

## **Appendix A: SAFE Tables**

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 that 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 pre-season and post-season 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	BIOMASS * FMSY * DISTRIBUTION
ABC	BIOMASS * BUFFER * FMSY * DISTRIBUTION
ACL	LESS THAN OR EQUAL TO ABC
HG	(BIOMASS - CUTOFF) * FRACTION * 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 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	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 subpopulatio	39,000 mt	9,750 mt	Equal to ABC	1,500 mt
Northern anchovy, central	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.



- 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. (69FR8572). 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).

TABLE 2-5. Oregon state limited entry sardine permit vessels landing sardine in 2010.

Vessel Name	Documentation Number	Year Built	Registered Measurements (ft) <sup>1/</sup>			Calculated Vessel GT <sup>2/</sup>
			Length	Breadth	Depth	
ANTHONY G	605599	1979	58	24	8	74.6
CRYSTAL SEA <sup>3/</sup>	1061917	1997	66	26	12	138
D C COLE	566145	1975	49.6	19	10.1	63.8
DARLENE Z	611694	1979	49.6	19	10.1	63.8
DELTA DAWN <sup>4/</sup>	647246	1982	49.6	19	10.1	63.8
EVERMORE	248555	1944	76.3	22.2	11.4	129.4
HARBOR GEM	974306	1982	58	19.5	10	75
LADY LAW	1131965	2002	74.7	25	13.3	166.4
LAUREN L KAPP	OR072ACX	---	72	---	---	---
OCEAN ANGEL II <sup>3/</sup>	622522	1980	74.5	28	10.7	149.5
OCEAN DREAM	621541	1980	58	19	10.2	94
PACIFIC JOURNEY <sup>3/, 4/</sup>	OR661ZK	1996	71	22	10	104.7
PACIFIC KNIGHT	OR155ABZ	1978	62	19.6	7.6	61.9
PACIFIC LEADER <sup>3/4/</sup>	643138	1981	59.5	21	9.2	93
PACIFIC PREDATOR	OR018ADR	---	57	---	---	---
PACIFIC PURSUIT	OR873ABY	1993	63	---	---	---
PACIFIC RAIDER <sup>4/</sup>	972638	1991	57.7	22.7	11	96.5
SEA VENTURE	WN4232NW	---	73	---	---	---
SPARTAN <sup>4/</sup>	607367	1979	58	19	10.1	74.6
SUNRISE	238918	1939	80.2	22.2	10.2	121.7

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.).

3/ Vessel also held a federal CPS permit.

4/ Vessel also held a Washington sardine permit.

TABLE 2-6. Washington limited entry sardine licenses in 2010.

Vessel Name	Coast Guard Number	Year Built	Registered Measurements (ft) <sup>1/</sup>			Calculated Vessel GT <sup>2/</sup>	Other Permits/Licenses	
			Length	Breadth	Depth		Federal Limited Entry	Oregon Limited Entry
ATLANTIS	649333	1982	49.6	19.0	10.1	63.8	x	
BAINBRIDGE	236505	1937	78.6	22.7	9.6	114.8	x	
CAPE CAUTION	606699	1979	49.6	19.0	10.1	63.8		
DELTA DAWN	647246	1982	49.6	19.0	10.1	63.8		x
HEAVY	655523	1983	58.0	21.3	10.2	84.4	x	

DUTY								
HUSTLER	943301	1989	55.0	17.0	8.2	51.4		
JUNO	260614	1950	131.3	30.1	12	317.8		
LISA MARIE	1038717	1996	78.0	25.3	13	171.9		
MARAUDER	975597	1991	58.0	22.8	10.5	93.0		
	OR761ABL	2004	25.7			0.0		
PACIFIC JOURNEY	OR661ZK	2001	64.3	22.0	10.3	97.7	x	x
PACIFIC LEADER	643138	1981	59.5	21.0	9.2	77.0	x	x
PACIFIC RAIDER	972638	1991	57.7	22.7	11.0	96.5		x
	OR108ADL	1980	68.0					
SPARTAN	607367	1979	58.0	19.0	10.1	74.6		x
ST. TERESA	623983	1980	49.0	18.5	8.5	51.6		x
VOYAGER	248217	1945	66.7	20.2	9.3	84.0		

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 6-1 (continued). Preliminary catch summary for vessels targeting Pacific sardine from NMFS-SWR coastal pelagic species pilot observer program, 2004-2008. (Page 2 of 2).

