

PETITION FOR RULEMAKING TO PROHIBIT  
PACIFIC BLUEFIN TUNA FISHING



Photo Credit: NOAA

BEFORE THE NATIONAL MARINE FISHERIES SERVICE

APRIL 9, 2014

## Notice of Petition

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## Right to Petition

The right of an interested party to petition a federal agency is a freedom guaranteed by the first amendment: “Congress shall make no law ... abridging the ... right of people ... to petition the Government for redress of grievances.”<sup>1</sup>

Under the Administrative Procedure Act (APA), all citizens have the right to petition for the “issuance, amendment, or repeal” of an agency rule.<sup>2</sup> A “rule” is the “whole or a part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy.”<sup>3</sup>

Petitioner seeks amendment of the highly migratory species fishery management plan (“FMP”) and promulgation of agency rules to prohibit fishing for Pacific bluefin tuna (*Thunnus orientalis*). Specifically, Petitioner requests an amendment to add Pacific bluefin tuna to the list of prohibited species that must be released immediately if caught. 50 C.F.R. § 660.711(a). In the alternative, Petitioner requests that an amendment establish annual catch limits for bluefin tuna and a permanent minimum size requirement to protect age classes 1-2 from fishing mortality. Finally, Petitioner requests an FMP amendment to establish reference points for bluefin tuna to guide science-based management. *See* 50 C.F.R. § 600.310(h)(2)(ii) (requiring status determination criteria).

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<sup>1</sup> U.S. Const., amend. I; see also *United Mine Workers v. Illinois State Bar Ass’n*, 389 U.S. 217, 222 (1967) (right to petition for redress of grievances is among most precious of liberties without which the government could erode rights).

<sup>2</sup> 5 U.S.C. § 553(e).

<sup>3</sup> 5 U.S.C. § 551(4).

In addition, Petitioner requests U.S. recommendations for international action including (1) a high seas moratorium on all fishing, (2) a Pacific-wide minimum size for bluefin tuna catch and (3) a reduction in Pacific bluefin tuna quota for all member countries in order to meet established rebuilding goals.

The National Marine Fisheries Service (NMFS) has the authority to take the requested actions under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).<sup>4</sup> Thus, the petitioner has the right to petition for revision of these rules. NMFS is required to respond to this petition: "Prompt notice shall be given of the denial in whole or in part of a written application, petition, or other request of an interested person made in connection with any agency proceeding."<sup>5</sup> The APA further requires that "within a reasonable time, each agency shall proceed to conclude a matter presented to it."<sup>6</sup>

Further, the APA provides for judicial review of a final agency action.<sup>7</sup> The scope of review by the courts is determined by section 706 of the APA.<sup>8</sup> The APA also permits courts to compel agency action unlawfully withheld or unreasonably delayed.

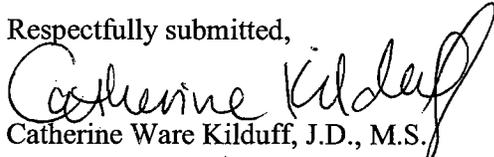
#### **Petitioner**

The Center for Biological Diversity is a nonprofit environmental organization dedicated to the protection of imperiled species and their habitats through science, education, policy, and environmental law. The Center's Oceans Program aims to protect marine life and ocean ecosystems in United States and international waters. The Center has over 675,000 online activists and members. The Center submits this petition on its own behalf and on behalf of its members and staff with an interest in protecting the ocean environment.

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Respectfully submitted,

  
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<sup>4</sup> 16 U.S.C. §§ 1801-1884.

<sup>5</sup> 5 U.S.C. § 555(e).

<sup>6</sup> *Id.* § 555(b).

<sup>7</sup> *Id.* § 704.

<sup>8</sup> *Id.* § 706.

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## A. Executive Summary

Currently, the Pacific bluefin tuna (*Thunnus orientalis*) faces irreversible and irreparable harm from ongoing overfishing. Overexploitation threatens this fish's future, due in large part to an extremely high economic value and expanding global marketplace demand. Best available science indicates that spawning stock biomass levels have dropped to 3.6 percent of unfished levels, and are at or near the historic low. In the United States, small, sporadic landings have become the norm in contrast to early reports of regular bluefin appearances throughout the eastern Pacific.

NMFS recently classified Pacific bluefin tuna as "overfished," triggering specific duties under the Magnuson-Stevens Act. Because NMFS also determined that international management measures in place are inadequate to control overfishing, the Magnuson-Stevens Act section 304(i) requires the Pacific Fishery Management Council recommend national management measures to NMFS by April 8, 2014, one year after receiving the notification.

The Center formally petitions NMFS to take the following actions amending the highly migratory species fishery management plan and implementing regulations:

**(1) Prohibit fishing for Pacific bluefin tuna under 50 C.F.R. § 660.711(a).**

**In the alternative, establish annual catch limits for bluefin tuna and a permanent minimum size requirement to protect age classes 1-2 from fishing mortality.**

**(2) Identify specific values for reference points used to determine if overfishing is occurring or if the stock is overfished, such as maximum fishing mortality threshold and the minimum stock size threshold. 50 C.F.R. § 600.310(h)(2)(ii).**

The Center also requests that NMFS make recommendations to the Secretary of State and Congress regarding international actions to end overfishing in the fishery and rebuild Pacific bluefin tuna populations that include all of the below:

**(1) A high seas moratorium on all fishing,**

**(2) A Pacific-wide minimum size for bluefin tuna catch, and**

**(3) A steep reduction in Pacific bluefin tuna quota for all countries to meet rebuilding targets based on established reference points.**

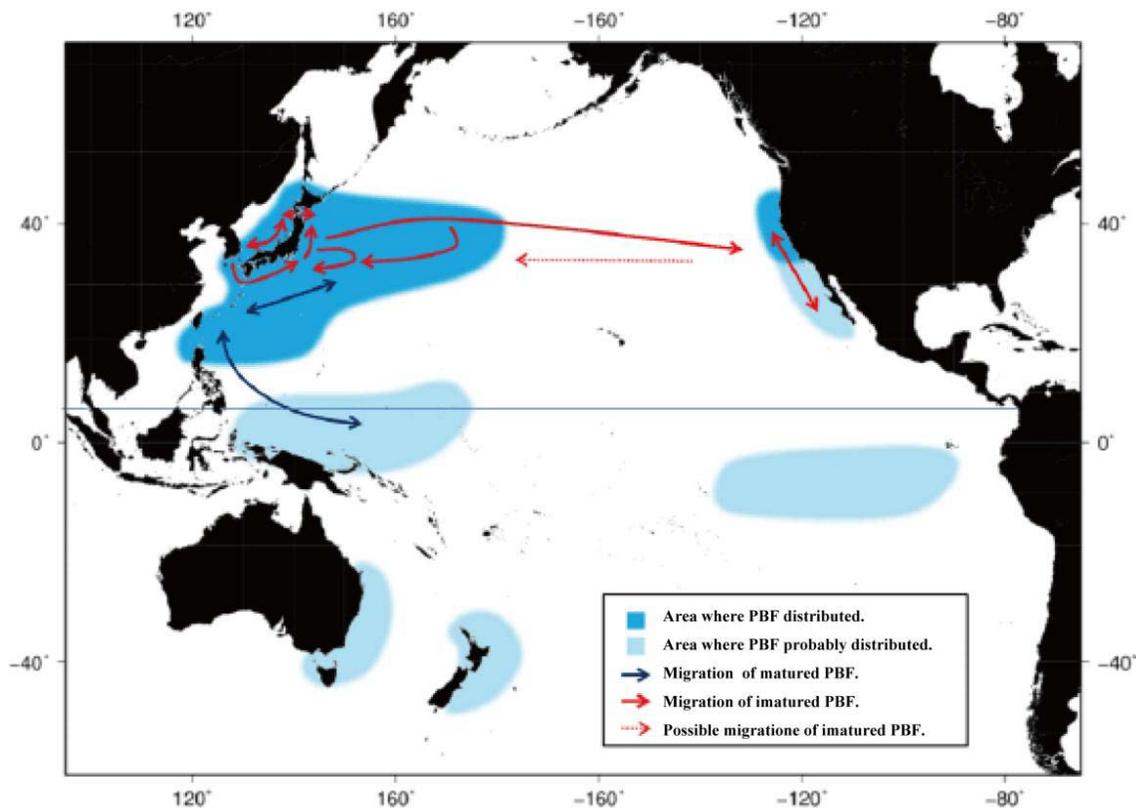
While U.S. catch represents only a small portion of Pacific bluefin tuna caught worldwide, NMFS still has a duty to take the steps it can to slow or reduce overfishing. The drastic potential consequence of failing to act – here, failing to stop the decline or prevent

extinction of Pacific bluefin tuna – makes it more urgent to act now. Rebuilding of Pacific bluefin tuna populations is uncertain and will likely take a long time, but that is all the more reason to take action as soon as possible.

## B. Background

### 1. Pacific bluefin tuna

The Pacific bluefin tuna is a highly migratory pelagic fish, primarily distributed through the North Pacific Ocean, from the East China Sea to the Pacific coasts of the United States and Mexico (Bayliff 1994, ISC 2013).



**Figure 1.** General distribution and migration of Pacific bluefin tuna. Darker areas indicate the main distribution areas. (Source: ISC 2013 Fig. 2-2.)

While many Pacific bluefin tuna remain in the western Pacific (the spawning areas), some migrate east to the western coasts of the United States and Mexico (Bayliff 1994). Even with the great distance between eastern and western Pacific fish, experts believe that only one population of Pacific bluefin tuna exists (Bayliff 1994, Rooker et al. 2001). Eastern Pacific fish travel along the coast of North America, following seasonal peaks in algae and sardines (Domeier et al. 2005, Kitagawa et al. 2007, Boustany et al. 2010). As Pacific bluefin tuna only

spawn in the western Pacific Ocean, most of the bluefin tuna in the eastern Pacific are juveniles, who spend a few years growing, before making the return migration to spawn (ISC 2013).

