



Issues Paper on Amendment 14: Bigeye and yellowfin overfishing measures- outstanding issues

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1.0 Introduction

In response to the identification of overfishing by the Secretary of Commerce, at its 126th meeting held March 14-17, 2005 in Honolulu the Council reviewed a background document on Pacific bigeye fisheries, listened to public comments and took initial action to direct its staff to continue its development of Amendment 14 to the Pelagics FMP. This amendment contains comprehensive background information and analyses as well as recommendations for international management and a range of alternatives for the management of domestic fisheries. As stated in the notice of overfishing published in the Federal Register (FR Vol 69 No 250, 78397), “Pacific bigeye tuna occurs in the waters of multiple nations and the high seas and is fished by the fleets of other nations in addition to those of the U.S. The capacity for unilateral action by the U.S. to prevent overfishing, as required under National Standard 1 of the Magnuson-Stevens Act (16 U.S.C. 1851(a)(1)), is limited, as is the capacity for action taken by the Councils to end overfishing, as required under 50 CFR 600.310(e)(4)(i). Multilateral management action is essential to ensure that overfishing on bigeye tuna in the Pacific Ocean ends. NMFS will work with the Department of State, the regional fishery management councils,

industry, and other interests to promote conservation and management measures in international and regional fishery management organizations to prevent further overfishing and ensure that bigeye tuna in the Pacific Ocean does not become overfished.”

Following extensive review by the Council’s Pelagics Plan Team, Science and Statistical Committee and Advisory Panels, as well as public comment solicited at meetings through out Hawaii. The Council took final action in June 2005 to recommend a suite of non-regulatory measures for the international management of fisheries which harvest bigeye tuna. The Council also reviewed and recommended a range of regulatory and non-regulatory measures for fisheries managed under the Pelagics FMP.

Subsequently, in August 2005, the Scientific Committee of the Western and Central Pacific Fishery Commission reviewed stock assessments for Western and Central Pacific bigeye, yellowfin and skipjack tunas, and South Pacific albacore tuna. The conclusion for bigeye tuna remained more or less unchanged, but yellowfin was found to be likely being subjected to overfishing, although the biomass of the stock was still well above the biomass at maximum sustainable yield (MSY). Subsequently, National Marine Fisheries Service (NMFS) Pacific Islands Fisheries Science Center (PIFSC) advised the NMFS Pacific Islands Regional Office (PIRO) that yellowfin tuna was being subjected to unsustainably high levels of fishing mortality in the Western and Central Pacific Ocean (WCPO). Consequently, at its 129th Council meeting in Guam in November 2005, the Council recommended applying to fishing for yellowfin tuna the management measures in draft Amendment 14 to the Pelagics FMP that the Council recommended for bigeye tuna.

The Council transmitted the initial draft of Amendment 14 accordingly to the NMFS Pacific Islands Regional Office for review and approval in November 2005. Reviews received in may 2006 NMFS PIRO and the NOAA Office of General Counsel, indicate that Amendment 14 must address the following issues:

- 1. The amendment objectives need to be quantified where possible**
- 2. The recommended management measures in Amendment 14 need to be grouped as alternatives**
- 3. A recommendation for EPO purse-seiners needs to be included**

This issues paper is intended to provide the Council with the required information to take action on these changes to Amendment 14 at its 133rd meeting in June 2006.

2.0 Summary of Measures Currently Contained in Amendment 14

2.1 General Recommendations for International Fisheries

The Council recommended that the United States promote the following measures in the international arena.

