WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

# Information and Alternatives Regarding Overfishing in the Hawaii Bottomfish Fishery

**December 8, 2005**

## I. Introduction

The U.S. Congress, through the Magnuson-Stevens Fishery Conservation and Management Act, requires that "conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry" (16 U.S.C. 1851, National Standard 1). If it is determined that overfishing is occurring or a stock is overfished, management actions must be initiated to adjust fishing effort and/or restore or "rebuild" the resource.

The Western Pacific Regional Fishery Management Council is the agency responsible for the development of fishery management measures for federal waters (3 to 200 miles offshore) in the Western Pacific Region (American Samoa, Guam, Hawaii, Northern Mariana Islands and the Pacific Remote Island Areas). The Council's Bottomfish Plan Team, which includes representatives from the Federal National Marine Fisheries Service (NMFS) and the State of Hawaii's Division of Aquatic Resources (HDAR), annually reviews the status of bottomfish resources in Hawaii.

The method by which fishery scientists determine the status of fishery stocks has recently changed. They are now assessed relative to two key criteria:

1) Overfishing: This is related to the amount of fishing mortality (the total number/pounds of fish that are caught) that a stock can support on an ongoing basis.

2) Overfished: This is related to the stock biomass (the total amount of bottomfish in the water) necessary to support a sustainable harvest.

Based on these new assessment criteria, the Hawaii bottomfish resource as a whole (archipelago-wide) is not overfished. However, it has been determined that "overfishing" is occurring due to excessive fishing effort in the main Hawaiian Islands (MHI).

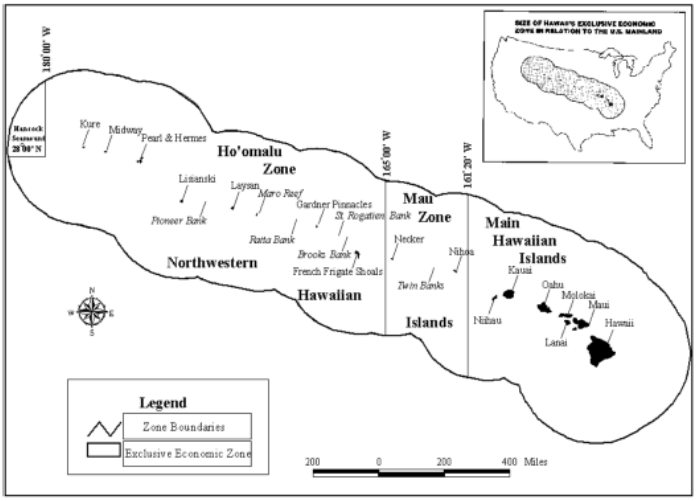
On May 28, 2005, the Secretary of Commerce notified the Council of this overfishing determination and gave the Council until May 2006 to develop a plan to reduce fishing mortality for bottomfish in the MHI. Scientists at NMFS' Pacific Islands Fishery Science Center (PIFSC) report that the target level of reduction, based on 2003 fishery statistics, is 15 percent.

This document provides information for fishermen, fishing support industries, fishery organizations and interested members of the public. Meetings and hearings to review alternatives under consideration by the Council and to solicit public input are scheduled to be held throughout Hawaii during December 12-15, 2005, and January 9-13, 2006, respectively. The Council will review the proposed alternatives and potential impacts at its 130th meeting on December 20, 2005, and is anticipated to take final action on this issue at its 131st in March 2006.

## II. Hawaii Bottomfish Fishery Zones and Management Overview

The Hawaii Archipelago is made up of 132 islands and atolls stretching 1,800 miles. The Archipelago is divided into the MHI, which includes the eight major inhabited islands from Hawaii at the southeast end of the archipelago up through Kauai and Niihau, and the Northwestern Hawaiian Islands (NWHI), which encompasses the largely unpopulated islands, atolls and reefs that stretch northwest of Niihau to Kure Atoll.

*Figure 1: Hawaii bottomfish zones*




In coordination with the State of Hawaii, the Council manages Hawaii's offshore bottomfish resources through its Bottomfish and Seamount Groundfish Fishery Management Plan (FMP). The FMP was established in 1986 and prohibits the use of destructive fishing gear, such as bottom trawls, explosives and poisons. The Council's limited entry programs subsequently created and limited entry to the Hoomalu Zone in 1989 and the Mau Zone in 1999. Management of bottomfish in Hawaii Archipelago is thus divided into three management zones—the MHI, the Hoomalu Zone and Mau Zone (Figure 1).

Bottomfish Management Unit Species (BMUS) managed under the FMP include deep-slope dwelling snappers, groupers, and jacks that are harvested using the hook-and-line method of fishing where weighted and baited lines are lowered and raised with electric, hydraulic, or hand-powered reels. These species are found generally at depths of 50 to 150 fathoms. Also included are Hawaii's onaga (red snapper) and opakapaka (pink snapper) that are well-known in local restaurants, as well as the hapuupuu or Hawaiian grouper. The BMUS also include species that are not found in Hawaii but are caught in other parts of the Western Pacific Region such as American Samoa and the Mariana Archipelago (Table 1).

| Common name | Scientific name |
|---|---|
| Uku | *Aprion virescens* |
| Hapuupuu | *Epinephelus quernus* |
| Opakapaka | *Pristipomoides filamentosus* |
| Onaga | *Etelis coruscans* |
| Ehu | *E. carbunculus* |
| Butaguchi | *Pseudocaranx dentex* |
| Kalekale | *P. sieboldii* |
| Gindai | *P. zonatus* |
| Lehi | *Aphareus rutilans* |
| Yellowtail kalekale | *P. auricillia* |
| White ulua | *Caranx ignobilis* |
| Black ulua | *C. lugubris* |
| Kahala | *Seriola dumerili* |
| Taape | *Lutjanus kasmira* |

*Table 1. Bottomfish Management Unit Species managed under Council's Bottomfish and Seamount Groundfish Fishery Management Plan*

Source: Western Pacific Regional Fishery Management Council 1999

In 1998 HDAR created 19 Restricted Fishing Areas (RFAs) throughout the MHI primarily to help rebuild stocks of onaga and ehu, which were considered to be locally depleted (experiencing low abundance). These RFAs are centered on the 100-fathom contour and close about 20 percent of the bottomfish habitat in the MHI (Figure 2). The list of prohibited species in the RFAs was later expanded to include other deep-slope bottomfish commonly caught while targeting onaga and ehu such as gindai, kalekale, hapuupuu, lehi and opakapaka. The reason for prohibiting the targeting or possession of the additional species was that onaga and ehu were often incidentally caught but could not be released alive due to the high mortality rates generally associated with air embolism while bringing the fish to the surface

The State also instituted recreational bag limits for onaga and ehu. The rule limits non-commercial fishermen (those without a valid Commercial Marine License, or CML, issued by HDAR) to a maximum of five onaga or ehu combined, per person per trip.

