WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

Draft Options Paper
Longline Bigeye Catch Limits
for the U.S. Pacific Island Territories and Commonwealth

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I. Introduction

This paper presents options for consideration by the Western Pacific Regional Fishery Management Council (Council) for the establishment of annual longline bigeye tuna (hereafter, bigeye) limits for the US Pacific Island Territories of American Samoa, Guam, and the Commonwealth of Northern Mariana Islands (CNMI).

Under Article 43 of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, American Samoa, Guam, and CNMI are afforded the status of Participating Territories of the Commission (WCPFC). These territories receive different catch and effort allocations than the U.S., which is a member of the WCPFC.

The WCPFC is a regional fisheries management organization (RFMO), and is comprised of 25 members, 7 participating territories, and 11 cooperating non-members.[1] Conservation and management measures are agreed to by the WCPFC and then implemented under domestic law by members and cooperating non-members.

Bigeye tuna is experiencing overfishing in the Western and Central Pacific Ocean (WCPO) and is caught using a variety of fishing methods. The two methods that have the greatest impact on the stock are purse seining and longlining. Until recently, the WCPO longline fishery targeting adult bigeye for sashimi markets contributed the most to bigeye fishing mortality. Now, however, the purse seine fishery for skipjack and yellowfin for canned tuna markets catches more volume of bigeye than the longline fishery.[2] The purse seine fishery catches juvenile bigeye while fishing on fish aggregation devices (FADs). The WCPFC manages impacts to bigeye from the purse seine fishery through a seasonal FAD closure and vessel day limits, and impacts from the longline fishery, through annual catch limits.

[1] **Members**: Australia, China, Canada, Cook Islands, European Union, Federated States of Micronesia, Fiji, France, Japan, Kiribati, Republic of Korea, Republic of Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Chinese Taipei, Tonga, Tuvalu, United States of America, Vanuatu.
Participating Territories: American Samoa, Commonwealth of the Northern Mariana Islands, French Polynesia, Guam, New Caledonia, Tokelau, Wallis and Futuna
Cooperating Non-member(s): Belize, Democratic Peoples Republic of Korea, Ecuador, El Salvador, Indonesia, Mexico, Senegal, St Kitts and Nevis, Panama, Thailand, Vietnam.

[2] Williams, P. and P. Terawasi. 2012. Overview of the tuna fishery in the Western and Central Pacific Ocean, including economic conditions-2011. WCPFC-SC8-2012/GN WP-1.

Under WCPFC conservation and management measure 2008-01, the US Participating Territories were provided each with annual 2,000 mt longline bigeye limits or unlimited catch if undertaking responsible fisheries development. These limits were extended by the WCPFC in 2011 (CMM 2011-01). WCPFC CMM 2012-01 (2012-01) replaced 2011-01 and establishes a goal of reducing bigeye tuna mortality to a level no greater than F/Fmsy $\leq$ 1, through a step-by-step approach through 2017. CMM 2012-01 established tropical tuna limits for distant water fleets but did not provide annual longline bigeye catches for any of the PTs or SIDS.

The US WCPO longline bigeye limit under CMM 2008 was 3,763 mt, and is principally applicable to the Hawaii longline fishery, which historically has landed over 5,000 mt of bigeye in Honolulu annually. Bigeye is the primary target species of the Hawaii longline fishery. NMFS implemented the 3,763 mt annual longline bigeye catch limit in 2009, and the Hawaii longline fishery reached the quota in late December 2009, resulting in the fishery prohibited from fishing for and retaining bigeye in the WCPO. In 2010, the Hawaii longline fishery reached its 3,763 mt quota on November 22, resulting in a 40 day closure from fishing in the WCPO which resulted in economic impacts on fishery participants, Hawaii seafood industry, and consumers.

In November 2011, Congress passed the FY2012 appropriations bill for the Department of Commerce that included Section 113 (See Appendix I). Subsection (a) of Section 113 provided American Samoa, Guam, and CNMI the authority to use, assign, allocate, and manage catch limits of highly migratory species (HMS) fish stocks, or fishing effort limits, agreed to by the WCPFC through arrangements with U.S. Vessels with PFEP permits (See Appendix I). In Section 113, Congress also directs the Council to recommend an amendment to the Pelagics Fishery Ecosystem Plan (Pelagics FEP) to implement Section 113.

NMFS promulgated regulations applicable to Section 113 arrangements in 50 CFR 300.224. In 2011, the American Samoa government entered into a fishing arrangement with the Hawaii Longline Association (American Samoa/HLA arrangement), applicable to fishing years 2011 and 2012, that included payments to the Western Pacific Sustainable Fisheries Fund. For the purposes of annual reporting to the WCPFC, NMFS began attributing catches of FEP-permitted vessels under the arrangement to American Samoa. Between November 18 and December 31, 2011, NMFS attributed 628 mt of bigeye to American Samoa under Section113 arrangements. In 2012, NMFS attributed 771 mt of bigeye to American Samoa under Section 113 arrangements.

Section 113(c) stated that subsection (a) shall remain in effect until the earlier of December 31, 2012, or such time as a Council recommends an amendment to the Pelagics FEP to the, and implementing regulations, are approved and implemented by the Secretary of Commerce that authorize use, assignment, allocation, and management of catch limits of the HMS stocks, or fishing effort limits, established by the WCPFC and applicable to the Territories (See Appendix I). In 2013, Congress extended Section 113 until December 31, 2013 or the earlier of such time that the Council's FEP amendment is approved and implemented.

In June 2012, the Council recommended the Pelagics FEP be amended to:

1. Provide the Territories the authority to use, assign, allocate, and manage catch limits of pelagic MUS, or fishing effort limits, established by the Western and Central Pacific Fisheries Commission through arrangements with U.S. vessels permitted under the Pelagic FEP. Further, the authority provided in this Pelagic FEP amendment may be subject to maximum annual limits, and any other terms or conditions, as recommended by the Council and approved by the Secretary of Commerce.

2. Establish annual longline bigeye tuna catch limits for each of the Territories based on the SIDS/PTs provisions in the WCPFC conservation and management measures for tropical tunas, and further that the Council review this limit on an annual basis;

3. Establish that the Territories may assign up to 1,000 mt per year of their annual longline bigeye tuna catch limits through arrangements with U.S. vessels permitted under the FEP, and further that that the Council review this limit on an annual basis

4. Establish that vessels under such arrangements are integral to the domestic fisheries of the U.S. Participating Territories provided that such arrangements satisfy either of the following:
   i) contain no requirements regarding where such vessels must fish or land their catch, and shall be funded by deposits to the Western Pacific Sustainable Fisheries Fund in material support of fisheries development projects identified in a territory's Marine Conservation Plan, and further that the funding of such arrangements authorized under this Pelagic FEP amendment shall be of a sufficient amount to substantially contribute to MCP fisheries development objectives; or
   ii) provide a landing requirement to offload catch in the ports of the Territory for which the arrangement exists.

5. Establish that arrangements authorized under this Pelagic FEP amendment shall become effective 30 days after submission to the Council and NMFS, unless the Regional Administrator, with the advice and recommendation of the Council's Executive Director, determines that the arrangement does not comply with the Pelagic FEP or applicable law. Further, that catch or effort under qualifying arrangements shall be subject to attribution to the applicable Territory for purposes of annual reporting to WCPFC.

As seen in recommendation number 2 above, the Council recommended to establish annual longline bigeye catch limits for the Territories, but did not specify a number at the 154th meeting, which at that time, longline bigeye catches by the Territories were restricted to 2,000 mt annually under CMM 2011-01. As noted previously, the WCPFC 2012 conservation and management measure (2012-01) for tropical tunas did not provide annual longline bigeye catches for any of the PTs or SIDS.

II. Purpose and Need

The Council has responded to the Congressional directive to recommend an amendment to the Pelagics FEP to implement Section 113; however, at present the Council's recommended action does not limit overall bigeye mortality. That is, while authorizing the assignment a total of up to 3,000 metric tons to Pelagic FEP permit holders, there are no corresponding limits on the amount

of bigeye that can be harvested by the PT's domestic fisheries, so the net effect of the action may be to increase pressure on a stock that is experiencing overfishing. Accordingly, to satisfy the Magnuson-Stevens Act requirement that fisheries management actions address the needs of conservation by preventing overfishing while allowing the achievement of optimum yield on a continuing basis, the Council may wish to consider an appropriate management framework that limits the overall amount of bigeye that could be caught in the WCPO by U.S. vessels managed under the Pelagics FEP.

The purpose of this options paper is to consider appropriate annual longline bigeye catch limits for the US Participating Territories that support the objectives of Section 113 while also managing potential bigeye catches by US longline vessels in the WCPO consistent by MSA.

III. Catch Limit Options

The following table provides a summary of management options considered in this paper. The Council's selection of one of these options will be added to the existing Pelagics FEP amendment recommendations described earlier.

