

REGULATORY IMPACT REVIEW

**FOR A RULE TO IMPLEMENT THE DECISIONS OF THE FIFTH REGULAR
ANNUAL SESSION OF THE COMMISSION FOR THE CONSERVATION
AND MANAGEMENT OF HIGHLY MIGRATORY FISH STOCKS IN THE
WESTERN AND CENTRAL PACIFIC OCEAN:**

**FISHING RESTRICTIONS AND OBSERVER REQUIREMENTS IN PURSE
SEINE FISHERIES FOR 2009-2011 AND TURTLE MITIGATION
REQUIREMENTS IN PURSE SEINE FISHERIES**

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1. INTRODUCTION

This document is a regulatory impact review (RIR) prepared under Executive Order 12866, “Regulatory Planning and Review.” An initial regulatory flexibility analysis (IRFA) prepared under the Regulatory Flexibility Act is included in the proposed rule published in the Federal Register.

Executive Order 12866 requires that the economic impacts of proposed government regulations on the national economy be assessed before implementation. In most instances, the measurement of changes to gross domestic product is an accurate measure of impact. “In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory measures, including the alternative of not regulating” (EO 12866, Section 1). The emphasis of the analysis is on expected changes in net benefits that occur as a result of the proposed management measures. The government should choose only those sets of regulations that produce positive benefits while considering social and distributional effects. NMFS requires that this analysis be done through a regulatory impact review (RIR) for all regulatory actions that are of public interest. The RIR also includes analysis of distributive impacts and the costs of government administration and private compliance with the proposed measures. See the IRFA for further analysis of the expected economic effects on businesses, particularly small business entities.

This RIR is for a proposed regulatory action on the part of the National Marine Fisheries Service (NMFS) to implement decisions of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC). Those decisions require the members of the WCPFC, including the United States, to implement specific measures with respect to the conduct of their fishing vessels that operate in area of competence of the WCPFC. The rule would be issued under authority of the Western and Central Pacific Fisheries Convention Implementation Act (Public Law 109-479, Sec 501, et seq., codified at 16 U.S.C. § 6901 et seq.) (WCPFC Implementation Act).

2. OBJECTIVES

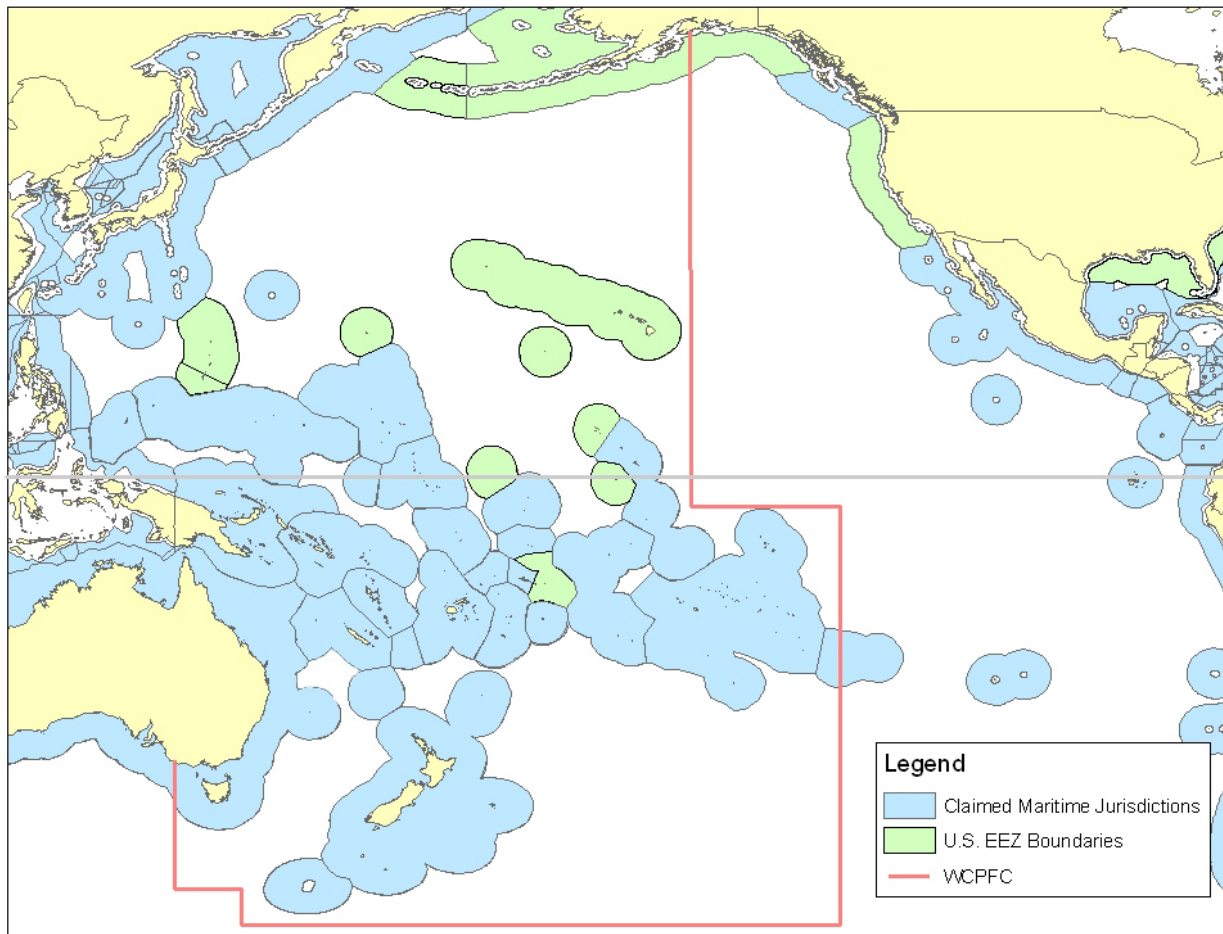
The objective of this proposed action is to satisfy the international obligations of the United States, as a Contracting Party to the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (Convention), with respect to the decisions of the WCPFC at its Fifth Regular Annual Session as they relate to the management of purse seine vessels. Those decisions primarily relate to the conservation and management of stocks of bigeye tuna (*Thunnus obesus*), yellowfin tuna (*Thunnus albacares*), and sea turtles in the WCPO. With respect to bigeye tuna and yellowfin tuna, which are among the principal stocks of fisheries governed under the Convention, the decisions are based in large part on the principle in the Convention (Article 5) that states that stocks subject to the Convention shall managed such that they are maintained or restored to levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors. With respect to sea turtles, the decisions are based in large part on the principle in the Convention (Article 5) that states that WCPFC shall adopt measures to minimize the catch of non-target species and minimize impacts from fishing vessels on associated and dependent

species, particularly endangered species.

The WCPFC Implementation Act authorizes the Secretary of Commerce (Secretary) to promulgate regulations that are needed to carry out the international obligations of the United States under the Convention and the Act, including the decisions of the WCPFC. The Secretary is directed to consult with the Secretary of State and the agency in which the U.S. Coast Guard is operating in promulgating regulations. The authority to promulgate regulations has been delegated to NMFS.

The Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (Convention) was opened for signature in Honolulu on September 5, 2000, and entered into force in June 2004. The full text of the Convention can be obtained from the Commission's website at: <http://www.wcpfc.int/convention.htm>. The area of application of the Convention ("the Convention Area") is shown in Figure 1. The Convention is focused on highly migratory species (HMS) and fish stocks within the Convention Area.

