

# **APPENDIX A:**

# **SAFE TABLES**

*Note: Tables are updated through June 2016. Economics tables (6-1 through 6-5) are updated through 2014. Recent economic data will be included in the subsequent SAFE document*

TABLE 2-1. HISTORY OF COUNCIL ACTIONS

- The Council initiated development of the FMP for northern anchovy in January of 1977. The FMP was submitted to the Secretary in June of 1978. Regulations implementing the FMP were published in the *Federal Register* on September 13, 1978 (43FR40868).
- The first amendment changed the method of specifying the domestic annual harvest for Northern anchovy and added a requirement for an estimate of domestic processing capacity and expected annual level of domestic processing. Approval for this amendment was published in the *Federal Register* on July 18, 1979 (44FR41806).
- The second amendment, which became effective on February 5, 1982, was published in the *Federal Register* on January 6, 1982 (47FR629). The purpose of this amendment was to increase the domestic fishing fleet's opportunity to harvest the entire OY of northern anchovy from the U.S. EEZ by releasing, inseason, unutilized portions of the northern quota.
- During the spring of 1982, the Council considered a third amendment that divided the quota for northern anchovy into two halves and made release of the second half conditional on the results of a mid-season review of the status of the stock. The methods proposed for the mid-season assessment were considered too complex to implement, and the amendment was not approved.
- The fourth amendment, which had two parts, was published in the *Federal Register* on August 2, 1983 (48FR34963) and became effective on August 13, 1983. The first part abolished the five inch size limit in the commercial fishery and established a minimum mesh size of 5/8 inch for northern anchovy. The mesh size requirement did not become effective until April 1986 in order to give the fleet additional time to comply without undue economic hardship. The second part established a mid-season quota evaluation that was simpler in design than the method proposed in Amendment 3.
- The fifth amendment in 1983 incorporated advances in scientific information concerning the size and potential yield of the central subpopulation of northern anchovy. Additionally, the fifth amendment included changes to a variety of other management measures. Two or more alternative actions were considered in each of seven general categories; (1) OY and harvest quotas; (2) season closures; (3) area closures; (4) quota allocation between areas; (5) the reduction quota reserve; (6) minimum fish size or mesh size; and (7) foreign fishing and joint venture regulations. The alternatives for the fifth amendment were reviewed by the Council during 1983. The final rule was published in the *Federal Register* on March 14, 1984 (49FR9572).
- In 1990, the sixth amendment implemented a definition of overfishing for northern anchovy consistent with National Standard 7, and addresses vessel safety (56FR15299, April 16, 1991).
- The Council began developing the seventh amendment as a new FMP for CPS on a motion from NMFS and California in 1990. A complete draft was available in November of 1993, but the Council suspended further work, because NMFS withdrew support due to budget constraints. In

July of 1994, the Council decided to proceed with the plan through the public comment period. NMFS agreed with the decision on the condition that the Council also consider the options of dropping or amending the anchovy FMP. Thus, four principal options were considered for managing CPS (1) drop the anchovy FMP (no Federal or Council involvement in CPS); (2) continue with the existing FMP for anchovy (status quo); (3) amend the FMP for northern anchovy; and (4) implement an FMP for the entire CPS fishery. In March of 1995, the Council decided to proceed with the FMP for CPS. Final action was postponed until June 1995 when the Council adopted a draft plan that had been revised to address comments provided by NMFS and the SSC. Amendment 7 was submitted to the Secretary, but rejected by NMFS, SWR, as being inconsistent with National Standard 7. NMFS announced its intention to drop the FMP for northern anchovy (in addition to FMP's other species) in the *Federal Register* on March 26, 1996 (61FR13148), but the action was never completed.

- Development of Amendment 8 began in June, 1997 when the Council directed the Coastal Pelagic Species Plan Development Team (CPSPDT) to amend the FMP for northern anchovy to conform to the recently revised Magnuson-Stevens Act and to expand the scope of the FMP to include the entire CPS fishery. Amendment 8 was partially approved by the Secretary on June 10, 1999, and final regulations were published on December 15, 1999 (64FR69888). The FMP was implemented on January 1, 2000.
- At its meeting in June 1999, the Council directed its CPSMT to recommend appropriate revisions to the FMP and report to the Council the following September. A public meeting of the CPSMT was held in La Jolla, California, on August 3 and 4, 1999, and August 24, 1999, and a meeting was held between the CPSMT and the CPSAS on August 24, 1999. At its September 1999 meeting, the Council gave further direction to the CPSMT regarding MSY for squid. At its March 2000 meeting, the Council asked the CPSMT for a more thorough analysis of the alternatives proposed for establishing MSY for squid and for bycatch. At a public meeting in La Jolla, California, on April 20 and 21, 2000, the CPSMT reviewed comments from the Council, the Council's SSC and prepared additional material for establishing MSY for squid based on spawning area.
- The Council distributed Amendment 9 for public review on July 27, 2000. At its September 2000 meeting, the Council reviewed written comments, received comments from its advisory bodies, and heard public comments, and decided to submit only two provisions for Secretarial review. Based on testimony concerning MSY for squid, the Council decided to include in Amendment 9 only the bycatch provision and a provision providing a framework to ensure that Indian fishing rights are implemented according to treaties between the U.S. and the specific tribes. Since implementation of the FMP, the CPS fishery has expanded to Oregon and Washington. As a result, the FMP must discuss Indian fishing rights in these areas. These rights were not included in the FMP; and the Council decided to address this issue in Amendment 9. The Council decided to conduct further analysis of the squid resource and prepared a separate amendment that addressed OY and MSY for squid.
- The Secretary approved Amendment 9 on March 22, 2001.

- In April 2001, the Council adopted the capacity goal and transferability provisions recommended by the CPSMT for inclusion in Amendment 10. The Council directed the CPSMT to develop an amendment to the CPS FMP that included the capacity goal, provisions for permit transferability, a process for monitoring fleet capacity relative to the goal, and a framework for modifying transferability provisions as warranted by increases or decreases in fleet capacity. The amendment also addressed determination of OY and MSY for market squid.
- In November 2001, the Council reviewed the findings of the market squid STAR workshop and endorsed the egg escapement approach as a proxy for squid MSY, as recommended by the market squid STAR Panel and CPSMT.
- In March 2002, the Council adopted draft Amendment 10 to the CPS FMP for public review.
- In June 2002, the Council adopted Amendment 10 to the CPS FMP.
- December 30, 2002, the Secretary approved Amendment 10. On January 27, 2003 NMFS issued the final rule and regulations for implementing Amendment 10.
- September 2002, the Council requested NMFS take emergency action to reallocate the unharvested portion of the Pacific sardine HG prior to October 1. The Council believed this action would minimize negative economic impacts in the northern fishery without causing market disruptions in the southern fishery. On September 26, 2002, through an emergency rule, NMFS reallocated the remaining Pacific sardine HG and reopened the northern subarea fishery, which had been closed on September 14, 2002.
- September 2002, the CPSAS recommended the Council initiate a regulatory or FMP amendment and direct the CPSMT to prepare management alternatives for revising the sardine allocation framework. The Council directed the CPSMT to review CPSAS recommendations for revising the allocation framework. A public meeting of the CPSMT was held on October 8, 2002. The CPSMT discussed information needs and prospective analyses for developing allocation management alternatives.
- On October 30, 2002, the Council initiated a regulatory amendment to address allocation issues.
- The CPSMT met January 30-31, 2003 to analyze various alternatives for revising the allocation framework and developed recommendations for Council consideration.
- At the March 2003 Council meeting, the SSC and CPSAS reviewed analyses of the proposed management alternatives for sardine allocation. Based on the advisory body recommendations and public comment, the Council adopted five allocation management alternatives for public review.
- At the April 2003 Council meeting, the CPSAS reviewed the five management alternatives and developed recommendations for the Council. The Council took final action on the regulatory amendment. The proposed action adopted by the Council would (1) change the definition of subarea A and subarea B by moving the geographic boundary between the two areas from 35° 40'

N latitude to 39° N latitude, (2) move the date when Pacific sardine that remains unharvested is reallocated to Subarea A and Subarea B from October 1 to September 1, (3) change the percentage of the unharvested sardine that is reallocated to Subarea A and Subarea B from 50 percent to both subareas to 20 percent to Subarea A and 80 percent to Subarea B, and (4) reallocate all unharvested sardine that remains on December 1 coastwide. The Council's intent is for this interim revision to the allocation framework be in effect for the 2003 and 2004 seasons. The allocation regime could be extended to 2005 if the 2005 HG were at least 90 percent of the 2003 HG.

- The regulatory amendment for allocation of the Pacific sardine HG was approved on August 29, 2003. The final rule implementing the regulatory amendment was published September 4, 2003 (68FR52523).
- At the November 2003 Council meeting, the Council adopted a HG of 122,747 metric tons (mt) for the 2004 Pacific sardine fishery, within an incidental catch allowance of up to 45 percent. This HG was based on a biomass estimate of 1,090,587 mt. Per the revised allocation framework, on January 1, the HG was allocated 33 percent to the northern subarea and 66 percent to the southern subarea, with a subarea dividing line at Point Arena, CA. The final rule implementing the HG was published December 3, 2003 (68FR67638).
- At the June 2004 Council meeting, the Council adopted the following management measures for the July 2004-June 2005 Pacific mackerel fishery: 1) total fishery HG of 13,268 mt; 2) directed fishery guideline of 9,100 mt; and 3) set-aside for incidental catches of 4,168 mt and an incidental catch rate limit of 40 percent when mackerel are landed with other CPS species, except that up to one mt of Pacific mackerel could be landed without landing any other CPS. The Council also requested NMFS track utilization of the directed fishery guideline and advise the Council at the March 2005 meeting if additional action (e.g., a mop-up fishery) was warranted. Additionally, the Council initiated an amendment to the CPS FMP with the primary purpose of allocating the coastwide Pacific sardine HG. The Council discussed a schedule that included final Council action on the FMP amendment by June 2005, which would enable implementation by January 2006. To facilitate development of the amendment, the Council directed the CPSAS to draft a range of alternative sardine allocation scenarios. The Council also directed the CPSMT to formally review the CPS FMP issues raised by NMFS to identify issues that could be addressed through amendment to the CPS FMP and if they could be addressed in the short-term or would require more extensive time to complete.
- At the September 2004 Council meeting, the Council adopted STAR Panel reports for Pacific mackerel and Pacific sardine. New assessment methodologies were used for management of the 2005 sardine fishery and the 2005-2006 Pacific mackerel fishery. Relative to the CPS FMP amendment process, the Council requested the CPSAS to narrow the current broad range of Pacific Sardine allocation alternatives for Council consideration at the November 2004 meeting. The Council received information from the CPSMT about their consideration of several FMP-related issues raised by NMFS, and directed Council staff to communicate to NMFS the Council plans for further review of CPS EFH.
- At the November 2004 Council meeting, the Council adopted a HG of 136,179 mt for the 2005 Pacific sardine fishery. This HG was based on a biomass estimate of 1.2 million mt. Per the FMP

allocation framework, on January 1 the HG was allocated 33 percent to the northern subarea and 66 percent to the southern subarea with a subarea dividing line at Point Arena, California. Additionally, the Council directed the CPSMT and staff to begin development of Amendment 11 to the CPS FMP to include alternatives for sardine allocation, as recommended by the CPSAS as well as two additional alternatives. The Council reviewed the draft analyses and considering formal adoption of allocation alternatives at the April 2005 Council meeting.

- At the March 2005 Council meeting, the Council reviewed a progress update from NMFS SWR on a proposed course of action for management of krill in the West Coast EEZ and National Marine Sanctuaries under the auspices of the CPS FMP. The Council approved a draft outline for an alternatives analysis.
- At the April 2005 Council meeting, the Council approved a range of alternatives for the allocation of Pacific sardine for further analysis and public review. After reviewing preliminary results on the range of alternatives approved for analysis in November 2004 and reports of the CPS advisory bodies, the Council eliminated two alternatives (Alternatives 2 and 5) from further consideration. The Council recommended that the CPSMT follow the advice of the SSC as they complete the analysis of allocation alternatives for public review.
- At the June 2005 Council meeting, the Council addressed three CPS matters, pacific mackerel HG and management measures, long-term Pacific sardine allocation, and CPS EFH.

Regarding Pacific mackerel, the Council adopted the new assessment and the following management measures for the July 2005-June 2006 Pacific mackerel fishery: 1) total fishery HG of 17,419 mt; 2) directed fishery guideline of 13,419 mt; and 3) set-aside for incidental catches of 4,000 mt and an incidental catch rate limit of 40 percent, when mackerel are landed with other CPS, except that up to one mt of Pacific mackerel could be landed without landing any other CPS. The Council requested NMFS track utilization of the directed fishery guideline and advise the Council at the March 2006 meeting if release of the incidental set-aside was warranted.

Regarding Pacific sardine allocation, the Council took final action on a long-term allocation of the annual Pacific sardine HG. The Council approved a modified version of Alternative 3, which provided the following allocation formula for the non-tribal share of the HG:

1. A seasonal allocation structure with 35 percent of the HG to be allocated coastwide on January 1.
2. 40 percent of the HG, plus any portion not harvested from the initial allocation, to be reallocated coastwide on July 1.
3. On September 15 the remaining 25 percent of the HG, plus any portion not harvested from earlier allocations, to be reallocated coastwide.

The Council also recommended a review of the allocation formula in 2008.

The Council adopted the 2005 SAFE document as drafted by the CPSMT including the required review of CPS EFH. The Council recommended no changes to the existing definition of EFH

because the CPSMT review identified no new information on which to base EFH modifications. The Council agreed with the research needs identified by the CPSMT in the 2005 SAFE and stressed the importance of coastwide sardine research and harvest policy review.

- At the November 2005 Council meeting, the Council adopted a Pacific sardine HG of 118,937 mt for the 2006 season to be managed under the terms of the allocation arrangements under Amendment 11.

The Council also approved a range of krill fishing alternatives for public review and additional analysis, including a preliminary preferred alternative to identify krill as a prohibited species in the EEZ. The proposed krill management measures were implemented as Amendment 12 to the CPS FMP. At the June 2005 Council meeting, the Council addressed three CPS matters, Pacific mackerel HG and management measures, long-term Pacific sardine allocation, and CPS EFH.

- At the March 2006 Council meeting, the Council took final action adopting CPS FMP Amendment 12 to prohibit harvest of all species of krill in the U.S. EEZ. Additionally, the Council adopted an EFH designation for all species of krill that extends the length of the West Coast from the shoreline to the 1,000 fm isobath and to a depth of 400 meters. No habitat areas of particular concern were identified.
- At the June 2006 meeting, the Council adopted the new assessment model and the following management measures for the July 2006-June 2007 Pacific mackerel fishery: a total fishery HG of 19,845 mt, a directed fishery guideline of 13,845 mt; and a set-aside for incidental catches of 6,000 mt and an incidental catch rate limit of 40 percent when mackerel are landed with other CPS, except that up to one mt of Pacific mackerel could be landed without landing any other CPS.
- At the November 2006 meeting, the Council adopted a HG of 152,654 mt for the 2007 Pacific sardine fishery. This HG was based on a biomass estimate of 1.32 million mt. Per the FMP allocation framework adopted under Amendment 11, the Pacific sardine HG was allocated seasonally with 35 percent of the HG allocated coastwide January 1, 40 percent of the HG, plus any portion not harvested from the initial allocation reallocated coastwide July 1; and the remaining 25 percent of the HG, plus any portion not harvested from earlier allocations, to be reallocated coastwide September 15. The Council also recommended a 45 percent incidental catch rate be allowed for other CPS fisheries in the event that a seasonal allocation be taken before the end of an allocation period or the HG was taken before the end of the year.

Additionally, the Council reviewed the draft Terms of Reference for the CPS stock assessment process scheduled for 2007 and directed Council staff to revise the document as recommended by the CPSAS, the CPSMT, and the SSC and distribute it for public review. The Council approved a final document in March 2007 for use during the review of full assessments for Pacific mackerel and Pacific sardine in May and September, respectively.

- At the March 2007 Council meeting, the Council approved the final Terms of Reference for the 2007 CPS stock assessment process. The final document was posted on the Council website and distributed for use during the review of full assessments for Pacific mackerel and Pacific sardine May 1-3 and September 18-21 respectively.

- At the June 2007 Council meeting, the Council adopted the new assessment model and the following management measures for the July 2007-June 2008 Pacific mackerel fishery: an acceptable biological catch (ABC) for U.S. fisheries of 71,629 mt, a directed fishery HG of 40,000 mt, and in the event the directed fishery reaches 40,000 mt, the directed fishery will revert to an incidental-catch-only fishery with a 45 percent incidental catch allowance when Pacific mackerel are landed with other CPS, except that up to 1 mt of Pacific mackerel could be landed without landing any other CPS. The Council and NMFS will track the 2007-08 Pacific mackerel fishery and will recommend an in-season review of the mackerel season for the March 2008 Council meeting, if needed, with the possibility of re-opening the directed fishery as a routine action. Additionally, the Council directed Council staff to send a letter to the U.S. State Department requesting increased coordination with Mexico on the exchange of data for the improvement of international management of CPS.
- In November 2007, the Council adopted an ABC or total harvest guideline (HG) of 89,093 mt for the 2008 Pacific sardine fishery. This ABC was based on a biomass estimate of 832,706 mt and the harvest control rule in the CPS FMP. The Council recommended 80,083 mt of the HG for the directed fishery to be allocated seasonally per the Amendment 11 framework. To allow for incidental landings of Pacific sardines in other CPS fisheries and to ensure the fishery did not exceed the ABC, the Council recommended a set aside of 8,910 mt allocated across seasonal periods as follows:

	Jan 1- June 30	July 1- Sept 14	Sept 15 - Dec 31	Total
Seasonal Allocation (mt)	31,183	35,637	22,273	89,093
Set Aside %	5.2%	1.2%	3.6%	10%
Set Aside (mt)	4,632	1,070	3,208	8,910
Adjusted Allocation (mt)	26,550	34,568	19,065	80,083

Regarding Pacific mackerel, the Council recommended no changes to Pacific mackerel assessment methodology for the 2008 assessment update and recommended the next CPS stock assessment review panel be convened in 2009 rather than 2010 to fully review the status of Pacific sardine and Pacific mackerel.

- In June 2008, the Council adopted an updated Pacific mackerel assessment and the following management measures for the July 2008-June 2009 Pacific mackerel fishery: 1) Establish a harvest guideline for the directed fishery at 40,000 mt, providing an 11,772 mt set-aside for incidental landings in other fisheries. 2) Close the directed fishery and revert to an incidental-catch-only fishery with a 45 percent incidental landing allowance when Pacific mackerel are landed with other coastal pelagic species (CPS), except that up to 1 mt of Pacific mackerel could be landed without landing any other CPS. If needed, conduct an in-season review of the 2008-2009 Pacific mackerel fishery at the nearest feasible Council meeting, with the possibility of either releasing a portion of the incidental set-aside to the directed fishery or further constraining incidental landings to ensure total harvest remains below the ABC.



- In November 2008, the Council adopted a harvest guideline (HG) of 66,932 mt for the 2009 Pacific sardine fishery. This HG was based on a biomass estimate of 662,886 mt and the harvest control rule in the CPS FMP. The Council recommended that 1,200 mt of the HG be set-aside prior to allocation for dedicated Pacific sardine research activities in period 2. The Council recommended an adjusted allocation of 59,232 mt as the HG for the directed fishery to be allocated seasonally per the Amendment 11 framework. To allow for incidental landings of Pacific sardines in other CPS fisheries and to help to ensure the fishery does not exceed the total HG, the Council adopted a set aside of 6,500 mt allocated across seasonal periods as follows:

<b>HG = 66,932 mt; Research set aside = 1,200 mt; Adjusted HG = 65,732 mt</b>				
	Period 1	Period 2	Period 3	
	Jan 1- Jun 30	Jul 1- Sep 14	Sep 15 – Dec 31	Total
Seasonal Allocation (mt)	23,006	26,293	16,433	65,732
Incidental Set Aside (mt)	1,000	1,000	4,500	6,500
Adjusted Allocation (mt)	22,006	25,293	11,933	59,232

If a seasonal allocation to the directed fishery is reached or exceeded in any period NMFS would close the directed sardine fishery and the fishery would revert to an incidental fishery with an incidental landing allowance of no more than 20 percent Pacific sardine by weight.

Under this proposal, the Council recommends NMFS take the following inseason automatic actions:

- Any unused seasonal allocation to the directed fishery from Period 1 or Period 2 rolls into the next period's directed fishery.
- Any overage of a seasonal allocation to the directed fishery from Period 1 or Period 2 is deducted from the next Period's directed fishery.
- Any unused Seasonal Incidental Set-Aside from Period 1 or Period 2 rolls into the next period's directed fishery.
- If both the seasonal allocation to the directed fishery and the Seasonal Incidental Set-Aside are reached or exceeded in any period, the retention of Pacific sardine will be prohibited and the overage will be deducted from the next period's directed fishery.
- Any of the research set-aside that is not used in Period 2 rolls into the third seasonal period's directed fishery HG.
- In November 2008, the Council also adopted a public review draft of the Terms of Reference document for the 2009 STAR Panel process. The Council also tasked Council staff with scheduling two STAR Panels for 2009; one in May 2009 focused on a full Pacific mackerel assessment and Pacific sardine assessment methodology, and a second in September 2009 that focuses on the review of a full Pacific sardine assessment.

- At the March 2009 meeting, the Council adopted a final Terms of Reference as a guide for the 2009 coastal pelagic species STAR process. The Council approved minor changes to the document as recommended by the Scientific and Statistical Committee (SSC). A final document will be posted to the Council website in the near future. The Council also scheduled two STAR Panels, both to be held at the Southwest Fisheries Science Center in La Jolla, California. The first occurred May 4-8, 2009 and will review a full assessment of Pacific mackerel as well as the survey design for a proposed Pacific sardine survey. The second occurred September 21-25, 2009 to review a full assessment of Pacific sardine.

The Council also approved for public review two EFP proposals for an industry-sponsored Pacific sardine research survey in 2009. The Council requested that Pacific sardine industry representatives work to provide a detailed single proposal that addresses the recommendations of the SSC and the Coastal Pelagic Species Management Team (CPSMT). The Council asked the proposal be submitted for publication on the Council website as soon as feasible, but no later than April 15, 2009 to allow for adequate review in advance of the May 4-8, 2009 STAR Panel meeting where survey methodology is scheduled for thorough evaluation. The Council also recommended National Marine Fisheries Service (NMFS) adjust the research set-aside for this effort from 1200 metric ton (mt) to 2400 mt.

The Council also reviewed the final NMFS guidelines for implementing National Standard 1 and held an initial scoping session on amending the coastal pelagic species FMP in accordance. In general, issues identified for further consideration include: updating the definition and implementation of the harvest control rules to comply with new management mechanisms such as ACLs, acceptable biological catch (ABC), and overfishing levels (OFLs), developing these mechanisms for monitored and prohibited harvest species, a listing of potential species to be categorized as ecosystem species, and revising measures for more efficient inseason monitoring and enhanced preseason and postseason accounting. Specifically, the Council was interested in advancing concepts brought forward by the SSC, CPSMT, CPS Advisory Subpanel, and public testimony. The Council reviewed initial analysis of potential alternatives at its November 2009 meeting in Costa Mesa, California, as the second stage of a four Council meeting process.

- In June 2009, the Council adopted the full Pacific mackerel assessment and the following harvest specifications and management measures for the July 2009-June 2010 Pacific mackerel fishery:
  1. Establish an acceptable biological catch of 55,408 metric ton (mt) and a harvest guideline for the directed fishery of 10,000 mt, which includes an incidental set-aside of 2,000 mt for incidental catch in non-divested fisheries.
  2. Should the directed fishery attain landings of 8,000 mt, the Council recommends that National Marine Fisheries Service (NMFS) close the directed fishery and revert to an incidental-catch-only fishery with a 45 percent incidental landing allowance when Pacific mackerel are landed with other coastal pelagic species (CPS), except that up to 1 mt of Pacific mackerel could be landed without landing any other CPS.

Additionally, to provide time to address research and data needs associated with the Pacific mackerel assessment, the Council recommended no assessment in 2010 and a full assessment in 2011.

- At the November 2009 meeting, the Council expressed support for further development and analyses of the alternatives proposed pursuant to National Standard 1 (NS1) of the Magnuson Act. The Council supported analysis of sector specific annual catch limits, but not for the live bait fishery and requested an analysis of annual catch targets to address management uncertainty and to buffer against overfishing. Additionally, the Council supports the proposed meetings between the CPS Management Team and the Scientific and Statistical Committee CPS Subcommittee to further review the CPS harvest control rules and their adequacy for addressing uncertainty and preventing overfishing. The Council put a lower priority on including additional forage species in the CPS FMP and on development of mechanisms to streamline inseason management. The Council recommended work on these issues with a focus on meeting time-sensitive requirements of the MSA and guidelines for meeting National Standard 1.

