DRAFT AMENDMENT LANGUAGE TO WEST COAST
FISHERY MANAGEMENT PLANS

This document contains draft language that would amend the Coastal Pelagics Species, Pacific Coast Salmon, and the Highly Migratory Species Fishery Management Plans (FMPs). The language presented would be used to make all FMPs consistent with the standardized bycatch reporting methodologies (SBRM) final rule. The document excerpts sections from the respective FMPs to show proposed changes. Deletions are shown with strikeout and insertions with underline.

DRAFT LANGUAGE TO AMEND
THE COASTAL PELAGICS SPECIES FISHERY MANAGEMENT PLAN

2.6 Standardized Bycatch Reporting Methodology

As required under Magnuson-Stevens Act, all FMPs must "establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery" (16 U.S.C. § 1853(a)(11)). Standardized bycatch reporting methodology (SBRM) is an established, consistent procedure or procedures used to collect, record, and report bycatch data in a fishery, which may vary from one fishery to another. This section described the SBRM for CPS fisheries and how it meets the purpose of SBRMs.

Bycatch in CPS fisheries is typically low due to the characteristics of the targeted species and the fishing gears. For example, CPS finfish typically school with similarly sized fish and are harvested above the thermocline (not associated with substrate). CPS vessels fish with roundhaul gear (purse seine or lampara nets). Roundhaul fishing tends to reduce unintentional catch, primarily because the fishermen target specific schools of CPS finfish and market squid, and the net can be adjusted when fishing in shallow water to reduce bycatch of benthic species. The most common catch of non-target species in a CPS fishery are other CPS species, which are typically sold and therefore are not bycatch. Various reviews of catch in CPS fisheries have confirmed that bycatch of non-CPS is extremely low.

The SBRM for CPS fisheries, as established under Amendment 9, is a reflection of the characteristics of bycatch in the fishery and findings from analyses during the development of Amendment 9 that showed bycatch was sufficiently minimized through existing management measures and regulations, and that SBRM could be accomplished cost-effectively through required state programs. The CPS SBRM consists of a suite of reporting and monitoring programs required by the states of California, Oregon, and Washington including logbooks, fish landing receipts, shorebased/dockside sampling, and observer programs for newly developing fisheries. Of these, fish landing receipts are mandated by all three states and apply uniformly to all CPS landings whereas the other programs may vary by fishery and state depending on need.

Additionally, the CPS FMP authorizes federal observers as described in Section 2.2.1.1. This regulation was added to the FMP through Amendment 9 as part of the FMP's SBRM. Based on

the data collected through historical observing programs, bycatch in CPS fisheries is known with reasonable certainty to be low, with the majority of non-target species caught in CPS fisheries being other CPS that are incidental catch rather than bycatch. Hence, CPS fisheries are not currently subject to having mandatory observers aboard. In addition, Washington and Oregon state regulations authorize observers and states may conduct observer programs.

These reporting and monitoring programs have been operating efficiently for many years and have shown to be feasible over time, as evidenced by their continued operation and use of the resulting data. The data from these programs are used each year by the Council, usually in the annual SAFE document, to assess the type and amount of bycatch in CPS fisheries. There is relatively low uncertainty around the suite of data from these programs because they have been ground-truthed by other more intensive data collection methods, namely observer programs in the 1990s and early 2000s, that were discontinued due to findings that bycatch in CPS fisheries was indeed low.

DRAFT LANGUAGE TO AMEND
THE PACIFIC COAST SALMON FISHERY MANAGEMENT PLAN FOR
COMMERCIAL AND RECREATIONAL SALMON FISHERIES
OFF THE COASTS OF WASHINGTON, OREGON, AND CALIFORNIA
AS REVISED THROUGH AMENDMENT 21

3.5 BYCATCH

"Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch."

