

DAILY BAG LIMITS, POSSESSION LIMITS, AND AT-SEA PROCESSING OF PACIFIC BLUEFIN TUNA IN CALIFORNIA RECREATIONAL FISHERIES

DRAFT ENVIRONMENTAL ASSESSMENT



Credit: Monterey Bay Aquarium

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**Pacific Fishery Management Council
National Marine Fisheries Service West Coast Region**

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Acronyms

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1 Introduction

1.1 *How this Document is Organized*

This document provides information about, and analyses of, setting recreational bag limits for Pacific bluefin tuna related management measures for 2015 and subsequent years for fisheries covered by the Fishery Management Plan (FMP) for West Coast Fisheries for Highly Migratory Species (HMS), which are developed by the Pacific Fishery Management Council (Council) in collaboration with the National Marine Fisheries Service (NMFS). These actions must conform to the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the principal legal basis for fishery management within the Exclusive Economic Zone (EEZ), which extends from the outer boundary of the territorial sea to a distance of 200 nautical miles from shore. The states manage their fisheries in the territorial sea, in a manner consistent with, or more restrictive than, the HMS FMP and Federal implementing regulations.

In addition to addressing MSA mandates, this document is an environmental assessment (EA), pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended. This document is organized so that it contains the analyses required under NEPA. The proposed action must also comply with other applicable laws, which are enumerated in Chapter 6. While this EA provides supporting information, the procedural and analytical requirements for legal mandates other than NEPA (including findings made by NMFS) may be addressed in other documents (see Chapter 6).

The EA is organized in the following chapters and appendices:

- Chapter 1 explains why the action is being considered. The purpose and need statement defines the scope of the subsequent analysis.
- Chapter 2 outlines the No Action and action alternatives that have been considered to address the defined purpose and need. The Council recommends a preferred alternative from among these alternatives, which provides the basis for establishing Federal regulations governing recreational bag limits for Pacific bluefin tuna.
- Chapter 3 describes the environmental components affected by the proposed action, which are Pacific bluefin tuna and other fish caught in association with bluefin in recreational fisheries, recreational fishery sectors and fishing communities, the marine ecosystem and essential fish habitat (EFH), and protected species.
- Chapter 4 describes the direct, indirect, and cumulative effects of the proposed action, including the No Action and preferred alternatives, on the environmental components described in Chapter 3.
- Chapter 5 details how this action meets 10 National Standards set forth in the MSA (Section 301(a)) and HMS FMP goals and objectives, as well as MSA-related scoping requirements and public meeting opportunities afforded through the Council process.
- Chapter 6 provides information on those laws and executive orders, in addition to the MSA, with which an action must be consistent.
- Chapter 7 is the bibliography.

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1.2 Proposed Action, Purpose and Need

1.2.1 The Proposed Action

The proposed action is to reduce recreational fishing mortality on Pacific bluefin tuna in the West Coast EEZ consistent with the requirement in MSA Section 304(i) that the Council “develop recommendations for domestic regulations to address the relative impact of fishing vessels of the United States on the stock and, if developed by a Council, the Council shall submit such recommendations to the Secretary.” In order to reduce adverse socioeconomic impacts consistent with necessary compliance monitoring, measures to allow processing of Pacific bluefin on recreational vessels such that processed bluefin can be distinguished from other, similar species are also considered.

1.2.2 Purpose and Need

The action is needed because the Council received notice on April 8, 2012, that the Secretary of Commerce had determined Pacific bluefin tuna was subject to overfishing and is overfished. In order to respond to the requirements of Section 304(i), the Council considered management measures to reduce fishing mortality on Pacific bluefin by domestic fishing vessels landing on the West Coast as part of the current biennial management cycle. Recommended regulations would come into effect on or about April 1, 2015, the start of the next 2-year management period, and remain in effect until modified by the Council and associated Federal rulemaking. In recent years recreational catch has exceeded commercial catch. Furthermore, the commercial fishery has been subject to a conservation measure adopted by the IATTC which limits catch 500 mt annually (the current measure is Resolution C-13-02) but recreational fisheries are not covered by the IATTC measure. [Describe any Resolution adopted by the IATTC in October 2014.] The Western and Central Pacific Fisheries Commission Northern Committee adopted a multi-year rebuilding plan and associated management measures for commercial fisheries for Pacific bluefin in the Convention Area. The rebuilding plan establishes the objective of rebuilding the stock to its median observed historical spawning stock biomass within 10 years.

In the 10 years 2004-2013, on average, 78% of fishing effort (measured by angler days) by West coast recreational fishing vessels (both private and CPFV) occurred in the Mexico EEZ. Fishing by U.S. recreational vessels in the Mexico EEZ is regulated by permit and management measures, including bag and possession limits and establishing regulations on fishing in a foreign EEZ is not part of the proposed action. The impact of recreational catch of Pacific bluefin tuna in the Eastern Pacific Ocean (EPO) (overwhelmingly by California-based recreational vessels) has been ranged from 0.4% to 24% of the total EPO fishery impact and 0.1%-4.7% of the stock-wide fishery impact. These proportions should be taken into account when developing domestic regulations to address the “relative impact” of domestic fisheries.

1.3 Fishery Management Action Area

Recreational fisheries for highly migratory species within the EEZ off the coast of California establish the geographic context for the proposed action. West coast communities engaged in these fisheries are also part of the context. Although this is the Federal fishery management area, the states manage the fisheries in the territorial sea to meet the goals and objectives of the HMS FMP.

2 Alternatives, Including the Preliminary Preferred Alternative

At its September 2014 meeting the Council adopted ranges of alternatives for bag and possession limits for recreational Pacific bluefin tuna catch and for processing of tunas aboard recreational vessels. These alternatives are described below.

2.1 **Bag and Possession Limit Alternatives for Recreational Fisheries in California**

All the alternatives apply only to recreational fisheries in Federal waters off California. Although Pacific bluefin tuna (PBF) are occasionally caught in Oregon and Washington, the numbers are so small that regulating catch in waters off those states is not justified. The action alternatives assume that California would adopt regulations that conform to changes in Federal regulations for the EEZ off California. In addition, the alternatives apply to possession in U.S. waters and landings in U.S. ports of fish legally caught in Mexico.

Alternative 1: The No Action Alternative

Currently for recreational fisheries the daily bag limit for bluefin tuna in Federal waters off California is 10 fish and the possession limit for multi-day trips is up to three times the daily bag limit (30 fish maximum). Anglers fishing in Mexico waters may retain their daily bag (5 PBF) and possession limits (15 PBF) allowable under Mexico regulations and land those fish into U.S. ports. Anglers may also retain bluefin caught off Mexico, return to U.S. waters and continue to fish until they attain the applicable U.S. daily bag and possession limits for bluefin tuna. In 2013 in U.S. waters CPFV recreational anglers landed between 5,419 and 6,473 PBF with an estimated weight between 84 and 101 mt (Agenda Item G.4.b, Supplemental CDFW Report 1, September 2014, Table 3).¹

Alternative 2: Reduce bag limit to two fish per day and the possession limit to six fish for multi-day trips (Preliminary Preferred Alternative)

The recreational daily bag limit for bluefin caught in Federal waters off California would be reduced to two fish, with a corresponding possession limit of up to six fish for multi-day trips (three or more days).² The recreational possession limit would have to be supported by proper documentation (i.e., California declaration form, CPFV logbook records, or multi-day license and Mexican fishing license if fishing in Mexico). The possession limit would apply to fishing vessels in the US EEZ even with respect to fish harvested outside the US EEZ. Therefore, a vessel that fished in Mexico waters could land no more than six fish even if the Mexico bag limit is higher than the US bag limit.³ If this limit was in place in 2013 it is estimated that CPFV angler landings would have been reduced by 1,752 fish or 27 mt (Agenda Item G.4.b, Supplemental CDFW Report 1, September 2014, Table 6).

Alternative 3: Harmonize US daily bag and possession limits for Federal waters off California with Mexico's current regulations for bluefin tuna.

¹ This range reflects either excluding (lower bound) or including (upper bound) CDFW statistical blocks that straddle the US-Mexico border. Catch in these blocks cannot be definitely attributed to US waters.

² For trips under three days (i.e., either one or two days), the daily bag limit is multiplied the number of days fishing to determine the possession limit, i.e., for a two-fish bag limit the possession limit for a one day trip would be two fish and for a two-day trip, four fish. A day is defined as a 24 hour period from the time of departure. Thus a trip spanning two calendar days could count as only one day for the purpose of enforcing possession limits.

³ NOAA Office of Law Enforcement could determine that the preferred daily bag limit for U.S. waters would be applied uniformly, even for fishing in Mexico waters, in order to make the proposed action enforceable. How the proposal will be implemented in this regard has not yet been determined.

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The recreational bag limit for bluefin tuna in Federal waters off California would be reduced from 10 to 5 bluefin per day and the maximum possession limit for multi-day trips (≥ 3 days) would be reduced from 30 to 15 bluefin. If this limit was in place in 2013 it is estimated that CPFV angler landings would have been reduced by 201 fish or 3 mt (Agenda Item G.4.b, Supplemental CDFW Report 1, September 2014, Table 6).

Alternative 4: Reduce daily bag and possession limits to below 5 fish per day and 15 fish in possession for Federal waters off California, and as a potential suboption, limit possession of fish caught in Mexico to no more than the corresponding U.S. possession limits.

The recreational daily bag limits for bluefin caught in Federal waters off California may be reduced to either 4 fish, 3 fish, or 1 fish, with corresponding possession limits of up to 3 times the daily bag limit for multi-day trips (≥ 3 days). (a 2-fish bag limit and corresponding possession limit is the Preliminary preferred alternative.) As with Alternative 2, the possession limit would apply to fish caught in both Mexico and US waters, even if the Mexico bag limit is higher than the US bag limit. If one of these limits was in place in 2013 it is estimated that CPFV angler landings would have been reduced by between 509 fish (4 fish bag limit) and 2,958 fish (1 fish bag limit) or 3-46 mt (Agenda Item G.4.b, Supplemental CDFW Report 1, September 2014, Table 6).

Alternative 5: Prohibit retention of bluefin tuna by recreational fisheries

Under this alternative, recreational targeting of PBF would be prohibited and any bluefin caught incidentally while fishing for other species in Federal waters off California would be required to be released immediately to minimize mortality. If this limit was in place in 2013 CPFV anglers would not have landed PBF; some incidental catch mortality would have occurred, which cannot be quantified.

2.2 Processing Tuna At Sea aboard Recreational Fishing Vessels

Adopting bag limits for PBF that differ from other tunas caught in recreational fisheries (principally yellowfin and albacore tuna) requires that the different species can be distinguished for monitoring and enforcement purposes. The current requirement (see No Action below), which allows filleting at sea, may not be sufficient to allow species identification. On the other hand, filleting provides income in the form of tips for CPFV crew and facilitates the storage and transport of fish. The alternatives would only apply to processing of tuna at sea by recreational harvesters fishing south of Point Conception.

No Action Alternative: Current state requirements, which allow filleting as long as a 1-inch square patch of skin is left on the fillet.

Alternative 2; Preliminary Preferred Alternative: Filleting of tuna at sea would be authorized in a manner that allows for both the species and the quantity of tuna taken aboard a vessel to be determined.

Alternative 3: Filleting of tuna at sea would be prohibited, while continuing to allow processing to remove organs and viscera (i.e., allowing only gilling and/or gutting).

Alternative 4: Filleting of tuna at sea would be prohibited, while continuing to allow processing to remove the head and organs and viscera (i.e., allowing only heading and/or gilling/gutting).

Alternative 5: Prohibit any processing of tuna at sea.

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3 Affected Environment

3.1 Target and Non-Target Species

3.1.1 Pacific Bluefin Tuna

3.1.1.1 Stock Status and Conservation Measures

An assessment of Pacific bluefin tuna in the NPO was completed by the ISC Pacific Bluefin Tuna Working Group (PBFWG or WG) in February 2014 and accepted at an inter-sessional meeting of the ISC Plenary in March 2014. An integrated statistical age-structured stock assessment model (Stock Synthesis Version 3.23b) was used to fit catch, size composition and catch-per-unit of effort (CPUE) data from 1952 to 2012, with life history parameters including a length-at-age relationship from otolith-derived ages and natural mortality estimates from a tag-recapture study.

“Using the updated stock assessment, the 2012 SSB was 26,234 t and slightly higher than that estimated for 2010 (25,476t).

Across sensitivity runs in the updated stock assessment, estimates of recruitment were considered robust. The recruitment level in 2012 was estimated to be relatively low (the 8th lowest in 61 years), and the average recruitment level for the last five years may have been below the historical average level. Estimated age-specific fishing mortalities on the stock in the period 2009-2011 relative to the 2002-2004 (the base period for the WCPFC Conservation and Management Measure 2010-2014) increased by 19%, 4%, 12%, 31%, 60%, 51% and 21% for ages 0-6, respectively, and decreased by 35% for age 7+.

Although no target or limit reference points have been established for the PBF stock under the auspices of the WCPFC and IATTC, the current F average over 2009-2011 exceeds all target and limit biological reference points (LBRs) commonly used by fisheries managers except for F_{LOSS} , and the ratio of SSB in 2012 relative to unfished SSB (depletion ratio) is less than 6%. In summary, based on reference point ratios, overfishing is occurring and the stock is overfished.”

On April 8, 2011, the Council was informed that NMFS had determined that Pacific bluefin tuna is subject to overfishing and is overfished, pursuant to MSA Section 304(i). The Council response included consideration of recreational management measures for PBF as part of the biennial management cycle.

In 2013 the IATTC adopted Resolution C-13-02, which established a 5,000 mt commercial catch limit for PBF in the Convention Area (the Eastern Pacific east of 150°W. longitude) for 2014. It also established a catch limit of 500 mt for any country “with a historical record of eastern Pacific bluefin catches.” The U.S. implemented this catch limit for commercial fisheries. On July 14, 2014, Mexico closed recreational fisheries for PBF in its waters. NMFS closed the commercial fishery for PBF on September 5, 2014 in anticipation of the 500 mt catch limit being reached.

[Summarize October IATTC results]

Since PBF is considered a single Pacific-wide stock, conservation measures in the Western and Central Pacific will influence stock status relative to EPO fisheries. The WCPFC adopted Conservation and Management Measure 2013-09 for PBF, applicable to 2014. This CMM directs members “to take measures necessary to ensure that total fishing effort by their vessels fishing for Pacific bluefin tuna in the area north of the 20 degrees north shall stay below the 2002-2004 annual average levels for 2014. Such measures shall include those to reduce all catches of juveniles (age 0-3 (less than 30 kg)) significantly below the 2002-2004 annual average levels for 2014.” In a footnote a 15% catch reduction from 2002-

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2004 average levels is identified for juveniles. In September 2014 the WCPFC Northern Committee adopted a proposed CMM that includes a multi-year rebuilding plan and a 50% reduction in juvenile catch from 2002-2004 average levels. At its annual meeting the WCPFC is likely to endorse and adopt this measure. This measure is not binding on EPO fisheries but establishes a benchmark for catch reduction and rebuilding.

