# Bluefin Tuna Catch in the Pelagic Longline Fishery

*White Paper prepared for the HMS Advisory Panel Meeting*
*September 20-22, 2011*
*Silver Spring, MD*

*September 12, 2011*

# Bluefin Tuna Catch in the Pelagic Longline (PLL) Fishery

Comments received on the 2011 bluefin tuna quota and Atlantic tuna management measures rulemaking (March 14, 2011; 76 FR 13583)(2011 Quota Rule) demonstrated the need for a comprehensive review of bluefin tuna management. Many comments raised issues that were outside of the scope of that rulemaking and would require more significant analyses because of the potential impacts on the fisheries and fishery participants. Some of the issues raised include: changing domestic allocations among fishing categories, reducing bluefin tuna bycatch, modifying the permit structure for the fisheries, improved monitoring of landings in the recreational fishery, and reducing dead discards in the PLL fishery. The Agency is in the process of examining the regulations that affect all bluefin tuna fisheries, both commercial and recreational, to determine if existing measures are the best means of achieving current management objectives and providing additional flexibility to adapt in the future. Review of PLL related issues is a step in that process.

This white paper focuses on landings and dead discards of bluefin tuna in the PLL fishery. The paper attempts to provide some context concerning the issue, including background and measures that have been implemented in other non-HMS fisheries to address similar issues. It also provides some potential options for stakeholders to consider while assisting the Agency in reviewing alternatives to the status quo. While the intent of this document is to focus on issues surrounding bluefin tuna catch in the PLL fishery, it is important to realize that modifications to the regulations in place for this fishery would likely have impacts on other fisheries as well.

The PLL fishery for Atlantic highly migratory species (HMS) primarily catches swordfish, yellowfin tuna, and bigeye tuna in various areas and seasons. Secondary target species include dolphin, albacore tuna, and sharks. Although this gear can be modified (e.g., depth of set, hook type, hook size, bait, etc) to target swordfish, tunas, or sharks, it is generally a multi-species fishery. Vessel operators may modify gear and make subtle changes to deployment techniques to achieve the greatest economic benefits on individual trips.

The Atlantic (PLL) fishery for HMS landed approximately $13.4 million worth of HMS products in 2010; approximately 37% of the $36.3 million reported for commercial Atlantic HMS landings fleet wide[1]. Incidentally caught bluefin tuna landed in the PLL fishery had an ex-vessel gross revenue of $0.9 million in 2010[2]. There were 242[3] vessel permits in this fishery during 2010, and 116[4] active vessels.

[1] NMFS Dealer Reports (analysis by NMFS for this paper)
[2] NMFS Dealer Report Database (from 2011 Quota Rule EA, Table 8)
[3] http://sero.nmfs.noaa.gov/foia/HTML/ATL.htm; August 18, 2011
[4] 2011 US National Report to ICCAT (draft)

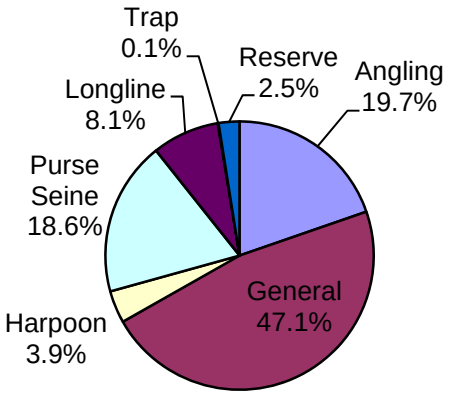


**Figure 1. Percentage allocation of US quota to bluefin tuna fishing categories in the 1999 HMS FMP.**

The 1999 HMS Fishery Management Plan (FMP) allocated the annual U.S. bluefin tuna quota from the International Commission for the Conservation of Atlantic Tunas (ICCAT) to bluefin tuna fishing categories (Figure 1), based on landings from 1983-1991. This included 8.1% percent for incidental PLL landings. Landings by the PLL fleet were the only portion of PLL catch (*i.e.*, catch = landings + discards) that were factored into the HMS FMP allocation analysis. The management objective for the PLL fishery with respect to bluefin tuna has been to balance utilization of the incidentally caught bluefin tuna with reducing dead discards and curbing any potential for targeting bluefin.

During the 2011 Quota Rule process, the adjusted quota for 2011 was insufficient to cover the 2010 PLL landings and anticipated PLL dead discards for 2011, while also providing base allocations for the other categories per the percentages outlined in the 2006 Consolidated HMS FMP. Further, during other recent rulemakings and meetings of the HMS Advisory Panel, several related issues concerning dead discards in the PLL fishery have been discussed. These issues include the distribution of bluefin tuna landings relative to the FMP percentage allocations and the methodology used for estimating dead discards.

As a result, this white paper reviews PLL bluefin tuna allocation history, catch (including landings and discards), and accounting methodologies. To facilitate discussion on different approaches to addressing bycatch and discards, this paper also provides examples of management practices regarding these issues in other non-HMS fisheries. Implications for alternative management strategies or other bluefin tuna fisheries are noted.

## Part I. Dead Discards and the 2011 Bluefin Tuna Quota Rule

There were three factors that made the 2011 Quota Rule more challenging than other recent annual bluefin tuna fisheries specification rules. The factors were: 1) changes to the ICCAT western Atlantic bluefin tuna recommendations (including reductions in total allowable catch (TAC), the amount of underharvest that can be carried forward ("carry-forward"), and the elimination of a dead discard allowance), 2) increases in domestic PLL dead discard estimates due to changes in estimation methodology and potentially an increase in bluefin tuna availability, and 3) recent increases in domestic bluefin tuna landings, including PLL landings.