A) No action- no annual longline bigeye limits for the US PTs

Under this option, no total annual longline bigeye limits would be established for the Territories, which is consistent with the existing WCPFC conservation and management measure. However, under the Council's existing recommendation to implement Section 113, the Territories could assign only up to 1,000 mt per year of their annual longline bigeye tuna catch limits through arrangements with U.S. vessels permitted under the FEP, and further that that the Council review this limit on an annual basis.

B) 1,000 mt longline bigeye longline limits for the US PTs

Under this option, an annual longline bigeye limit of 1,000 mt would be established for each Territory, and the Council would review this limit on an annual basis. This limit under this option is more conservative than what is provided under the existing WCPFC tropical tuna measure. Also under this option, the Council's existing recommendation to implement Section 113 would be maintained including the provision that the Territories could assign only up to 1,000 mt per year of their annual longline bigeye tuna catch limits through arrangements with U.S. vessels permitted under the FEP. This option would establish an overall US longline bigeye limit in the WCPO of 6,763 mt (3,000 mt total for Territories + US limit of 3,763).

C) 2,000 mt longline bigeye longline limits for the US PTs

Under this option, an annual longline bigeye limit of 2,000 mt would be established for each Territory, with the Council reviewing this limit on an annual basis. The limit under this option is more conservative than what is provided under the existing WCPFC tropical tuna measure. Also under this option, the Council's existing recommendation to implement Section 113 would be maintained including the provision that the Territories could assign only up to 1,000 mt per year

of their annual longline bigeye tuna catch limits through arrangements with U.S. vessels permitted under the FEP. This option would establish an overall longline bigeye limit applicable to US vessels in the WCPO of 9,763 mt (6,000 mt total for Territories + US limit of 3,763).

IV. Pros and Cons of Catch Limit Options

Option A: No annual longline bigeye limits for the US PTs

Pros	Cons
• Consistent with WCPFC CMM 2012-01 and same as what is provided to all Small Island Developing States and Participating Territories. • Allows for development of longline fisheries targeting bigeye in Territories. • Without a limit, Territory longline fisheries would not be subject to closure due to combined catches and quota transfers, reducing potential economic impacts. • Hawaii longline fishery unlikely to face closure due to ability to enter into Territory arrangements for catch transfer, reducing potential economic impacts.	• Does not establish an overall limit in the Council's FEP amendment to implement Section 113, which could be viewed as not addressing the potential contribution of US longline vessels to bigeye overfishing.

Option B: 1,000 mt longline bigeye longline limits for the US PTs

Pros	Cons
• Demonstrates the US as establishing stricter conservation measures than what are provided the Territories under WCPFC 2012-01. • Addresses potential contributions by US longline vessels to bigeye overfishing by establishing an overall limit consistent with MSA in the Council's FEP amendment to implement Section 113.	• Could act as a disincentive for fisheries development (e.g. infrastructure upgrades) • Could restrict existing Territory longline fisheries (e.g. American Samoa) if 1,000 mt was exceeded due to catches and catch transfers with FEP permitted vessels. • Could restrict the amount of bigeye available to be transferred under Territory/FEP vessel arrangements, which could result in closure of Hawaii longline fishery and economic impacts to participants, seafood industry, and consumers. • Would involve potential in-season monitoring costs of Territory longline catches and Territory catch transfer agreements.

Option C: 2,000 mt longline bigeye longline limits for the US PTs

Pros	Cons
• Demonstrates the US as taking stronger conservation measures than what are provided the Territories under WCPFC 2012-01. • Provides for limited opportunity to transfer unused quota to aid in the responsible development of Territory fisheries; reserves sufficient quota for continuation of domestic longline fisheries while ensuring the needs of conservation for a stock that is experiencing overfishing, consistent with CMM 2012-01 objectives. • Addresses potential contributions of US longline vessels to bigeye overfishing by establishing an overall limit consistent with MSA in the Council's FEP amendment to implement Section 113. • Consistent with previously provided longline limits provided to the Territories (e.g. CMM 2008-01; 2011-01). • Provides an existing buffer for bigeye catches made by existing Territory longline fisheries as well as for catch transfer under Territory arrangements with FEP permitted vessels. • Consistent with other limits established under CMM 2012-01 for members that have not harvested 2,000 metric tons annually, including New Zealand, Australia, Philippines, and European Union	• Could act as a disincentive for fisheries development (e.g. infrastructure upgrades) • Could restrict future Territory longline fisheries that experience some diversification or expansion if 2,000 mt was exceeded due to catches and catch transfers with FEP permitted vessels. • May involve potential in-season monitoring costs of Territory longline catches and Territory catch transfer agreements.

Appendix I- Consolidated and Further Continuing Appropriations Act, 2012

SEC. 113. (a) The U.S. Participating Territories of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean ("Commission") are each authorized to use, assign, allocate, and manage catch limits of highly migratory fish stocks, or fishing effort limits, agreed to by the Commission through arrangements with U. S. vessels with permits issued under the Pelagics Fishery Management Plan of the Western Pacific Region. Vessels under such arrangements are integral to the domestic fisheries of the U.S. Participating Territories provided that such arrangements shall impose no requirements regarding where such vessels must fish or land their catch and shall be funded by deposits to the Western Pacific Sustainable Fisheries Fund in support of fisheries development projects identified in a territory's Marine Conservation Plan and adopted pursuant to section 2 0 4 of the Magnuson-Stevens Fishery Conservation and Management Act.
The Secretary of Commerce shall attribute catches made by vessels operating under such arrangements to the U.S. Participating Territories for the purposes of annual reporting to the Commission.

(b) The Western Pacific Fisheries Management Council- (1) is authorized to accept and deposit into the Western Pacific Sustainable Fisheries Fund funding for arrangements pursuant to subsection (a); (2) shall use amounts deposited under paragraph (1) that are attributable to a particular U.S. Participating Territory only for implementation of that Territory's Marine Conservation Plan. adopted pursuant to section 204 of the Magnuson-Stevens Fishery Conservation and Management Act; and (3) shall recommend an amendment to the Pelagics Fishery Management Plan for the Western Pacific Region, and associated regulations, to implement this section.

(c) Subsection (a) shall remain in effect until the earlier of December 31, 2012, or such time as (1) the Western Pacific Regional Fishery Management Council recommends an amendment to the Pelagics Fishery Management Plan for the Western Pacific Region, and implementing regulations, to the Secretary of Commerce that authorize use, assignment, allocation, and management of catch limits of highly migratory fish stocks, or fishing effort limits, established by the Commission and applicable to U.S. Participating Territories; (2) the Secretary of Commerce approves the amendment as recommended; and (3) such implementing regulations become effective.

Appendix II- Background Information on Bigeye Conservation and Management

Bigeye Tuna

Bigeye tuna (hereafter, *bigeye*) is among the most highly valued fisheries in the Pacific due to its popularity for sushi and sashimi. It and other valuable pelagic species such as swordfish, yellowfin tuna, albacore tuna, mahimahi, ono (wahoo), pomfrets, moonfish (opah), and billfish are found in the U.S. Exclusive Economic Zone (EEZ) around the Territories and surrounding high seas. These species, as well as adult bigeye, are primarily targeted by longline vessels, but can also be caught with troll and handline methods. Juvenile bigeye are caught incidentally by purse seine vessels targeting skipjack and yellowfin tuna when fishing on fish aggregation devices (FADs), and caught in much smaller numbers by purse seine vessel when they fish on schools of fish unassociated with FADs. Because these species are considered highly migratory, conservation and management of them is subject to conservation and management measures adopted by the WCPFC and Inter-American Tropical Tuna Commission (IATTC) – the U.S. is a member of both commissions.

Bigeye Tuna Stock Status

In 2004, NMFS determined that Pacific-wide, bigeye tuna was experiencing overfishing (69 FR 78397) and requested the Council to take appropriate action to end overfishing. Pursuant to the MSA, the Council recommended Amended 14 to the Pelagics FMP that contained both domestic and international measures to address bigeye overfishing. NMFS approved Amendment 14's international management measures, but disapproved domestic management measures that would have required new federal permitting and data reporting requirements for Hawaii-based non-longline pelagic fisheries. NMFS felt that the recommended domestic permitting and reporting requirements would be duplicative with existing State of Hawaii regulations, but did agree to work jointly with NMFS Pacific Islands Science Center and the State of Hawaii to enhance the State's permitting and data collection program for small-boat commercial fisheries.

In 2005, the Council also established a control date of June 2, 2005 for domestic longline and purse seiners fishing under open access programs in U.S. EEZ waters in the Western Pacific region, including developing longline fisheries in Guam and CNMI. This control date would apply to vessels that are or may begin fishing under open-access programs and would not bind the Council to establishing limited access or other management programs for these fisheries, but it would notify current and prospective fishery participants that additional management measures may be taken by the Council for these fisheries. The implementation of a control date is in recognition of the fact that unlimited expansion of purse seining and longline fishing is untenable with the conservation of bigeye and yellowfin tuna.