Figure 1. The Convention Area (the exclusive economic zone of the United States is depicted in green, and those of foreign jurisdictions are in blue)



The WCPFC, established under the Convention, is comprised of the Contracting Parties to the Convention and fishing entities that have agreed to be bound by the regime established by the Convention. Other entities that participate in the WCPFC include Participating Territories and Cooperating Non-Members. Cooperating Non-Members are admitted on a yearly basis. The current Contracting Parties and Participating Territories to the Convention are: Australia, Canada, China, Cook Islands, European Community, Federated States of Micronesia, Fiji, France (extends to French Polynesia, New Caledonia and Wallis and Futuna), Japan, Kiribati, Korea, Marshall Islands, Nauru, New Zealand (extends to Tokelau), Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Tonga, Tuvalu, United States (extends to the Territory of American Samoa, the Commonwealth of the Northern Mariana Islands and the Territory of Guam) and Vanuatu. Chinese Taipei (Taiwan), as a fishing entity, has agreed to be bound by the regime established by the Convention.

The Convention was ratified by, and came into force for, the United States in 2007. The United States thereby became a full Member of the WCPFC after having been a Cooperating Non-Member since the WCPFC's establishment in 2004.

3. DESCRIPTION OF AFFECTED FISHERIES

The proposed rule would affect the U.S. purse seine fishery in the Convention Area. The fishery is described in the environmental assessment (NMFS 2009) prepared for this proposed rule, including characteristics of the fleet, fishing practices, the current management regime, and recent performance in terms of fishing effort and catches. Chapter 3 of the environmental assessment is incorporated here by reference.

4. PROBLEM STATEMENT

At its Fifth Regular Session, in December 2008, the WCPFC adopted a number of Conservation and Management Measures (CMM) that place certain obligations on the WCPFC Members, Participating Territories, and Cooperating Non-members (collectively, CCMs). These CMMs are available with the other decisions of the WCPFC at <http://www.wcpfc.int/decisions.htm>. The provisions of two of those CMMs, insofar as they relate to purse seine fisheries, would be implemented through the proposed rule considered in this RIR.

The first of the two CMMs, CMM 2008-01, "Conservation and Management Measure for Bigeye and Yellowfin Tuna in the Western and Central Pacific Ocean" is based in part on the findings by the WCPFC that the WCPO stock of bigeye tuna (*Thunnus obesus*) is experiencing a fishing mortality rate greater than the rate associated with maximum sustainable yield (MSY) and that the WCPO stock of yellowfin tuna (*Thunnus albacares*) is experiencing a fishing mortality rate close to the rate associated with MSY.

In accordance with the principles in Article 5 of the Convention, the objectives of CMM 2008-01 include achieving, over the 2009-2011 period, a reduction in fishing mortality on bigeye tuna in

the WCPO of at least 30 percent and no increase in fishing mortality on yellowfin tuna in the WCPO, relative to a specified historical baseline.

CMM 2008-01 includes provisions that:

- (1) for 2009-2011, establish purse seine fishing effort limits on the high seas in the Convention Area and require CCMs to implement compatible measures in their respective areas of national jurisdiction;
- (2) in the period 2009-2011, prohibit deploying and servicing FADs or associated electronic devices, and prohibit purse seine fishing on schools in association with FADs on the high seas in the Convention Area during specified periods each year (August 1 through September 30 in 2009 and July 1 through September 30 in 2010 and 2011) and require CCMs to implement compatible measures in their respective areas of jurisdiction;
- (3) in 2010 and 2011, close two specific high seas areas within the Convention Area to purse seine fishing, subject to the WCPFC deciding otherwise at its regular annual session in December 2009;
- (4) in 2010 and 2011, require that all bigeye tuna, yellowfin tuna, and skipjack tuna be retained on board purse seine vessels in the Convention Area up to the point of first landing or transshipment, with certain exceptions and contingent on the WCPFC Regional Observer Programme (WCPFC ROP) being able to provide 100 percent observer coverage; and
- (5) in 2009, require that WCPFC ROP or national observers be on board all purse seine vessels fishing in the Convention Area during the FAD prohibition period, and in 2010 and 2011, require that WCPFC ROP observers be on board all purse seine vessels fishing in the Convention Area (100% observer coverage).

The second of the two CMMs, CMM 2008-03, “Conservation and Management of Sea Turtles,” prescribes specific measures to be used to handle, resuscitate, and release sea turtles captured in HMS fisheries, and for purse seine vessels, requires that certain procedures be used to deal with sea turtles encircled and entangled in purse seines or FADs, including carrying and using dip nets.

In order to ensure that the United States, as a Contracting Party to the Convention, satisfies its international obligations under WCPFC CMM 2008-01 and CMM 2008-03, regulations are needed to implement the provisions that are applicable to U.S. fishing vessels; the proposed rule considered here would implement those provisions that are applicable to U.S. purse seine vessels.

5. ALTERNATIVES

NMFS has identified several alternatives to the proposed rule. The alternatives are limited to the way in which the fishing effort limits would be implemented. For the other elements of the

proposed rule, NMFS was not able to identify any alternatives that were reasonable and feasible.

5.1. Alternative A (no action)

Under Alternative 1, none of the provisions of CMM 2008-01 or CMM 2008-03 would be implemented and U.S. purse seine vessels operating in the Convention Area would continue to be subject to the existing management regime.

5.2. Alternative B (proposed rule)

(1) Fishing effort limits:

The proposed rule would establish a limit, from 2009 through 2011, on the number of fishing days per year that may be spent by the U.S. purse seine fleet on the high seas and in areas under U.S. jurisdiction (including the U.S. exclusive economic zone, or EEZ) within the Convention Area. The affected areas are collectively referred to here as the “Effort Limit Area for Purse Seine”, or ELAPS. Paragraph 10 of CMM 2008-01 gives the United States the choice of using the 2004 level or the average 2001-2004 level as the baseline for the fishing effort limits. Paragraphs 12 and 18 of CMM 2008-01 require the United States to take measures to reduce purse seine fishing mortality on bigeye tuna in the U.S. EEZ, in a way that is compatible with the measures that the Parties to the Nauru Agreement (PNA) adopt within their respective areas of national jurisdiction (as prescribed in Paragraphs 11 and 17 of the CMM). The measures to be implemented by the PNA that are pertinent to the fishing effort limits are described in the following paragraph.

The PNA (whose EEZs collectively comprise the vast majority of tuna purse seine fishing grounds in the WCPO) have established, and under CMM 2008-01 are obligated to implement, the Vessel Day Scheme (VDS), which caps the number of days fished by purse seine vessels in the EEZs of the PNA and provides for the allocation of the cap among the PNA. The VDS defines a fishing day as any calendar day, or part of calendar day, during which a purse seine vessel is outside of a port, except when the vessel is not undertaking fishing activities (i.e., when all fishing gear is stowed). For the purpose of this proposed rule, “fishing day” would be defined in similar manner. The PNA VDS specifies rolling three-year management periods. The rolling three-year management periods function by having the limit on the number of fishing days set for each of the years in the initial three-year management period. In theory, before the end of the first year, the fishing limit is then to be set for the fourth year, and before the end of the second year, the fishing limit is set for the fifth year, and so on, so that the maximum allowable fishing days are always established for three years in advance. Transfer of a certain number of fishing days between management years by individual PNA is allowed (up to 100% of the days from another year in the same three-year management period; up to 30% of the days from the final year of the preceding management period). Allocated fishing days may also be transferred, within specified limits, among PNA.