Target species - Pacific sardine					
Species	Target Catch	Incidental Catch	Bycatch Returned		
			Alive	Dead	Unknown
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 6-2. 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 6-3. 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 6-4. 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		11 lbs		
Round Stingray					1		
Sculpin			2				
Spiny Dogfish					1		
Unid. Croaker			20		45		
Unid. Flatfish			10				
Unid. Hake			4				
Unid. Seastar					1		
Unid. Smelt			2				
Unid. Turbot					1	1	20
White Croaker			50 lbs		35 lbs		
Yellowfin Croaker			50 lbs		10 lbs		
CA Sea Lion					5		
Sea Otter					1		

Table 6-5. Percent frequency of incidental catch in observed Pacific sardine and mackerel landings, by port, 2006-2010. (Page 1 of 6).

Common Name	All Ports Combined					Monterey/Moss Landing					Ventura/Port Hueneme/ Terminal Island/ San Pedro				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
<b>Finfish</b>															
Anchovy, northern	13.6	9.3	8.9	7.8	3.4	31.3	18.9	7.3	8.3	3.5	5.8	1.1	10.3	6.5	3.2
Barracuda, California	0.3	0.7	0.3	0.8	0.2	0.3	0.8		0.8		0.3	0.5	0.6	0.9	0.4
Bass, barred sand	0.5	0.4			0.2						0.7	0.8			0.4
Bass, kelp	0.6		0.3	0.6	0.4						0.9		0.6	1.9	0.7
Bass, striped			0.3										0.6		
Blacksmith	0.1	0.1									0.1	0.1			
Bonito, Pacific	1.7	0.6	0.3	1.4	0.6						2.4	1.1	0.6	4.6	1.1
Butterfish	4.7	2.4	0.9	0.8	3.4	3.3	1.9		0.4	3.5	5.3	2.9	1.7	1.9	3.2
Cabezon	0.1					0.3									
Combfish, longspine	0.6	0.3	0.6		0.2		0.5				0.9	0.1	1.1		0.4
Corbina, California	0.4	0.5									0.6	1.0			
Croaker, unspecified			0.3	0.3									0.6	0.9	
Croaker, white	4.4	3.7	1.2	4.7	5.0	2.6	2.7	2.0	6.7	7.8	5.2	4.5	0.6		2.5
Croaker, yellowfin		0.2		0.3								0.4		0.9	
Cusk eel, basketweave	1.7	0.4			0.7						2.4	0.8			1.4
Cusk-eel, spotted															
Eel, unspecified			0.3										0.6		
Eel, wolf (wolf-eel)															
Eel, yellow snake															
Fish, unspecified		0.3		0.6	0.4		0.2		0.8			0.4			0.7
Flatfish, unspecified	0.5	1.9	1.8	1.1	0.9	0.3	0.6		0.4		0.6	3.0	3.4	2.8	1.8
Flounder, starry	0.4	0.6	1.2	0.8	0.7	1.3	1.3	2.7	1.2	1.6					
Flounder, unspecified		0.1	0.3									0.1	0.6		
Flyingfish				0.6	0.2									1.9	0.4
Greenling, kelp		0.1			0.2		0.2			0.4					
Grunion, California	0.1										0.1				
Hagfish		0.1										0.1			
Halfmoon	0.1					0.3									
Halibut, California	2.0	3.2	3.1	2.8	2.1	0.3	0.6	0.7	2.8	1.2	2.7	5.4	5.1	2.8	2.9
Herring, Pacific	0.1	0.2	0.6	0.8	2.2	0.3	0.5	1.3	1.2	4.7					