Vessel owners must also register their vessels with HDAR and mark their vessels with a bottomfishing identification number. It is unlawful for any person to take or possess bottomfish species in the MHI on an unregistered vessel. As of August 2005, a total of 3,700 people have registered their vessels for bottomfishing. About 60 percent are registered as commercial fishing vessels with the rest registered as recreational vessels. The lengths of registered vessels range from 8 to 65 feet, with an average at about 19 feet. The vessel registration program does not

require registration renewals or reporting of fishing activity or landings by recreational fishermen. The effectiveness of HDAR's management regime is currently under review.

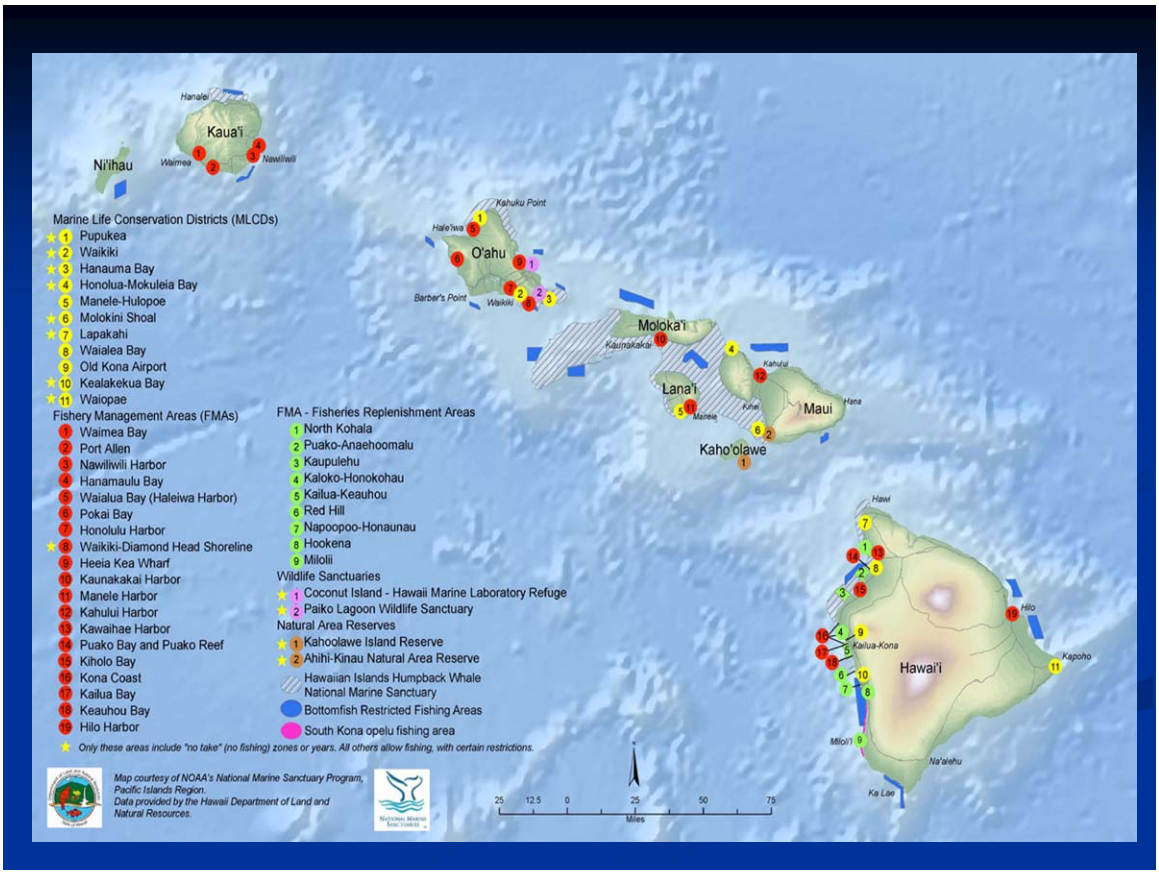



*Figure 2: Distribution of Restricted Fishing Areas*

## III. Commercial and Recreational Monitoring

There are few fishermen in Hawaii who specialize in harvesting bottomfish. Most fishermen shift from fishery to fishery in response to weather conditions, seasonal abundance or fluctuations in prices. In addition most vessel operators are part-time commercial fishermen and may combine commercial, recreational or subsistence effort in a single fishing trip.

The most reliable data for Hawaii's recreational bottomfish fishermen come from a creel survey conducted on Oahu by NMFS in 1990–1991, which found that 66 percent of the bottomfish landed were not sold and thus could be considered recreational catch. To date the Hawaii Marine Recreational Fishing Survey (HMRFS) program, re-initiated in 2001, has not provided comprehensive information on the bottomfish fishery because of the low number of bottomfish fishermen intercepted by surveyors.

In Hawaii, MHI fishermen who hold a CML are required to complete a monthly HDAR catch report. The form requires fishermen to report the type of fishing gear used (e.g., deep-sea handline, trolling, etc.), the area fished and the number of each species of caught fish.

Similarly, commercial fishermen participating in the NWHI bottomfish fishery are required to complete a HDAR NWHI catch report. This daily log collects information on the type of gear used, the number of lines and hooks, the number of each species of fish caught, etc.

Additional commercial landing information on both the MHI and NWHI bottomfish fisheries is collected through HDAR's Dealer Reporting program.

Data on Hawaii's bottomfish commercial fisheries depends on honest reporting of catch and effort, and little to no date is collected from recreational fishermen. Good enforcement and good reporting of catch data are imperative if the bottomfish fishery in the MHI is to be managed for sustainability.

## IV. Commercial Fishery Trends and Status of Hawaii Bottomfish Resources

Since the establishment of the NWHI limited entry programs, participation and landings have stabilized (Figure 3). In 2002, nine vessels participated in the NWHI bottomfish fishery landing 108,000 and 120,000 pounds of bottomfish species from the Mau and Hoomalu Zones, respectively. An additional 384 vessels reported commercial landings of 361,774 pounds of bottomfish in the open access MHI fishery during 2002.