Paragraph 7 of CMM 2008-01 provides that determinations of effort levels for the purpose of implementing the CMM shall include fishing rights organized under existing regional fisheries arrangements or agreements that were registered with the WCPFC by December 2006 in

accordance with CMM 2005-01, “Conservation and Management Measure for Bigeye and Yellowfin Tuna in the Western and Central Pacific Ocean,” provided that the number of licenses authorized under such arrangements does not increase. The South Pacific Tuna Treaty (SPTT) is such an agreement, and the United States has registered the SPTT with the WCPFC in accordance with CMM 2005-01. The number of licenses allowed for the U.S. purse seine fleet under the SPTT is 45, five of which are reserved for vessels engaged in joint ventures with Pacific Island Parties to the SPTT, and these numbers have not increased. The licensing requirements of the SPTT do not apply to the U.S. EEZ, but the area of application of the SPTT does include portions of the U.S. EEZ. From a practical standpoint, it is highly unlikely that a U.S. purse seine vessel would be able to fish economically only in the U.S. EEZ in the Convention Area, or more generally, in the WCPO. In fact, since the inception of the SPTT, all U.S. purse seine vessels that have fished in the U.S. EEZ in the WCPO have obtained licenses issued under the SPTT. For these reasons, the number of non-joint venture licenses authorized under the SPTT, 40, is used as the basis for the proposed fishing effort limits for both the high seas and the U.S. EEZ within the Convention Area.

This baseline of 40 vessels is used to derive the proposed fishing effort limits, expressed in terms of fishing days, by determining the average number of fishing days spent per vessel in the appropriate baseline period, and multiplying that number by 40 vessels. The numbers of days fished during the baseline periods were determined from the best available historical operational data from the U.S. purse seine fleet, as reported on regional purse seine logsheets. For both the high seas and the U.S. EEZ within the Convention Area, average fishing effort per vessel was greater in 2004 than during 2001-2004, so the 2004 levels are used for both areas. For the high seas in the Convention Area, the estimated average number of fishing days spent per vessel during 2004 (when 21 vessels were active in that area) was 50.76. For the U.S. EEZ in the Convention Area, the estimated average number of fishing days spent per vessel during 2004 (when 20 vessels were active in that area) was 13.95. Therefore, the proposed limit would be 2,030 fishing days per year (but not necessarily applied on an annual basis) for the high seas and 558 fishing days per year for the U.S. EEZ, or a total of 2,588 fishing days per year for the ELAPS as a whole. If any vessels enter the fishery with any of the five licenses reserved for vessels engaged in joint ventures with the Pacific Island Parties to the SPTT, the limit may be adjusted accordingly.

To accommodate the need for operational flexibility in the event of inter-annual variability in the spatial and temporal distribution of optimal fishing grounds and times, the proposed rule would implement the fishing effort limit in the ELAPS on three different time scales: First, there would be a limit of 7,764 fishing days (3 times the base of 2,588 fishing days) for the entire three-year 2009-2011 period. Second, there would be a limit of 6,470 fishing days (2.5 times the base of 2,588 fishing days) for each of the two-year periods 2009-2010 and 2010-2011. Third, there would be a limit of 3,882 fishing days (1.5 times the base of 2,588 fishing days) for each of the one-year periods 2009, 2010, and 2011. This approach would allow greater fishing effort in any given year than would be allowed under a strict annual limit, yet ensure that total fishing effort over the three-year period does not exceed the WCPFC-mandated limit for that period.

Once NMFS determines during any of those time periods that, based on information collected in vessel logbooks and other sources, the limit is expected to be reached by a specific future date,

NMFS would issue a notice announcing the closure of the purse seine fishery in the ELAPS starting on that specific future date and will remain closed until the end of the applicable time period. Upon closure of the fishery, it would be prohibited to use a U.S. purse seine vessel to fish in the ELAPS through the end of the applicable time period. NMFS would publish the notice at least seven calendar days before the effective date of the closure to provide fishermen advance notice of the closure.

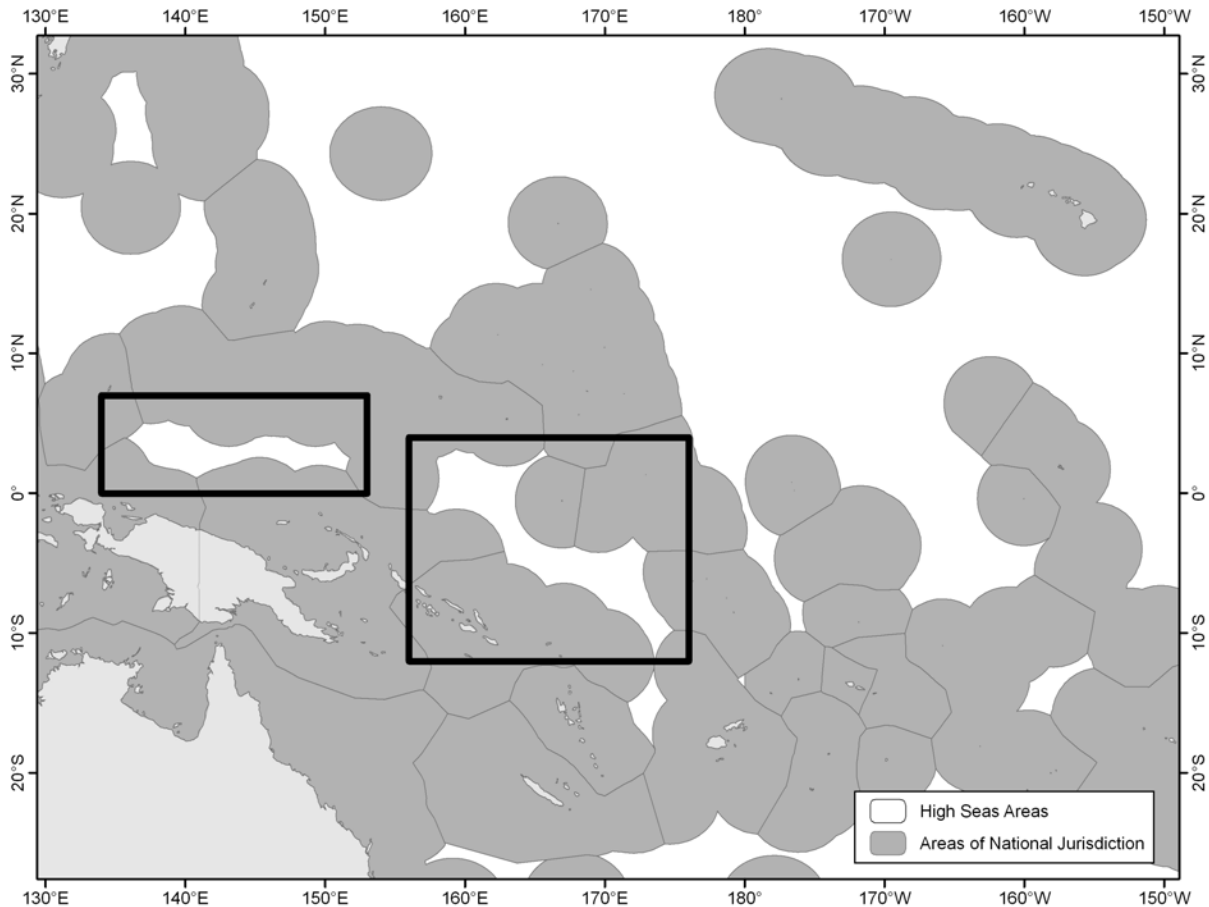
(2) FAD prohibition periods:

The proposed rule would establish periods in each of the years 2009, 2010, and 2011 during which it would be prohibited to set purse seines around FADs, deploy FADs, and service FADs or their associated electronic equipment. Also, to implement the provision in CMM 2008-01 to prohibit fishing “on schools in association with FADs”, it would be prohibited during these periods to set a purse seine within one nautical mile of a FAD or to set a purse seine in a manner intended to capture fish that have aggregated in association with a FAD, such as by setting the purse seine in an area from which a FAD has been moved or removed within the previous eight hours or setting the purse seine in an area into which fish were drawn by a vessel from the vicinity of a FAD. FADs would be defined to include both artificial and natural floating objects that are capable of aggregating fish. In 2009, the FAD prohibition period would be August 1 through September 30. In 2010 and 2011, it would be July 1 through September 30.