Magnuson-Stevens Act, National Standard 9

*"...Establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority*B

(A) minimize bycatch; and

(B) minimize the mortality of bycatch which cannot be avoided;"

Magnuson-Stevens Act § 303(a)(11)

3.5.1 Definition and Management Intent

"Bycatch" for the purposes of this fishery management plan is defined as fish harvested (caught) in an ocean salmon fishery which are not sold or kept for personal use and includes economic discards, regulatory discards, and fishery mortality due to an encounter with fishing gear that does not result in capture of fish. Bycatch does not include any fish that legally are retained in a fishery and kept for personal, tribal, or cultural use, or that enter commerce through sale, barter, or trade. In addition, under the provisions of the MSA, bycatch does not include salmon released alive under a recreational catch-and-release fishery management program.

Under the salmon FMP, the primary bycatch that occurs is bycatch of salmon species. Therefore, the Council's conservation and management measures shall seek to minimize salmon bycatch and bycatch mortality (drop off and hooking mortality) to the greatest extent practical in all ocean fisheries. Very limited bycatch of groundfish species occurs as well. When bycatch cannot be avoided, priority will be given to conservation and management measures that seek to minimize bycatch mortality and ensure the extended survival of such fish. These measures will be developed in consideration of the biological and ecological impacts to the affected species, the social and economic impacts to the fishing industry and associated communities, and the impacts upon the fishing, management, and enforcement practices currently employed in ocean salmon fisheries (see also Section 6.5.3).

Shared EC Species, identified in Table 1-4, could continue to be taken incidentally without violating Federal regulations, unless regulated or restricted for other purposes, such as with bycatch minimization regulations. The targeting of Shared EC Species is prohibited.

3.5.2 Occurrence of Bycatch

~~The present~~ Current bycatch and bycatch mortality estimates and methodologies for salmon in salmon fisheries are documented by the STT annually in the SAFE and Preseason Report III documents. Descriptions of bycatch estimation methodologies are included in an appendix to Preseason Report III. ~~Bycatch of salmon in Pacific Coast trawl fisheries is documented in Amendment 12 (PFMC 1997a). More recent information is reported in a Section 7 biological opinion regarding salmon bycatch in the groundfish fishery (NMFS 2006), and a subsequent report that summarizes the bycatch of salmon in recent years (Bellman et al. 2011). Salmon fisheries or fishery practices that lack or do not have recent observation data or estimates of bycatch composition and associated mortality rates will be identified by the Council for future research priority in their biannual Research and Data Needs Report to NMFS.~~

~~Future~~ Changes ~~in the procedures and~~ to the methodologies from prior years will occur only if a comprehensive technical review ~~of existing biological data justifies~~ supports a modification and the modification is approved by the STT, SSC, and Council. ~~All of these changes will~~ Any changes to methodologies for estimating bycatch will be considered ~~occur~~ within the schedule and process established for Salmon Methodology Review and apart from the preseason planning process (Council Operating Procedure 15; PFMC 2008), unless the Council determines additional review is necessary. Salmon fisheries or fishery practices that lack or do not have recent observation data or estimates of bycatch composition and associated mortality rates will be identified by the Council for future research priority in their biannual Research and Data Needs Report to NMFS.

~~Bycatch of fish other than salmon in salmon fisheries is generally very limited. Only hook-and-line gear is allowed in ocean salmon fisheries and regulations allow for retention of most groundfish species and limited numbers of Pacific halibut that are caught incidentally while salmon fishing.~~

3.5.2.1 Characteristics of Bycatch in the Salmon Fishery

Salmon bycatch, consistent with the definition above, occurs when salmon are discarded due to regulatory reasons (e.g., undersized salmon not legal to retain or non-target species are captured such as Chinook salmon in coho salmon directed fishery), boat limits are reached (additional encounters are discarded and therefore not sold or kept for personal use), and also includes salmon that encounter fishing gear but do not result in harvest of fish (drop off and release mortality).