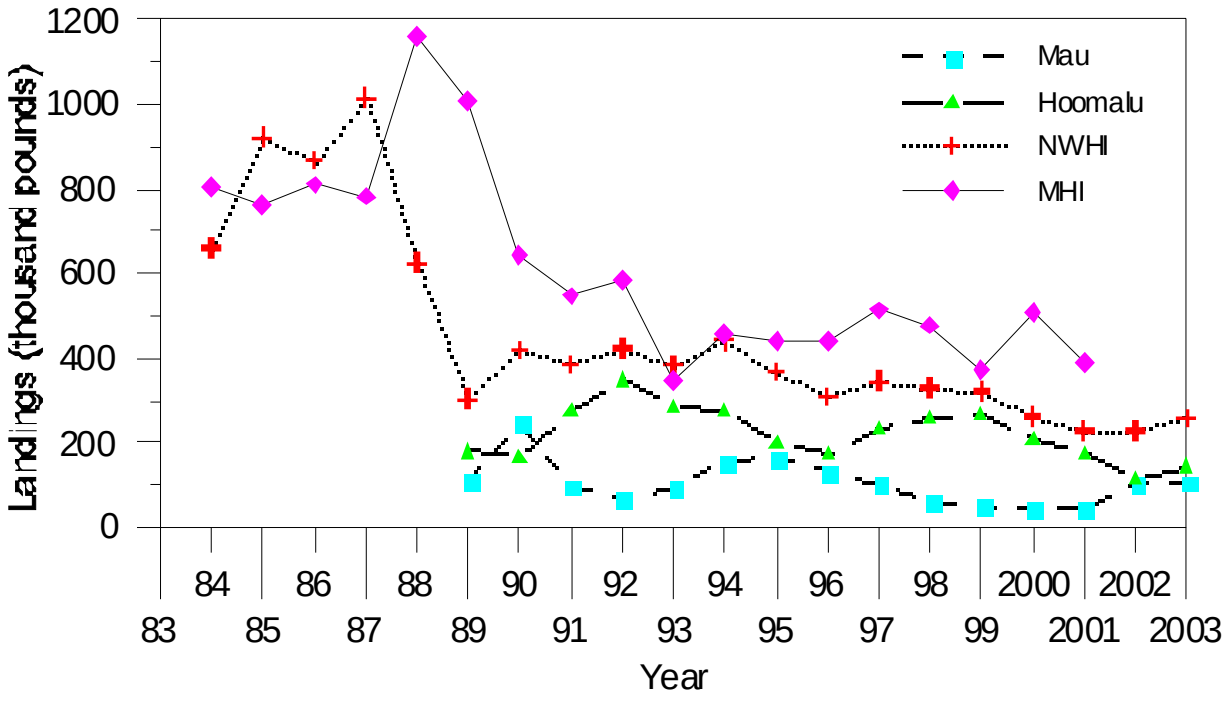



*Figure 3: Hawaii commercial bottomfish landings 1983-2003*

Reported data from the MHI commercial bottomfish fishery show that catch per unit effort (CPUE or catch per trip) has remained relatively stable over the past decade, while fishing effort and participation has declined by 50 percent since 1998 (Figure 4).

Fishery participation and trips in the MHI declined from record high levels in the 1980s through the early 1990s. Effort increased through the late 1990s, but has continued to decline from 1998 to 2003 (Figure 5).

In the Mau Zone, participation declined from 14 vessels in 1990 to five vessels in 2003 as intended under the limited entry system. CPUE has been relatively stable over the past decade but has increased in recent years as participation has dropped. In the Hoomalu Zone, CPUE has declined over time (Table 2), which is consistent with sustainable fisheries population dynamics models. Since 1990, participation has been fairly constant, while effort has fluctuated and shows no discernible trend.

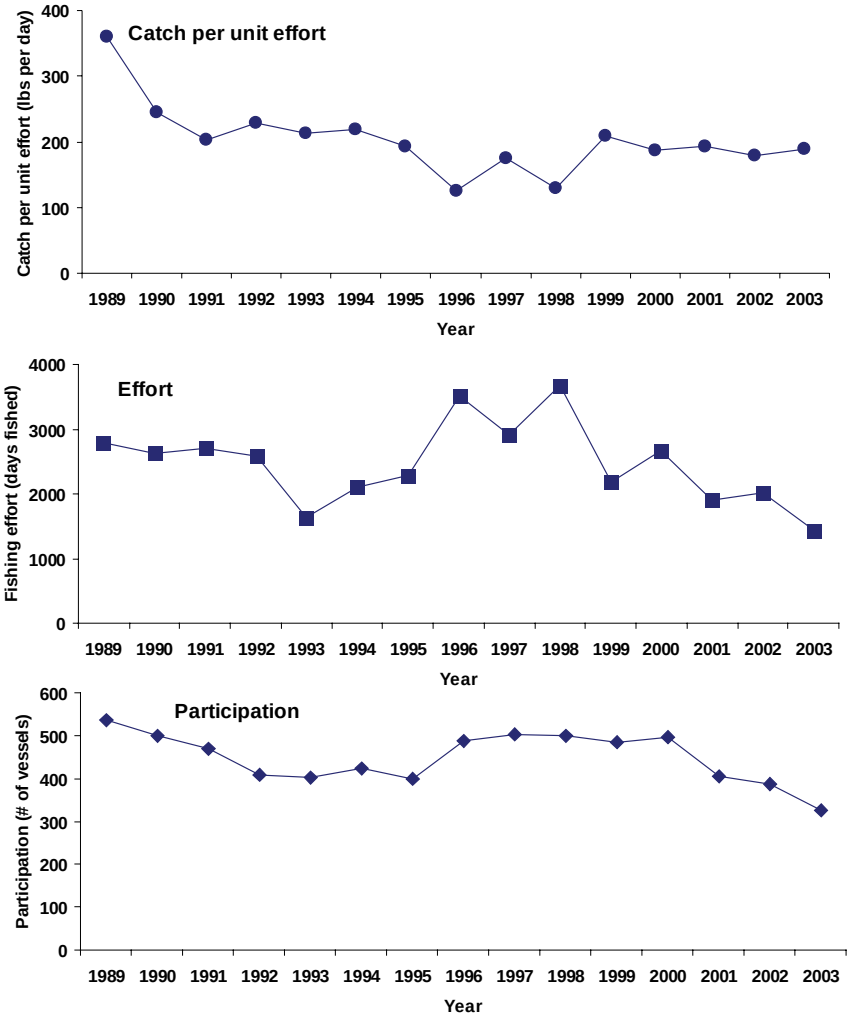



*Figure 4: MHI Catch per unit effort, days fished and number of commercial bottomfish vessels 1989-2003*

The NMFS Pacific Islands Fisheries Science Center has not completed a comprehensive stock assessment for Hawaii's bottomfish resources; however, one is targeted for completion by the end of 2006.