(3) High seas closed areas:

The proposed rule would establish two areas closed to fishing by U.S. purse seine vessels, effective January 1, 2010 through December 31, 2011. The areas would be the two areas of high seas within the Convention Area that are depicted on the map in Figure 2. In CMM 2008-01, the WCPFC has reserved the option of reversing its adoption of the closed areas at its regular annual session in December 2009. If such a decision occurs, NMFS will take appropriate action to rescind any closed areas that are established by regulation.

Figure 2. Proposed high seas closed areas. Areas of high seas are indicated in white; areas of claimed national jurisdiction, including territorial seas, archipelagic waters, and exclusive economic zones, are indicated in dark shading. Areas that would be closed to purse seine fishing are all high seas areas within the two rectangles bounded by the thick black lines. This map displays indicative maritime boundaries only.



(4) Catch retention:

The proposed rule would prohibit discarding bigeye tuna, yellowfin tuna, or skipjack tuna (*Katsuwonus pelamis*) from a U.S. purse seine vessel at sea within the Convention Area. Exceptions would be provided for fish that are unfit for human consumption for reasons other than their size, for the last set of the trip if there is insufficient well space to accommodate the entire catch, and for cases of serious malfunction of equipment that necessitate that fish be discarded. This element of the proposed rule would become effective no earlier than January 1, 2010, and only upon NMFS' determination that an adequate number of WCPFC-approved observers are available for the purse seine vessels of all WCPFC CCMs as necessary to ensure compliance by such vessels with the catch retention requirement. Once it makes that determination, NMFS would announce the effective date of the requirement in a notice published

in the Federal Register. The requirement would then remain in effect through December 31, 2011.

(5) *Observers:*

The proposed rule would require that U.S. purse seine vessels carry observers deployed as part of the WCPFC ROP or deployed by NMFS on all trips in the Convention Area from August 1 through September 30, 2009 (the FAD prohibition period). It would also require, effective January 1, 2010, through December 31, 2011, that U.S. purse seine vessels carry WCPFC-approved observers on all trips in the Convention Area. These observer requirements would not apply to trips that take place exclusively within areas under the jurisdiction of the United States or any other single nation. They also would not apply in cases where NMFS has determined that an observer is not available.

(6) *Sea turtle handling:*

The proposed rule would require that owners and operators of U.S. purse seine vessels operating in the Convention Area carry specific equipment and use specific measures to disentangle, handle, and release sea turtles that are encountered in fishing gear, including purse seines and FADs. The required equipment would be a dip net with specified minimum design standards. The required measures would include: immediately releasing sea turtles that are observed enclosed in purse seines; disentangling sea turtles that are observed entangled in purse seines or FADs; stopping net roll until a sea turtle is disentangled from a purse seine; resuscitating sea turtles that appear dead or comatose; and releasing sea turtles back to the ocean in a specified manner. Unlike all the other elements of the proposed rule, this element would be effective indefinitely.

5.3. Alternative C

Alternative C differs from the proposed rule only in that the fishing effort limits would be allocated (according to some as-yet undetermined criteria) among individual vessels.

5.4. Alternative D

Alternative D would establish separate fishing effort limits for the high seas and for areas under U.S. jurisdiction and separate limits for each of the SPTT licensing years (which run from June 15 through June 14) during 2009-2011. In accordance with the baseline effort levels specified in CMM 2008-01, the limits would be 2,030 fishing days on the high seas and 558 fishing days in areas under U.S. jurisdiction.

5.5. Alternative E

Alternative E differs from the proposed rule only in that there would be a single limit of 7,764 fishing days (three times the fishing effort rate of 2,588 fishing days per year) for the entire three-year period 2009-2011.

6. ANALYSIS OF ALTERNATIVES

Four types of economic effects are analyzed: changes in net benefits, distributional changes in net benefits, changes in income and employment, and cumulative effects. The analysis focuses on the effects of the proposed action (Alternative B) relative to the baseline (i.e., the effects of Alternative A, the no-action alternative). At the end of each of the four subsections, the effects of the other three action alternatives (Alternatives C, D, and E) are examined and compared with those of the proposed action.

6.1. Changes in net benefits

Analytical approach:

The emphasis of the RIR is on identifying changes in revenues as a proxy (in the absence of detailed and up-to-date cost data) for changes in net benefits. For the purpose of estimating future benefits and costs, U.S. government guidance for benefit-cost analysis (OMB 1992; OMB 2003) calls for the use of an annual discount rate of seven percent for a base-case analysis, and to apply alternative rates, including three percent, for the purpose of sensitivity analyses. The discount rate is applied to the expected stream of net benefits over an appropriate time horizon, which in the case of this proposed rule is three years, the duration of the rule. The duration of most elements of this proposed rule would be limited to three years, so the discount rate and time horizon are not very relevant. Because of that, along with the fact that any quantitative estimates provided here are very rough, only nominal values are examined.

It is emphasized that with the exception of the sea turtle handling requirements, the proposed rule would be effective only in the years 2009-2011, so its direct effects on the conduct of fishing vessels would be largely limited to that period and its economic impacts would be accordingly short-lived (but see section 6.4 regarding the cumulative impacts of this proposed action with those of other foreseeable future actions).

The analysis is limited to examining changes in net benefits to U.S. gross domestic product; changes in net benefits that occur to foreign interests are not relevant in the context of this RIR. Changes in benefits and costs in both the private and public sectors are important with respect to net benefits; effects in both sectors are accounted for in this analysis to the extent possible. In the private sector, benefits may accrue as surpluses to consumers and producers. In the case of fish harvesting operations, producer surplus is reflected in the difference between gross revenues and operating costs. Expected changes in benefits and costs are quantified where possible, but in some instances only qualitative projections can be made.

Overall benefit of the proposed action:

The proposed rule is a conservation action in that it intended to: (1) reduce the fishing mortality rate of a stock (WCPO bigeye tuna) that has been found to be subject to a fishing mortality rate greater than the rate associated with MSY; (2) control the fishing mortality rate of a stock (WCPO yellow tuna) that has been found to be subject to a fishing mortality rate close to the rate

associated with MSY; and (3) reduce the adverse consequences of purse seine fishing on sea turtle populations.

Although the stock sizes of WCPO bigeye tuna and WCPO yellowfin tuna are still greater than the sizes associated with MSY, if the fishing mortality rate for WCPO bigeye tuna continues at a rate greater than the rate associated with MSY, or if the rate for WCPO yellowfin tuna increases above the rate associated with MSY, the respective stock sizes would be expected to decline to a size smaller than the size associated with MSY. In that event, for either stock, catch-per-unit-of-fishing-effort, and consequently, revenues-per-unit-of-fishing-effort, would decline accordingly. Therefore, any reduction in fishing mortality on either stock would enhance the stock's potential productivity and enhance its continued ability to produce MSY. That, in turn, would enhance the ability of the United States to benefit from the stock, be it through producer surplus generated in U.S. fisheries that catch the stock or consumer surplus generated by both domestically produced and imported WCPO bigeye tuna and WCPO yellowfin tuna.