Climate change may disrupt Pacific bluefin tuna spawning patterns because bluefin spawning is particularly vulnerable to temperature changes, which can affect fish migration and larval survival (Kimura et al. 2010). Pacific bluefin tuna spawn between Japan and the Philippines, in the Sea of Japan south of Honshu (Chen et al. 2006; Tanaka et al. 2007). With spawning success closely linked to water temperature, Pacific bluefin tuna prefer areas with low variability in inter-annual temperatures. Even small variations in egg and larval survival and growth rates could cause significant impacts to populations (Kimura et al. 2010). This is a serious concern for the future success of Pacific bluefin tuna because an ocean model simulation under a climate warming scenario predicts a 3° C increase in temperature by 2100 and, when considering a spawning season between April and June, results in a predicted 36% decline in larval survival due to exposure to lethally warm temperatures (*Id.*). Although research on ocean acidification's effects on tuna is in its infancy, preliminary experiments hatching yellowfin tuna eggs in ocean water of varying pH including current and predicted near future ocean pH (6.9, 7.3, 7.7, and 8.1) showed that decreasing pH – acidification – significantly increased hours until complete hatching (Bromhead et al. 2013).

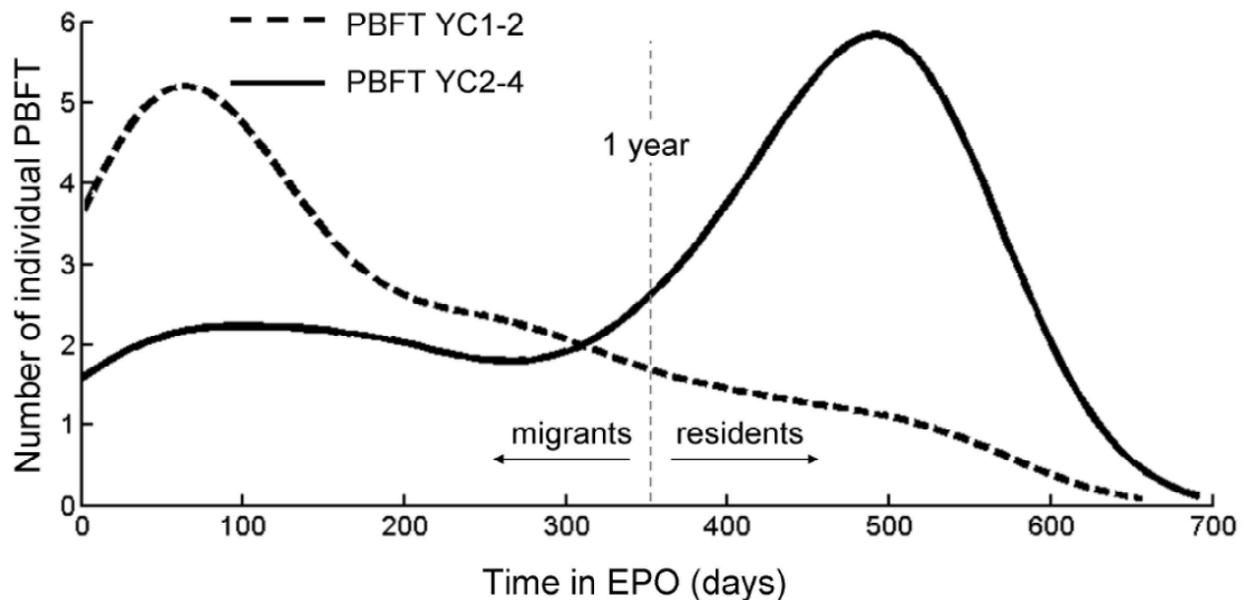
Age of maturity has a large impact on the ability of populations to recover from over-exploitation. Pacific bluefin tuna reaches sexual maturity at approximately 5 years of age and can have a maximum lifespan of 25 years (Tseng and Smith 2012). Species that take several years to reach sexual maturity, like the Pacific bluefin tuna, become particularly vulnerable as many fish are caught before they can reproduce (Hutchings and Reynolds 2004). Ninety percent of eastern Pacific landings occurred on fish between 60 and 100cm, or 1 to 3 years of age, therefore, most fish never had an opportunity to reproduce (IATTC 2010). Furthermore, the fish's overall age affects its reproductive output. As with many fish species, the Pacific bluefin's reproductive output is positively correlated with its overall size. For example, a fish measuring 190 cm would likely produce 5 million eggs, but a fish 250 cm in length would produce 25 million eggs (Sawada et al. 2005; Chen et al. 2006). Accordingly, these older, larger fish have a proportionately greater contribution to overall species productivity than one might imagine.

Pacific bluefin tuna migrate to the California Current System most likely in search of food, reducing migration in years when sardines are abundant off Japan (Polovina 1996). The California current's nutrient-rich waters support sardine, anchovy and small squids which feed predators such as tunas, billfish, seabirds, pinnipeds, sharks and cetaceans. Bluefin tuna movement patterns coincide with seasonal and interannual peaks in upwelling and productivity in the California current (Boustany et al. 2010). During periods where bluefin tuna's presence in the California current is not consistent with upwelling, bluefin tuna may be feeding on prey other than sardines or anchovies, such as squid and pelagic red crabs (*id.*, Madigan et al. 2012). Future research to identify feeding hotspots in the California current will compare a model to estimate energy intake in Pacific bluefin tuna using oceanographic data to predict foraging success in the

California current (Whitlock et al. 2013).

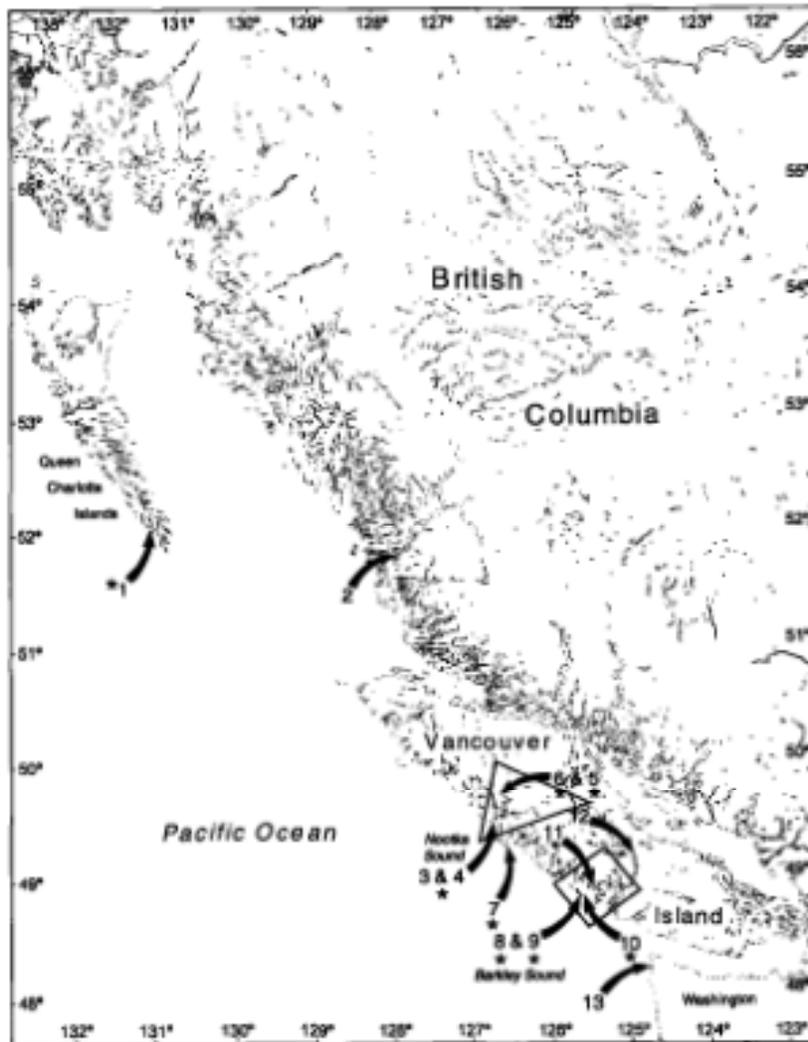
Pacific bluefin tuna migrate to the coast of Mexico and the United States, posing a challenge to management and recovery. While Pacific bluefin tuna seem to be a single genetically mixed stock throughout the Pacific (Tseng and Smith 2012), a portion of the population spends from one to four years in the eastern Pacific Ocean (figure 2, Madigan et al. 2014, Boustany et al. 2010, Block et al. 2011). Because of the repeating and predictable nature of the juvenile bluefin tuna migrations of to the eastern Pacific, bluefin tuna may be more susceptible and vulnerable to fishing pressure than anticipated (Boustany et al. 2010). The 2012 stock assessment assumes the stock is fully spatially mixed and cannot account for regional depletion in the eastern Pacific Ocean (Carruthers 2013).

Failing to account for the impacts of excessive fishing in the eastern Pacific bluefin tuna on immature fish could have undesirable consequences. For example, using a Fukushima-derived radiotracer and isotope analysis Madigan et al. (2014) found that the majority of Pacific bluefin tuna migrate to the eastern Pacific Ocean when ages 1 to 2. Consequently, most larger fish had been in the eastern Pacific Ocean for more than a year (figure 2, Madigan et al. 2014). In other words, fewer large fish were recent migrants. Thus protecting small fish in the eastern Pacific may be the most effective way to increase availability of larger fish in the eastern Pacific. High fishing mortality in the eastern Pacific Ocean also prevents an unknown proportion from spawning, reducing the recovery potential for Pacific bluefin tuna.



**Figure 2.** Estimates of time in the eastern Pacific Ocean for 130 Pacific bluefin tuna. Dashed line (- -) indicates year-class 1-2, solid line (-) indicates year-classes 2-3 and 3-4. Most migrants were small tuna rather than various ages/sizes. Most large fish had been in the eastern Pacific Ocean more than a year. (Source: Madigan et al. 2014, Fig. 3.)

High fishing mortality could wipe out migration behavior altogether if migrating to the eastern Pacific Ocean is learned or heritable. Anecdotal and archeological evidence exists that large (> 160 cm total length (TL), 80 kg) adult bluefin tuna were harvested in the northeastern Pacific until the late 19th century (fig. 3, Crockford 1997). The majority of fish (83%) found in archeological samples were at least 6 years or older, ranging between 160 and 240 cm TL and between approximately 96 to 293 kg in weight, with the youngest fish estimated at 4 years (120 cm TL) and the oldest between 9 and 10 years (240 cm TL) (*Id.*). Crockford concluded from the archeological evidence spanning almost 5,000 years that the occurrence of adult bluefin tuna off the British Columbia coast was longstanding (Crockford 1997).



**Figure 3.** Map showing the locations of archeological sites in the Pacific northwest coast of North America from which bluefin tuna remains have been recovered. (Source: Crockford 1997, figure 1.)