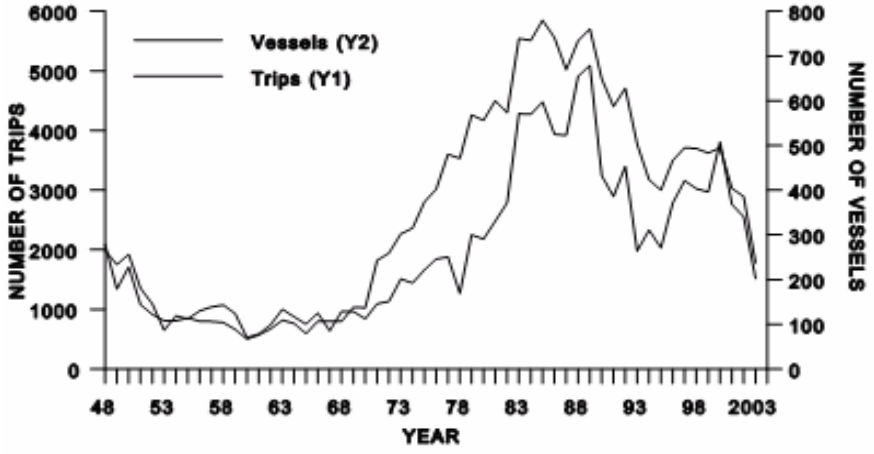



*Figure 5: MHI Commercial Bottomfish Reported Effort and Participation 1948-2003*

*Table 2. Summary of bottomfish landings, catch per unit effort and vessel participation, 1995 - 2003*

| Year | MHI Landing (lbs) | Mau Landing (lbs) | Hoomalu Landing (lbs) | MHI CPUE (lb/trip) | Mau CPUE (lb/trip) | Hoomalu CPUE (lb/trip) | MHI Vessels | Mau Vessels | Hoomalu Vessels |
|---|---|---|---|---|---|---|---|---|---|
| 1995 | 439,625 | 166,000 | 202,000 | 193 | 1,635 | 6,130 | 400 | 10 | 5 |
| 1996 | 439,867 | 135,000 | 176,000 | 125 | 1,543 | 6,216 | 487 | 13 | 3 |
| 1997 | 512,554 | 105,000 | 241,000 | 176 | 1,976 | 6,351 | 502 | 9 | 6 |
| 1998 | 478,802 | 66,000 | 266,000 | 130 | 1,689 | 5,315 | 498 | 7 | 7 |
| 1999 | 455,131 | 54,000 | 269,000 | 209 | 1,808 | 5,611 | 483 | 7 | 6 |
| 2000 | 496,989 | 49,000 | 213,000 | 187 | 1,053 | 5,909 | 495 | 6 | 5 |
| 2001 | 366,997 | 50,000 | 236,000 | 194 | 916 | 5,757 | 404 | 6 | 5 |
| 2002 | 361,774 | 108,000 | 120,000 | 179 | 1,416 | 4,638 | 386 | 5 | 4 |
| *2003 | 272,569 | 77,000 | 145,000 | 190 | 2,070 | 3,713 | 325 | 5 | 4 |

* preliminary NMFS data

*Table 3. Summary of fishery characteristics, participation and management measures*

| | Main Hawaiian Islands | NWHI Mau Zone | NWHI Hoomalu Zone |
|---|---|---|---|
| **Location** | Big Island to Niihau | Nihoa and Necker Islands | French Frigate Shoals to Kure Atoll |
| **Management authority** | HDAR; Hawaii Administrative Rules | Bottomfish FMP; Federal regulations | Bottomfish FMP; Federal regulations |
| **Location of habitat** | 80% of MHI fishing grounds are inside State waters | Nearly 100% of habitat is in federal waters | Nearly 100% of habitat is in federal waters |
| **Primary species Managed** | 7 deepwater species (onaga, ehu, opakapaka, gindai, kalekale, hapuupuu, lehi) | 17 deepwater snappers, groupers and jacks (includes State's 7) | 17 deepwater snappers, groupers and jacks (includes State's 7) |
| **Effort controls** | Unlimited entry; about 3,700 vessels registered with HDAR to fish MHI. 19 Bottomfish RFAs in place | Limited entry since 1999, up to 10 permits allowed (2 permits reserved for indigenous communities) | Limited entry since 1989 with up to 7 permits allowed |
| **Capacity controls** | No vessel size limits | 60-foot vessel size limit | 60-foot vessel size limit |
| **Vessel participation** | 325 commercial vessels reported landings in 2003; Recreational participation unknown | 5 commercial vessels active in 2003 and 2004; No recreational participation | 4 commercial vessels active in 2003 and 2004; No recreational participation |
| **Average trip duration** | Mostly day trips, but may extend for several days | Trips last up to 2 weeks | Trips last up to 3 weeks |
| **Seasonality of fishery** | Highest average landings in winter months around holiday season | Consistent landings throughout year, peaks in summer months | Consistent landings throughout the years, peaks in summer and winter holiday season |
| **Peak commercial landings & value** | Peak landings occurred in 1988, at 1,166,000 pounds ($3,288,000) | Peak landings occurred in 1990 at 249,000 pounds ($630,000) | Peak landings occurred in 1992 at 353,000 pounds ($1,030,760) |
| **Recreational fishing controls** | 5 onaga and ehu combined per person per day | No recreational fishing allowed without federal limited entry permit | No recreational fishing allowed without federal limited entry permit |
| **Permit, license and reporting** | Bottomfish vessel registration for all vessels. Commercial operators must have CML & make monthly catch reports | CML, federal permits and daily landing reports required | CML, federal permits and daily landing reports required |
| **Observers** | None | Yes, federal observers | Yes, federal observers |

## V. Alternatives to Address Overfishing in the MHI

All the actions below refer to the State's seven bottomfish management unit species (onaga, ehu, opakapaka, gindai, kalekale, hapuupuu, and lehi). These species the focus of this action because a) this facilitates synchronization HDAR's management measures; b) the federal BMUS list includes some species such as taape, which is an introduced species and considered a nuisance fish not subject to overfishing; and c) some federal BMUS species are caught in shallow areas on non-bottomfish gear and their populations are not stressed (e.g., uku and kahala).