Based on stock assessments conducted for the WCPFC and IATTC, NMFS has determined that the Pacific-wide bigeye tuna stock is still experiencing overfishing, but that it is not overfished nor approaching an overfished condition (NMFS 2012).

The 2011 assessment of WCPO bigeye, which uses a six-region, MULTIFAN-CL model, indicates that overfishing ratio of $F_{current}/F_{msy}$ is 1.46 (for the base model run) is occurring in the

WCPO, but that the bigeye stock is not overfished (i.e., total biomass and spawning biomass greater than the associated MSY levels; Davies et al. 2011). However, two of the alternate models found that the spawning biomass to be less than the spawning biomass at MSY, indicating that bigeye tuna may be currently in an overfished state (Davies et al. 2011). Using 2006-2009 as the baseline, a 32 percent reduction in fishing mortality is needed eliminate overfishing in the WCPO. An analysis of historical patterns in the mix of fishing gears indicates that MSY has been reduced to less than half its levels prior to 1970 through increased harvest of juveniles. Recent overfishing could result in further losses in potential yields in the future.

Figure 1 shows the base case model run used by Davies et al. (2011) to represent the temporal trend in annual bigeye stock status, relative to biomass at MSY and fishing mortality at MSY reference points. Recent estimates of MSY for bigeye in WCPO is 74,993 mt (Davies et al. 2011) and 82,246 mt for the EPO (Aires de Silva and Maunder 2012).

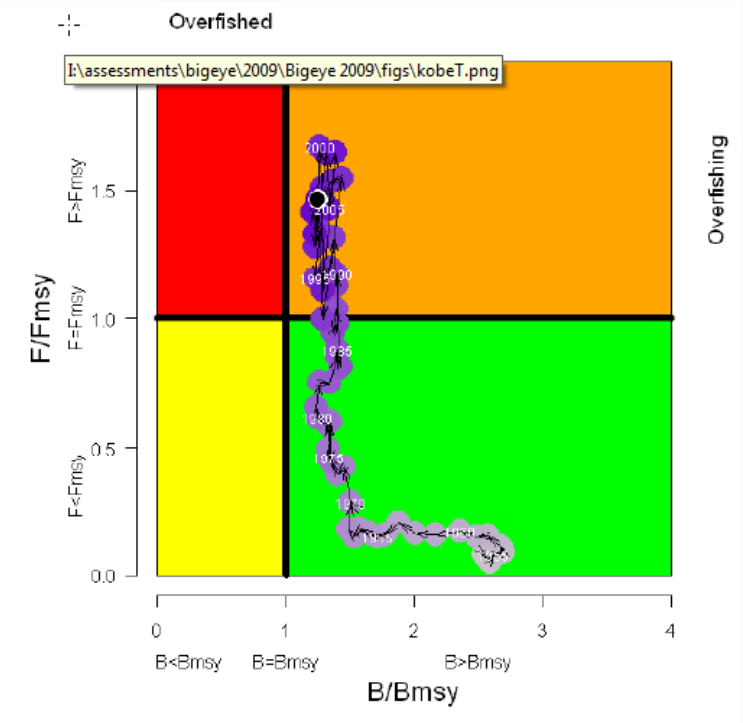

Figure 1: Temporal trend in annual stock status of WCPO bigeye tuna, relative to BMSY (x-axis) and FMSY (y-axis) reference points, for the model period (1952–2009)
Note: The white circle represents the average for the period 2006-09 and the black dot represents the 2009 value.
Source: Davis et al. 2011

The greatest fishery impact to the WCPO stock is in the equatorial region (approximately 90% of fishing mortality occurs within 10 degrees north and south of the equator), while the temperate regions are estimated to be moderately exploited (see Figure 2). The 2011 WCPO bigeye stock assessment indicates that the purse seine fishery and the domestic Indonesian/Philippine purse seine and handline fishery are currently having a greater impact to the bigeye stock than the longline fishery.

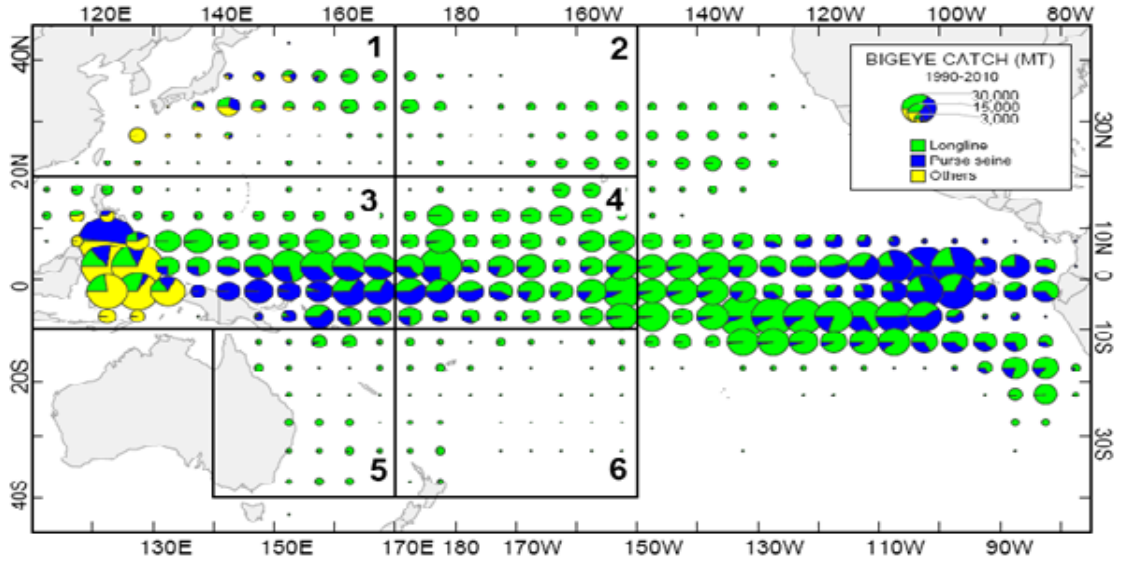

Figure 2: Distribution of cumulative bigeye tuna catch from 1990-2010 by 10 degree squares of latitude and longitude and fishing gear
Note: The six-region spatial stratification used in stock assessment for the WCP–CA is shown. Bigeye longline catches in the Eastern Pacific may not be fully covered.
Source: Williams, P. and P. Terawasi. 2011. WCPFC-SC7-2011/GN WP-1.

Furthermore, because the purse seine fishery takes primarily juvenile bigeye, the fishery has been reducing the maximum sustainable yield of the stock since the 1980's, when the purse seine fishery began fishing on FADs (see Figure 3). The 2011 WCPO stock assessment concludes that bigeye MSY would be greater if mortality of small fish were reduced which would allow greater overall yields to be sustainably obtained. According to the WCPFC Scientific Committee, estimation of the individual impacts on bigeye tuna F/FMSY of observed levels of catch or effort for the longline, purse seine and domestic Philippines and Indonesia fishery groups in 2009 and 2010 against a base of 2004 indicates that the reduction in purse seine FAD effort in 2010 has the greatest effect in terms of removing overfishing (67.4% of overfishing removed) followed by the reduction in longline catch in 2010 (34.7% of the overfishing removed; WCPFC 2012).

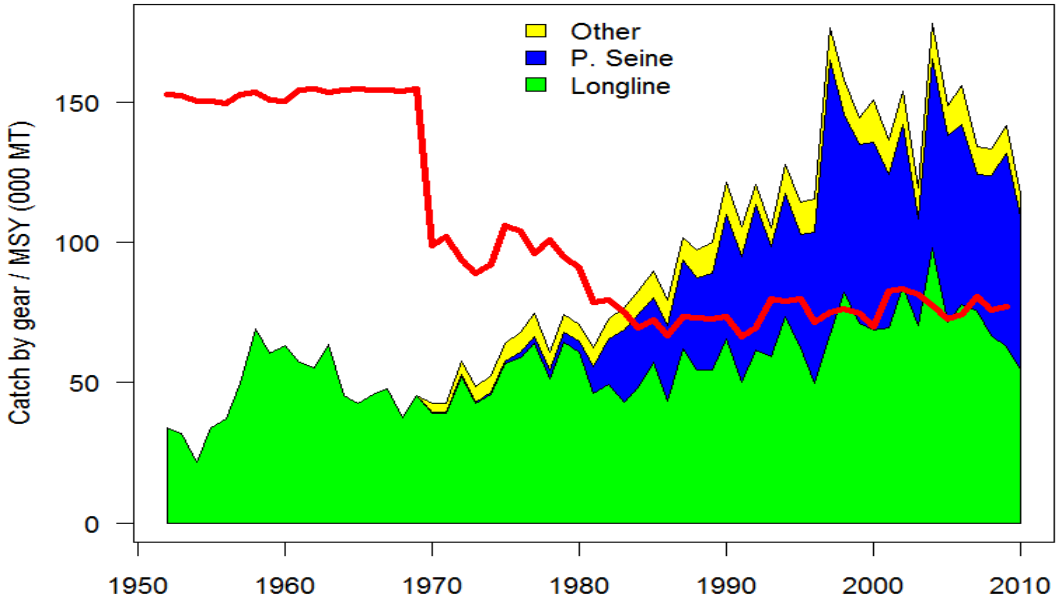

Figure 3: History of the annual estimates of *MSY* and *FMSY* (compared with annual catch split into three sectors
Source: Davies et al. 2011