General Recommendations for the Management, Monitoring and Research of Bigeye and Yellowfin Tunas in the Pacific Ocean

General recommendations for management and monitoring:

- i. Use science-based measures that consider historical participation, and provide for sustained participation by local communities.**
- ii. Strive for consistent measures (e.g. WCPO and EPO) where possible.**
- iii. Focus on fisheries with greatest impacts.**
- iv. Focus on regions of highest catches and spawning areas.**
- v. Reduce surplus capacity.**
- vi. Restrict the use of purse seine FADs.**
- vii. Consider exempting fleets that catch less than 1% of the total from some or all measures.**
- viii. Improve species specific fishery monitoring.**
- ix. Establish standardized vessel registry system for the WCPO.**
- x. To the extent practicable the U.S. should seek RFMO decisions that are consistent with National Standard 1 of the MSA and its guidelines as codified.**

General recommendations for research:

- i. Determine consistent science-based reference points that are appropriate for management use. In the absence of international reference points, promote the establishment and application of MSY based reference points and associated control rules with respect to preventing and ending overfishing.**
- ii. Improve stock assessments that provide region specific information and understanding of recruitment.**
- iii. Promote pan-Pacific assessments that provide region specific information.**
- iv. Improve understanding of responses to FADs.**
- v. Investigate gear and fishing characteristics of vessels with above-average CPUE.**
- vi. Collect and define vessel and gear attributes useful for effort standardization for all fleets.**
- vii. Define total costs of management on governments and participants.**

2.2 Council Management Protocol for Pacific Bigeye and Yellowfin Tunas

The Council recommended the following protocol to ensure that both the Western Pacific Regional Fishery Management Council (WPRFMC) and Pacific Fishery Management Council (PFMC) are informed and afforded the opportunity to substantively participate in all of the activities leading up to the development and implementation of U.S. proposals for international management:

- a. The Council participates on U.S. delegations to Regional Fishery Management Organizations (RFMOs e.g. IATTC and WCPFC) in the Pacific Ocean and is included in all pre and post meetings and negotiations.**

- b. The Council and NMFS monitor RFMO meetings and actions and relevant fisheries, Council becomes aware of a need for management action or receives notice from NMFS or the RFMO directly of a need for such action, with supporting documentation.**
- c. The Council reviews information from RFMO, NMFS, and other sources concerning stock assessment, area of consideration, fishery issues and data supporting determinations, and the role of U.S. fisheries in causing or contributing to overfishing.**
- d. NMFS provides formal notice and time frame for Council action within MSA and RFMO frameworks.**
- e. The Council refers information to its Pelagics Plan Team, Advisory Panel(s), SSC and other advisors for review and advice with focus on:**
 - Definition and condition of the stock or other fishery management unit, and the issue of concern (e.g., overfishing, bycatch, allocation, etc.),**
 - Possible reasons for the situation including fishery and environmental conditions that may be relevant to the stock condition or other management concern,**
 - Relative role of U.S. fisheries in overall stock harvests and management situation,**
 - Existing conservation and management measures of the RFMO with jurisdiction over the stock or fishery involved,**
 - Possible multi-lateral measures to avoid or end overfishing, rebuild the stock, or resolve other management concerns.**
- f. The Council's PPT, AP, SSC and other advisory bodies recommend possible domestic and international fishery conservation and management measures, including a comparison and evaluation of alternative measures including distinctions between Pacific-wide, regional, and local measure's effects and effectiveness.**
- g. The Council makes initial decision on how to address problem (initial action).**
- h. The Council distributes a draft background and action document for public review and advice.**
- i. The Council makes formal recommendations to NMFS and the Department of State on:**
 - domestic regulations,**
 - international actions.**
- j. The Council drafts a position paper on how RFMOs should address the situation (the position paper should clearly and forcefully state the Council's recommendation on every substantial issue).**
- k. The Council presents its position within the U.S. delegation to the RFMO.**

- l. The RFMO meets and acts on fishery conservation and management needs in the international arena.**
- m. The Council considers the RFMO's actions, U.S. government positions and requirements under applicable treaties and the MSA.**
- n. The Council determines its appropriate regulatory response for domestic fisheries consistent with international agreements and the MSA.**
- o. The Council takes final action (if any) to recommend regulations for NMFS' approval and implementation.**
- p. NMFS implements approved recommendations.**

2.3 Management for the WCPO and EPO

The Council recommended the following management measures purse seine and longline fishing in the WCPO:

- a. Short term: cap and roll back fishing effort (e.g. number of vessels) to 1999 levels¹**
- b. Long term: reduce levels of fishing mortality to sustainable levels. If quotas are established they should transferable within countries².**
- c. Require that fish aggregating devices used by purse seiners be registered and limited in number³.**

¹ The WCPFC decided at its second meeting in December 2005 not to set caps for longline effort, electing instead to cap catches for the period 2006-2008 at the 2004 levels for China and the U.S. and the annual average of 2001-2004 catches for the other CCMs. The WCPFC required CCMs to ensure that purse seine effort levels between 2006 and 2008 do not exceed either 2004 levels or the average of 2001-2004 levels in waters under their national jurisdiction. The WCPFC undertook to implement compatible measures to ensure that purse seine do not exceed 2004 levels on the high seas in the Convention Area or the total fishing capacity will not increase in the Convention Area. Pacific Islands countries who are Parties to the Nauru Agreement (PNA), will implant the purse seine effort limits by a Vessel Day Scheme that will limit days fished to a level no greater than 2004 levels and will be fully implemented by 1 December 2007. Other non-PNA member countries will implement similar measures to limit purse seine effort in waters under their jurisdiction to no greater than 2004 levels, or to the average of 2001 to 2004 levels. Further, in order to achieve the overall reduction in catch and effort required for bigeye and yellowfin tuna, in accordance with advice and recommendations received from the Scientific Committee, the WCPFC Executive Director will work with CCMs during 2006 to develop a proposal for consideration at the Third Session of the Commission that is consistent with the IATTC arrangements that allow for a system of temporary purse seine closures.

² The longline catch limits set for bigeye by WCPFC in 2005 and IATTC in 2004 were at the national level and it is each country's prerogative how these might be divided up between national fleets.

³ At the WCPFC meeting in December 2005, the WCPFC also required CCMs to develop management plans for the use of FADs (anchored and drifting) within waters under national jurisdiction which shall be submitted to the Commission, which will include registration and may include limits on numbers deployed. However, this falls far short of the management advice given to WCPFC from the Science Committee meeting in August 2005, which recommended major redirection of purse seine effort from FAD sets to unassociated schools.

d. Give consideration to allow for the development of emerging Pacific Island fisheries⁴.

The Council recommended the following management measures for longline fishing in the EPO:

a. Set EPO bigeye tuna longline catch quotas at 1999 levels.

b. Exempt fleets that take less than 1% of the total bigeye tuna catch in the EPO.

c. Exempt fleets that catch less than 550 mt of bigeye tuna annually in the EPO.

d. Provide the U.S. longline fleet with a quota of 250 mt. of EPO bigeye tuna.

e. All recommendations include a provision in whatever management measures are adopted to permit the landing of a small volume of bigeye (e.g. 20-25 fish)⁵ when quotas are exceeded to minimize bycatch and waste by longliners not targeting bigeye. They also include a provision that whatever management measures are adapted should incorporate flexibility for nations to administer the longline quota in accordance with national legislation and sovereignty. This will allow the Council to apply their expertise to the allocation and implementation of domestic quotas as they apply to vessels operating under or in the Council's management authority.

2.4 Management Recommendations for Domestic WPRFMC Fisheries

The Council made additional recommendations for the management of domestic longline, purse seine and small boat pelagic fisheries.

2.4.1 Recommendations for WPRFMC Pelagic Longline and Purse Seine Fisheries

Establish a control date of June 2, 2005 for domestic longline and purse seiners fishing in U.S. EEZ waters in the Western Pacific region, including developing longline fisheries in Guam and CNMI.⁶

⁴ The conservation and management decisions adopted by the WCPFC in December 2005 for bigeye, yellowfin and albacore tunas contain language which states that nothing in the language of these measures prejudice the legitimate rights and obligations of those small island state Members and participating territories in the Convention Area seeking to develop their own domestic fisheries.

⁵ An average of 24 bigeye tuna were caught per swordfish trip by Hawaii-based longline vessels. Source: Ito, R.Y. & W.A. Machado. 2001. Annual report of the Hawaii-based longline fishery for 2000. NMFS SWFSC Admin. Rep. H-01-07.