The Council also adopted a harvest guideline (HG) of 72,039 metric tons (mt) for the 2010 Pacific sardine fishery. This HG is based on a biomass estimate of 702,024 mt and the harvest control rule in the Coastal Pelagic Species (CPS) Fishery Management Plan. The Council recommends that 5,000 mt of the HG be set-aside prior to allocation for dedicated Pacific sardine research activities in 2010. The Council recommends an adjusted allocation of 67,039 mt as the HG for the directed fishery to be allocated seasonally per the Amendment 11 framework. To allow for incidental landings of Pacific sardines in other CPS fisheries and to help to ensure the fishery does not exceed the total HG, the Council adopted a set aside of 7,000 mt allocated across seasonal periods as follows:

HG = 72,039 mt Research set aside = 5,000 mt Adjusted HG = 67,039 mt				
	Jan 1- Jun 30	Jul 1- Sep 14	Sep 15 – Dec 31	Total
Seasonal Allocation (mt)	23,463	26,816	16,760	67,039
Incidental Set Aside (mt)	1,000	1,000	1,000	3,000
Management Uncertainty			4,000	4,000
Adjusted Allocation (mt)	22,463	25,816	11,760	60,039

- At the March, 2010 meeting, the Council considered a proposed EFP for the industry-sponsored aerial sardine survey. This would be the third year of the aerial survey, which was reviewed by a STAR panel in May 2009. The proposed research survey would utilize the 5,000 mt EFP set-aside that the Council approved at the November 2009 meeting. 2,100 mt each would be allocated to the northwest and the southwest, respectively, with an additional 800 mt set aside for a fall pilot LIDAR survey in the Southern California Bight.

Also at the March meeting, the Council considered and adopted Amendment 13 preliminary preferred alternatives for public review. These included:

- All actively managed and monitored CPS species remain in the fishery, and krill are moved to a new Ecosystem Component species category.

- Maintain existing Status Determination Criteria (SDC) for CPS FMP stocks, and develop MSY proxy for the northern subpopulation of northern Anchovy.
  - No preferred alternative for overfishing levels (OFLs), acceptable biological catches (ABCs) and annual catch limits (ACLs), pending additional analyses.
  - Maintain the default harvest control rule for monitored stocks.
  - Further analyze the use of accountability measures such as ACTs, set-asides, and management uncertainty buffers to address research, live bait, management uncertainty, and incidental fishery mortality.
  - Maintain all current species in the current CPS FMP and transfer no species to state management.
- At the April 2010 meeting, the Council approved the EFP proposal, as modified in response to SSC and CPSMT suggestions. The Council voted to transmit a letter to NMFS Southwest Region, recommending approval of the EFP. The EFP was ultimately approved and issued by NMFS.
  - At the June 2010 meeting, the Council adopted management measures for Pacific mackerel, for the fishing season beginning July 1, 2010 through June 30, 2011. Because there was no new assessment for 2010, the Council based management measures on the previous year's assessment. The following measures were adopted:
    - Establish an acceptable biological catch of 55,408 metric ton (mt) and a harvest guideline for the directed fishery of 11,000 mt, which includes an incidental set-aside of 3,000 mt for incidental catch in non-directed CPS fisheries.
    - Should the directed fishery attain landings of 8,000 mt, the Council recommends that National Marine Fisheries Service (NMFS) close the directed fishery and revert to an incidental-catch-only fishery with a 45 percent incidental landing allowance when Pacific mackerel are landed with other coastal pelagic species (CPS), except that up to 1 mt of Pacific mackerel could be landed without landing any other CPS.

Also in June 2010, the Council took final action on Amendment 13 to the CPS FMP, Annual Catch Limits and Accountability Measures. In adopting the final FMP amendment, the Council selected the following alternatives:

- All actively managed, monitored species, and prohibited harvest species (krill) in the FMP are to be categorized as "in the fishery."
- Jacksmelt and Pacific herring are to be added to the FMP as ecosystem component (EC) species and monitor incidental catch in CPS fisheries.
- Modify the existing harvest control rules for actively managed species to include a buffer or reduction in acceptable biological catch (ABC) relative to overfishing limit (OFL) to account for scientific uncertainty. This buffer will be determined through the annual management cycle through a combination of scientific advice from the SSC and a policy determination of the Council.

#### Control Rules for Actively Managed Species:

OFL	$\text{BIOMASS} * \text{FMSY} * \text{DISTRIBUTION}$
ABC	$\text{BIOMASS} * \text{BUFFER} * \text{FMSY} * \text{DISTRIBUTION}$
ACL	LESS THAN OR EQUAL TO ABC
HG	$(\text{BIOMASS} - \text{CUTOFF}) * \text{FRACTION} * \text{DISTRIBUTION}$
ACT	EQUAL TO HG OR ACL, WHICHEVER VALUE IS LESS

OFL = overfishing limit

ABC = acceptable biological catch

FMSY = fishing mortality rate that maximizes catch biomass in the long term.

ACL = annual catch limit

HG = harvest guideline

ACT = annual catch target

- Maintain the default harvest control rules for monitored stocks as modified to specify the new management reference points. ACLs would be specified for multiple years until such time as the species becomes actively managed or new scientific information becomes available. The value of 0.25 in the ABC control rule (a 75 % buffer) will remain in use until recommended for modification by the Scientific and Statistical Committee and approved by the Council.

Control Rules for Monitored Species:

OFL STOCK SPECIFIC MSY PROXY

ABC  $\text{OFL} * 0.25$

ACL Equal to ABC or reduced by OY considerations

- Add sector-specific ACLs, ACTs, and AMs, to the CPS FMP management framework for use in the annual harvest and management specification process.
- Add language to specify that the Council will include ecological considerations when reviewing and/or adopting SDCs, OFLs, ABCs, and ACLs.

While not a change to the FMP, the Council confirmed that status determination criteria for CPS FMP are to remain as currently specified with the exception of the Northern subpopulation of Northern anchovy (for which no criteria existed at the time). The Council anticipated adopting a maximum sustained yield (MSY) proxy for this subpopulation through the annual management cycle at its November 2010 meeting.

- At the November 2010 meeting, the Council approved the sardine stock assessment and adopted management measures for the 2011 sardine fishery. Management measures were based on a biomass estimate of 537,173 metric tons (mt). The Council adopted an Overfishing Limit (OFL) of 92,767 mt, a  $P^*$  value of 0.40, and a corresponding Acceptable Biological Catch (ABC) of 84,681 mt. The Council set an Annual Catch Limit (ACL) equal to the ABC of 84,681 mt. The Council adopted a harvest guideline (HG) of 50,526 mt, with a 4,200 mt set-aside for dedicated Pacific sardine research activities in 2011. (*Only 2,700 mt was subsequently proposed for EFP research, thereby adding 1,500 mt to the 2011 third period directed fishery*). The Council also adopted a set aside of 5,000 mt allocated across seasonal periods as in the following table. Incidental catch limits during closed periods and rollover provisions for quota overages and underages remain the same as prior years.

HG = 50,526 mt; EFP set aside = 4,200 mt; Adjusted HG = 46,326 mt				
	Jan 1- Jun 30	Jul 1- Sep 14	Sep 15 – Dec 31	Total
Seasonal Allocation (mt)	16,214	18,530	11,582	46,326

Incidental Set Aside (mt)	1,000	1,000	1,000	3,000
Management Uncertainty (mt)			2,000	2,000
Adjusted Allocation	15,214	17,530	8,582	41,326

The Council also adopted catch limits for monitored CPS stocks, under the Amendment 13 provisions approved at the June 2010 meeting:

Stock	OFL	ABC	ACL	ACT
Jack mackerel	126,000 mt	31,000 mt	Equal to ABC	
Northern anchovy, Northern subpop	39,000 mt	9,750 mt	Equal to ABC	1,500 mt
Northern anchovy, central subpop	100,000 mt	25,000 mt	Equal to ABC	
Market squid	Fmsy proxy resulting in Egg Esc $\geq$ 30%	Fmsy proxy resulting in Egg Esc $\geq$ 30%	Exempt	

The Council approved new Terms of Reference (TOR) documents for the CPS STAR panel process and a Methodology Review process. The methodology review process TOR was developed as a way to provide independent review of new stock survey and assessment methods for use in CPS fisheries management. As of November 2010, the egg production and aerial survey methods were used in the sardine stock assessment. At the November meeting, the Council considered three other methods to be reviewed for potential use in the sardine stock assessment. These were the SWFSC's Acoustic-Trawl survey, LIDAR imagery, and satellite imagery. *(Note: subsequently, only the Acoustic-Trawl method was reviewed – and approved – for use in CPS stock assessments. The proponents of the other two methods withdrew from consideration prior to panel review).*

- At the March 2011 meeting, the Council considered a preliminary proposal to conduct stock survey research under a NMFS-issued Exempted Fishing Permit (EFP). Unlike the previous two years, the only proposal was aimed at conducting industry-sponsored aerial survey research off the Pacific Northwest. Northwest Sardine Survey (NWSS), LLC submitted the preliminary proposal. The California Wetfish Producers Association (CWPA) participated in the aerial survey during 2009 and 2010, but did not choose to pursue the research again in 2011. The NWSS proposal identified 2,100 mt to utilize for the aerial survey, representing half of the EFP set-aside from the November Council meeting. However, because the CWPA did not propose to use any of the EFP set-aside, the Northwest and California industry members agreed that it would be reasonable for the NWSS to increase its request, to 2,700 mt. The Council approved the proposal for public review, offering several suggestions, including adopting most of the CPSMT's requests in its supplemental report

- At the April 2011 meeting, the Council considered the revised EFP proposal, and voted to recommend that NMFS approve the EFP, subject to minor revisions. The Council Executive Director subsequently transmitted a letter of support to the NMFS Southwest Region, expressing support for the EFP proposal.

Also at the April 2011 meeting, the Council considered a report of the CPS Methodology Review Panel, which provided guidance on potential for use of acoustic-trawl surveys in stock assessments for CPS fisheries. Acknowledging that there are concerns about whether the methodology should be used to develop absolute abundance estimates for Pacific sardine, the Council approved the methodology for potential contributory use in future stock assessments for Pacific Coast CPS fisheries.

- At the June 2011 meeting, the Council approved Pacific mackerel stock assessment and management measures for the 2011-2012 fishery, beginning July 1, 2011 and ending June 30, 2012. Because Amendment 13 was not yet in place, the Council adopted management benchmarks that would apply under both a pre- and post-Amendment 13 fishery. Therefore, management measures included OFL, ABC, HG, ACL, and ACT:

Biomass	211,126 mt
Overfishing Limit (OFL)	44,336 mt
P* (risk of overfishing)	0.45
Acceptable Biological Catch (ABC)	42,375 mt
Annual Catch Limit (ACL)	40,514 mt
Harvest Guideline (HG)	40,514 mt
Annual Catch Target (ACT)	30,386 mt

The ACT of 30,336 mt is 75% of the HG/ACL, and reflects a defacto incidental set-aside of 10,128 mt. After attaining the ACT, the fishery will revert to management similar to recent past years: Other CPS fisheries harvest may include up to 45% Pacific mackerel by weight, and directed harvest of Pacific mackerel up to 1 mt would be allowed). Upon attainment of the ACL (40,514 mt), no retention of Pacific mackerel would be allowed in CPS fisheries. The Council also adopted a provision to consider in April 2012 the possibility of re-allocating the incidental set-aside to the directed fishery. This provision was included in case mackerel become available and in demand. The set aside is relatively large compared with prior years. Therefore, the Council agreed that near the end of the fishing year (spring/summer 2012), if there is a large amount of set aside remaining, it has the option to allocate some of the set aside for directed harvest.

- At the November 2011 meeting, the Council approved the full stock assessment for Pacific sardine, which produced a biomass estimate of 988,385 mt. The Council considered the Quinault Tribal Nation's intention to harvest up to 9,000 mt, and a 3,000 mt EFP set aside, and adopted an allocation plan as indicated in the table below. The Council also approved a recommendation to conduct a methodology review for the Canadian DFO trawl survey off Vancouver Island, which was subsequently scheduled for the spring of 2012.

**Harvest Specifications for the 2012 Pacific sardine fishery.**

ACT = 109,409 mt; Tribal Set Aside = 9,000 mt; EFP set aside = 3,000 mt;

Adjusted ACT = 97,409 mt

	Jan 1- Jun 30	Jul 1- Sep 14	Sep 15 – Dec 31	Total
Seasonal Allocation (mt)	34,093 (35%)	38,964 (40%)	24,352 (25%)	97,409
Incidental Set Aside (mt)	1,000	1,000	1,000	3,000
Adjusted Allocation (mt)	33,093	37,964	23,352	94,409

- At the March 2012 meeting, the Council recommended that the National Marine Fisheries Service approve and issue the EFP proposed by the Northwest Aerial Sardine Survey. Any of the 3000 mt set-aside that not utilized was to be re-allocated to the third period directed fishery. The Council also asked the CPSMT to explore ways to streamline the CPS EFP process, and report back at the June Council meeting.
- The Council adopted management measures and harvest specifications for the upcoming fishing year, including an Annual Catch Limit of 40,514 metric tons (mt), an Annual Catch Target of 30,386 mt, and incidental set-aside of 10,128 mt. The Council also adopted a provision to consider in April 2013 the possibility of re-allocating the incidental set-aside to the directed fishery. These measures were based on the 2011 Pacific mackerel stock assessment, which was approved at the June 2011 Council meeting.
- At the November 2012 meeting, the Council approved COP 23, which describes an EFP process for CPS fisheries. The Council also approved a workshop designed to review Pacific sardine harvest parameters, to be held in spring, 2013, and directed staff to develop a terms of reference and begin plans to implement the workshop.

The Council also approved the stock assessment update, and established harvest specifications and management measures in the table below. In setting harvest for the 2013 fishing year, the Council recognized the Quinault Tribe's intent to harvest up to 9,000 mt, and an EFP set aside of 3,000 mt.



<b>2013 Pacific sardine harvest specifications and allocation plan</b> HG = 66,495 mt; Tribal set-aside = 9,000 mt; potential EFP set-aside = 3,000 mt Adjusted HG = 54,495 mt				
	Jan 1- Jun 30	Jul 1- Sep 14	Sep 15 – Dec 31	Total
Seasonal Allocation (mt)	19,073 (35%)	21,798 (40%)	13,624 (25%)	54,495
Incidental Set-Aside (mt)	1,000	1,000	1,000	3,000
Adjusted (Directed) Allocation (mt)	18,073	20,798	12,624	51,495

- At the March 2013 meeting, the Council recommended that NMFS approve the 3,000 mt EFP research set-aside, as requested by the Northwest Aerial Sardine Survey, LLC.
- At its April 2013 meeting, the Council considered a report on the sardine harvest parameters workshop, and scheduled potential action for the June 2013 meeting. (That was subsequently shifted to final action at the November 2013 meeting). The Council also indicated support for changing the sardine fishery start date from January 1 to July 1, and scheduled final action for the June 2013 meeting.
- At the June 2013 meeting, the Council adopted Pacific mackerel management measures and harvest specifications for the 2013-2014 fishing year. These included an overfishing limit of 57,316 mt, a P\* choice of 0.45, acceptable biological catch and annual catch limit (ACL) set equal to 52,358 mt, and an annual catch target (ACT) equal to 39,268 mt. The 13,089 mt difference between the ACL and ACT is an incidental catch buffer. The Council also approved a “check in” at the subsequent April meeting, to consider re-allocating some of the incidental catch to the directed fishery, in the case that landings are significantly up, and approaching the initial directed allocation.

The Council also voted to amend the management and assessment schedule for Pacific mackerel. The new schedule calls for full stock assessments every four years starting in 2015, alternating with catch-only projection estimates every four years, in off-science years. Biennial harvest specifications will be made for two years at a time.

Also at the June meeting, the Council voted to change the fishery start date for Pacific sardine to July 1, starting in 2014. A biomass projection estimate was to be used to set harvest specifications for the January 1-June 30 period during the 2014 transition year, and the Council anticipated a full stock assessment would be available to inform annual harvest specifications for the fishing year beginning July 1, 2014.

- At the November 2013 meeting, the Council adopted Pacific sardine management measures for the six-month period January 1-June 30, 2014. This includes approving a biomass estimate of 378,120 metric tons (mt) and an Overfishing Limit of 59,214 mt. Based on a P\* choice of 0.4, the

Acceptable Biological Catch and Annual Catch Limit were set at 54,052 mt. The annual Harvest Guideline was set at 29,770 mt, with an Annual Catch Target set at 19,846 mt. Accounting for a 1,000 mt Tribal allocation and a 500 mt incidental set-aside, the January 1-June 30 allocation was set at 5,446 mt. Other management measures were to be consistent with the 2012 fishery, with the exception of (1) the incidental landing allowance that was set at 45 percent for mixed loads, after the directed fishery closes, and (2) there would be no rollover of uncaught fish from the first six-month period into the following fishing period.

The Council considered a letter of intent from the Northwest Aerial Sardine Survey, LLC to conduct survey research during summer 2014. The Council adopted the request for public review and scheduled a final determination, including the final tonnage amount, at the April 2014 Council meeting. (The request for an EFP set-aside was subsequently withdrawn).

The Council established a Maximum Sustainable Yield (MSY) reference point for the northern subpopulation of northern anchovy. Based on information that northern anchovy are subject to large population fluctuations and have relatively high productivity, the Council selected annual fishing rate:  $F_{msy} = 0.3$  as the appropriate MSY reference point.

The Council also endorsed methodology reviews of the California Department of Fish and Wildlife/California Wetfish Producers Association aerial survey methodology for the Southern California Bight, of the Northwest Aerial Sardine Survey, and the NMFS acoustic sardine survey. The methodology review was to be coordinated with the Southwest Fisheries Science Center to optimize logistical and financial contingencies. The Council also tasked the Coastal Pelagic Species (CPS) Management Team and CPS Advisory Subpanel with reviewing the draft Council Operating Procedure for a CPS methodology review process and with providing their recommendations at a future Council meeting.

- At the March 2014 meeting, the Council adopted the technical change of using the CalCOFI temperature index, rather than the Scripps Pier temperature recordings, in calculating the annual overfishing limit (OFL) for Pacific Sardine. The new temperature index and new temperature-productivity relationship was to be used for establishing the OFL starting with the April 2014 meeting, when the Council established annual harvest specifications and management measures for the fishing year beginning July 1, 2014. The Council directed the CPSMT and NMFS to further evaluate alternatives for applying the new temperature index and  $F_{msy}$  relationship to annual harvest specifications, and to report back to the Council at the September 2014 meeting.
- At the April 2014 meeting, the Council adopted harvest specifications and management measures for Pacific sardine, for the fishing year running July 1, 2014 through June 30, 2015. This included an OFL of 39,210 mt and an ABC of 35,792 mt, based on a  $P^*$  value of 0.40. The Council set the ACL and the ACT both to 23,293 mt, and adopted a 500 mt incidental set aside for each of the three fishing periods. Accounting for a Quinault Indian Nation allotment of 4,000 mt and a total of 1,500 mt incidental set aside, the period allocations were set to 7,218 mt in Period 1 (July 1 – September 14), 4,323 mt for Period 2 (September 15 – December 31), and 6,252 mt for Period 3 (January 1 – June 30, 2015). The Council approved rollovers from Periods 1 and 2 into the subsequent Period, with no rollover from Period 3 into the next fishing year. The Council also

adopted a mixed load allowance of up to 45 percent sardines caught in other CPS fisheries, after directed Pacific sardine fishing closes.

- At the June 2014 meeting, the Council adopted harvest specifications and management measures for Pacific mackerel. Based on a catch-only projection estimate of 157,106 mt, the Council adopted an OFL of 32,992 mt, an ABC and ACL both equal to 30,138 mt, an HG of 29,170 mt, and an ACT of 24,170 mt. The difference between the HG and the ACT is a 5,000 mt incidental set aside. Should the directed fishery realize the ACT (24,170 mt), the directed fishery will close, and shift to an incidental only fishery, with a 45 percent incidental landing allowance when Pacific mackerel are landed with other CPS, with the exception that up to 1 (one) mt of Pacific mackerel may be landed without landing any other CPS. The Council also adopted a check in provision, to consider reallocating a portion of the set aside to the directed fishery, should the directed fishery attain the ACT.
- At the November 2014 meeting, the Council adopted the technical change of using the CalCOFI temperature index, rather than the Scripps Pier temperature recordings, in calculating annual harvest specifications for Pacific Sardine; and adopted an accompanying harvest FRACTION term ranging between five and 20 percent. This replaces the current range of five and fifteen percent. This change also incorporated a new temperature-productivity relationship.
- At its March 2015 meeting, the Council took final action to protect a suite of currently [unmanaged forage fish](#) species and prohibit the development of new directed commercial fisheries. Although incidental retention of these shared ecosystem component species is allowed, directed commercial take is not allowed. A Council process to develop an exempted fishing permit must be completed prior to allowing directed take on any of the shared EC species, which are: round herring, thread herring, mesopelagic fishes, Pacific sand lance, Pacific saury, silversides, smelts in the family *Osmeridae*, and pelagic squids (except Humboldt squid).
- At its April 2015 meeting, the Council adopted Pacific sardine harvest specifications and management measures for the 2015 – 2016 fishery. Because the estimated biomass fell below the Cutoff of 150,000 metric tons, a directed fishery was precluded. Therefore the Council adopted an HG of zero, with a 7,000 mt ACL to allow for tribal harvest, incidental landings, live bait, research, and other minor sources of mortality. For incidental catches, the Council adopted an incremental approach, with 40% mixed loads allowed until 1,500 mt are landed. Then the mixed load amount drops to 30% until 4,000 mt are landed, and dropped to 5% until the ACL is met.
- At that same meeting, the Council took emergency action to close the current (2014 – 2015) fishery as soon as possible, to stay within the remaining quota, and urged NMFS to immediately assess landings and catch rate, to determine a closure date associated with the remaining available quota.
- At its June 2015 meeting, the Council adopted the Pacific mackerel stock assessment for management in both the 2015-16 and the 2016-17 fishing years. A projection estimate of biomass was used to estimate the second year biomass, assuming the full HG would be taken. The Council adopted the following harvest specifications and management measures:

	<b>2015-16 (mt)</b>	<b>2016-17 (mt)</b>
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<b>Biomass</b>	120,425	118,968
<b>OFL</b>	25,291	24,983
<b>ABC<sub>0.45</sub></b>	23,104	22,822
<b>ACL</b>	23,104	22,822
<b>HG</b>	21,469	21,161
<b>ACT</b>	20,469	20,161

The Council also adopted a 45 percent incidental landing allowance once the directed fishery is closed, and up to three mt of Pacific mackerel per landing to be allowed in non-CPS fisheries.

- At its April 2016 meeting, the Council adopted Pacific sardine harvest specifications and management measures for the 2016 – 2017 fishery. Because the 106,137 mt estimated biomass again fell below the Cutoff of 150,000 metric tons, a directed fishery was precluded. Therefore the Council adopted an HG of zero, with a 8,000 mt ACL to allow for tribal harvest, incidental landings, live bait, research, and other minor sources of mortality. For incidental catches, the Council adopted an incremental approach, with 40% mixed loads allowed until 2,000 mt are landed. Then the mixed load amount drops to 20% until 5,000 mt are landed, and dropped to 10% until the ACL is met. The Council also adopted an OFL of 23,085 mt and an ABC of 19,236 mt.