WCPO Bigeye Tuna Fisheries

Longline bigeye catches in the WCPO have fluctuated between 70,000–96,000 mt since 1999, but the 2010 and 2011 catch (68,777 mt and 67,699, respectively; 52% and 43 % of the total WCP-CA bigeye catch) are the lowest since 1997 (see Figure 4; Williams and Terawasi, 2012). The provisional WCPO purse seine bigeye catch for 2011 was estimated to be 77,095 mt (51 % of total WCP-CA bigeye catch) which among the highest on record (see Figure 4). The estimated purse-seine catch of bigeye tuna may be probably higher than indicated because logsheet-reported catch from associated schools contain a significant amount of yellowfin and bigeye tuna misreported as skipjack tuna (Williams and Terawasi, 2011). The WCPO pole-and-line fishery has generally accounted for between 2,800–6,700 mt (2-4%) of bigeye catch annually over the past decade (see Figure 4). The "other" category, representing various gears in the Philippine, Indonesian16 and Japanese domestic fisheries, has accounted for an estimated 4,000–8,000 mt (3–4% of the total WCP–CA bigeye catch) in recent years (see Figure 4; Williams and Terawasi, 2012).

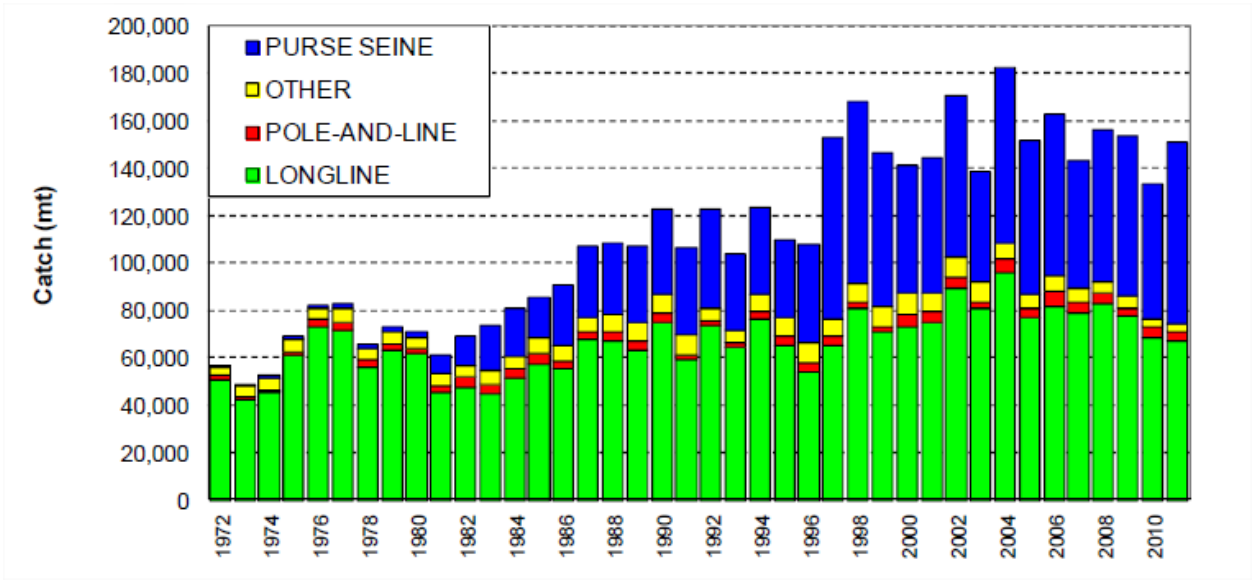

Figure 4: Total annual catch of bigeye tuna from the WCP-CA by fishing method, 1952-2010
Source: Williams and Terawasi 2012

The impact of the purse seine fishery on the bigeye stock is substantial because of the number of juvenile fish killed by purse seine vessels as compared to the primarily adult bigeye taken by longline vessels. It is estimated that the purse seine fishery catches 25 times as many bigeye as the longline fishery (see Figure 3 below).

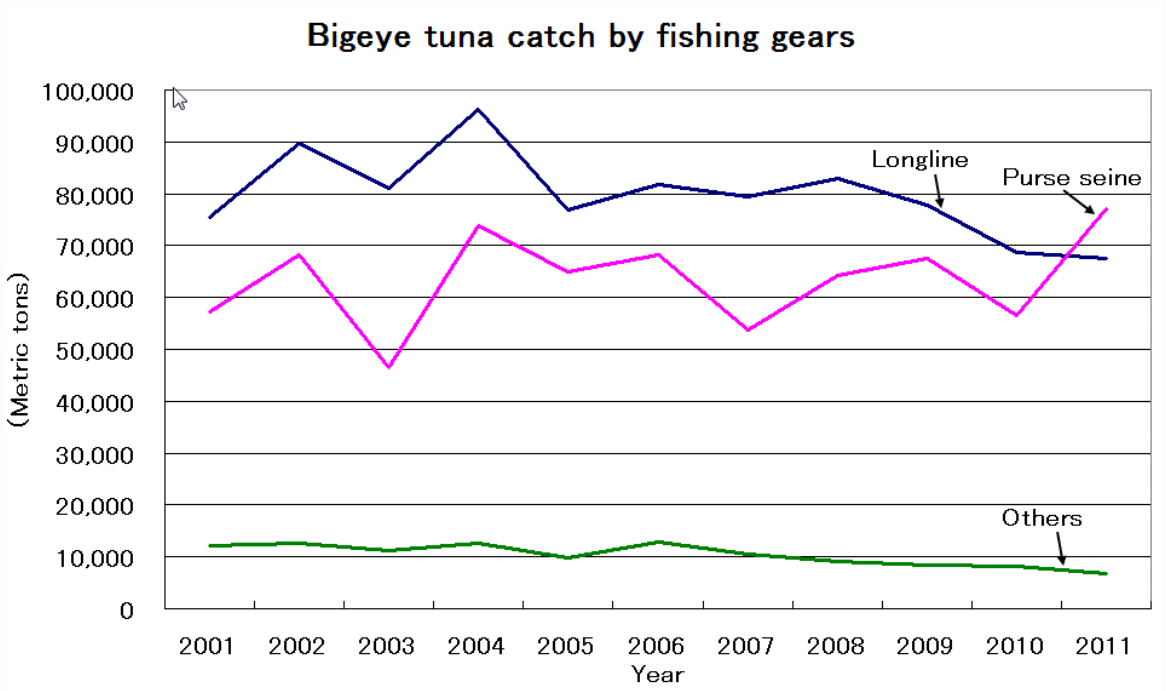

Figure 5: Volume of bigeye catch by weight in the WCPO
Source: http://oprt.or.jp/eng//wp-content/uploads/2013/02/bigeye%20catch%20by%20fishing%20gears_2.gif
Based on data from: WCPFC SC8-2012/ST IP-1, Table 1, 3, 5