⁶ Notification of this control date was published in the Federal Register, Vol. 70, No. 156 Monday, August 15, 2005 / 47782 – 47783.

2.4.2 Recommendations for Other WPRFMC Pelagic Fisheries

1. No action

2. Implement management measures (quotas and bag limits, minimum sizes, gear restrictions) for small boat pelagic fisheries in the Western Pacific region.

3. Implement a federal permit and reporting program for all Hawaii-based pelagic small boat fishermen.

4. Implement a federal permit and reporting program for Hawaii-based offshore (Cross Seamount, NOAA Moorings, FADs) mixed-line pelagic small boat fishermen.

5. Implement a federal permit and reporting program for Hawaii-based recreational pelagic small boat fishermen.

6. Expand the Hawaii Marine Recreational Fisheries Survey for Hawaii-based boats.

7. Assist the State of Hawaii to improve its fishermen and dealer reporting systems.

8. Implement a targeted survey of all Hawaii-based pelagic small boat owners/ operators to obtain information on their fishing effort and catches (preferred).

9. Implement a voluntary reporting system for Hawaii-based recreational pelagic small boat fishermen (preferred).

10. Implement a federal permit and reporting program for Hawaii-based commercial pelagic small boat fishermen (preferred).

11. Establish a control date of June 2, 2005 for commercial pelagic Hawaii-based small boat fisheries (preferred).⁷

Although the Council considered the above alternatives in a comprehensive context (i.e. wherever such vessels operate) legal counsel has stated that the Council's authority does not extend into state waters and thus any resultant regulations would not apply in those areas.

3.0 Review of Outstanding Issues for Council Action

⁷ Notification of this control date was published in the Federal Register, Vol. 70, No. 156 Monday, August 15, 2005, 47781 – 47782.

3.1 Quantification of Amendment Objectives

Council staff and Pelagic Plan Team members have examined the latest available information and offer the following for consideration by the Council:

Objectives for measures to address overfishing in the WCPO:

- reduce longline and purse seine bigeye fishing mortality by 20% as compared to 2001-2003 fishing levels (WCPFC 2005)
- reduce longline and purse seine yellowfin fishing mortality by 20% as compared to 2001-2003 fishing levels (WCPFC 2005)
-

Objectives for measures to address overfishing in the EPO:

- reduce longline and purse seine bigeye fishing mortality by 32% as compared to 2003-2004 fishing levels (Maunder & Hoyle IATTC 2006)

Objectives for measures to address overfishing in Hawaii small boat fisheries

- Implement mechanisms to cap effort if necessary
- Increase data collection and availability

3.2 Grouping of the Measures as Alternatives

3.2.1 International Measures

Council staff have drafted the following alternatives and summaries of their associated impacts for consideration by the Council

3.2.1.1 Alternative 1: No Action

Under this alternative neither the WCPFC and IATTC would take action to end overfishing of Pacific BET, nor would the WCPFC move to end overfishing of WCPO YFT.

Biological impacts

The no-action alternative is the current baseline but would be inconsistent with requirements in international agreements, and the Magnuson-Stevens Act, and would not achieve the Council's objectives for addressing overfishing. Fishing mortality (F) would not be expected to decline on either tuna stock, and even if F did not increase, it is likely that the biomass (B) of either species would decline below the B_{msy} and potentially below the Minimum Stock Size Thresholds (MSSTs). If this occurred then the Council would be obliged to develop a rebuilding plan for Pacific BET and WCPO YFT. Maintenance of present effort levels or subsequent expansion

would also likely threaten the sustainable exploitation of other tunas and associated stocks such as billfish and pelagic sharks, leading to the need for additional action.

Expansion of fishing effort would also increase the levels of fish bycatch and the potential for interactions with protected species such as turtles, marine mammals and seabirds. The impact of fish bycatch in terms of the Council's overfishing control rule are likely to remain unknown since stock assessments for most pelagic species are unavailable, but there may be long term ecosystem-wide impacts, especially if the mean trophic level of the catch was reduced through fishing down the larger species of tunas, billfish and sharks..