Based on prior examinations of groundfish bycatch in the salmon fishery (2006 EA), coupled with declining levels of salmon fishing effort since the last examination, bycatch of fish other than salmon in salmon fisheries is generally very limited and expected to continue to be low. Only hook-and-line gear is allowed in ocean salmon fisheries and regulations allow for retention of most groundfish species. Incidental groundfish catch is also considered part of the open access groundfish fishery. ~~And~~ The limited number~~s~~ of incidental Pacific halibut caught ~~incidentally~~ while commercial salmon fishing are managed under the North Pacific Halibut Act of 1982 (U.S. Congress, 1982).

All non-salmon species (except halibut and highly migratory species) must be released when fishing in the federal Rockfish Conservation Area (RCA) unless a vessel is equipped with Vessel

Monitoring System (VMS). Vessels with VMS may retain a limited quantity of some groundfish. However, the proportion of salmon vessels equipped with VMS is thought to be relatively small.

In addition, the number of active salmon permits and the number of vessels landing salmon in Washington, Oregon, and California indicate that fishery participation has generally decreased or been stable since at least 1980. In addition, the commercial salmon troll fishery has not had changes in gear type, structural changes in fishery regulations, or major expansion of open fishing areas. Based on this information it is unlikely that characteristics of groundfish bycatch in the salmon fishery have increased over time, nor is it expected to increase in the future.

3.5.3 Standardized Bycatch Reporting Methodology

3.5.3.1 Data collection, recording, and reporting on bycatch in the salmon fishery

Consistent procedure(s) used to collect, record, and report salmon bycatch data have been established to assess the amount and type of bycatch occurring in ocean salmon fisheries. The data used to assess salmon bycatch in the ocean salmon fishery is collected through sampling and monitoring programs conducted by the states of Washington, Oregon and California, and the tribes, in various ports along the west coast. Data from the commercial salmon troll fisheries are documented on commercial landing receipts and reported in an electronic fish ticket system. Data from recreational ocean fisheries are estimated through a comprehensive dockside sampling program, and estimates of salmon that are retained as well as salmon that are released are provided to RecFIN(recFIN.org).

Section 7.2.2 of this plan details the methods for obtaining data, stating the local fishery management authorities (states, Indian tribes) will collect the necessary catch and effort data and will provide the Secretary with statistical summaries adequate for management. The local management authorities, in cooperation with and subject to review by the National Marine Fisheries Service, will continue this data collection. Section 7.3 of this plan authorizes local management authorities to determine the specific reporting requirements for those groups of fishermen under their control and to collect that information under existing local data-collection provisions. Data regarding released salmon in the salmon recreational fisheries is collected by the states through dockside interview programs. There are no reporting requirements for salmon bycatch in the commercial salmon fishery, however, released salmon may be voluntarily reported on fish tickets. Bycatch concerns are very low in the commercial salmon fishery due to the selectivity of gear, seasonality, and the implementation of closed areas during times of the year when bycatch is generally highest. If this data collection and/or reporting becomes insufficient to manage the salmon fishery, federal data collection may need to be implemented.

These data collection efforts are feasible, as they have been implemented in the fishery for a number of years.

3.5.3.2 Assessing bycatch in the salmon fishery

Anticipated bycatch in the fishery is addressed in the salmon preseason planning process and documented annually at conclusion of the preseason planning process in the Preseason Report III. In the pre-season planning process, the STT uses existing bycatch data and modeling methodologies to describe the salmon bycatch that would be expected to result from each of the

management alternatives developed in the preseason process.─Post-season estimated incidental mortality of salmon is reported in the annual Review of Ocean Salmon Fisheries

~~Within the salmon preseason planning process,~~The management alternatives will be assessed for the effects on the amount and type of salmon bycatch and bycatch mortality. Estimates of salmon bycatch and incidental mortalities associated with salmon fisheries will be included in the modeling assessment of total fishery impact and assigned to the stock or stock complex projected to be impacted by the proposed management measures. The resultant fishery impact assessment reports for the ocean salmon fisheries will specify the amount of salmon bycatch and bycatch mortality associated with each accompanying management alternative. The Preseason III report of Council-~~adopted~~ recommended management measures will contain an assessment of the total salmon bycatch and bycatch mortality ~~for~~ estimated to result from the ocean salmon fisheries, and include the percentage that these estimates represent compared to the total harvest projected for each species, as well as the relative change from the previous year's total bycatch and bycatch mortality levels.