The average length of Pacific bluefin tuna caught in purse seines and in the sport fishery

in the eastern Pacific Ocean ranges between 75 cm (1-year old fish) before the mid-eighties and 85 cm (2-year old fish) in the late 1990s and 2000s (ISC 2013 at 25). In the late 1980s, very large fish around 150-200 cm were caught in the eastern Pacific Ocean (Aires-da-Silva and Dreyfus 2012). This time period also coincided with some of the lowest fishing mortality in the eastern Pacific Ocean because of the decline in the U.S. purse seine fishery (*id.*). The largest recent reported U.S. catch of giant bluefin tuna in the eastern Pacific was made in 1988, when seiners caught an estimated 987 adult bluefin tuna off southern California, including many over 100 kg, some more than 250 kg, and one that broke California records at 458 kg and 271.2 cm TL (Crockford 1997 (citing Foreman and Ishizuka 1990)).

While environmental changes may cause changes in the annual distribution of bluefin tuna, the contribution of overfishing to decline in adult bluefin tuna off the British Columbia coast cannot be ignored. Large declines in the range of pelagic predators like the Pacific bluefin tuna tend to correlate with declines in abundance (Worm and Tittensor 2011). Between 1960 and 1999 – well after significant declines in Pacific bluefin tuna’s population (see figure 5) – the range of Pacific bluefin tuna decreased 25 percent (*Id.*). A spatial dynamic model has shown that for social fish like bluefin tuna, removal of knowledgeable individuals or decreasing individual’s preference for a particular destination can cause abrupt changes in migratory patterns (De Luca et al. 2014). Thus, fishing mortality likely has contributed to both Pacific the decline in bluefin tuna’s range in the eastern Pacific Ocean and truncation of size structure.

#### **i. Status of Pacific bluefin tuna**

Pacific bluefin tuna are severely overfished – the most recent stock assessment estimates a decline of 96.4% of unfished levels (ISC 2013) – and undergoing overfishing. Scientists estimate unfished adult Pacific bluefin tuna biomass to be about 633,468 mt and the current adult biomass to be 22,606 mt, far below the biomass that could produce maximum sustainable yield (124,498 mt) (McInnis 2013). Bluefin tuna has a long history of high commercial value; currently, bluefin tuna rank among the world’s most expensive fish due to the expanding international sushi trade (Collette et al. 2011). This has led to consistent exploitation above sustainable levels.

The Magnuson-Stevens Act – as implemented in accordance with National Standard 1 guidelines (50 C.F.R. § 600.310) and the west coast Highly Migratory Species Fishery Management Plan (“FMP”) – provides the framework by which to establish stock status thresholds and fishing control rules. The National Standard 1 guidelines state that FMPs should include a variety of quantitative stock indicators:

Maximum sustainable yield (MSY): MSY is the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological, environmental conditions and fishery technological characteristics (e.g., gear selectivity), and the distribution of catch among fleets.

MSY fishing mortality rate ( $F_{MSY}$ ): The fishing mortality rate that, if applied over the long term, would result in MSY.

MSY stock size ( $B_{MSY}$ ): The long-term average size of the stock or stock complex, measured in terms of spawning biomass or other appropriate measure of the stock's reproductive potential that would be achieved by fishing at  $F_{MSY}$ .

Status determination criteria (SDC): Quantifiable factors or their proxies that are used to determine if overfishing has occurred, or if the stock or stock complex is overfished. "Overfished" relates to biomass of a stock or stock complex, and "overfishing" pertains to a rate or level of removal of fish from a stock or stock complex. SDC are:

Maximum fishing mortality threshold (MFMT): The level of fishing mortality ( $F$ ), on an annual basis, above which overfishing is occurring. The MFMT or reasonable proxy may be expressed either as a single number (a fishing mortality rate or  $F$  value), or as a function of spawning biomass or other measure of reproductive potential.

Overfishing limit (OFL): The annual amount of catch that corresponds to the estimate of MFMT applied to a stock or stock complex's abundance and is expressed in terms of numbers or weight of fish. The OFL is an estimate of the catch level above which overfishing is occurring.

Minimum stock size threshold (MSST): The level of biomass below which the stock or stock complex is considered to be overfished.

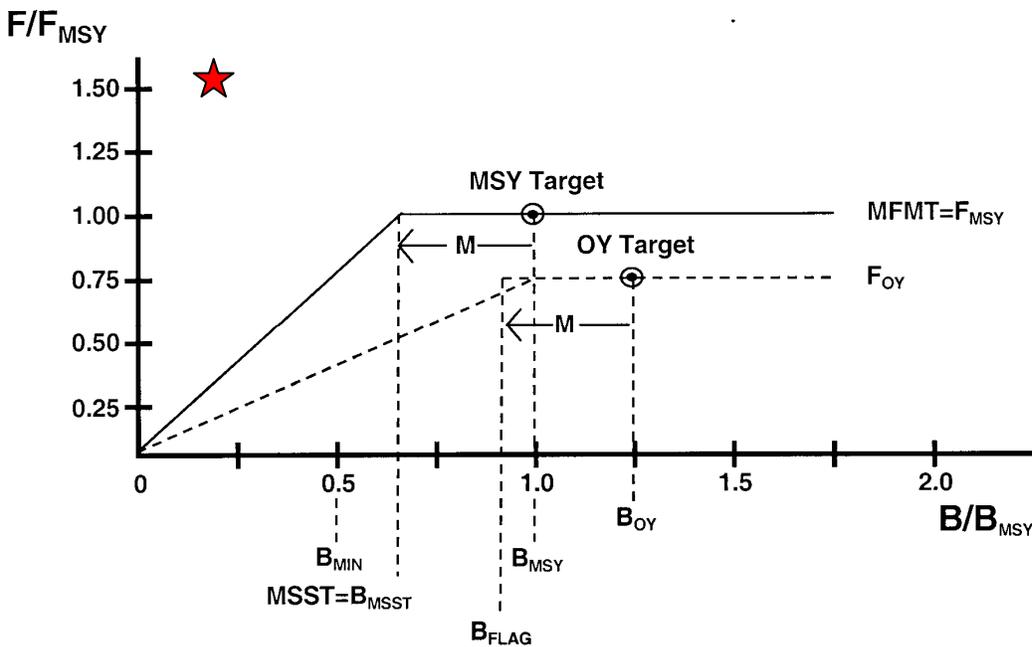
Optimum yield (OY): The amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems.

(FMP 2011, see also figure 4).

While the FMP adopts a precautionary approach to setting reference points for Pacific bluefin tuna, it assigns no specific values for the identified thresholds. The FMP adopts an optimum yield control rule for vulnerable species for bluefin tuna and striped marlin, set at 0.75 MSY to be precautionary and "because of uncertainties concerning total catches and stock structure" (FMP 2011 at 32-33, see also figure 4). Despite stating the general rule for the reference point, the FMP fails to identify specific values for bluefin tuna optimum yield or any other reference point (FMP 2011; McInnis 2013).

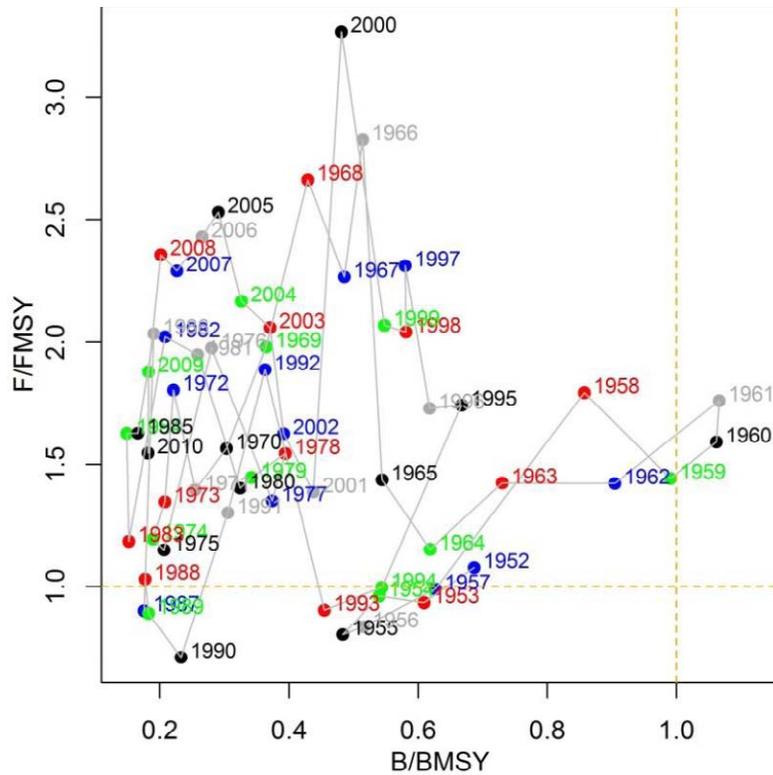
Because no thresholds were applied in the 2012 stock assessment, international scientists and NMFS's stock assessment peer reviewers could not provide management advice. The 2012 stock assessment stated that the "ISC requires advice from the WCPFC regarding which

reference points managers prefer so that it can provide the most useful scientific advice” (ISC 2013). Similarly, without stated values for reference points or even direction as to which reference points to use, peer reviewers of the 2012 Pacific bluefin tuna stock assessment were unable to determine how overfishing and overfished stock status are defined for Pacific bluefin tuna (*see, e.g.*, Carruthers 2013 at 20). The assessment provides the foundation for domestic management decisions by the Pacific Fishery Management Council, but without specific reference points fails to provide recommendations “for acceptable biological catch, preventing overfishing, maximum sustainable yield, and achieving rebuilding targets . . .” 16 U.S.C. § 1852(g)(1)(B). Notwithstanding the lack of reference points, the extremely poor status of Pacific bluefin tuna allowed scientists to conclude fishing mortality (F) to be above all target and limit biological reference points commonly used by fisheries managers (ISC 2013, *see also* figure 4).



**Figure 4.** General model of maximum sustainable yield and optimum yield control rules, according to Restrepo et al. (1998) (Source: Figure 4-1, FMP 2011.) The star (★) in the upper left hand area of the plot represents the estimated placement of Pacific bluefin tuna in 2010 (*see* Carruthers 2013, Table R1,  $F_{2010}/F_{MSY} = 1.55$ ,  $B_{2010}/B_{MSY} = 0.18$ ).