The key to success under all of the following options will be reliable monitoring, good data reporting and effective enforcement.

### ALTERNATIVE 1: NO ACTION

Alternative 1 is to take no federal action i.e., no further federal management measures would be implemented.

Under this alternative, HDAR's bottomfish management actions would remain in place, including bag limits for the recreational harvest of onaga and ehu; requirements for anyone who intends to harvest any of the seven deepwater bottomfish species to register their vessel; and the closure of bottomfish habitat in the 19 RFAs.

This alternative would also allow continued open access for entry into the MHI fishery, and commercial fishermen would continue to be required to submit catch reports but not the recreational fishermen. The recreatinal catch component would continue to be unknown

To date HDAR's management regime has not been evaluated to determine its effectiveness to restore the bottom abundance. The RFAs are under review, and there is a prospect of RFA boundary revisions, the removal of some RFAs and the establishment of new ones. Under this alternative HDAR would continue to mange the RFAs and could make changes to them.

Overfishing, as defined by CPUE, of deepwater bottomfish would likely continue under this alternative, but fish stock health would be expected to recover over time, assuming that the downward trend of bottomfish fishing effort in the MHI that has been occurring since 1998 continues. However, the latest indications are that the downward trend in fishing pressure may have flattened over the last year. The cause of the decline is not known. Some fishermen may have switched to other fisheries and could switch back if it is to their advantage. Increasing fuel costs, for example, could tempt fishermen back to bottomfish fishing from trolling, which consumes far more fuel.

Should continued overfishing lead to declines in bottomfish stocks under this alternative, catch reductions and the need for draconian management measures may occur in the future.

### ALTERNATIVE 2: AREA CLOSURE

Under Alternative 2, all recreational and commercial fishermen would be prohibited from targeting, landing or selling any of the seven deep-slope bottomfish species from Penguin Bank (Figure 6) and Middle Bank (Figure 7). All vessel operators (both commercial and recreational) targeting bottomfish in the MHI would be required to register their vessels on an annual basis and would be required to complete and submit catch reports detailing their catches, fishing effort, and area fished.

To facilitate recognition of bottomfish registered vessels from the air, each vessel would be required to be marked on an unobstructed upper surface with its registration number.

This is the only alternative that would be solely a federal action, as both Penguin and Middle Banks occur entirely in federal waters. Based on 1998 to 2004 and 1990 to 2004 data, respectively these areas represent between 15 percent and 18 percent of MHI bottomfish landings (Figure 8).

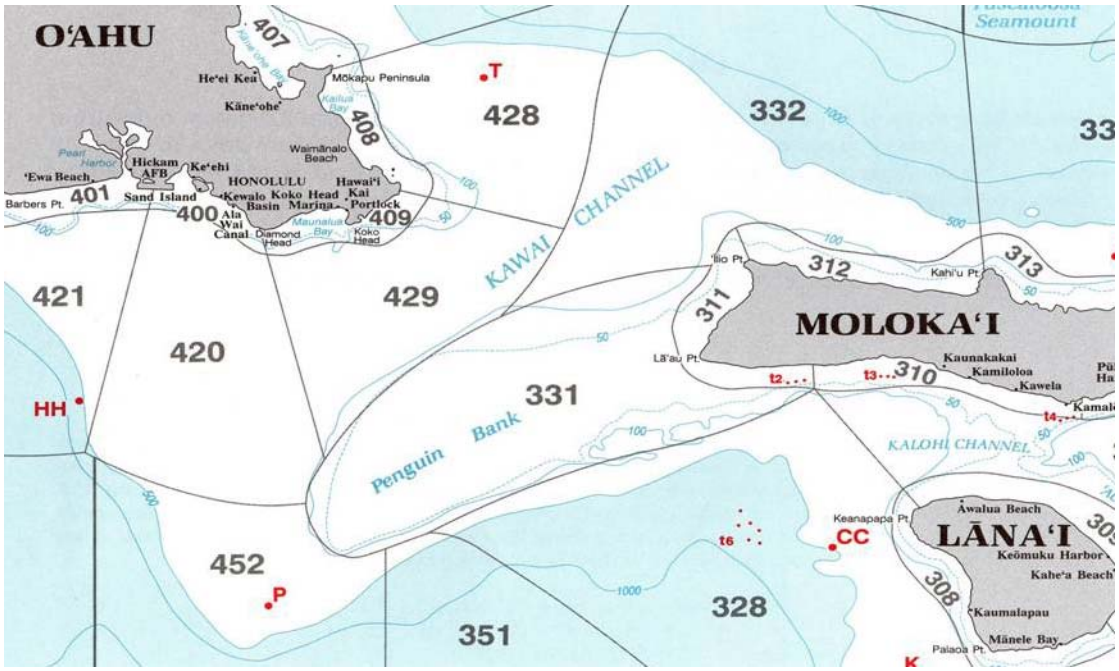
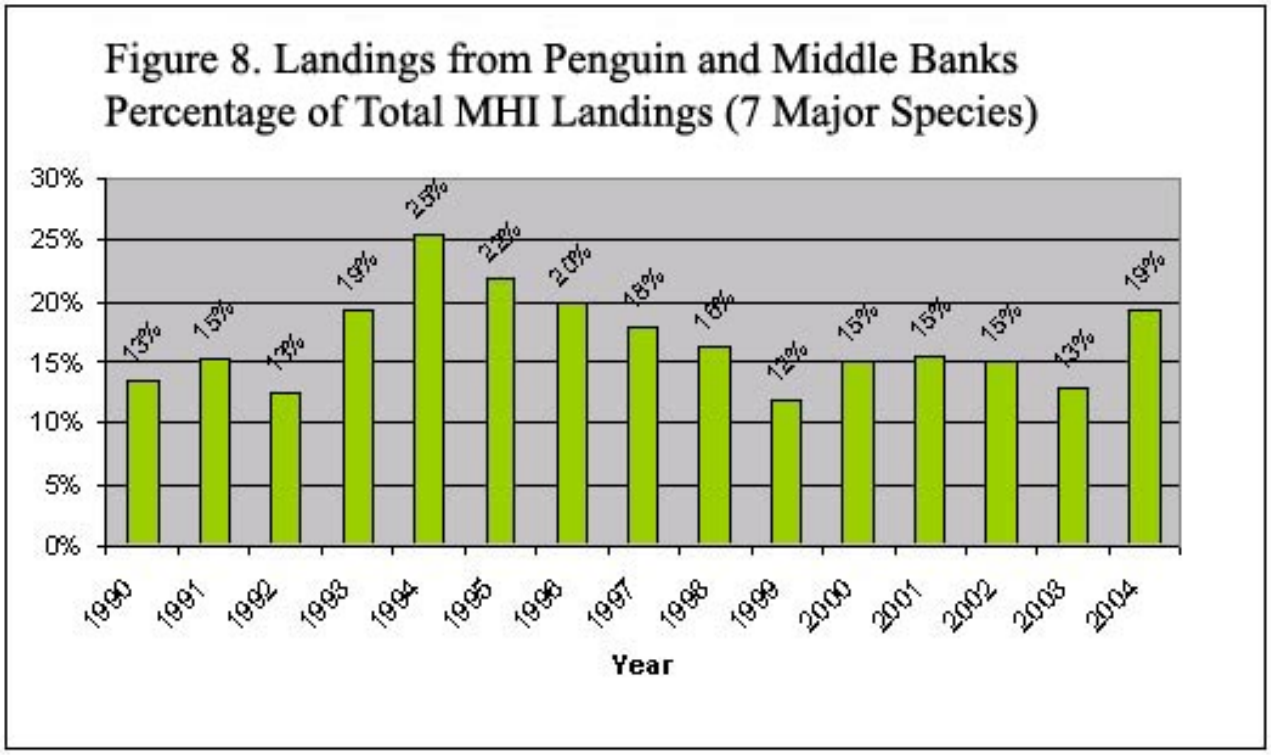