3.5.3.3 Data uncertainty regarding bycatch in the salmon fishery

For some fishery sectors there is not any direct observation or reporting of salmon bycatch, and in those cases historical data from when full retention occurred in the fishery can be used to model expected encounter rates given contemporary effort and abundance estimates. In such cases, standard bycatch rates developed using the best scientific information will be used to estimate bycatch. The use of standard rates can introduce uncertainty in the bycatch estimates. Although this uncertainty cannot be described quantitatively, the majority of the bycatch estimation uncertainty is assumed to be from release and drop-off mortality estimates which are based on the best scientific information available, which have been reviewed by the STT (STT, 2000).

Salmon fisheries or fishery practices that lack recent bycatch data or estimates of bycatch composition and associated mortality rates will be identified by the Council for future research priority in their biannual Research and Data Needs Report to NMFS.

The STT will annually continue to assess the number of active permits and the number of vessels landing salmon in California, Oregon, and Washington to determine if fishery participation levels change over time to gauge potential changes in byctatch of groundfish since the last examination occurred (2006 EA [NMFS 2006]), and will document their findings annually in the Preseason III report.

12 LITERATURE CITED

~~Bellman, M., J. Jannot, and J. Majewski. 2011. Observed and estimated total bycatch of salmon in the 2009 US west coast groundfish fisheries. West Coast Groundfish Observer Program. National Marine Fisheries Service, NWFSC, 2725 Montlake Blvd., Seattle, WA 98112. 32 p.~~

STT. 2000. STT Report B.2. (Final) "STT Recommendations for Hooking Mortality Rates in 2000 Recreational Ocean Chinook and Coho Fisheries". Available at www.pcouncil.Org

United States Congress. 1982. Northern Pacific Halibut Act of 1982. Available at www.GOVINFO.gov

Environmental Assessment for the Proposed 2006 Management Measures for the Ocean Salmon Fishery Managed Under the Pacific Coast Salmon Plan. (Document prepared by the Pacific Fishery Management Council for the National Marine Fisheries Service.) Pacific Fishery Management Council, 7700 NE Ambassador Place, Suite 200, Portland, Oregon 97220-1384.

DRAFT LANGUAGE TO AMEND
THE FISHERY MANAGEMENT PLAN FOR WEST COAST FISHERIES FOR HIGHLY MIGRATORY SPECIES

6.3 Bycatch Monitoring and Minimization

The MSA requires that bycatch in fisheries be assessed, and that the bycatch and bycatch mortality be reduced to the extent practicable. Specifically, National Standard 9 states that an FMP shall establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery~~,~~ and include conservation and management measures to the extent practicable and in the following priority: 1) minimize bycatch; and 2) minimize the mortality of bycatch which cannot be avoided.

~~Bycatch has been identified as a concern in HMS drift gillnet and longline fisheries and large-vessel purse seine fisheries (see Appendix C). Anecdotal accounts indicate bycatch in the small-vessel HMS purse seine and albacore troll fishery is relatively low, but these fisheries have not had formal observer programs. The harpoon fishery is thought to have little, if any, bycatch due to the selective nature of the gear.~~

6.3.1 Standardized Bycatch Reporting Methodology

MSA Section 303(a)(11) requires that FMPs establish a standardized bycatch reporting methodology (SBRM) to assess the amount and type of bycatch occurring in any fishery managed under the FMP. An SBRM is an established, consistent procedure or procedures used to collect, record, and report bycatch data in these managed fisheries, and the methods may vary from one fishery to another. The SBRM is used to estimate bycatch as its defined by the MSA and includes fish which are harvested in a fishery, but which are not sold or kept for personal use and includes economic discards and regulatory discards. SBRMs, as described in the FMP, focus on reporting methods and inform procedures to assess bycatch and the development of measures to minimize bycatch or bycatch mortality (section 6.3.2).