Pacific bluefin tuna has a long history of exploitation. The current stock status – overfished and subject to overfishing – has characterized Pacific bluefin tuna for the majority of the years since 1952 (figure 5, Carruthers 2013). The ISC assessment estimated that even in 1952 the stock was in an overfished state and subject to overfishing (Carruthers 2013, fig. R2). Pacific bluefin tuna landing records from coastal Japan date back to as early as 1804 and to the early 1900s for U.S. fisheries in the eastern Pacific Ocean, with peak catches of approximately 59,000 mt in 1935 (ISC 2013). By the start of modern record-keeping in 1952, the population was about a third of the size of unfished population (Powers 2013).



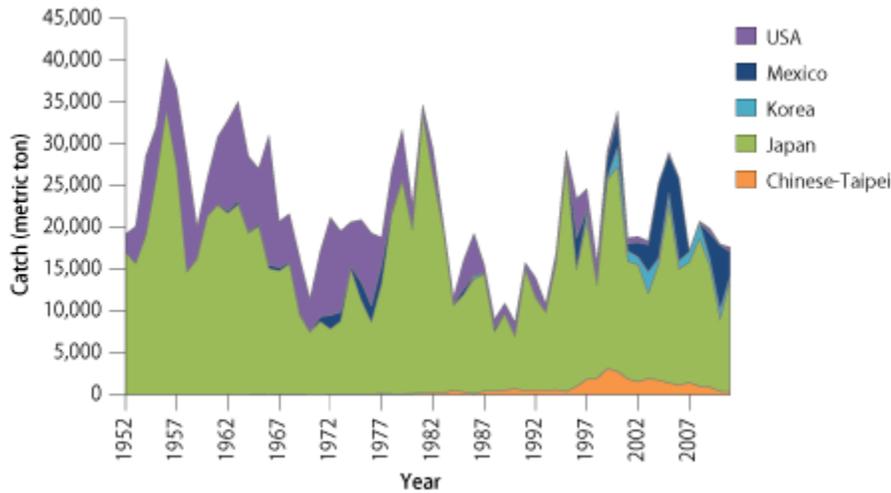
**Figure 5.** Maximum likelihood estimates of historical exploitation levels ( $F/F_{MSY}$ ) and stock status ( $B/B_{MSY}$ ) (B refers to spawning stock biomass). (Source: Carruthers 2013, Fig. R2.)

Because Pacific bluefin tuna abundance is at an all time low, the potential for recovery is uncertain. The 2012 stock assessment assumes stock sizes have not declined to a level at which recruitment is impaired, meaning that given the right conditions (lower fishing mortality and a favorable environment), Pacific bluefin tuna could recover (ISC 2013). On the other hand, the benchmarks of overfished and undergoing overfishing by definition mean that recruitment might be impaired, presenting an internal inconsistency in the assessment (Carruthers 2013 at 6). In the past the stock size has also been very low and the fishing mortality very high (1970s-80s), and the population still responded to fishing mortality reductions, which offers some hope for recovery (Carruthers 2013 at 5).

## ii. Pacific bluefin tuna fisheries

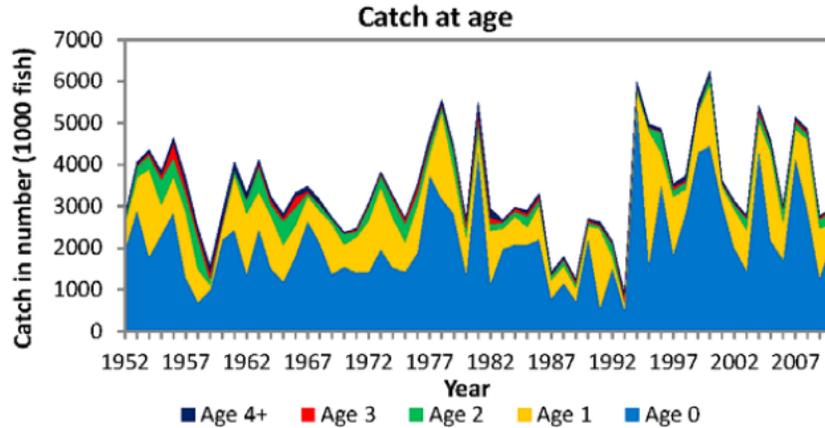
Pacific bluefin tuna fishing methods include purse seine, pole and line, and longline. Landings occur year-round, with most of the catch from the western Pacific Ocean taken during May-September and most from the eastern Pacific Ocean taken during May-October (Tseng and Smith 2012; Bayliff 1994). The recent trend in the global bluefin fisheries has transitioned to purse seine fleets, which supply live fish for ranching operations to meet sashimi market demand. With sashimi prices exuberantly higher than that of canned tuna, the globalization of this market has encouraged overexploitation.

Eastern Pacific Ocean commercial fisheries have focused on small fish (less than 100cm), mostly caught by purse seines (Hanan 1983). Landings greatly expanded through the 1960s, peaking in 1965 at 18,000 mt, before declining in the 1980s and early 1990s (Bayliff 1994). Eastern Pacific landings vary greatly year-to-year, with 5000 mt variations between years common (Hanan 1983). In the late 1990s, the eastern Pacific fisheries followed market trends by beginning to catch live fish for ranching operations (IATTC 2010). This resurgence peaked in 2007, with landings reaching 10,000 mt. (ISC 2008).



**Figure 6.** Annual landings of Pacific bluefin tuna reported by ISC members in the North Pacific Ocean, 1952-2011 (source: [http://isc.ac.affrc.go.jp/fisheries\\_statistics/index.html](http://isc.ac.affrc.go.jp/fisheries_statistics/index.html), Fig. 2).

Japan's catch of young of year bluefin tuna in the western Pacific Ocean comprises most of the landings, followed by the Mexican fleet (figures 6 and 7). The increase in Mexico's catch in the past fifteen years is consistent with increasing fishing pressure on eastern Pacific Ocean bluefin tuna age 1 (figure 7).



**Figure 7.** Historical annual catch-at-age of Pacific bluefin tuna in 1952-2011 (source: ISC 2013, figure 3). Note that the catch on the y-axis is in number of fish, not metric tons as in figure 6.

#### *U.S. Commercial and Recreational Fishing*

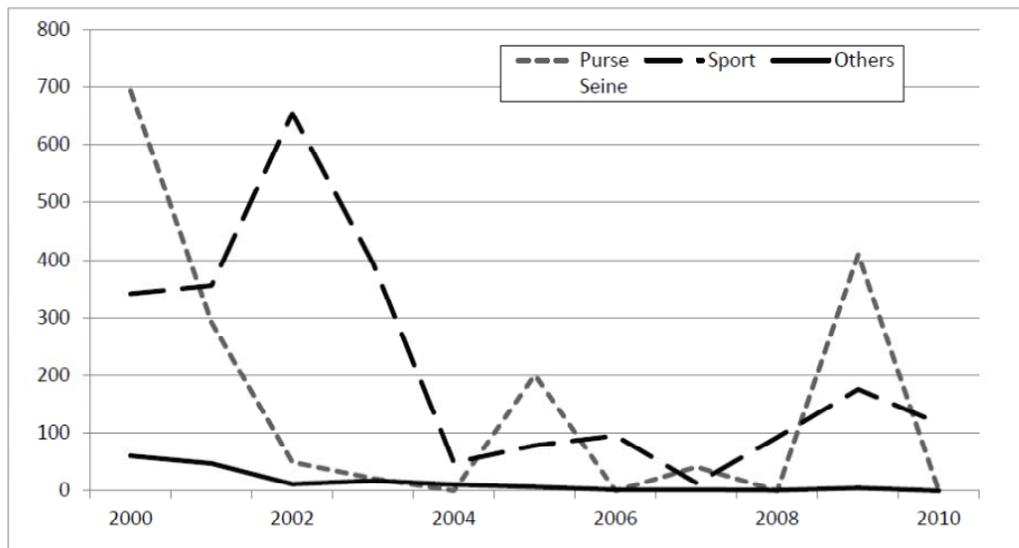
Commercial harvest in the United States occurs primarily by purse seiners, but gillnets, longlines, and the albacore troll and pole-and-line fishery also take some smaller amount of bluefin tuna (NMFS 2012; *see also* Carruthers 2013 at 26 (giving background on the U.S. Pacific bluefin tuna fishery)). Average annual U.S. commercial Pacific bluefin tuna catch from 2007 to 2011 represents only two percent of the average annual landings for all fleets fishing in the eastern Pacific Ocean during that period (79 Fed. Reg. 1810, 1811).

Year	Commercial (mt)	Recreational (mt)	U.S. Total (mt)	% of Reported Pacific-wide landings
1987	881	34	915	6
1988	974	1	975	11
1989	1,067	112	1,179	11
1990	1,472	65	1,537	18
1991	416	92	508	3
1992	1,989	110	2,099	15
1993	684	298	981	9
1994	965	89	1,054	6
1995	706	258	964	3
1996	4,609	40	4,650	20
1997	2,372	156	2,528	10
1998	2,051	413	2,464	16
1999	368	441	809	3
2000	756	342	1,097	3
2001	338	356	694	4
2002	61	654	715	4
2003	40	394	434	2
2004	11	49	60	0
2005	206	79	285	1

2006	2	96	98	0
2007	88	28	116	1
2008	103	93	196	1
2009	566		566	3
2010	1	122	123	1
2011	117	456	573	3

**Table 1.** U.S. commercial and recreational annual landings of Pacific bluefin tuna for the past 25 years (1987-2011). (Source: ISC, Fisheries statistics, reported total annual landings, [http://isc.ac.affrc.go.jp/fisheries\\_statistics/annual\\_landings\\_20121015.xls](http://isc.ac.affrc.go.jp/fisheries_statistics/annual_landings_20121015.xls)).

In the last decade, recreational catch has become more important, accounting for 64 percent of the total (note that U.S. charter recreational vessels are permitted to fish in Mexican waters while commercial vessels are not) (figure 8, Pacific Fishery Management Council 2011). In Washington, bluefin tuna catch is negligible. Oregon’s estimated annual recreational catch ranged from zero to 40 fish from 2003 through 2012 (PFMC 2013b at table 5).



**Figure 8.** U.S. catch (mt) of Pacific bluefin tuna by fishery, 2000-2010 (Source: Pacific Fishery Management Council 2011, figure 1).