3.1.1.2 Relative Impact of West Coast Fisheries on Pacific Bluefin Stock Status

Based on ISC data, recent (2008-2012) catch of Pacific bluefin tuna by U.S. West Coast fisheries constitutes approximately 2% of the North Pacific-wide catch but in 2013 recreational catch accounted for about 11% of total catch (Figure 3-1, Table 3-1). This was due to both a substantial increase in US catch and declines in commercial catches.

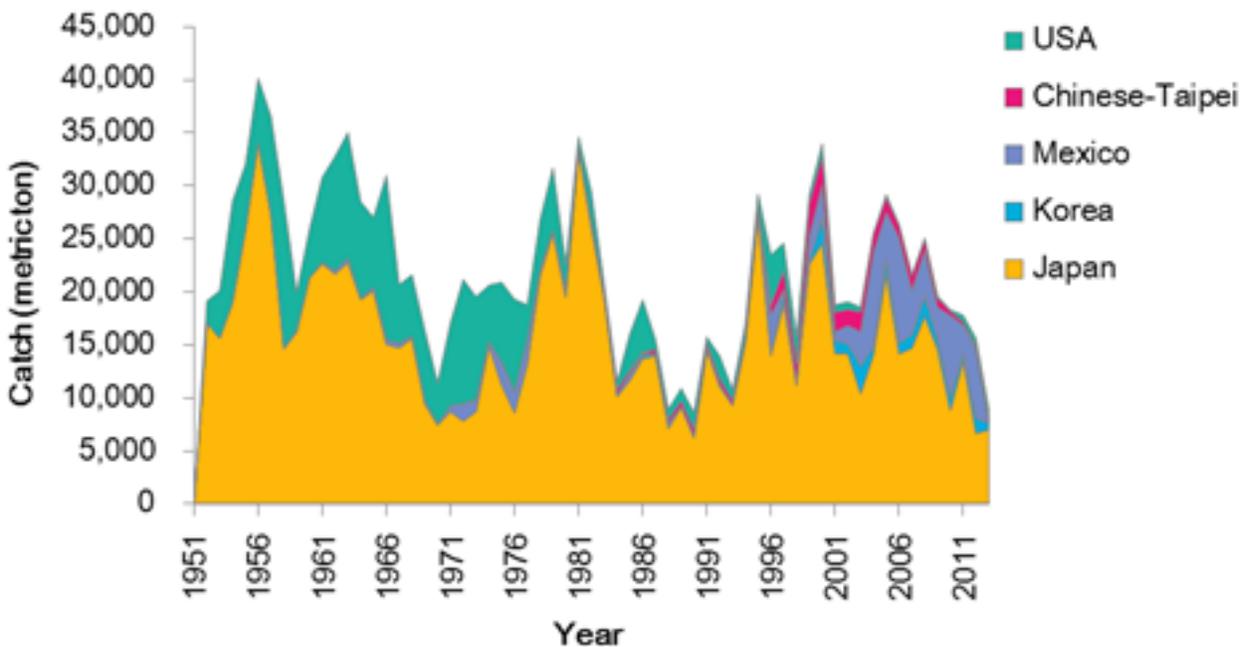


Figure 3-1. Annual landings of Pacific bluefin tuna reported by ISC members. (Source: ISC website)

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Table 3-1. Recent landings of Pacific bluefin tuna as reported by ISC and US recreational catch as a proportion of EPO and stock-wide catch. (Source: ISC website)

Year	Japan	Korea	Mexico	Chinese-Taipei	USA			Grand Total	USA Recreational Fishery % of EPO Total	USA Recreational Fishery % of Total
	Total	Total	Total	Total	Commercial	Recreational	Total			
2000	24,572	2,401	3,118	2,782	754	342	1,096	33,969	8%	1.0%
2001	14,205	1,176	863	1,843	340	356	696	18,783	23%	1.9%
2002	14,181	932	1,710	1,527	62	654	716	19,066	27%	3.4%
2003	10,394	2,601	3,254	1,884	40	394	434	18,567	11%	2.1%
2004	14,091	773	8,894	1,717	11	49	60	25,535	1%	0.2%
2005	21,654	1,318	4,542	1,370	208	79	287	29,171	2%	0.3%
2006	14,167	1,012	9,927	1,150	2	96	98	26,354	1%	0.4%
2007	14,698	1,281	4,147	1,411	44	14	58	21,595	0%	0.1%
2008	17,707	1,866	4,407	981	1	93	94	25,055	2%	0.4%
2009	14,591	936	3,019	888	6	180	186	19,620	6%	0.9%
2010	8,837	1,196	7,746	409	1	121	122	18,310	2%	0.7%
2011	13,470	670	2,731	316	118	498	616	17,803	15%	2.8%
2012	6,654	1,421	6,668	214	42	615	657	15,614	8%	3.9%
2013	7,014	604	3,154	334	10	984	994	12,100	24%	8.1%

The relative impact of fisheries in the Eastern Pacific Ocean (EPO) compared to those in the Western Pacific Ocean (WPO) on bluefin spawning stock biomass is shown in Figure 3-2, excerpted from the 2014 bluefin stock assessment [ref]. For recent years (2007-2012), EPO fisheries account for approximately 20% of the impacts of all fisheries on the bluefin spawning stock biomass. EPO fisheries include the Mexico commercial fishery, the U.S. commercial fishery and the U.S. recreational (sport) fishery. The majority of bluefin tuna caught in these fisheries are juveniles, not adults of spawning size or age. However, the harvest of juvenile fish affects the production potential of the stock, as shown by the estimated impacts on spawning stock biomass. Because the stock assessment assumes that the size selectivities are the same for all three fisheries, their impacts on the spawning stock are proportional to their catches. Therefore, the U.S. recreational fishery proportion of EPO fisheries impacts on the spawning stock is equivalent to the percentage of the U.S. recreational catch of the total EPO catch. Furthermore, because EPO fisheries account for approximately 20% of all fisheries impacts, the proportional impact by the U.S. recreational fishery of all fisheries is one-fifth of its percentage of the EPO fisheries landings by weight.

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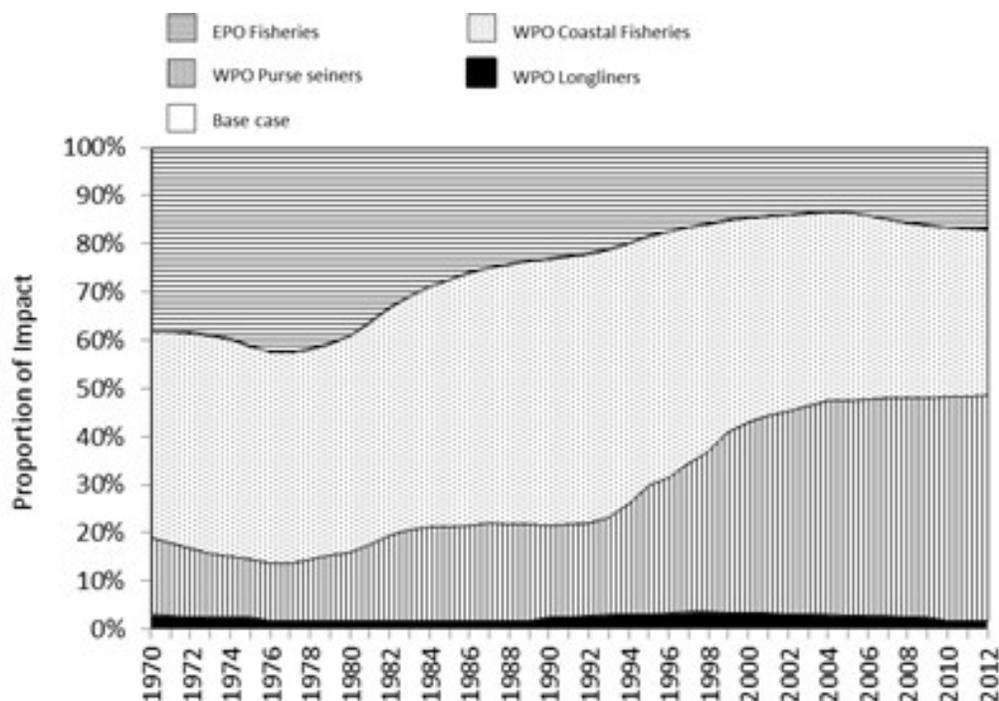


Figure 3-2. The proportion of the impact on the Pacific bluefin tuna (*Thunnus orientalis*) spawning stock biomass by each group of fisheries. (Excerpted from the Executive Summary to the Stock Assessment for Bluefin Tuna, 2014, by the Bluefin Tuna Working Group, ISC).

Given the direct relationship between catch and the impact on spawning biomass, estimates of the impact of the U.S. recreational fishery on the spawning stock biomass can be drawn directly from the last two columns in Table 3-1. This impact has increased in recent years, from <5% of EPO fisheries and <1% of all fisheries during 2007-2010 to 24% and 5%, respectively, in 2013.

[Update 2014 US rec and Mexico catches]

3.1.1.3 Size Composition of Recreational Catch

Most bluefin tuna landed by recreational fisheries from U.S. and Mexico waters are juveniles. Recreational landings by weight for the CPFV fishery are estimated from monthly numbers of bluefin landings reported in CPFV logbooks and a monthly estimate of average weight from IATTC sampling data.⁴ IATTC sampling was limited in geographic coverage and time of day, and was discontinued in 2012. Samplers measured fish lengths and average weights were computed by applying a length-weight formula.

The length composition (percentage) of IATTC fish length measurements during 2008-2012 are summarized by 5-cm size categories in Figure 3-3. These are not applied to the catches, but provide an

⁴ United States Catch Time Series for Pacific Bluefin Tuna in the North Pacific Ocean, A.L. Coan, Jr., and J.F. Childers, Dec. 2007. A Working document submitted to the sixth meeting of the Pacific Bluefin Tuna Working Group of the International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean (ISC), 11-19 December 2007, Shimizu, Japan. Document not to be cited without author's permission.

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indication of the size of bluefin landed by the CPFV fishery in recent years. Over 7,700 fish were measured and half were smaller than 79 cm and half were larger than 79 cm.

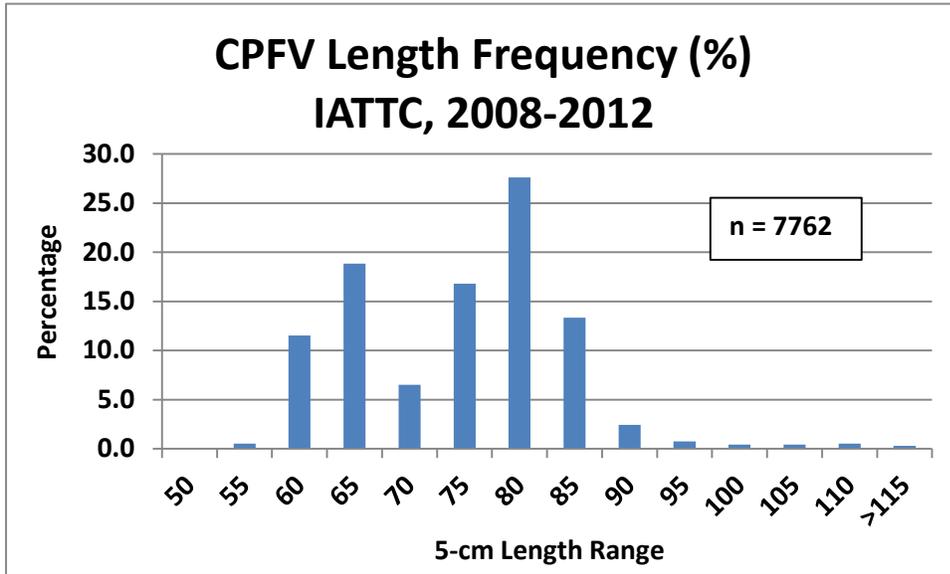


Figure 3-3. Length composition (percent by 5-cm categories) of bluefin tuna measured in CPFV landings from fishing activities in U.S. and Mexico waters during 2008-2013. The length composition represents only measured fish and is not expanded to the catch. (Source: Jenny Suter, NMFS, personal communication, with permission of IATTC).

Information on the size of fish landed by private/rental vessel anglers is minimal, due to limited recreational fishery monitoring activities and fish often being filleted at sea. During 2008-2013, lengths were measured for only 27 bluefin tuna landed by private or rental vessels in California ports from fishing activities in U.S. and Mexico waters (Figure 3-4). Meaningful estimates of the length composition of the private vessel fishery cannot be produced from these few lengths.

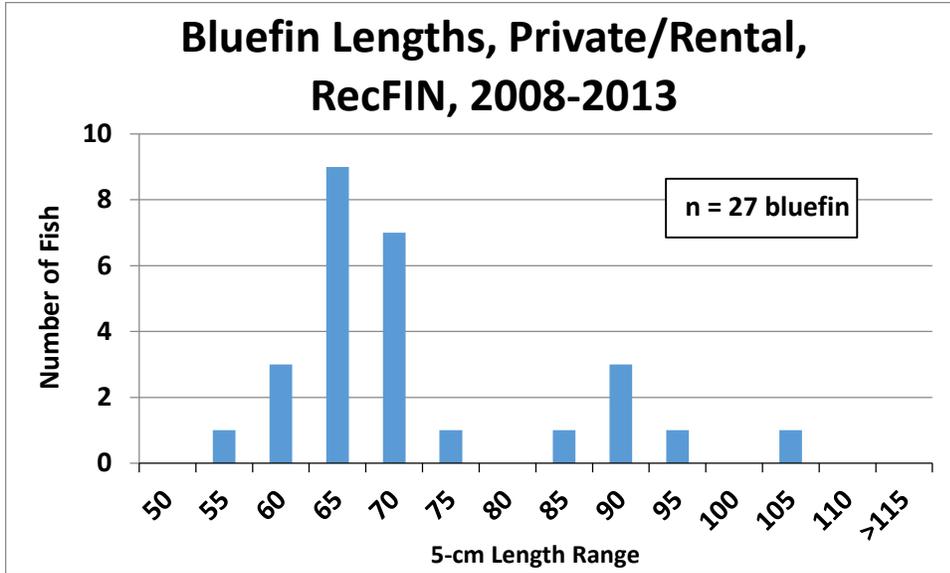


Figure 3-4. Length frequency of bluefin tuna measured in landings by the private vessel fishery in U.S. and Mexico waters during 2008-2013. (Source: RecFIN, Ed Hibsich, personal communication.)

3.1.2 Other Species Caught in Association with Pacific Bluefin Tuna in the Southern California Recreational Fishery

3.1.2.1 Species Composition of CPFV Catch

Data from CPFV logbooks provides a picture of the catch composition of HMS. Figure 3-5 shows catch composition in U.S. waters in the recent past. For this time period, albacore has accounted for most of the catch, followed by yellowfin, PBF, and dorado (dolphinfish). Taken together these species have accounted for 94% of the catch.

A complete inventory of species caught on tuna directed trips is larger than what is shown in Figure 3-5 but these other species comprise a very small proportion of total catch. Table 3-2 shows the number of species (based on market category names reported) by management group excluding the HMS shown in Figure 3-5. A total of 132 market category codes were report but only 121 of those were associated with a distinct common name.