Socio-economic impacts

Unfettered expansion of fishing effort in Pacific pelagic fisheries for BET and WCPC YFT is not sustainable, nor is it likely that present levels of fishing effort can be sustained indefinitely. Impacts from these scenarios are likely to be different across fisheries. In the WCPO, purse seine and pole and line fisheries focus primarily on skipjack tuna, which appears to be very resilient to the current levels of fishing effort. Consequently the WCPO purse seine and pole and line fleets may only be lightly impacted by further decline of BET and YFT. By contrast, the longline fleets targeting BET and YFT in the WCPO and BET in the EPO would likely find it more difficult to maintain profitable levels of catches.

As such, social and economic impacts would be expected to be widespread across the Asia-Pacific region in the cities and towns heavily reliant on longline fisheries, as fishing conditions progressively worsened. At the local level the Hawaii longline fleet is primarily focused on BET catches, now landing about 10 million pounds annually. Although fishing effort, and hence fishing mortality is not spatially homogenous across the Pacific, it is likely that as the BET stock declined in total, there will be increasingly poor CPUEs for BET in the Hawaii-based longline fishery. Given the fishing constraints on the other high value fish in the Hawaii fishery, i.e. swordfish, longliners may have to target other species, some of which like yellowfin tuna are also subject to overfishing. More likely, is the decline in the fishery and the less successful vessels leave the fishery. The contraction of the Hawaii fleet would have a knock-on effect through the whole seafood industry in Hawaii, leading to less employment and higher prices for fresh fish.

Administrative impacts

Should the Council continue to persist in taking no action, it is likely Secretary of Commerce would be forced to develop a Secretarial amendment to be consistent with the requirements of the MSA. Such action might ultimately involve closure of longline and other US fisheries targeting WCPO YFT and Pacific BET. While unilateral Council action would not end overfishing, the Council would be derelict in its stated policy of fully engaging in the international management of pelagic fisheries in the Pacific. Pursuit of a 'no action' alternative would also provide a poor example to other countries participating in pelagic fisheries in the Pacific Ocean, possibly leading to RFMO policies that do little to address overfishing of BET and YFT.

3.2.1.2 Alternative 2: End Overfishing Immediately

Under this alternative the WCPFC and IATTC would take action to immediately end overfishing of Pacific BET, and the WCPFC would move to immediately end overfishing of WCPO YFT as follows:

Measures to address overfishing in the WCPO (bigeye and yellowfin)

- Immediately reduce longline tuna effort by 20%
- Immediately reduce purse seine effort on floating FADs by 20%

Measures to address overfishing in the EPO (bigeye)

- Immediately reduce longline tuna effort 30%
- Immediately reduce purse seining effort on floating FADS by 30%

All measures must consider traditional participation as specified in the MSA and emerging island fisheries as specified in the convention which established the WCPFC.

Biological impacts

This alternative would likely provide the greatest possibility of recovering Pacific BET and WCPO YFT stocks if the reductions in effort and targeting were indeed effected immediately. Moreover, there would be additional benefits to reducing purse seine fishing on floating FADs by reducing the level of bycatch of other species, including turtles, associated with FAD sets. However, in the EPO, a return to fishing on unassociated sets may increase the bycatch of marine mammals, particularly dolphins, found in association with free-swimming yellowfin schools

Socio-economic impacts

There would be high social and economic costs of this alternative. The immediate cutting of longline fishing effort between 20 and 30% would mean either reductions in fleet sizes or constraints on the operations of existing fleets. Either way, there would be a loss of income for longline fleets, with subsequent knock-on effects in the seafood industries around the Pacific and elsewhere.