When developing this FMP, the Council examined existing bycatch reporting methodologies, and found that current logbook requirements for the various fisheries (states, NMFS and IATTC), together with periodic recreational fishing surveys and port sampling, have provided an important source of information on catch and bycatch for all HMS fisheries (Appendix C, section 5). Nonetheless, certain additional measures were considered to provide improved standardization of logbook reporting and better ground- truthing of the logbook data through pilot observer programs for some of the presently unobserved fisheries. Observer programs are authorized consistent with observer sampling plans prepared by NMFS (Section 6.2.3). All commercial and recreational party or charter/CPFV fishing vessels must maintain and submit to NMFS logbook records containing catch and effort statistics, including bycatch ~~These measures, together with existing reporting requirements, should provide for a comprehensive standardized bycatch reporting system.~~ (Section 6.2.2).

When designing and developing monitoring data collection programs under the SBRM, the Council and NMFS, in consultation with the states, considered the feasibility and need for various monitoring methods in light of the level of bycatch in each fishery and the risk that such bycatch poses to affected fish stocks. Catch and bycatch characteristics for the fisheries managed under this FMP are addressed in this Section, and in further detail in Appendix C of the FMP and the Stock Assessment and Fishery Evaluation (SAFE) reports, which are updated annually. In addition to reporting catch and bycatch in Appendix C and the yearly SAFE reports, logbook data is used to report aggregated catch (including bycatch) and effort to the respective RFMOs and RFMO science providers, which use the information to produce stock assessments for HMS. SBRM for some HMS fisheries incorporates state-run programs sufficient for meeting federal requirements. If conditions in a fishery change such that the amount or nature of bycatch changes, or a state-run program is no longer sufficient for meeting federal requirements, the Council could use the framework procedures described in Section 5.1 to implement additional bycatch monitoring and reporting methodologies.

The authorized gear types enumerated in Section 6.1 define the following fisheries to which SBRMs apply:

- Surface hook-and-line fishery targeting albacore tuna
- Harpoon fishery
- Coastal purse seine fishery when targeting HMS MUS
- California large mesh drift gillnet fishery
- Pelagic longline fishery
- Recreational party/charter boat fishery
- Private recreational boat fishery

Appendix C also describes bycatch monitoring measures for the tropical tuna purse seine fishery. However, this fishery is not actively managed under the HMS FMP, because no vessels in the fishery make landings on the West Coast. Conservation measures for the fishery are adopted by the IATTC and applied to U.S. vessels by regulations pursuant to the Tuna Conventions Act and the High Seas Fishing Compliance Act, rather than the MSA.

Surface hook-and-line fishery targeting albacore tuna

NMFS began collecting data from the fishery in 1974. Each year the SWFSC publishes a summary of the fishery and its associated statistics in an administrative report. Discard rates of non-marketable albacore are not known definitively, but limited observer sample data from the North Pacific albacore troll fishery during the 1990s indicated that these rates are likely low and if accounted for, would not substantially inflate the estimates of the landed catch. Typically, the troll fishery discards fish that are smaller than roughly 4.1 kg (58 cm or 2-year-old fish). According to information in Appendix C (Section C.3.2) small amounts of skipjack tuna, bluefin tuna, dorado, and billfish were observed as incidental catch and are generally sold according to data from the limited observer program run by NMFS (27 trips in 8 years) in the 1990s and in 2006, and from commercial landings data.

According to information compiled in Appendix C (Section C.3.2), the live bait boat component of this fishery is very selective in catching larger fish, so discards are low.

Data collection for this fishery under the SBRM includes a mandatory Federal logbook program. Logbooks provide information about bycatch through self-reporting. Given that available information does not indicate a concern for the amount or type of bycatch in the fishery, which can be characterized by type with reasonable certainty, logbooks represent the most feasible data collection method for this fishery. as they are relatively low in cost compared to other methods such as onboard observers. Bycatch information is periodically presented in the aforementioned administrative reports prepared by the SWFSC, and any uncertainty arising from use of data collected by logbooks can be qualitatively described and considered in relevant analyses.