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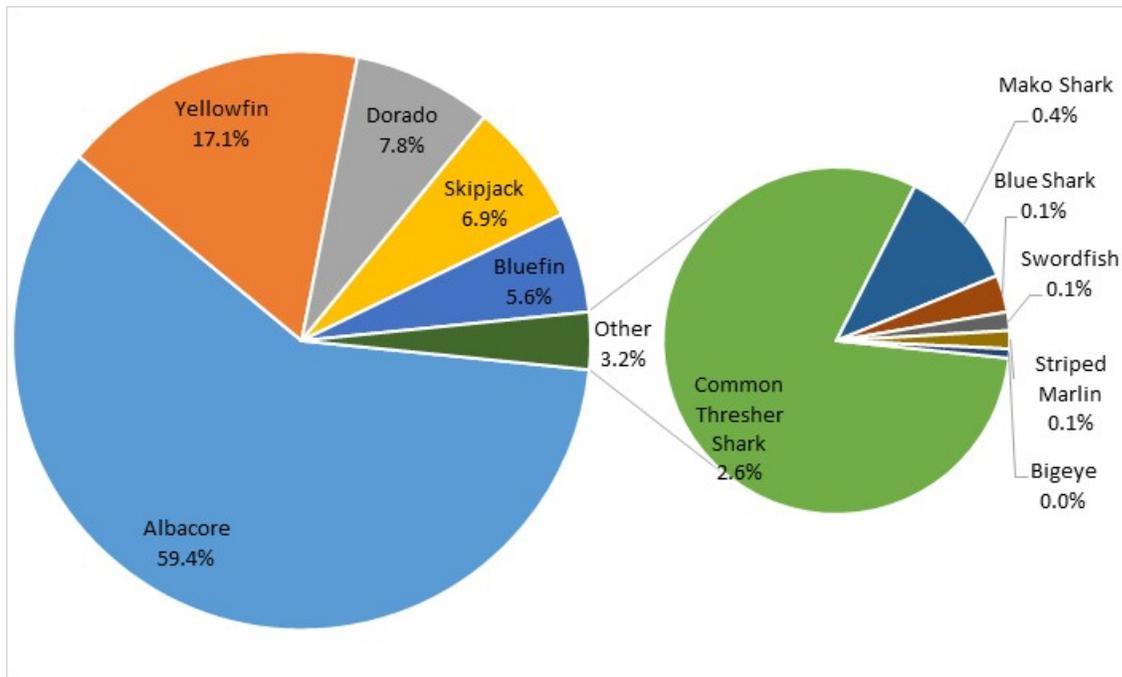


Figure 3-5. Composition of catch of CPFV vessels in U.S. waters, 2003-2012, based on numbers of fish. (Source: 2013 HMS SAFE)

Table 3-2. Number of species (market category values) by species group caught on tuna directed CPFV trips. (Source: Elizabeth Hellmers, CDFW)

Group	Number
CPS	6
Crab	3
Groundfish (flatfish)	6
Groundfish (rockfish)	21
Groundfish (roundfish)	4
Groundfish (sharks and skates)	4
Salmon	4
Shellfish	3
Shrimp	1
Other tunas	7
Others*	62
Total	121

*Includes the following where a common name was provided: amberjack, barracuda, barred sand bass, bat ray, blacksmith, brown smoothhound, bullet mackerel, corbina, crevalle, eel, escolar, garibaldi, giant kelpfish, giant sea bass, grouper, halfmoon, halibut, jacksmelt, jumbo squid, kelp bass, kelpfishes, lobster, louvar, needlefish, ocean whitefish, oilfish, opah, opaleye, other bass, other sea urchins, Pacific sierra, pompano, queenfish, rainbow sp., sailfish, salema, sargo, sheephead, shovelnose guitarfish, silversides, smooth hammerhead, snapper (Mexico), striped bass, striped mullet, triggerfish, unsp surfperch, unsp. fish, unsp. jack, unsp. sculpin, unsp. shark, wahoo, white croaker, white seabass, white shark, wolf eel, yellowfin croaker, yellowtail.

As shown in Figure 3-6, Catch composition has varied substantially over time. Over the whole time series North Pacific albacore has accounted for the largest share of catch but there have been periods when its proportion has declined. Catch of all species, in numbers of fish, also illustrated in Figure 3-6 on the secondary axis. This too has varied substantially from year to year. Total catch fell substantially from the

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early 2000s to the present. This appears to be due to the lack of catch of albacore, which historically accounted for the largest share of the catch. Table 3-3 compares species composition for three time periods to illustrate that the large proportion of Pacific bluefin in the catch in 2013 is anomalous, as suggested in the figure. For the entire time period, 1981-2012, PBF accounted for 6% of the catch and even considering the recent past, 2001-2012 PBF was only 7% of the catch. In 2013 it accounted for the largest proportion of the catch at 46%.

Fluctuations in species composition and total catch is likely a function of the availability of different species coupled with angler participation. Furthermore, the availability of fish, or ease of capture, may influence demand for recreational fishing and thus participation. Put simply, one factor that likely influences the decision to go fishing is the abundance of fish locally. Another factor influencing species composition of the catch could be the substitutability of one species for another, particularly among tuna species.

The importance of bluefin to the CPFV fishery can also be characterized by the proportion of bluefin tuna in the landings, compared to landings of other HMS FMP species (other tunas, sharks, swordfish and dorado). During 2000-2010, bluefin generally accounted for less than 10% of the landings (by number) of all HMS species (Table 3-3). Since then, the percentage of bluefin increased substantially, to about 45% of all species in 2013 landings from California waters, from Mexico waters, and for all waters combined.

However, the trends in percentages of bluefin in the landings are influenced by the abundance of other species in the landings. For example, the number of bluefin landed in 2002 is only slightly smaller than the number landed in 2012 (), although bluefin account for a much smaller percentage of total HMS landings in 2002. Very large numbers of albacore were landed during 2002, in comparison to albacore landings in recent years, resulting in the comparatively low percentage of bluefin tuna that year.

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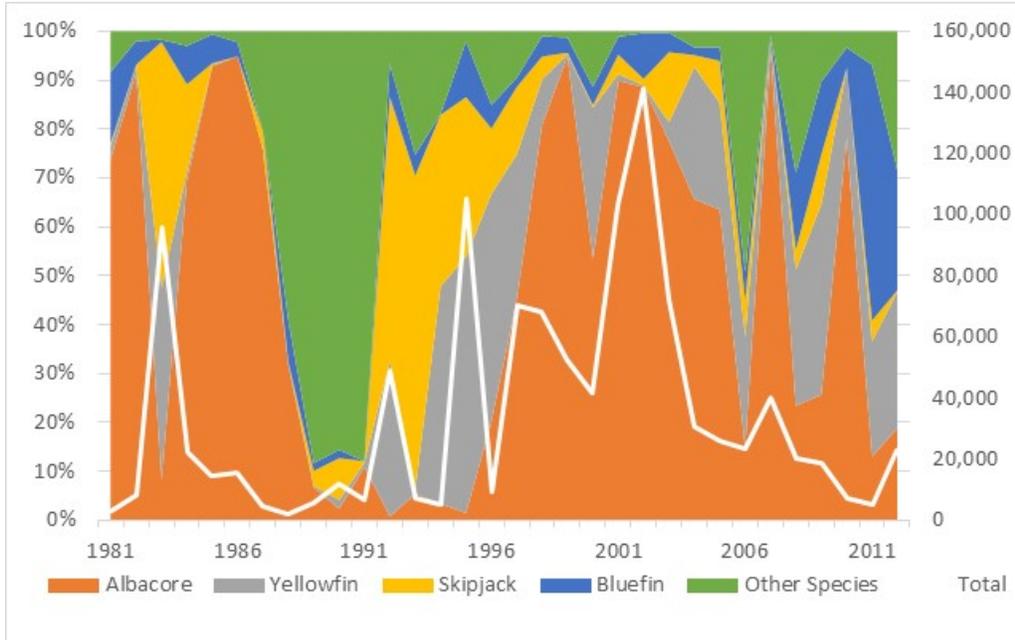


Figure 3-6. Species composition and volume of CPFV catch in U.S. waters, 1981-2012. Left vertical axis shows the percent composition of annual catch; right vertical axis and white line shows total catch volume of all species in numbers of fish. (Source: 2013 HMS SAFE, Table 4-63.)

Table 3-3. Species composition of CPFV catch in U.S. waters for three time periods. (Source: 2013 HMS SAFE, Table 4-63 and Elisabeth Hellmers, CDFW for 2013 data.)

Interval	Albacore	Yellowfin	Skipjack	Bluefin	Other Species
1981-2012	54%	18%	14%	6%	7%
2001-2012	73%	9%	5%	7%	6%
2013	2%	39%	*	46%	13%

*Skipjack included in Other Species category for 2013.

Figure 3-7 shows a breakdown of CPFV fishing days by whether bluefin tuna were caught exclusively, in combination with other tuna species, or not at all. The figure only includes CPFV days in US and Mexico waters for which at least one fish of the listed tuna species were reported caught on the trip log. The vast majority of CPFV fishing days with tuna catch included no bluefin.

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CPFV Fishing Days with Tuna* Species Caught in US and Mexico Waters

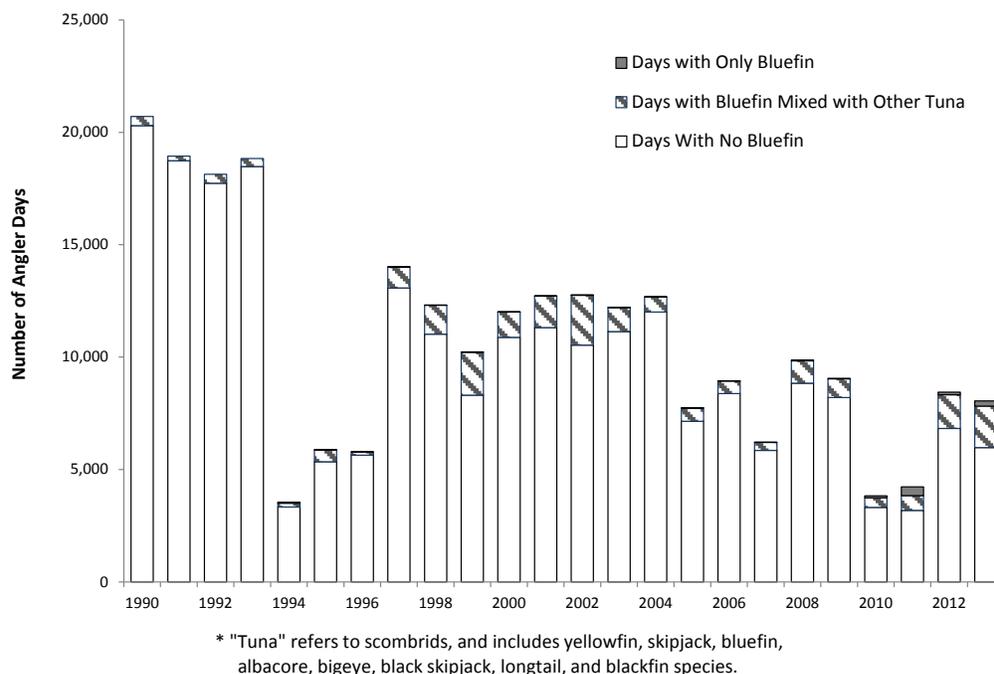


Figure 3-7. Number of CPFV angler days with tuna species landed from fishing in U.S. and Mexico waters. (Source: CFIS, CPFV logbook data, Elizabeth Hellmers, CDFW, personal communication.)

3.1.2.2 Stock Status of HMS Caught with Pacific Bluefin Tuna

Yellowfin tuna comprises separate stocks in the EPO and WCPFO. The IATTC scientific staff conducted a stock assessment for EPO yellowfin tuna in 2014. The results are reported in IATTC Document 87-03a (Revised) Tuna and Billfishes in the Eastern Pacific Ocean in 2013. A key finding on stock status is:

The recent fishing mortality rates are below the MSY level, and the recent levels of spawning biomass are estimated to be at that level. As noted in IATTC Stock Assessment Report 14 and previous assessments, these interpretations are uncertain, and highly sensitive to the assumptions made about the steepness parameter of the stock-recruitment relationship, the average size of the older fish, and the assumed levels of natural mortality. The results are more pessimistic if a stock-recruitment relationship is assumed, if a higher value is assumed for the average size of the older fish, and if lower rates of natural mortality are assumed for adult yellowfin. (p. 54)

The HMS SAFE reports that based on IATTC and HMS SAFE data, recent (2007-2011) catch of yellowfin tuna in the EPO by U.S. West Coast fisheries constitutes approximately 0.01% of the stock wide catch. The total EPO catch, 2008-2013, is about 1.36 million mt while the RecFIN estimate of recreational catch for this period is 131 mt, or about 0.01% of the total. Therefore, recreational catches have a negligible impact on stock status.

In the North Pacific, albacore tuna is considered a single Pacific-wide stock. (South Pacific albacore is a separate stock.) The ISC Albacore Working Group completed an assessment for the stock in 2014. The ISC Plenary [ref] concluded that based on a range of plausible biological reference points the stock is not experiencing overfishing and is not overfished. North Pacific albacore are caught seasonally in

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recreational fisheries off all three west coast states. For the 2008-2013 time period ISC reports 486,486 mt total North Pacific albacore catch and 4,696 mt for the U.S. recreational fishery, or 1.0% of the total.

IATTC Fishery Status Report No. 14, skipjack tuna is “a notoriously difficult species to assess” because of its high and variable productivity making the impact of fishing to detect. For that reason eight comparative indicators are used to evaluate stock status. The IATTC report concludes

The main concern with the skipjack stock was the constantly increasing exploitation rate. However, this appears to have leveled off in recent years. The data- and model-based indicators have yet to detect any adverse consequence of this increase. The average weight was below its lower reference level in 2009, which can be a consequence of overexploitation, but can also be caused by recent recruitments being greater than past recruitments or expansion of the fishery into areas occupied by smaller skipjack. Any continued decline in average length is a concern and, combined with leveling off of catch and CPUE, may indicate that the exploitation rate is approaching, or above, the level associated with MSY. (p. 82)

The status of the dolphinfish (*Coryphaena hippurus*) stock in the EPO is unknown, indeed stock structure for this globally distributed species is poorly understood. The life history characteristics of this species suggests it is fairly productive, however. According to the FAO, 316,531 mt of dolphinfish was landed in the EPO, 2008-2012, while the RecFIN estimate for this period is 139 mt, or 0.04% of the total.