***Factor 1: Adjustments to the ICCAT western Atlantic bluefin tuna rebuilding program recommendations.***

In 1998, ICCAT adopted a 20-year rebuilding program for western Atlantic bluefin tuna. The program called for biannual bluefin tuna stock assessments, and often the program was amended after each assessment via binding recommendation. Table 1 summarizes the changes in western Atlantic recommendations that were significant for domestic bluefin tuna quota management in the United States.

**Table 1. Summary of changes to the ICCAT western Atlantic bluefin tuna recommendations including year of effectiveness, TAC, U.S. quota and dead discard allowance, and restrictions on carry-forward to the following year.**

| ICCAT Rec No. | Quota Year | TAC (mt) | U.S. Quota (mt) | % "carry-forward" | U.S. Dead Discard Allowance |
|---|---|---|---|---|---|
| 98-07 | 1999-2002 | 2500 | 1387 | unrestricted | 67.7 mt (85.7% of 79 mt) |
| 02-07 | 2003-04 | 2700 | 1489.6[1] | unrestricted | 67.7 mt (85.7% of 79 mt) |
| 04-05 | 2005-06 | 2700 | 1489.6 | unrestricted | 67.7 mt (85.7% of 79 mt) |
| 06-06 | 2007-08 | 2100 | 1190.1 | 50% (up to 595.1 mt)[2] | None |
| 08-04 | 2009 | 1900 | 1034.9 | 50% (up to 517.5 mt) | None |
| | 2010 | 1800 | 977.4 | 50% (up to 488.7 mt) | None |
| 10-03 | 2011 | 1750 | 948.7 | 10%[3] (up to 94.9 mt) | None |
| | 2012 | 1750 | 948.7 | 10% (up to 94.9 mt) | None |

[1] *all quotas after recommendation 02—07 include 25 mt of bycatch related to LL fisheries in vicinity of management area boundary (a.k.a. Northeast Distant Area (NED))*
[2] *2007 - 75 mt of U.S. underharvest to Mexico & 50 mt to Canada; 2008 – 100 mt of U.S. underharvest to Mexico & 50 mt to Canada*
[3] *initially included in ICCAT Recommendation 08-04 to be effective for 2011 and after*

Between 2006 and 2011, the U.S. TAC allocation has been reduced by a total of 541 mt (1489.6 – 948.7 = 540.9 mt). The U.S. TAC allocation was reduced for the fishing years 2007, 2008, 2009, 2010, and 2011-2012 by approximately 300 mt, 155 mt, 57 mt, and 29 mt, respectively (Table 1), visible in Figure 2. Within this same time period, reductions in carry-forward also resulted in a large decrease in bluefin tuna available to U.S. fisheries. During 2006-2011, the amount of carry-forward allowed by ICCAT was reduced from an unlimited amount to 10% of a country's initial allocation, *e.g.*, 94.9 mt for the United States in 2011. The effect of this reduction is apparent in Figure 2, which shows the large amount of carry-forward in the adjusted quota for 2005 (over 500 mt) and 2006 (over 1000 mt). The large carry-forward resulted from relatively low landings for the domestic fisheries for 2004 -2006. In a 2006 recommendation (06-06), ICCAT first limited the amount of carry-forward to 50% of a country's

initial allocation (*e.g.,* 518 mt for the United States in 2009). Figure 2 shows this large reduction in the adjusted U.S. quota in 2007, even though landings in 2006 were the lowest in the time series. ICCAT adopted Recommendation 08-04 in 2008, which further reduced the amount of carry-forward to 10% starting in 2011.