## 2. Magnuson-Stevens Act

Congress enacted the Magnuson-Stevens Act in 1976, “to take immediate action to conserve and manage the fishery resources found off the coasts of the United States.” 16 U.S.C. § 1801(b)(1). The Act requires conservation measures “to prevent overfishing, to rebuild overfished stocks, to insure conservation, to facilitate long-term protection of essential fish habitats, and to realize the full potential of the Nation’s fishery resources.” 16 U.S.C. § 1801(a)(6). Congress recognized that “[i]nternational fishery agreements have not been effective

in preventing or terminating overfishing of these valuable fishery resources. There is a danger that irreversible effects from overfishing will take place before an *effective* international agreement on fishery management jurisdiction can be negotiated, signed, ratified, and implemented.” 16 U.S.C. § 1801(a)(4) (emphasis added).

While the Magnuson-Stevens Act implements a national program to manage federal fisheries, it balances the protection of state interests by establishing eight Regional Fishery Management Councils. 16 U.S.C. § 1852; *C & W Fish Co. v. Fox*, 931 F.2d 1556, 1557 (D.C. Cir. 1991). Each Council has management authority over its respective region. The Secretary of Commerce appoints Councils, members of which include federal officials, state officials, and private parties. Their authority covers federal waters within the United States’ exclusive economic zone, extending from 3 miles to 200 miles offshore. 16 U.S.C. § 1801(b)(1). Each Council becomes responsible for developing a fishery management plan. *Id.* Plans must include conservation and management measures that prevent overfishing and rebuild overfished stocks, while protecting, restoring, and promoting the long-term health and stability of the fishery. 16 U.S.C. § 1853(a)(1)(A); see *Flaherty v. Bryson*, 850 F. Supp. 2d. 38, 43 (D.C. Cir. 2012).

To implement the fishery management plans, NMFS must approve the plans and promulgate implementing regulations that comply with the Magnuson-Stevens Act’s ten National Standards and other applicable law. 16 U.S.C. § 1854(a)(3); *Flaherty*, 850 F. Supp. 2d at 45. National Standard 1 requires that “[c]onservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery . . .” 16 U.S.C. § 1851(a)(1). National Standard 1 Guidelines (“Guidelines”) specify that “National Standards 2 through 10 provide further requirements for conservation and management measures in FMPs, but do not alter the requirement of [National Standard 1] to prevent overfishing and rebuild overfished stocks.” 50 C.F.R. § 600.310(l).

The sustainable fishery management and conservation goals are achieved through the Secretary’s power to regulate overfished fisheries. 16 U.S.C. § 1854(e). If the Secretary determines a fishery has reached overfished levels, “the Secretary shall immediately notify the appropriate Council and request that action be taken to end overfishing in the fishery and to implement conservation and management measures to rebuild affected stocks of fish.” *Id.* § 1854(e)(2). Once notified, the Council has two years to prepare and implement an FMP, amendment, or regulation. *Id.* § 1854(e)(3). Section 1854 specifies that the action must “end overfishing immediately in the fishery and rebuild affected stocks.” If the Council fails to act within the 2-year period, the Secretary “shall prepare a fishery management plan or plan amendment and any accompanying regulations to stop overfishing and rebuild affected stocks of fish within 9 months.” *Id.* § 1854(e)(5).

In 2007, Congress enacted the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act to add a section addressing fish overfished “due to excessive international fishing pressure.” Pub. L. No. 109-479, 120 Stat. 3575 (2007). For these stocks, the

Secretary must determine whether the fish: (1) are being overfished “due to excessive international fishing pressure,” and (2) there are no management measures to end overfishing under an international agreement to which the United States is a party. Upon such a determination:

(1) the Secretary, in cooperation with the Secretary of State, [shall] immediately take appropriate action at the international level to end the overfishing; and

(2) within 1 year after the Secretary's determination, the appropriate Council, or Secretary, for fisheries under section 1852(a)(3) of this title shall—

(A) 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; and

(B) develop and submit recommendations to the Secretary of State, and to the Congress, for international actions that will end overfishing in the fishery and rebuild the affected stocks, taking into account the relative impact of vessels of other nations and vessels of the United States on the relevant stock.”

16 U.S.C. § 1854(i).<sup>9</sup>

National Standard 1 guidelines provide that the “relative impact” of fishing vessels of the United States – as used in paragraph (2) above – may include consideration of factors such as (1) domestic and international management measures already in place, (2) management history of a given nation, (3) estimates of a nation's landings or catch (including bycatch) in a given fishery, and (4) estimates of a nation’s mortality contributions in a given fishery. 50 C.F.R. § 600.310(k)(3).

In addition to the above requirements specific to overfished internationally managed stocks, all stocks subject to management under an international agreement must have reference points like status determination criteria and maximum sustainable yield in each fishery management plan. *Id.* § 600.310(h)(2)(ii). Status determination criteria mean quantifiable factors or their proxies used to determine if overfishing has occurred or the stock is overfished. *Id.* § 600.310(e). These management measures must be based on the best scientific information available. 16 U.S.C. § 1851(a)(2) (National Standard 2).

The Pacific Fishery Management Council adopted the FMP in 2004 and most recently amended it in 2011. The FMP prohibits retention of certain species (great white sharks, basking sharks, megamouth sharks) and allows catch of other “prohibited species” only under certain

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<sup>9</sup> So in original. Two subsections (i) have been enacted.

conditions (Pacific halibut and salmon) (FMP 2011; 50 C.F.R. § 660.711(a).) The list of prohibited species was created to protect rare animals, like the low productivity sharks, and prevent Pacific halibut and salmon from becoming targets of fisheries covered by the FMP that have incidental catch. (FMP 2011; 50 C.F.R. § 660.711(a).)

### 3. Tunas Conventions Act of 1950

The Tunas Conventions Act of 1950, 16 U.S.C. §§ 951-62, requires the Secretary of Commerce to promulgate regulations to carry out recommendations of the Inter-American Tropical Tuna Convention (IATTC) upon approval by both the Secretary of State and the Secretary of Commerce. 16 U.S.C. § 955(c).

### 4. Regulatory History

NMFS has determined both that Pacific bluefin tuna is undergoing overfishing and is overfished. First, in 2011, NMFS determined that

[a]lthough both regional fisheries management organizations [the IATTC and the Western and Central Pacific Fisheries Commission] have internationally agreed upon management measures in place for [Pacific] bluefin tuna, these measures are inadequate to end overfishing for purposes of the [Magnuson-Stevens Act] and its implementing regulations. Therefore, the Councils . . . must undertake action under [Magnuson-Stevens Act] section 304(i)(2).

*Fisheries of the Pacific Region; Western Pacific Region, Notification of determination of overfishing or an overfished condition*, 76 Fed. Reg. 28422, 28422 (Apr. 7, 2011). The Pacific Fishery Management Council and the Western Pacific Fishery Management Council responded jointly to NMFS's 2011 section 304(i) determination in a March 26, 2012, letter (PFMC 2012). The Councils did not recommend new domestic management measures to address relative impact of U.S. fishing vessels on the Pacific bluefin tuna stock and instead found current regulations "adequately address the very low impact of U.S. fisheries on the stock of Pacific bluefin tuna" (PFMC 2012).

Second, on April 8, 2013, NMFS notified the Pacific Fishery Management Council that even though the highly migratory species fishery management plan does not identify biological reference points, NMFS had "determined that Pacific bluefin tuna (*Thunnus orientalis*) continues to be subject to overfishing and was now overfished." (McInnis 2013; *see also International Fisheries; Pacific Tuna Fisheries; Fishing Restrictions in the Eastern Pacific Ocean*, 78 Fed. Reg. 33240, 33241 (Apr. 16, 2013) ("Based on a 2013 stock assessment, NMFS determined Pacific bluefin tuna was not only experiencing overfishing but was also overfished."). The Pacific Fishery Management Council directed its Executive Director to respond with a letter recommending no new domestic management measures and recommending the U.S. government

advocate for a higher level of protection in international fisheries (PFMC 2013a; *see also* PFMC 2014 (transmitting the final response)). The Council decided to evaluate current catch limits in West Coast recreational bluefin tuna fisheries as part of the biennial process beginning in June 2014 (PFMC 2013a; *see also* PFMC 2014).

#### **i. Commercial Catch Limits**

On June 4, 2013, NMFS implemented IATTC recommendations capping commercial bluefin tuna annual catch for 2012 and 2013 at 500 mt – an amount above any U.S. catches in the past decade. 78 Fed. Reg. 33240 (codified at 50 C.F.R. § 300.24(u) and § 300.25(h)). NMFS promulgated the catch limits solely under its Tuna Convention Act authority to implement IATTC recommendation, and therefore considered “[t]his action . . . not subject to the Magnuson-Stevens Act.” *Id.* at 33241-42; *see* 16 U.S.C. §§ 951-962 (Tuna Conventions Act of 1950). On January 10, 2014, NMFS published a proposed rule to set 2014 annual catch at the same levels as in 2012 and 2013, but has not finalized that rule. *See Proposed Rule for International Fisheries; Pacific Tuna Fisheries; Fishing Restrictions for Pacific Bluefin Tuna in the Eastern Pacific Ocean*, 79 Fed. Reg. 1810; *see also* Kilduff 2014 (providing the Center’s comments on the proposed rule).

In 2008 – years before the IATTC recommended catch limits – the California Legislature requested Pacific bluefin tuna catch limits because of concern over the status of the stock (S.C.R. 85 (2008)). California Senators Kuehl, Migden, and Wiggins introduced Senate Concurrent Resolution 85 to request the assistance of state, federal, and international management agencies to achieve, among other things, “the imposition and enforcement of catch limits for Pacific bluefin tuna in the United States Exclusive Economic Zone” (*id.*) The findings of the resolution include concerns over the potential collapse of Pacific bluefin tuna, associated economic losses, ecosystem effects of fewer Pacific bluefin tuna, and the failure of national and international regulatory structure to manage and protect Pacific bluefin tuna. The California Assembly and Senate adopted the resolution in July and August 2008, respectively. Many agencies and non-governmental organizations supported the bill, including NMFS, the Monterey Bay Aquarium, and several environmental organizations, but neither the Pacific Fishery Management Council nor NMFS took action to set catch limits in response.