Jacksmelt	1.5	2.1	0.6	3.9	3.0		3.3	1.8	1.3	5.6	6.2		0.7	2.3			
Kelpfish, giant	0.1	0.1			0.2								0.1	0.1			0.4
Lingcod		0.1	0.3	0.3				0.2	0.7	0.4							
Lizardfish, California	1.7	1.3	0.9	0.3	0.7								2.4	2.5	1.7	0.9	1.4
Mackerel, jack	9.5	8.7	14.5	4.7	3.4		8.5	8.3	14.7	2.4			9.9	8.9	14.3	10.2	6.5
Midshipman, plainfin	1.3	1.7	1.8	0.3	0.7		1.0	1.4	2.7		0.8		1.4	1.9	1.1	0.9	0.7
Midshipman, specklefin	1.3	0.3	1.2		0.6								1.9	0.5	2.3		1.1
Midshipman, unspec																	
Opaleye			0.6													1.1	
Perch-like, unspecified			0.3													0.6	
Pipefish, bay		0.1												0.1			
Pipefish, kelp	0.1				0.2								0.1				0.4
Poacher, unspecified	0.1												0.1				
Queenfish	2.4	0.7	1.5	0.6	0.2								3.5	1.4	2.9	1.9	0.4
Rockfish, chilipepper	0.1						0.3										
Rockfish, unspecified		0.4		0.6	0.2									0.8		1.9	0.4
Salema	0.1			0.6									0.1			1.9	
Salmon, Chinook		0.1						0.2									
Sanddab, longfin	0.2	0.1	0.3										0.3	0.1	0.6		
Sanddab, Pacific	1.1	3.0	2.5	6.1	3.4			5.4	4.7	8.7	6.2		1.6	1.0	0.6		0.7
Sanddab, speckled	0.1	0.7	1.5		0.2			1.0	3.3				0.1	0.4			0.4
Sanddab, unspecified	2.1	0.7	0.3		1.5		4.2	0.6	0.7		1.2		1.2	0.7			1.8
Scorpionfish, California	2.7	2.1	1.8	2.2	3.0								3.9	3.8	3.4	7.4	5.7
Sculpin, pithead	0.1												0.1				
Sculpin, roughback		0.1						0.2									
Sculpin, staghorn	0.1	0.4		1.7	2.1		0.3	0.6		2.4	3.1			0.1			1.1
Sculpin, undentified	0.2		1.5	0.3									0.3		2.9	0.9	
Sculpin, yellowchin				0.3												0.9	
Seabass, giant (black)	0.1												0.1				
Shad, American	0.7	0.7	0.3	0.3			2.3	1.6	0.7	0.4							
Sheephead, California	0.1												0.1				
Silversides	0.3	0.1		0.3									0.4	0.1		0.9	
Smelt, surf		0.1			0.7			0.3			1.6						
Smelt, true		0.1		0.3										0.1		0.9	
Snapper, Mexican		0.1												0.1			
Sole, C-O	0.3	0.1					1.0	0.2						0.1			



Sole, English	0.2	1.2	0.9	1.7	1.1		0.7	2.2	2.0	2.4	2.3			0.3			
Sole, fantail		0.1	0.3		0.4									0.3	0.6		0.7
Sole, petrale		0.2						0.5									
Sole, rock		0.1						0.2									
Sole, sand	0.4	0.1	1.2	2.5	2.8		1.3	0.3	2.7	3.6	5.8						
Sole, slender	0.1												0.1				
Sole, unspecified	0.2	0.1					0.7	0.2									
Sunfish, ocean	0.1						0.3										
Surfperch, barred	0.1						0.3										
Surfperch, black	0.1	0.1			0.2			0.2					0.1				0.4
Surfperch, kelp		0.1						0.2									
Surfperch, pink	0.9	0.4	0.6		0.2		1.3	0.5	1.3				0.7	0.3			0.4
Surfperch, rainbow		0.1						0.2									
Surfperch, rubberlip	0.1			0.3						0.4			0.1				
Surfperch, shiner	0.7	0.3	0.3		0.4		0.3	0.2	0.7				0.9	0.4			0.7
Surfperch, unspecified	0.3	0.3					0.3						0.3	0.5			
Surfperch, walleye		0.1												0.3			
Tonguefish	1.0	0.7			0.9			0.5					1.4	1.0			1.8
Topsmelt		0.4		0.6	0.7									0.7		1.9	1.4
Turbot, curlfin	0.1	0.1		0.3				0.2		0.4			0.1	0.1			
Turbot, diamond	0.2	0.4	0.6		0.6								0.3	0.8	1.1		1.1
Turbot, hornyhead	2.3	2.4	1.2	0.8	0.7		0.7	1.1	0.7	0.4	0.4		3.0	3.6	1.7	1.9	1.1
Turbot, spotted	0.5	0.1			0.2								0.7	0.1			0.4
Turbot, unspecified	0.8		0.3		0.4								1.2		0.6		0.7
Whiting, Pacific	0.1	0.9	0.3				0.3	1.9	0.7								
Total % Freq. Incidents	66.3	57.2	56.6	51.9	49.3		67.4	58.2	50.7	49.6	50.2		65.9	56.3	61.7	57.4	48.4
<b>Elasmobranchs</b>																	
Guitarfish, shovelnose	0.2	0.6	0.9		0.6								0.3	1.1	1.7		1.1
Ratfish, spotted	0.1	0.3	0.9		0.2			0.5	0.7		0.4		0.1	0.1	1.1		
Ray, bat	2.4	2.6	2.2	2.2	5.2			0.6		1.2	3.1		3.0	4.3	4.0	4.6	7.2
Ray, California butterfly					0.2												0.4
Ray, Pacific electric	0.9	2.8	3.7	3.1	1.5		1.0	5.8	8.0	3.6	1.9		0.7	0.3		1.9	1.1
Ray, unspecified		0.2	0.3	0.6						0.4				0.4	0.6	0.9	
Shark, brown smoothhound	0.1	0.4			0.7		1.3				1.2		0.1	0.7			0.4
Shark, gray smoothhound	0.2	0.1											0.3	0.3			