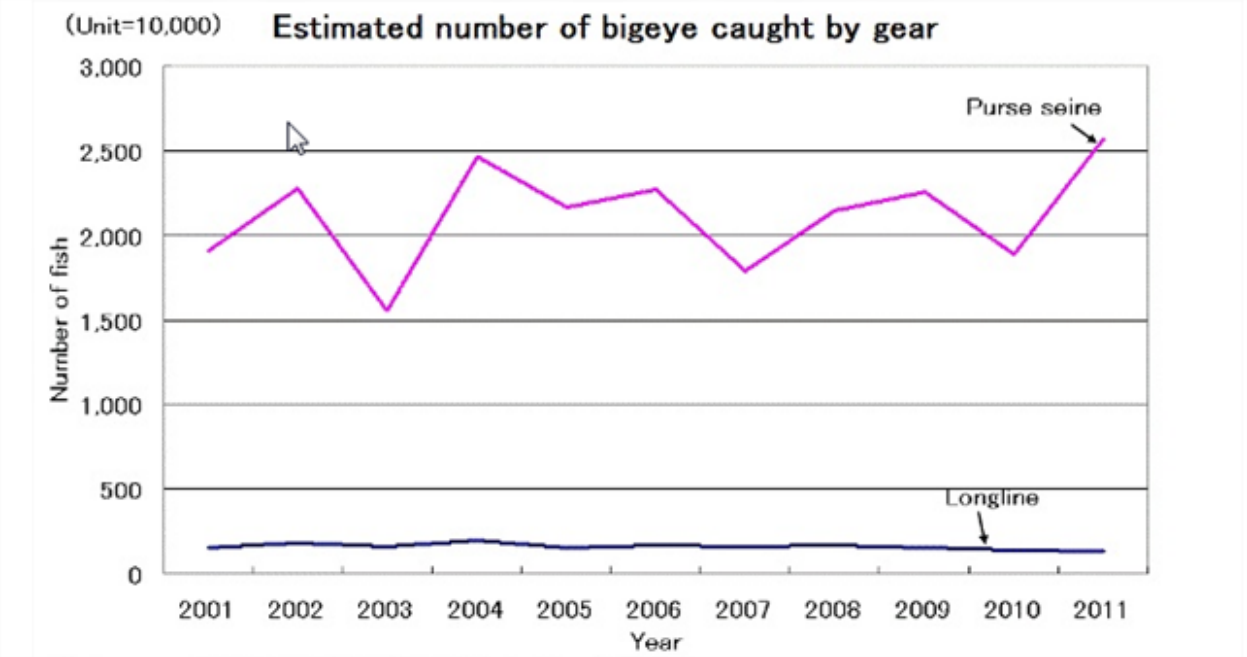

Figure 6: Number of bigeye caught by gear, purse seine vs longline, in the WCPO
Source: http://oprt.or.jp/eng//wp-content/uploads/2013/02/bigeye%20catch%20by%20fishing%20gears_2.gif
Based on data from: WCPFC SC8-2012/ST IP-1, Table 1, 3, 5

Western and Central Pacific Fisheries Commission

To address the overfishing of bigeye in the Western and Central Pacific Ocean (WCPO), the WCPFC agreed in 2008 on: "Conservation and Management Measure for Bigeye and Yellowfin Tuna in the Western and Central Pacific Ocean" (CMM 2008-01) with the overall objective to reduce fishing mortality on bigeye tuna by 30 percent in the WCPO in the three year period from 2009-2011. CMM 2008-01 had provisions applicable to purse seine, longline, and other fisheries operating in the WCPO. Under CMM 2008-01, the purse seine fisheries were subject to a two month FAD closure in 2009, and a three month FAD closure in 2010 and 2011. Longline fisheries that caught more than 2,000 mt of bigeye in 2004 were to reduce their longline catches by 10% from their 2004 catch in each of the years 2009, 2010, and 2011, for a total 30 % reduction in catch. However, CMM 2008-01 also provided that fresh fish longline bigeye fisheries landing less than 5,000 mt of bigeye per year, only need to reduce longline bigeye catch by 10% of the 2001-2004 average, or in the case of the U.S. only the 2004 level. Under CMM 2008-01, 2004 is the baseline year for the U.S. WCPO longline limit, because the Hawaii longline fishery was significantly restricted from 2001-2004 due to closures resultant from environmental litigation related to sea turtle interactions.

Table 1: Reported longline catches (mt) of bigeye in the WCPO, by flag, 2001-2010

CCM	2001	2002	2003	2004	Av. 2001-2004	CMM 2008-01 Attach. F	CMM 2008-01 (Curr.)	2005	2006	2007	2008	2009	2010	2010 (excl. SIDs)	CMM 2008-01 2010 limits
AMERICAN SAMOA	75	196	242	227	185	185		134	181	218	132	249	491		
AUSTRALIA	1,307	1,002	1,024	892	1,056	1,056	2,000	791	499	1,008	1,027	726	458	458	2,000
BELIZE	1,322	812	782	297	803	803	803	425	254	158	89	43	89	89	803
CHINA	2,227	2,312	8,965	11,748	6,313	9,314	11,748	7,520	13,378	10,535	10,798	15,289	13,924	13,924	11,748
CHINESE TAIPEI	12,435	16,645	14,429	20,992	16,125	15,854	16,125	15,498	14,295	14,760	15,229	13,319	11,552	11,552	12,900
COOK ISLANDS	1	56	204	394	164	164		220	166	238	292	217	192		
EUROPEAN UNION	0	0	0	42	11	11	2,000	17	62	62	77	46	15	15	2,000
FSM	651	759	656	542	652	652		182	172	1,395	970	1,395	899		
FIJI	662	853	889	1,254	915	915		423	771	556	671	689	532		
FRANCE (FRENCH POLYNESIA)	745	649	439	502	584	584		606	498	478	490	587	436		
FRANCE (NEW CALEDONIA)	128	189	142	90	137	137		76	35	53	63	51	44		
INDONESIA	942	1,470	2,168	2,192	1,693	8,413	2,192	2,202	3,011	1,993	6,704	4,000	1,221	1,221	2,000
JAPAN	27,466	29,574	26,110	29,248	28,100	28,100	28,100	23,021	25,685	26,076	19,534	16,650	14,565	14,565	22,480
KIRIBATI	0	0	1	0	0	0		0	0	0	44	0	3		
MARSHALL ISLANDS	0	0	0	1	0	0		0	0	3	375	381	257		
NAURU	6	3	10	0	5	5		0	0	0	0	0	0		
NEW ZEALAND	481	201	204	177	266	266	2,000	175	177	213	133	253	131	131	2,000
NIUE	0	0	0	0	0	0		10	22	18	1	10	4		
PALAU	21	1	1	7	8	8		0	0	0	0	0	0		
PAPUA NEW GUINEA	240	318	390	399	337	335		237	216	111	201	128	39		
PHILIPPINES	59	59	59	59	59	343	2,000	59	59	59	59	59	59	59	2,000
REPUBLIC OF KOREA	22,172	28,533	17,151	17,941	21,449	21,499	21,449	15,622	12,489	10,054	17,001	15,231	13,862	13,862	17,159
SAMOA	185	137	110	104	134	134		64	128	101	106	117	108		
SENEGAL	0	0	0	0	0	0		0	3	2	0	0	0	0	
SOLOMON ISLANDS	187	401	385	294	317	476		3	0	0	0	0	412		
TONGA	191	215	94	40	135	135		125	117	129	81	38	24		
USA	2,418	4,396	3,618	4,181	3,653	4,181	4,181	4,462	4,381	5,381	4,649	3,741	3,576	3,576	3,763
VANUATU	17	396	841	1,862	779	779		1,558	1,651	2,122	860	1,300	2,060		
VIETNAM	0	0	0	0				0	0	0	0	0	2,441		
Total	73,938	89,177	78,914	93,485	83,879	94,349	92,598	73,430	78,250	75,723	79,586	74,519	67,394	59,452	78,853

Source: WCPFC8-2011-IP-11 Rev. 1.

At its eighth meeting (August 2012) the WCPFC Science Committee reviewed the effectiveness of CMM 2008-01 and made the following conclusions:

- despite FAD closure, total purse seine FAD sets made in 2011 was a record high, due to high FAD set ratio outside of the FAD closure and increased purse seine effort overall (highest on record; 30 % higher than 2001-2004 average).
- total purse seine catch of bigeye in 2011 was the highest on record (77,095 mt); only 2nd time that purse seine catch had exceeded the longline catch;
- longline catch of bigeye tuna in 2011 is 24% lower than the 2001- 2004 level. The longline catch in 2010 was 30% lower in 2010 than the 2001-2004 average.
- under 2010 levels bigeye F/FMSY declines and is at a projected level of 0.96 in 2021. This is driven by several factors: the lower than usual FAD use in 2010, the lower longline catches, and a large (30%) reduction in reported catches from the domestic fisheries of Indonesia and the Philippines. For the scenario approximating 2011 fishery conditions, F/FMSY stabilizes at a projected level of 1.29.
- the reduction in purse seine FAD effort in 2010 has the greatest effect in terms of removing overfishing (67.4% of overfishing removed) followed by the reduction in longline catch in 2010 (34.7% of the overfishing removed).

In 2012, the WCPFC adopted an interim measure (2012-01) to extend the majority of the provisions and establishes a goal of reducing bigeye tuna mortality to a level no greater than F/Fmsy $\leq$ 1, through a step-by-step approach through 2017. This measure generally maintains the longline catch limits established in CMM 2008-01 for 2012, in recognition that the longline

fishery has reduced its contribution to bigeye fishing mortality by approximately 24% (See Table 2). The 2012 measure also requires a 4 month purse seine FAD closure in the WCPO from July-October. The WCPFC is expected to consider a longer term, more comprehensive tropical tuna conservation and management measure at its 10th Regular meeting in December 2013.