## TABLE 2-2. REGULATORY ACTIONS

**January 25, 2000.** NMFS published HGs for Pacific sardine and Pacific mackerel for the fishing year beginning January 1, 2000. A HG of 186,791 mt was established for Pacific sardine, based on a biomass estimate of 1,581,346 mt. The HG was allocated for Subarea A, which was north of 35° 40' N latitude (Point Piedras Blancas) to the Canadian border, and for Subarea B, which was south of 35° 40' N latitude to the Mexican border. The northern allocation was 62,264 mt; the southern allocation was 124,527 mt. The sardine HG was in effect until December 31, 2000, or until it was reached and the fishery closed. A HG of 42,819 mt was established for Pacific mackerel based on a biomass estimate of 239,286 mt. The HG for Pacific mackerel was in effect until June 30, 2000, or until it was reached and the fishery closed. (65FR3890)

**September 11, 2000.** NMFS announced the annual HG for Pacific mackerel in the EEZ off the Pacific coast. Based on the estimated biomass of 116,967 mt and the formula in the FMP, a HG of 20,740 mt was calculated for the fishery beginning on July 1, 2000. This HG is available for harvest for the fishing season July 1, 2000 through June 30, 2001. (65FR54817)

**November 1, 2000.** NMFS announced the closure of the directed fishery for Pacific mackerel in the EEZ off the Pacific coast on October 27, 2000. The FMP and its implementing regulations require NMFS to set an annual HG for Pacific mackerel based on a formula in the FMP and to close the fishery when the HG is reached. The HG of 20,740 mt was reached before the end of the fishing season on June 30, 2001, which required closing the directed fishery and setting an incidental harvest limit for Pacific mackerel so that the harvest of other CPS would be further restricted. The intended effect of this action was to ensure conservation of the Pacific mackerel resource. For the reasons stated here and in accordance with the FMP and its implementing regulations at 50 CFR 660.509, the directed fishery for Pacific mackerel was closed October 27, 2000, after which time no more than 20 percent by weight of any landing of Pacific sardine could be Pacific mackerel. (65FR65272)

**November 17, 2000.** NMFS published a correction to the Pacific mackerel closure, which was published on November 1, 2000. In 65FR65272, the following correction was included: On page 65272, in the third column, under the heading SUPPLEMENTARY INFORMATION, the last sentence is corrected to read as follows: "For the reasons stated here and in accordance with the FMP and its implementing regulations at 50 CFR 660.509, the directed fishery for Pacific mackerel will be closed October 27, 2000, after which time no more than 20 percent by weight of a landing of Pacific sardine, northern anchovy, jack mackerel, or market squid may consist of Pacific mackerel." (65FR69483)

**December 27, 2000.** NMFS announced the annual HG for Pacific sardine in the EEZ off the Pacific coast for the January 1, 2001, through December 31, 2001, fishing season. This HG was calculated according to the regulations implementing the FMP. The intended effect of this action was to establish allowable harvest levels for Pacific sardine off the Pacific coast. Based on the estimated biomass of 1,182,465 mt and the formula in the FMP, a HG of 134,737 mt was calculated for the fishery beginning January 1, 2001. The HG was allocated one third for Subarea A, which was north of 35° 40' N latitude (Point Piedras Blancas) to the Canadian border, and two thirds for Subarea B, which was south of 35° 40' N latitude to the Mexican border. Any unused resource in either area would be reallocated between areas to help ensure that the OY would be achieved. The northern allocation is 44,912 mt; the southern allocation was 89,825 mt. (65FR81766)

**February 22, 2001.** NMFS announced changes to the restriction on landings of Pacific mackerel for individuals participating in the CPS fishery and for individuals involved in other fisheries who harvest small amounts of Pacific mackerel. The incidental limit on landings of 20 percent by weight of Pacific mackerel in landings of Pacific sardine, northern anchovy, jack mackerel, and market squid remained in effect; however, CPS fishermen could land up to one mt of Pacific mackerel even if they landed no other species from the trip. Non CPS fisherman could land no more than one mt of Pacific mackerel per trip. After the

HG of 20,740 mt was reached, all landings of Pacific mackerel would be restricted to one mt per trip. This action was authorized by the FMP and was intended to ensure that the fishery achieved, but did not exceed, the HG while minimizing the economic impact on small businesses. For the reasons stated here, no fishing vessel could land more than one mt of Pacific mackerel per fishing trip, except that fishing vessels with other CPS on board could land more than one mt of Pacific mackerel in a fishing trip if the total amount of Pacific mackerel on board the vessel did not exceed 20 percent by weight of the combined weight of all CPS on board the vessel. (66FR11119)

**March 30, 2001.** NMFS announced the closure of the fishery for Pacific mackerel in the EEZ off the Pacific coast at 12:00 a.m. on March 27, 2001. The FMP and its implementing regulations require NMFS to set an annual HG for Pacific mackerel based on a formula in the FMP and to close the fishery when the HG is reached. The HG of 20,740 mt was reached. Following this date no more than one mt of Pacific mackerel could be landed from any fishing trip. The effect of this action was to ensure conservation of the Pacific mackerel resource. (66FR17373)

**July 25, 2001.** NMFS announced a HG of 13,837 mt for Pacific mackerel for the fishing season July 1, 2001 through June 30, 2002. A directed fishery of 6,000 mt was established, which, when attained, would be followed by an incidental allowance of 45 percent of Pacific mackerel in a landing of any CPS. If a significant amount of the HG remained unused before the end of the fishing season on June 30, 2002, the directed fishery would be reopened. This approach was taken because of concern about the low HG's potential negative effect on the harvest of Pacific sardine if the fishery for Pacific mackerel had to be closed. The two species occur together often and could present incidental catch problems. (66FR38571)

**November 27, 2001.** NMFS announced the closure of the directed fishery for Pacific mackerel in the EEZ off the Pacific coast at 12:00 noon on November 21, 2001. For the fishing season beginning July 1, 2001, 6,000 mt of the 13,837 mt HG was established for a directed fishery. More than 6,000 mt has been landed. Therefore, the directed fishery for Pacific mackerel was closed on November 21, 2001, after which time no more than 45 percent by weight of a landing of Pacific sardine, northern anchovy, jack mackerel, or market squid could consist of Pacific mackerel. The intended effect of this action was to ensure that the HG was achieved, but not exceeded, and to minimize bycatch of Pacific mackerel while other CPS were being harvested. (66FR59173)

**December 27, 2001.** NMFS published the HG for Pacific sardine for the fishing season beginning January 1, 2002. A HG of 118,442 mt was established for Pacific sardine based on a biomass estimate of 1,057,599 mt. The HG was allocated for Subarea A, which was north of 35° 40' N latitude (Point Piedras Blancas) to the Canadian border, and for Subarea B, which was south of 35° 40' N latitude to the Mexican border. The northern allocation is 39,481 mt; the southern allocation is 78,961 mt. The sardine HG is in effect until December 31, 2002, or until it is reached and the fishery closed. (66FR66811)

**April 5, 2002.** NMFS announced the reopening of the directed fishery for Pacific mackerel in the U.S. EEZ off the Pacific coast on April 1, 2002. A significant portion of the Pacific mackerel HG remained unharvested (6,585 mt). Therefore, the incidental catch allowance that has been in effect since November 21, 2001 was removed, and any landing of Pacific mackerel could consist of 100 percent Pacific mackerel. This action was taken to help ensure that the HG was attained. If the HG was projected to be reached before June 30, 2002, the directed fishery would be closed and an appropriate incidental landing restriction imposed. (67FR16322)

**July 11, 2002.** NMFS proposed a regulation to implement the annual HG for Pacific mackerel in the EEZ off the Pacific coast. The CPS FMP and its implementing regulations require NMFS to set an annual HG for Pacific mackerel based on the formula in the FMP. This action proposes allowable harvest levels for Pacific mackerel off the Pacific coast. Based on the estimated biomass of 77,516 mt and the formula in the FMP, a HG of 12,456 was proposed for the fishery beginning on July 1, 2002, and continued through June 30, 2003, unless the HG was attained and the fishery closed before June 30. (67FR45952)

**September 18, 2002.** NMFS announced the closure of the fishery for Pacific sardine in the U.S. EEZ off the Pacific coast north of Point Piedras Blancas, California, (35° 40' N latitude) at 0001 hrs local time on September 14, 2002. The closure remained in effect until the reallocation of the remaining portion of the coastwide HG was required by the CPS FMP. That reallocation was expected to occur on or about October 1, 2002. The purpose of this action was to comply with the allocation procedures mandated by the FMP. (67FR58733)

**September 26, 2002.** Emergency rule. NMFS announced the reallocation of the remaining Pacific sardine HG in the U.S. EEZ off the Pacific coast. The CPS FMP required that NMFS conduct a review of the fishery 9 months after the beginning of the fishing season on January 1, and reallocate any unharvested portion of the HG, with 50 percent allocated north and south of Point Piedras Blancas, California. The allocation north of Point Piedras Blancas was reached on September 14, 2002, and the fishery was closed until the scheduled time for reallocation on October 1, 2002. This action reallocated the remainder of the HG earlier than the date specified in the FMP in order to minimize the negative economic effects on fishing and processing, primarily in the Pacific Northwest, which would result from delaying the reallocation. (67FR60601)

**October 3, 2002.** NMFS issued a regulation to implement the annual HG for Pacific mackerel in the EEZ off the Pacific coast. The CPS FMP and its implementing regulations required NMFS to set an annual HG for Pacific mackerel based on the formula in the FMP. This action was to conserve Pacific mackerel off the Pacific coast. Based on the estimated biomass of 77,516 mt and the formula in the FMP, a HG of 12,456 was proposed for the fishery beginning on July 1, 2002, and continued through June 30, 2003, unless the HG was attained and the fishery closed before June 30. There was a directed fishery of at least 9,500 mt, and 3,035 mt of the HG was utilized for incidental landings following the closure of the directed fishery. After closure of the directed fishery, no more than 40 percent by weight of a landing of Pacific sardine, northern anchovy, jack mackerel, or market squid could consist of Pacific mackerel, except that up to one mt of Pacific mackerel could be landed without landing any other CPS. The fishery was monitored, and if a sufficient amount of the HG remained before June 30, 2003, the directed fishery would be reopened. The goal was to achieve the HG and minimize the impact on other coastal pelagic fisheries. (67FR61994)

**October 30, 2002.** NMFS proposed a regulation to implement Amendment 10 to the CPS FMP, which was submitted by the Council for review and approval by the Secretary of Commerce. Amendment 10 addressed the two unrelated subjects of the transferability of limited entry permits and maximum sustainable yield for market squid. Only the provisions regarding limited entry permits require regulatory action. The purpose of this proposed rule was to establish the procedures by which limited entry permits could be transferred to other vessels and/or individuals so that the holders of the permits have maximum flexibility in their fishing operations while the goals of the FMP were achieved. (67FR66103)

**November 25, 2002.** NMFS proposed a regulation to implement the annual HG for Pacific sardine in the U.S. EEZ off the Pacific coast for the fishing season January 1, 2003, through December 31, 2003. This HG has been calculated according to the CPS FMP and establishes allowable harvest levels for Pacific sardine off the Pacific coast. Based on the estimated biomass of 999,871 mt and the formula in the FMP, a HG of 110,908 mt was determined for the fishery beginning January 1, 2003. The HG is allocated one third for Subarea A, which is north of 35° 40' N latitude (Point Piedras Blancas) to the Canadian border, and two thirds for Subarea B, which is south of 35° 40' N latitude to the Mexican border. The northern allocation is 36,969 mt; the southern allocation is 73,939 mt. (67FR70573)

**December 31, 2002.** NMFS issued a regulation to implement the annual HG for Pacific sardine in the U.S. EEZ off the Pacific coast for the fishing season January 1, 2003, through December 31, 2003. This HG was calculated according to the CPS FMP and established allowable harvest levels for Pacific sardine off the Pacific coast. Based on the estimated biomass of 999,871 mt and the formula in the FMP, a HG of 110,908 mt was determined for the fishery beginning January 1, 2003. The HG was allocated one third for Subarea A, which was north of 35° 40' N latitude (Point Piedras Blancas, California) to the Canadian border,

and two thirds for Subarea B, which was south of 35° 40' North latitude to Mexican border. The northern allocation was 36,969 mt; the southern allocation was 73,939 mt. If an allocation or the HG was reached, up to 45 percent by weight of Pacific sardine could be landed in any landing of Pacific mackerel, jack mackerel, northern anchovy, or market squid. (67FR79889).

**January 27, 2003.** NMFS issued a regulation to implement Amendment 10 to the CPS FMP, which was submitted by the Council for review and approval by the Secretary. Amendment 10 addresses the two unrelated subjects of the transferability of limited entry permits and maximum sustainable yield for market squid. Only the provisions regarding limited entry permits require regulatory action. The primary purpose of this final rule was to establish the procedures by which limited entry permits could be transferred to other vessels and/or individuals so that the holders of the permits have maximum flexibility in their fishing operations while the goals of the FMP were achieved. (68FR3819)

**June 26, 2003.** NMFS proposed a regulatory amendment to the CPS FMP. This amendment was submitted by the Council for review and approval by the Secretary. The proposed amendment would change the management subareas and the allocation process for Pacific sardine. The purpose of this proposed amendment was to establish a more effective and efficient allocation process for Pacific sardine and increase the possibility of achieving OY. (68FR37995)

**July 29, 2003.** NMFS proposed a regulation to implement the annual HG for Pacific mackerel in the EEZ off the Pacific coast. The CPS FMP and its implementing regulations require NMFS to set an annual HG for Pacific mackerel based on the formula in the FMP. (68FR44518)

**September 4, 2003.** NMFS issued a final rule to implement a regulatory amendment to the CPS FMP that changed the management subareas and the allocation process for Pacific sardine. The purpose of this final rule was to establish a more effective and efficient allocation process for Pacific sardine and increase the possibility of achieving OY. (68FR52523)

**September 9, 2003.** NMFS announced the reallocation of the remaining Pacific sardine HG in the EEZ off the Pacific coast. On September 1, 2003, 59,508 mt of the 110,908 mt HG was expected to remain unharvested. The CPS FMP required that a review of the fishery be conducted and any uncaught portion of the HG remaining unharvested in Subarea A (north of Pt. Arena, California) and Subarea B (south of Pt. Arena, California) be added together and reallocated, with 20 percent allocated to Subarea A and 80 percent to Subarea B; therefore, 11,902 mt was allocated to Subarea A and 47,600 mt was allocated to Subarea B. The intended effect of this action was to ensure that a sufficient amount of the resource was available to all harvesters on the Pacific coast and to achieve OY. (68FR53053)

**October 3, 2003.** NMFS issued a final rule to implement the annual HG for the July 1, 2003 - June 30, 2004 Pacific mackerel fishery in the EEZ off the Pacific coast. The CPS FMP and its implementing regulations require NMFS to set an annual HG for Pacific mackerel based on the formula in the FMP. Based on this approach, the biomass for July 1, 2003, was 68,924 mt. Applying the formula in the FMP results in a HG of 10,652 mt, which was lower than last year but similar to low HGs of recent years. (68FR57379)

**October 28, 2003.** NMFS announced the closure of the fishery for Pacific sardine in the EEZ off the Pacific coast north of Pt. Arena, California (39° N latitude) at 12:01 a.m. local time on October 17, 2003. The purpose of this action was to comply with the allocation procedures mandated by the CPS FMP. (68FR61373)

**December 3, 2003.** NMFS proposed a regulation to implement the annual HG for Pacific sardine in the U.S. EEZ off the Pacific coast for the fishing season January 1, 2004 through December 31, 2004. This HG was calculated according to the regulations implementing the CPS FMP and established allowable harvest levels for Pacific sardine off the Pacific coast. (68FR67638)



**February 25, 2004.** NMFS issued a regulation to implement the annual HG for Pacific sardine in the U.S. EEZ off the Pacific coast for the fishing season January 1, 2004 through December 31, 2004. This action adopted a HG and initial subarea allocations for Pacific sardine off the Pacific coast that were calculated according to the regulations implementing the CPS FMP. Based on a biomass estimate of 1,090,587 mt (in U.S. and Mexican waters), using the FMP formula, the HG for Pacific sardine in U.S. waters for January 1, 2004 through December 31, 2004 was 122,747 mt. The biomass estimate was slightly higher than last year's estimate; however, the difference between this year's biomass was not statistically significant from the biomass estimates of recent years. Under the FMP, the HG was allocated one third for Subarea A, which was north of 39° N latitude (Pt. Arena, California) to the Canadian border, and two thirds for Subarea B, which was south of 39° N latitude to the Mexican border. Under this final rule, the northern allocation for 2004 would be 40,916 mt and the southern allocation would be 81,831 mt. (69 *FR* 8572). July 20, 2004. NMFS proposed a regulation to implement the annual HG for Pacific mackerel in the EEZ off the Pacific coast for the fishing season July 1, 2004 through June 30, 2005. The CPS FMP and its implementing regulations required NMFS to set an annual HG for Pacific mackerel based on the formula in the FMP. This action proposed allowable harvest levels for Pacific mackerel off the Pacific coast. (69 *FR* 43383)

**September 14, 2004.** Information memorandum. NMFS announced the reallocation of the remaining Pacific sardine HG in the U.S. EEZ off the Pacific coast. A regulatory amendment (69 *FR* 8572, February 25, 2003) required that NMFS conduct a review of the fishery 10 months after the beginning of the fishing season on January 1, and reallocate any unharvested portion of the HG, with 20 percent allocated north of Point Area, California, and 80 percent allocated south of Point Arena, California. (69 *FR* 55360)

**October 21, 2004.** NMFS issued a final rule to implement the annual HG for the July 1, 2004 - June 30, 2005 Pacific mackerel fishery in the EEZ off the Pacific coast. The CPS FMP and its implementing regulations required NMFS to set an annual HG for Pacific mackerel based on the formula in the FMP. Based on this approach, the biomass for July 1, 2003, was 81,383 mt. Applying the formula in the FMP resulted in a HG of 13,268 mt. (69 *FR* 61768)

**December 8, 2004.** NMFS proposed a regulation to implement the annual HG for Pacific sardine in the U.S. EEZ off the Pacific coast for the fishing season January 1, 2005 through December 31, 2005. This HG was calculated according to the regulations implementing the CPS FMP and established allowable harvest levels for Pacific sardine off the Pacific coast. (69 *FR* 70973)

**June 22, 2005.** NMFS issued a regulation to implement the annual HG for Pacific sardine in the U.S. EEZ off the Pacific coast for the fishing season January 1, 2005 through December 31, 2005. This HG was calculated according to the regulations implementing the CPS FMP and established allowable harvest levels for Pacific sardine off the Pacific coast. Based on a biomass estimate of 1,193,515 mt (in U.S. and Mexican waters) and using the FMP formula, NMFS calculated a HG of 136,179 mt for Pacific sardine in U.S. waters. Under the FMP, the HG was allocated one-third for Subarea A, which was north of 39°00' N. lat. (Pt. Arena, California) to the Canadian border, and two-thirds for Subarea B, which was south of 39° 00' N. lat. to the Mexican border. Under this final rule, the northern allocation for 2005 would be 45,393 mt, and the southern allocation would be 90,786 mt. (70 *FR* 36053)

**August 29, 2005.** NMFS proposed a regulation to implement the annual HG for Pacific mackerel in the U.S. EEZ off the Pacific coast. For specific regulations, see final rule language from October 21, 2005 below. (70 *FR* 51005)

**October 21, 2005.** NMFS issued a final rule to implement the annual HG for Pacific mackerel in the U.S. EEZ off the Pacific coast. The biomass estimate for July 1, 2005, was 101,147 mt. Applying the formula in the FMP resulted in a HG of 17,419 mt, which was 32 percent greater than last year but similar to low HGs of recent years. For the last three years, the fishing industry has recommended dividing the HG into a directed fishery and an incidental fishery, reserving a portion of the HG for incidental harvest in the Pacific sardine fishery so that the Pacific sardine fishery was not hindered by a prohibition on the harvest of Pacific mackerel. At its meeting on June 15, 2005, the CPSAS recommended for the 2005–2006 fishing

season that a directed fishery of 13,419 mt and an incidental fishery of 4,000 mt be implemented. An incidental allowance of 40 percent of Pacific mackerel in landings of any CPS would become effective if the 13,419 mt of the directed fishery was harvested. The CPSAS also recommended allowing up to 1 mt of Pacific mackerel to be landed during the incidental fishery without the requirement to land any other CPS. (70 FR 61235)

**October 28, 2005.** NMFS announced that the Council submitted Amendment 11 to the CPS FMP for Secretarial review. Amendment 11 would change the framework for the annual apportionment of the Pacific sardine HG along the U.S. Pacific coast. The purpose of Amendment 11 was to achieve optimal utilization of the Pacific sardine resource and equitable allocation of the harvest opportunity for Pacific sardine. The public comment period on Amendment 11 was open through December 27, 2005. (70 FR 62087)

**January 17, 2006.** NMFS proposed a regulation to implement the annual HG for Pacific sardine in the U.S. EEZ off the Pacific coast for the fishing season of January 1, 2006 through December 31, 2006. This HG was calculated according to the regulations implementing the CPS FMP and established allowable harvest levels for Pacific sardine off the Pacific coast. (71 FR 2510)

**June 29, 2006.** NMFS issued the final rule to implement Amendment 11 to the CPS FMP, which changed the framework for the annual apportionment of the Pacific sardine HG along the U.S. Pacific coast. The purpose of this final rule was to achieve optimal utilization of the Pacific sardine resource and equitable allocation of the harvest opportunity for Pacific sardine. (71 FR 36999)

**July 5, 2006.** NMFS issued a final rule to implement the annual HG for Pacific sardine in the U.S. EEZ off the Pacific coast for the fishing season of January 1, 2006, through December 31, 2006. This HG was calculated according to the regulations implementing the CPS FMP and established allowable harvest levels for Pacific sardine off the Pacific coast. Based on the estimated biomass of 1,061,391 mt and the formula in the FMP, a HG of 118,937 mt was determined for the fishery beginning January 1, 2006. (71 FR 38111)

**August 21, 2006.** This notice retracted the Notice of Intent (NOI) to prepare an Environmental Impact Statement to analyze a range of alternatives for the annual allocation of the Pacific sardine HG proposed action published on July 19, 2004. Further scoping subsequent to the publication of the NOI revealed additional information indicating that it was unlikely the proposed action would result in significant environmental impacts. An EA was completed and a subsequent Finding of No Significant Impact was signed. (71 FR 48537)

**October 20, 2006.** NMFS proposed a regulation to implement the annual HG for Pacific mackerel in the U.S. EEZ off the Pacific coast. (71 FR 61944).

**December 7, 2006.** NMFS proposed a regulation to implement new reporting and conservation measures under the CPS FMP. These reporting requirements and prohibitive measures would require CPS fishermen/vessel operators to employ avoidance measures when southern sea otters are present in the area they are fishing and to report any interactions that may occur between their vessel and/or fishing gear and sea otters. The purpose of this proposed rule was to comply with the terms and conditions of an incidental take statement from a biological opinion issued by the U.S. Fish and Wildlife Service regarding the implementation of Amendment 11 to the CPS FMP. (71 FR 70941).

**January 31, 2007.** NMFS issued a final rule to implement the annual HG and management measure for the 2006-2007 Pacific Mackerel fishery. Based on the estimated biomass of 112,700 mt and the formula in the FMP, a HG of 19,845 mt was in effect for the fishery which began on July 1, 2006. This HG applied to Pacific mackerel harvested in the U.S. EEZ off the Pacific coast from July 1, 2006 through June 30, 2007, unless the HG was attained and the fishery was closed before June 30, 2007. All landings made after July 1, 2006, will be counted toward the 2006–2007 HG of 19,845 mt. There was a directed fishery of 13,845 mt, followed by an incidental fishery of 6,000 mt. An incidental allowance of 40 percent of Pacific mackerel in landings of any CPS would become effective after the date when 13,845 mt of Pacific mackerel

was estimated to have been harvested. A landing of one mt of Pacific mackerel per trip was permitted during the incidental fishery for trips in which no other CPS is landed. (72 *FR* 4464).

**May 30, 2007.** This action implemented new reporting and conservation measures under the CPS FMP. The purpose of this action was to prevent interactions between CPS fisherman and southern sea otters, as well as establish methods for fishermen to report these occurrences. These reporting requirements and conservation measures require CPS fishermen/vessel operators to employ avoidance measures when southern sea otters are present in the area they are fishing and to report any interactions that may occur between their vessel and/or fishing gear and sea otters. (72 *FR* 29891).

**September 28, 2007** NMFS proposed a regulation to implement the annual HG for Pacific mackerel in the U.S. EEZ Based on a total stock biomass estimate of 359,290 mt, the ABC for U.S. fisheries for the 2007-2008 management season was 71,629 mt. The estimated stock biomass for the 2006-2007 season was 112,700 mt, resulting in an ABC of 19,845 mt. off the Pacific coast for the fishing season of July 1, 2007 through June 30, 2008. (72 *FR* 55170).

**October 25, 2007** NMFS issued the final rule to implement the annual HG for Pacific sardine in the U.S. EEZ off the Pacific coast (California, Oregon, and Washington) for the fishing season of January 1, 2007 through December 31, 2007. The Pacific sardine HG was apportioned based on the following allocation scheme established by Amendment 11 to the CPS FMP: 35 percent (53,397 mt) was allocated coastwide on January 1; 40 percent (61,025 mt), plus any portion not harvested from the initial allocation was reallocated coastwide on July 1; and on September 15 the remaining 25 percent (38,141 mt), plus any portion not harvested from earlier allocations was released. (72 *FR* 60586).

**January 31, 2008** NMFS issued the final rule to implement the annual HG for Pacific mackerel for the fishing season of July 1, 2007 through June 30, 2008. The HG for the 2007–2008 fishing season is 40,000 mt. If this total was reached, Pacific mackerel fishing would be closed to directed harvest and only incidental harvest would be allowed at a 45 percent by weight incidental catch rate when landed with other CPS, except that up to one mt of Pacific mackerel could be landed without landing any other CPS. (73 *FR* 5760).

**August 20, 2008** NMFS proposed a regulation to implement the annual HG for Pacific mackerel in the EEZ off the Pacific coast for the fishing season of July 1, 2008 through June 30, 2009. (73 *FR* 49156).

**August 20, 2008** NMFS issued a final rule that noticed effectiveness of reporting requirements of interactions that may occur between a CPS vessel and/or fishing gear and sea otters originally published on May 30, 2007 (see above). The May 30<sup>th</sup> final rule contained information collection requirements that at the time of publication had not yet been approved by OMB. The final rule stated that NMFS would publish a subsequent Federal Register notice announcing the effectiveness of those requirements. Therefore NMFS announces that OMB approved the collection of information requirements contained in the May 30, 2007, final rule under Control Number 0648-0566 with an expiration date of August 31, 2010. (73 *FR* 60191).