Reduction of purse seine effort on floating FADs by 20-30% would also likely compromise those purse seine operations highly dependent on FAD sets, such as in the EPO and in countries such as Papua New Guinea in the WCPO. The inability to use FADs and inexperience with catching unassociated sets would likely lead to uneconomic operations and a contraction of purse seine fleets, which would ultimately lead to a decreased volume to canneries, and higher prices for canned tuna.

Administrative impacts

The administrative impacts from an immediate reduction in fishing effort as described above would be substantial. Fleets across the Pacific would have to be monitored to ensure that the 20-30% reductions were being effected. This would be less serious for the US fleets which have a

high level of observer coverage, but would be more substantial for other fleets. Nonetheless, a 20% reduction of longline effort would require the Council to develop rules governing the Hawaii and American Samoa longline fleets, possibly through some form of set allocation, number of hooks set or days at sea schemes, and the costs would be substantial.

3.2.1.3 Alternative 3: Phase Out Overfishing In No More Than 10 years

Under this alternative the WCPFC and IATTC would take action to end overfishing of Pacific BET, and the WCPFC move to end overfishing of WCPO YFT as described below. In both instances these actions would be phased in no more than 10 years.

Implementation of output controls

- WCPO (bigeye and yellowfin):
 - If necessary, implement quotas on a country level basis with domestic allocation left to each country (WPRFMC)
- EPO (bigeye)
 - Implement EPO bigeye longline quota equal to 1999 harvests (WPRFMC)
 - Provide U.S. longline fleet with EPO quota of 250 mt (WPRFMC)
 - Exempt fleets that take less than 1% or 550 mt of annual EPO bigeye catch (WPRFMC)

Gradually (over 10 years) quotas would be reduced to achieve objectives. However, all measures must consider traditional participation as specified in the MSA and emerging island fisheries as specified in the convention which established the WCPFC.

Implementation of input controls

- WCPO (bigeye and yellowfin)
 - Gradually decrease longline fishing effort (# of vessels), starting with rollback to 1999 levels (WPRFMC)
 - Register and limit the use of purse seine FADs (WPRFMC)
- EPO (bigeye)
 - Allow non-bigeye target longline trips to retain 20-25 incidentally caught bigeye (WPRFMC)
 - Gradually reduce EPO purse seining on bigeye by 20% (IATTC 2006)

Gradually (over 10 years) input controls would be increased to achieve objectives. However, all measures must consider traditional participation as specified in the MSA and emerging island fisheries as specified in the convention which established the WCPFC.

Biological impacts

Clearly, some form of phased approach to reducing longline and purse seine fishing effort would mean that stocks of WCPO YFT and Pacific BET would recover more slowly from excessive fishing mortality. However, it would still achieve the same objective. Moreover, there would be the same additional benefits to reducing purse seine fishing on floating FADs by reducing the level of bycatch of other species, including turtles, associated with FAD sets. Further, while in the EPO, a return to fishing on unassociated sets may increase the interactions of marine mammals, a phased approach may provide sufficient time to ensure that any interactions are minimized.

Socio-economic impacts

There would be still be some social and economic costs of this alternative. However, a phased-in programmed approach would allow participants to adjust to downward shifts in fishing effort through adaptive management. Ultimately, as stocks recovered catch rates should improve over the long term in the fishery, making it more profitable for the remaining participants in the fishery.

Administrative impacts

Similarly, there would still be administrative impacts from a phased approach to fishing effort reduction, but as noted above there would be a greater ‘window’ for participants to adjust. In particular, it would provide a better opportunity both domestically and through the RFMOs to develop equitable mechanisms for reducing effort and ensuring the reductions continue to be observed by participants.

3.2.2 Measures for Hawaii Small Boats

Council staff have drafted the following groupings of the Council’s recommended measures as alternatives, as well as summaries of their associated impacts, for consideration by the Council.

3.2.2.1 Alternative 1 No action

Under this alternative the Council would take no action regarding Hawaii’s small boat fisheries that fish for bigeye or yellowfin tuna.