Shark, horn	0.5	0.2		0.3	0.2						0.7	0.4		0.9	0.4
Shark, leopard		0.1			0.6		0.2			0.4		0.1			0.7
Shark, Pacific angel	0.2	0.1			0.2						0.3	0.3			0.4
Shark, pelagic thresher															
Shark, smooth hammerhead			0.3										0.6		
Shark, spiny dogfish	0.1	0.7	0.6		1.1		1.4	1.3		1.6					0.7
Shark, unspecified		0.1	0.3		0.2					0.4		0.1	0.6		
Skate, big	0.5	0.7	0.6		0.7	0.3	1.3	1.3		1.6	0.1	0.1			
Skate, California	0.4	0.3		0.3			0.5				0.6	0.1		0.9	
Skate, long-nosed						1.3									
Skate, thornback	1.3	1.6		2.2	2.8		0.2		1.6	1.6	1.6	2.7		3.7	3.9
Skate, unspecified	0.1	0.1	0.3				0.3				0.1		0.6		
Stingray, round	0.2	0.6	0.3	0.3	0.7	0.7					0.3	1.1	0.6	0.9	1.4
Total % Freq. Incidents	7.2	11.5	10.5	8.9	14.9	4.6	10.7	11.3	6.7	12.1	8.4	12.2	9.7	13.9	17.6
<b>Invertebrates &amp; Plants</b>															
Algae, marine	0.7	0.1		0.8	0.2		0.2								
Bryozoan		0.1					0.2								
Crab shells	0.3							1.2			0.3				0.4
Crab, box	0.1	0.2									0.1	0.4			
Crab, decorator	0.1		0.3			2.3	0.7								
Crab, Dungeness	0.1	0.1	0.3	4.7	3.9		0.3			8.2			0.6		
Crab, globe		0.3			0.4	0.3						0.5			
Crab, rock unspecified	0.2	1.1		0.3	0.2			6.7			0.3	2.1		0.9	
Crab, sheep	0.1	0.1			0.6	0.3					0.1	0.1			0.7
Crab, slender						0.3									0.4
Crab, spider				0.3	0.2									0.9	1.1
Crab, swimming	0.3	0.1		0.3	1.3						0.4	0.3		0.9	
Crab, unspecified	0.4	0.3	0.3	0.3	0.2		0.2				0.6	0.4	0.6	0.9	0.4
Eelgrass	1.6	0.5			0.6		0.3				1.2	0.7			2.5
Gorgonians (sea fans)	0.5										0.7				0.4
Invertebrate, unspecified			0.3										0.6		1.1
Jellyfish		3.2	8.0	6.7	0.9		6.7	17.3		1.9		0.1			
Kelp	8.6	9.2	9.8	10.0	7.8	2.6	7.7	8.0		5.1	8.4	10.4	11.4	14.8	
Kelp, feather boa	0.2	0.2	1.5	1.1	1.5			0.7	9.5		0.3	0.4	2.3	1.9	
Lobster, California spiny		0.2		0.3	0.6				7.9			0.4		0.9	10.4