Harpoon fishery

This gear is highly selective and it is likely that a bycatch in this fishery would be economic discards of swordfish or shark species, or fish not successfully harpooned and landed. Data collection consists of a logbook and commercial landing receipts to characterize effort and catch, including bycatch. There is no observer requirement for the harpoon fishery and in the absence of comprehensive direct observation, it cannot be confirmed that absolutely no bycatch occurs. There are anecdotal accounts of individuals targeting unmarketable species such as blue shark with harpoon as "practice" for catching swordfish. However, these reports are not common or verified. Given the selective nature of this fishing gear to target one fish at a time and the status of the blue shark stock available off the U.S. West Coast, impacts of "harpoon practice" would have minimal impact to the blue shark population. Due to the year-to-year variability in availability of swordfish in surface waters and the open access structure of the permits, the number of harpoon participants varies; but has remained relatively low and generally stable over time. Given that bycatch in this fishery is of very little concern for the overall health of any stocks, logbooks are the most feasible data collection method due to low cost, compared to other methods, such as observers.

Coastal purse seine fishery when targeting HMS MUS

As documented in the HMS SAFE Report, the fishery only targets tunas, largely Pacific bluefin tuna, when available. Anecdotal accounts indicate bycatch in the small-vessel coastal purse seine fishery is relatively low, but this fishery has not been subject to a formal observer program under the MSA or MMPA authority. This fishery is classified on the MMPA List of Fisheries as a Category III fishery with remote likelihood of and no known incidental death or serious injury of marine mammals. Bycatch that may occur would likely consist of tuna species (e.g., skipjack) discarded, although in the absence of comprehensive direct observations, bycatch estimates may be uncertain. This fishery is required to submit logbooks when targeting HMS MUS that provide information on kept and discarded catch by species. Given that available information does not indicate a concern for the amount or type of bycatch in the fishery, which can be characterized by type with reasonable certainty, logbooks represent the most feasible data collection method. Logbooks are relatively low in cost compared to other methods such as onboard observers.

California large-mesh drift gillnet fishery

Bycatch has been identified as a concern in this fishery (see Appendix C), although the majority of non- target finfish catch is marketable and usually retained. The most common bycatch species are mola mola and blue shark, with observer data indicating that the vast majority of mola and a large proportion of blue shark are returned alive. While the post-release mortality rate of both is unknown, mola are believed to have a very high survival rate. Striped marlin, bigeye thresher shark, smooth hammerhead shark, pelagic stingray, and bat ray also occur as bycatch in this fishery.

The SBRM for this fishery includes 20-30 percent observer coverage annually. The data contains catch, effort, bycatch, and biological data collected by NMFS observers aboard California-based large-mesh drift gillnet vessels fishing off the California coast. The main objective of this program is to monitor marine mammal interactions and mortality as required under the MMPA; however, finfish bycatch data are also collected. At the inception of the observer program, a minimum 20 percent observer coverage level was recommended in MMPA legislation for monitoring of marine mammal mortality in "Category 1" fisheries (Barlow 1989); this is the level that was adopted for use in the DGN observer program. Given that monitoring finfish bycatch is fundamentally similar to monitoring marine mammal bycatch, the 20 percent coverage level standard is considered sufficient for SBRM purposes.

Subsequently, NMFS evaluated the costs relative to revenues and variable profits of the fleet and reported on the feasibility of industry funding to cover costs of onboard observers or electronic monitoring (Agenda Item G.7 Attachment 3, June 2018). Additionally, NMFS funded a study to consider the potential uncertainty for reliably estimating bycatch when some vessels in the fleet were unobservable (Agenda Item F.1.a NMFS Report 2, June 2021). The results did not detect any observer bias and support current observer coverage levels as sufficient and practicable to estimate finfish bycatch.