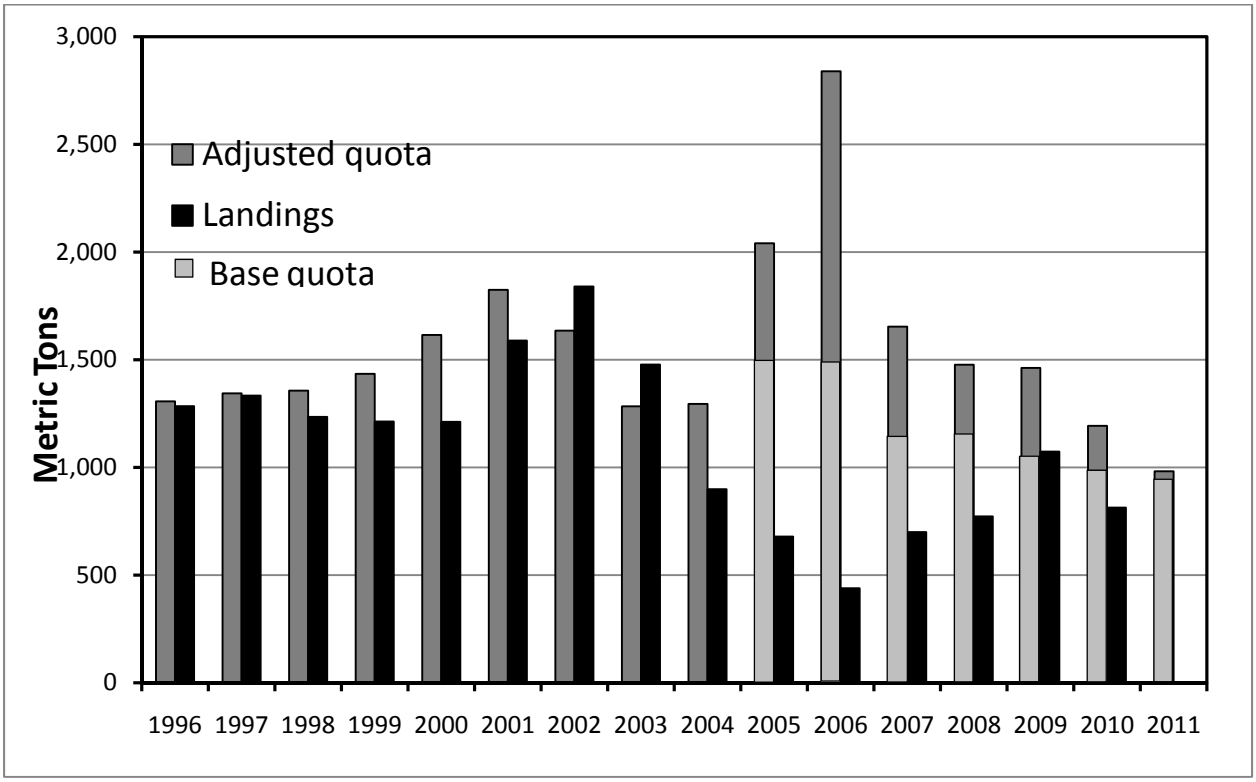


**Figure 2. Annual U.S. Atlantic bluefin tuna landings, ICCAT TAC allocation (base quota), and adjusted quota for fishing years 1996 – 2011.** NOTE: The bluefin tuna fisheries were managed on a fishing year basis (June through May) versus a calendar year basis (January through December) starting with the implementation of the 1999 FMP in 2000 until January 2008, when management reverted to a calendar year basis. Landings are presented on a calendar year (versus fishing year) basis for 1996 through 1999, and for 2008 through 2010. The 2007 fishing year was June 1, 2007-December 31, 2007.

From 1998-2006, ICCAT western Atlantic bluefin recommendations included a dead discard allowance of 79 mt, of which 68 mt was allocated to the United States (Table 1). By definition, "total allowable catch" limits in the ICCAT recommendations would include all sources of catch-related mortality. Commercial fishermen and recreational anglers generally attempt to avoid discarding bluefin tuna; however, some amount of discards is inevitable due to restrictions on size and retention limits, and some number of the bluefin tuna released are already dead or do not survive. The PLL fishery is currently the only fishery for which sufficient data is collected to estimate dead discards. Recommendation 06-06 (effective 2007) did not include the dead discard allowance, and in combination with the reduction in allowable carry-forward, resulted in a need for the United States to account for PLL dead discards in another way, beginning in 2011.

### *Factor 2. Estimates of U.S. dead discards are up*

In 2006, ICCAT's Standing Committee on Research and Statistics approved a method for estimating dead discards using catch rates estimated from observer data and fishing effort reported in the logbooks, which was announced in the proposed specifications for the 2007 fishing year (72 FR 16319, April 4, 2007). Previously, discards were reported from logbook tallies, and adjusted as warranted when observer counts in quarterly/geographic stratum exceeded logbook reports. The change in methodology for estimating U.S. dead discards was first implemented in the 2007 fishing year using 2005 data as a proxy for 2006 estimates (Table 2).

**Table 2. Annual base quota and adjusted quota for the PLL fishery, as well as estimates of longline catch, including dead discard estimates and landings. Units correspond to metric tons (whole weight).**

| ALLOCATIONS | | | | CATCH | | |
|---|---|---|---|---|---|---|
| **Year** | **PLL Base Quota (mt)[1]** | **PLL Base Plus Dead Discards (mt)[2]** | **PLL Adjusted Quota (mt)** | **PLL Landings (mt)** | **PLL Dead Discards (mt)** | **TOTAL CATCH (mt)** |
| 2000 | 112 | 180 | 120 | 51 | 67 | 118 |
| 2001 | 112 | 180 | 93 | 36 | 25 | 61 |
| 2002 | 112 | 180 | 61 | 56 | 38 | 43 |
| 2003 | 144 | 211 | 122 | 94 | 52 | 146 |
| 2004 | 144 | 211 | 126 | 92 | 72 | 164 |
| 2005 | 144 | 211 | 175 | 57 | 131 (46)[3] | 188 |
| 2006 | 144 | 211 | 258 | 66 | 91 | 157 |
| 2007 | 119 | 119 | 225 | 35 | 90 | 125 |
| 2008 | 119 | 119 | 82 | 75 | 173 | 248 |
| 2009 | 107 | 107 | 99 | 131 | 160 | 291 |
| 2010 | 102 | 102 | 100 | 89 | 122 | 211 |
| 2011 | 100 | 100 | 86 | TBD | TBD | TBD |

[1]PLL Base Quota = base domestic quota per the HMS FMP allocation (2000-2011) + 25 mt for incidental bluefin catch in the NED (2003-2011)

[2]PLL Base plus Dead Discards = PLL Base Quota + 68 mt from ICCAT dead discard allowance (2000-2006). This variable is graphed in Figure 3

[3]New methodology for dead discard estimates first applied in 2007 fishery specifications to estimate 2006 dead discards. Since data were not yet available for 2006, the figure for 2005 was used as a proxy. The dead discard estimate for 2005 using the old methodology is 46 mt.