**October 10, 2008** NMFS issued a final rule that notices effectiveness of reporting requirements of interactions that may occur between a CPS vessel and/or fishing gear and sea otters originally published on May 30, 2007 (see above). The May 30<sup>th</sup> final rule contained information collection requirements that at the time of publication had not yet been approved by OMB. The final rule stated that NMFS would publish a subsequent Federal Register notice announcing the effectiveness of those requirements. Therefore NMFS announces that OMB approved the collection of information requirements contained in the May 30, 2007, final rule under Control Number 0648-0566 with an expiration date of August 31, 2010. (73 *FR* 60191).

**November 18, 2008** NMFS issued a final rule to implement the annual HG for Pacific mackerel in the EEZ off the Pacific coast for the fishing season of July 1, 2008, through June 30, 2009. The HG for the 2008–2009 fishing season is 40,000 mt. If this total is reached, Pacific mackerel fishing will be closed to directed harvest and only incidental harvest will be allowed at a 45 percent by weight incidental catch rate when landed with other CPS, except that up to one mt of Pacific mackerel can be landed without landing any other CPS. (73 FR 68362).

**January 5, 2009.** NMFS proposed a regulation to implement the annual harvest guideline (HG) for Pacific sardine in the U.S. exclusive economic zone (EEZ) off the Pacific coast for the fishing season of January 1, 2009, through December 31, 2009. This HG was proposed according to the regulations implementing the Coastal Pelagic Species (CPS) Fishery Management Plan (FMP) and established allowable harvest levels for Pacific sardine off the Pacific coast. The proposed initial HG for the 2009 fishing year was 65,732 mt and was proposed to be divided across the seasonal allocation periods in the following way: January 1–June 30, 22,006 mt was allocated for directed harvest with an incidental set-aside of 1,000 mt; July 1–September 14, 25,293 mt was allocated for directed harvest with an incidental set-aside of 1,000 mt; September 15–December 31, 11,933 mt was to be allocated for directed harvest with an incidental set-aside of 4,500 mt. If during any of the seasonal allocation periods the applicable adjusted directed harvest allocation was projected to be taken, fishing would be closed to directed harvest and only incidental harvest would be allowed. (74 FR 252).

**May 6, 2009.** NMFS proposed a regulation to adjust the harvest specifications for Pacific sardine in the U.S. exclusive economic zone (EEZ) off the Pacific coast for the fishing season of January 1, 2009, through December 31, 2009. The proposed action increased the tonnage of Pacific sardine allocated for industry conducted research from 1200 metric tons (mt) to 2400 mt and decreases the second and third period directed harvest allocations by 750 mt and 450 mt, respectively. (74 FR 20897).

**June 30, 2009.** NMFS issued a final rule to adjust the harvest specifications for Pacific sardine in the U.S. exclusive economic zone (EEZ) off the Pacific coast for the fishing season of January 1, 2009, through December 31, 2009. This final rule increased the tonnage of Pacific sardine allocated for industry-conducted research from 1200 metric tons (mt) to 2400 mt and decreases the second and third period directed harvest allocations by 750 mt and 450 mt, respectively. (74 FR 31199).

**July 13, 2009.** NMFS issued a final rule to implement Amendment 12 to the Coastal Pelagic Species (CPS) Fishery Management Plan (FMP) which would provide protection for all species of krill off the West Coast (i.e., California, Oregon and Washington). This rule would prohibit the harvest of all species of krill by any fishing vessel operating in the Exclusive Economic Zone (EEZ) off the West Coast, and would also deny the use of exempted fishing permits to allow krill fishing (74 FR 33372).

**July 17, 2009.** NMFS prohibited directed fishing for Pacific sardine off the coast of Washington, Oregon and California. This action was necessary because the directed harvest allocation total for the second seasonal period (July 1–September 14) was projected to be reached by the effective date of the rule. From the effective date of the rule until September 15, 2009, Pacific sardine could only be harvested as part of the live bait fishery or incidental to other fisheries; the incidental harvest of Pacific sardine is limited to 20–percent by weight of all fish per trip. Fishing vessels had to be at shore and in the process of offloading at 12:01 am Pacific Daylight Time on date of closure. (74 FR 34700).

**September 23, 2009.** NMFS issued a temporary rule prohibiting directed fishing for Pacific sardine off the coasts of Washington, Oregon and California. This action was necessary because the directed harvest allocation total for the third seasonal period (September 15–December 31) was projected to be reached by the effective date of the rule. From the effective date of this rule until December 31, 2009, Pacific sardine could only be harvested as part of the live bait fishery or incidental to other fisheries; the incidental harvest

of Pacific sardine was limited to 20-percent by weight of all fish per trip. Fishing vessels had to be at shore and in the process of offloading at 12:01 am Pacific Daylight Time on date of closure. (74 FR 48421)

**September 29, 2009.** NMFS issued a proposed regulation to implement the annual harvest guideline (HG) for Pacific mackerel in the U.S. exclusive economic zone (EEZ) off the Pacific coast. This HG is proposed according to the regulations implementing the Coastal Pelagic Species (CPS) Fishery Management Plan (FMP) and establishes allowable harvest levels for Pacific mackerel off the Pacific coast. The proposed total HG for the 2009–2010 fishing year was 10,000 metric tons (mt) and was proposed to be divided into a directed fishery HG of 8,000 mt and an incidental fishery of 2,000 mt. (74 FR 49845).

**December 22, 2009.** NMFS issued a temporary rule prohibiting the incidental harvest of Pacific sardine off the coasts of Washington, Oregon and California. This action was necessary because the incidental set aside for the third allocation period of the 2009 Pacific sardine season was reached. From the effective date of this rule until January 1, 2010, Pacific sardine can only be harvested as part of the live bait fishery. (FR 74 67986).

**January 13, 2010.** NMFS issued a proposed rule to implement annual harvest specifications for the 2010 sardine fishery off the U.S. West Coast. NMFS proposed a regulation to implement the annual harvest guideline (HG) and seasonal allocations for Pacific sardine in the U.S. exclusive economic zone (EEZ) off the Pacific coast for the fishing season of January 1, 2010, through December 31, 2010. This rule is proposed according to the Coastal Pelagic Species (CPS) Fishery Management Plan (FMP). The proposed 2010 acceptable biological catch (ABC) or maximum HG is 72,039 mt. 5,000 mt of this 72,039 mt would initially be set aside for use under an Exempted Fishing Permit (EFP), if issued, leaving the remaining 65,732 mt as the initial commercial fishing HG. That HG would be divided across the seasonal allocation periods in the following way: January 1–June 30, 22,463 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; July 1–September 14, 25,861 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; September 15–December 31, 11,760 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt with an additional 4,000 mt set aside to buffer against reaching the ABC. (75 FR 1744).

**March 10, 2010.** NMFS issued the sardine Final Rule to implement the annual harvest specifications for the 2010 sardine fishery off the U.S. West Coast. The proposed allocation of the overall HG over three fishing periods, were identical to those proposed on January 13, 2010 (above). (75 FR 11068).

**June 15, 2010.** NMFS issued a temporary rule announcing the closure of the first period sardine fishery, effective at 12:01am Pacific Daylight Time June 12. From 12:01 am on the date of closure through June 30, 2010, Pacific sardine may be harvested only as part of the live bait fishery or incidental to other fisheries, with the incidental harvest of Pacific sardine limited to 30 percent by weight of all fish caught during a trip. (75 FR 33733).

**July 22, 2010.** NMFS issued a temporary rule announcing the closure of the second period sardine fishery, effective at 12:01am Pacific Daylight Time July 22. From 12:01 am on the date of closure through September 14, 2010, Pacific sardine may be harvested only as part of the live bait fishery or incidental to other fisheries, with the incidental harvest of Pacific sardine limited to 30 percent by weight of all fish caught during a trip. (75 FR 42610).

**September 27, 2010.** NMFS issued a temporary rule announcing the closure of the third period sardine fishery, effective at 12:01am Pacific Daylight Time September 24. From 12:01 am on the date of closure through December 31, 2010, Pacific sardine may be harvested only as part of the live bait fishery or incidental to other fisheries, with the incidental harvest of Pacific sardine limited to 30 percent by weight of all fish caught during a trip. (75 FR 59156).

**January 27, 2011.** NMFS issued a proposed rule on annual specifications and management measures for Pacific sardine, under the CPS FMP. The proposed 2011 maximum HG for Pacific sardine was 50,526 metric tons (mt), of which 4,200 mt was initially set aside for potential use under an Exempted Fishing Permit (EFP). The remaining 46,326 mt, constituting the initial commercial fishing HG, would be divided across the seasonal allocation periods in the following way: January 1–June 30: 16,214 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; July 1–September 14: 18,530 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; September 15– December 31: 11,582 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt, plus an additional 2,000 mt set aside to buffer against reaching the total HG. (76 FR 4854).

**March 4, 2011.** NMFS issued a temporary emergency rule to close first period directed sardine fishery, anticipating that the first period allocation of 15,214 metric tons would have been harvested by then. Under this rule, Pacific sardine could have been harvested only as part of the live bait fishery or incidental to other fisheries; and the incidental harvest of Pacific sardine was limited to 30-percent by weight of all fish caught per trip. The effective date was 12:01 a.m. March 5, 2011. (76 FR 11969).

**May 25, 2011.** The Final Rule implementing the closure of the first period directed sardine fishery (see above) was issued. (76 FR 30276).

**June 28, 2011.** NMFS issued a Proposed Rule to implement parts of proposed Amendment 13 to the CPS FMP, which is intended to ensure the FMP is consistent with advisory guidelines published in Federal regulations. NMFS also issued a request for comments, which were due by July 28, 2011. Amendment 13 revises the framework process that was in place to set and adjust fishery specifications and management measures and modifies this framework to include the specification new reference points such as annual catch limit (ACL).

**November 14, 2011.** NMFS issued a final rule to implement parts of Amendment 13 to the CPS FMP, which is intended to ensure the FMP is consistent with advisory guidelines published in Federal regulations. Amendment 13 revised the framework process that was in place to set and adjust fishery specifications and management measures and modified this framework to include the specification new reference points such as annual catch limit (ACL). (76 FR 70362).

**April 3, 2012.** NMFS issued a proposed rule on annual specifications and management measures for Pacific sardine, under the CPS FMP. The proposed 2012 maximum HG for Pacific sardine was 109,409 metric tons (mt), of which 3,000 mt was initially set aside for potential use under an Exempted Fishing Permit (EFP) and 9,000 mt for potential harvest by the Quinault Indian Nation. The remaining 97,409 mt, constituting the initial commercial fishing HG, would be divided across the seasonal allocation periods in the following way: January 1–June 30: 34,093 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; July 1–September 14: 38,964 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; September 15– December 31: 24,352 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt. (77 FR 19991).

**April 12, 2012.** NMFS issued a proposed rule on annual specifications and management measures for Pacific mackerel, under the CPS FMP. The proposed 2011-2012 maximum HG for Pacific mackerel was 40,514 metric tons (mt), and the ACT was 30,386 mt. If the ACT was attained, the directed fishery would close, and the difference between the ACL and the ACT (10,128 mt) would be reserved as a set aside for incidental landings in other CPS fisheries and other sources of mortalities. (77 FR 21958).

**August 8, 2012.** NMFS issued a final rule on annual specifications and management measures for Pacific sardine, under the CPS FMP. The final 2012 maximum HG for Pacific sardine was 109,409 metric tons

(mt), of which 3,000 mt was initially set aside for potential use under an Exempted Fishing Permit (EFP) and 9,000 mt for potential harvest by the Quinault Indian Nation. The remaining 97,409 mt, constituting the initial commercial fishing HG, would be divided across the seasonal allocation periods in the following way: January 1–June 30: 34,093 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; July 1–September 14: 38,964 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; September 15– December 31: 24,352 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt. (77 FR 47318).

**June 18, 2012.** NMFS issued a final rule on annual specifications and management measures for Pacific mackerel, under the CPS FMP. The final 2011-2012 maximum HG for Pacific mackerel was 40,514 metric tons (mt), and the ACT was 30,386 mt. If the ACT is attained, the directed fishery would close, and the difference between the ACL and the ACT (10,128 mt) would be reserved as a set aside for incidental landings in other CPS fisheries and other sources of mortalities. (77 FR 36192).

**August 23, 2012.** NMFS issued a temporary rule announcing the closure of the second period sardine fishery, effective at 12:01am Pacific Daylight Time August 23. From 12:01 am on the date of closure through September 14, 2012, Pacific sardine may be harvested only as part of the live bait fishery or incidental to other fisheries, with the incidental harvest of Pacific sardine limited to 30 percent by weight of all fish caught during a trip. (77 FR 50952).

**December 7, 2012.** NMFS issued a proposed rule on annual specifications and management measures for Pacific mackerel, under the CPS FMP. The proposed 2012-2013 maximum HG for Pacific mackerel was 40,514 metric tons (mt), and the ACT was 30,386 mt. If the ACT was attained, the directed fishery would close, and the difference between the ACL and the ACT (10,128 mt) would be reserved as a set aside for incidental landings in other CPS fisheries and other sources of mortalities. (77 FR 73005).

**January 31, 2013.** NMFS issued a proposed rule on annual specifications and management measures for Pacific sardine, under the CPS FMP. The proposed 2013 maximum HG for Pacific sardine was 66,495 metric tons (mt), of which 3,000 mt was initially set aside for potential use under an Exempted Fishing Permit (EFP) and 6,000 mt for potential harvest by the Quinault Indian Nation. The remaining 57,495 mt, constituting the initial commercial fishing HG, would be divided across the seasonal allocation periods in the following way: January 1–June 30: 19,123 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; July 1–September 14: 22,998 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; September 15– December 31: 12,374 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt. (78 FR 6794).

**March 26, 2013.** NMFS issued a final rule on annual specifications and management measures for Pacific mackerel, under the CPS FMP. The final 2012-2013 maximum HG for Pacific mackerel was 40,514 metric tons (mt), and the ACT was 30,386 mt. If the ACT was attained, the directed fishery would close, and the difference between the ACL and the ACT (10,128 mt) would be reserved as a set aside for incidental landings in other CPS fisheries and other sources of mortalities. (78 FR 18249).

**June 17, 2013.** NMFS issued a final rule on annual specifications and management measures for Pacific sardine, under the CPS FMP. The final 2013 maximum HG for Pacific sardine was 66,495 metric tons (mt), of which 3,000 mt was initially set aside for potential use under an Exempted Fishing Permit (EFP) and 6,000 mt for potential harvest by the Quinault Indian Nation. The remaining 57,495 mt, constituting the initial commercial fishing HG, would be divided across the seasonal allocation periods in the following way: January 1–June 30: 19,123 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; July 1–September 14: 22,998 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt; September 15– December 31: 12,374 mt would be allocated for directed harvest with an incidental set-aside of 1,000 mt. (78 FR 36117).

**August 20, 2012.** NMFS issued a temporary rule announcing the closure of the second period sardine fishery, effective at 12:01am Pacific Daylight Time August 22. From 12:01 am on the date of closure through September 14, 2012, Pacific sardine may be harvested only as part of the live bait fishery or incidental to other fisheries, with the incidental harvest of Pacific sardine limited to 40 percent by weight of all fish caught during a trip. (78 FR 51097).

**December 23, 2013.** NMFS issued a proposed rule to change the starting date of the annual Pacific sardine fishery from January 1 to July 1. This would change the fishing season from one based on the calendar year to one based on a July 1 through the following June 30th schedule. No other changes to the annual allocation structure are proposed and the existing seasonal allocation percentages would remain as specified in the FMP; as would the current quota roll-over provisions. (78 FR 77413).

**February 28, 2014.** NMFS issued a final rule to change the starting date of the annual Pacific sardine fishery from January 1 to July 1. This changed the fishing season from one based on the calendar year to one based on a July 1 through the following June 30th schedule. No other changes to the annual allocation structure were made and the existing seasonal allocation percentages remain as specified in the FMP; as do the current quota roll-over provisions. (78 FR 11343).

**February 6, 2015.** NMFS issued a final rule on annual specifications and management measures for Pacific mackerel, under the CPS FMP. The final 2014-2015 HG for Pacific mackerel was 29,170 mt, with an ACT of 24,170 mt. The directed fishery would be closed if the ACT was attained, with the remaining 5,000 mt representing a set aside for incidental landings in other CPS fisheries and other sources of mortality. (80 FR 6662).

**March 23, 2015.** NMFS announced the approval of Amendment 14 to the CPS FMP, specifying an estimate of MSY for the NSNA. At its November 2013 meeting, the Council adopted an FMSY of 0.3 as the best MSY estimate for NSNA, and voted to include this reference point as part of Amendment 14 to the CPS FMP. This action was based on data compiled by the CPSMT and recommended by the Council's SSC.

**June 29, 2015.** NMFS issued a final rule to implement annual management measures and harvest specifications to establish the allowable catch levels of Pacific sardine in waters off the U.S. West Coast. The annual biomass estimate of 96,688 mt fell below the Cutoff value of 150,000, thereby precluding directed non-tribal harvest. NMFS set an ACL of 7,000 mt and an ACT of 4,000, to account for incidental harvest, tribal harvest, live bait, and other minor sources of mortality. NMFS implemented an OFL of 13,227 mt, and ABC of 12,074 mt, and the following conservation measures: incidental catch shall not exceed 40 percent by weight, until 1,500 mt of sardine are harvested, at which time the incidental allowance will become 30 percent. When 4000 mt has been harvested, the percent allowance will be reduced to five percent for the remainder of the fishing year. The Council also adopted a two mt incidental per landing allowance in non-CPS fisheries.



TABLE 2-3. Coastal pelagic species 2013 limited entry permit vessel listing<sup>4</sup> with calculated gross tonnage (GT) values for each vessel. (Page 1 of 2)

Vessel Name	Permit No.	Coast Guard Number/ Vessel ID	Calculated Vessel GT <sup>1</sup>	Permit GT Endorsement	Permit Transfer Allowance <sup>2</sup>
PROVIDER	1	572344	63.8	63.8	70.2
UNASSOCIATED	2	----	---	43.5	47.9
SEA VENTURE	3	WN4232NW	98.4	98.4	108.2
BARBARA H	4	643518	121.1	121.1	133.2
KAREN MARIE	5	593871	82.0	82.0	90.2
CACHALOT	6	654091	98.1	98.1	107.9
SAN PEDRO PRIDE	7	549506	160.7	160.7	176.8
FERRIGNO BOY	8	602455	139.3	139.3	153.2
KING PHILIP	9	1061827	156.9	156.9	172.6
SEA WAVE	10	951443	206.9	206.9	227.6
UNASSOCIATED	11	---	---	56.2	61.8
ANGELETTE	12	608579	114.8	114.8	126.3
PIONEER	13	246212	141.9	141.9	156.1
TRITON	14	CF7218UH	89.3	89.3	98.2
SAINT JOSEPH	15	633570	84.4	84.4	92.8
-----	16	---	---	137.5	151.3
RISING SPIRIT	17	WN0416RK	61.9	61.9	68.1
ATLANTIS	18	649333	63.8	63.8	70.2
SEA PEARL	19	CF7336UH	124.6	124.6	137.1
UNASSOCIATED	20	---	---	111.9	123.1
SPERANZA MARIE	21	643138	77.0	77.0	84.7
OCEAN ANGEL IV	22	OR868ADK	63.5	63.5	69.9
PACIFIC PREDATOR	23	OR018ADR	97.7	97.7	107.5
OCEAN ANGEL I	24	584336	63.8	63.8	70.2
SEA DIAMOND	25	509632	68.1	68.1	74.9
MANANA	26	253321	23.8	23.8	26.2
NEW QUEEN	27	OR588ADB	55.5	55.5	61.1
MINEO BROS. <sup>/3</sup>	28	CF0163TF	73.4	73.4	80.7
UNASSOCIATED	29	---	---	42.0	46.2
MINEO BROS. <sup>/3</sup>	30	CF0163TF	40.8	40.8	44.9
SHELLFISH	31	506989	340.2	340.2	374.2
ELDORADO	32	690849	54.9	54.9	60.4
KELSEY NICOLE	33	1210115	194.0	194.0	213.4
CAROL N ROSE	34	1211776	125.6	125.6	138.2
ENDURANCE	35	613302	42.0	42.0	46.2
NEW SUNBEAM	36	284470	27.0	27.0	29.7
CALOGERA A	37	984694	85.3	85.3	93.8
EILEEN	38	252749	119.9	119.9	131.9
PAMELA ROSE	39	693271	61.9	61.9	68.1
NEW STELLA	40	598813	71.8	71.8	79.0
TRAVELER	41	661936	44.0	44.0	48.4
LUCKY STAR	42	295673	41.5	41.5	45.7
OCEAN ANGEL II	43	622522	149.5	149.5	164.5
CRYSTAL SEA	44	1061917	137.0	137.0	151.8
TRIONFO	45	625449	79.2	79.2	87.1
RELENTLESS	46	CF2009TK	85.0	85.0	93.5
HEAVY DUTY	47	655523	84.4	84.4	92.8
ALIOTTI BROS	48	685870	107.2	107.2	117.9
LADY J	49	647528	40.7	40.7	44.8
INVINCIBLE	50	1225596	50.2	50.2	55.2
ENDEAVOR	51	971540	72.3	72.3	79.5

TABLE 2-3. Coastal pelagic species 2013 limited entry permit vessel listing<sup>4</sup> with calculated gross tonnage (GT) values for each vessel. (Page 2 of 2)

Vessel Name	Permit No.	Coast Guard Number/ Vessel ID	Calculated Vessel GT <sup>1</sup>	Permit GT Endorsement	Permit Transfer Allowance <sup>2</sup>
ANTOINETTE W	52	606156	37.0	37.0	40.7
CAPE BLANCO	53	648720	158.2	158.2	174.0
OCEAN ANGEL III	54	OR108ADL	82	126.5	139.2
UNASSOCIATED	55	---	---	40.4	44.4
KATHY JEANNE	56	507798	86.3	86.3	94.4
MERVA W	57	532023	54.4	54.4	59.8
SANTA MARIA	58	236806	91.1	91.1	100.2
STELLAR	59	1190501	73.3	74.5	82.0
PACIFIC KNIGHT	60	OR155ABZ	63.4	63.4	69.7
ALEUTIAN SPIRIT	61	621542	59.9	59.9	65.9
SEABOUND	62	AK9671AF	67.8	39.7	43.7
EMERALD SEA	63	626289	86.3	86.3	94.9
LUCKY MARIE	64	602150	35.1	54.5	60.0
BOUNTY	65	629721	26.4	26.4	29.0

<sup>1</sup> Vessel Gross Tonnage GT=0.67(Length\*Breadth\*Depth)/100. See 46 CFR 69.209.

<sup>2</sup> Maximum transfer allowance is based on permit GT + 10%.

<sup>3</sup> Vessel Mineo Bros is associated with permits 28 and 30

<sup>4</sup> Several CPS permit transfers occurred in 2013. The above list includes vessels with permits at the end of December 2013 that received renewal permit applications. Vessels that had permits earlier in the year but transferred their permit to other vessels were not included

TABLE 2-4. Vessel age and calculated gross tonnage (GT) for the initial and current Federal limited entry fleet.

	Initial Fleet	Current Fleet
Number of Vessels	65	56
Average Vessel Age	35 years	34 years
Range of Ages	12 to 66 years	4 to 70 years
Average GT	71.3	88
Range of GT	12.8 to 206.9	23.4 to 206.9
Sum of Fleet GT	4,635.9	4,753
Capacity Goal (GT) <sup>1/</sup>	---	5,650.9
Transferability Trigger	---	5,933.5

<sup>1/</sup> Established in Amendment 10 to the CPS FMP.

TABLE 2-5. Oregon state limited entry sardine permitted vessels landing sardine during the 2014-15 fishery.

Vessel Name	Coast Guard Number <sup>1/</sup>	Year Built	Length	Breadth	Depth	Calculated Vessel GT <sup>2/</sup>
ANTHONY G	605599	1979	58	24	8	74.6
APRIL LANE	1249802	2014	50.5	22.5	10.2	77.7
ARCTIC FOX	1187928	2006	57.3	26	12.6	125.8
CORVA MAY	615795	1979	49.6	19	10.1	
EMERALD SEA	626289	1980	62.7	26	7.9	86.3
HARBOR GEM	974306	1982	58	19.5	10	75.8
LAUREN L KAPP	OR072ACX	----	72	---	---	---
LISA MARIE	1038717	1996	78	25.3	13	171.9
LOUI M	1246619	2013	58	22.5	10.6	92.7
MISS EMILY	1244893	2013	71	28	13	173.2
MISS ROXANNE	976542	1991	58	19.5	10	75.8
OCEAN DREAM	621541	1980	58	19	10.2	75.3
PACIFIC JOURNEY	OR661ZK	1996	71	22	10	104.7
PACIFIC PURSUIT	OR873ABY	1993	63	---	---	---
PACIFIC RAIDER	972638	1991	57.7	22.7	11	96.5
PACIFIC VENTURE	WN7995RP	---	59	19	---	45 <sup>3/</sup>
SEQUEL	1240646	2012	57.8	22.7	11.5	101.1
WESTWIND	246530	1944	72.5	20.2	8.4	82.4

1/ Vessel dimension information was obtained from NOAA at [www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByName.html](http://www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByName.html).