Table 2: Longline bigeye catch limits by flag under CMM 2012-01

CCMs	CMM 2012-01 limits
AMERICAN SAMOA	
AUSTRALIA	2,000
BELIZE	803
CHINA	10,673
COOK ISLANDS	
EUROPEAN UNION	2,000
FIJI	
FRENCH POLYNESIA	
NEW CALEDONIA	
FSM	
GUAM	
INDONESIA	5,889
JAPAN	19,670
KIRIBATI	
MARSHALL ISLANDS	
NAURU	
NEW ZEALAND	2,000
NIUE	
NORTHERN MARIANA ISLANDS	
PALAU	
PAPUA NEW GUINEA	
PHILIPPINES	2,000
REPUBLIC OF KOREA*	15,014
SAMOA	
SOLOMON ISLANDS	
CHINESE TAIPEI*	11,288
TOKELAU	
TONGA	
TUVALU	
USA	3,763
VANUATU	
WALLIS and FUTUNA	

Note: * agreed to a voluntary 2% reduction from listed levels in 2013.

A major concern in the region is China's rapid expansion in its longline fleet and catches of bigeye as well as Southern Albacore (See Figure 5).

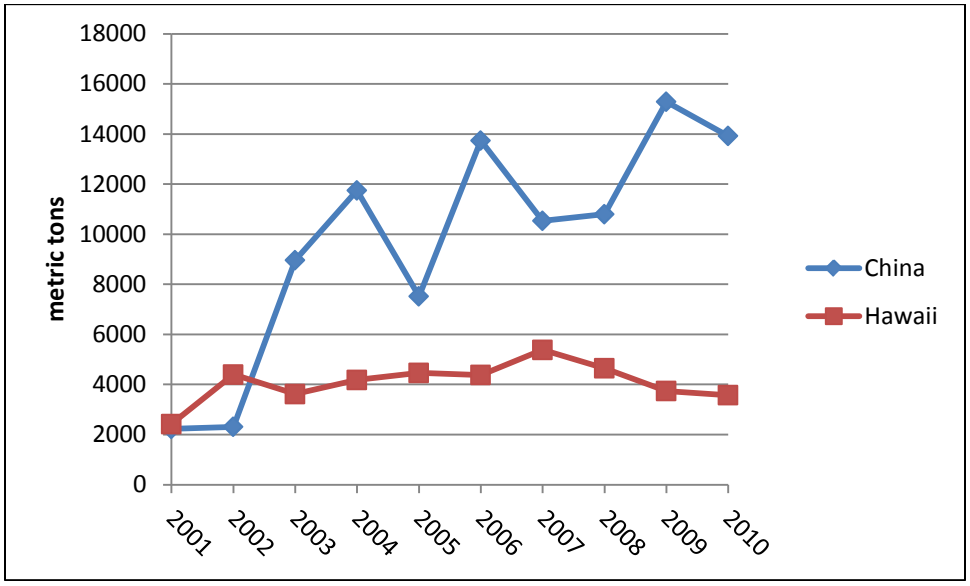

Figure 5: Trend in WCPO longline bigeye catches by Hawaii longline vessel and China-flagged longline vessels, 2001-2010.
Source: WCPFC8-2011-IP-11 Rev. 1.

Bigeye catches of the Hawaii longline fishery

The recent bigeye catch of the Hawaii longline fishery's contribution to the WCPO, EPO and total Pacific bigeye catch is shown in Table 3 (note that Table 3 includes all US longline caught bigeye landed in Hawaii, include vessels with American Samoa longline limited entry permits). The Hawaii longline fishery represents about 3% of the WCPO bigeye catch. In the Eastern Pacific, the Hawaii longline fishery forms about 1% of the total bigeye catch. In the Pacific as a whole, the Hawaii fishery accounts for just over 2% of the bigeye catch.

Table 3: Longline and purse seine bigeye catch in the WCPO, EPO and combined, with percent contribution by Hawaii longline fishery, weight is metric tons.

		WCPO			
Year	**Longline**	**Purse seine**	**Total**	**HI WCPO***	**Hawaii as % WCPO**
2007	79,371	53,711	143,498	5,599	3.90%
2008	83,003	64,327	156,369	4,781	3.06%

2009	77,826	67,629	153,779	3,990	2.59%
2010	68,777	56,558	133,420	4,064	3.05%
2011	67,599	77,095	151,533	4,742	3.13%
mean	75,315	63,864	147,720	4,635	3.15%
		EPO			
	Longline	**Purse seine**	**Total**	**HI-EPO***	**Hawaii as % EPO**
2007	29,928	63,450	93,378	182	0.20%
2008	26,152	75,028	101,180	1,076	1.06%
2009	32,210	76,799	109,009	738	0.68%
2010	35,866	57,752	93,618	1,319	1.41%
2011	25,216	56,526	81,742	706	0.86%
mean	29,874	65,911	95,785	804	0.84%
		Total			
	EPO	**WCP-CA**	**Total**	**HI Total ***	**Hawaii as % Total**
2007	93,378	143,498	236,876	5781	2.44%
2008	101,180	156,369	257,549	5857	2.27%
2009	109,009	153,779	262,788	4728	1.80%
2010	93,618	133,420	227,038	5383	2.37%
2011	81,742	151,533	233,275	5448	2.34%
mean	95,785	147,720	243,505	5,439	2.24%

* Includes all longline bigeye landings in Hawaii, including duel AS and HI longline permitted vessels and vessels operating under the ASG/HLA arrangement.
Source: SPC Tuna Yearbook, 2012; Calculations: WPFMC unpublished data.

The Hawaii longline fishery is not the biggest US flagged vessel contribution to bigeye mortality in the WCPO. The US purse seine fishery catches more bigeye tuna by volume and number than the Hawaii longline fishery. The volume of bigeye caught by the US purse seine fleet in the WCPO is provided in Figure 6.

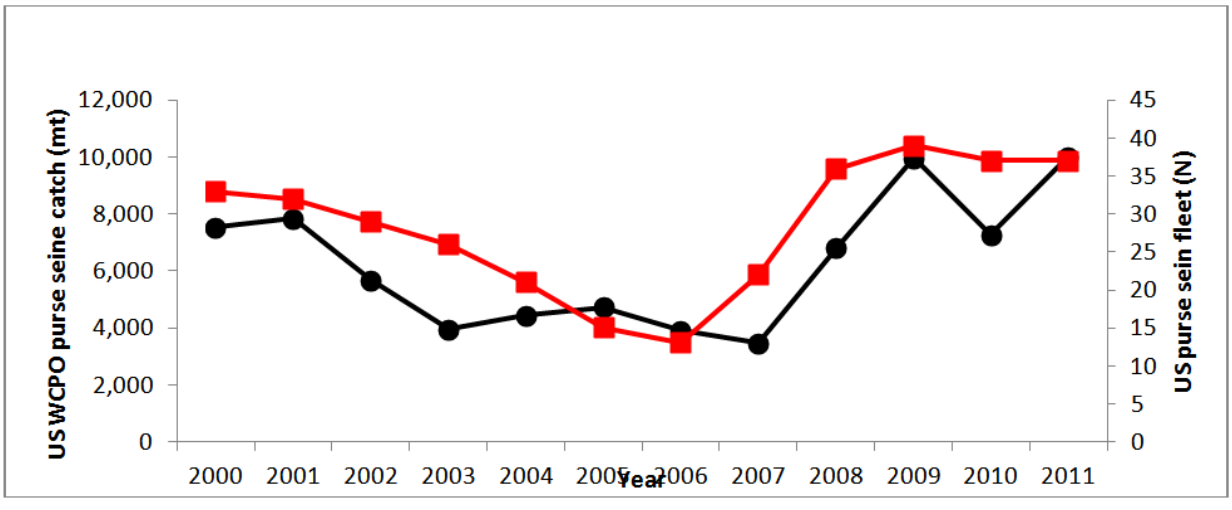

Figure 6: Volume (mt) of estimated bigeye catches by US purse fleet in WCPO, 2000-2011
Note: graph also includes the number of US purse seine vessels operating in WCPO during period.

The volume of bigeye landed in Hawaii by US longline vessels is shown Figure 7.