The average PLL dead discard amount for the years 2000-2004 (50.8 mt +/- 19.6 mt) based on logbook tallies, is significantly lower than the average for 2005-2010 (127.9 mt +/- 34.4 mt) which used the new methodology. This increase in the estimated dead discards (resulting from the change in methodology) is apparent in Figure 3, which shows PLL dead discards, landings, and catch (discards plus landings). Figure 3 shows that 2005 was the first year in the time series in which dead discard estimates were higher than PLL landings. Dead discards during the last three years (2008-2010) are the highest in the time series (with the exception of 2005). This recent trend (*i.e.*, last three years) may be due to an increase in interactions with the relatively large 2003 year class as it begins to recruit into the commercial

fishery combined with the target catch requirements in place for retaining bluefin tuna, or an increase in PLL effort, among other things.

Beginning in 2008, PLL catch has exceeded the PLL base plus dead discards (base quota + 25 mt in NED (2003-2011) + 68 mt ICCAT allowance (2000-2006)) (Table 2, Figure 3). The western Atlantic bluefin total allowable catch (TAC) and thus the U.S. TAC allocation have decreased over time, due to changes in ICCAT recommendations including the removal of the allowance used to cover dead discards and reductions in the overall TAC and carry-forward limits from ICCAT. However, from 2008-2010, PLL catch has exceeded domestic allocations for all previous years, which brings us to the third factor in our discussion – increased PLL landings.

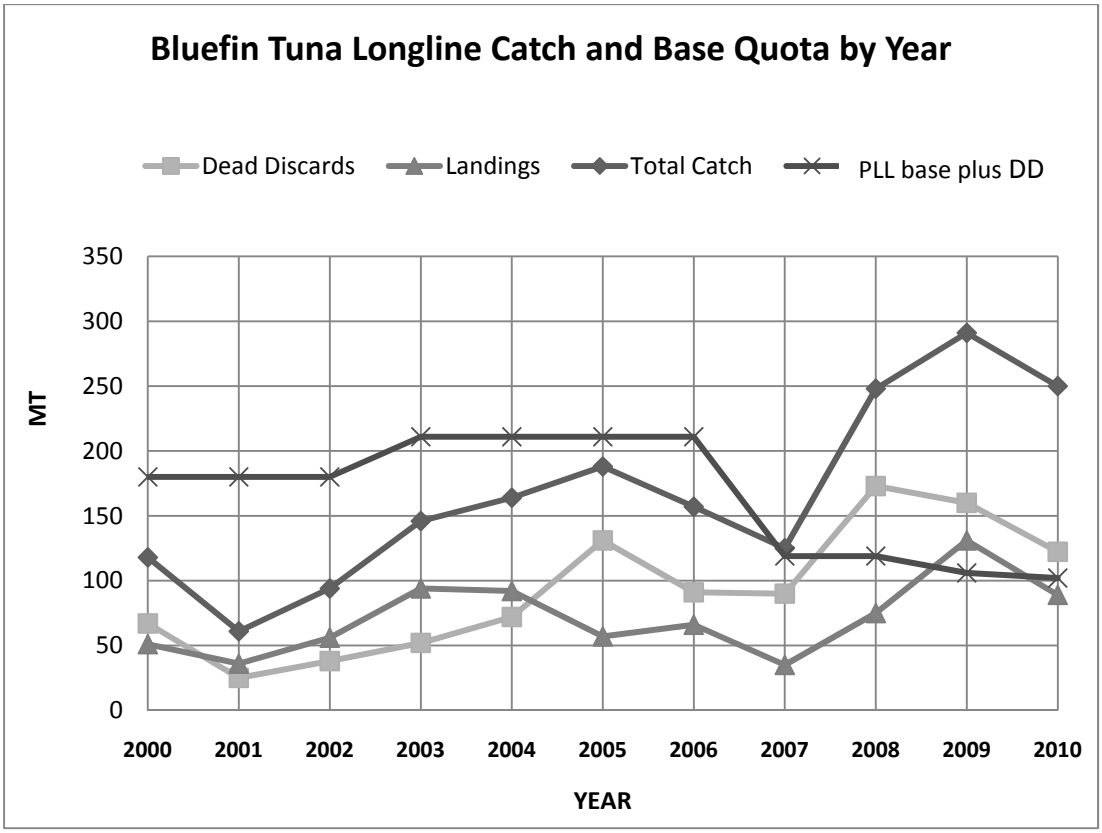


**Figure 3. Bluefin tuna catch (landings plus dead discards) in the PLL fishery. PLL base plus dead discards (DD) includes 25 mt for the NED (2003-2010), the 68 mt allowance from ICCAT for PLL bycatch (2000-2006), and 8.1% of the U.S. total allowable catch allocation from ICCAT per the Consolidated HMS FMP.**

***Factor 3. U.S. landings are up, including PLL landings.***

Since 2006, bluefin tuna landings have been increasing, with the exception of a slight downturn in 2010 (which could be attributed to the Deepwater Horizon oil spill fishery closures) (Figure 2). As of 2011, up to 95 mt of unharvested quota can be carried forward each year, if the full adjusted quota is not harvested by the domestic fisheries in the previous year. This

amount of carry-forward reflects a significant reduction from previous carry-forward limits (ICCAT Recommendation 08-04, Table 1). The full 95 mt was made available in the 2011 fisheries specifications (76 FR 39019, July 5, 2011); however, if 2010 landings and dead discards had been at the 2009 level (Figure 2), then only a portion of the 95 mt would have been available for the 2011 fishing year. If the trend of increasing landings from 2006-2009 continues, carry-forward will decrease accordingly, since the closer the U.S. fisheries come to landing the full adjusted U.S. quota for the fishing year, the less carry-forward there would be for the following year.