Other HMS are caught in relatively small numbers on CPFV trips. These species are likely caught opportunistically on trips where the dominant tuna species are expected to be caught. Stock status of some of the remaining species shown in Figure 3-5 is not known. Of those species where stock status is known, EPO bigeye tuna is may be slightly overfished. The IATTC Fishery Status Report No. 14 summarizes EPO bigeye status as follows:

...the most recent estimate indicates that the bigeye stock in the EPO is slightly overfished ($S < S_{MSY}$) but that overfishing is not taking place ($F < F_{MSY}$) ... In fact, the current exploitation is very close to the MSY target reference points. Likewise, the current base case model indicates that the proposed limit reference points of 0.38 S_{MSY} and 1.6 F_{MSY} , which correspond to a 50% reduction in recruitment from its average unexploited level based on a conservative steepness value ($h = 0.75$) for the Beverton-Holt stock-recruitment relationship, have not been exceeded ... These interpretations, however, are subject to uncertainty, as indicated by the approximate confidence intervals around the most recent estimate in the phase plots. (p. 87; figure references removed)

3.2 Socioeconomic Environment

3.2.1 Charter Fishing Passenger Vessel Fleet

3.2.1.1 Fishery Catch and Effort

The California CPFV fleet lands the majority of bluefin into U.S. ports, and for most years, 80% or more is caught in waters off Mexico (Table 3-3). For simplicity in this report, the minor landings from fishing activities in the statistical blocks straddling the U.S.-Mexico border are included in the landings reported from U.S. waters, unless otherwise noted. Since 2000, the number of CPFV vessels targeting HMS in California waters has varied without trend, ranging from a high of 206 vessels in 2001 to a low of 113 vessels in 2011. The number of CPFV vessels was 158 in 2012 and 127 in 2013 (CFIS, CPFV logbook data, CDFW, personal communication). Landings by the California private (& rental) vessel fishery are very small and are not included in the analyses of the alternatives. Oregon and Washington landings of bluefin tuna are negligible and fisheries off these states are not considered in this report.

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Corresponding angler effort (number of days) by the California CPFV and private vessel fleets are presented in Table 3-5. For the CPFV fleet, effort represents tuna targeted days and includes days when tuna were identified as the target, regardless of whether bluefin were landed, and days with bluefin catch regardless of the species targeted (not adjusted for non-compliance). Landings for the private vessel fishery are estimated from a custom CDFW analysis for 2008-2013 (Michelle Horezcko, CDFW, personal communication).

Table 3-4. Estimated landings of Pacific bluefin tuna (numbers of fish) by private and charter vessels fishing off California and off Mexico, 2000–2013. Landings for the CPFV fishery are estimated from CPFV logbooks received (not adjusted for non-compliance). Landings for the private vessel fishery are estimated from a custom CDFW analysis for 2008-2013 (Michelle Horezcko, CDFW, personal communication).

Year	U.S. Waters off California			Mexico Waters			U.S. and Mexico Waters Combined		
	Private Fishery	CPFV Fishery	Total	Private Fishery	CPFV Fishery	Total	Private Fishery	CPFV Fishery	Total
2000	-	1,564	-	-	19,100	-	-	20,664	-
2001	-	3,829	-	-	18,078	-	-	21,907	-
2002	-	13,245	-	-	20,153	-	-	33,398	-
2003	-	2,858	-	-	19,433	-	-	22,291	-
2004	-	485	-	-	2,906	-	-	3,391	-
2005	-	723	-	-	5,034	-	-	5,757	-
2006	-	1,349	-	-	6,124	-	-	7,473	-
2007	-	187	-	-	841	-	-	1,028	-
2008	399	3,159	3,558	499	7,028	7,527	898	10,187	11,085
2009	210	2,788	2,998	420	9,350	9,770	630	12,138	12,768
2010	20	306	326	377	8,153	8,530	397	8,459	8,856
2011	28	2,743	2,771	114	28,751	28,865	142	31,494	31,636
2012	10	5,627	5,637	0	34,386	34,386	10	40,013	40,023
2013	234	6,473	6,707	324	56,877	57,201	558	63,350	63,908

Table 3-5 Angler effort (tuna target days) for the California CPFV fishery in U.S. and Mexico waters during 2000-2013 are estimated from CPFV logbooks received (Elizabeth Hellmers, personal communication). Estimated angler effort (days) for the private vessel fishery in U.S. and in Mexico waters are from a custom analysis by CDFW (Michelle Horezcko, CDFW, personal communication).

[Corrected table pending.]

As shown in Figure 3-8, while catch-per-unit-effort for PBF has increased substantially since 2008, CPUE for all HMS has fluctuated without a clear trend.

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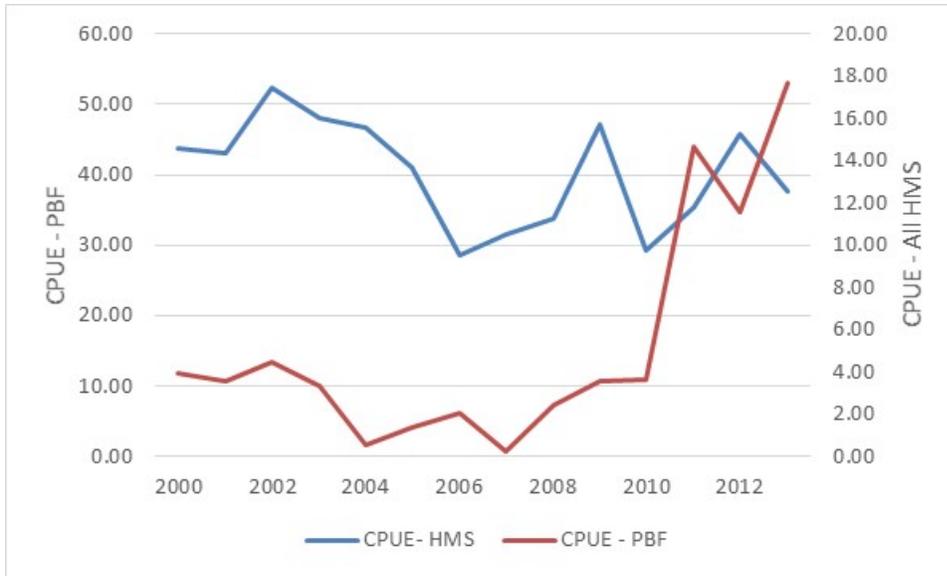


Figure 3-8. Catch-per unit-effort (number of fish / tuna target days) for PBF (left vertical axis) and all HMS (right vertical axis) for CPFV landing in the San Diego region. (Source: Elizabeth Hellmers, CDFW)

The seasonal pattern in CPFV landings (numbers) of bluefin tuna has not been consistent in recent years, likely due to the unpredictable availability of bluefin tuna related to suitable environmental conditions, as well as the relative availability of other desirable species. During 2007-2010, the pattern in monthly landings varied markedly among years, sometimes with most of the landings in July and August and other times with most during June and September (Figure 3-9). During 2011-2013, bluefin landings increased substantially and the monthly landing pattern was much more consistent among years (Figure 3-10). Landings were always highest in August, with substantial amounts also landed in July and September.

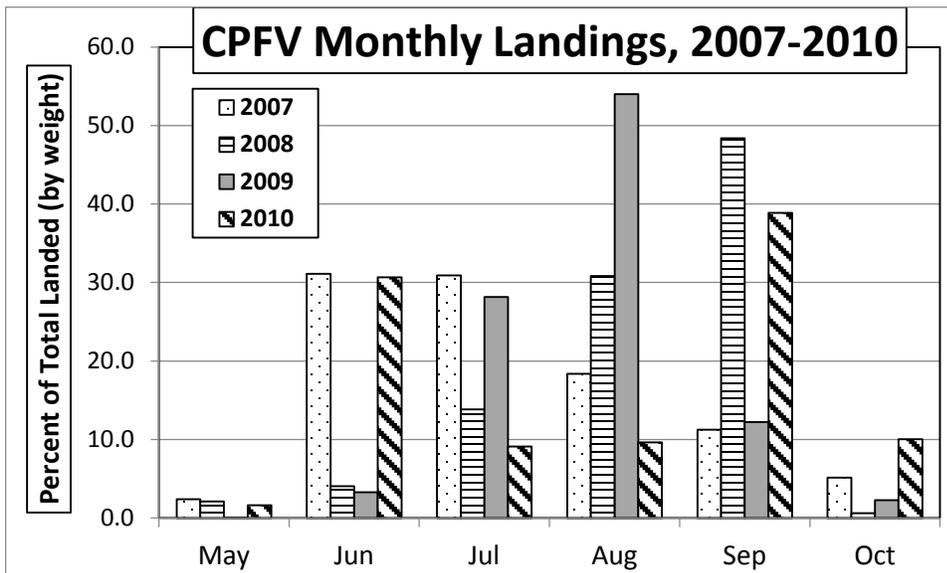


Figure 3-9. Monthly percentage of annual bluefin landings by CPFV vessels fishing in U.S. and Mexico waters, 2007-2010. (Source: CPFV logbook data, Elizabeth Hellmers, personal communication).

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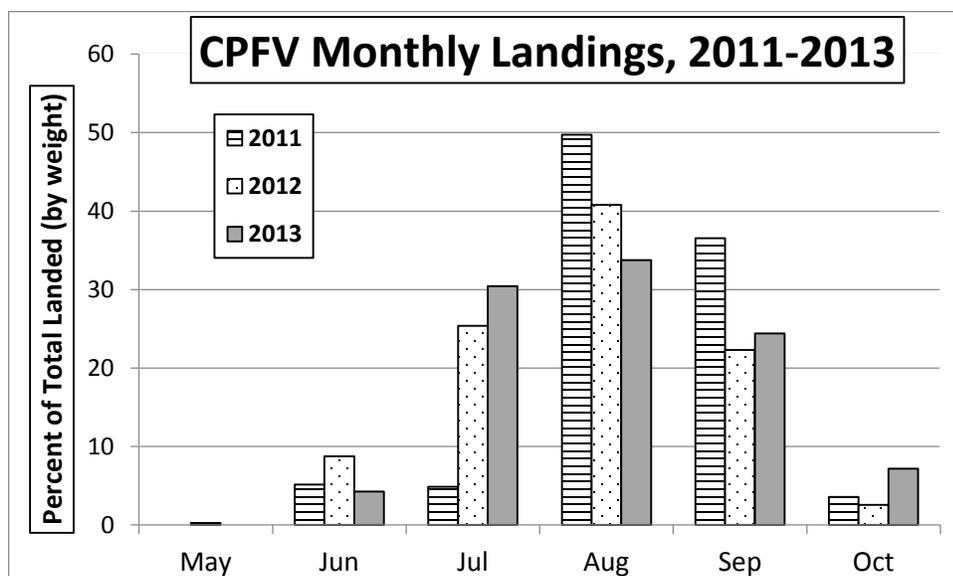


Figure 3-10. Monthly percentage of annual bluefin landings by CPFV vessels fishing in U.S. and Mexico waters, 2011-2013. (Source: CPFV logbook data, Elizabeth Hellmers, personal communication).

3.2.2 Private Boat Anglers

Historically, private boat anglers (i.e., anglers not on CPFV vessels) have accounted for a small proportion of recreational PBF catch. Table 3-6 shows landings (as a proxy for angler effort) estimated for private anglers and reported CPFV landings in U.S. waters. The left panel shows landings of major tuna species and the right panel shows landing of PBF only. While private anglers have accounted for most catch of major tuna species (primarily albacore), PBF is largely caught on CPFVs.

Table 3-6. Landings of selected HMS (left panel) and PBF (right panel) by private anglers and CPFVs in numbers of fish and percent, 2000-2012, in U.S. waters. (Source: 2013 HMS SAFE, Tables 59 and 63. Private recreational catch reported in the SAFE in thousands of fish; converted to number of fish for comparison.)

Year	Albacore, Bluefin, Skipjack, Yellowfin				Bluefin			
	Private		CPFV		Private		CPFV	
	No. fish	Percent total	No. fish	Percent total	No. fish	Percent total	No. fish	Percent total
2000	95,100	72%	36,700	28%	0	0%	1,564	100%
2001	93,600	48%	101,813	52%	1,000	21%	3,829	79%
2002	71,800	34%	140,709	66%	900	6%	13,245	94%
2003	152,700	68%	72,013	32%	0	0%	2,858	100%
2004	62,100	68%	29,747	32%	100	17%	485	83%
2005	11,000	31%	25,007	69%	100	12%	723	88%
2006	22,400	65%	11,923	35%	200	13%	1,349	87%
2007	84,700	68%	39,729	32%	0	0%	187	100%
2008	37,000	72%	14,288	28%	400	11%	3,159	89%
2009	63,000	79%	16,707	21%	200	7%	2,788	93%
2010	53,600	88%	7,058	12%	0	0%	306	100%
2011	29,800	86%	4,882	14%	100	4%	2,743	96%
2012	83,300	83%	16,467	17%	0	0%	5,642	100%

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3.2.3 Fishing Communities

The vast majority of tuna targeting CPFV trips originate and return to ports in the San Diego region. As shown in the top panel of Figure 3-11, trips targeting all species have remained stable in terms of the distribution between ports, with San Diego accounting for between 30% and 40%, 2000-2013. However, as shown in the bottom panel, and increasing proportion of tuna targeting trips returned to San Diego over the same time period. Participation dropped sharply in the mid-2000s and began to recover after 2010. This is likely due to the Great Recession, which reduced household disposable income. It may be that as overall participation declined charter operations outside of the San Diego reduced tuna trips and focused on lower-cost fishing modes to retain their customer base.

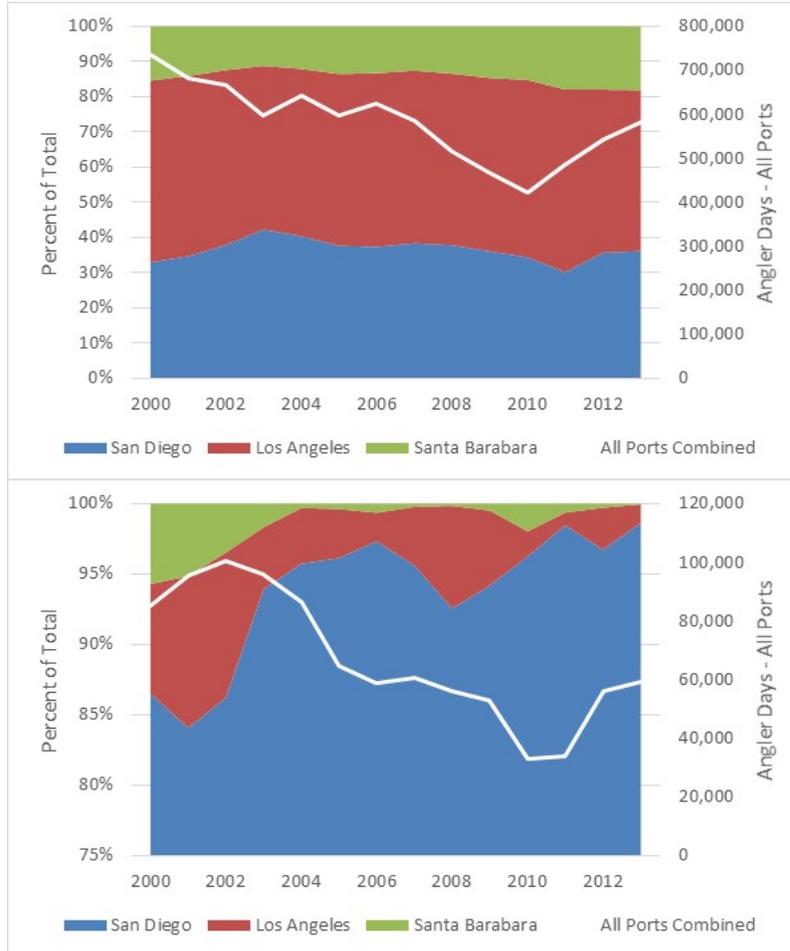


Figure 3-11. Distribution of fishing effort by port area (left vertical axis) and total angler effort (right vertical axis), 2000-2013. Top panel, all species target; bottom panel, tuna target trips.