Biological impacts

The no-action alternative is the current baseline but would be inconsistent with requirements in international agreements, and the Magnuson-Stevens Act, and would not achieve the Council’s objectives for Hawaii’s small boat fisheries. In the short-run there would not be expected to be any discernable biological impacts as these fisheries constitute a very small part of Pacific bigeye and yellowfin catches. In the longer run these fisheries could grow in size and begin to have significant impacts that could be difficult to address if participants feel that they have a historical “right” to continue fishing.

Socio-economic impacts

This alternative is unlikely to have any short-term socio-economic impacts but if Hawaii's small boat fisheries grow in size they may begin to contribute significantly to the overfishing problem and catches and catch rates may decline, leading to adverse social and economic impacts for both recreational and commercial fisheries. At the same time, the lack of complete and timely data from Hawaii's small boat fisheries would hamper efforts by scientists and managers to understand these changes.

Administrative impacts

The no action alternative would have no immediate administrative impacts however a lack of positive action by the Council could ultimately lead to the unilateral implementation of a Secretarial amendment. Such action could result in management measures for Hawaii's small boat fisheries. In addition, although unilateral Council action would not end overfishing, the Council would be derelict in its stated policy of fully engaging in this issue. Pursuit of a 'no action' alternative would also provide a poor example to other countries participating in pelagic fisheries in the Pacific Ocean, possibly leading to RFMO policies that do little to address overfishing of BET and YFT.

3.2.2.2 Implement fishery controls

Under this alternative the Council would recommend the establishment of fishery controls such as quotas, trip limits or limited entry programs for Hawaii's small boat fisheries that harvest bigeye or yellowfin tuna.

Biological impacts

This alternative would not be expected to have any discernable short-run biological impacts as these fisheries constitute a very small part of Pacific bigeye and yellowfin catches. If these fisheries grow in size and begin to have significant impacts, such controls would be valuable in addressing those impacts.

Socio-economic impacts

This alternative would be expected to have negative socio-economic impacts on fishery participants, with the force of those impacts obviously varying with the amount of controls implemented. Given the limited impact of these fisheries on Pacific tuna stocks it is unlikely that there would be associated positive impacts such as increased catch rates.

Administrative impacts

This alternative would have administrative impacts, with the force of those impacts again varying with the amount of controls actually implemented.

3.2.2.3 Establish control dates

Under this alternative control dates would be established to notify new entrants to Hawaii's small boat fisheries who enter the fishery after the control date may be regulated or not allowed to participate in the fishery pending further action by the Council. (Note that these control dates were already published by NMFS.)

Biological impacts

This alternative would have no immediate biological impacts however it would smooth and speed the implementation of future fishery controls to roll back effort if they become necessary.

Socio-economic impacts

This alternative would have no immediate socio-economic impacts as it does not affect fishing or other activities. In the longer term it would have positive impacts as new entrants to the fisheries would be aware that their operations could be limited or prohibited as a result of further action by the Council. This would allow them to carefully consider their levels of investment in the fisheries and prevent over investment in what may turn out to be a limited opportunity. Impacts on long term fishery participants could also be positive if roll backs in effort are required and implemented and these should eventually result in improved catch rates for remaining participants.

Administrative impacts

This alternative would have little immediate administrative impact beyond publication of the appropriate Federal Register notice. In the longer term it would smooth the implementation of future fishery controls to roll back effort if they become necessary.

3.2.2.4 Increase data collection from Hawaii small boats

This alternative would address the current gaps in data collection and the problems with the timely processing and availability of data to fishery scientists and managers.

Biological impacts

There would be no immediate biological impact under this alternative however the collection and analysis of information on bigeye and yellowfin tuna from fishery participants would increase our understanding of the overfishing problem and would allow the Council to implement finely tuned, adaptive and informed fishery controls should they become necessary.

Socio-economic impacts

This alternative could have mixed socio-economic impacts as the permitting and reporting burden might be offset by the increased understanding of the importance of data reporting and good stewardship by fishery participants who to date have not had to report their catches.

Administrative impacts

This alternative would have high administrative impacts as it would require NMFS to establish permit and reporting programs for Hawaii's small boat fisheries.