PLL landings were the highest in the time series in 2009 and were still high in 2010 (Table 2, Figure 3). Landings for 2009 (131 mt ) and 2010 (89 mt) are greater than the average for the previous eleven years (62.4 mt +/- 22.5 mt), although landings in 2003 (94 mt) and 2004 (92 mt) were slightly greater than the amount of landings in 2010. Annual effort, as accounted by total number of sets, was plotted to determine whether an increase in PLL effort played a role in the increase in catch (Figure 4). Number of sets has generally risen from 2006-2009. Total number of hooks set per year was also plotted in Figure 4 as a measure of effort, and has been fairly constant from 2007-2009. The data for this time series showed a decrease in average number of hooks per set from 735 to 671 between 2008-2009 (J. Desfosse, pers. comm.), which may account for the slight decrease in total number of hooks in 2009, even though the total number of sets increased. NMFS is pursuing analyses that would partition effort data by area and/or target species to better characterize the annual variability in PLL effort.

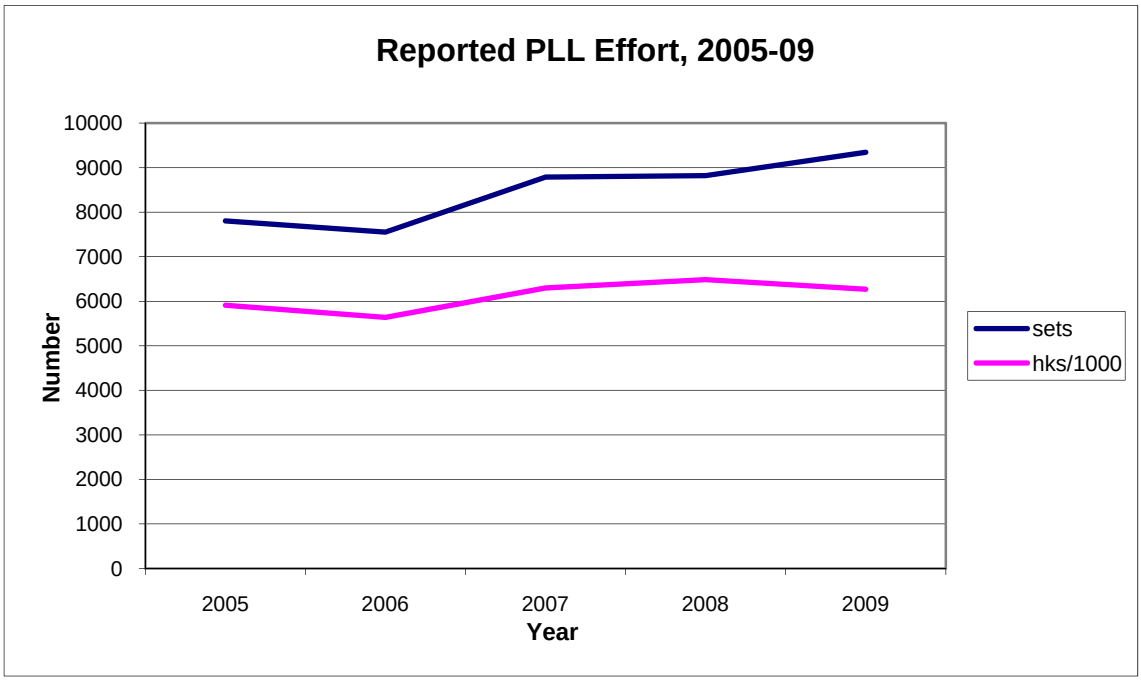


**Figure 4. Annual PLL effort in total number of hooks and number of sets per year, as reported in vessel logbook reports.**

Recruitment of the 2003 year class into the commercial fishery may also have affected the recent increase in amount of discards and landings seen in Figure 3. It is possible that this increase could be a part of what could reasonably be described as a trend in increased *interactions* in the PLL fishery. Table 3 estimates total number of interactions in the PLL fishery for 2005-2009 by combining number of bluefin landed, discarded dead, and discarded alive according to extrapolated logbook reports. The total number of interactions increased annually from 2006-2009 (number of fish is not available for discard estimates for 2005). NMFS is considering further study of the size composition and age of landed and discarded fish to provide some insight into this possible explanation.

**Table 3. Estimated bluefin tuna interactions in the PLL fishery from 2005 – 2009, in number of fish per year. Logbook reports were extrapolated based on observer data. Interactions in number of fish allow some comparison with target catch regulations.**

| Year | Landed (No.) | Discard Dead (No.) | Discard Alive (No.) | Total Inter-actions (No.) |
|---|---|---|---|---|
| 2005 | 1142 | NA | NA | 1142 |
| 2006 | 1095 | 749 | 1000 | 1549 |
| 2007 | 1702 | 769 | 1103 | 2061 |
| 2008 | 1760 | 936 | 1289 | 2292 |
| 2009 | 1919 | 1276 | 1883 | 2769 |

***Convergence and resolution…for now…***

The simultaneous events described above created a situation where the adjusted quota for 2011 was insufficient to cover the base allocations for all categories per the percentages in the 2006 Consolidated HMS FMP, as well as the anticipated dead discards. In the final specifications, NMFS provided full allocations to each directed fishing category, and subtracted half of the 2010 dead discard estimate (*i.e*., 61.2 mt, used as a proxy for 2011 discards) up front, directly from the Longline category quota, and applied half of the 94.5 mt allowed to be carried forward to 2011 to the Longline category. In addition, NMFS reinstated target catch requirements in the NED, which may serve to further reduce incentive for bluefin interactions in that region. Further, the weak hook requirement for PLL fishing in the Gulf of Mexico (76 FR 18653, April 5, 2011) could reduce PLL catch in the Gulf of Mexico.