Under the HMS FMP, the DGN fishery also has a logbook requirement. Until 2019, this requirement was met using a logbook distributed by the state of California for all gillnet fisheries. In 2019, CDFW removed the state requirement for the large-mesh DGN fishery to complete these logs, and NMFS developed a Federal logbook specific to this fishery. The Federal logbooks are used to collect information on catch by species, effort, and disposition by date and area of catch (CDFG block).

While estimation of bycatch for marine mammals and turtles has been completed for many years by NMFS scientists, with new methodologies being developed to more accurately model the fishery's catch of protected species, estimated catch of finfish species of concern (such as billfish other than swordfish, prohibited sharks, etc.) had not been produced. To address this, the Council adopted finfish performance metrics, using the regression tree methodology recently developed and applied to estimate marine mammal, sea turtle, and seabird bycatch in the fishery, as described in Carretta et al. (2020). These were first presented to the Council in June 2019 and updated in June 2021.

Pelagic longline fishery

Almost all pelagic longline (both deep and shallow-set pelagic longline [DSLL, SSLL]) vessels making landings on the West Coast are permitted and managed under the WPFMC Pelagics FEP; fewer than six DSLL vessels are exclusively permitted under this FMP. Considering that swordfish-targeting SSLL gear is not authorized under the HMS FMP, these vessels mainly target bigeye tuna and also catch some related species at depth.

Bycatch has been identified as a concern in both longline fisheries (see Appendix C). Similar to the DGN fishery, a large proportion of finfish catch in DSLL is marketable and often retained and sold. The largest areas of bycatch concern are those of incidentally caught striped marlin, which cannot be legally landed to the West Coast, resulting in regulatory discards, and blue shark bycatch, where economic discards reflect the absence of a West Coast consumer market.

SBRM elements for this fishery include 20 percent observer coverage and mandatory logbooks. The fishery was subject to 100 percent observer coverage for the first decade of its operation under the HMS FMP and higher than 20 percent coverage in years since. As noted above, this level of observer coverage is sufficient to estimate commonly caught finfish bycatch. Observers collect information on catch, effort, and biological data are also used to monitor and manage the fishery and to contribute to stock assessments of billfish and tunas. Therefore, there is a high level of certainty in bycatch estimates for this fishery.

Commercial Passenger Fishing Vessel fishery

Albacore is targeted coastwide in recreational fisheries while catch of other HMS is largely confined to the Southern California Bight.

Bycatch in the commercial passenger fishing vessel (CPFV, or party/charter boat) fleet is minimal when targeting HMS and consists largely of catch and release due to overage on bag limits, or release of striped marlin and large sharks (off Southern California). CPFV trips that target HMS generally fish in areas where other species (such as groundfish) are not present or common, such as far offshore. Most non-target catch is landed as long as it is legal (not prohibited, within bag limits, correct size, etc.). Bycatch on CPFV trips is unlikely to cause any significant impacts to stocks. There is also anecdotal information on size-grading in the fishery, where smaller, often dead fish are thrown back once an angler lands a larger fish of the same species. The degree of this practice is unknown, but it is not believed to be substantial. There is uncertainty about post-release mortality for many species, although studies do exist for some and vary greatly from species to species. Given the nature of the fisheries, that bycatch is not of concern based on the best available information, and the existing CPFV logbook program, additional methods of collecting bycatch data are not feasible considering the costs.

State-run monitoring programs, with some variation among the three U.S. West Coast states, are sufficient to satisfy federal monitoring requirements for this fishery. In California, data collection includes onboard observers/samplers and dockside sampling through the California Recreational Fishing Survey (CRFS), and mandatory state daily logbook reporting. Logbooks require information on both kept and released catch.

In Oregon, the Oregon Department of Fish and Wildlife's (ODFW) Ocean Recreational Boat Survey (ORBS) is responsible for estimating the effort and catch of the recreational ocean boat fishery (CPFV and private). CPFV fishing for HMS must submit daily logbooks reporting the amount of retained species and any bycatch.
In Washington, most all anglers access marine waters from just four ports. Washington Department of Fish and Wildlife (WDFW's) Ocean Sampling Program tracks and estimates recreational catch and effort from Washington ports and from both CPFV and privately owned vessels.

