP US TO KNOW MORE ABOUT FISHERMEN.
YOU WILL NOT BE IDENTIFIED WITH YOUR ANSWERS, SO PLEASE BE FRANK.

What is your age? _____ In what area do you live? _____

Are you a resident of Hawaii?

THANK YOU FOR YOUR HELP.

()male ()female

_____group size

DATE_____

TIME FINISHED_____

WEATHER_____

LOCATION

_____Pt. Panic

_____Kewalo

_____Magic Island

_____Ala Wai

_____Hilton Point

_____DH Lighthouse

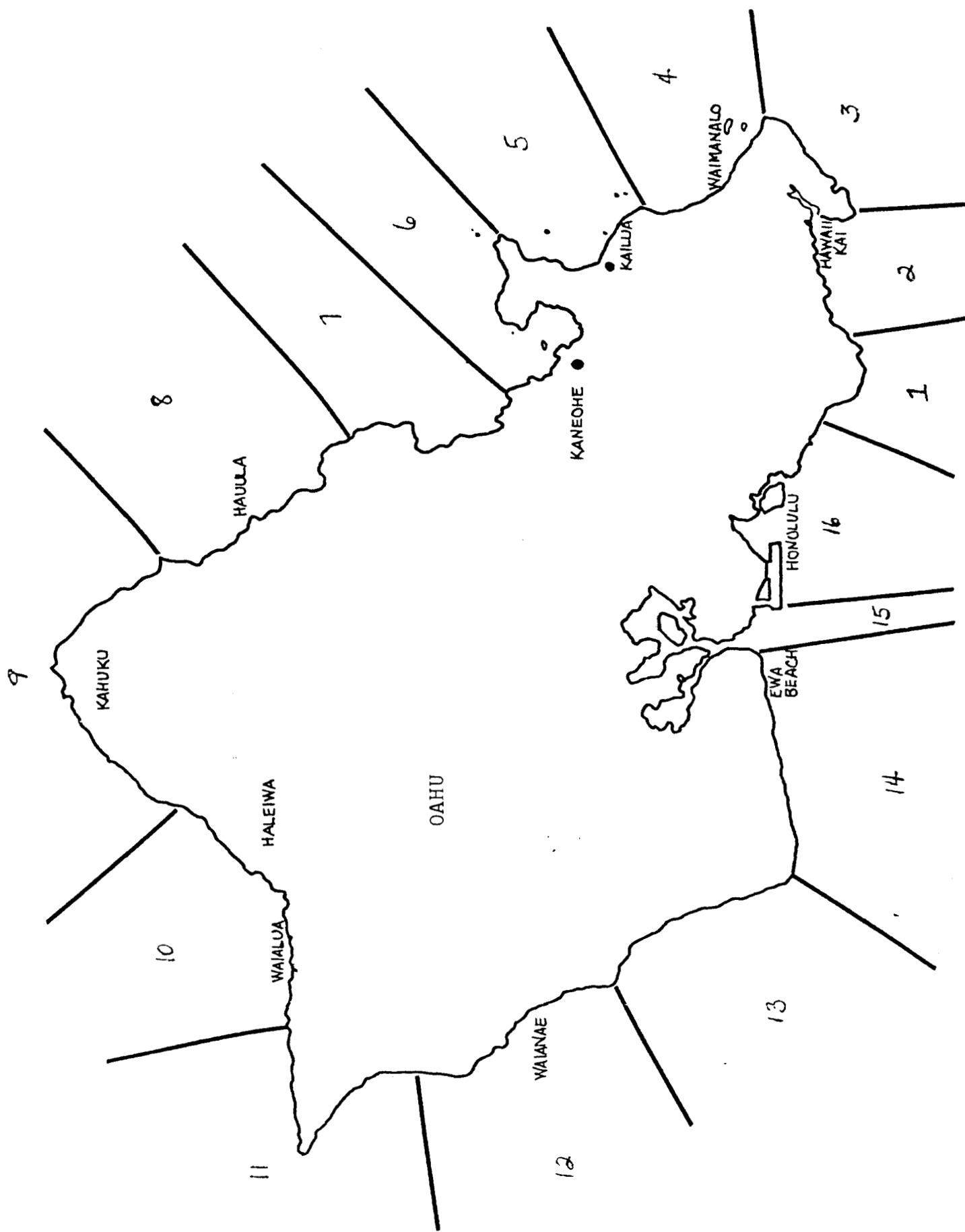
_____Black Point

_____Kahala

_____Wailupe

_____Moanalua Bay

_____Other



(MAP FOR QUESTIONS #4, 5, 19.)