## Part II. Strategies for Managing Dead Discards in Other Fisheries

The following case studies provide some examples of other fisheries that face similar issues concerning target species and bycatch/dead discard.

***1. Red Snapper and Shrimp in the Gulf of Mexico.*** *(73 FR 5117, January 29, 2008)*

In 2008, Amendment 14/27 to the Gulf Shrimp and Reeffish FMPs implemented bycatch targets for reducing red snapper mortality in shrimp trawl fisheries, among other things. Shrimp trawls primarily catch red snapper that are below the minimum size, which is attained at 3-4 years of age. Red snapper is a valuable part of the both the commercial and recreational snapper-grouper fisheries and is classified as overfished without overfishing.

An assessment of the previous year's shrimp trawl fishing effort and status of the bycatch reduction target is produced by March 1 of each year. If bycatch of juvenile red snapper is estimated to be in excess of the bycatch targets and shrimping effort has increased, closures to reduce shrimping effort may be implemented in three regions (Eastern Gulf of Mexico, LA, TX) during the following season. To date, no closures have been triggered. If needed, a closure would be implemented via final rule; environmental and other impacts of these measures would fall within the scope of the analyses for Amendment 14/27's implementing regulations.

Questions:

- Would it be effective for NMFS to use PLL fishery closures for the following year to make up for increased landings or dead discards of bluefin tuna in the PLL fishery in a previous year? Note -- The current BFT regulations allow for reconciling a landings overage for bluefin tuna the following year (*i.e.,* a reduction in landings as opposed to a closure).

**2. *Scallop and Yellowtail Flounder (YTF) in New England*** *(76 FR 43746, July 21, 2011)*

Under the New England Fishery Management Council's multi-species FMP, 10 percent of the Georges Bank YTF TAC and 10 percent of the Southern New England/Mid-Atlantic YTF TAC are allocated to scallop vessels fishing in protected areas that are closed to multispecies fishing, called *scallop access areas* (*i.e.*, Closed Areas I and II in Georges Bank, and Nantucket Lightship Area, in Southern New England). If either of the YTF TACs is caught, then the access areas within those regions are closed to scallop vessels for the remainder of the fishing year, precluding vessels from fishing in these highly productive areas. If a scallop vessel has unused trips in an area due to a yellowtail closure, they are allocated additional open area Days at Sea (DAS) to use during the remainder of the fishing year so that equivalent scallop mortality occurs. The scallop fishery also has broader Georges Bank and Southern New England annual catch limits of YTF that apply for both open areas and access areas; however, if these limits are exceeded, overages are addressed the following year with seasonal area closures.

The industry and the University of Massachusetts (SMAST) have collaborated to produce a real-time monitoring tool that posts areas of high YTF catch to a university website so scallop fishermen can avoid those areas (http://www.smast.umassd.edu/index.php). Fishermen supply data about their catches to SMAST which is then translated to general grades of yellowtail interaction. SMAST posts this information on online charts so fishermen can avoid areas of high YTF concentration to keep the fishery in the protected areas open for as long as possible, benefiting the fleet as a whole.

Questions:

- In the event that the PLL fishery would be closed due to bluefin tuna landings or dead discards, would the SMAST/industry collaboration model help PLL fishermen avoid bluefin tuna to avoid a closure?

Other things to think about:

- Are there closed areas that would allow improved access to target species, that could be opened with hard caps for protected species (similar to the scallop access area openings)?

***3. Chinook salmon bycatch in the Bering Sea walleye pollock fishery***[5] *(75 FR 53026, August 30, 2010)*

Chinook (king) salmon are caught as bycatch in the pollock trawl fishery 1-2 years before they can return to natal rivers to spawn. Chinook salmon are a high-value species extremely important to western Alaskan commercial and subsistence fishermen, and also provide remote trophy sport fishing opportunities. Reasons for reductions in the number of Chinook salmon returning to spawn in western Alaska rivers and the Canadian portion of the Yukon River drainage are uncertain, but recent increases in Bering Sea bycatch may be a contributing factor.

Chinook are managed as a prohibited species, *i.e.*, they must be discarded (after being recorded by observer) or donated to a food bank. If/when the salmon hard cap is hit, the pollock fishery closes. This fishery has 100% observer coverage, which is the primary basis for monitoring salmon bycatch.

Amendment 91 (75 FR 53026, August 30, 2010, amended , 75 FR 58337, September 24, 2010) allows Chinook salmon prohibited species catch allocations to be traded among sectors involved in the fishery using an internet based on-line trading application (http://www.fakr.noaa.gov/sustainablefisheries/bycatch/default.htm). Fishermen may accept a smaller hard cap (~47,000 fish), or create an incentive plan agreement (IPA) and establish

[5] http://www.fakr.noaa.gov/sustainablefisheries/bycatch/salmon/chinook/feis/executive_summary.pdf; July 15, 2011

performance standards in exchange for a higher cap (60,000 fish), provided they do not exceed 47,000 fish three times in any seven-year period; otherwise, it is set at 47,000 permanently. IPAs and performance standards are established by industry sectors and can include a variety of measures, such as area closures, modifying time of fishing activities, and gear modification, among others. The IPAs and standards are reviewed by NMFS and the North Pacific Fishery Management Council. The sectors report annually on the status of fishery with respect to achieving their agreements.