Harvest for the aquaculture industry is an ever-present threat to Pacific bluefin tuna. Between 2002 and 2008, NMFS almost yearly published notices and requests for comments on applications for Mexican vessels to receive transfers of live tuna from U.S. purse seiners for the purpose of transporting the tuna alive to an aquaculture facility located in Baja California, Mexico. *See* 73 Fed. Reg. 17326 (Apr. 1, 2008); 72 Fed. Reg. 37731 (July 11, 2007); 70 Fed. Reg. 44326 (Aug. 2, 2005); 69 Fed. Reg. 25882 (May 10, 2004); 67 Fed. Reg. 40277 (June 12, 2002). The Center submitted comments opposing the transshipment permits under Magnuson-Stevens Act section 204(d) in 2007 and 2008 (Sakashita 2007, Sakashita 2008). To our knowledge NMFS issued no authorizations for this activity.

NMFS also has studied ranching bluefin tuna in U.S. waters. Hannesson and Herrick<sup>10</sup> (2013), conducted an economic study of potential species suitable for California aquaculture and concluded that “California halibut and bluefin tuna for the Japanese market appear expensive enough to unambiguously justify fish farming.” The high prices paid for sushi-grade bluefin tuna drive ideas to develop the bluefin tuna industry despite the decimated population.

## ii. Recreational Catch Limits

On October 15, 2007, NMFS established a recreational daily bag limit of 10 bluefin tuna in federal waters off of California. *Fisheries off West Coast States; Highly Migratory Species Fisheries*, 72 Fed. Reg. 58258 (Oct. 15, 2007). This bag limit is so high that it will not limit fishing for Pacific bluefin tuna. *See* 72 Fed. Reg. 35213, 35213 (June 27, 2007) (“from 1997 through 2005 . . . approximately 98 percent of sampled catches that contained albacore tuna landed less than 10 total fish per day”). During the rulemaking process, NMFS rejected comments requesting a lower bag limit and application to federal waters off all three west coast states. 72 Fed. Reg. at 58259. At that time NMFS was operating under the conclusion that bluefin tuna populations in the North Pacific Ocean were not experiencing overfishing or overfished, but NMFS “will, in conjunction with the Pacific Council, take necessary steps in the future to implement appropriate conservation measures if warranted, including the potential for additional regulations to address both commercial and recreational fisheries impacts.” *Id.*

NMFS determined that the federal bag limit – applicable only to waters off California – is consistent with state regulations (72 Fed. Reg. at 58258; 16 U.S.C. 1856). All three west coast states have recreational bag limits for pelagic species on a per angler basis:

- Washington: 2 bluefin per day. W.A.C. 220-56-240.
- Oregon: aggregate of 25 offshore pelagic species per day. O.A.R. 635-011-0100 (incorporating 2014 Oregon Sport Fishing Regulations).
- California: 10 bluefin per day. 14 C.C.R. § 28.38(b).

In practice, these bag limits do little to restrict the catch of bluefin tuna. In California – where an angler is most likely to catch bluefin tuna – state regulations allow, by special permit, retention of up to three daily bag limits for a trip occurring over multiple consecutive days. 14 C.C.R. § 27.15. In other words, for a multi-day trip with a special permit an angler could catch 30 bluefin tuna. In addition, two or more anglers may continue to fish until “boat limits” are reached. A boat limit is “equal to the number of passengers aboard . . . authorized to sport fish in ocean waters off California . . . multiplied by the individual daily bag limit authorized for a species or

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<sup>10</sup> Correspondence on the paper is directed to S F Herrick, Fisheries Research Division, Southwest Fisheries Science Center, National Marine Fisheries Service, National Oceanographic and Atmospheric Administration, 8604 La Jolla Shores Drive, La Jolla, CA 92037, USA. E-mail: sam.herrick@noaa.gov.

species group.” 14 CCR §§ 27.60(c), 195(e)(4); *see* 50 C.F.R. § 660.721(d). Allowing anglers to pool their bag limits in this way can drastically increase daily limits.

### **C. NMFS must take action to amend the Highly Migratory Species Fishery Management Plan and implement regulations to address overfishing of Pacific bluefin tuna.**

As described below, NMFS has the duty to propose regulations to reduce overfishing of Pacific bluefin tuna. This duty was triggered by NMFS’s 2011 and 2013 findings that (i) Pacific bluefin tuna continues to be subject to overfishing and overfished due to excessive international fishing pressure and (ii) international management measures in place are inadequate to correct the problem. 16 U.S.C. § 1854(i); 76 Fed. Reg. 28422; 78 Fed. Reg. 33240. The Magnuson-Stevens Act requires that within one year after this determination, the Council shall develop and submit “recommendations for domestic regulations to address the relative impact of fishing vessels of the United States on the stock.” *Id.*; *see also* PFMC 2013c (describing the requirements of the Magnuson-Stevens Act). Moreover, because the Council has failed to meet this statutory mandate, NMFS must propose regulations to address domestic impacts on Pacific bluefin tuna.<sup>11</sup> With this petition, we request that NMFS initiate formal rulemaking.

#### *Excessive International Fishing Pressure*

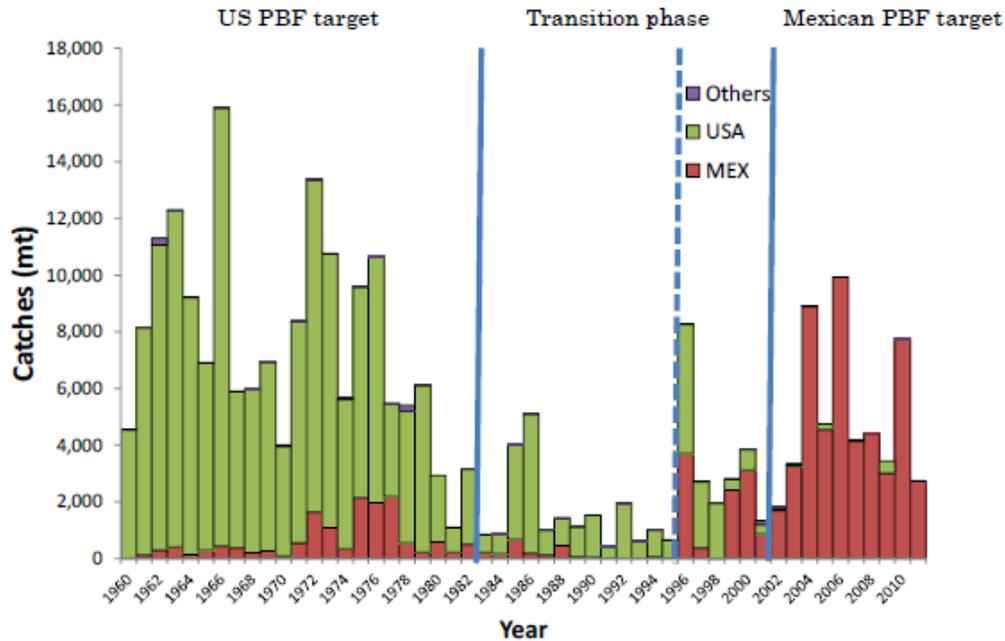
NMFS has clearly determined that Pacific bluefin tuna are overfished due to excessive international fishing pressure. NMFS has found that Pacific bluefin tuna abundance is close to its historical low due to excessive international fishing pressure (McInnis 2013). As shown in figure 5, for most of the years since 1952, bluefin tuna has been overfished and experiencing overfishing. The major country fishing Pacific bluefin tuna since 1952 has been Japan. Mexico, Chinese-Taipei and Korea have increased fishing in the past 20 years, while the U.S. catch declined at the same time (figure 6). The highly migratory nature of Pacific bluefin tuna – potentially crossing the Pacific Ocean to travel between spawning grounds off Okinawa and foraging in the California Current – makes them susceptible to this international fishing pressure.

In the eastern Pacific Ocean, two major events marked changes in fishing for Pacific bluefin tuna: one causing the decline of the U.S. fishery and the other causing the rise of the Mexican fishery (Aires-da-Silva and Dreyfus 2012). First, beginning in the early 1980s, U.S. purse seine vessels abandoned traditional fishing grounds along the coast of Baja California because of the establishment in 1982 of exclusive economic zones (EEZs) extending 200 nautical miles along the oceanic borders of coastal states. This assigned sovereign powers to coastal states to manage resources within the EEZs and assure they are not subject to

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<sup>11</sup> NMFS is authorized to prepare a fishery management plan amendment where the Council fails to develop and submit to the Secretary, after a reasonable period of time, any necessary amendment. 16 U.S.C. § 1854(c).

overexploitation (Ostrom 2008). Second, Mexico began targeting juvenile bluefin tuna for farming (pen rearing) to supply the sushi trade in the late 1990s. For stock assessment purposes, scientists divide the history of catch in the eastern Pacific Ocean into three stages: a U.S. target fishery (1952-1982); a transition period dominated by an extinguishing U.S. fishery (1993-1998) and a developing Mexican fishery (1996-s2001); and a fully developed Mexican target fishery for pen rearing from 2002 to present (figure 8; Aires-da-Silva and Dreyfus 2012).



**Figure 8.** Total catches of Pacific bluefin tuna by flag for the purse seine fisheries in the eastern Pacific Ocean, 1960-2011. (Source: Aires-da-Silva and Dreyfus 2012, figure 1.)

#### *Inadequate International Management Measures*

NMFS has determined that international management measures in place are inadequate to correct the problem, i.e. are insufficient to end overfishing (McInnis 2013). Even though Pacific bluefin tuna is considered to be a single Pacific-wide stock, management is split between the Western and Central Pacific Fisheries Commission and the Inter-American Tropical Tuna Commission. While international measures remain important, they are currently inadequate to end overfishing and rebuild populations. As one recent example, at the 2013 Western and Central Pacific Fisheries Commission meeting in Fukuoka, Japan, a majority of the members agreed on a 15 percent cut in fishing mortality only as an interim measure and deferred more significant cuts until the next assessment despite fishing mortality exceeding all potential reference points (*see* WCPFC CMM 2013-09; figure 4). Thus far countries have been unable to reduce the catch of Pacific bluefin tuna as needed to begin recovery.

Similarly, during its June 2013 meeting, the Inter-American Tropical Tuna Commission considered the problems facing Pacific bluefin tuna (*see* Resolution C-13-02). It noted that the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) recently reported 2010 biomass levels were near the lowest in history. Rather than react accordingly and reduce cumulative total limits, the Inter-American Tropical Tuna Commission extended their measures for another year (*see id.*). By extending the 5,000 metric ton per year catch limit, including the 500 metric ton exception for all convention members and cooperating non-members with historic catch records, the Inter-American Tropical Tuna Convention failed to react to the current reality that Pacific bluefin tuna are rapidly disappearing.