*Figure 6: Penguin Bank*


*Figure 7: Middle Bank*



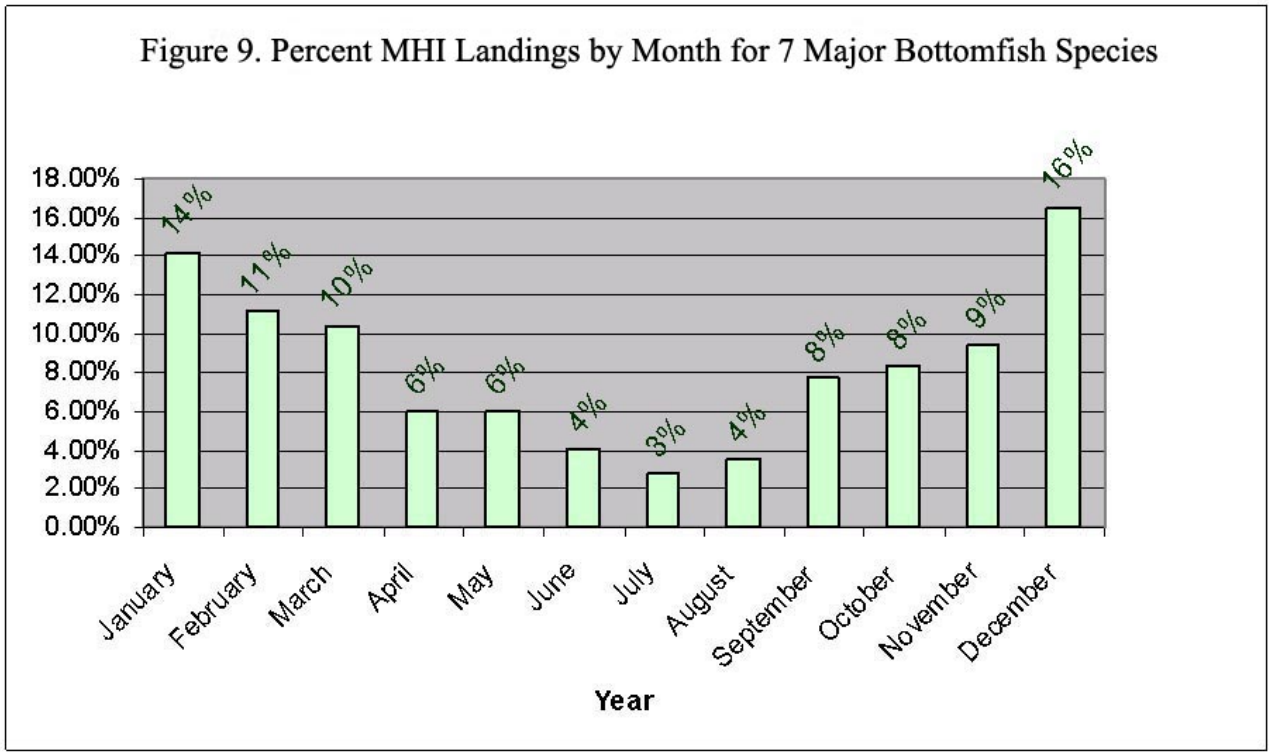

This action must include at-sea enforcement as shore-based determination of the origin of bottomfish landed or sold in Hawaii would be impossible. Two factors enhance at-sea enforcement capability for Penguin Bank—it is a single large bottomfish area that is close to Oahu which is the base of U.S. Coast Guard operations in the region. Middle Bank is also amenable to occasional monitoring by the U.S. Coast Guard through aerial surveillance.

Under this alternative, bottomfish within the closed area would be protected, but fishing effort would likely be displaced to other areas where local bottomfish populations would be exposed to greater fishing pressure as a consequence of the closure. A transfer of effort to less productive areas would likely lead to a lowering of CPUE and the possibility of increased localized overfishing.

Closing Penguin Bank, the most productive bottomfish area in the MHI, would also disproportionably impact commercial and recreational bottomfish fishermen as well as markets based in Oahu and Molokai, which depend on the high-quality sashimi-grade onaga from this area. Some full-time commercial operations might no longer be viable and the opportunities to develop bottomfish charter fishing would be constrained for businesses based on Oahu and Molokai.

**ALTERNATIVE 3: SEASONAL CLOSURE**

Under this alternative a summer closure would be implemented for the entire MHI bottomfish fishery (both commercial and recreational vessels). Based on past landings (Figure 9) the exact timing of the closure would be designed to achieve at least a 15 percent reduction in fishing mortality. Targeting, landing and or selling the seven deep-slope bottomfish species would be prohibited during the closed season; however, the federally permitted and healthy NWHI bottomfish fishery would remain open. All vessel operators (both commercial and recreational) targeting bottomfish in the MHI would be required to register their vessels on an annual basis and would be required to complete and submit catch reports detailing their catches, fishing effort, and area fished.




Enforcement of this alternative would consist of shore-based monitoring of landings and sales. Only bottomfish from the NWHI or imported bottomfish could be legally sold during the closed season and these would need to be certified and tracked to final point of sale. At-sea enforcement would not be required, but occasional checks would supplement shore-side monitoring.