Question:

- Would management of bluefin landings and dead discards by sector be useful for the PLL fleet? How could sectors be defined within the HMS PLL fleet?
- Would short term transfers of quota allocation, pursuant to determination criteria, among current categories (e.g., purse seine trade to longline) fit this model?

### *4. Northeast Groundfish*

Northeast groundfish are mostly managed under an optional sector program which allows individual fishermen to form a sector and receive allocations of groundfish by species and stock. Allocations are based on the historical catch of the individuals that comprise the sector. Sectors are permitted to trade their allocations with other sectors. Because sectors are formed voluntarily by individual fishermen, they often include more than one gear type and may span across geographic areas.

Both landings and discards count against a sector's allocation. Discard of legal-sized groundfish is prohibited. Groundfish (both target and non-target) may only be discarded if they are below the minimum size, and they must still be counted against a sector's quota. Observer data are used to estimate discards for each sector on a weekly basis. A target of 38% observed trips was established for the 2010-11 season. Discard rates are re-computed weekly, and retroactively applied to previous weeks because the cumulative data provide a more robust estimate of discards. To date, none of the sectors exceeded their quota allocation during the 2010-2011 season. The high rate of observer coverage was funded by NMFS for the 2010-2011 season, and will transition to industry funding in 2012.

Stocks with lower allocations (referred to by some as "choke" stocks) vary by sector and during 2010-2011 included cod and hake, among others. If a sector catches its allocation of one of the stocks with a low allocation, it must stop fishing in that stock area; however, to avoid early closure of such stock areas, sectors can trade portions of allocations easily using an internet based trading application. As long as the sector is in compliance with reporting requirements (observer, vessel, and dealer), then transfers are approved by NMFS. Each sector is required to employ a sector manager who is responsible for monitoring, reporting, and trades.

Question:

- Could the PLL fishery benefit from sector management with allocation of bluefin landings quota and discards to individual PLL vessels or sectors?

### *5. Canadian PLL fishery and bluefin tuna discards*

The Canadian pelagic longline fleet targets swordfish and other tunas, and catches bluefin tuna incidentally. The fishery operates with individual transferable quotas, with approximately 77 limited access permits, of which 48 were active in 2005. Until 2007, there was no domestic bluefin allocation to the PLL fleet from the Canadian ICCAT TAC allocation. Prior to 2007, ICCAT allocated 15 mt to Canada for PLL dead discards "in the vicinity of the management area boundary" which Canada defined as the Central North Atlantic; and, a 5.6 mt dead discard allowance.

After ICCAT Recommendation 06-06 removed the dead discard allocation for Western Atlantic bluefin, Canada allocated 18.8 mt of the domestic landings quota to the PLL fishery in 2007 as a means to decrease dead discards. Other measures that were implemented to decrease bluefin dead discards in the Canadian PLL fishery are given in Table 4. VMS is required for all PLL vessels, in addition to vessel logbooks and industry funded dockside monitoring. Approximately 5% of trips are observed, and coverage is funded by the industry.

**Table 4. Management measures to reduce bluefin tuna discards in the Canadian PLL fishery for swordfish and other tunas.**

| Management Measure | Detail |
|---|---|
| Closed Areas | Bluefin Exclusion Area; Hell Hole |
| Hail in bluefin catches | Vessels must hail in and out of port, and hail in all bluefin catches, including tag numbers |
| Prohibition of dead discards on concurrent trips | Vessels may be assigned both a PLL and BFT directed permit and conduct concurrent trips. All bluefin caught on concurrent trips must be landed. It is up to each PLL vessel to ensure it has enough tags for a bluefin before it leaves the dock; trip ends when all tags are used |
| Quota transfers | Quotas may be transferred between sectors;<br>Quota from bluefin fleets to PLL vessels may be transferred via tag allocation; |

The Canadian directed bluefin tuna fishery is limited to hand gear (tended line and rod and reel) and had about 777 limited access permits in 2007. Seven regional inshore sectors and one offshore vessel are assigned quota allocations based on historical catch levels (1993-2002), and develop sector conservation harvesting plans that include the required provisions of the integrated fishery management plan (IFMP). Required measures of the IFMP include: 30 kg (equivalent to 47" curved fork length) minimum size, vessel logbooks, industry funded dockside monitoring, industry funded observers (when required by the Canada Department of Fisheries and Oceans (DFO)), bluefin tuna tags issued to vessels at a cost of $150 each. Quota transfer among the sectors may be approved by DFO. In addition, if a directed permit holder also holds

a pelagic longline permit for swordfish and other tunas, then dead discards of bluefin are prohibited, and all bluefin (> 30 kg) must be landed.