The proposed action could lead to positive impacts on WCPO bigeye tuna and WCPO yellowfin tuna by reducing the fishing mortality rates on bigeye tuna generally and on juveniles of both stocks during the FAD prohibition periods and possibly by reducing the fishing mortality rate on juveniles of both stocks through the catch retention requirement. On the other hand, the FAD prohibition periods, which would encourage fishing on unassociated schools, which contain more yellowfin tuna and comparatively larger fish than fish captured in FAD sets, could have negative effects on WCPO yellowfin tuna by increasing the fishing mortality rate on the stock.

Overall, it is likely that the effects of the proposed actions in aggregate would be beneficial to WCPO bigeye tuna and WCPO yellowfin tuna stocks. However, these beneficial effects would be relatively small, because: (1) the duration of the FAD prohibition periods would be only three years and the catch retention requirement would be implemented for a maximum of two years; (2) there would likely be only a small reduction in the fishing mortality rates contributed by the U.S. purse seine fleet; and (3) the U.S. WCPO purse seine fleet is only one of many fleets that contribute to the total fishing mortality of these two stocks.

Adult bigeye tuna and adult yellowfin tuna are among the top predators of the tropical or warm-pool marine ecosystem. Changes to the WCPO stocks of these species could lead to trophic interactive effects, including increased competition for prey species with other top predators. Larval and juvenile bigeye tuna and yellowfin tuna are also sources of food for other marine species, including fish, seabirds, porpoises, marine mammals, and sharks. Thus, increases in biomass of larval and juvenile tunas could increase the food available for these other species. However, it is unlikely that the effects of this proposed action on WCPO bigeye tuna and yellowfin tuna would be great enough to appreciably impact the marine ecosystem. There are those who have postulated that the current large size of WCPO skipjack tuna may be due in part to recent reductions in the biomass of adult bigeye tuna and yellowfin tuna, both of which are known to be voracious feeders on all forms of small fish, including skipjack tuna. A return to higher biomass levels of these two stocks could lead to a reduction in the size of WCPO skipjack tuna, which is the main target species in the WCPO purse seine fishery. However, predicting whether and to what extent this would occur would be highly speculative.

Only in concert with similar actions by other members of the WCPFC, and only if similar or more restrictive actions are taken after 2011 would the proposed rule result in beneficial impacts on WCPO bigeye tuna and WCPO yellowfin tuna that are great enough to be beneficial to the United States. Those possible actions and their cumulative beneficial effects are addressed further in section 6.4.

With respect to sea turtles, the proposed rule would require that operators and crew of U.S. purse seine vessels handle and release sea turtles in a manner that is expected to improve the condition of sea turtles that are encountered in the fishery, thereby reducing the adverse consequences of the fishery on the populations of sea turtles that it interacts with and improving the likelihood of these populations' persistence. These expected benefits to sea turtle populations are expected to be minor because sea turtles are encountered relatively rarely in the U.S. WCPO purse seine fishery and they are generally released in good condition.

To gauge the net benefits of the proposed action, the (uncertain and unquantifiable) benefits identified here and in section 6.4 would have to be weighed against the costs of the proposed action. Those costs are estimated to the extent possible in the paragraphs that follow, specifically in terms of consumer surplus, producer surplus, and public sector costs.

Consumer surplus:

Consumer surplus is the difference between what consumers would be willing to pay and what they must pay for a given good or service.

Consumers of U.S. purse seine fishery-produced light meat canned tuna in the United States are part of a much larger global market of tuna sourced from the fleets of many nations and produced from tuna stocks in all the world's oceans. Consequently, production by the U.S. WCPO purse seine fleet has limited influence on prices paid by U.S. canned tuna consumers or on the quality or quantity of the products they consume. Participants in the U.S. purse seine fleet can be viewed as "price takers" in terms of their individual and fleet-wide production. In other words, individual and cumulative U.S. purse seine fleet-wide landings are not sufficient to "move the markets" up or down in terms of the price of a can of light meat tuna. The proposed action, which is expected to have relatively minor effects on production by the U.S. fleet, is therefore unlikely to have any effects on quantities, quality, or prices of products available to U.S. consumers, so no impacts on consumer surplus are expected.

Producer surplus:

Producer surplus is the difference between producers' (e.g., fishing businesses') revenues and their costs.

The proposed rule would potentially foreclose fishing opportunities for U.S. purse seine vessels due to the fishing effort limits, the FAD prohibition periods, and the high seas closed areas, and thereby bring economic losses to those producers. The catch retention requirement could have operational impacts and bring economic losses for certain segments of the U.S. fleet. The observer and sea turtle handling requirements would also bring direct compliance costs to

affected vessel owners and operators. These losses and costs to businesses in the U.S. purse seine fleet cannot be projected quantifiably, but the following discussion attempts to give a qualitative indication of the losses expected from each of the six elements of the proposed rule. As of April 2009, the U.S. WCPO purse seine fleet consisted of 39 vessels. For the purpose of projecting the impacts of the proposed rule, it is assumed that the fleet will consist of the full 40 vessels allowed under the SPTT.

(1) Fishing effort limits: Two factors that are potentially important with respect to the likelihood of the fishing effort limit being reached are per-vessel fishing effort and climate/ocean conditions (which affect the distribution and availability of key target species of the U.S. WCPO purse seine fleet).

Because the proposed effort limits, expressed in terms of fishing days, would be set at a level that could reasonably be expected from 40 vessels, which is the expected fleet size under no-action, the limits may not have a high likelihood of being reached. However, because the proposed limits are based on average per-vessel fishing effort from 2004, if per-vessel effort levels in the no-action 40-vessel fleet are greater than that historical level, the likelihood of the limit being reached would be that much greater.

With respect to climatic and oceanic conditions, the spatial distribution of the fleet's fishing effort is strongly influenced by conditions associated with El Niño-Southern Oscillation (ENSO) patterns. The eastern areas of the WCPO have tended to be comparatively more attractive to the fleet during El Niño events, when warm water spreads from the western Pacific to the eastern Pacific. Consequently, the areas subject to the proposed limit appear to be more important fishing grounds during El Niño events. If El Niño conditions occur during 2009-2011 (the effective dates of this element of the proposed rule), the likelihood of the fishery being closed, along with any associated economic costs, would be slightly greater than if such an event does not occur. However, the proposed limits have been designed to mitigate that likelihood and the associated costs (not just in anticipation of El Niño events, but to accommodate the spatial-temporal variations in optimal fishing grounds that would be expected from any number of factors). Specifically, the most restrictive limit (in terms of allowable fishing days per unit of time) would be established for the entire three-year period. Less restrictive limits would be established for the one-year and two-year periods within the overall 2009-2011 period. This would allow some of the overall allowable effort for the 2009-2011 period to be concentrated – to a certain extent – within shorter sub-periods, such as during El Niño events (which may last from six months to two years).

The area that would be closed (the ELAPS) constitutes a relatively small portion of the fishing grounds available to, and typically used by, the U.S. purse seine fleet. On average during 1997 through 2007, fishing effort in the ELAPS made up about 30% of the annual total, and percentage among those years ranged from 22 to 40 (NMFS unpublished data). In the event of a closure, affected vessels could continue to operate in the Convention Area in foreign EEZs (i.e., the EEZs of Pacific Island countries), as allowed under the SPTT. Given that Pacific Island EEZs in the Convention Area have collectively received the majority of the U.S. purse seine fleet's fishing effort (60 to 78% in the years 1997-2007), the economic losses associated with being limited to such areas would, on average among vessels, likely not be substantial. Nonetheless,

the closure of any fishing grounds would be expected to bring some (unquantifiable) losses to affected entities (e.g., because revenues per unit of fishing effort in the open area might, during the closed period, be lower than in the closed area), and as indicated in the preceding paragraph, the losses would vary depending on where the best fishing grounds are during the closed period, which is dependent in part on ENSO-related conditions.