2/ Vessel Gross Tonnage  $GT=0.67(Length*Breadth*Depth)/100$

3/ Vessel Gross Tonnage provided by WDFW.

TABLE 2-5(b). Oregon state limited entry sardine permit vessels landing sardine in 2012.

Vessel Name	Coast Guard Number	Year Built	Length	Breadth	Depth	Calculated Vessel GT <sup>2/</sup>	Federal Limited Entry	WA Limited Entry
ANTHONY G	605599	1979	58	24	8	74.6		
CRYSTAL SEA	1061917	1997	66	26	12	138	X	
D C COLE	556145	1975	49.6	19	10.1	63.8		
DELTA DAWN	647246	1982	49.6	19	10.1	63.8		X
EMERALD SEA	626289	1980	62.7	26	7.9	86.3	X	X
EVERMORE	248555	1944	76.3	22.2	11.4	129.4		
HARBOR GEM	974306	1982	58	19.5	10	75.8		
LADY LAW	1131965	2002	74.7	25	13.3	166.4		
LAUREN L KAPP	OR072ACX	----	72	---	---	---		
OCEAN ANGEL II	622522	1980	74.5	28	10.7	149.5	X	
OCEAN DREAM	621541	1980	58	19	10.2	75.3		
PACIFIC JOURNEY	OR661ZK	1996	71	22	10	104.7	X	
PACIFIC PREDATOR	OR018ADR	---	57	20	---	---	X	
PACIFIC PURSUIT	OR873ABY	1993	63	---	---	---		
PACIFIC RAIDER	972638	1991	57.7	22.7	11	96.5		X
ROYAL PACIFIC	OR873ABY	---	73	---	---	---		
SEA VENTURE	WN4232NW	---	66	---	---	---	X	
SEQUEL	1240646	2012	57.8	22.7	11.5	101.1		
SHELTER COVE	1239174	2012	58	25	11	106.9		
SUNRISE	238918	1939	80.2	22.2	10.2	121.7		

WESTWIND	246530	1944	72.5	20.2	8.4	82.4		
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1/ Vessel dimension information was obtained from NOAA at [www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByName.html](http://www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByName.html).

2/ Vessel Gross Tonnage  $GT=0.67(\text{Length}*\text{Breadth}*\text{Depth})/100$

TABLE 2-5 (c). Oregon state limited entry sardine permit vessels landing sardine in 2013.

Vessel Name	Coast Guard Number	Year Built	Length	Breadth	Depth	Calculated Vessel GT <sup>2/</sup>	Federal Limited Entry	WA Limited Entry
ANTHONY G	605599	1979	58	24	8	74.6		
ARCTIC FOX	1187928	2006	57.3	26	12.6	125.8		X
DELTA DAWN	647246	1982	49.6	19	10.1	63.8		X
JOHNNY A	625595	1980	49.6	22	9.7	70.9		
LAUREN L KAPP	OR072ACX	----	72	---	---	---		
MISS ROXANNE	976542	1991	58	19.5	10	75.8		
OCEAN DREAM	621541	1980	58	19	10.2	75.3		
PACIFIC JOURNEY	OR661ZK	1996	71	22	10	104.7		
PACIFIC PURSUIT	OR873ABY	1993	63	---	---	---		
PACIFIC RAIDER	972638	1991	57.7	22.7	11	96.5		X
PACIFIC VENTURE	WN7995RP	---	59	19	---	45 <sup>3</sup>		
SEQUEL	1240646	2012	57.8	22.7	11.5	101.1		
ST. TERESA	623983	1980	49	18.5	8.5	51.6		
WESTWIND	246530	1944	72.5	20.2	8.4	82.4		

1/ Vessel dimension information was obtained from NOAA at [www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByName.html](http://www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByName.html).

2/ Vessel Gross Tonnage  $GT=0.67(\text{Length}*\text{Breadth}*\text{Depth})/100$

3/ Vessel Gross Tonnage provided by WDFW.

TABLE 2-6. Washington limited entry sardine licenses in 2014.

Vessel Name	Coast Guard Number	Year Built	Length	Breadth	Depth	Calculated Vessel GT <sup>2/</sup>	Federal Limited Entry	Oregon Limited Entry
ARTIC FOX	1187928	2006	57.3	26.0	12.6	125.8		X
ATLANTIS <sup>1/</sup>	649333	1982	49.6	19.0	10.1	63.8	X	
CAPE CAUTION	606699	1979	49.6	19.0	10.1	63.8		
EMERALD SEA	626289	1980	62.7	26.0	7.9	86.3	X	X
HOT SPUR	942575	1988	52.6	21.0	9.2	68.1		
KELSEY NICOLE	1210115	1982	58	19.5	10	75.8	X	
LADY LAW	1131965	2002	74.7	25	13.3	166.4		X
LISA MARIE	1038717	1996	78.0	25.3	13	171.9		X
MARAUDER	975597	1991	58.0	22.8	10.5	93.0		X
OCEAN STORM	986786	1992	57.9	22.3	11.3	97.8		
PACIFIC GRACE	625595	1980	58	22	9.7	107		
RISING SUN	1244677	2013	58.0	22.7	11.5	101.4		

SHELTER COVE	1239174	2012	58	25	11	107		
ROBERT MAGNUS	1230071	2011	58	26	13	131.3		
VOYAGER	248217	1945	66.7	20.2	9.3	84.0		
WN7062SA		1977	68.4	22.0		100.0		
ZEALOT	986920	1992	57.9	22	10.5	89.6		

1/ Vessel dimension information was obtained from NOAA at [www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByName.html](http://www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByName.html).

2/ Vessel Gross Tonnage  $GT=0.67(\text{Length} \times \text{Breadth} \times \text{Depth})/100$

TABLE 2-6. Washington limited entry sardine licenses 2015.

Vessel Name	Coast Guard Number	Year Built	Length	Breadth	Depth	Calculated Vessel GT <sup>2/</sup>	Federal Limited Entry	Oregon Limited Entry
ARTIC FOX	1187928	2006	57.3	26.0	12.6	125.8		X
ATLANTIS <sup>1/</sup>	649333	1982	49.6	19.0	10.1	63.8	X	
CAPE CAUTION	606699	1979	49.6	19.0	10.1	63.8		
EMERALD SEA	626289	1980	62.7	26.0	7.9	86.3	X	X
HOT SPUR	942575	1988	52.6	21.0	9.2	68.1		
JUNO	260614	1950	138	30	12	199		

KELSEY NICOLE	1210115	1982	58	19.5	10	75.8	X	
LADY LAW	1131965	2002	74.7	25	13.3	166.4		X
LISA MARIE	1038717	1996	78.0	25.3	13	171.9		X
MARAUDER	975597	1991	58.0	22.8	10.5	93.0		X
OCEAN STORM	986786	1992	57.9	22.3	11.3	97.8		
PACIFIC GRACE	625595	1980	58	22	9.7	107		
PACIFIC RAIDER	972638	1991	57.7	22.7	11	96.5		X
RISING SUN	1244677	2013	58.0	22.7	11.5	101.4		
ROBERT MAGNUS	1230071	2011	58	26	13	131.3		
VOYAGER	248217	1945	66.7	20.2	9.3	84.0		
WN7062SA		1977	68.4	22.0		100.0		
ZEALOT	986920	1992	57.9	22	10.5	89.6		

1/Vessel dimension information was obtained from NOAA at [www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByName.html](http://www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByName.html).

2/ Vessel Gross Tonnage  $GT=0.67(\text{Length}*\text{Breadth}*\text{Depth})/100$  (The CPSMT is working on discrepancies between Tables 2-3 through 2-6).



TABLE 4-1 (continued). Preliminary catch summary for vessels targeting Pacific sardine from NMFS-SWR coastal pelagic species pilot observer program, 2004-2008. (Page 2 of 2).

<b>Target species - Pacific sardine</b>					
<b>Species</b>	<b>Target Catch</b>	<b>Incidental Catch</b>	<b>Bycatch Returned</b>		
			<b>Alive</b>	<b>Dead</b>	<b>Unknown</b>
Unid. Smelt		2			
Unid. Surf Perch		1			
Unid. Turbot				60	
White Croaker		31 lbs	50 lbs		
Yellowfin Croaker		10 lbs			
CA Sea Lion			49		
Harbor Seal			1		
Unid. Gull			3	2	4

TABLE 4-2. Preliminary catch summary for vessels targeting market squid from NMFS-SWR coastal pelagic species pilot observer program, 2004-2008.

<b>Target species - Squid</b>					
<b>Species</b>	<b>Target Catch</b>	<b>Incidental Catch</b>	<b>Bycatch Returned</b>		
			<b>Alive</b>	<b>Dead</b>	<b>Unknown</b>
Squid	1274 mt		28 mt	350 lbs	2 mt
Anchovy		100 lbs	120 lbs		
Jack Mackerel		2 mt	18 lbs	2 lbs	
Pacific Mackerel		20 mt	20 mt	180 lbs	1 lb
Sardine		12 mt	13 mt	1077 lbs	3 lbs
Spanish Mackerel		20 lbs			
Bat Ray			53		1
Bat Star			1		
Blue Shark			2		
Common Mola			1		
Pelagic Stingray			60		
Pacific Butterfish		19			1
Sunstar		30	4		
Squid Eggs					505 lbs
Lobster			3		
Brittle Star				3000	
Unid. Batfish				2 lbs	
Unid. Crab		1	1		93
Unid. Croaker		3	2	16 lbs	
Unid. Flatfish		1	1	6	2
Unid. Jellyfish		4			
Unid. Mackerel		2 lbs	102 lbs		
Unid. Octopus		1			
Unid. Rockfish		1	1	4	
Unid. Ray			4		1
Unid. Sanddab		4	3		4
Unid. Seastar		1			
Unid. Seaslug					21
Unid. Scorpionfish		1			
Unid. Surfperch				3	
Unid. Skate		3		1	
Unid. Smelt		49			
Unid. Stingray		9	17		
Unid. Shark					1
Thresher Shark		1			
CA Sea Lion			98		
Harbor Seal			3		
Common Dolphin				1	
Unid. Gull			16	1	

TABLE 4-3. Preliminary catch summary for vessels targeting Pacific mackerel from NMFS-SWR coastal pelagic species pilot observer program, 2004-2008.

<b>Target species - Pacific mackerel</b>					
Species	Target Catch	Incidental Catch	Bycatch Returned		
			Alive	Dead	Unknown
Pacific Mackerel	40 mt	16 mt			
Bat Ray			2		
CA Yellowtail			1		
Midshipman			1		
Sardine					
Sea Cucumber			5		
Unid. Crab			1		
Unid. Flatfish			3		
Unid. Jellyfish			3		
Unid. Shark			1		

TABLE 4-4. Preliminary catch summary for vessels targeting northern anchovy and northern anchovy/Pacific sardine from NMFS-SWR coastal pelagic species pilot observer program, 2004-2008.

<b>Target species - Anchovy and Anchovy/Sardine</b>					
Species	Target Catch	Incidental Catch	Bycatch Returned		
			Alive	Dead	Unknown
Anchovy	373 mt	21 mt	2 mt	1 mt	
Sardine			2 mt		
Bat Ray			4		
CA Lizardfish			4		
Kelp Bass			1		
Midshipman					5
Pacific Bonito			20 lbs		
Pacific Mackerel			2		
Queenfish			50 lbs		
Round Stingray			11 lbs		
Sculpin			1		
Spiny Dogfish			2		
Unid. Croaker			1		
Unid. Flatfish			45		
Unid. Hake			10		
Unid. Seastar			4		
Unid. Smelt			1		
Unid. Turbot			2		
White Croaker			1	1	20
Yellowfin Croaker			50 lbs		
CA Sea Lion			35 lbs		
Sea Otter			10 lbs		
			5		
			1		

Table 4-5. Percent frequency by occurrence of incidental catch in sampled Pacific sardine, Pacific mackerel, and Northern anchovy\* landings, by port, 2011-2015. Table values represent proportion of each incidental species out of total incidental observed each year. \*Collection of Northern anchovy samples began in 2014.

	All Ports Combined						Monterey/Moss Landing						Ventura/Port Hueneme/Terminal Island/San Pedro				
Common Name	2011	2012	2013	2014	2015		2011	2012	2013	2014	2015		2011	2012	2013	2014	2015
<b>Finfish</b>																	
Anchovy, northern	7.4	1.9	0.9	7.9	0.2		8.9	4	3.6	12.1	0.3		3.0	0.5	0.4	1.1	
Barracuda, California	0.5	0.4		0.6	0.7		0.3	0.4		0.2	0.9		1.0	0.5		1.1	
Bass, barred sand	0.2	0.7	0.3	0.1	0.2								1.0	1.2	0.4	0.4	0.9
Bass, kelp		1.3	4.4	1.9	0.2									2.2	5.3	4.9	0.9
Bass, striped		0.3						0.4						0.2			
Blacksmith			0.3	0.1											0.4	0.4	
Bonito, Pacific		0.1	3.8	0.4	1.3					0.5	0.3			0.2	4.6	0.4	4.3
Butterfish	4.4	1.8	1.5	3.2	6.7		4.3	3.6	3.6	4.8	8.2		5.0	0.5	1.1	0.8	2.6
Cabezon		0.1						0.4									
Combfish, longspine	0.2	0.1					0.3							0.2			
Corbina, California		0.1												0.2			
Croaker, unspecified			0.3												0.4		
Croaker, white	5.7	3.1	0.9	1.2	0.4		6.2	6.9	5.4	1.4	0.3		4.0	0.5		0.8	0.9
Croaker, yellowfin		0.3		0.4	0.2			0.7		0.5						0.4	0.9
Cusk eel, basketweave	0.5	0.1		0.3	0.4						0.3		2.0	0.2		0.8	0.9
Cusk-eel, spotted																	
Eel, unspecified					0.2						0.3						
Eel, wolf (wolf-eel)	0.2	0.3					0.3							0.5			
Eel, yellow snake																	
Fish, unspecified																	
Flatfish, unspecified	1.0	1.9	0.6	0.6	0.4		0.3	0.7		1.0	0.6		3.0	2.7	0.7		
Flounder, starry	1.2	0.9		0.1			1.6	2.2		0.2							
Flounder, unspecified																	
Flyingfish	0.2	0.3	0.3	0.1									1.0	0.5	0.4	0.4	
Greenling, kelp	0.2			0.1			0.3									0.4	
Grunion, California																	
Hagfish																	
Halfmoon					0.4						0.3						0.9
Halibut, California	2.5	1	1.8	0.4	0.9		2.3	1.4	1.8		0.3		3.0	0.7	1.8	1.1	2.6
Herring, Pacific	0.7	1.2					1.0	2.9									
Jacksmelt	2.0	2.8	0.9	0.1	0.7		2.0	6.1	5.4	0.2	0.9		2.0	0.5			
Kelpfish, giant		0.3	0.6	0.1										0.5	0.7	0.4	
Lingcod	2.2	0.1					3.0							0.2			
Lizardfish, California	0.5	1.2	1.2	2.3	2.2			0.7	5.4	3.3	2.4		2.0	1.5	0.4	0.8	1.7
Mackerel, jack	1.0	5.7	13.5	4.5	9.4		0.3			0.2	12.7		3.0	9.7	16.1	11.3	
Midshipman, plainfin	3.2	0.1	0.6	0.6	2.5		3.9			1.0	2.1		1.0	0.2	0.7		3.5
Midshipman, specklefin		0.7	1.8	0.7	0.7									1.2	2.1	1.9	2.6
Midshipman, unspec																	
Opaleye																	
Perch-like, unspecified		0.3			0.2			0.7			0.3						

Pipefish, bay																	
Pipefish, kelp		0.1		0.1								0.2			0.4		
Poacher, unspecified																	
Queenfish	0.2	0.1			0.7					0.6	1.0	0.2				0.9	
Rockfish, chilipepper				0.4	0.2				0.7	0.3							
Rockfish, unspecified		0.6		0.1					0.2				1.0				
Salema																	
Salmon, Chinook		0.6					1.1					0.2					
Sanddab, longfin				0.1											0.4		
Sanddab, Pacific	5.2	2.2	5	6.1	8.1	6.6	4.3	7.1	6.4	9.7	1.0	0.7	4.6	5.7	3.5		
Sanddab, speckled		0.7	0.3	0.9				1.8	1.4			1.2					
Sanddab, unspecified	0.2	1.9			0.4		1.4			0.6	1.0	2.2					
Scorpionfish, California	2.0	1.3	2.6	3.2	1.8						7.9	2.2	3.2	8.3	7.0		
Sculpin, pithead																	
Sculpin, roughback		0.3										0.5					
Sculpin, staghorn	1.7	1.0	0.6		0.9	2.3	2.5	3.6		1.2							
Sculpin, unidentified		0.3		0.1					0.2			0.5					
Sculpin, yellowchin																	
Seabass, giant (black)																	
Shad, American		1.5			0.2		3.6			0.3							
Sheephead, California				0.1											0.4		
Silversides	0.2										1.0						
Smelt, surf				0.3											0.8		
Smelt, true																	
Snapper, Mexican																	
Sole, C-O			0.9	0.7	0.2								1.1	1.9	0.9		
Sole, English	1.2	0.4		0.1	0.2	1.6	1.1		0.2	0.3							
Sole, fantail		1.0	1.8	0.4	0.2		0.4					1.5	2.1	1.1	0.9		
Sole, petrale			0.3		0.2					0.3			0.4				
Sole, rock																	
Sole, sand	3.7	1.5	1.5	0.4		4.9	2.9	8.9	0.7			0.5					
Sole, slender																	
Sole, unspecified																	
Sunfish, ocean				0.1					0.2								
Surfperch, barred																	
Surfperch, black		0.1	0.6				0.4						0.7				
Surfperch, kelp																	
Surfperch, pink		0.3										0.5					
Surfperch, rainbow	0.2					0.3											
Surfperch, rubberlip	0.2		0.3	0.1		0.3							0.4	0.4			
Surfperch, shiner		0.6	0.9	0.4	0.4		1.1		0.2	0.3		0.2	1.1	0.8	0.9		
Surfperch, unspecified		0.1	0.6	0.1	0.2				0.2			0.2	0.7		0.9		
Surfperch, walleye																	
Tonguefish	0.2			0.3	0.2				0.5	0.3	1.0						
Topsmelt	0.5	0.1									2.0	0.2					
Turbot, curlfin	0.7	1.5	0.3	0.9	0.2	1.0	0.4	1.8	1.4	0.3		2.2					
Turbot, diamond	0.5	0.6									2.0	1					
Turbot, hornyhead	0.7	2.2	4.4	2.2	1.3	0.3	0.4	1.8	0.2	0.3	2.0	3.5	4.9	5.3	4.3		

Turbot, spotted		0.1	0.6										0.2	0.7			
Turbot, unspecified	0.5		0.6	0.3	0.2					0.5	0.3		2.0		0.7		
Whiting, Pacific				0.7						1.2							
Total % Freq. Incidents	52.2	47.0	54.5	44.8	54.9		52.5	50.5	50.0	40.0	57.5		51.5	44.5	55.4	52.5	46.4
Elasmobranchs																	
Guitarfish, shovelnose	0.2						0.3										
Ratfish, spotted																	
Ray, bat	2.7	3.1	1.2	0.1	1.8		2.0	3.2	1.8	0.2	1.2		5.0	3.0	1.1		3.5
Ray, California butterfly		0.1	0.3		0.4			0.4							0.4		1.7
Ray, Pacific electric	3.9	0.6	1.5	4.2	4.9		4.6	0.7	3.6	6.7	6.4		2.0	0.5	1.1	0.4	0.9
Ray, unspecified		1.0		0.1	0.2			0.4		0.2	0.3			1.5			
Shark, brown smoothhound																	
Shark, gray smoothhound																	
Shark, horn		0.7	0.3	0.7	0.2									1.2	0.4	1.9	0.9
Shark, leopard		0.3		0.3						0.2				0.5		0.4	
Shark, Pacific angel		1.6	1.5	0.6	0.7									2.7	1.8	1.5	2.6
Shark, pelagic thresher																	
Shark, smooth hammerhead																	
Shark, spiny dogfish																	
Shark, unspecified		0.1												0.2			
Skate, big	1.2	1.0	0.3				1.6	2.5	1.8								
Skate, California	0.2	0.3	0.9	0.1	0.4			0.4			0.3		1.0	0.2	1.1	0.4	0.9
Skate, long-nosed		0.1						0.4									
Skate, thornback	1.2	1.5	2.1	0.9	1.1		0.3	1.8	5.4		0.6		4.0	1.2	1.4	2.3	2.6
Skate, unspecified		0.1		0.1	0.2					0.2				0.2			0.9
Stingray, round		0.6		0.3	0.4									1		0.8	1.7
Total % Freq. Incidents	9.6	11.3	7.9	7.6	8.5		8.9	9.7	7	7.6	6.8		11.9	12.4	7.0	7.5	14.4
Invertebrates & Plants																	
Algae, marine		0.6			1.6					0.5	2.1			1.0			
Bryozoan	0.2												1.0				
Crab shells		0.3	0.6		0.7			0.7	1.8		0.9				0.4		
Crab, box																	
Crab, decorator		0.4		3.5				0.4						0.5			
Crab, Dungeness	3.4	1.8	1.2		1.3		4.6	4.3	7.1	5.5	1.8					0.4	
Crab, globe	0.2	1.0	0.6										1.0	1.7	0.7		
Crab, rock unspecified		0.9	0.3	0.3					1.8					1.5			
Crab, sheep		0.4	2.3					0.4						0.5	2.8	0.8	
Crab, slender																	
Crab, spider		0.7		1.9										1.2			
Crab, swimming	0.5	0.6	1.2	0.6	1.1					0.2			2.0	1.0	1.4	4.5	4.3
Crab, unspecified	0.7	1.3	0.9	1.0	2.2			0.4			1.2		3.0	2.0	1.1	1.5	5.2
Eelgrass	0.5	1.5			1.6			1.1		1.0	0.3		2.0	1.7		1.1	5.2
Gorgonians (sea fans)					0.4												1.7
Invertebrate, unspecified		0.1		6.4										0.2			

Jellyfish	4.9	1.2	0.6	11.8	1.6		6.6	2.9	3.6	10.5	2.1						
Kelp	8.9	11.0	11.4	0.6	16.0		8.2	10.1	5.4	9.3	15.2		10.9	11.7	12.6	15.8	18.3
Kelp, feather boa	0.2	3.8		0.4	0.9			1.4		1.0	1.2		1.0	5.5			
Lobster, California spiny		1.5	1.2											2.5	1.4	1.1	
Nudibranch				1.0													
Octopus, unspecified	1.2	2.4	3.8		0.4		1.3	2.9	8.9	0.7	0.3		1.0	2.0	2.8	1.5	0.9
Pleurobranch				0.3													
Prawn, ridgeback				0.4						0.5							
Prawn, spot		0.1		1.6						0.5				0.2		0.4	
Salps	0.5	0.1		1.5	0.7						0.9		2.0	0.2		4.2	
Sea cucumber	0.2	0.9	0.6		0.4			0.4		1.7			1.0	1.2	0.7	1.1	1.7
Sea pansy																	
Sea stars	3	1.6	1.2		0.2		3.6	3.6	3.6		0.3		1.0	0.2	0.7		
Shrimp,black-spotted bay	2.7	0.9		0.1	0.2		3.3	2.2			0.3		1.0				
Shrimp, unspecified	0.5	0.3	0.3		3.1						2.7		2.0	0.5	0.4	0.4	4.3
Snail, top																	
Snail, unspecified				0.3													
Sponge, unspecified	0.2						0.3			0.5							
Squid, jumbo				15.0													
Squid, market	10.1	7.8	11.4		11.2		10.8	8.3	5.4	20.0	14.8		7.9	7.5	12.6	7.2	0.9
Squid, market (Egg Cases)																	
Surfgrass				0.4													
Tunicates					1.3					0.7	1.8						
Turkish Towel		0.3						0.7									
Total % Freq. Incidents	38.2	41.7	37.5	47.6	36.4		38.7	39.7	37.5	53.4	35.7		36.6	43.0	37.5	40.0	39.2
Total All Incidents	406	679	56	685	551		305	277	285	420	426		101	402	341	265	125
Total Observed Landings	89	186	7	100	162		33	34	110	24	108		56	146	118	76	54

Table 4-6. Incidental catch reported on landing receipts with greater than fifty percent market squid (by tonnage per landing) from 2010 – 2014 for round haul gear.

	2011		2012		2013		2014		2015	
Common Name	Number of Landings	Metric Tons	Number of Landings	Metric Tons	Number of Landings	Metric Tons	Number of Landings	Metric Tons	Number of Landings	Metric Tons
Anchovy, northern	2	2	2	1	4	5	1	0	2	18
Bonito, Pacific	0	0	0	0	0	0	0	0	1	5
Mackerel, jack	11	16	51	70	23	19	30	19	45	61
Mackerel, Pacific	29	79	114	128	52	92	144	248	119	184
Sardine, Pacific	41	94	150	190	55	113	40	31	27	23

TABLE 4-7. Percent frequency by occurrence of bycatch in observed loads of California market squid by port, 2011-2015. Table values represent proportion of each incidental species out of total incidental observed each year.