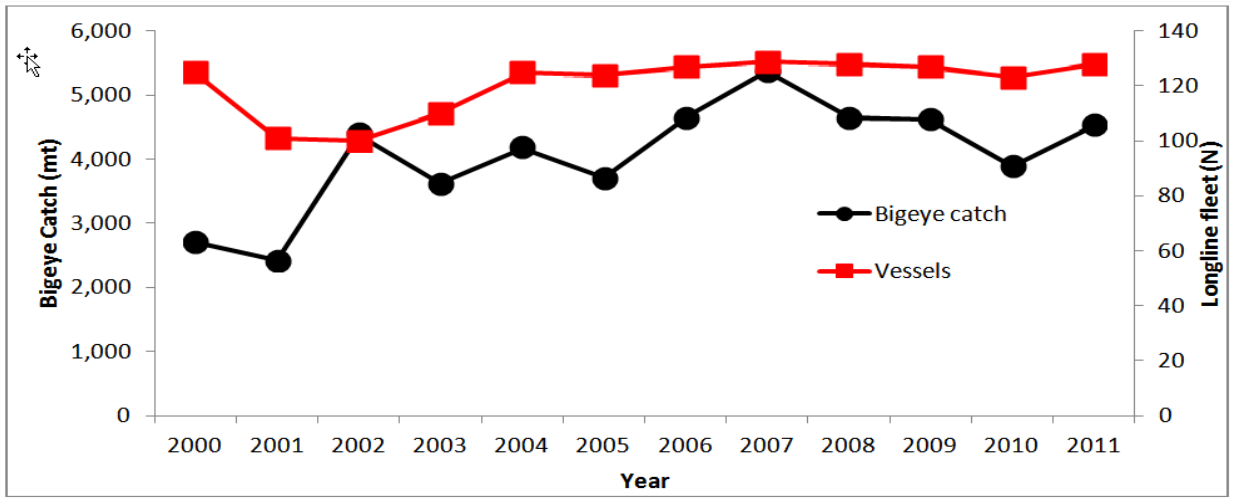

Figure 7: Volume (mt) of bigeye landed by US longline vessels into Hawaii, 2000-2011
Note: catch volume includes bigeye assigned to American Samoa under the existing ASG/HLA arrangement and by dual-permitted American Samoa and Hawaii longline vessels. The number of US longline vessels operating out of Hawaii in the period is also listed in graph.

US Territories and Responsible Fisheries Development

As mentioned, the US Participating Territories to the WCPFC, which are grouped with the Small Island Developing States (SIDS) under Article 30 of the WCPFC convention, were provided separate and different longline bigeye catch limits under CMM 2008-01.[3] First, the Territories are each provided an annual catch limit of 2,000 mt of bigeye in years 2009, 2010 and 2011.[4] These catch limits are independent of the catch limit otherwise applicable to the U.S. and reportable to the WCPFC on an annual basis.[5] Second, the annual bigeye tuna catch limits do not apply to the Territories if they are undertaking responsible development of their domestic fisheries.[6] Similar to bigeye, the Territories and SIDS are not subject to WCPO catch or effort limits for pelagic species such as swordfish, yellowfin tuna, and albacore tuna if they are undertaking responsible fisheries development. In 2012, the WCPFC did not provide any catch

[3] Language is consistently applied in WCPFC conservation and management measures that such measures shall not prejudice the legitimate rights and obligations of Small Island Developing State and Participating Territories in the Convention Area who may wish to pursue responsible fisheries development
[4] Paragraph 32 of CMM 2008-01. These limits were maintained for 2012.
[5] The annual U.S. WCPO longline bigeye catch limit, as established by CMM 2008-01, is 3,763 mt (74 FR 63999).
[6] Paragraph 34 of CMM 2008-01. These limits were maintained for 2012.

bigeye longline catch limits applicable to the Participating Territories or SIDS, meaning their bigeye catches are not restricted under CMM 2012-01.

Within the WCPFC, there is no definition of what it means to be undertaking responsible fisheries development. From the Council's perspective, responsible fisheries development involves enhancing fisheries infrastructure, promoting fishing capacity that corresponds to the sustainability of the harvested resource and associated ecosystem, reducing underutilization, prevent overcapacity, increasing the selectivity of fishing gear and fishing efficiency, and ensuring appropriate monitoring, control, and surveillance of fishing activities.

The Territories are interested in responsibly developing fisheries (e.g. pelagic longline and troll/handline) for bigeye and other pelagic species, but existing barriers such as a lack of vessel capacity, transportation, infrastructure, and access to markets have been limiting factors (AECOS 1984; ASEAC 2002; Miller 2001; Bartram and Kaneko 2009). Examples of projects that would serve to enhance fisheries development are found in the Marine Conservation Plans (MCPs) of the Territories, which have been approved by the Secretary of Commerce pursuant to Section 204(e)(4) of the MSA. Under the Council's Pelagics FEP, requirements already exist for fisheries in the Territories for monitoring and control of fishing vessels including logbooks, VMS, observers, spatial management, gear identification, and measures to reduce protected species interactions.

American Samoa

In American Samoa, there is a longline fishery that primarily targets albacore in the EEZ to sell (frozen) to the local cannery.[7] In 2002, the Council recommended a limited entry program for the American Samoa longline fishery and in 2005, NMFS implemented the permitting system. The longline fishery in American Samoa experienced a rapid increase in participation in the late 1990's that has since declined, and also shifted from primarily as small-vessel (less than 50 ft) fishery to a large vessel (over 50ft) fishery. For example, in 2000, there were approximately 65 small longline vessels active in American Samoa, but in 2009 and 2010, only one of 28 active longline vessels in American Samoa was a small vessel. Some of larger vessels that fish out of American Samoa also hold Hawaii longline limited entry permits and fish for bigeye out of Hawaii during certain periods of the year. The American Samoa-based longline fleet fishing out of American Samoa catches approximately 200-400 mt of bigeye per year, which has been reported to the WCPFC by NMFS.

The American Samoa-based U.S. longline fleet relies on the cannery as its only market, so there is a need to responsibly diversify this fishery and facilitate revival of the once active small vessel fleet. The development of a sustainable and multifaceted fishery sector could help reduce the economic impacts facing American Samoa. In 2011, Tri Marine began fresh fish export operations for tuna and bill under a subsidiary partnership called Samoa Tuna Processors at the facility previously occupied by Chicken of the Sea. Samoa Tuna Processors is planning to begin conducting tuna canning operations in 2014.

[7] Currently, Starkist operates a cannery in American Samoa. TriMarine has announced it will begin tuna canning operations at the facility, which was previously occupied by Chicken of the Sea, in 2014.

American Samoa seafood marketing potentials were assessed by TEC, Inc. (2007). Three scenarios for new development directions identified by TEC represent points along a spectrum of possible futures for American Samoa's longline fishery. New Direction 1 emphasizes the potential for fresh export, particularly of high quality bigeye tuna, via air cargo to Hawaii and other US markets. New Direction 2 emphasizes processing pelagic species (e.g. swordfish) into value-added products for freezing and export via ocean cargo. New Direction 3 emphasizes close cooperation through a longline fishermen's association or cooperative to process and market canned or pouched albacore products in oversea markets under an American Samoa brand. In 2009, a preliminary responsible fisheries development plan was completed for the American Samoa longline fishery, and in that plan, all three directions were found to be components of responsible fisheries development, but also dependent on several projects to overcome existing barriers (Bartram and Kaneko 2009).[8] Existing barriers include limited air freight, lack of fish processing and cold storage facilities, limited longline vessel dockage in Pago Pago Harbor, fish handling and HACCP training, and product development.

Commonwealth of Northern Mariana Islands

CNMI has 50-100 small pelagic and bottomfishing vessels. In 2009, an emerging longline fishery began operating out of CNMI with two vessels targeting bigeye, yellowfin tuna, and other pelagic species. In 2012, however, these vessels ceased operations. In the 1980's, CNMI used to be the base of several U.S. purse seine vessels, but those operations ceased in that decade. CNMI's local tourism market coupled with its close proximity to Guam and large Asian markets make responsible fisheries development a key area for economic growth. Fisheries development needs for CNMI include longline vessel capacity, large vessel docking space, fish processing and cold storage facilities, fish handling and HACCP training, and marketing development. According to Governor Fitial in his 2010 state of the Commonwealth report to the CNMI legislature, the CNMI economy is in severe disarray.[9] Governor Fitial mentioned in his report that the predicted effect of the U.S. federalization of CNMI minimum wage rates and travel visa requirements would result in a loss of about 44 percent of CNMI's total gross domestic product, 60 percent of its jobs, and 45 percent of its real personal income by 2015. He also stated the CNMI is now experiencing these adverse economic effects were that are projected by 2015.[10]

Guam

Guam currently has hundreds of small scale fishing vessels that troll for pelagics and bottomfish using handline methods. There is one recently FEP permitted longline vessel on Guam, but it is currently inactive. Guam also used to homeport several U.S. purse seine vessels, but that ceased in the late 1980's. Due to its strategic location and regional air service hub, Guam also used to be a principal transshipment port for many foreign longline vessels, but the numbers of foreign vessels port calls to Guam has significantly decreased over recent years. The decline in foreign port calls is believed to be linked to the U.S. Shark Finning Prohibition Act and landing agreements between foreign vessels and neighboring Pacific Island Countries that restrict foreign

[8] See http://www.wpcouncil.org/pelagic-fisheriestoday.html
[9] http://pidp.eastwestcenter.org/pireport/2011/January/01-03-03.htm
[10] Ibid.

vessels landing in Guam. Due to its history as a transshipment port, Guam does have cold storage facilities, but is lacking fish processing facilities. A fisheries development need in Guam is local capital for purchasing or leasing larger vessels that could allow local Guam fishermen to participate in larger scale, offshore tuna fisheries. Guam is close to large Asian markets, serviced by daily from flights to and from Honolulu, and has an expanding local population and markets related to tourism and the U.S. military buildup.