The effort limit could affect the temporal distribution of fishing effort in the U.S. purse seine fishery. Since the limit would be competitive – that is, not allocated among individual vessels, vessel operators might have an incentive to fish harder in the affected area earlier in a given limit-period (e.g., one of the calendar years 2009-2011) than they otherwise would. This “race-to-fish” effect could be accentuated by the closure of the two high seas areas (see element 3 below). To the extent such a shift occurs, it could affect the seasonal timing of fish catches and deliveries to canneries. If, for example, deliveries from the fleet were substantially concentrated early in the year, it could adversely affect prices during that period. However, as discussed in the preceding paragraphs, the majority of fishing effort is expected to occur outside the ELAPS, so the timing of catches and deliveries would not be appreciably impacted by a “race-to-fish” in the ELAPS. Furthermore, the timing of cannery deliveries by the U.S. fleet alone is unlikely to have an appreciable impact on prices, since the canneries buy from the fleets of multiple nations – in other words, businesses in the U.S. purse seine fleet are largely price-takers. A race to fish could bring costs to affected businesses if it causes vessel operators to forego vessel maintenance or to fish in weather or ocean conditions that it otherwise would not. This could bring costs in terms of human safety as well as the economic performance of the vessel. A race-to-fish effect might also be expected in the time period between when a closure of the fishery is announced and when it is actually closed, which would be at least seven calendar days. However, for the reasons stated above, any such effect and its associated costs are expected to be minor.

(2) FAD prohibition periods: The economic losses stemming from not being able to fish in association with FADs during the specified periods cannot be projected, but the fleet’s historical use of FADs can give a qualitative indication of the losses. In the years 1997-2007, the proportion of sets made on FADs in the U.S. purse seine fishery ranged from less than 40 percent in some years to more than 90 percent in others (SPC 2009a). The importance of FADs in terms of profits appears to be quite variable over time, and is probably a function of many factors, including fuel prices (e.g., unassociated sets involve more searching time and thus tend to bring higher fuel costs than FAD sets) and market conditions (e.g., FAD-fishing, which tends to result in greater catches of small skipjack tuna than unassociated sets, might be more attractive and profitable when canneries are not rejecting small fish). Thus, the losses stemming from the FAD prohibition periods would depend on a variety of factors. The fact that the fleet has typically made a large portion of its sets on FADs suggests that prohibiting the use of FADs for two to three months each year would bring substantial losses to affected businesses. It is possible that the opportunity costs associated with FAD fishing would be such that vessels would tie up rather than fish without FADs during the FAD prohibition periods. Given current market conditions, it seems unlikely that any affected businesses would choose to do so. However, as described below for element (5) on observer coverage, affected businesses would also bear costs associated with having to carry an observer during the 2009 FAD prohibition period. To mitigate the costs that the FAD prohibition periods would bring, vessel operators might choose to schedule their routine vessel maintenance during a portion of those periods.

(3) High seas area closures: The losses stemming from not being able to fish in the two high seas areas in 2010 and 2011 cannot be quantified. Because the affected areas constitute a relatively small portion of the fleet's traditional fishing grounds, the closures would not be expected to have a large effect on the ability of vessels to fish and generate revenue. NMFS unpublished data from vessel logbooks indicate that from 1997 through 2007, the proportion of the fleet's total annual catch that was taken from the two areas collectively was about 10 percent, and ranged from about 3 to 20 percent. Total fishing effort would likely be unaffected, but the spatial distribution of effort would necessarily shift out of the affected areas into what would be less attractive, and in some cases, less profitable, fishing grounds.

(4) Catch retention: Implementing the catch retention requirement would bring costs associated with having to fill well space with less valuable, and in some cases, unmarketable, product. Those costs cannot be quantified, but historical tuna discard rates in the U.S. purse seine fishery give a qualitative indication. Based on vessel observer data, annual observed discard rates (percent of catch that was discarded at sea, by weight) of bigeye tuna, skipjack tuna, and yellowfin tuna were 10%, 9%, and 6%, respectively, in 2007 and 4%, 1%, and 1%, respectively, in 2008 (SPC 2009b). The decrease in discard rates between 2007 and 2008 may be indicative of an increase in the value of small tuna.

The economic losses stemming from the catch retention requirement would likely be different for vessels that tend to operate out of Pago Pago and deliver their catch to the canneries in Pago Pago versus vessels that transship most of their catch to other vessels. For vessels in the former category, which have to steam relatively far from the fishing grounds in order to land their fish, a fishing trip typically only ends when the fish holds are full in order to maximize revenue during a given trip. Revenues and profits for these vessels are therefore strongly dependent on the size of their fish wells and on the value of fish per unit of well space. There have been occasions when the canneries have charged vessel operators to unload small fish. If that occurs with small fish that under this proposed rule are retained that otherwise would not be, vessel owners and operators would bear direct economic costs. For vessels that tend to transship their catches at ports near the fishing grounds, well space is a less important constraint on profits, so the economic impacts of this requirement on these vessels would likely be less.

(5) Observer coverage: The expected costs of having to comply with the proposed observer requirements are first estimated for 2009, in which vessels would be required to carry an observer during the FAD prohibition period (August 1 through September 30), and then estimated for 2010 and 2011, when vessels would be required to carry observers on all trips.

Under the current 20 percent observer coverage requirement under the SPTT, vessels that operate out of Pago Pago, American Samoa, typically carry an observer on about one trip per year. The observers required under the terms of the SPTT are deployed by the Pacific Islands Forum Fisheries Agency (FFA), which acts as the SPTT Administrator on behalf of the Pacific Island Parties to the SPTT. Under an agreement between the United States and the Pacific Island Parties to the SPTT, the observers deployed for the purpose of meeting this new WCPFC-mandated observer requirement would also be deployed by the FFA. Under the SPTT, the FFA dictates the deployment of observers and the U.S. facilitates their placement on vessels. Deployment is done

in a way such that vessel operators have essentially no control over which trips will be observed.

In 2009, if an SPTT-mandated observer is deployed by the FFA on a trip that includes the FAD prohibition period, that would satisfy this new WCPFC-mandated observer requirement, and there would be no new compliance costs for the affected vessel in 2009. If, on the other hand, an SPTT-mandated observer is not deployed on the trip or trips that include the 2009 FAD prohibition period, then the affected vessel would have to carry an observer (assuming an observer is available) on that trip or trips as well as on any trips that it carries an SPTT-mandated observer. In that case, the new compliance costs would be as follows:

The owner and operator of the affected vessel would be responsible for both the cost of providing food, accommodation, and medical facilities to observers (termed “observer accommodation costs” here), and certain costs imposed by the FFA for the operation of its observer program as it is applied to the U.S. purse seine fleet (termed “observer deployment costs” here). For the purpose of estimating these costs, it is assumed that an affected vessel would schedule its trips such that it takes one trip during the 61-day FAD prohibition period and that the trip lasts for the duration of the period (vessel logbook data indicate average trip lengths of more than 70 days in 2003 and 2004, but the averages in 2007 and 2008 were less than 40 days; SPC 2009a). If the timing or duration of an affected vessel’s trips differs from these assumptions, the costs it would bear would vary accordingly from the estimates given in the following paragraphs.

Observer accommodation costs are expected to be about \$20 per day, so total observer accommodation costs in 2009 for an affected vessel would be about \$1,400.