	Total All Ports						San Pedro/Terminal Island						Ventura/Port Hueneme						Monterey/Moss Landing				
Common Name	2011	2012	2013	2014	2015		2011	2012	2013	2014	2015		2011	2012	2013	2014	2015		2011	2012	2013	2014	2015
<b>Finfish</b>																							
Anchovy, northern	2.8	3.6	3.5	3.2	4.0		1.7	17.6	2.9	3.6			1.3	3	4.3	4.0	1.8		3.6	2.8	2.7	2.8	5.4
Barracuda, California	0.6	1.1	0.4	0.4	0.6		0.9			1.0			2.7	2	0.8								0.9
Bass, kelp			0.3	0.5					1.0	1.5					0.3								
Blacksmith			0.1	0.2						0.5					0.3								
Bonito, Pacific			0.1	0.2	0.9				1.0		4.2					2.0	1.8						
Butterfish (Pacific pompano)	3.8	10.1	10	4.6	5.2		1.7	8.8	10.7	1.5	4.2		4	11.4	11.6	2.0	1.8		4.6	8.5	7.7	6.7	6.3
Combfish, longspine	0.4		0.1	0.2									1.3		0.3				0.3			0.3	
Croaker, white (kingfish)	1.6	1.5	1.0	0.4	0.6					0.5			1.3	0.3	0.5				2.3	3.2	2.0	0.3	0.9
Eel, wolf (wolf-eel)	0.2	0.5	0.5	0.2										0.3					0.3	0.9	1.3	0.3	
Fish, unspecified		0.1																		0.3			
Flatfish, unspecified	0.6		0.3	0.9	1.5		2.6		1.0		2.1					2.0					0.3	1.2	1.8
Flounder, starry		1.3	0.1	0.4																3.2	0.3	0.6	



Flyingfish		0.5	0.6	0.2				1.0	0.5				1.0	1.1									
Halibut, California	0.2		0.1	0.2			0.9	1.0												0.3			
Herring, Pacific	0.2	1.1	1.3	0.5													0.3	2.5	3.4	0.9			
Jacksmelt	1.4	2.2	2.5	3.0	4.3			1.0	0.5	2.1			1.5	0.3			2.3	3.2	5.7	4.9	5.8		
Lizardfish, California	0.4	0.8	2.8	2.3	0.6		0.9	5.9	3.9		2.1		1.3	1.0	3.0				2.3	4.0	0.4		
Mackerel, jack	2.8	2.8	2.6	4.9	12.5		11.1	8.8	2.9	10.3	10.4		1.3	3.8	3.0	6.0	10.5		0.9	2.0	1.5	13.5	
Mackerel, Pacific	14.5	2.8	4.3	8.4	14.9		17.9	2.9	3.9	12.9	14.6		13.3	4.6	5.4	16.0	33.3		13.4	0.6	3.0	4.6	10.3
Mackerel, unspecified		0.3																	0.6				
Midshipman, plainfin	0.6	1.2	1.7	1.8	1.2		0.9		1				1.3	2.3	1.9			0.3		1.7	3.1	1.8	
Midshipman, specklefin	0.2	0.1	0.8	0.2	0.6				2.9	0.5	2.1		1.3	0.3	0.8							0.4	
Midshipman, unspecified	0.4			0.2			1.7			0.5													
Poacher, unspecified																							
Rockfish, Blue			0.6	0.4	0.3															1.7	0.6	0.4	
Rockfish, chilipepper			0.9	0.9																2.3	1.5		
Rockfish, unspecified		0.1	0.5	0.2	0.3				1.0										0.3	1.0	0.3	0.4	
Salmon, Chinook	0.4	0.9	0.5															0.7	2.2	1.3			
Sanddab, longfin	0.4	0.3	0.1	0.2			0.9		1.0	0.5			1.3						0.6				
Sanddab, Pacific	8.2	3	2.7	5.3	6.4				5.8	4.1	4.2		16.0			2.0			9.5	7	5.0	6.4	8.5
Sanddab, speckled	0.6	0.1	0.9	2.5	0.6		1.7								8.0	3.5		0.3	0.3	2.3	3.1		
Sanddab, unspecified		6.3	5.6	0.4				2.9		1.0				10.2	11.3				1.9	0.3			
Sardine, Pacific	10.6	6.7	5.3	4.4	9.8		20.5	14.7	1.9	2.6	8.3		8.0	6.1	4	2.0	7.0		7.5	6.6	8.1	5.8	10.8
Scorpionfish, California	1.4	0.1	0.6	0.2	0.3		4.3	2.9	2.9	0.5	2.1		2.7		0.5								
Sculpin, pithead																							
Sculpin, staghorn	2	1.2	0.5	0.2									1.3	0.3	0.5			2.9	2.5	0.7	0.3		
Sculpin, undentiifed		0.4	0.3	0.4										0.3	0.3				0.6	0.3	0.6		
Silversides																							
Sunfish, ocean	0.4	0.3	0.1	0.2										0.3	0.3			0.7	0.3		0.3		
Surfperch, shiner	0.2	0.9	1.2	0.4	0.3				1.9		2.1			1.8	1.9	2.0		0.3			0.3		
Topsmelt		0.1	0.4												0.8				0.3				
Turbot, hornyhead	3.2	1.7	3.4	1.4	0.6				4.9	1.5	2.1		2.7	2.5	3.5			4.6	0.9	2.7	1.5	0.4	

Turbot, spotted																							
Turbot, unspecified		0.4	0.4	0.4										0.8					0.9		0.6		
Whiting, Pacific			0.4	0.2																1.0	0.3		
Total % Freq. Incidents	58.2	52.8	57.6	49.6	65.5		67.5	64.7	53.4	44.3	60.4		61.3	52.8	57.3	46.0	59.6		53.9	51.6	59.4	53.2	68.2
Elasmobranchs																							
Ray, bat	1.4	4.6	3.8	1.4	3.4		3.4	11.8	10.7	2.6	2.1		4.0	6.6	4.0	6.0	10.5			1.3	1.0		1.8
Ray, Pacific electric	2	1.3	1.9	1.8	0.6								1.3	1.0	0.8				2.9	1.9	4.0	3.1	0.9
Shark, horn		0.1	0.1											0.3	0.3								
Shark, unspecified																							
Skate, long-nosed		0.1																		0.3			
Skate, unspecified		0.3		0.2																0.6		0.3	
Stingray, round																							
Total % Freq. Incidents	3.4	6.5	5.8	3.3	3.9		3.4	11.8	10.7	2.6	2.1		5.3	7.9	5.1	6.0	10.5		2.9	4.1	5.0	3.4	2.7
Invertebrates & Plants																							
Algae, marine	0.2		0.3	0.4	1.2		0.9														0.7	0.6	1.8
Cnidaria (Sea Anemones)	0.4	0.1					1.7	2.9															
Crab, box		0.3												0.5									
Crab, Dungeness	4	3.4	0.9	3.5	1.8						2.1								6.5	7.9	2.3	6.1	2.2
Crab, rock unspecified	0.4	0.4	0.3	0.5	0.6		0.9	5.9		1.0	2.1		1.3	0.3	0.3	2.0	1.8				0.3		
Crab, sheep		0.3	0.1		0.3				1.0											0.6			0.4
Crab, Shore																							
Crab, swimming	0.4			0.2	0.9		0.9				4.2		1.3				1.8					0.3	
Crab, unspecified	0.2		0.1	0.7	0.9		0.9		1.0	1.5	2.1					2.0							0.9
Eelgrass		1.5	3.2	1.9	0.9			2.9	1.0	3.6	6.3			1.8	0.8					0.9	7.0	1.2	
Gorgonians (sea fans)																							
Grass, Turtle																							
Jellyfish	7.4	4.8	1.9	5.4	3.0					0.5				0.5	0.3				12.1	10.8	4.7	9.2	4.5
Kelp	15.5	12	12.8	15.9	10.1		13.7	11.8	13.6	24.2	8.3		17.3	13.7	14.0	22.0	14.0		15.7	9.8	11.1	10.1	9.4
Kelp, feather boa	0.4	0.9	1.2	1.1	1.2		1.7													2.2	3.0	1.8	1.8

Lobster, California spiny			0.1						1.0														
Salps		4.4	4.4	3.2						5.2				8.4	9.1	16.0							
Sea cucumber	1.2		0.4				0.9						2.7		0.8				1.0				
Sea Cucumber, warty																							
Sea Hare		2.3	0.5		0.9						2.1			4.3	1.1		3.5						
Sea Slug																							
Sea stars	2.6	3.1	2.5	1.2	1.2		0.9			0.5	2.1		1.3	1.5	3.5		3.5		3.6	5.4	2.0	1.8	0.4
Squid, jumbo	0.2	0.4					0.9													0.9			
Squid, market (Egg Cases)	5.2	3.5	6.7	8.4	3.7		5.1		18.4	16.5	8.3		9.3	4.8	6.7	6.0	5.3		4.2	2.2	2.7	4.0	2.2
Surfgrass		3.2	1.0	4.7	3.7									3.3	1.1					3.5	1.3	8.3	5.4
Tunicates	0.2		0.1				0.9														0.3		
Urchin, Purple		0.1												0.3									
Total % Freq. Incidents	38.4	40.7	36.6	47.1	30.5		29.1	23.5	35.9	53.1	37.5		33.3	39.3	37.6	48.0	29.8		43.1	44.3	35.6	43.4	29.1
Total All Incidents	498	744	773	571	328		117	316	103	194	48		75	394	372	50	57		306	316	298	327	223
Total Observed Landings	143	196	196	135	103		77	39	92	72	8		14	74	64	22	58		52	39	40	41	37

TABLE 4-8. Expanded salmonid bycatch in Pacific sardine fisheries in Oregon and Washington, 2000-2015/16.

	Oregon <sup>1/</sup>							Washington <sup>2/</sup>						
	Chinook		Coho		Total		Grand Total	Chinook		Coho		Total		Grand Total
	(live)	(dead)	(live)	(dead)	(live)	(dead)		(live)	(dead)	(live)	(dead)	(live)	(dead)	
2015/16 <sup>4/</sup>					0	0	0	0	0	0	0	0	0	0
2014/15					17	7	24	44	146	27	166	71	312	383
2014 <sup>3/</sup>					0	0	0	6	21	4	24	10	45	55
2013					117	81	198	207	683	125	779	332	1,462	1,794
2012					61	64	125	244	806	148	919	392	1,725	2,117
2011					35	37	72	56	186	34	212	90	398	488
2010					110	76	186	87	288	53	328	140	616	756
2009					126	115	241	56	186	34	212	90	398	488
2008					123	75	198	45	149	27	170	72	319	391
2007					349	170	519	33	108	20	124	53	232	285
2006					164	93	257	31	101	19	116	50	217	267

2005					411	176	587	47	156	29	178	76	334	410
2005					518	305	823	35	225	19	105	54	330	384
2003					315	185	500	92	262	81	231	173	493	666
2002					199	81	280	150	356	61	765	211	1,121	1,332
2001	45	45	201	134	246	179	425	449	170	571	504	1,020	674	1,694
2000	43	72	159	43	202	115	317	38	3	276	116	314	119	433

- 1/ Oregon salmon bycatch data for 2000-2001 are expanded from a bycatch rate of salmon/trip based on vessel observation program.  
Oregon salmon bycatch data for 2002-2015 are from logbooks. No sardine fishery landings were made in Oregon during January 1-June 30, 2014.
- 2/ Washington totals calculated from observed 2000-2004 observed bycatch rates.
- 3/ January 1, 2014 – June 30, 2014.
- 4/ The 2015/16 directed sardine fishery was closed.

TABLE 4-9. Reported logbook catches of non-target species caught in Oregon sardine fishery since 2007. There were no sardine fishery landings in Oregon during the 2014 Interim Fishery, January 1-June 30, 2014. The directed fishery for sardines was closed during the 2015-2016 fishery year.

Species	2007	2008	2009	2010	2011	2012	2013	2014 Interim Fishery	2014-2015	2015-2016
Blue Shark	0	1	0	0	0	0	0	0	0	0
Thresher Shark	3 (2 released alive)	0	0	0	0	0	0	0	0	0
Unknown Shark	5	0	0	0	0	0	0	0	0	0
Salmonids	519 67% alive; 33% dead	198 62% alive; 38% dead	248 53% alive; 47% dead	186 59% alive; 41% dead	72 49% alive; 51% dead	125 49% alive; 51% dead	198 59% alive; 41% dead	0	24 71% alive; 29% dead	0
Mackerel	473,441 lbs	59,205 lbs	30,872 lbs	15,280 lbs	20 lbs	947,200 lbs	569,650 lbs	0	1,146,300 lbs	0
Anchovy	500 lbs	8,300 lbs	12,045 lbs	20,450 lbs	0	0	15,000 lbs	0	0	0
Herring	0	52,200 lbs	2,000 lbs	0	0	6,000 lbs	3,000 lbs	0	0	0
Hake	0	525 lbs	0	0	0	0	0	0	0	0
Squid	0	225 lbs	0	30 lbs	0	0	0	0	200 lbs	0
Jellyfish	0	0	0	0	0	0	0	0	0	0
Dogfish	-	-	200 lbs	0	0	0	0	0	0	0
Shad	0	0	0	0	0	0	2 lbs	0	0	0

TABLE 4-10. Recorded incidental catch (mt) in Oregon sardine fishery since 2010 (from fish ticket data). Excludes species landed under an Exempted Fishery Permit. There were no sardine fishery landings in Oregon during the 2014 Interim Fishery, January 1-June 30, 2014. The directed fishery for sardines was closed during the 2015-2016 fishery year.

Species	2010	2011	2012	2013	2014 Interim Fishery	2014-2015	2015-2016
Pacific mackerel	39.2	5.2	1,585.8	435.6	0	1,008.1	0
Jack mackerel	<0.01	0	70.9	60.1	0	245.0	0
Pacific herring	0	0	0.35	0	0	0	0
Northern anchovy	1.2	21.2	0	12.5	0	0	0
American shad	0	0	0.005	0.02	0	0.001	0
Sablefish	0	0	0	0.01	0	0	0

Table 4-11. Species noted as encountered on CDFW Live Bait Logs, 1996-2015.

Year	Days Fished	Jack Mackerel	Pacific Mackerel	Barracuda	Herring	Grunion	Smelts (Atherinids)	Shiner Surfperch	White Croaker	Queenfish	Market Squid	Pacific Bonito
2015	833	20	99				4				3	6
2014	794	15	98			1	4				1	1
2013	752	2	43				1				47	
2012	762	1	27	7							41	
2011	896	4	34	2			1				31	
2010	673	1	69								9	1
2009	965	2	77	6						1		
2008	957		92	9							2	6
2007	954	2	88	27			2				6	12
2006	1,002	4	160	5								2
2005	1,045	51	182	24							1	13
2004	950	79	82	2							4	8

2003	1,147	24	145	23							2	1
2002	1,150	9	155	55							1	
2001	1,179	11	190	57		1					28	
2000	495	25	96	46		1					2	
1999	449	16	77	7	1		1					
1998	809	8	189	69	1			1				
1997	773	46	190	104				3				
1996	522	10	45	27	3		5					

TABLE 4-12. Estimates of Pacific sardine and Northern anchovy live bait harvest in California. Data for 1939-1992 from Thomson et al. (1994), and 1993-2014 from CDFW live bait logs. Values are in metric tons with the assumption that 1 scoop =12.5 lbs.

Year	Anchovy	Sardine	Year	Anchovy	Sardine
1939	1,364	0	1977	6,410	0
1940	1,820	0	1978	6,013	107
1941	1,435	0	1979	5,364	0
1942	234	0	1980	4,921	12
1943	WII	WII	1981	4,698	6
1944	WII	WII	1982	6,978	38
1945	WII	WII	1983	4,187	193
1946	2,493	0	1984	4,397	53
1947	2,589	0	1985	3,775	11
1948	3,379	0	1986	3,956	17
1949	2,542	0	1987	3,572	216
1950	3,469	0	1988	4,189	50
1951	4,665	0	1989	4,594	100
1952	6,178	0	1990	4,842	543
1953	5,798	0	1991	5,039	272
1954	6,066	0	1992	2,572	1,807
1955	5,557	0	1993	669	176
1956	5,744	0	1994	2,076	1,506
1957	3,729	0	1995	1,278	2,055
1958	3,843	0	1996	703	1,801
1959	4,297	0	1997	1,077	2,344
1960	4,225	0	1998	304	2,037
1961	5,364	0	1999	453	2,411
1962	5,595	0	2000	834	1,270
1963	4,030	0	2001	1,347	1,226
1964	4,709	0	2002	1,010	1,759
1965	5,645	0	2003	978	3,124
1966	6,144	0	2004	192	3,900
1967	4,898	0	2005	1,464	2,817
1968	6,644	0	2006	476	3,601
1969	4,891	0	2007	699	3,352
1970	5,543	0	2008	719	2,968
1971	5,794	0	2009	774	2,702
1972	5,307	0	2010	504	1,860
1973	5,639	0	2011	1,053	2,073

1974	5,126	0	2012	356	2,594
1975	5,577	0	2013	739	1,847
1976	6,202	0	2014	1,157	1,567
			2015	723	1,996

TABLE 4-13. Ratio of anchovy to sardine in reported live bait catch in California, 1994-2015. Values are in metric tons with the assumption that 1 scoop =12.5 lbs.

Year	Anchovy	Sardine	Total	Proportion Anchovy	Proportion Sardine
2015	723	1,996	2,719	0.27	0.73
2014	1,157	1,567	2,742	0.42	0.58
2013	739	1,847	2,586	0.29	0.71
2012	356	2,594	2,950	0.12	0.88
2011	1,053	2,073	3,126	0.34	0.66
2010	504	1,860	2,364	0.21	0.79
2009	774	2,702	3,476	0.22	0.78
2008	719	2,968	3,687	0.20	0.80
2007	699	3,352	4,051	0.17	0.83
2006	476	3,601	4,077	0.12	0.88
2005	1,464	2,817	4,281	0.34	0.66
2004	192	3,900	4,092	0.05	0.95
2003	978	3,124	4,102	0.24	0.76
2002	1,010	1,759	2,769	0.36	0.64
2001	1,347	1,226	2,573	0.52	0.48
2000	834	1,270	2,104	0.40	0.60
1999	453	2,411	2,864	0.16	0.84
1998	304	2,037	2,341	0.13	0.87
1997	1,077	2,344	3,421	0.31	0.69
1996	703	1,801	2,504	0.28	0.72
1995	1,278	2,055	3,333	0.38	0.62
1994	2,076	1,506	3,582	0.58	0.42



TABLE 4-14. Directed Sardine Fishery By-Catch from Fish Tickets (metric tons) in Washington.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2014-2015	2015-2016
Arrowtooth Flounder														0.02			Fishery closed
American Shad			0.18						<0.01				0.01	0.02			
Chinook		<0.01		<0.01									0.03	0.12		<0.01	
Chum													<0.01				
Coho	<0.01												0.29	0.08		0.01	
Mackerel	4.32	272.44	259.32	52.40	22.34	19.04	40.61	35.73	6.32	4.45	2.09	0.43	636.17	195.95			
Misc				0.34			1.37			2.34				0.01			
Northern Anchovy						1.81					5.44						
Pacific Herring			0.02						4.69				<0.01	<0.01			
Pink Salmon													<0.01	<0.01			
General Shark	0.10	0.01								0.01							
Sole Rex														<0.01			
Spiny Dogfish									<0.01				<0.01	<0.01			
Starry Flounder	<0.01																

Table 6-1. West coast landings (mt) and exvessel revenues for Pacific sardine, Pacific mackerel<sup>2</sup>, jack mackerel, anchovy and market squid, 1981-2014.

Year	Pacific Sardine mt	Pacific Sardine Rev	Pacific Mackerel mt	Pacific Mackerel Rev	Jack Mackerel mt	Jack Mackerel Rev	Anchovy mt	Anchovy Rev	Squid mt	Squid Rev
1981	15	\$3,018	35388	\$7,282,561	17778	\$3,653,556	52309	\$3,273,441	23510	\$5,077,890
1982	2	\$538	36065	\$7,263,745	19617	\$3,983,940	42155	\$2,164,877	16360	\$3,584,584
1983	1	\$175	41479	\$8,035,125	9829	\$1,792,251	4430	\$417,294	1959	\$837,924
1984	1	\$868	44086	\$8,279,871	9154	\$1,369,090	2899	\$415,093	993	\$502,704
1985	6	\$1,414	37773	\$6,563,566	6876	\$1,292,060	1638	\$238,589	11071	\$4,282,943
1986	388	\$82,680	48089	\$7,783,354	4777	\$828,421	1557	\$234,514	21290	\$4,518,595
1987	439	\$63,116	46725	\$6,675,830	8020	\$1,194,126	1467	\$309,472	19984	\$3,954,945
1988	1188	\$171,522	50864	\$8,213,502	5068	\$795,811	1518	\$417,081	37316	\$7,559,112
1989	837	\$195,162	47713	\$7,054,274	10745	\$1,657,311	2511	\$697,609	41017	\$7,521,615
1990	1664	\$190,583	40092	\$5,357,653	3254	\$442,694	3259	\$625,228	28447	\$4,729,885
1991	7587	\$892,955	32067	\$5,341,049	1712	\$248,654	4068	\$651,310	37389	\$6,072,324
1992	18056	\$1,875,359	19045	\$4,006,788	1526	\$238,846	1166	\$223,737	13119	\$2,446,138
1993	15236	\$1,535,750	12086	\$1,499,633	1950	\$275,383	2003	\$477,937	42889	\$10,300,695
1994	11644	\$1,515,282	10293	\$1,436,788	2906	\$381,324	1859	\$550,517	55483	\$14,376,035
1995	40256	\$3,556,901	8823	\$1,150,282	1877	\$291,812	2016	\$368,659	70363	\$22,361,538
1996	32553	\$3,151,710	9730	\$1,317,223	2437	\$304,875	4505	\$700,430	80665	\$21,899,940
1997	43290	\$4,440,711	20168	\$2,781,258	1533	\$247,164	5779	\$811,580	70388	\$20,679,030
1998	43321	\$3,627,534	21561	\$2,538,792	1777	\$380,867	1584	\$245,132	2903	\$1,627,365
1999	60333	\$5,176,502	9094	\$1,093,828	1557	\$201,827	5286	\$954,259	92040	\$33,353,591
2000	67982	\$7,100,136	22058	\$2,930,364	1451	\$260,581	11832	\$1,445,814	118821	\$27,219,397
2001	75801	\$8,927,393	7618	\$1,137,499	3852	\$569,951	19345	\$1,433,556	86386	\$16,964,384
2002	96897	\$10,377,738	3744	\$520,410	1026	\$204,064	4882	\$623,286	72880	\$18,259,492
2003	71923	\$7,033,562	4213	\$649,827	231	\$58,205	1929	\$341,913	45068	\$25,390,723
2004	89350	\$9,788,527	3708	\$565,459	1160	\$253,322	7019	\$819,181	40116	\$19,801,015
2005	86464	\$9,831,482	3586	\$569,365	294	\$61,369	11414	\$1,127,029	55755	\$31,470,536
2006	86610	\$9,282,556	6610	\$880,926	1174	\$199,293	12960	\$1,335,011	49186	\$26,963,876
2007	127789	\$13,258,430	5759	\$849,327	646	\$145,080	10548	\$1,138,875	49475	\$29,096,360
2008	87190	\$14,578,912	3597	\$696,984	323	\$53,624	14654	\$1,657,118	38101	\$26,457,043
2009	67084	\$12,499,092	5138	\$1,103,601	121	\$19,234	3519	\$514,994	93107	\$56,873,568
2010	66892	\$12,301,806	2107	\$414,896	314	\$62,667	1284	\$562,604	130864	\$71,160,383
2011	46746	\$9,734,040	1365	\$327,096	104	\$18,727	2814	\$692,334	121557	\$66,567,538
2012	101555	\$21,176,646	6070	\$1,244,558	272	\$39,007	2705	\$455,277	97734	\$64,024,600
2013	63892	\$14,826,994	8704	\$1,644,175	1095	\$209,409	6061	\$1,100,566	104405	\$73,733,910
2014	23244	\$8,827,458	7043	\$1,691,195	1824	\$354,461	10588	\$1,653,133	86201	\$61,107,231

Source: PacFIN - 2012-2014 data extracted March 29, 2015.

<sup>2</sup>Pacific mackerel landings and revenues also include landings and revenues of unspecified mackerel.

Table 6-2. West coast landings (mt) and exvessel revenues for Pacific sardine, Pacific mackerel<sup>2</sup>, jack mackerel, anchovy and market squid by fishery sector, 1981-2014.