Responsible Fisheries Development and Bigeye Tuna Stock Status

Responsible fisheries development involves establishing appropriate catch limits for species subject overfishing (e.g. bigeye). Without catch limits for the Territories, there is potential for unrestricted bigeye catches attributable to the Territories if fishing is increased over current levels. This would be contrary to MSA management objectives to end overfishing of bigeye tuna.

Establishing annual catch limits for each of the three Territories does not mean that the entire total amount of bigeye would be caught. For example, the Council has already recommend to restricted the total amount a Territory could annually assign under arrangement(s) with FEP permitted vessels to 1000 mt. Because Hawaii is the largest U.S. market in the region, and interest in Territory arrangements has come from Hawaii longline vessels, it is predicted that the majority of fishing under Territory fishing arrangements will likely occur on the high seas adjacent to the U.S. EEZ of the Hawaii Archipelago. The area where fishing is expected to occur in the near term is in north-central Pacific Ocean. Primarily, this area is within Region 2 of the WCPO bigeye tuna stock assessment, and is where fishing mortality on bigeye is significantly lower than along the equator. Therefore, any increases in fishing in this area would have a proportionately lower impact to bigeye fishing mortality than compared to other regions with much higher fishing pressure (See Figure 8).[11]

In addition, supporting fisheries development in the Territories is important to develop sustainable and responsible longline fisheries to fill U.S. markets. For the last decade, the US production of tuna has been less than foreign imports of tuna, with the balance increasing in recent years (See Figure 8).

[11] The north-central Pacific Ocean includes Region 2 and the northern third of Region 4 which are statistical areas used in the spatially disaggregated WCPO bigeye stock assessment.

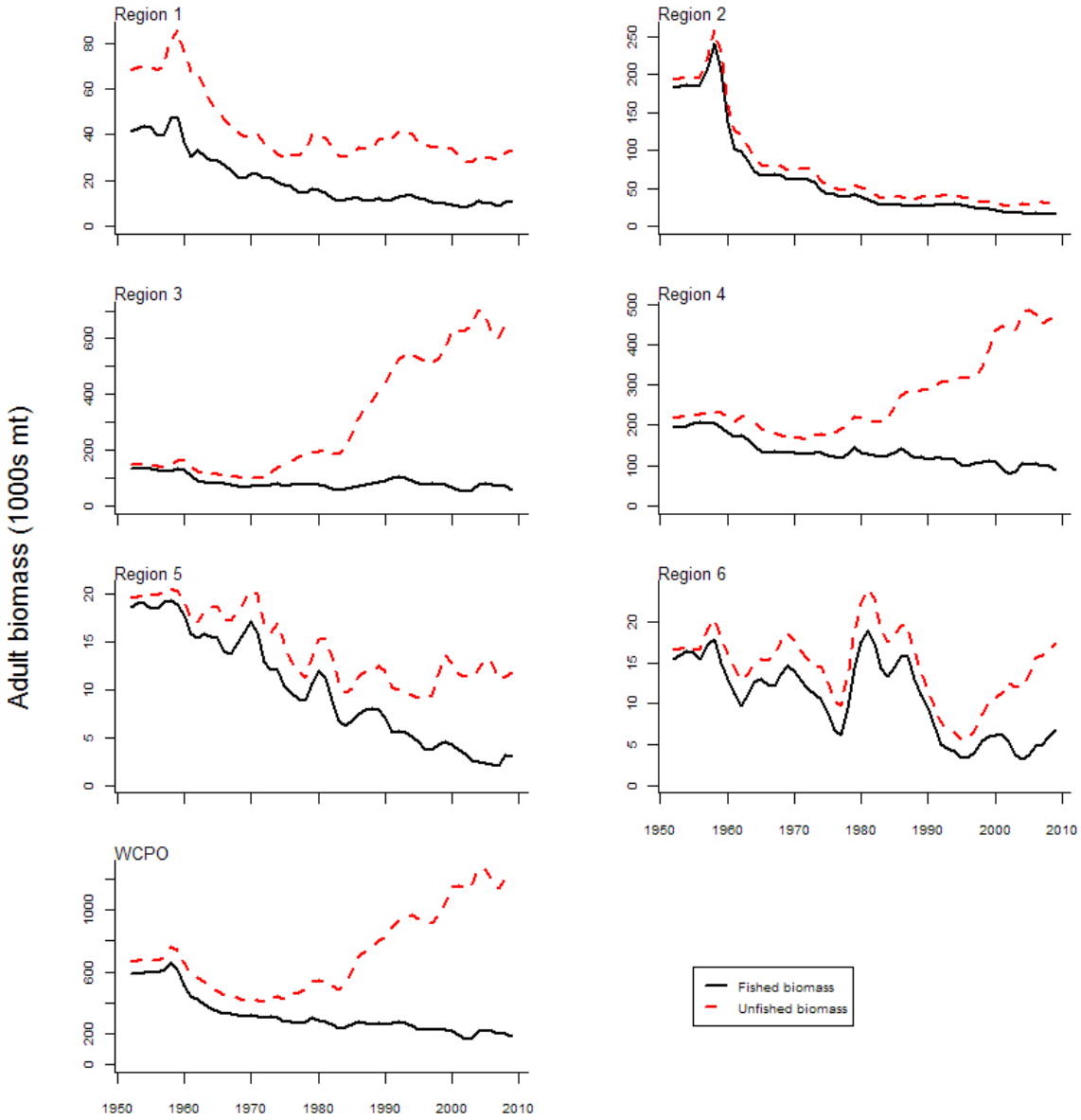

Figure 7: Comparison of the estimated adult biomass trajectories (lower heavy lines) with biomass trajectories that would have occurred in the absence of fishing (upper dashed lines) for each region and for the WCPO (base case model).
Source: Hoyle et al. 2010.

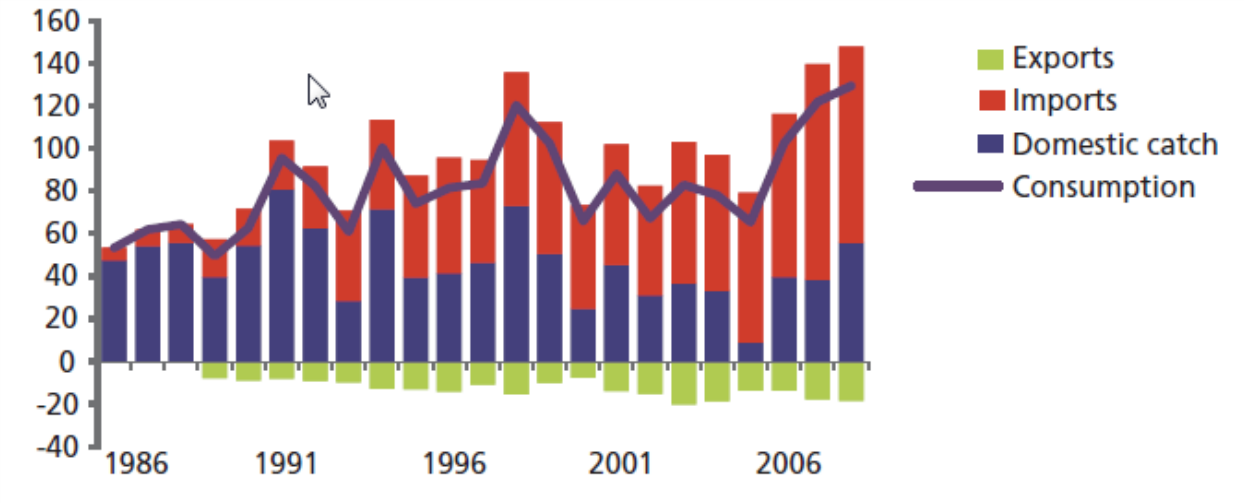

Figure 9: Domestic US catch, foreign import, and export (in thousand tons) of fresh and frozen tuna other than for canning purposes, 1986-2008
Source: Miyake et al. 2010

The issue of transferred effects is also important in the discussion of impacts to target and non-target species. The Hawaii market for fresh and frozen tuna is substantial and cannot be satisfied with the current amount of domestic landings. The strict regulation of the annual catch limits for the Hawaii-based longline fleet has left the Hawaii market wide open for foreign imports. If the Hawaii based longline fishery reaches its annual catch limit by the fall in any one year and is prohibited in fishing in the WCPO, it is believed that foreign imports will supply the market demand in Hawaii. The effect of strictly regulating the Hawaii based longline fleet is expected to represent the same or more amount of fishing for bigeye by foreign interest to satisfy the Hawaii market. Because foreign longline fisheries are less monitored and less regulated than U.S. longline fisheries, maintaining the supply of highly regulated US caught bigeye into the Hawaii market is important and more environmentally friendly than foreign supplied bigeye. Recent statistics indicate that fresh tuna imports into the US market are up 24% over recent years.