NMFS has also recognized that its finding triggered Section 304(i)'s mandate for domestic regulations. 16 U.S.C. § 1854(i). In NMFS's letter dated April 8, 2013, notifying the Pacific Fishery Management Council of the change in status to "overfished," NMFS also acknowledged that "the Council is *required* to develop domestic regulations that address the relative impact of the domestic fishing fleet on Pacific bluefin tuna" (McInnis 2013 (emphasis added)). Once the Council submits proposed regulations, NMFS must initiate an evaluation. 16 U.S.C. § 1854(b). Within 15 days NMFS must make a determination whether or not to publish the regulations. *Id.* Domestic regulations to address the U.S. vessels' impact are now required because NMFS's determination triggered the process in section 1854(i).

The Council has failed to develop recommendations for appropriate domestic regulations or international actions (*see* PFMC 2014). NMFS must now promulgate regulations to address the impact of U.S. fishing vessels and develop and submit recommendations for international actions to the Secretary of State. 16 U.S.C. § 1854(i).

To meet the requirements of the Magnuson-Stevens Act, we formally request that NMFS amend the FMP and its implementing regulations to:

- 1. Add bluefin tuna to the FMP's list of prohibited species to require release immediately if caught. 50 C.F.R. § 660.711(a).**
  - i. Alternatively, establish annual catch limits for bluefin tuna and a permanent minimum size requirement to protect age classes 1-2 from fishing mortality.**
- 2. Establish specific values for reference points for Pacific bluefin tuna to guide science-based management.**

Without these measures, the FMP and regulations will not be able to slow the decline of Pacific bluefin tuna or even have the tools necessary to translate the dire scientific assessments into management action.

## 1. NMFS should add Pacific bluefin tuna to the list of prohibited species.

The Council has failed to meet its statutory duty to make the recommendations for domestic regulations in response to NMFS's determinations in 2011 and 2013 that Pacific bluefin tuna was undergoing overfishing and overfished, respectively. The Council response that no new recommendations are necessary does not satisfy Congress's intent in the 2007 Magnuson-Stevens Act amendments to address international overfishing. The combination in section 1854(i) of the deadline – “within 1 year after the Secretary's determination” – and the mandatory language – “the Council shall submit such recommendations to the Secretary” – indicate that this is an enforceable duty.<sup>12</sup> If Congress meant for domestic measures addressing international overfishing to be discretionary, it would have adopted permissive language as it has elsewhere in the Magnuson-Stevens Act. In addition, the Magnuson-Stevens Act has a strong mandate, as evidenced in National Standard 1, to prevent overfishing. To read the mandate for domestic regulations as discretionary would contravene the larger purposes of the legislation and the specific language of 16 U.S.C. § 1854(i).<sup>13</sup>

At the June 2013 Pacific Fishery Management Council meeting where members considered adopting a response to Magnuson-Stevens Act requirements, the minutes show that little to no concern was given to the statute's requirement for the Council to recommend domestic regulations within a year. Mr. Mark Helvey, NMFS Southwest Region designee to the Council, pointed out that the status of Pacific bluefin tuna had gotten worse since 2012 when the Council responded to NMFS's 2011 notification that Pacific bluefin tuna was subject to overfishing (PFMCd 2013 at 22). He recommended an analysis of the recreational bag limits off California and Oregon and also encouraging that the Western and Central Pacific Fisheries Commission move in the direction of catch limits, like the Inter-American Tropical Tuna Commission (*id.*). But when asked what type of schedule he had in mind, Mr. Helvey replied that the analysis should start in June 2014 – a full two months after the one-year deadline would pass for the Council to recommend domestic regulations under section 1854(i). (*Id.*) The Council brazenly failed to conduct an analysis or consider whether to recommend regulations within the statute's timeframe.

In the absence of Council recommendations, NMFS should act unilaterally to implement domestic regulations to address Pacific bluefin tuna's U.S. fishing mortality. Subsection 1854(i) on international overfishing states that it applies in lieu of subsection 1854(e), which addresses

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<sup>12</sup> The word “shall” normally imposes a mandatory duty. *See* 3 Sutherland Statutory Construction § 77.1 (7th ed.); § 57.2 (“‘Shall’ is considered presumptively mandatory unless there is something in the context or the character of the legislation which requires it to be looked at differently.”).

<sup>13</sup> *See United States v. Begay*, 622 F.3d 1187, 1196 (9th Cir. 2010) (“there is nothing novel about reading a statute in light of its legislative purpose; indeed, we have stated that “[t]he language of a statute must be interpreted in its context to effectuate legislative intent.”) (citations omitted).

rebuilding overfished fisheries and the timelines required for domestically managed stocks. Subsection 1854(e) contains a requirement that within 9 months NMFS prepare measures to stop overfishing and rebuild affected stocks if a Council does not submit to the Secretary the required fishery management plan, plan amendment, or proposed regulations. 16 U.S.C. § 1854(e)(5). While subsection 1854(i) does not expressly require NMFS to step in once the Council fails to act, NMFS's duty is implied by the structure and purpose of § 1854(i), as well as the agency's similar duties under § 1854(e). Without such a mechanism, Congress's intent to require Council recommendations within one year of notification would be unfulfilled. Therefore NMFS should consider § 1854(i) to contain an implied statutory mandate to make recommendations in a similar timeframe as under § 1854(e).

Because of the extremely depleted status of Pacific bluefin tuna, NMFS should put into place the most protective domestic regulations possible. Like the sharks on the FMP's prohibited species list – great white shark, basking shark, megamouth shark – Pacific bluefin tuna's population is so low as to be extremely vulnerable to fishing mortality, even incidentally. At a 96% decline from unfished population levels, Pacific bluefin tuna cannot sustain additional decreases without inviting irreparable disaster. Further, the U.S. vessels do not target Pacific bluefin tuna, but incidentally catch them and ports fishermen cannot sell Pacific bluefin tuna (WCPFC-NC9 2013a). Thus the economic effect of such listing Pacific bluefin tuna on the prohibited species list would be minimal.

Even though the U.S. fisheries catch only a small percentage of Pacific-wide bluefin tuna catch, a complete moratorium on U.S. fishing is necessary to recover the population to healthy levels nearly unseen after 1952. A strong domestic stance in favor of drastic action can underscore the large reductions in fishing that are necessary internationally. Once the U.S. prohibits the catch of Pacific bluefin tuna, it may be easier to persuade Mexico and Japan to act accordingly until Pacific bluefin tuna have recovered.<sup>14</sup>

Prohibiting U.S. catch of Pacific bluefin tuna would be significant because it is not only precedent setting, but it also acknowledges that past fishing effort should confer responsibility on a nation to reduce overfishing. The history of U.S. catch – the biggest bluefin tuna fishing nation in the eastern Pacific Ocean for three decades after 1952 (even while never close to Japan's catch in the western Pacific) – makes a prohibition due to a decline in population even more symbolically powerful.

There are also biological benefits of prohibiting U.S. catch. A prohibition on U.S. catch has the potential to allow some of juvenile Pacific bluefin tuna grow large, return to spawn, and

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<sup>14</sup> Japan recently made an independent move to reduce catch levels to fifty percent of 2002-2004 levels (Bangor Daily News 2014). This reduction is arguably not enough to meet potential goals, *e.g.* the reference point  $F_{0.1}$ , a biologically precautionary target to prevent growth overfishing (see Carruthers 2013 (“fishing mortality rate in the period 2002-2004 was estimated to be 2.5 times  $F_{0.1}$  . . .”).

strengthen the migratory pathways to the California Current. The small catch numbers belie the historical presence of large bluefin tuna off the U.S. west coast. The true impact of continuing to heavily fish juveniles in the eastern Pacific Ocean may not be obvious when comparing numbers of bluefin in the entire Pacific Ocean, many of which never come to the eastern Pacific.

As discussed above, the potential benefits of prohibiting U.S. fishing for Pacific bluefin tuna outweigh the burden of doing so. While it could be argued that giving up the opportunity for bluefin tuna catch weakens U.S. negotiating power, the status of the stock is so dire and the U.S. catch so minimal (2% of Pacific-wide landings) that U.S. fisheries have little left to lose. In the case of Pacific bluefin tuna, very depleted and with fishing continuing at levels too high, recovery is uncertain especially in light of predicted reductions in larval survival with climate change (*see* Kimura et al. 2010). The U.S. focus thus should be on implementing every way to achieve recovery as quickly as possible. The small percentage of U.S. catch cannot justify inaction.

Given the enormous uncertainty of climate change's impacts to Pacific bluefin tuna and the potential for recovery of Pacific bluefin tuna even in the best environmental circumstances, the cost of several years of not fishing Pacific bluefin tuna is essentially irrelevant. In those years scientific research regarding the migrations, genetics, and spawning of Pacific bluefin tuna will continue. A decade's worth of scientific insights may completely change the way that we calculate the impact of continued fishing on bluefin tuna in the eastern Pacific Ocean. A reduction in fishing in the eastern Pacific Ocean, no matter what happens elsewhere, increases the odds of halting the population decline and finding answers to questions regarding Pacific bluefin tuna's use of the California Current.

While prohibiting U.S. catch of Pacific bluefin tuna by itself may not reverse the population decline, it does not follow that NMFS does not have a duty to take steps to slow or reduce overfishing. Contrary to the Pacific Fishery Management Council's position (*see* PFMC 2014), the petitioned for actions here can have an important contribution to ending overfishing of Pacific bluefin tuna. The more drastic the potential consequence of failing to act – here, failing to stop the decline and eventual extinction of Pacific bluefin tuna – the more urgent it is to act to reduce the probability. Given the nearly continuously overfished status of Pacific bluefin tuna (figure 5), it is more than likely that U.S. fishing vessels did significantly impact Pacific bluefin tuna populations even though U.S. fishing declined greatly in the past 20 years. Thus, we strongly request that NMFS act quickly to add Pacific bluefin tuna to the list of prohibited species that must be released immediately if caught at 50 C.F.R. § 660.711(a).

The Magnuson-Stevens Act requires that the recommendations for domestic regulations and international actions consider the relative impact of U.S. fishing vessels on the stock. 16 U.S.C. § 1854(i). Because this section applies only when a stock is “overfished or approaching a condition of being overfished due to excessive international fishing pressure,” the fact that U.S. vessels are not causing the current overfishing, or even having a large impact on the stock in its

already-depleted state, does not excuse the requirement. *Id.* To read it otherwise would provide an exception that would swallow the rule. Further, basing relative impact solely on the United States' percentage of global landings (PFMC 2014) fails to take into account the factors and primary objective established in National Standard 1 Guidelines; specifically, the duty to rebuild overfished stocks. *See* 50 C.F.R. § 600.310(k).