Successful implementation and enforcement of this alternative would be dependent upon coordination with the State of Hawaii as it would require closure of both state and federal waters.

Under this alternative, impacts would be evenly distributed throughout the state and the MHI fishery would remain open during the winter holiday season. Local markets would continue to be supplied with NWHI fish but there would be reduced availability of locally caught bottomfish during the closed season. That shortfall in market supply would likely be made up with imported fish and prices could increase for locally caught fish during the closed season. In addition, depending upon import arrangements there may be some loss of market for the MHI fishermen if wholesalers come to rely on imported fish and choose not to switch back to locally caught fish during the open season.

Between 130 and 200 commercial vessels harvest MHI bottomfish during the summer months, of which less than 10 percent have consistently high catches during this period. These fishermen could be heavily impacted under this alternative. Significant transfers of effort from the MHI to the NWHI would be unlikely, as the NWHI fishery is a limited entry fishery that allows no more than 17 vessels.

Although bottomfish spawn year round, evidence indicates that spawning is greatest in summer months, so a summer closure would provide additional benefits by reducing fishing mortality of spawning bottomfish. However there would be reduced opportunities to develop bottomfish charter fishing and there may be safety implications for fishermen who try to make up bottomfish fishing time in the open winter season, when the weather is more inclement.

## ALTERNATIVE 4: CATCH LIMITS

Alternative 4 includes two variations. Both would limit the commercial catch of MHI bottomfish. Alternative 4a would establish a fleet-wide total allowable catch (TAC) of bottomfish for all commercial fishing vessels in the MHI, while Alternative 4b would establish vessel specific individual fishing quotas (IFQs) for bottomfish for all commercial fishing vessels in the MHI. Recreational fishing vessels would continue to be subject to the bag limits already established by HDAR (five onaga and ehu combined per person per trip).

Under both variations, all vessel operators (both commercial and recreational) targeting bottomfish in the MHI would be required to register their vessels on an annual basis and would be required to complete and submit catch reports detailing their catches, fishing effort, and area fished.

Enforcement of this alternative would consist of shore-based monitoring of landings and sales. Imported bottomfish or bottomfish caught in the NWHI would still be available, and these would need to be certified and tracked to final point of sale. At-sea enforcement would not be required, but occasional checks would supplement shore-side monitoring.

Both variations would offer direct control of fishing mortality, but there would likely be high-grading (discards of less desirable fish so that quotas could be filled with higher valued fish) with an associated high risk of fish mortality among the discards due to embolism. Discards would not be reported and this would lead to incomplete information regarding total fishing mortality by species and size.

### Alternative 4a: Total Allowable Catch Limit

Under Alternative 4a, a TAC representing 15 percent reduction of the average annual MHI bottomfish catch would be applied to the entire MHI commercial bottomfish fishery. The bottomfish fishing year would start on October 1 and continue until the TAC was reached. Thereafter no commercial fishing for bottomfish would be permitted in the MHI. The federally permitted healthy NWHI bottomfish fishery would remain open.

Successful implementation and enforcement of this alternative would be dependent upon coordination with the State of Hawaii as it would require closure of both state and federal waters.

Enforcement of this alternative could consist of shore-based monitoring of landings and sales. Imported bottomfish or bottomfish caught in the NWHI would still be available, and these would need to be certified and tracked to final point of sale. At-sea enforcement would not be required, but occasional checks would supplement shore-side monitoring.

### Alternative 4b: Individual Fishing Quotas

Under Alternative 4b, IFQs would be established for each commercial bottomfish fisherman, allowing them to catch 85 percent of their average catch based on historical landing records. The bottomfish fishing year would start on January 1. Once a commercial fisherman had landed their IFQ, they would not be permitted to catch, land or sell any more bottomfish until the following year.

Under this variation data would need to be analyzed in real time to ensure that fishermen did not exceed their quota. Fishermen would be required to report their bottomfish catches on a per trip basis.

Commercial fishermen who have failed to report or have under-reported not reported their catches in the past would be disadvantaged under this alternative as they would not have a historical landing record. These fishermen could be forced out of the fishery and the quota system would prevent new entry. In addition, unless there is a mechanism to transfer quotas, family run operations may cease to exist when the current permit holder leaves the fishery.

**ALTERNATIVE 5: COMBINATION MEASURES**

Alternative 5 would mitigate potential impacts of the stand alone alternatives above by combining modifications of those alternatives. Alternative 5 includes two variations. Alternative 5a would combine a seasonal bottomfish closure with bottomfish IFQs for certain commercial fishing vessels during the seasonal closure. Alternative 5b would combine seasonal closures with a partial closure of Penguin Bank.

Under both versions of Alternative 5, all vessel operators (both commercial and recreational) targeting bottomfish in the MHI would be required to register their vessels on an annual basis and would be required to complete and submit catch reports detailing their catches, fishing effort, and area fished.

Successful implementation and enforcement of Alternative 5 would be dependent upon coordination with the State of Hawaii as it would require fishing limits and closures in both state and federal waters.

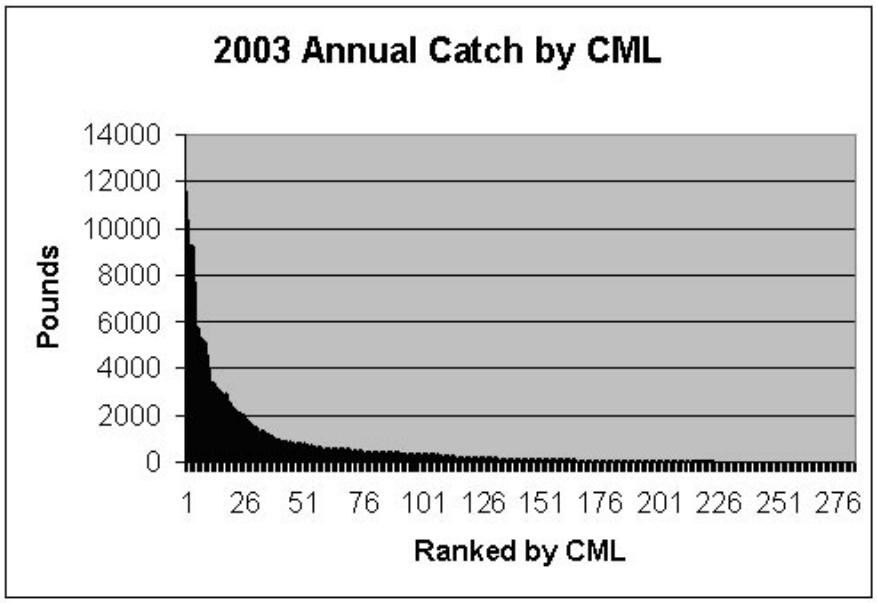
Enforcement of Alternative 5 could consist of shore-based monitoring of landings and sales. Imported bottomfish or bottomfish caught in the NWHI would still be available, and these would need to be certified and tracked to final point of sale. At-sea enforcement would not be required, but occasional checks would supplement shore-side monitoring.