3.2.4 Current Regulatory Environment

The Pacific Fishery Management Council (Council), established by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) has the authority to recommend a management regime for commercial passenger fishing vessels (CPFV) and private vessels fishing for Pacific bluefin tuna. Under Section 304(i) of the MSA, where a fishery is overfished or approaching a condition of being overfished due to excessive international fishing pressure, the Council (within one year) shall: (a) develop recommendations for domestic regulations to address the relative impact of U.S. fishing vessels, and (b) provide to Congress and the Secretary of State recommendations for international actions that will end

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overfishing and rebuild affected stocks. Under Section 304(e), for a fishery within the Council's geographical area of authority that has been classified as overfished or approaching a condition of being overfished, the Council (or Secretary) shall: (a) prepare and implement proposed regulations that end overfishing immediately in the fishery, and (b) rebuild affected stocks of fish, or prevent overfishing from occurring when the fishery is identified as approaching an overfished condition.

CPFV fishing for highly migratory species (HMS) are subject to Federal and state regulations, in addition to the laws and regulations of Mexico when fishing in Mexico's EEZ. Typically, CPFV fishing for Pacific bluefin tuna occurs in U.S. West Coast waters off of California and in Mexico's EEZ; therefore, regulations pertaining to waters off of California are discussed in more detail than waters off of Oregon and Washington. These regulations include permit and logbook requirements, and bag, possession, and boat limits (Table 5). Daily bag limits apply within each 24-hour period per person. Possession limits may be considered trip limits per person (e.g., U.S. anglers fishing on multi-day trips in Mexican waters are allowed to retain, under Mexican regulations, a maximum of three daily limits as a possession limit regardless of the duration of an individual trip). Boat limits are the number of licensed anglers multiplied by the daily bag limits.

To fish and/or land HMS, an angler on board a vessel must have a valid state license (unless they are fishing in Mexican waters exclusively), and the vessel operator must have a Federal HMS permit and submit a logbook. A HMS permit is required to fish for HMS in the U.S. EEZ off of and/or land HMS in California, Oregon, and Washington (50 CFR §660.707). A sport fishing license is required by the state of California to take any fish (14 CCR §700). CPFVs are required to submit logbooks, which may be the same logbooks required by the states of California, Oregon or Washington by both Federal (50 CFR §660.708) and California requirements (California Fish and Game Code §7923 and §8026).

Federal bag, possession, and boat limits (50 CFR §660.721) for bluefin tuna are specific to the waters off of California and/or defer to California regulations (14 CCR §28.38b). The Federal bag limit, as well as the California bag limit, is ten bluefin tuna off the coast of California. In California, the limit of ten bluefin tuna is in addition to a 20-fish bag limit of any finfish (i.e., up to 30 fish total); the additional 20 finfish may consist of up to ten of a single species of tuna. The Federal possession limit indicates that if California requires a multi-day possession permit of bluefin tuna landed in California, which it does, then it is deemed consistent with Federal law. California's possession limit is three times the daily bag limit, therefore an angler may land up to 30 bluefin tuna per trip that is three days or longer in duration; vessel owner/operators must have filed a Declaration for Multi-Day Fishing trip in order for the possession limit per person (3x daily bag limit) to apply. Federal boat limits are the combined daily limits of HMS for all licensed anglers. In California, the boat limit does not apply to fishing trips originating in California where fish are taken in other jurisdictions (e.g., Mexico) (14 CCR §27.60c, c(1)-c(4)).

In addition to U.S. regulations, because CPFVs frequently fish in Mexico's waters, CPFVs must also adhere to Mexico's regulations, which include a bag limit of five bluefin tuna and a possession limit of 15 bluefin tuna. A Mexican fishing license is required from each person on the fishing vessel, regardless of age or whether fishing⁵. Currently, the bag limits in Mexico are stricter than both Federal and California regulations. However, note that per U.S. Federal regulations, it is prohibited to take and retain, possess on board, or land, fish in excess of any bag limit specified in Federal regulations (i.e., 10 bluefin tuna) (50 CFR §660.705).

⁵ CONAPESCA San Diego: <http://www.conapescasandiego.org>

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Table 3-7. Current bag (daily catch) and possession limits in different regulatory areas.

Regulatory Area	Daily Catch Limit	Possession Limit
Mexico EEZ	5	15
U.S. West Coast EEZ	10 off of CA	30 off of CA
California	10	30
Oregon	Up to 25 in aggregate limit	Up to 50 in aggregate limit
Washington	2	No limit

3.3 Ecosystem and Essential Fish Habitat

Chapter 3 in the Council’s Fishery Ecosystem Plan describes the west coast EEZ in terms of the California Current Ecosystem. PBF fisheries occur primarily in the southern sub-region of the CCE described in FEP section 3.1.2.1, south of Point Conception, California, and extending beyond the EEZ to Punta Baja, Mexico (30° N. latitude). A fourth sub-region of the CCE exists in Mexican waters, reaching from Punta Baja to the tip of the Baja Peninsula at Cabo San Lucas. This region is characterized by complex under-sea topography and the sheltered waters of the Southern California Bight. There is a cyclonic gyre in the Bight area that mixes cooler CCE water with warmer waters from the southeast.

Chapter 7 in the HMS FMP describes essential fish habitat (EFH) for species, by life stage, managed under the HMS FMP. HMS occur in pelagic waters with EFH for species/life stages determined by water temperature, water depth, and occurrence of prey species.

3.4 Protected Species

Implementation of the HMS FMP was subjected to a consultation between NMFS Protected Resources Division and Sustainable Fisheries Division pursuant to Section 7 of the Endangered Species Act. The Biological Opinion for this action lists ESA-listed species occurring in the action area. This Biological Opinion found the recreational HMS fisheries do not result in takes of listed species.

Marine mammals not listed under the ESA are still protected under the Marine Mammal Protection Act. NMFS produces a Stock Assessment Report annually for Pacific stocks. The SAR estimates fishery-related serious injury and/or mortality (SI/M) for each stock. Recreational fisheries are not expected to result in SI/M.

Section 6.2.7 in the FEIS for the HMS FMP summarizes protected species interactions with recreational HMS fisheries. California sea lions may be attracted to vessels actively chumming, as are seabirds, including brown pelicans, cormorants, seagulls, shearwaters, and petrels.

[Table showing protected species occurring in the fishery management area.]

4 Environmental Impacts

4.1 Target and Non-Target Species

4.1.1 Pacific Bluefin Tuna

4.1.1.1 Estimating Catch Reductions from the Proposed Action

The action alternatives are intended to reduce retained recreational catch of PBF compared to No Action. However, the actual reduction in catch cannot be predicted, because changes in total fishing effort and CPUE affect total catch. Put another way, if the number of anglers and their ability to catch PBF changes catch would change under any given bag limit.

It is also uncertain at this time how bag and possession limits in Federal regulations would be applied for U.S. recreational vessels fishing in Mexico waters. And it is also not known whether Mexico will change its recreational management measures. It has an established daily bag limit of five fish per angler and an accompanying 15 fish possession limit for multi-day trips. However, in 2014, Mexico prohibited recreational fishing for PBF in July when its commercial limit under IATTC Resolution C-13-02 was reached. **Proposals that include a recreational quota have also been put forward for consideration at the October 27-29, 2014, IATTC meeting. The Council should know the outcome of the IATTC meeting when it takes final action in November 2014.** If a recreational quota is agreed to or Mexico continues to manage the recreational fishery in its waters based on an EPO commercial quota agreed to by the IATTC the recreational season could close early based on attainment of either quota.

Finally, under the Preliminary Preferred Alternative the possession limit of six fish would apply to both fish caught in Mexico and U.S. waters. If this alternative is implemented it could reduce landings even if Mexico continues with its five fish bag limit and 15 fish possession limit.

For these reasons it is not possible to precisely project the effect of bag and possession limit alternatives. The retrospective bag limit analysis provides an indication of possible catch reductions under conditions that applied in past years. As noted, actual reductions are subject to various external factors including the availability of PBF to the recreational fishery and management measures adopted at the international level.

Estimated reductions from CPFV bag limit analyses are very consistent among areas and years (Table 4-1). Cumulative reductions for successively lower bag limits from No Action (10-fish bag) for 2013 are very similar to those estimated from combined 2008-2013 logbook data. The 10-fish daily bag limit for bluefin tuna adopted in 2007 became effective in 2008, so data for the 2008-2013 time period were analyzed to cover period when the 10-fish bag limit has been in effect. To compare to the baseline fishery in 2013, catch savings from the alternatives are estimated from reductions in bluefin landings (bag limit analyses) for 2013 CPFV logbook data. Cumulative reductions for CPFV fishing in U.S. waters are also very similar to those for Mexico waters. In general, a bag limit change from 10 to 4 fish results in a catch reduction of 5-10% (by number), a bag limit of 3 fish results in approximately a 15% reduction; a bag limit of 2 fish results in about a 30% reduction, and a bag limit of 1 fish results in roughly a 50% reduction.

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Table 4-1. For the CPFV fishery, estimated cumulative percentage reductions in number of Pacific bluefin landings with successive reductions from a 10-fish bag limit for U.S waters, U.S.-Mexico waters (straddling), and Mexico waters, during 2013 and during 2008-2013 (combined). (Source: Elizabeth Hellmers, CDFW, personal communication).

CPFV No. Bags	2013 Percentage Reductions			2008-2013 Percentage Reductions		
	4,037	762	25,986	17,438	2,900	133,735
Bag Size	U.S. Waters	U.S. - Mexico	Mexico Waters	U.S. Waters	U.S.- Mexico	Mexico Waters
0	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
1	54.6%	52.8%	54.2%	51.3%	39.7%	51.5%
2	32.3%	30.5%	29.5%	29.3%	19.4%	27.9%
3	18.2%	16.1%	14.9%	16.6%	9.6%	14.2%
4	9.4%	5.9%	5.9%	9.1%	3.7%	5.8%
5	3.7%	0.0%	0.6%	4.4%	0.4%	0.6%
6	2.0%	0.0%	0.3%	2.5%	0.0%	0.3%
7	0.8%	0.0%	0.2%	1.1%	0.0%	0.2%
8	0.1%	0.0%	0.1%	0.3%	0.0%	0.1%
9	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

To approximate total catch savings by weight, the reduction in number of fish from the bag limit analysis for the CPFV fishery is multiplied by an average weight of fish (14.3kg per fish). This average is the simple average of the six estimated annual average weights of bluefin landed by CPFV vessels during 2008-2013, estimated from IATTC fish measurements during 2008-2012 (Jenny Suter and John Childers, NMFS, personal communication). Monthly average weights of fish from 2011 was applied to monthly CPFV landings (numbers) of bluefin to obtain a total weight (mt) of 2013 landings. Because these averages have ranged from a low of 10.2 kg per fish in 2008 to a high of 15.9 kg per fish in 2011, and therefore, a range of potential catch savings in weight are also estimated, based on these high and low annual values. CDFW staff also indicates that the logbook compliance rate is approximately 80%; the bag limit analyses and potential reductions are not expanded to account for non-compliance. Table 4-2 presents the estimated potential catch savings in numbers and weight (mt) of fish for the CPFV fishery in U.S. waters, in Mexico waters, and combined U.S. and Mexico waters, for the 2013 fishery only, the baseline for No Action.

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Table 4-2. Potential bluefin catch savings in total number and total weight (mt) of fish for the CPFV fishery. (Source: Analysis by Elizabeth Hellmers, CDFW, personal communication.)

Potential Bag Reductions	U.S. Waters			Mexico Waters			U.S. & Mexico Waters Combined		
	Number of Fish	Weight (mt)		Number of Fish	Weight (mt)		Number of Fish	Weight (mt)	
		Average	Range		Average	Range		Average	Range
10 fish to 5 fish	201	3	2-3	320	5	3-5	521	8	5-8
10 fish to 4 fish	571	9	6-9	3,318	52	34-53	3,889	60	40-62
10 fish to 3 fish	1,155	18	12-18	8,425	131	86-134	9,580	149	98-152
10 fish to 2 fish	2,073	32	21-33	16,745	260	171-266	18,818	292	192-299
10 fish to 1 fish	3,514	55	36-56	30,726	477	313-489	34,240	532	349-544

Potential conservation benefits from the bag limit and possession limit changes included in the proposed alternatives are estimated from the reductions in bluefin tuna landings (in numbers and weight) based on bag limit analyses of CPFV logbooks received and average fish weight from IATTC sampling. Catch savings from the private vessel fishery are likely to be minor because landings by this fishery are small (558 fish landed in 2013 from U.S. and Mexico waters) and nearly all fish are taken in one-fish bags. Consequently, catch savings from the private vessel fishery in U.S. and Mexico waters are not estimated and not included in the bag analyses and comparisons among alternatives.

4.1.1.2 Conservation Effect of Catch Reduction

The effect of any of the bag limit proposals on PBF stock conservation would be modest by themselves given the catch reductions involved. For illustrative purposes, historical catch and estimated catch reductions under the bag limit proposals are compared to proposals under consideration by the IATTC.

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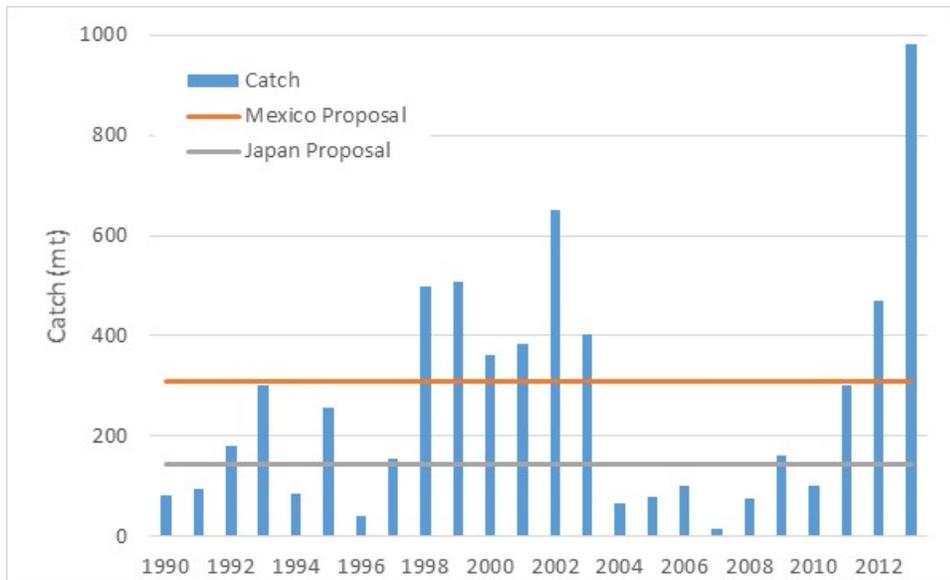


Figure 4-1. Estimated PBF CPFV catch, 1990-2013, compared to proposals for EPO non-commercial quota.