Based on the budget for the FFA observer program for the 2008-2009 SPTT licensing period, which is based on a 20 percent coverage rate, observer deployment costs are approximately \$8,630 per vessel per year, or about the same per observed trip. According to the budget, about 28 percent of those costs, or \$2,416, is fixed costs (as opposed to variable, or per-trip, costs). It is not known how the fixed component of costs would change with the increase in coverage from the current 20-percent level. Assuming that fixed costs do not change at all, the cost for an additional observed trip in 2009 would be about \$6,200. If, on the other hand, fixed costs increase in proportion to the number of trips observed, the cost for an additional observed trip in 2009 would be about \$8,600.

In 2010 and 2011, observer coverage would be required on all trips. Assuming, based on recent logbook data, that an affected purse seine vessel spends 285 days at sea each year (NMFS unpublished data), and, as described above, \$20 per observed-sea-day in observer accommodation costs, annual observer accommodation costs at 100 percent coverage would be about \$5,700 per vessel. Of these estimated costs, 80 percent, or \$4,600 per vessel, would be “new” annual costs associated with this proposed requirement.

Observer deployment costs in 2010 and 2011 are estimated based on the FFA observer program budget for the 2008-2009 SPTT licensing period, as done for 2009 in the preceding paragraphs. If fixed costs do not change at all in response to the increased observer coverage rate, the annual cost per vessel at 100 percent coverage would be about \$33,400. If fixed costs increase in

proportion to the level of observer coverage, the annual cost per vessel at 100 percent coverage would be about \$43,200. Of these estimated per-vessel costs, 80 percent, or \$26,700 to \$34,500, would be new annual costs associated with this proposed requirement.

In summary, in 2009, any vessel that chooses to fish during the FAD prohibition period would be subject to compliance costs of up to about \$7,600 to \$10,000 (\$1,400 in observer accommodation costs plus \$6,200 to \$8,600 in observer deployment costs, but costs would be zero if an SPTT-mandated observer happens to be deployed during the entirety of the FAD prohibition period). If all 40 vessels in the fleet choose to fish during the FAD prohibition period, the total fleet-wide cost would be up to approximately \$0.3 to \$0.4 million, but again, to the extent that SPTT-mandated observers are deployed during the FAD prohibition period, fleet-wide costs would be accordingly lower).

In each of 2010 and 2011, affected vessels would be subject to costs of up to about \$31,300 to \$39,100 (\$4,600 in observer accommodation costs plus \$26,700 to \$34,500 in observer deployment costs). Assuming 40 active vessels in the fleet, the total fleet-wide cost in each of 2010 and 2011 would be up to approximately \$1.3 to \$1.6 million.

(6) Sea turtle interaction mitigation: The costs of implementing the proposed sea turtle interaction mitigation requirements would include the costs of obtaining the required dip net, ensuring that crew members are adequately trained to execute the required mitigation measures, and the time and labor required to handle and release sea turtles in the required manner (potentially at the expense of fishing time). A dip net with the minimum required specifications is estimated to cost each of the 40 or so affected vessels no more than \$100. Training costs cannot be quantified, but because the proposed requirements are relatively simple, crew members can probably become sufficiently skilled through informal training using educational materials provided by NMFS. Consequently, training costs are expected to be minor. Handling and releasing sea turtles in the required manner might involve more time on the part of crew members than is currently spent dealing with sea turtles that are entangled or encountered. However, such incidents occur rarely in the fishery, so the costs of labor and lost fishing time are expected to be minor.

Public sector costs:

Implementation of the proposed rule would result in federal government costs in several areas.

NMFS would need to monitor fishing effort with respect to the limits. The basic data collection systems needed to do so are already in place. These include catch and effort reporting done through the mandatory use of vessel logbooks. However, the logbook data, complemented with real-time information about vessel whereabouts (e.g., from the electronic vessel monitoring system administered by NMFS), would have to be processed more quickly than they otherwise would be in order to ensure that NMFS' determination of the limit being reached occurs no later than the limit actually being reached.

Using the effort estimates as described above, NMFS would have to make determinations as to whether the limit is likely to be reached within a particular period, and once such a determination

is made, prepare and publish a notice in the Federal Register that announces the closure of the fishery in the ELAPS.

In order to achieve a high level of compliance with the sea turtle mitigation requirements, NMFS would conduct outreach with participants in the purse seine fishery. The costs would likely be modest, as NMFS would take advantage of existing educational materials and work with individuals in the fleet in the course of routine outreach activities.

Enforcement authorities, such as NMFS and the U.S. Coast Guard, would likely invest resources into enforcing the rule. The costs of the on-the-water and on-the-ground aspects of such enforcement would probably be minimal, as they would be largely conducted in the course of routine patrols and surveillance activities used to enforce a variety of laws.

The costs of these new activities are not possible to predict. The activities would constitute relatively minor add-ons to existing NMFS and U.S. Coast Guard programs. On their own, the new activities would probably not require investment of any new funds into those existing programs (but collectively with new mandates generated elsewhere, they could lead to such investment). Instead, it is likely that existing resources would be diverted from other activities to meet these new needs. In that case, the costs would be borne in terms of lost productivity in other areas rather than “cash” costs.

Summary of effects on net benefits:

As described above, the proposed action can be expected to have a positive effect on net benefits that the United States can potentially enjoy through the maintenance of productive WCPO bigeye tuna and yellowfin stocks, as well as through enhanced likelihood of persistence of populations of threatened and endangered species of sea turtles. Those effects, however, cannot be quantified and they would occur only if the other fishing nations in the WCPO implement similar actions and, except for the turtle mitigation measures, which are of indefinite duration, if all the fishing nations in the WCPO implement similar or more conservation actions beyond the three-year duration of this WCPFC-mandated action (see discussion of cumulative effects in section 6.4).

Those positive effects would be countered by costs to the nation in terms of reduced producer surplus and increased public sector costs. The sum of those costs cannot be quantified, but because the benefits would not accrue immediately, during 2009-2011 the costs would almost certainly outweigh the benefits. It is not possible to determine whether the benefits of the proposed rule would outweigh the costs in the long term. Given the value of WCPO bigeye tuna, WCPO yellowfin tuna, and sea turtle populations to the United States, the benefits appear to have the potential to outweigh the costs.

Comparisons among alternatives:

Alternative A (no-action):

Taking no action would bring no direct short-term economic costs. It would also not bring the

benefits that the action alternatives would bring (which, as described above and in section 6.4, would accrue from the action's cumulative effects with other present and future actions rather than from the direct or indirect of the action itself). Again, under the no-action scenario, the status of target stocks would likely continue to deteriorate, which would be expected to bring costs to producers in the long term (e.g., because of increasing search times, fishing during less than optimal periods (e.g., when vessel maintenance would normally be done), and reduced catch per unit effort or all increase. Some of these costs would likely be offset by increased ex-vessel prices due to scarcity, but the magnitude of these effects and costs are impossible to predict at this time.

Alternative C (allocation of fishing effort limit among individual vessels):

The benefits of Alternative C (in terms of the future productivity of WCPO bigeye tuna and WCPO yellowfin tuna) would likely be the same as those of the proposed action, as total fishing effort and fishing mortality would be about the same in both cases.

The costs of Alternative C (in terms of producer surplus) would likely be somewhat less than those of the proposed rule, since allocated limits would alleviate any adverse impacts of the race-to-fish that might occur as a result of establishing the competitive fishing effort limits as in the proposed rule. Those potential impacts include lower prices for landed product and risks to performance, as well as health and safety, stemming from fishing during sub-optimal times.