Year	Landings (mt)					Exvessel Revenues (2012 \$)				
	Sardine	P. Mackerel	J. Mackerel	Anchovy	Squid	Sardine	P. Mackerel	J. Mackerel	Anchovy	Squid
<b>Southern California</b>										
1981	14.7	33,971.0	17,558.3	47,269.7	10,684.7	\$3,017	\$7,045,481	\$3,605,298	\$2,898,402	\$1,178,861
1982	1.8	33,955.4	19,326.2	38,955.4	5,696.4	\$495	\$6,878,540	\$3,924,928	\$1,872,452	\$726,230
1983	0.6	37,826.4	7,345.3	3,629.0	858.2	\$162	\$7,489,688	\$1,470,615	\$259,374	\$328,737
1984	0.8	36,868.2	3,618.6	345.8	73.5	\$602	\$7,471,293	\$714,529	\$126,734	\$44,720
1985	3.7	35,001.6	6,647.4	200.4	6,055.9	\$878	\$6,219,560	\$1,233,017	\$63,874	\$1,779,202
1986	286.6	46,086.2	4,586.0	313.0	14,533.7	\$63,447	\$7,536,697	\$769,368	\$67,486	\$2,907,552
1987	317.3	45,751.5	7,810.0	251.4	13,831.2	\$57,812	\$6,556,223	\$1,160,882	\$57,973	\$2,627,917
1988	1,172.2	50,793.8	4,945.6	252.7	31,526.8	\$170,737	\$8,188,279	\$765,602	\$67,327	\$6,209,966
1989	505.1	47,633.9	10,703.7	733.6	33,317.4	\$69,151	\$7,031,225	\$1,624,697	\$340,308	\$5,853,791
1990	1,300.7	37,554.1	3,060.3	352.5	20,399.7	\$160,539	\$5,032,362	\$402,401	\$115,651	\$3,295,115
1991	6,415.1	31,753.3	1,648.9	1,004.1	29,210.1	\$784,564	\$5,281,608	\$229,843	\$211,946	\$4,088,135
1992	13,950.9	18,181.7	1,096.8	347.3	4,526.3	\$1,447,823	\$3,913,199	\$218,582	\$76,518	\$710,517
1993	13,867.4	11,723.2	1,272.1	421.6	32,293.0	\$1,447,977	\$1,475,010	\$179,350	\$102,554	\$7,162,902
1994	9,033.8	9,902.7	2,512.2	506.1	33,903.2	\$965,567	\$1,385,404	\$277,581	\$166,275	\$8,103,665
1995	34,142.3	8,144.3	1,597.1	682.3	59,780.7	\$3,041,558	\$1,070,914	\$194,737	\$191,386	\$19,170,370
1996	23,923.8	8,857.7	2,065.1	758.2	61,647.8	\$2,218,154	\$1,180,169	\$276,653	\$241,577	\$16,628,530
1997	26,536.4	15,178.6	830.0	1,666.8	52,328.7	\$2,777,380	\$2,322,631	\$182,838	\$201,186	\$15,119,013
1998	31,917.6	19,507.9	1,012.4	579.5	2,405.3	\$2,973,924	\$2,377,495	\$319,551	\$117,142	\$1,374,414
1999	39,533.4	8,781.4	927.5	3,646.7	80,417.6	\$3,802,050	\$1,077,339	\$185,372	\$537,661	\$29,248,694
2000	39,123.3	21,877.8	1,218.8	4,832.7	93,534.5	\$4,491,202	\$2,918,713	\$226,996	\$540,505	\$21,341,824
2001	40,763.8	6,751.8	3,623.9	7,572.0	71,318.8	\$4,846,918	\$1,075,310	\$561,721	\$775,109	\$13,836,345
2002	39,500.4	3,368.3	1,003.6	1,943.1	40,307.2	\$4,519,526	\$488,590	\$202,342	\$286,405	\$9,627,564
2003	22,910.8	3,981.5	135.9	847.7	21,608.8	\$2,074,295	\$626,811	\$54,549	\$180,585	\$12,275,449
2004	23,733.4	3,085.9	1,027.1	2,869.4	26,821.2	\$2,715,448	\$507,548	\$248,623	\$445,648	\$13,066,177
2005	24,140.5	3,242.8	210.9	4,959.1	45,525.5	\$2,534,615	\$539,203	\$51,723	\$693,559	\$26,081,668
2006	26,799.9	5,840.7	1,025.8	5,071.5	43,112.0	\$3,446,619	\$821,962	\$168,442	\$720,670	\$23,699,611

2007	42,989.7	4,891.1	459.9	2,668.5	31,132.3	\$5,026,215	\$770,314	\$106,682	\$297,993	\$18,535,146
2008	30,913.2	3,249.0	214.7	2,027.3	27,969.3	\$3,468,465	\$636,434	\$42,368	\$247,357	\$19,317,666
2009	12,422.3	5,028.7	97.7	1,663.0	60,640.2	\$1,784,395	\$1,093,425	\$18,233	\$245,216	\$37,944,924
2010	27,829.1	2,053.1	295.5	305.6	80,454.6	\$3,659,385	\$411,365	\$62,002	\$135,056	\$44,142,917
2011	17,601.6	1,341.2	79.7	779.1	77,678.1	\$2,401,169	\$325,146	\$10,284	\$328,353	\$43,084,374
2012	17,840.3	3,475.0	138.2	214.0	67,834.2	\$3,272,433	\$882,035	\$27,149	\$71,176	\$44,759,836
2013	6,028.9	8,072.1	891.9	383.6	54,409.9	\$1,313,553	\$1,520,649	\$178,605	\$229,584	\$38,552,275
2014	1,418.4	5,009.2	690.6	99.7	24,620.0	\$303,563	\$1,126,360	\$132,626	\$78,077	\$17,233,682

#### Northern California

1981		1,361.1	213.4	4,820.9	12,824.8		\$223,981	\$46,048	\$317,696	\$3,898,935
1982	<0.1	2,060.6	281.6	3,003.7	10,611.3	\$43	\$372,678	\$56,408	\$246,887	\$2,848,714
1983	<0.1	3,465.2	2,458.5	653.1	961.5	\$13	\$506,740	\$307,431	\$118,201	\$426,762
1984	0.3	7,164.7	5,486.3	2,432.9	488.0	\$265	\$794,045	\$645,844	\$251,586	\$256,523
1985	2.2	2,719.0	228.1	1,397.0	3,890.1	\$537	\$329,330	\$58,925	\$156,162	\$2,004,560
1986	84.5	1,999.9	191.1	1,200.9	6,319.8	\$19,234	\$245,295	\$58,990	\$142,295	\$1,543,137
1987	47.9	963.0	210.2	1,100.7	5,953.9	\$5,292	\$117,005	\$33,244	\$182,953	\$1,296,130
1988	3.0	65.2	121.9	1,188.6	5,196.9	\$766	\$22,364	\$30,168	\$307,615	\$1,221,875
1989	238.0	69.1	41.5	1,684.0	7,149.5	\$125,826	\$17,626	\$32,572	\$293,407	\$1,575,986
1990	127.1	2,509.9	194.0	2,845.5	8,047.1	\$29,945	\$312,147	\$40,285	\$464,354	\$1,434,563
1991	985.9	300.8	43.8	2,986.0	8,175.9	\$108,392	\$53,592	\$16,297	\$395,771	\$1,983,073
1992	3,127.7	386.8	112.2	773.3	8,559.7	\$427,523	\$86,104	\$19,277	\$112,846	\$1,729,335
1993	676.1	39.5	400.8	1,529.0	7,057.4	\$87,130	\$14,115	\$93,340	\$345,821	\$2,370,285
1994	2,295.1	40.4	191.7	1,273.8	15,921.3	\$549,715	\$19,343	\$95,994	\$333,375	\$5,146,045
1995	5,681.2	461.4	109.4	1,203.7	3,197.7	\$506,307	\$63,541	\$77,767	\$100,126	\$1,037,016
1996	7,988.2	710.5	91.8	3,659.0	5,004.9	\$887,870	\$95,926	\$13,746	\$394,713	\$1,483,964
1997	13,359.8	3,217.6	329.6	4,050.8	8,490.8	\$1,593,521	\$436,330	\$63,496	\$567,970	\$2,994,012
1998	10,493.4	1,469.7	39.9	901.7	14.1	\$646,581	\$148,747	\$15,868	\$67,473	\$15,541
1999	17,475.1	6.5	24.2	1,541.9	306.6	\$1,286,623	\$11,345	\$1,790	\$350,294	\$81,445
2000	11,367.5	41.1	50.5	6,920.8	7,125.9	\$969,290	\$6,765	\$27,704	\$857,189	\$1,918,321
2001	7,102.6	172.8		11,704.9	8,026.6	\$1,434,262	\$20,579		\$588,915	\$1,847,746
2002	13,779.2	0.3	1.9	2,706.7	25,935.8	\$1,329,680	\$551	\$413	\$264,582	\$7,008,990
2003	7,920.9	1.0	19.8	705.7	16,729.1	\$673,572	\$4,361	\$2,503	\$81,964	\$9,468,037
2004	15,837.5	490.0	<0.1	3,890.8	5,735.0	\$1,241,378	\$52,883	\$15	\$290,736	\$2,958,639
2005	8,509.3	0.4	0.5	6,192.2	1,916.9	\$601,000	\$746	\$325	\$383,094	\$985,816
2006	17,841.9	31.8	140.9	7,705.0	516.8	\$1,651,935	\$9,946	\$30,460	\$568,926	\$257,455
2007	34,781.9	123.4	166.8	7,704.4	25.3	\$3,192,827	\$18,980	\$36,252	\$803,519	\$16,258
2008	26,711.7	206.6	59.5	12,216.0	65.6	\$4,100,307	\$33,782	\$10,842	\$1,306,141	\$44,942
2009	25,011.9	14.3		978.4	1,183.0	\$3,755,614	\$2,117		\$107,850	\$910,780
2010	4,305.5	<0.1	<0.1	717.5	20,137.5	\$572,570	\$4	\$12	\$327,609	\$11,054,402

2011	10,071.9	14.6		1,822.2	14,487.3	\$1,994,875	\$1,452		\$289,294	\$7,947,935
2012	4,241.4	100.3		2,273.5	16,851.3	\$945,302	\$27,749		\$301,596	\$11,148,182
2013	895.5	0.1		5,549.2	20,964.2	\$177,341	\$8		\$819,419	\$15,015,443
2014	6,165.3	240.3	89.4	10,376.4	53,659.1	\$1,654,048	\$72,681	\$15,952	\$1,518,011	\$38,461,649
<b>Pacific Northwest</b>										
1981		<0.1		1.3	0.1		\$1		\$295	\$45
1982		<0.1		5.2	51.3		\$41		\$9,579	\$9,124
1983		8.4		2.9	134.9		\$7,842		\$5,375	\$79,908
1984		3.1		10.1	429.4		\$894		\$10,007	\$199,971
1985		0.4	<0.1	11.7	794.6		\$212	\$1	\$11,869	\$318,706
1986		<0.1		22.1	12.0		\$1		\$19,824	\$2,683
1987		1.5		77.6			\$521		\$58,735	
1988		0.6		40.4	<0.1		\$343		\$32,618	\$1
1989		4.9		61.8	43.6		\$1,170		\$54,109	\$7,684
1990		10.4		50.3			\$3,673		\$41,797	
1991		0.7	19.3	54.5	<0.1		\$210	\$2,425	\$37,282	\$29
1992	3.9	468.2	316.5	41.7	6.1		\$2,924	\$798	\$32,968	\$1,606
1993	0.2	310.1	276.6	44.2	59.3		\$3,532	\$2,660	\$27,071	\$31,240
1994		285.5	202.3	70.4	105.7		\$12,547	\$7,744	\$48,319	\$35,670
1995		197.0	148.6	129.8	111.8		\$4,379	\$7,190	\$77,084	\$41,478
1996		126.7	260.5	85.6	104.0		\$23,719	\$7,978	\$63,391	\$36,896
1997		1,766.9	373.7	59.1	123.0		\$19,630	\$830	\$41,614	\$49,456
1998	9.5	583.7	724.5	102.5	8.8	\$6,960	\$12,390	\$45,447	\$60,517	\$3,627
1999	776.9	305.8	604.4	97.8	1.1	\$87,539	\$5,122	\$14,198	\$66,298	\$1
2000	14,369.8	138.2	181.1	78.8	5.7	\$1,632,378	\$4,696	\$5,880	\$48,048	\$58
2001	23,907.6	692.7	227.9	68.0	1.9	\$2,639,249	\$41,248	\$8,135	\$69,531	\$261
2002	38,543.5	374.8	20.4	231.8	2.0	\$4,527,451	\$31,191	\$1,303	\$72,299	\$587
2003	37,178.1	213.8	75.7	252.9	12.2	\$4,157,685	\$16,806	\$1,153	\$69,052	\$5,105
2004	45,045.3	129.1	132.9	226.5	19.7	\$5,827,937	\$4,081	\$4,670	\$68,521	\$5,539
2005	51,831.2	341.4	80.4	232.1	14.5	\$6,681,387	\$29,222	\$8,601	\$37,300	\$5,214
2006	40,032.5	706.2	7.1	169.7	27.2	\$4,182,466	\$48,287	\$391	\$37,610	\$15,636
2007	46,808.8	740.5	14.8	158.0	0.6	\$5,038,135	\$58,904	\$1,169	\$35,467	\$295
2008	29,384.3	66.6	48.3	368.6		\$7,003,309	\$10,142	\$415	\$91,954	
2009	29,507.0	57.6	2.4	851.3	0.2	\$6,955,534	\$6,219		\$144,578	
2010	33,233.0	51.0	4.0	258.1	7.6	\$7,935,687	\$3,502	\$12	\$99,939	
2011	19,032.0	7.4	24.3	212.2	<0.1	\$5,335,651	\$482	\$8,443	\$74,687	\$1
2012	78,510.6	2,470.9	126.1	217.5	0.1	\$16,927,917	\$330,665	\$10,797	\$82,505	
2013	56,746.0	632.0	202.8	128.4	0.1	\$13,309,790	\$123,446	\$30,795	\$51,547	
2014	15,572.5	1,717.1	1,043.1	112.4	0.5	\$6,849,624	\$480,003	\$205,787	\$57,045	\$409

Other										
1981		55.9	6.3	217.1	0.2		\$13,099	\$2,211	\$57,048	\$49
1982		48.5	9.5	190.9	0.4		\$12,487	\$2,602	\$35,959	\$517
1983		179.4	25.5	144.7	3.9		\$30,855	\$14,206	\$34,345	\$2,518
1984		50.0	49.3	110.1	2.7		\$13,640	\$8,716	\$26,765	\$1,490
1985		51.8	0.2	28.5	330.3		\$14,466	\$117	\$6,685	\$180,476
1986		3.1	0.1	21.4	424.1		\$1,362	\$62	\$4,910	\$65,222
1987	<0.1	9.0		37.6	199.2	\$13	\$2,081		\$9,811	\$30,899
1988	0.1	4.0	<0.1	36.6	592.1	\$20	\$2,514	\$41	\$9,520	\$127,270
1989	0.2	4.9	0.1	31.7	506.8	\$186	\$4,252	\$41	\$9,786	\$84,154
1990	0.3	17.3	<0.1	10.5	0.3	\$100	\$9,471	\$7	\$3,425	\$208
1991		11.8	0.1	23.8	2.6		\$5,640	\$89	\$6,311	\$1,088
1992	<0.1	8.1	0.3	3.3	26.5	\$13	\$4,563	\$189	\$1,405	\$4,680
1993	0.7	13.4	<0.1	7.9	3,479.5	\$642	\$6,976	\$34	\$2,492	\$736,270
1994		64.6	<0.1	9.1	5,553.0		\$19,493	\$6	\$2,549	\$1,090,655
1995	77.5	20.2	21.9	0.1	7,273.2	\$9,037	\$11,448	\$12,118	\$63	\$2,112,674
1996	180.3	35.2	19.6	2.2	13,908.6	\$45,687	\$17,409	\$6,497	\$750	\$3,750,551
1997	36.1	4.8		2.4	9,445.5	\$69,809	\$2,668		\$810	\$2,516,549
1998	0.9	0.1			475.0	\$69	\$160			\$233,784
1999	3.0	0.2	0.8	0.1	11,314.8	\$290	\$21	\$467	\$6	\$4,023,453
2000	49.0	0.6	<0.1	<0.1	18,154.9	\$7,266	\$190	\$2	\$73	\$3,959,194
2001	70.4	0.4	0.1		7,038.8	\$6,964	\$362	\$96		\$1,280,032
2002	9.2	<0.1	<0.1		6,634.6	\$1,081	\$78	\$7		\$1,622,351
2003	1,547.2	16.8		122.9	6,717.8	\$128,010	\$1,848		\$10,312	\$3,642,133
2004	23.1	2.9	<0.1	32.4	7,540.0	\$3,764	\$947	\$15	\$14,276	\$3,770,659
2005	97.4	1.1	1.9	30.7	8,297.7	\$14,481	\$195	\$721	\$13,075	\$4,397,838
2006	6.3	30.9		14.2	5,530.1	\$1,536	\$731		\$7,807	\$2,991,174
2007	51.6	4.0	4.6	16.9	18,317.3	\$1,253	\$1,129	\$978	\$1,896	\$10,544,661
2008	80.6	75.3		41.7	10,065.8	\$6,831	\$16,626		\$11,666	\$7,094,436
2009	80.2	37.1	20.9	26.7	31,283.7	\$3,550	\$1,839	\$1,002	\$17,350	\$18,017,865
2010	1,084.2	3.0	14.2	2.4	30,264.8	\$134,165	\$26	\$641		\$15,963,063
2011	13.8	1.5	0.3		29,392.0	\$2,344	\$16			\$15,535,227
2012	165.2	23.9	7.3		13,048.0	\$30,994	\$4,108	\$1,061		\$8,116,582
2013	115.7	0.4	<0.1	<0.1	29,031.0	\$26,311	\$73	\$8	\$15	\$20,166,193
2014	79.7	76.6	0.7		7,921.4	\$20,224	\$12,149	\$96		\$5,411,490

Source: PacFIN - 2012-2011 data extracted March 29,2015.

<sup>2</sup>Pacific mackerel landings and revenues also include landings and revenues of unspecified mackerel.

Table 6-3. Average annual real<sup>1</sup> exvessel prices (2013 \$) for Pacific sardine, Pacific mackerel<sup>2</sup>, jack mackerel, anchovy and market squid, 1981-2014.

	<b>Pacific</b>	<b>Pacific</b>	<b>Jack</b>		
	<b>Sardine</b>	<b>Mackerel</b>	<b>Mackerel</b>	<b>Anchovy</b>	<b>Squid</b>
<b>Year</b>	<b>\$/lb</b>	<b>\$/lb</b>	<b>\$/lb</b>	<b>\$/lb</b>	<b>\$/lb</b>
1981	\$0.09	\$0.09	\$0.09	\$0.03	\$0.10
1982	\$0.12	\$0.09	\$0.09	\$0.02	\$0.10
1983	\$0.08	\$0.09	\$0.08	\$0.04	\$0.19
1984	\$0.39	\$0.09	\$0.07	\$0.06	\$0.23
1985	\$0.11	\$0.08	\$0.09	\$0.07	\$0.18
1986	\$0.10	\$0.07	\$0.08	\$0.07	\$0.10
1987	\$0.07	\$0.06	\$0.07	\$0.10	\$0.09
1988	\$0.07	\$0.07	\$0.07	\$0.12	\$0.09
1989	\$0.11	\$0.07	\$0.07	\$0.13	\$0.08
1990	\$0.05	\$0.06	\$0.06	\$0.09	\$0.08
1991	\$0.05	\$0.08	\$0.07	\$0.07	\$0.07
1992	\$0.05	\$0.10	\$0.07	\$0.09	\$0.08
1993	\$0.05	\$0.06	\$0.06	\$0.11	\$0.11
1994	\$0.06	\$0.06	\$0.06	\$0.13	\$0.12
1995	\$0.04	\$0.06	\$0.07	\$0.08	\$0.14
1996	\$0.04	\$0.06	\$0.06	\$0.07	\$0.12
1997	\$0.05	\$0.06	\$0.07	\$0.06	\$0.13
1998	\$0.04	\$0.05	\$0.10	\$0.07	\$0.25
1999	\$0.04	\$0.05	\$0.06	\$0.08	\$0.16
2000	\$0.05	\$0.06	\$0.08	\$0.06	\$0.10
2001	\$0.05	\$0.07	\$0.07	\$0.03	\$0.09
2002	\$0.05	\$0.06	\$0.09	\$0.06	\$0.11
2003	\$0.04	\$0.07	\$0.11	\$0.08	\$0.26
2004	\$0.05	\$0.07	\$0.10	\$0.05	\$0.22
2005	\$0.05	\$0.07	\$0.09	\$0.04	\$0.26
2006	\$0.05	\$0.06	\$0.08	\$0.05	\$0.25
2007	\$0.05	\$0.07	\$0.10	\$0.05	\$0.27
2008	\$0.08	\$0.09	\$0.08	\$0.05	\$0.31
2009	\$0.08	\$0.10	\$0.07	\$0.07	\$0.28
2010	\$0.08	\$0.09	\$0.09	\$0.20	\$0.25
2011	\$0.09	\$0.11	\$0.08	\$0.11	\$0.25
2012	\$0.09	\$0.09	\$0.06	\$0.08	\$0.30
2013	\$0.11	\$0.09	\$0.09	\$0.08	\$0.32
2014	\$0.17	\$0.11	\$0.09	\$0.07	\$0.32

Source: PacFIN - 2012-2014 data extracted March 29, 2015.

<sup>2</sup>Pacific mackerel landings and revenues also include landings and revenues of unspecified mackerel.

Table 6-4. West coast landings (mt) and real<sup>1</sup> exvessel revenues (2013 \$) for Pacific sardine, Pacific mackerel<sup>2</sup>, jack mackerel, anchovy and market squid by state, 1981-14.