Japan and Mexico have submitted proposals for the conservation of PBF to be considered at the October 27-29, 2014, 87th IATTC Meeting (Resumed). The Japanese proposal includes an annual 142 mt non-commercial PBF catch quota for the EPO while Mexico proposes an annual 308 mt non-commercial catch quota. The lower Japanese quota is based on a 50% reduction in juvenile (defined as fish less ≤ 30 kg) catch from the 2002-2004 average, which is in line with the conservation and management measure adopted by the WCPFC Northern Committee in September 2014.⁶ The Mexico quota is based on a 25% reduction from 2010-2012 catch. CPFV catch has exceeded 308 mt in 8 of the 24 years, 1990-2013, or one-third of the time. It exceeded 142 mt in 14 of those years, or almost 60% of those years.

⁶ It should be noted that the 50% reduction in juvenile catch is based on an evaluation of alternative management scenarios done by the ISC, see [WCPFC-NC10-IP-03](#). The scenario upon which the NC based the conservation measure assumes an annual EPO catch of 2,750 mt, while the combined commercial and non-commercial EPO quotas proposed by Japan sum to 1,886 mt. Mexico's proposal includes a 4,327 mt quota for 2015 and 2016.

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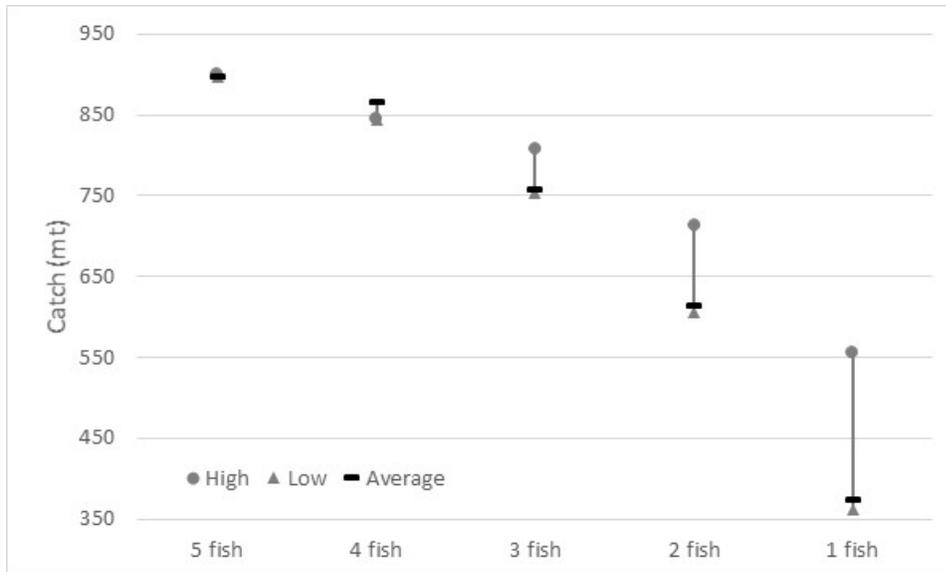


Figure 4-2. PBF catch estimated to have occurred in 2013 if alternative bag limits were in place. (Based on Table 4-2.)

The estimated catch reductions from the 2013 baseline year shown in Table 4-2 are illustrated in Figure 4-2. If conditions remain unchanged from 2013 in terms of the availability of PBF to anglers and recreational fishing effort targeting PBF, this range of bag limits is not anticipated to achieve catch reductions sufficient to prevent either proposed non-commercial quota from being exceeded. However, if conditions were to change, making PBF less available to anglers and/or if fishing effort directed at PBF declined, then quotas within this range might not be exceeded. Figure 4-1 illustrates that recreational PBF catch can vary widely independent of management controls. Throughout the period catch was minimally controlled yet catch was still below these levels in some years.

4.1.1.3 Summary of the Impacts of the Alternatives

Alternative 1, No Action Alternative: Under the No Action alternative, assuming that an IATTC measure does not apply to recreational fisheries and Mexico continues its five fish bag limit / 15 fish possession limit, catches would be expected to remain in the range of recent historical catch, depending on fishing effort and CPUE. In reference to Table 4-2, estimating catch reductions that would have occurred in 2013 under different bag limits, an estimated 6,473 fish or 93 mt (based on a 14.3kg average) would have been caught in U.S. waters under No Action. An estimated 63,350 fish or 985 mt (based on monthly average weights from IATTC sampling) would have been caught in U.S. and Mexico waters combined under No Action. Table 4-3 summarizes recreational PBF catch in number of fish and weight for the period 1990-2013 by area. Total catch in weight ranged from an annual low of 13 mt to a high of 982 mt. The average is 264 mt, indicating that the annual figures skew towards the lower end of the distribution. Under No Action it is likely that recreational catch would fall within this range.

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Table 4-3. Range of estimated annual catch of PBF by recreational anglers, 2000-2013. U.S. – CDFW fishing blocks wholly in U.S. waters; Straddling – CDFW statistical blocks straddling the border between U.S. and Mexico waters; Total – both U.S. and Mexico waters. (Source: Table 3, Agenda Item G.4.b, CDFW Report 1, September 2014)

	No. of Fish			Weight (mt)		
	U.S.	Straddling	Total	U.S.	Straddling	Total
Min	0	0	1,028	0	0	13
Max	12,224	1,054	63,154	239	19	982
Average	2,111	185	16,493	35	3	264

Alternative 2, Preliminary Preferred Alternative: A two fish per day bag limit and six fish possession limit for multi-day trips would be implemented. The possession limit could be applied to all multi-day trips including fish caught in Mexico waters. As shown in Table 4-1, a bag limit analysis indicates that a two-fish limit would result in a 32% reduction in catch if in place in 2013 or, as shown in Table 4-2, a reduction of 32 mt of catch in U.S. waters. (A range of total weights is also reported in this table based on variability in monthly average weight per fish measured by the IATTC dock sampling program.) Historically, 86% of U.S. recreational catch occurred in Mexico waters, so measures affecting catch there would have a relatively larger impact in comparison to measures applicable to U.S. waters alone. If this possession limit had an equivalent effect in Mexico waters as a two-fish bag limit in U.S. waters (or the lower bag limit were enforced in both countries) then according to Table 4-2 catch in 2013 would have been reduced by 292 mt using an estimate average weight per fish of 14.3 kg. Two hundred and ninety-two metric tons represents a 30% reduction from the 982 mt estimated catch in 2013. These figures are for the CPFV fleet only, but private anglers account for a small portion of total catch according to CRFS sampling.

Alternative 3: U.S. daily bag and possession limits for Federal waters off California would be harmonized with Mexico’s current regulations for bluefin tuna of five fish per day bag limit and 15 fish possession limit. If these bag and possession limits were in place in 2013 they would have resulted in a 3.7% reduction in catch by CPFV vessels (see Table 4-1) and overall reduction in catch of 201 fish or 3 mt using an average weight in U.S. waters.⁷ Catch in Mexico waters would be unaffected since this alternative accords with the current possession limit for Mexico.

Alternative 4: In order to simplify the analysis, this alternative includes a range of potential daily bag limits/possession limits of four-, three-, and one-fish daily bags and corresponding possession limits computed as three times the daily bag limit for multi-day trips for Federal waters off California. (The Preliminary Preferred Alternative is the two-fish bag limit, six-fish possession limit.) As with the Preliminary Preferred Alternative, possession of fish caught in Mexico could be limited to no more than the corresponding U.S. possession limits. If possession limits make corresponding daily bag limits apply to both U.S. and Mexico waters, CPFV catch would be reduced 10% and 55% (Table 4-1) depending on which bag limit was applied. As shown in Table 4-2, projected catch savings achieved through a bag limit reduction to four fish in U.S. and Mexico waters combined (60 mt) is approximately the same as catch savings achieved through a one-fish bag limit for U.S. waters (55 mt). A bag limit of three fish for U.S. and Mexico waters combined achieves a 15% reduction from the No Action Alternative; a two-fish bag limit achieves a 30% reduction and a one-fish bag limit achieves a 54% reduction. The potential maximum reduction under this alternative is estimated to be 34,240 fish and 532 mt for a one-fish bag limit in U.S. and Mexico waters combined.

⁷ Although the analysis shows catch reduction in Mexico waters, this is due to misreporting or anglers exceeding the bag limit. Since there would be no change in the regulations for recreational PBF catch in Mexico waters it is assumed that catch would have been the same as reported for 2013.

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Alternative 5: Retention of bluefin tuna by recreational fisheries would be prohibited in the U.S. EEZ. This would effectively also prohibit retention of tuna caught in Mexico waters by U.S. recreational anglers, because they would transit U.S. waters and land in U.S. ports. In comparison to the other alternatives, using the 2013 baseline, this alternative would result in a 985 mt reduction in retained catch. Anglers are usually able to distinguish PBF schools from other tunas, so it would be possible for them to avoid targeting PBF. However, it is likely that some amount of PBF would still be caught. Any such fish would have to be released but there would still be some unquantified amount of bycatch mortality.

4.1.2 Other Species Caught in Association with Pacific Bluefin Tuna in the Southern California Recreational Fishery

The principal species caught in conjunction with PBF are yellowfin tuna, North Pacific albacore tuna, and dolphinfish (dorado). Section 3.1.2.2 describes stock status of these species. For these other species, west coast recreational catch is a negligible fraction of total catch and unlikely to discernably affect stock status. Historical CPFV catch data reported in Section 3.1.2.1 shows variability in catch composition and total catch over time.

The action alternatives are intended to limit catch of PBF and this could induce switching to other target species, depending on their availability to the fishery. If other species are not abundant, or recreational anglers do not view them as desirable substitutes for PBF, catch could decline. This in turn could reduce participation in recreational fishing directed towards HMS. Alternatives that impose greater restrictions on PBF catch would likely promote more target switching, other factors being equal.

Alternative 1, No Action: Bag limits and related measures would remain unchanged. Assuming 2013 conditions as the baseline, other HMS would comprise about half of recreational catch (see Table 3-2).

Alternative 2, Preliminary Preferred Alternative: As discussed above, assuming 2013 conditions as the baseline, this alternative (two-fish bag limit, six fish possession limit) would reduce PBF catch in U.S. waters by 32% and the possession limit would have an unquantified additional impact on catch in Mexico waters. (As discussed above, the possession limit could function as a proxy for an equivalent daily bag limit for U.S. recreational anglers fishing in Mexico waters.) Table 4-4 shows, in number of fish, changes in catch composition under different bag limit scenarios, based on the PBF catch reductions reported for different bag limits in Table 4-2. The PBF catch reduction under each bag limit scenario is proportionately redistributed to the other species categories to derive these numbers. This does not take into account potential changes in the availability of different species and changes in angler effort which would lead to different catch amounts for these species. Furthermore, it does not account for differences in demand for different fish species that could additionally change the distribution of catch among species, because of targeting preferences. Under a two-fish bag limit albacore catch would increase from 2,823 fish to 2,901; yellowfin would increase from 53,681 fish to 55,164, and other HMS would increase from 18,536 fish to 19,048. Expressed in percentage terms these increases are less than 1%. As noted in Section 3.1.2.2, west coast recreational catch is a negligible fraction of catch of these stocks, which are by and large healthy. Thus catch increases indicated by this simple illustration are not likely to meaningfully impact stock status.

Alternative 3: Using the method described above under Alternative 2, catch increases of other species under this alternative accord with the five-fish bag limit shown in Table 4-4. Albacore catch could increase from 2,823 fish to 2,831; yellowfin could increase from 53,681 fish to 53,825, and other HMS could increase from 18,536 fish to 18,586. These changes are negligible and would not affect stock status.

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Alternative 4: Using the method described above under Alternative 2, catch increases of other species under this alternative accord with the four- three- and one-fish bag limits shown in Table 4-4. Under the most restrictive bag limit of one fish, albacore catch could increase from 2,823 fish to 2,942; yellowfin could increase from 53,681 fish to 55,935, and other HMS could increase from 18,536 fish to 19,315. These changes are negligible and would not affect stock status.

Alternative 5: Using the method described above under Alternative 2, if PBF retention is prohibited it is assumed that fishing effort would shift completely to other HMS. As shown in Table 4-4 this could result an increase in albacore catch from 2,823 fish to 5,206; for yellowfin an increase from 53,681 fish to 98,999, and for other HMS an increase from 18,536 fish to 34,184. While this result in the largest potential increase in catch of these species, such increases are still negligible and would not affect stock status.

Table 4-4. Number of fish caught by species assuming 2013 conditions and other HMS were perfectly substituted for PBF under different bag limit scenarios. (Based on Table 4-2)

Bag limit	PBF Reduction	Albacore	Yellowfin	Bluefin	Remaining Species	Total
10 fish (2013)	0	2,823	53,681	63,350	18,536	138,390
5 fish	201	2,831	53,825	63,149	18,586	138,390
4 fish	571	2,844	54,089	62,779	18,677	138,390
3 fish	1,155	2,866	54,507	62,195	18,821	138,390
2 fish	2,073	2,901	55,164	61,277	19,048	138,390
1 fish	3,154	2,942	55,937	60,196	19,315	138,390
0 fish	63,350	5,206	98,999	0	34,184	138,390

4.1.3 Biological Impacts of Processing Recreational Catch At Sea Requirements

The range of alternatives for processing recreational catch at sea would have no discernable biological impact on fish stocks, because catch has occurred and the fish are dead. Changes in the discarding of fish offal could affect other species, such as seabirds and marine mammals that are attracted to discarded offal and congregate at the boat. The action alternatives range of practices that would generate the same amount of offal as under No Action (filleting in a manner to allow species identification) to a reduction in discarded offal if the amount of processing is restricted. This would have both beneficial and adverse impacts. Restrictions on discards may reduce interactions between seabirds and marine mammals and recreational vessels, which could have a beneficial impact if such interactions occasionally result in injury or mortality of these animals. The reduction in offal as a food source for these animals could be an adverse impact, to the degree that their nutritional needs are not met.

4.2 Socioeconomic Environment

4.2.1 CPFV and Private Boat Anglers

Short run costs of recreational bluefin regulation would primarily impact the Southern California private vessel and CPFV fishing fleets, the community of anglers that catch bluefin tuna, and related industries which supply goods and services to the portion of the recreational HMS fishery which includes bluefin among its targets. These costs could include loss of consumer and producer surplus and negative economic benefits in exchange for long-term conservation benefits. Specific impacts might include a substitution of other recreational target species for bluefin, reduced angler satisfaction, lower willingness to pay for CPFV trips, fewer customers, and negative economic impacts in terms of jobs and revenues in the CPFV fishery and other industries which support them. Additional short-run costs not borne by the

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west coast fishery and related industries could include potential agency monitoring, management and enforcement costs for in-season actions.

Stock recovery due to successful conservation management may provide long-term economic benefits, in the form of potentially higher future catch and retention of bluefin tuna for both recreational and commercial west coast fisheries. Whether Council constituents would be able to recapture the value of any future improvements in the status of the Pacific bluefin tuna stock would depend on the flexibility of future management to relax regulations in case warranted by stock conditions.