**i. Alternatively, NMFS should establish annual catch limits.**

While an outright prohibition on fishing for Pacific bluefin is the best way to ensure its rebuilding, NMFS should alternatively put into place annual catch limits for Pacific bluefin tuna and a permanent minimum size to protect year classes 1 and 2. As discussed above, in the absence of Council recommendations for domestic regulations to address the impact of U.S. fishing vessels on Pacific bluefin tuna, NMFS must act to fulfill Congress's intent to address international overfishing. Annual catch limits underpin U.S. success in fisheries management because the limits cannot exceed science advisors' recommendations. 50 C.F.R. § 600.310(b)(2)(v)(D); *Conservation Law Foundation v. Pritzker*, D.D.C. No. 13-821 (Apr. 4, 2014), 2014 U.S. Dist. LEXIS 46543 at \*29-30. With annual catch limits, domestic management will be based on scientific advice. U.S. stocks have proven this to be a successful strategy.

While NMFS guidelines do not require annual catch limits for internationally managed stocks, 50 C.F.R. § 600.310(h)(2)(ii), NMFS has said that they are generally recommended for a fishery managed under an international fishery agreement (*Magnuson-Stevens Act Provisions; Annual Catch Limits; National Standard Guidelines, Proposed Rule*, 73 Fed. Reg. 32526, 32530 Table 1 (June 9, 2008).) We urge NMFS to implement annual catch limits if it denies the request to prohibit fishing for Pacific bluefin tuna.

Assuming that Pacific bluefin tuna recovers to the point where annual catch limits allow fishing in the eastern Pacific Ocean, requiring a minimum size will benefit fishermen by allowing small fish migrating to the eastern Pacific Ocean to increase size before capture, thereby increasing yield. Based on the results of Madigan et al. (2014), many of the Pacific bluefin tuna in the eastern Pacific Ocean stay for more than a year before returning west to spawn (see figure 2). Benefits of a minimum size include not only bigger fish for U.S. fishermen, but any fish not captured at a larger size will be able to return to spawn and potentially reinforce the genes and/or behavior that allows eastern migration (*see, e.g., De Luca et al. 2014*).

On NMFS's recommendation, the Pacific Fishery Management Council decided to evaluate current catch limits for Pacific bluefin tuna in west coast recreational fisheries beginning in June 2014 (PFMC 2014). The Center supports the Council's decision to examine the limits in the west coast recreational fisheries, but these limits should be based on best available science regarding the status of the stock, including specific values for reference points. As discussed above in the section on regulatory background, the current recreational limits (state and federal) fail to limit fishing because they are so high, thus providing no benefit to conservation and management of Pacific bluefin tuna.

## **2. NMFS must amend the FMP to establish reference points for bluefin tuna to guide science-based management.**

Establishing biological reference points by which scientists can evaluate the status of the Pacific bluefin tuna has the potential to greatly increase awareness and improve management, thus should be a NMFS priority in amending the FMP. The Magnuson-Stevens Act requires scientific and statistical committees to provide the Council with “scientific advice for fishery management decisions, including acceptable biological catch, preventing overfishing, maximum sustainable yield, and achieving rebuilding targets. . .” 16 U.S.C. § 1852(g). Without reference points, scientific advisors are unable to give this advice. Even stocks subject to management under an international agreement “need to have [status determination criteria] and [maximum sustainable yield].” 50 C.F.R. § 600.315(h)(2)(ii). NMFS highlighted the lack of specific values for Pacific bluefin tuna reference points in its 2013 letter to the Council (McInnis 2013). These benchmarks are critical to determine if overfishing has occurred, or if the stock or stock complex is overfished.

The lack of specific values for Pacific bluefin tuna reference points has already crippled scientists’ ability to provide conservation advice. Despite the depleted stock status, the 2012 assessment failed to provide specific conservation advice because the “ISC requires advice from the WCPFC regarding which reference point managers prefer.” (ISC 2013.) The peer reviewers also pointed out this as a failing of the stock assessment (*see, e.g.*, Carruthers 2013 at 20 (“The assessment report does not include standard MSY reference points making it difficult to understand the status of the stock in terms of a productive biomass and the expected trajectory of the stock given current fishing mortality rate.”).) Without such thresholds, scientists cannot convey management advice with specificity, thereby greatly decreasing the likelihood of science-based fisheries management.

### **D. NMFS should recommend to the Secretary of State and the Congress the international actions to end overfishing of Pacific bluefin tuna.**

The Magnuson-Stevens Act requires that NMFS develop and submit recommendations to the Secretary of State, and to the Congress, for international actions that will end overfishing in the fishery and rebuild the affected stocks, taking into account the relative impact of vessels of other nations and vessels of the United States on the relevant stock. 16 U.S.C. § 1854(i). Here, NMFS should make robust recommendations to end overfishing of Pacific bluefin tuna including (1) establishing a high seas moratorium on all fishing, (2) implementing a Pacific-wide minimum size for bluefin tuna catch, and (3) achieving a steep reduction in Pacific bluefin tuna quota for all countries to meet rebuilding targets that are based on established reference points.

### *High Seas Moratorium*

In order to address some of the fundamental problems plaguing international management of highly migratory species, NMFS should consider recommending that the Secretary of State and Congress encourage international action to close the high seas to all fishing. Recently a published scientific paper and an economist speaking at the World Ocean Summit separately raised the specter of the costs of fishing in the high seas (Crow and Costello 2014, *see* Bland 2014).

While closing the high seas alone may not protect bluefin tuna from overfishing because countries will continue to target bluefin tuna within EEZs, it is worth evaluating as a tool in the toolbox. Japanese fishing grounds are generally coastal or near-shore waters, but the distant-water longline fishery also catches relatively small numbers of Pacific bluefin tuna (ISC 2013). Independently of the Western and Central Pacific Fishery Management Commission, this year Japan proposed measures to reduce its catch of bluefin tuna too young to spawn by 50 percent from the average in 2002-04 (Bangor Daily News 2014). Reportedly by taking the lead as the world's largest consumer of tuna and demonstrating its intention to reduce the amount of fish caught, Japan hopes to encourage other nations to strengthen their restrictions as well (*Id.*). On the other hand, Japan claims that the Western and Central Pacific Fishery Management Commission's conservation and management measures are not legally applicable within the territorial or internal waters of Japan (WCPFC-NC9 2013b). The high seas closure would be a measure to foreclose catch in areas undeniably within Commission jurisdiction and could similarly indicate to member countries that measures are immediately necessary.

Scientific support for closing high seas to fishing is growing and includes support for both economic reasons and population dynamics. Crow and Costello modeled governance and biological scenarios to determine effects of high seas closures. They found that for fisheries targeting pelagic, migratory stocks, where some but not all of the fishery occurs in EEZs, closing the high seas nearly always benefited the fishery by increasing profits and may encourage stock rebuilding by protecting a large range of open ocean habitat (Crow and Costello 2014). Martin Stuchtey, with global management consulting firm McKinsey & Company, reportedly presented at the World Ocean Summit results of his analysis showing that closing the high seas would cost every person on earth \$2 but would ultimately give them a return of \$4 (Bland 2014). Based on these preliminary studies, a high seas closure could reduce Pacific bluefin tuna fishing and be politically palatable.

It is imperative given the dire status of Pacific bluefin tuna that NMFS recommend strong international measures to the Secretary of State and Congress, potentially including a moratorium on fishing in the high seas. Other measures tailored specifically to Pacific bluefin tuna should be recommended as well, such as a minimum size to prevent fishing mortality of age classes 1 and 2.

### *Pacific-Wide Minimum Size*

To fulfill the requirements of Magnuson-Stevens Act section 304(i) to make recommendations for international actions that will end overfishing in the fishery and rebuild the affected stocks, NMFS should recommend to Congress and the Secretary of State implementation of a Pacific bluefin tuna minimum size to protect young bluefin tuna from fishing mortality. These recommendations are necessary to begin to rebuild the population of Pacific bluefin tuna and maintain migrations from spawning grounds to the eastern Pacific Ocean. The majority of the catch of Pacific bluefin tuna is currently less than a year old (figure 7). A minimum size has the potential to allow bluefin tuna time to migrate to the eastern Pacific Ocean, potentially reestablishing the historical range. It may also allow quicker recovery if larger tuna escape capture until maturity.

### *Steep Reductions in Catch*

The United States must continue to push the international management organizations to achieve steep reductions in Pacific bluefin tuna quota for all countries in order to meet rebuilding targets that are based on established reference points. At the Western and Central Pacific Fisheries Management Commission meeting in 2013, U.S. recommendations included creating a rebuilding plan (WCPFC-NC9 2013a at ¶ 57.) The Center supports this recommendation and would reemphasize that the basis for the rebuilding targets should be specific reference points. In the case where a Council manages a fish for which no internationally-set reference points exist, “the Council should propose reference points . . . for consideration by the IATTC and the WCPFC” (FMP 2011 at 43). We recommend that the United States suggest a precautionary reference point and recommend the international organizations adopt the FMP’s definition of optimum yield as 0.75MSY. A rebuilding plan and the steep reductions in catch necessary to achieve rebuilding targets will follow from setting precautionary reference points.

Without specific reference points and rebuilding targets, managers are unlikely to make the cuts necessary to rebuild Pacific bluefin tuna. As noted in one of the peer reviews of the 2012 assessment, “none of the proposed conservation measures enable the stock to recover by 2030.” (Bonhommeau 2013 at 13.) It is alarming that under the most conservative scenario proposed, in 2030 the biomass of Pacific bluefin tuna would only be one third (33%) of what would provide maximum sustainable yield (*id.*). Without firm goals and targets clearly stated in assessments, the ramifications of continuing to fish at too high a level are more obscure.

## **E. Conclusion**

The low population of Pacific bluefin tuna – just 3.6 % of unfished biomass remaining – requires immediate action under the Magnuson-Stevens Act to reduce fishing. NMFS should use

its full authority to protect the Pacific Ocean from these effects and lead the effort for progressive fishery management by prohibiting fishing for Pacific bluefin tuna.

NMFS must promptly respond to this petition and initiate the petitioned-for rulemaking. The provisions of this Petition are severable. If any provision of this Petition is found to be invalid or unenforceable, the invalidity or lack of legal obligation shall not affect the other provisions of the Petition.

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