Recreational data for the CPFV fleet in Oregon and Washington is submitted to PSMFC's RecFIN program and reported in the SAFE. Estimates of California CPFV catch, including discards (bycatch), are reported in the HMS SAFE.

Private recreational boat fishery

Bycatch characteristics in the private recreational boat fishery for HMS are similar to those in the CPFV fleet. As is the case for the CPFV fishery, state-run monitoring programs, with some variation among the three U.S. West Coast states, are sufficient to satisfy federal monitoring requirements for the private recreational boat fishery.

In California the SBRM includes samplers stationed at public boat ramps and marinas and phone surveys of recreational license holders are also conducted. Since samplers cannot reach anglers returning to private marinas, the phone survey component of CRFS is the only sampling method. However, it is not believed to accurately estimate bycatch from this portion of the fleet, although bycatch is believed to be similar in composition to both the CPFV fleet and other private vessel sectors. Anecdotal information suggests vessels docked at private marinas are larger and can fish farther offshore, targeting HMS that are typically found farther offshore like North Pacific albacore, Pacific bluefin tuna and swordfish. Given the nature of the fisheries, that bycatch is not of concern based on best available information, and the existing data collection, additional methods of collecting bycatch data are not feasible considering the costs.

In Oregon and Washington anglers go on offshore trips targeting North Pacific albacore with few other species encountered. In general, few fish are reported released on these trips. Similar to California, Oregon and Washington samplers monitor private recreational activity in recreational ports and randomly select vessels to conduct interviews including information on released catch, examine landed catch, and collect biological data. Recreational data for the private recreational fleet are submitted to PSMFC's RecFIN program. Estimates of private recreational catch, including discards (bycatch), are reported in the HMS SAFE.

6.3.2 Minimizing Bycatch and Bycatch Mortality

Additional actions that will have the effect of reducing bycatch and bycatch mortality are discussed in Appendix C and under the various fishery-specific actions in Sections 6.6.1 (drift gillnet fishery), and 6.6.2 (pelagic longline fishery).

The FMP provides for a fishery-by-fishery review of measures to reduce bycatch and bycatch mortality (see Appendix C); establishes a framework for implementing bycatch reduction, adopts measures to minimize bycatch in pelagic longline and drift gillnet fisheries (Section 6.6), and adopts a formal voluntary "catch-and-release" program for HMS recreational fisheries. This meets the goals of the MSA and of this FMP and the requirements for estimating bycatch and for establishing measures to reduce bycatch and bycatch mortality in HMS fisheries.

The framework procedure may be used to implement additional bycatch ~~reporting and~~ reduction measures. Potential measures/methods include but are not limited to:

- ~~logbooks~~
- ~~observers~~
- time/area closures
- gear restrictions or modifications, or use of alternative gear
- educational programs
- performance standards
- ~~real-time data collection programs (e.g., VMS, electronic logbooks)~~

The voluntary "catch-and-release" program promotes reduction of bycatch mortality and waste by encouraging the live release of unwanted fish. Its rationale and origination for recreational fisheries is explained in Appendix C, Section C.7. The establishment of the catch-and-release program removes live releases in the recreational fisheries from the "bycatch" category as defined in the MSA in Section 3(2) and also promotes the handling and release of fish in a manner that minimizes the risk of incidental mortality, encourages the live release of small fish, and discourages waste.

Shared EC Species, identified in Section 3.3, could continue to be taken incidentally without violating Federal regulations, unless regulated or restricted for other purposes, such as with bycatch minimization regulations. The targeting of Shared EC Species is prohibited.

Add to Section 8.0, Literature Cited:

Barlow, J. 1989. Estimating sample size required to monitor marine mammal mortality in California gillnet
fisheries. Southwest Fisheries Science Center Administrative Report LJ-89-08, 8 pp.