Alternative C might bring greater public sector costs than the proposed rule, since fishing effort would have to be closely tracked for individual vessels, and enforcing individual limits might be slightly more complex and thus costly.

Alternative D (separate annual limits for high seas and U.S. EEZ):

The benefits of Alternative D (in terms of the future productivity of WCPO bigeye tuna and WCPO yellowfin tuna) would be similar to those of the proposed action and Alternative C, but since this alternative would provide less operational flexibility than those alternatives, the effort limits would be more constraining, resulting in slightly less fishing effort and slightly greater benefits to the stocks.

The costs of Alternative D (in terms of producer surplus) would be slightly greater than those of the proposed action and Alternative C, due to the more constraining nature of the annual limits in each of the two areas.

Alternative E (single three-year fishing effort limit):

The benefits of Alternative E (in terms of the future productivity of WCPO bigeye tuna and WCPO yellowfin tuna) would probably be the same as those of proposed rule and Alternatives D, as total fishing effort and fishing mortality would be about the same in all cases.

The costs of Alternative E (in terms of producer surplus) could be smaller or greater than those of the proposed rule and Alternatives C and D. This alternative would provide slightly more

operational flexibility to affected vessels than the proposed rule and Alternatives C and D, which could bring lower compliance costs. However, the lack of any limits for a given year would bring the potential for a longer closed period (e.g., during a substantial part of 2011) than would likely occur under the proposed rule (under which relatively brief closures might be expected in one or more of the years 2009-2011). To the extent that continuous fishing and continuity of supply are important for the fishery, several short closures might cause less adverse economic impacts than a single long closure. For example, with a brief closure in each year, vessel owners and operators might be able to schedule routine vessel maintenance during the closed periods and mitigate the losses of not being able to fish in the ELAPS. This would be more difficult to do during a longer closed period. In any case, as described previously, because the majority of the fleet's traditional fishing grounds would not be subject to the limit or the closure, the potential losses caused by a closed period – however short or long – are likely to be relatively minor.

No differences in terms of consumer surplus would be expected among any of the alternatives, including the no-action alternative (none would have any impacts).

6.2. Distributional changes in net benefits

Examples of distributional effects include differential economic impacts according to geographical region and businesses of differing sizes.

The proposed action would apply only to the U.S. WCPO purse seine fishery. Fisheries involving other vessel types and in other areas of the United States would be unaffected (but as noted in section 6.4, the U.S. longline fishery in the WCPO would be subject to a separate restrictive action). To the extent that the action results in the stocks of WCPO bigeye tuna and WCPO yellowfin tuna being larger than they otherwise would be, other U.S. fisheries in the Pacific Ocean that exploit the stock would benefit without bearing any costs.

As described in section 6.1, the economic losses stemming from the catch retention requirement would likely be different for vessels that tend to operate out of Pago Pago and deliver their catch to the canneries in Pago Pago versus vessels that transship most of their catch to other vessels.

The proposed rule would not appear to have distributional impacts in terms of the sizes of affected businesses.

All four action alternatives would be similar in terms of distributional effects.

6.3. Changes in income and employment

It is not possible to quantify impacts in terms of income and employment, but to the extent that the proposed rule would cause the delivery of less – in the short term – tuna from the U.S. purse seine fleet in 2009-2011 than under the no-action scenario and consequent adverse economic impacts to the producers (fishing businesses), it would also bring adverse impacts to business sectors with backward linkages to the producers, such as businesses that supply the fishing vessels. This could also be true for business sectors with forward linkages to the producers, such as the canneries in Pago Pago that process much of their catches, but because the canneries also

handle deliveries from the fishing fleets of other nations, as well as from other domestic fleets, the canneries are unlikely to be appreciably impacted by the proposed rule or any of the alternatives.

Alternative E (single three-year fishing limit) probably has a slightly higher potential for adverse changes in income and employment than the other alternatives, because the longer closed period would have the potential for greater disruption of supply to the canneries. However, as described previously, because the majority of the fleet's traditional fishing grounds would not be subject to the limit or the closure, the potential impacts caused by a closed period – however short or long – are likely to be relatively minor.

6.4. Cumulative effects

Cumulative effects are the additive effects of this action and other existing and reasonably foreseeable actions (e.g., other fishery regulations). The cumulative effects of the proposed action can be described only qualitatively.

Benefits:

As described in section 6.1, the proposed action would have the potential to reduce (relative to the no-action outcome) the total fishing mortality rate of WCPO bigeye tuna and WCPO yellowfin tuna by only small amounts (e.g., in the case of WCPO bigeye tuna, the reduction achieved by the proposed action would be small compared to the estimated 30 percent reduction that is needed to reach the level associated with MSY). Moreover, the reduction would be attained for only the three years during which the requirements would be in effect. Other reasonably foreseeable actions, however, could result in more substantial and durable beneficial impacts on WCPO bigeye tuna and WCPO yellowfin tuna.

First, the other members of the WCPFC are, like the United States, obligated to implement the purse seine-related provisions of CMM 2008-01. They are also obligated to limit in 2009-2011 catches of bigeye tuna in their longline fisheries, which are the largest source of WCPO bigeye tuna fishing mortality (NMFS is implementing those provisions in a separate rule from this one). As stated in CMM 2008-01, its objective for WCPO bigeye tuna is a 30 percent reduction in fishing mortality and for WCPO yellowfin tuna, no increase in fishing mortality. However, given a number of compromises and exemptions available in CMM 2008-01, it is clear that the collective longline and purse seine measures are unlikely, even if fully implemented by all the WCPFC members, to result in the desired 30 percent reduction in the fishing mortality rate. The likely cumulative effect is not possible to predict, but it is somewhere between nil and the target reduction of 30 percent, and any fisheries exploiting WCPO bigeye tuna and WCPO yellowfin tuna, including U.S. fleets, would benefit in the future from the cumulate effect.

Second, the WCPFC is likely to adopt conservation and management measures in the future for WCPO bigeye tuna and WCPO yellowfin tuna that apply past 2011. It is not possible to predict what those measures would be, when they would apply, or what their effects on the two tuna stocks would be. In any case, any fisheries exploiting the two stocks, including U.S. fleets, would benefit from the conservative effects of such future measures.

Costs:

If in the future the WCPFC adopts conservation and management measures that the United States implements with respect to the U.S. purse seine fishery, the businesses involved in the fishery would bear costs. Neither those future measures nor their associated costs can be predicted.

Net effects:

As described above, neither the cumulative benefits nor cumulative costs of the proposed rule can be estimated quantitatively. It is consequently not possible to determine whether the cumulative benefits to the United States would outweigh the cumulative costs.

Comparison among alternatives:

All the other present and potential future management actions identified above would be expected in association with any of the action alternatives, so the cumulative effects of the three alternatives would be different only insofar as their direct and indirect effects are different, as described in the previous subsections.

7. DETERMINATION OF SIGNIFICANCE UNDER EXECUTIVE ORDER 12866

In accordance with E.O. 12866, NMFS has made the following determinations:

- This rule is not likely to have an annual effect on the economy of more than \$100 million or to adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or state, local, or tribal governments or communities.
- This rule is not likely to create any serious inconsistencies or otherwise interfere with any action taken or planned by another agency.
- This rule is not likely to materially alter the budgetary impact of entitlements, grants, user fees or loan programs or the rights or obligations of recipients thereof.
- This rule is not likely to raise novel or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866.

Based on these determinations, the rule considered in this RIR is not a "significant regulatory action" for the purposes of E.O. 12866. Furthermore, the rule is not controversial.

8. REFERENCES

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