**Table 5. Comparison of measures for management of incidental catch in several fisheries.**

| Management Approach | Timing | Monitoring | Status of Management Program | Application to HMS? |
|---|---|---|---|---|
| **Fishery:** Gulf of Mexico Penaeid Shrimp **Non-target Catch:** Juvenile red snapper | | | | |
| Area Closures | Following season | -observer<br>-logbooks<br>-port samples | -bycatch reduction targets have been met due to reduced effort; no closures implemented | - consider establishing quota for incidental bluefin catch and close areas or reduce quota by area in the following season, based on location and amount of overages<br>- regional closures based on annual effort may be less useful for highly migratory species & fleet<br>- since effort in shrimp fishery has been low, so mechanism has not yet been applied |
| **Fishery:** Northeast Sea Scallop **Non-target Catch:** Yellowtail flounder | | | | |
| -rotational access to five access areas w/ hard bycatch cap<br>-If cap is hit, access areas are closed and vessels allocated additional "Days at Sea" in open areas<br>-in open areas if cap is hit, seasonal or area closures are implemented the following year | Real time measures in access areas;<br>Following season in open areas | -observer<br>-logbooks<br>-dealer reports | -SMAST collaboration successful in keeping protected areas open;<br>-sea scallop resource is healthy and fished at sustainable levels | - consider applicability of SMAST & industry collaboration model to identify areas of high bycatch<br>- consider additional time/area closures & application of hard caps in those areas w/ real time closures once caps are reached. |
| **Fishery:** Bering Sea Pollock **Non-target Catch:** Chinook salmon | | | | |
| -transferrable prohibited species catch limits;<br>-level of catch limit informed by incentive plan agreement; | Real-time measures to close fishery if bycatch cap is reached;<br>Review of IPA effectiveness (*i.e.*, if over 3 out of 7 years, must reduce | -100% observer coverage<br>-annual reports from sectors | Bering Sea Pollock/Chinook Salmon: healthy and fished at sustainable levels | -consider sectors and/or distribution of individual BFT catch limits based on incentive plan agreements developed by the industry participants |

| Management Approach | Timing | Monitoring | Status of Management Program | Application to HMS? |
|---|---|---|---|---|
| | catch limit) | | | |
| **Fishery:** Northeast Groundfish **Non-target Catch:** Cod, hake, etc. | | | | |
| -Sector allocations;<br>-transfers between sectors allowed;<br>-discards of legal sized groundfish are prohibited<br>-closure when allocation for any species is met | Real time | -observers<br>-logbooks<br>-dealer reports | -After first year, no hard cap closures were necessary<br>-No overages | -consider sectors within PLL fishery or individual, transferable bycatch allocations |
| **Fishery:** Canadian PLL for swordfish & other tunas **Non-target Catch:** Bluefin tuna | | | | |
| -incidental quota (2007)<br>- quota /tag transfers between incidental and/or direct categories<br>-all BFT must be landed for concurrent trips | Real time | -hailed in catches/tag nos.<br>-logbooks<br>-dockside monitors (industry funded)<br>-observers (industry funded) | -low discards | -concurrent licenses (*i.e.*, hand gear and pelagic LL on one vessel) are prohibited in current regs;<br>-could consider increasing incidental quota;<br>-could consider allocating BFT tags to individual vessels and allow transfers similar to ITQs |

**Part III. Next Steps/Topics for Discussion with AP**

- The Agency is interested in feedback from stakeholders concerning options for management of Atlantic bluefin tuna in the PLL fishery that would ensure consistency with the existing rebuilding plan, Atlantic Tunas Convention Act (ATCA), and the Magnuson-Stevens Fishery Conservation and Management Act. PLL management should also take into consideration other management issues such as swordfish revitalization efforts as well as reduction in interactions with sea turtles, marine mammals, billfish, and other bycatch species.

- In 2013, NMFS intends to revisit the decision to list Atlantic BFT as a species of concern under the Endangered Species Act (ESA).

- The process of changing the regulations can take 2-3 years, therefore, NMFS would like to consider how fleetwide bluefin tuna landings/dead discards may be managed under a variety of quota vs. landings scenarios (*i.e.*, full utilization vs. quota available). Regulatory measures that are flexible enough to be effective under a variety of these scenarios may minimize the need for future regulatory changes.

- Measures related to the following themes may warrant further consideration:

    1. Decrease PLL and bluefin tuna interactions:
        - Fishing Gear
            - expand weak hook requirements to the NED or other areas, where appropriate, to reduce the number of bluefin tuna discarded/landed;
            - transition to other gears that are less likely to catch or kill bluefin tuna.

        - Time/Area Closures
            - Consider opening seaward portion of Charleston Bump to PLL, based on recent research (Dr. Kerstetter) that shows low bluefin interactions in this area;
            - Reconsider other time/area closure analyses as appropriate to reduce bluefin interactions and minimize other bycatch while maintaining or increasing access to target species;
            - Industry might want to consider models for industry-academic collaborations for monitoring incidental catch to facilitate avoidance by the fleet (*i.e*., similar to SMAST/industry approach).

        - Hard Caps:
            - Close the PLL fisheries for HMS once the PLL bluefin tuna allocation is caught;

- Establish individual, transferable bycatch caps for bluefin tuna in the PLL fishery.

2. Quota Allocation:
    - Modify the quota allocation for bluefin tuna in the PLL fishery to account for recent levels of interaction;
    - Re-allocate quotas based on recent catch data (landings and discards) for all bluefin fisheries. If catch data is not available for all fisheries, conduct research or establish fishery monitoring requirements as necessary to generate discard estimates;
    - Increase flexibility with multi-year quota allocations.

3. Reduce waste by prohibiting discards:
    - Allow an increase in retention (including a decrease in minimum size consistent with ICCAT) to minimize waste of dead discards, with concomitant measures to reduce overall catch;
    - Require donation of bluefin tuna over a certain limit established to minimize incentive to target bluefin tuna.

4. Establish PLL sectors:
    - Allow sectors within the PLL fishery to develop individual bluefin tuna catch reduction strategies based on the needs of the sector and criteria established by NMFS.

5. Expand use of monitoring tools: New technology could facilitate implementation of management measures listed above. VMS, expanded observer coverage, or video cameras could provide real-time estimates of bluefin tuna dead discards and landings in the PLL fishery.

6. Encourage industry collaboration: many of the options above could be implemented via industry programs or required under regulatory measures. Industry programs could have the added benefit of increased autonomy, compliance, flexibility, and speed of implementation.