It is not clear without further information what effect reducing bluefin tuna bag or retention limits would have on substitution of other catch for bluefin tuna or on reduced demand for CPFV or private vessel trips. Since current bag and retention limits are set at levels which affect a very low percentage of west coast CPFV angler bags, existing data are not representative of economic impacts which could result from a significant reduction in bluefin tuna bag or retention limits.

4.2.2 Fishing Communities

Fishing communities, principally the ports of landing for CPFVs and private boats, benefit through expenditures made by anglers, CPFV owners, and CPFV crew, either through direct expenditures for equipment and supplies or secondarily through wage expenditures and angler expenditures for additional services, such as food and accommodation. Ports in the San Diego region would be most affected by bag limit reductions, because a large proportion of tuna targeting trips originate and return to this region.

4.2.3 Socioeconomic Impacts of Processing Recreational Catch At Sea Requirements

At-sea processing of recreational catch as an important source of income for CPFV crew through tips from anglers or other types of compensation. It is not clear how restrictions on processing short of a complete prohibition would affect crew compensation. Crew may still receive equivalent tips for partial processing, such as heading and gutting the fish. If processing at sea was prohibited entirely anglers may still tip crew in recognition of other kinds of assistance they provide to anglers on CPFVs. The actual impact of restrictions on crew compensation cannot be predicted but is more likely than not to result in fewer tips.

Limitations on at-sea processing would also make the recreational experience less enjoyable for anglers, who would likely have to undertake additional processing on shore in order to take fish home with them, since tuna are large fish which cannot be easily transported in whole or partially processed form. Processing also enhances the quality of the flesh by reducing spoilage. Fish that can be taken home and frozen (or processed and frozen dockside) are likely viewed as an important benefit since anglers can substitute this for fish that might otherwise be purchased. Aside from the obvious practical benefit, taking fish home is likely important psychologically in terms of justifying the cost of angling and providing food to friends and family.

4.3 Ecosystem and Essential Fish Habitat

Impacts to the ecosystem result from changes in trophic structure due to fishery removals. Removals directly impact trophic structure by reducing the abundance of species subject to fishing mortality. Indirect effects occur when fishery removals affect the abundance of other species in the food web through predator-prey interactions. The relative impacts of recreational bag limits on trophic structure would be negligible, because the impact on population size is so small.

Adverse impacts to EFH are usually a result of adverse gear interactions with habitat features. Pelagic habitat is generally insensitive to such impacts. Benthic EFH designated for other species (groundfish)

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can be adversely affected by fishing gear that contacts substrate. Recreational fishing trips for HMS occur in pelagic waters at generally great ocean depths. Therefore, fishing gear does not contact substrate. Furthermore, fishing gear has negligible impacts on all but the most sensitive substrates (e.g., structure-forming macro-invertebrates). Therefore, the proposed action would have no discernable impact on EFH.

4.4 Protected Species

As discussed in section 3.5, recreational HMS fisheries have limited interactions with marine mammals and seabirds if chumming is used to attract game fish. Serious injury or mortality has not been observed to result from these interactions. A change in interactions could result from changes in angler fishing effort and the time and place of fishing activities. These changes cannot be predicted, because the effect of a bag limit reduction on participation and fishing patterns is not known. The time and location of fishing activities will likely be more influenced by the availability and distribution of target species than limits on the number of fish that may be retained.

4.5 Climate Change

4.6 Cumulative Effects

A cumulative effects analysis is required by the Council on Environmental Quality (CEQ) (40 CFR part 1508.7). The purpose of a cumulative effects analysis is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective, but rather, the intent is to focus on those effects that are truly meaningful. This Section of the EA addresses the significance of the expected cumulative impacts as they relate to the federally managed HMS fishery.

4.6.1 Affected Resources

In Chapter 3 (Description of the Affected Environment) the environmental components affected by the proposed action are identified and described. Therefore, the significance of the cumulative effects will be discussed in relation to those affected environmental components as grouped below:

- Pacific bluefin tuna (Section 3.1)
- Other species caught in recreational fisheries for HMS (Section 3.1)
- The socioeconomic environment or human communities (Section 3.2)
- The California Current ecosystem and essential fish habitat (Section 3.3)
- Protected species (Section 3.4)

4.6.2 Geographic Boundaries

The analysis of impacts focuses on actions related to recreational catch of Pacific bluefin tuna in the U.S. west coast EEZ south of Point Conception, California. The geographic scope of the affected resources listed above is the EEZ off Southern California.

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4.6.3 Temporal Boundaries

The temporal scope of past and present actions for the affected resources encompasses actions that occurred after FMP implementation (2004) and more specifically during the baseline period, 2013, which is the temporal context within which affected resources are described in Chapter 3. For endangered species and other protected resources, the scope of past and present actions is determined by analysis pursuant to the ESA and MMPA, including biological opinions and marine mammal stock assessment reports. The temporal scope of future actions for all affected resources is 10 years based on the rebuilding plan adopted by the WCPFC Northern Committee. The objective is to rebuild the stock to a target of the median spawning biomass observed over the assessment period.⁸

4.6.4 Past, Present, and Reasonably Foreseeable Future Actions Other than the Proposed Action

Past and present actions and their effects are described in Chapter 3. This forms the environmental baseline. The cumulative effect results from the combination of the effects of these past and present actions, reasonably foreseeable future actions, and the proposed action. Ongoing and reasonably foreseeable actions with detectable effects are summarized below.

Fishery Management Related

- Past and Present Fisheries for HMS: As discussed in Section 3.1, west coast recreational fisheries account for a very small fraction of total catch of HMS and resulting fishery impact. For PBF commercial fishing vessels from Japan and Mexico account for the largest proportion of fishery impact. PBF is overfished and subject to overfishing. A broader range of nations accounts for fishery impact on other HMS, in the EPO these are mainly Latin American countries dominated by Mexico, Ecuador, and Venezuela, and distant-water fleets from Japan, Taiwan, and Korea.
- RFMO Conservation Measures. As discussed in Chapter 3, the IATTC conducts stock assessments and responds by establishing conservation measures for tuna stocks in the EPO and other resources affected by vessels fishing for HMS. Member countries, including the U.S., are obligated to implement these measures for their flagged vessels. Currently IATTC Resolution has adopted Resolution C-13-01, Tuna conservation in the EPO 2014-2016, Resolution C-13-02, Pacific bluefin tuna, and C-13-03, supplementing Resolution C-05-02 for Northern albacore tuna. As discussed elsewhere, C-13-02 only applies to 2014 and the IATTC has not yet adopted a successor resolution. Some HMS, including PBF and North Pacific albacore, are considered pan-Pacific stocks so management activities in the WCPO impact stocks affected by the proposed action. The WCPFC has adopted similar measures including C-2013-01, Conservation and Management Measure for bigeye, yellowfin and skipjack tuna in the Western and Central Pacific Ocean, C-2013-09, Conservation and Management Measure for Pacific Bluefin Tuna, and C-2005-03, Conservation and Management Measure for North Pacific Albacore. The WCPFC has proposed a conservation and management measure for a multi-year rebuilding program for PBF that would take effect in 2015.
- The Council's Fishery Ecosystem Plan. The Council is developing measures to protect unfished and unmanaged forage fish species pursuant to an initiative identified in the FEP. This action involves amending all current FMPs to prohibit targeted harvest of specified forage species. These protections could benefit both currently unmanaged fish stocks and managed stocks that depend on forage fish.

⁸ The U.S. Government takes the position that the target should be spawning biomass equivalent to 20% of spawning biomass in the absence of fishing.

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- Regulation of fisheries for other species. Other fisheries contribute to mortality of protected species. Fishery removals from all sources also have long-term effects on the trophic structure of the California Current ecosystem.

Not Related to Fishing

- Water pollution. A variety of activities introduce chemical pollutants and sewage and cause changes in water temperature, salinity, dissolved oxygen, and suspended sediment into the marine environment. Although these activities tend to affect nearshore waters, pelagic species may be affected if a part of their life cycle occurs in these waters. Examples of these activities include, but are not limited to, agriculture, port maintenance, coastal development, marine transportation, marine mining, dredging, and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources.
- Other authorities to conserve biological resources considered in this EIS. The MSA (50 CFR 600.930) imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH. NMFS also reviews certain activities that are regulated by Federal, state, and local authorities causing adverse effects to the marine environment through processes required by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The jurisdiction of these activities is in “waters of the U.S.” and includes both riverine and marine habitats. Under the Fish and Wildlife Coordination Act (Section 662) agencies must consult with the USFWS over certain activities affecting freshwater habitats. This Act provides another avenue for review of actions by other Federal and state agencies that may impact resources that NMFS manages. NMFS and the USFWS share responsibility for implementing the ESA. Activities that may jeopardize the continued existence of a species listed under the Act may be regulated directly and through the designation of critical habitat for such species. This provides a way for NMFS to review actions by other entities that may impact endangered and protected resources whose management units are under NMFS’ jurisdiction.
- Cyclical and ongoing climate change. Section 4.5 describes the effects of climate on ecosystem components. Cyclical phenomena include ENSO, PDO, and NPGO. Range shifts of target species may cause the biggest climate change related impact on fisheries.

Sections 4.15.4.1 through 4.15.4.6 discuss the effects of these past, present, and reasonably foreseeable future actions on the environmental components evaluated in this EIS.

4.6.5 Effects of Past, Present, and Reasonably Foreseeable Future Actions, the Proposed Actions, and Net Cumulative Effects

This section summarizes effects to determine cumulative impacts with respect to the environmental components evaluated in this EA. Table 4-5 is included for reference.

4.6.5.1 Pacific Bluefin Tuna

- Past, Present, and Reasonably Foreseeable Future Actions. Past and present fishing has caused the PBF stock to be overfished and it may continue to be subject to overfishing, depending on how effective RFMO conservation measures are. Current RFMO measures have not been sufficient to prevent overfishing and rebuild stock biomass to a level capable of producing MSY.

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A measure adopted by the WCPFC establishes a multi-year rebuilding program for the stock. The IATTC has not yet taken comparable action.

- Proposed Actions. Establishing a two-fish bag limit and six-fish retention limit for recreational anglers in U.S. waters would reduce recreational fishing mortality by a moderate amount, depending on changes in overall angler effort and the availability of PBF and other HMS to recreational anglers. Requirements for processing tuna at sea that would allow PBF to be distinguished from other tuna species support monitoring and enforcement and thus the effectiveness of the bag limit and possession limit.
- Cumulative Effects. The proposed action would have a moderate beneficial cumulative effect by reducing PBF fishing mortality by west coast anglers. The fishery impact of west coast anglers and represented a small proportion of total fishery impact, but if commercial catch continues to decline and PBF continues to be available to recreational anglers, the relative impact of the recreational fishery would increase.

4.6.5.2 Other Species Caught in Recreational Fisheries for HMS

- Past, Present, and Reasonably Foreseeable Future Actions. Other species accounting for most catch on tuna target trips (North Pacific albacore tuna, yellowfin tuna, skipjack tuna, and dorado) are not overfished and not subject to overfishing, although there is uncertainty with regard to yellowfin tuna. The IATTC and the WCPFC have established conservation measures for the tuna stocks intended to prevent overfishing. Stock structure and status of dorado is poorly understood but available information does not suggest that overfishing is occurring.
- Proposed Action. A bag limit and possession limit reduction for PBF could result in some level of target switching to other stocks, increasing catch. The degree to which this happens depends on overall angler effort, availability of these species to anglers, and the substitutability of these species for PBF. West coast recreational fisheries account for a minor to negligible fraction of stock-wide catch for these stocks so any likely catch increases would likely have a negligible fishery impact. Requirements for processing tuna at sea that would allow PBF to be distinguished from other tuna species support monitoring and enforcement and thus the effectiveness of the bag limit and possession limit. Other factors being equal, this would prompt target switching.
- Cumulative Effects. Given that fisheries other than the west coast recreational fishery account for an overwhelming proportion of the fishery impact on these stocks, the cumulative effect is likely to be mixed. The proposed action may increase fishing mortality while RFMO measures for commercial fisheries for these stocks appear moderately effective in preventing overfishing and rebuilding stocks where necessary. Because RFMO measures are implemented through members' jurisdiction over their flagged vessels, the effectiveness of these measures is hard to assess beyond the results of periodic stock assessments.

4.6.5.3 West Coast Recreational Fisheries and Human Communities (Socioeconomic Environment)

- Past, Present, and Reasonably Foreseeable Future Actions. Macroeconomic factors affecting household disposable income appear to have a much greater effect on participation in recreational fisheries compared to the availability of any one species. A substantial decline in participation in the CPFV fishery coinciding with the Great Recession (see Figure 3-11) lends credence to this assertion. Disposal income and cost of participation (fixed and variable dollar costs, opportunity cost) and the perceived value of the recreational experience are the likely factors affecting participation.
- Proposed Actions. Reducing trip and possession limits may reduce the perceived quality of the recreational fishing experience of tuna targeting trips. This will likely depend on the availability

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of PBF and other tuna species and willingness to substitute other tuna species for PBF. Most PBF are caught on CPFV trips so bag and possession limits will have a greater absolute effect on CPFVs compared to anglers on private vessels. A large proportion of CPFV tuna trips originate and return to ports in the San Diego region so these fishing communities would be relatively more affected compared to the Los Angeles and Santa Barbara regions. If processing of tunas at sea is restricted (e.g. heading and gutting only) or prohibited, CPFV crew and anglers are likely to be adversely affected. Crew could lose income from tips while anglers would face difficulties in preserving and transporting the tuna that they catch and wish to retain.

- Cumulative Effects. A recovering economy may have beneficial effects if anglers are more willing to devote income to recreational fishing. Reducing bag and possession limits could reduce the perceived value of recreational fishing for tunas, potentially forcing CPFVs to reduce prices or see a loss in sales. Private anglers may be relatively unaffected since they account for a small fraction of PBF catch. Changes in participation coupled with the any effects that processing requirements have on crew compensation could affect income. Given these countervailing factors, a moderately adverse net cumulative effect may result.

4.6.5.4 The California Current Ecosystem and Essential Fish Habitat

- Past, Present, and Reasonably Foreseeable Future Actions. Fishery removals and other human activities affecting productivity of biological components of the ecosystem have affected trophic structure. Adverse effects on EFH can indirectly affect the productivity of biological components of the ecosystem. Climate change and associated ocean acidification is likely to affect both overall system forcing and productivity and the relative abundance of biological components, affecting trophic structure. The Council's FEP provides a mechanism to consider how management decisions may affect the ecosystem. Mitigation measures to address the adverse impacts of fishing on EFH and associated consultation requirements for federally permitted non-fishing activities have a beneficial effect on EFH.
- Proposed Action. The proposed actions will not have a discernable effect on the California Current ecosystem or EFH for HMS or other species managed under the MSA.
- Cumulative Effects. Actions other than the proposed action are likely to have mixed effects while the proposed action will have no discernable effects.