	Pacific	Pacific	Pacific	Pacific	Jack	Jack				
Year	Sardine mt	Sardine Rev	Mackerel mt	Mackerel Rev	Mackerel mt	Mackerel Rev	Anchovy mt	Anchovy Rev	Squid mt	Squid Rev
	California									
1981	15	\$3,018	35388	\$7,282,560	17778	\$3,653,556	52308	\$3,273,146	23510	\$5,077,845
1982	2	\$538	36,065	\$7,263,704	19,617	\$3,983,940	42,150	\$2,155,298	16,308	\$3,575,460
1983	1	\$175	41,471	\$8,027,282	9,829	\$1,792,251	4,427	\$411,919	1,824	\$758,016
1984	1	\$868	44,083	\$8,278,978	9,154	\$1,369,090	2,889	\$405,086	564	\$302,733
1985	6	\$1,414	37,772	\$6,563,354	6,876	\$1,292,059	1,626	\$226,720	10,276	\$3,964,238
1986	388	\$82,680	48,089	\$7,783,353	4,777	\$828,421	1,535	\$214,691	21,278	\$4,515,912
1987	439	\$63,116	46,724	\$6,675,310	8,020	\$1,194,126	1,390	\$250,737	19,984	\$3,954,945
1988	1,188	\$171,522	50,863	\$8,213,158	5,068	\$795,811	1,478	\$384,462	37,316	\$7,559,111
1989	837	\$195,162	47,708	\$7,053,104	10,745	\$1,657,311	2,449	\$643,501	40,974	\$7,513,931
1990	1,664	\$190,583	40,081	\$5,353,971	3,254	\$442,694	3,208	\$583,431	28,447	\$4,729,885
1991	7,587	\$892,955	32,066	\$5,340,839	1,693	\$246,229	4,014	\$614,028	37,389	\$6,072,296
1992	18,052	\$1,875,359	18,577	\$4,003,864	1,209	\$238,047	1,124	\$190,769	13,112	\$2,444,532
1993	15,236	\$1,535,750	11,776	\$1,496,101	1,673	\$272,723	1,959	\$450,866	42,830	\$10,269,455
1994	11,644	\$1,515,282	10,008	\$1,424,242	2,704	\$373,580	1,789	\$502,198	55,377	\$14,340,365
1995	40,256	\$3,556,901	8,626	\$1,145,903	1,728	\$284,623	1,886	\$291,575	70,252	\$22,320,060
1996	32,553	\$3,151,710	9,603	\$1,293,504	2,177	\$296,896	4,419	\$637,039	80,561	\$21,863,045
1997	43,290	\$4,440,711	18,401	\$2,761,628	1,160	\$246,333	5,720	\$769,966	70,265	\$20,629,574
1998	43,311	\$3,620,574	20,978	\$2,526,402	1,052	\$335,419	1,481	\$184,615	2,895	\$1,623,739
1999	59,557	\$5,088,963	8,788	\$1,088,706	952	\$187,629	5,189	\$887,961	92,039	\$33,353,590
2000	53,612	\$5,467,758	21,920	\$2,925,668	1,269	\$254,701	11,753	\$1,397,766	118,815	\$27,219,338
2001	51,893	\$6,288,144	6,925	\$1,096,250	3,624	\$561,817	19,277	\$1,364,025	86,384	\$16,964,123
2002	58,353	\$5,850,287	3,369	\$489,218	1,005	\$202,761	4,650	\$550,987	72,878	\$18,258,905
2003	34,745	\$2,875,877	3,999	\$633,021	156	\$57,052	1,676	\$272,861	45,056	\$25,385,618
2004	44,305	\$3,960,590	3,579	\$561,378	1,027	\$248,653	6,793	\$750,660	40,096	\$19,795,475
2005	34,633	\$3,150,095	3,244	\$540,144	213	\$52,768	11,182	\$1,089,729	55,740	\$31,465,322
2006	46,577	\$5,100,090	5,904	\$832,639	1,167	\$198,902	12,791	\$1,297,402	49,159	\$26,948,240
2007	80,980	\$8,220,294	5,018	\$790,424	631	\$143,912	10,390	\$1,103,408	49,475	\$29,096,065
2008	57,806	\$7,575,603	3,531	\$686,842	274	\$53,210	14,285	\$1,565,164	38,101	\$26,457,043
2009	37,577	\$5,543,558	5,080	\$1,097,381	119	\$19,234	2,668	\$370,416	93,107	\$56,873,568
2010	33,659	\$4,366,119	2,056	\$411,394	310	\$62,655	1,026	\$462,664	130,857	\$71,160,383



2011	27,714	\$4,398,389	1,357	\$326,614	80	\$10,285	2,601	\$617,647	121,557	\$66,567,537
2012	23,044	\$4,248,728	3,599	\$913,892	145	\$28,210	2,488	\$372,772	97,733	\$64,024,600
2013	7,146	\$1,517,204	8,073	\$1,520,729	892	\$178,614	5,933	\$1,049,018	104,405	\$73,733,910
2014	7,672	\$1,977,834	5,326	\$1,211,191	781	\$148,674	10,476	\$1,596,088	86,201	\$61,106,822
	<b>Oregon</b>									
1981			<1	1					<1	45
1982			<1	\$41			<1	\$100	51	\$9,124
1983			8	\$7,804					135	\$79,908
1984			3	\$808					429	\$199,971
1985			<1	\$2	<1	\$1	<1	\$39	795	\$318,706
1986			<1	\$1					12	\$2,683
1987			1	\$521						
1988			1	\$343			<1	\$1	<1	\$1
1989			5	\$1,120			<1	\$15	44	\$7,684
1990			10	\$3,607						
1991			<1	\$170	19	\$2,425			<1	\$29
1992	4		462	\$155	317	\$799			6	\$1,606
1993			280	\$858	277	\$2,660			59	\$31,240
1994			252	\$9,609	202	\$7,744	1	\$200	106	\$35,670
1995			189	\$3,562	149	\$7,190	<1	\$485	112	\$41,478
1996			61	\$3,824	258	\$7,667			104	\$36,896
1997			1,611	\$2,288	373	\$750			123	\$49,456
1998	1	\$775	538	\$8,636	686	\$43,749			9	\$3,627
1999	776	\$85,889	259	\$1,008	496	\$4,644			1	\$1
2000	9,528	\$1,112,940	119	\$2,600	161	\$3,645	<1	\$300	6	\$58
2001	12,780	\$1,548,230	322	\$1,364	196	\$2,814			2	\$261
2002	22,711	\$2,624,471	127	\$2,426	9	\$23	3	\$1,697	2	\$587
2003	25,258	\$2,716,680	160	\$9,304	74	\$1,020	39	\$3,111	12	\$5,105
2004	36,111	\$4,600,302	107	\$1,761	126	\$3,450	13	\$4,611	20	\$5,539
2005	45,110	\$5,858,819	318	\$26,699	70	\$6,742	68	\$1,560	14	\$5,214
2006	35,668	\$3,743,074	665	\$34,874	5	\$90	9	\$17	27	\$15,636
2007	42,144	\$4,551,001	702	\$49,668	14	\$990	5	\$2,220	1	\$295
2008	22,949	\$5,665,290	58	\$7,811	46	\$415	260	\$56,674		
2009	21,481	\$5,290,596	53	\$4,766	2		39	\$8,678		
2010	20,852	\$5,252,316	49	\$2,872	3		138	\$28,869	8	
2011	11,023	\$3,191,592	7	\$372	14	\$2,838	21	\$6,558	<1	\$1

2012	42,619	\$8,976,817	1,779	\$171,178	95	\$5,383				
2013	26,289	\$6,299,323	439	\$79,831	123	\$12,358	13	\$4,108		
2014	7,789	\$3,521,759	1,172	\$324,624	800	\$146,577			<1	\$409
	<b>Washington</b>									
1981							1	295		
1982							5	\$9,479		
1983			<1	\$38			3	\$5,375		
1984			<1	\$86			10	\$10,007		
1985			<1	\$210			12	\$11,830		
1986							22	\$19,824		
1987							78	\$58,735		
1988							40	\$32,617		
1989			<1	\$50			62	\$54,094		
1990			<1	\$75			50	\$41,797		
1991			<1	\$40			54	\$37,282		
1992			6	\$2,769			42	\$32,968		
1993			30	\$2,674			44	\$27,071		
1994			33	\$2,938			70	\$48,119		
1995			7	\$817			130	\$76,599		
1996			65	\$19,895	3	\$311	86	\$63,391		
1997			156	\$17,342	1	\$80	59	\$41,614		
1998	8	\$6,185	46	\$3,754	39	\$1,698	103	\$60,517		
1999	1	\$1,650	47	\$4,114	108	\$9,554	98	\$66,298		
2000	4,842	\$519,438	19	\$2,096	20	\$2,235	79	\$47,748		
2001	11,127	\$1,091,019	371	\$39,884	32	\$5,321	68	\$69,531		
2002	15,833	\$1,902,980	248	\$28,765	12	\$1,280	229	\$70,602		
2003	11,920	\$1,441,005	54	\$7,502	2	\$133	214	\$65,941		
2004	8,934	\$1,227,635	22	\$2,320	7	\$1,220	213	\$63,910		
2005	6,721	\$822,568	24	\$2,523	11	\$1,859	164	\$35,740		
2006	4,364	\$439,392	41	\$13,413	2	\$301	161	\$37,593		
2007	4,665	\$487,134	38	\$9,236	1	\$179	153	\$33,247		
2008	6,435	\$1,338,019	9	\$2,331	3		109	\$35,280		
2009	8,026	\$1,664,938	4	\$1,453			812	\$135,900		
2010	12,381	\$2,683,371	2	\$630	1	\$12	120	\$71,070		
2011	8,009	\$2,144,059	<1	\$110	10	\$5,605	191	\$68,129		
2012	35,892	\$7,951,100	692	\$159,487	31	\$5,414	217	\$82,505		

2013	30,457	\$7,010,467	193	\$43,615	80	\$18,437	116	\$47,439		
2014	7,784	\$3,327,865	545	\$155,379	243	\$59,210	112	\$57,045		

Source: PacFIN - 2012-2014 data extracted March 29, 2015.

<sup>2</sup>Pacific mackerel landings and revenues also include landings and revenues of unspecified mackerel.

Table 6-5. West coast CPS landings (mt) and real<sup>1</sup> exvessel revenues (2014 \$) by gear group, 1981-2014.

Year	Roundhaul or Lampara	Dip Net	Pot or Trap	Trawl	Hook and Line	Gillnet	Other or Unknown
	<u>Landings</u> (metric tons)						
1981	120,578	8,231	<1	11	9	79	
1982	110,254	3,693	52	13	27	81	
1983	57,078	490	<1	9	2	44	40
1984	56,712	64	<1	6	1	189	
1985	56,288	495	1	20	9	430	<1
1986	75,795	88	4	3	<1	133	
1987	75,048	213	1	6	7	1,314	<1
1988	94,190	140	1	39	1	1,395	<1
1989	102,070	248	<1	132	3	100	
1990	76,010	489	1	15	34	72	
1991	81,817	724	37	128	4	63	
1992	47,666	4,322	3	808	15	31	
1993	68,249	5,171	2	595	3	44	
1994	78,449	2,997	59	511	49	11	13
1995	121,050	1,410	1	387	121	9	42
1996	128,457	855	1	402	64	31	
1997	138,571	236	<1	2,190	90	18	
1998	69,672	37	<1	1,339	44	6	
1999	166,703	528	72	962	12	10	
2000	219,825	1,563	45	281	215	4	141
2001	190,411	1,791	1	636	120	3	
2002	178,638	761	<1	12	10	2	
2003	123,129	133	<1	85	12	<1	<1
2004	140,330	790	<1	115	8	<1	63
2005	154,875	2,504	11	106	9	<1	
2006	154,752	1,582	83	33	84	<1	
2007	193,348	826	<1	15	25	<1	<1
2008	143,364	444		51	3	<1	
2009	167,133	1,831	<1	2	3	<1	
2010	198,085	3,304	31	12	2	2	
2011	168,258	4,301		25	<1	<1	<1
2012	202,889	5,319	<1	47	7	1	<1
2013	180,741	3,223	43	126	22	1	<1
2014	128,186	293	13	316	51	<1	6

Table 6-5, continued

<b>Year</b>	<b>Roundhaul or Lampara</b>	<b>Dip Net</b>	<b>Pot or Trap</b>	<b>Trawl</b>	<b>Hook and Line</b>	<b>Gillnet</b>	<b>Other or Unknown</b>
	<b><u>Revenues</u></b>						
1981	\$18,385,887	\$837,365	\$149	\$3,923	\$4,786	\$28,701	
1982	\$16,472,812	\$453,188	\$11,159	\$4,263	\$8,793	\$23,992	
1983	\$10,849,406	\$191,941	\$927	\$3,330	\$1,317	\$13,276	\$7,040
1984	\$10,428,830	\$34,720	\$1,765	\$2,756	\$935	\$48,658	
1985	\$11,886,900	\$311,346	\$699	\$9,200	\$3,892	\$131,792	\$830
1986	\$13,347,151	\$26,573	\$1,025	\$1,887	\$131	\$40,859	
1987	\$11,873,522	\$40,619	\$1,946	\$2,379	\$1,768	\$244,597	\$9
1988	\$16,790,882	\$32,533	\$705	\$29,090	\$495	\$252,703	\$1
1989	\$16,831,629	\$42,856	\$43	\$29,879	\$870	\$25,068	
1990	\$11,194,170	\$45,967	\$731	\$6,605	\$28,860	\$29,595	
1991	\$13,058,904	\$53,766	\$6,867	\$23,773	\$4,656	\$18,588	
1992	\$8,234,277	\$477,450	\$1,908	\$8,706	\$19,573	\$11,219	
1993	\$13,199,342	\$784,529	\$1,743	\$8,535	\$3,575	\$18,957	
1994	\$17,645,932	\$469,382	\$17,589	\$28,174	\$41,213	\$5,551	\$2,403
1995	\$27,194,028	\$361,157	\$526	\$17,816	\$53,475	\$4,586	\$8,975
1996	\$27,023,423	\$190,155	\$495	\$39,977	\$62,480	\$15,497	
1997	\$28,699,975	\$80,974	\$100	\$45,886	\$91,153	\$8,373	
1998	\$8,242,660	\$24,660	\$135	\$77,097	\$57,897	\$3,010	
1999	\$40,499,923	\$188,043	\$15,884	\$36,073	\$25,416	\$5,924	
2000	\$38,456,636	\$392,481	\$10,088	\$10,442	\$38,407	\$1,892	\$14,643
2001	\$28,552,344	\$383,367	\$398	\$28,813	\$34,291	\$1,627	
2002	\$29,766,977	\$186,258	\$293	\$2,341	\$24,111	\$1,311	
2003	\$33,361,814	\$74,381	\$66	\$6,056	\$27,405	\$121	\$19
2004	\$30,791,296	\$372,100	\$2	\$3,449	\$19,796	\$102	\$34,501
2005	\$41,529,484	\$1,486,631	\$6,268	\$14,307	\$16,506	\$156	
2006	\$37,754,406	\$861,199	\$7,180	\$15,467	\$20,233	\$172	
2007	\$43,951,737	\$502,026	\$30	\$3,448	\$27,119	\$67	\$39
2008	\$43,132,322	\$296,145	\$0	\$1,689	\$10,698	\$39	
2009	\$69,942,757	\$1,045,944	\$23	\$472	\$18,293	\$183	
2010	\$82,660,943	\$1,796,001	\$16,819	\$970	\$11,819	\$1,047	
2011	\$74,636,218	\$2,691,494		\$9,062	\$31	\$55	\$90
2012	\$83,210,572	\$3,651,172	\$241	\$5,926	\$19,291	\$3,438	\$38
2013	\$89,153,183	\$2,290,778	\$30,463	\$19,159	\$17,485	\$385	\$8
2014	\$73,301,802	\$214,640	\$2,253	\$42,201	\$37,038	\$78	\$4,333
Source: PacFIN - 2012-2014 data extracted March 29, 2015.							

TABLE 8-1. Commercial landings (metric tons) of CPS in Ensenada, Baja California, Mexico, for calendar years 2000-2015<sup>1/2/3/4/5</sup>. Sardine landings include both southern and northern subpopulations.

Year	Pacific sardine	Northern anchovy	Pacific mackerel	Jack mackerel	Market squid
2000	67,845	1,562	7,182	0	na
2001	46,071	76	4,078	0	na
2002	46,845	0	7,962	0	na
2003	41,342	1,287	2,678	0	na
2004	41,897	1,797	1,530	0	na
2005	55,323	4,873	2,343	0	72
2006	57,237	1,567	2,318	0	554
2007	36,847	4,058	3,057	0	415
2008	66,866	991	180	0	5,378
2009	55,911	2,444	8	0	3,685
2010	56,821	3,139	85	0	10,991
2011	70,336	1,760	2,601	0	15,091
2012	59,069	1,809	186	0	4,802
2013	51,413	2,428	327	0	16,707
2014	90,396	539	975	0	2,978
2015	37,468	46,850	1,219	0	63

1/ Data for 2000 to 2002 from García and Sánchez (2003).

2/ Data for 2003 provided by Dr. Celia Eva-Cotero, INAPESCA-Ensenada (pers. comm.).

3/ Data for 2004 provided by Dr. Manuel O. Nevarrez, INAPESCA-Guaymas (pers. comm.).

4/ Data for 2005-2015 from CONAPESCA ([http://www.conapesca.sagarpa.gob.mx/wb/cona/cona\\_anuario\\_estadistico\\_de\\_pesca](http://www.conapesca.sagarpa.gob.mx/wb/cona/cona_anuario_estadistico_de_pesca)).

5/ Anchovy landings for 2015 range from 26,143 mt (CONAPESCA statistics) to 46,850 mt (Concepcion Enciso-Enciso, pers. comm., 2015 Trinational Sardine Forum presentation).

TABLE 8-2. Pacific sardine northern subpopulation biomass-at-age and summary biomass (Hill et al. 2016).

Model year (July-1)	POPULATION BIOMASS-AT-AGE (metric tons)									SUMMARY BIOMASS	
	0	1	2	3	4	5	6	7	8+	Ages 0+	Ages 1+
1993	54,514	169,893	82,329	53,218	34,192	26,940	21,019	22,918	49,615	514,637	460,123
1994	50,502	168,567	222,510	78,938	44,108	26,123	19,591	14,821	49,409	674,570	624,068
1995	16,874	153,856	206,290	200,564	63,056	33,008	18,744	13,671	43,303	749,366	732,492
1996	27,046	51,769	194,404	191,440	163,020	47,648	23,833	13,144	38,536	750,840	723,794
1997	86,420	82,963	64,887	177,661	153,731	122,403	34,297	16,683	34,922	773,967	687,548
1998	60,986	264,146	101,897	57,959	140,509	114,474	87,683	23,928	34,841	886,423	825,437
1999	10,100	184,128	308,032	87,200	44,731	103,112	81,148	60,636	39,469	918,555	908,455
2000	11,090	28,657	208,011	274,405	70,103	33,499	73,605	56,169	67,387	822,928	811,837
2001	23,063	30,843	30,323	173,530	210,634	50,418	22,977	48,951	79,800	670,539	647,477
2002	2,862	60,597	29,692	24,157	129,098	147,098	33,591	14,846	80,648	522,589	519,727
2003	113,533	7,279	53,349	21,805	16,920	85,287	92,707	20,526	56,271	467,677	354,144
2004	54,925	337,485	8,368	43,507	15,482	10,999	52,448	55,138	43,981	622,333	567,408
2005	94,741	166,137	417,266	7,145	29,903	9,403	6,259	28,796	52,715	812,364	717,624
2006	29,083	285,559	207,485	368,097	5,126	19,063	5,630	3,619	45,568	969,228	940,145
2007	45,458	86,549	347,469	185,133	280,688	3,557	12,516	3,576	30,037	994,984	949,526
2008	15,555	131,706	96,376	287,468	137,197	192,774	2,320	7,907	20,356	891,658	876,103
2009	44,229	44,305	143,523	79,863	215,319	95,556	127,695	1,489	17,440	769,418	725,189
2010	12,396	127,540	50,393	122,884	59,983	148,535	62,505	80,862	11,481	676,580	664,184
2011	1,810	35,980	147,709	43,341	90,579	40,171	94,027	38,272	55,215	547,105	545,295
2012	548	5,010	36,413	113,804	30,406	59,079	24,893	56,420	54,506	381,079	380,531
2013	827	1,419	4,842	27,458	69,621	16,260	29,494	11,981	51,790	213,692	212,865
2014	3,039	2,162	1,384	3,625	16,563	36,603	7,971	13,934	29,043	114,324	111,285
2015	14,851	9,217	2,576	1,131	2,504	10,350	21,563	4,537	23,598	90,326	75,476
2016	---	46,274	12,468	2,534	951	1,927	7,562	15,260	19,159	---	106,137

TABLE 8-3. U.S. Pacific sardine landings (PacFIN) and harvest guidelines (HG) in metric tons since onset of management under the federal CPS-FMP. Landings include both the southern and northern subpopulations.

Management year					HARVEST LIMITS		
	CA	OR	WA	U.S. Total	OFL	ABC	HG/ACL
2000	53,611	9,528	4,842	67,981	n/a	n/a	186,791
2001	51,893	12,780	11,127	75,801	n/a	n/a	134,737
2002	58,353	22,711	15,833	96,896	n/a	n/a	118,442
2003	34,746	25,258	11,920	71,923	n/a	n/a	110,908
2004	44,305	36,111	8,936	89,351	n/a	n/a	122,747
2005	34,633	45,110	6,722	86,465	n/a	n/a	136,179
2006	46,577	35,668	4,364	86,609	n/a	n/a	118,937
2007	80,980	42,144	4,665	127,789	n/a	n/a	152,564
2008	57,805	22,949	6,435	87,189	n/a	n/a	89,093
2009	37,577	21,482	8,026	67,085	n/a	n/a	66,932
2010	33,658	20,853	12,392	66,903	n/a	n/a	72,039
2011	27,715	11,023	8,009	46,747	92,767	84,681	50,526
2012	23,044	42,666	35,739	101,448	154,781	141,289	109,409
2013	7,146	26,288	30,461	63,895	103,284	94,281	66,495
2014 (Jan-Jun)	5,647	0	908	6,555	59,214	54,052	(6,966)
2014-15	3,754	9,920	6,907	20,581	39,210	35,792	23,293
2015-16	158	1	0	159	13,227	12,074	7,000
2016-17	---	---	---	---	23,085	19,236	8,000

TABLE 8-4. West Coast Pacific sardine landings (metric tons) by country, 2000-2015. Landings include both the southern and northern subpopulations.

Year	Ensenada México	United States	B.C. Canada	Total
2000	67,845	67,980	1,721	137,547
2001	46,071	75,800	1,266	123,137
2002	46,845	96,887	739	144,472
2003	41,342	71,921	978	114,240
2004	41,897	89,348	4,438	135,683
2005	55,323	86,464	3,232	145,018
2006	57,237	86,609	1,575	145,421
2007	36,847	127,780	1,522	166,149
2008	66,866	87,186	10,425	164,477
2009	55,911	67,083	15,334	138,328
2010	56,821	66,892	22,223	145,936
2011	70,336	46,746	20,719	137,802
2012	59,069	101,148	19,172	179,389
2013	51,413	63,892	0	115,304
2014	90,396	22,744	0	113,140
2015	37,468	3,833	0	41,301



TABLE 8-5. RecFIN estimated recreational harvest of Pacific (chub) mackerel by state (type ‘A+B1’ estimate in metric tons), 2000-2015. Estimates from 2000-2003 are based on MRFSS sampling. Estimates from 2004-2015 are based on CRFS and ORBS sampling programs, and are not directly comparable to MRFSS estimates.

Calendar year	CA	OR	WA	Total
2000	250.00	0.07	0.00	250.07
2001	561.39	0.05	0.00	561.44
2002	279.11	0.11	0.00	279.22
2003	341.35	0.27	0.00	341.61
2004	546.44	0.10	0.00	546.53
2005	313.05	0.07	0.00	313.12
2006	464.24	0.11	0.00	464.35
2007	240.73	0.92	0.00	241.65
2008	321.81	0.02	0.00	321.83
2009	237.41	0.06	0.00	237.47
2010	235.59	0.00	0.00	235.59
2011	165.54	0.01	0.00	165.55
2012	143.69	0.19	0.00	143.88
2013	109.67	0.27	0.00	109.94
2014	178.78	0.16	0.00	178.93
2015	306.44	0.54	0.00	306.98

TABLE 8-6. RecFIN estimated recreational harvest of Pacific (chub) mackerel by fishing mode (type ‘A+B1’ estimate in metric tons), 2000-2015. Estimates from 2000-2003 are based on MRFSS sampling. Estimates from 2004-2015 are based on CRFS and ORBS sampling programs, and are not directly comparable to MRFSS estimates.

Calendar year	Shore Modes	Party/ Charter	Private/ Rental	Total
2000	51.30	76.85	121.92	250.07
2001	347.05	52.23	162.17	561.44
2002	92.88	25.74	160.59	279.22
2003	208.40	25.39	107.82	341.61
2004	406.35	20.28	119.91	546.53
2005	224.99	46.47	41.67	313.12
2006	406.16	15.63	42.57	464.35
2007	187.02	20.20	34.43	241.65
2008	276.35	20.06	25.42	321.83
2009	183.92	13.35	40.21	237.47
2010	201.25	9.47	24.87	235.59
2011	139.17	6.75	19.63	165.55
2012	122.44	7.80	13.64	143.88
2013	79.49	16.56	13.88	109.94
2014	103.91	36.21	38.82	178.93

TABLE 8-7. Pacific mackerel harvest specifications and commercial and recreational landings in the U.S. (metric tons) by July-June management years since the onset of the federal CPS-FMP.

Mgmt Year	HARVEST LIMITS				U.S. Landings
	OFL	ABC	HG/ACL	Directed/ACT	
2000-01	n/a	n/a	20,740	n/a	19,838
2001-02	n/a	n/a	13,837	6,000	8,391
2002-03	n/a	n/a	12,535	9,500	2,936
2003-04	n/a	n/a	10,652	7,500	4,769
2004-05	n/a	n/a	13,268	9,100	4,484
2005-06	n/a	n/a	17,419	13,419	4,217
2006-07	n/a	n/a	19,845	13,845	7,255
2007-08	n/a	n/a	71,629	40,000	6,636
2008-09	n/a	n/a	51,772	40,000	4,567
2009-10	n/a	n/a	55,408	8,000	3,281
2010-11	n/a	n/a	55,408	11,000	2,304
2011-12	44,336	42,375	40,514	30,386	2,003
2012-13	44,336	42,375	40,514	30,386	5,514
2013-14	57,316	52,358	52,538	39,269	12,007
2014-15	32,992	30,138	29,170	24,170	5,579
2015-16	25,291	23,104	21,469	20,469	4,664
2016-17	24,983	22,822	21,161	20,161	---

Table 9-1. Total landings (mt) of sardines and other species, and number of vessels and processors that participated under Exempted Fishery Permits during 2009-2013. (Source: ODFW and WDFW fish ticket records).

Species	2009	2010	2011	2012	2013	5-Year Total
Sardines	1,178.0	2,013.9	2,699.7	2,914.4	1,526.9	10,333.0
Pacific Mackerel	3.8	9.3	1.2	200.6	13.6	228.4
Jack Mackerel	0.0	0.0	0.0	1.5	0.0	1.5
Jellyfish	2.0	0.0	0.0	0.0	0.0	2.0
Number Vessels	2	3	4	5	2	7
Number Processors	1	1	1	3	1	3

Table 9-2. EFP landings in California. Total landings (mt) of sardines and other species, and number of vessels and processors that participated under Exempted Fishing Permits during 2009-2012. (Sources: Northwest Aerial Sardine Survey, LLC; \* NMFS WCR; \*\*CWPA).

<b>Species</b>	<b>2009</b>	<b>2010</b>
Sardines	1685mt*	1,218.2mt
Pacific Mackerel	756.0mt	9.8mt
Jacksmelt	40.00mt	
Kingfish	412.0mt	
Other spp		0.0
Number Vessels **	2	3
Number Processors **	2	2