Under Alternative 5 the management measures could be easily fine-tuned through the modification of the closed months and/or the area closed and number of affected fishermen. This would allow adaptive management in response to changes in targets for fishing mortality reduction anticipated to occur as better reporting, data collection and stock assessments become available.

<u>Alternative 5a: Seasonal Closure and IFQs</u>

Under Alternative 5a, the MHI bottomfish fishery would be closed during an expanded “summer” closure, except for a small number of fulltime commercial bottomfish fishermen. This would minimize the economic impact of the closure by ensuring that the local market has a continuous supply of MHI bottomfish. The exempt fishermen would be those who have demonstrated consistently high catches of bottomfish based upon historical performance (Figure 10).

*Figure 10. Annual landings by MHI Commercial Marine License (CML) holders*




Each MHI commercial bottomfish fisherman exempted from the summer closure would be issued a set of bottomfish stamps, with each stamp representing a number of bottomfish and all the stamps totaling the vessel's IFQ for the otherwise close season. The fisherman would be required to submit a stamp to the dealer at the point of sale. If the fisherman sold fish in excess of the number of bottomfish for one stamp he would be required to surrender a second stamp to the dealer. Once all the stamps were submitted the fisherman would be prohibited from fishing until the open season. Enforcement of Alternative 5 could consist of shore-based monitoring of landings and sales. Imported bottomfish or bottomfish caught in the NWHI would still be available, and these would need to be certified and tracked to final point of sale. At-sea enforcement would not be required, but occasional checks would supplement shore-side monitoring. The very small number of permitted bottomfish fishing boats operating during the summer closure will be relatively easy to monitor.

Alternative 5b: Seasonal Closure and Area Closure

Alternative 5b combines a summer closures for the MHI with a full-time partial closure of Penguin Bank. All MHI bottomfish fishermen would be prohibited from targeting, landing or selling the seven deep-slope bottomfish species from the MHI during the summer. However, the area closure measure would enable the length of the summer closure to be reduced.

The area closure would have to be enforced via at-sea monitoring, and shore-based monitoring of landings would also be required. To facilitate recognition of bottomfish registered vessels from the air, each vessel would be required to be marked on an unobstructed upper surface with its registration number.

This alternative would impact all bottomfishing sectors equally, but the impact of the seasonal closure on bottomfish fishermen and the market would be minimized.

| | Alt. 1 - No Action | Alt. 2 - Close PB and MB | Alt. 3 - Summer Closure | Alt. 4a – Fleet-wide TAC | Alt. 4b - IFQ | Alt. 5a – Expanded "Summer" Closure & select IFQ exemption | Alt. 5b – Reduced Summer Closure & Partial PB Closure |
|---|---|---|---|---|---|---|---|
| Continues State's bag limit, bottomfish vessel registration and RFAs | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| Continues commercial catch reporting requirement | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| Requires catch reporting by recreational bottomfish fishermen | | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| Requires at-sea enforcement and aerial surveillance markings on bottomfish vessels | | ✔ | | | | | ✔ |
| Requires State & federal mirror regulations | | | ✔ | ✔ | ✔ | ✔ | ✔ |
| Requires shore-based enforcement of landings &/or monitoring by dealers plus certification & tracking of NWHI & imported bottomfish | | | ✔ | ✔ | ✔ | ✔ | ✔ |
| Requires fishermen to report their catches on a per trip basis | | | | | ✔ | | |
| Requires issuance of bottomfish stamps | | | | | | ✔ | |

*Table 4: Summary of Alternatives*

## V. Public Outreach and Solicitation

As shown below, since 2003 the Council has held a series of Fishers Forums and public meetings to solicit comments from fishermen and the public on the need to improve the health of MHI bottomfish stocks. HDAR has participated in this process by reporting on the status of their review of the MHI bottomfish restricted fishing areas and management efforts. Comments received at these meetings have helped to shape the above alternatives.

2003
July 30 Hale Oihana, Lihue, Kauai
August 1 Komohana Ag Complex, Hilo, Hawaii
August 2 King Kamehameha Hotel, Kailua-Kona, Hawaii
August 7 Maui Community College, Kahului, Maui
August 19 Honokohau Harbor, Kona, Hawaii
October 1 Heeia State Park, Kaneohe, Oahu

2004
March 23 Hawaii Convention Center, Honolulu, Oahu
June 23 Ala Moana Hotel, Honolulu, Oahu
October 13 Pagoda Hotel, Honolulu, Oahu

2005
May 13 Naniloa Hotel, Hilo, Hawaii
May 19 Council Office, Honolulu, Oahu
June 1 Ala Moana Hotel, Honolulu, Oahu

The Council will continue to seek public comment on management options at the scheduled meetings below:

**Dec. 12, 2005**, 6-9 p.m., University of Hawaii-Hilo Campus Center, 200 W. Kawili St., Hilo, Big Island

**Dec. 13, 2005**, 6-9 p.m., King Kamehameha Hotel, 75-5660 Palani Rd., Kona, Big Island

**Dec. 14, 2005**, 6-9 p.m., Chiefess Kamakahelei Middle School, 4431 Nuhou St., Lihue, Kauai

**Dec. 15, 2005**, 6-9 p.m., Maui Beach Hotel, 170 Kaahumanu Ave., Kahului, Maui

**Dec. 20, 2005**, noon, 130th Council meeting and public hearing, 1164 Bishop St., Suite 1400, Honolulu, Oahu

Public hearings will also take place throughout the Hawaii January 9-13, 2006, and during the 131st Council meeting scheduled March 13-16, 2006, during which the Council is expected to take final action regarding its recommended alternative to forward to the Secretary of Commerce for approval and implementation.

For more information, contact Mark Mitsuyasu at the Council office by phone (808) 522-6040; fax (808) 522-8226 or email mark.mitusyasu@noaa.gov or visit the Council website at www.wpcouncil.org.