4.6.5.5 Protected Species

- Past, Present, and Reasonably Foreseeable Future Actions. Past directed and incidental take of protected species reduced populations. For some species degradation of critical habitat has also affected population productivity. The ESA, MMPA, and MTBA have had a beneficial effect by prohibiting directed take and requiring mitigation measures for incidental take. Many, though not all, protected species populations are recovering.
- Proposed Action. Protected species takes are not known to occur in recreational HMS fisheries. Therefore the proposed actions will not have a discernable effect on protected species
- Cumulative Effects. Other applicable laws mitigate the adverse effect of fishing and other activities on protected species while the proposed action has no effect. Therefore the cumulative effect is positive.

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Table 4-5. Summary of the cumulative effects of the proposed actions.

Affected Resources	Past, Present, and Reasonably Foreseeable Future Actions	PBF Bag Limits	Processing at Sea	Cumulative Effects
PBF Stock	Mixed	Positive	Neutral	Uncertain
Other Stocks	Mixed	Neutral	Neutral	Mixed
West Coast Recreational Fisheries and Human Communities	Mixed	Negative	Negative	Negative
Essential Fish Habitat and California Current Ecosystem	Mixed	Neutral	Neutral	Mixed
Protected Species	Positive	Neutral	Neutral	Positive

5 Consistency with the HMS FMP and MSA National Standards

5.1 FMP Goals and Objectives

1. Promote and actively contribute to international efforts for the long-term conservation and sustainable use of highly migratory species fisheries that are utilized by West Coast-based fishers, while recognizing these fishery resources contribute to the food supply, economy, and health of the nation.
2. Provide a long-term, stable supply of high-quality, locally caught fish to the public.
3. Minimize economic waste and adverse impacts on fishing communities to the extent practicable when adopting conservation and management measures.
4. Provide viable and diverse commercial fisheries and recreational fishing opportunity for highly migratory species based in ports in the area of the Pacific Council's jurisdiction, and give due consideration for traditional participants in the fisheries.
5. Implement harvest strategies which achieve optimum yield for long-term sustainable harvest levels.
6. Provide foundation to support the State Department in cooperative international management of highly migratory species fisheries.
7. Promote inter-regional collaboration in management of fisheries for species which occur in the Pacific Council's managed area and other Councils' areas.
8. Minimize inconsistencies among federal and state regulations for highly migratory species fisheries.
9. Minimize bycatch and avoid discard and implement measures to adequately account for total bycatch and discard mortalities.
10. Prevent overfishing and rebuild overfished stocks, working with international organizations as necessary.
11. Acquire biological information and develop a long-term research program.
12. Promote effective monitoring and enforcement.
13. Minimize gear conflicts.
14. Maintain, restore, or enhance the current quantity and productive capacity of habitats to increase fishery productivity for the benefit of the resource and commercial and recreational fisheries for highly migratory species.
15. Establish procedures to facilitate rapid implementation of future management actions, as necessary.
16. Promote outreach and education efforts to inform the general public about how West Coast HMS fisheries are managed and the importance of these fisheries to fishers, local fishing communities, and consumers.
17. Manage the fisheries to prevent adverse effects on any protected species covered by MMPA and MBTA and promote the recovery of any species listed under the ESA to the extent practicable.
18. Allocate harvest fairly and equitably among commercial, recreational and charter fisheries for HMS, if allocation becomes necessary.

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5.2 National Standards

National Standard 1 states that conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the OY from each fishery for the United States fishing industry.

National Standard 2 states that conservation and management measures shall be based on the best scientific information available.

National Standard 3 states that, to the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

National Standard 4 states that conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishers, such allocation shall be (A) fair and equitable to all such fishers; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

National Standard 5 states that conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.

National Standard 6 states that conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

National Standard 7 states that conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

National Standard 8 states that conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), ... take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

National Standard 9 states that conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

National Standard 10 states that conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

5.3 Other Applicable MSA Provisions

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5.4 Public Scoping under MSA

At its June 2014 meeting the Council considered advisory body advice and public comment and decided to consider measures to reduce recreational catch of PBF for the biennial management period beginning April 1, 2015.

At its September 2014 meeting the Council adopted the range of alternatives evaluated in this EA and identified its preliminary preferred alternative. This provided opportunity for public comment on the proposed action and alternatives.

At its November 2014 meeting the Council confirms or modifies their preferred alternative.

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6 NEPA and Other Applicable Laws

6.1 National Environmental Policy Act

The CEQ has issued regulations specifying the requirements for NEPA documents (40 CFR 1500 – 1508), and NOAA’s agency policy and procedures for NEPA can be found in NOAA Administrative Order 216-6 (NAO 216-6).

The required elements of an EA are as follows (as per NAO 216-6 5.03b):

- A brief discussion of the purpose and need for the action;
- Alternatives, as required by Sections 102(2)(C)(iii) and 102(2)(E) of NEPA;
- A brief of the environmental impacts of the proposed action and alternatives;
- A listing of agencies and persons consulted;
- A FONSI, if appropriate;
- An index and appendices, as appropriate.

A draft of this EA was provided to support Council final action at its November 2014 meeting. A FONSI must be signed before the Final Rule implementing the proposed action may be published.

6.2 Administrative Procedure Act

The Administrative Procedures Act, or APA, governs the Federal regulatory process and establishes standards for judicial review of Federal regulatory activities. Most Federal rulemaking, including regulations promulgated pursuant to the MSA, are considered “informal,” which is determined by the controlling legislation. Provisions at 5 U.S.C. 553 establish rulemaking procedures applicable to the proposed action. Section 5.1 in the HMS FMP specifies that biennial harvest specifications and management measures require ‘full notice-and-comment rulemaking’ to implement the regulations necessary to implement the Council recommendation. The rulemaking associated with this proposed action will be conducted in accordance with the APA and procedures identified in section 304 of the MSA.

6.3 Additional Laws and Executive Orders Applicable to the Proposed Action

In addition to the Magnuson-Stevens Act (see Chapter 5), the National Environmental Policy Act, and the Administrative Procedure Act there are other laws and Federal Executive Orders that may impose substantive and procedural requirements on the proposed action. These other laws and executive orders are described below.

6.3.1 Coastal Zone Management Act:

Section 307(c)(1) of the Federal Coastal Zone Management Act (CZMA) of 1972 requires all Federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. A determination as to whether the proposed action is would be implemented in a manner that is consistent to the maximum extent practicable with the enforceable policies of the approved coastal zone management programs of Washington, Oregon, and California will be submitted to the responsible state agencies for review under Section 307(c)(1) of the CZMA. The HMS FMP has been found to be consistent with the Washington, Oregon, and California coastal zone management programs.

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6.3.2 Endangered Species Act

The Endangered Species Act of 1973 (ESA) was signed on December 28, 1973, and provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The ESA replaced the Endangered Species Conservation Act of 1969; it has been amended several times.

A “species” is considered endangered if it is in danger of extinction throughout all or a significant portion of its range. A species is considered threatened if it is likely to become an endangered species within the foreseeable future.

Federal agencies are directed, under section 7(a)(1) of the ESA, to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Federal agencies must also consult with NMFS or USFWS, under section 7(a)(2) of the ESA, on activities that may affect a listed species. These interagency consultations, or section 7 consultations, are designed to assist Federal agencies in fulfilling their duty to ensure Federal actions do not jeopardize the continued existence of a species or destroy or adversely modify critical habitat. Should an action be determined to jeopardize a species or result in the destruction or adverse modification of critical habitat, NMFS or USFWS will suggest Reasonable and Prudent Alternatives (RPAs) that would not violate section 7(a)(2).

Biological opinions document whether the Federal action is likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of critical habitat. Where appropriate, biological opinions provide an exemption for the “take” of listed species while specifying the extent of take allowed, the Reasonable and Prudent Measures (RPMs) necessary to minimize impacts from the Federal action, and the Terms and Conditions with which the action agency must comply.

A Biological Opinion for the implementation of the HMS FMP was published February 4, 2004.

6.3.3 Marine Mammal Protection Act

The MMPA of 1972 is the principle Federal legislation that guides marine mammal species protection and conservation policy in the United States. Under the MMPA, NMFS is responsible for the management and conservation of 153 stocks of whales, dolphins, porpoise, as well as seals, sea lions, and fur seals; while the USFWS is responsible for walrus, sea otters, and the West Indian manatee.

Off the west coast, the Steller sea lion (*Eumetopias jubatus*) eastern stock, Guadalupe fur seal (*Arctocephalus townsendi*), and Southern sea otter (*Enhydra lutris*) California stock are listed as threatened under the ESA. The sperm whale (*Physeter macrocephalus*) Washington, Oregon, and California stock, humpback whale (*Megaptera novaeangliae*) Washington, Oregon, and California - Mexico Stock, blue whale (*Balaenoptera musculus*) eastern north Pacific stock, and Fin whale (*Balaenoptera physalus*) Washington, Oregon, and California stock are listed as depleted under the MMPA. Any species listed as endangered or threatened under the ESA is automatically considered depleted under the MMPA.

Pursuant to the MMPA, the List of Fisheries (LOF) classifies U.S. commercial fisheries into one of three Categories according to the level of incidental mortality or serious injury of marine mammals:

- I. frequent incidental mortality or serious injury of marine mammals
- II. occasional incidental mortality or serious injury of marine mammals
- III. remote likelihood of/no known incidental mortality or serious injury of marine mammals

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The Marine Mammal Protection Act (MMPA) mandates that each fishery be classified by the level of serious injury and mortality of marine mammals that occurs incidental to each fishery is reported in the annual Marine Mammal Stock Assessment Reports for each stock. The AK/WA/OR/CA commercial passenger fishing vessel fishery is identified as category III in the draft 2015 List of Fisheries ([79 FR 50589](#)).

6.3.4 Migratory Bird Treaty Act

The MBTA of 1918 was designed to end the commercial trade of migratory birds and their feathers that, by the early years of the 20th century, had diminished the populations of many native bird species. The MBTA states that it is unlawful to take, kill, or possess migratory birds and their parts (including eggs, nests, and feathers) and is a shared agreement between the United States, Canada, Japan, Mexico, and Russia to protect a common migratory bird resource. The MBTA prohibits the directed take of seabirds, but the incidental take of seabirds does occur.

6.3.5 Paperwork Reduction Act

The Paperwork Reduction Act requires that agency information collections minimize duplication and burden on the public, have practical utility, and support the proper performance of the agency's mission. The proposed action does not have Paperwork Reduction Act implications

6.3.6 Regulatory Flexibility Act

The Regulatory Flexibility Act requires government agencies to assess the effects that regulatory alternatives would have on small entities, including small businesses, and to determine ways to minimize those effects. A fish-harvesting business is considered a “small” business by the Small Business Administration if it has annual receipts not in excess of \$4.0 million. For related fish-processing businesses, a small business is one that employs 500 or fewer persons. For wholesale businesses, a small business is one that employs not more than 100 people. For marinas and charter/party boats, a small business is one with annual receipts not in excess of \$6.5 million. If the projected impact of the regulation exceeds \$100 million, it may be subject to additional scrutiny by the Office of Management and Budget

6.3.7 Executive Order 12866 (Regulatory Impact Review)

EO 12866, Regulatory Planning and Review, covers a variety of regulatory policy considerations and establishes procedural requirements for analysis of the benefits and costs of regulatory actions. It directs agencies to choose those approaches that maximize net benefits to society, unless a statute requires another regulatory approach. The agency must assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only after reasoned determination the benefits of the intended regulation justify the costs. In reaching its decision, the agency must use the best reasonably obtainable information, including scientific, technical and economic data, about the need for and consequences of the intended regulation. NMFS requires the preparation of a regulatory impact review (RIR) for all regulatory actions of public interest. The purpose of the analysis is to ensure the regulatory agency systematically and comprehensively considers all available alternatives, so the public welfare can be enhanced in the most efficient and cost-effective way. The RIR addresses many of the items in the regulatory philosophy and principles of EO 12866.

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6.3.8 Executive Order 12898 (Environmental Justice)

EO 12898 obligates Federal agencies to identify and address “disproportionately high adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations in the United States” as part of any overall environmental impact analysis associated with an action. NOAA guidance, NAO 216-6, at Section 7.02, states that “consideration of EO 12898 should be specifically included in the NEPA documentation for decision-making purposes.” Agencies should also encourage public participation, especially by affected communities during scoping, as part of a broader strategy to address environmental justice issues.

6.3.9 Executive Order 13132 (Federalism)

EO 13132, which revoked EO 12612, an earlier federalism EO, enumerates eight “fundamental federalism principles.” The first of these principles states “Federalism is rooted in the belief that issues that are not national in scope or significance are most appropriately addressed by the level of government closest to the people.” In this spirit, the EO directs agencies to consider the implications of policies that may limit the scope of or preempt states’ legal authority. Preemptive action having such “federalism implications” is subject to a consultation process with the states; such actions should not create unfunded mandates for the states; and any final rule published must be accompanied by a “federalism summary impact statement.”

6.3.10 Executive Order 13175 (Consultation and Coordination with Indian Tribal Government)

EO 13175 is intended to ensure regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes.

The Secretary recognizes the sovereign status and co-manager role of Indian tribes over shared Federal and tribal fishery resources. In Section 302(b)(5), the MSA reserves a seat on the Council for a representative of an Indian tribe with Federally-recognized fishing rights from California, Oregon, Washington, or Idaho.

6.3.11 Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds)

EO 13186 supplements the MBTA (above) by requiring Federal agencies to work with the USFWS to develop memoranda of agreement to conserve migratory birds. NMFS is in the process of implementing a memorandum of understanding. The protocols developed by this consultation will guide agency regulatory actions and policy decisions in order to address this conservation goal. The EO also directs agencies to evaluate the effects of their actions on migratory birds in environmental documents prepared pursuant to the NEPA.

6.4 Findings

The Council process and this EA are intended, where possible, to meet the public involvement requirements and provide the information and analysis necessary to address the mandates described above. The information and analysis in this EA supports the following findings with respect to other applicable law.

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Coastal Zone Management Act: The proposed action is not expected to affect any state's coastal management program.

ESA: NMFS and USFWS conducted section 7 consultations to determine whether activities authorized under HMS FMP are likely to jeopardize the continued existence of any species listed under the ESA. Incidental take was not identified for recreational fisheries.

Marine Mammal Protection Act: Recreational fisheries are not known to cause serious injury/mortality to marine mammal stocks in the west coast EEZ.

Migratory Bird Treaty Act: The proposed action is unlikely to cause the incidental take of seabirds protected by the Migratory Bird Treaty Act to differ substantially from levels in previous years. The HMS FMP notes occasional hooking of seabirds during recreational fishing. Hooked birds are usually released alive.

Paperwork Reduction Act: The proposed action does not require collection-of-information subject to the Paperwork Reduction Act.

Executive Order 12898 (Environmental Justice): The proposed action will not result in disproportionate adverse impacts to low income and minority communities.

Executive Order 13132 (Federalism): The proposed action does not have federalism implications subject to EO 13132.

Executive Order 13175 (Consultation and Coordination with Indian Tribal Government): The proposed action has been developed in consultation with the affected tribe(s) and, insofar as possible, with tribal consensus.

Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds): See the finding for the Migratory Bird Treaty Act, above.

6.5 Preparers and Listing of Agencies and Persons Consulted

This EA was prepared by Council staff and the Council's Highly Migratory Species Management Team:

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7 Literature Cited