Nudibranch									0.8							2.9	
Octopus, unspecified	0.7	0.4		0.3	0.7		9.1			0.4		0.9	0.8			1.1	
Pleurobranch		0.1						0.2									
Prawn, ridgeback		0.1			1.1				0.4	1.9			0.1			1.1	
Prawn, spot	0.1		0.3	0.3	0.9							0.1		0.6			
Salps		0.1					0.3						0.1			0.4	
Sea cucumber	0.4	0.6	0.3	0.3	0.2				0.4			0.6	1.1	0.6	0.9	1.8	
Sea pansy																	
Sea stars	1.4	1.5	1.2	4.4	2.8			1.4	2.0		4.3	1.0	1.5	0.6	0.9	0.4	
Shrimp, black-spotted bay		0.6	0.6	2.8	1.9			1.3	1.3		2.7						
Shrimp, unspecified	0.1	1.7	0.6		1.3					6.0	0.4		0.1	3.2	1.1	1.4	
Snail, top		0.1								4.0				0.1		1.1	
Snail, unspecified							2.3									2.2	
Sponge, unspecified	0.1		0.3						0.7				0.1				
Squid, jumbo		0.1											0.1				
Squid, market	10.4	10.2	8.3	5.6	8.6			12.5	6.0		12.8	10.4	8.2	10.3	5.6		
Squid, market (Egg Cases)																	
Surfgrass										5.6						4.7	
Tunicates		0.1							0.2		1.2			0.1			
Turkish Towel	0.1		0.6	0.8			10.4		1.3				0.1				
Total % Freq. Incidents	26.5	31.3	32.9	39.2	35.8		28.0	31.1	38.0	43.7	37.7		25.8	31.5	28.6	28.7	34.1
Total All Incidents	1001	1352	326	364	536		307	624	150	252	257	694	728	176	112	279	
Total Observed Landings	317	349	166	166	159		96	118	42	42	50	221	231	124	55	109	

Table 6-6. Incidental catch reported on landing receipts with greater than fifty percent market squid (by tonnage per landing) from 2006 – 2010 for round haul gear.

Common Name	2006		2007		2008		2009		2010	
	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	15	21	35	72	22	34	11	10	8	6
Bonito, Pacific	3	3			7	2	1	1		
Mackerel, jack	25	26	31	32	53	46	54	73	66	74
Mackerel, Pacific	160	226	106	155	119	199	209	240	239	330
Sardine, Pacific	172	277	232	436	257	497	303	328	206	279

TABLE 6-7. Percent frequency of bycatch in observed loads of California market squid by port, 2006-2010.

CommonName	Total All Ports					San Pedro/Terminal Island					Ventura/Port Hueneme					Monterey/Moss Landing				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
<b>Finfish</b>																				
Anchovy, northern	5.2	7.6	2.1	1.4	4.2	5.0	2.9	2.0	1.1		7.8	11.5	2.6	10.0	3.2			11.1	5.3	
Barracuda, California	1.3		1.0			0.8		1.3			3.9									
Bass, kelp	0.4		0.5		0.4	0.8		0.7		1.8										
Blacksmith	0.4					0.8														
Bonito, Pacific	0.4	0.6	0.5					0.7			2.0	1.0								
Butterfish (Pacific pompano)	2.6				3.0	4.2				1.8	2.0			10.0					2.9	
Combfish, longspine																				
Croaker, white (kingfish)		0.6			0.8			1.5											1.2	
Eel, wolf (wolf-eel)																				
Fish, unspecified				0.5										4.5						

Flatfish, unspecified	0.4		1.0	0.5	2.1				1.3	0.6	1.8					20.0		1.6				1.2
Flounder, starry					0.4																	0.6
Flyingfish			0.5	1.4	0.4				0.7	1.7	1.8											
Halibut, California			1.6						2.0													
Herring, Pacific					0.4																	0.6
Jacksmelt	0.4				3.4													1.6				4.7
Lizardfish, California					0.4						1.8											
Mackerel, jack	12.4	3.5	7.8	5.3	1.7	15.1	4.4	9.8	4.5	7.1	2.0	2.1		13.6			15.9	14.3				
Mackerel, Pacific	18.9	18.1	12.5	17.7	6.3	17.6	20.6	12.4	17.4	23.2	33.3	17.7	12.8	22.7	10.0		9.5				11.1	0.6
Mackerel, unspecified		2.3										4.2										
Midshipman, plainfin			0.5	0.5	0.8				0.7	0.6												1.2
Midshipman, specklefin	0.4	1.2	0.5		0.4	0.8	2.9	0.7		1.8												
Midshipman, unspecified				0.5						0.6												
Poacher, unspecified		0.6					1.5															
Rockfish, Blue					0.4																	0.6
Rockfish, chilipepper																						
Rockfish, unspecified		0.6	0.5				1.5	0.7														
Salmon, Chinook	0.4																	1.6				
Sanddab, longfin																						
Sanddab, Pacific	1.3	1.8			4.6	0.8	1.5					1.0						3.2	14.3			6.4
Sanddab, speckled			0.5					0.7														
Sanddab, unspecified		0.6	1.6		0.8			0.7		3.6		1.0	5.1									
Sardine, Pacific	22.3	26.3	21.9	27.3	12.7	26.9	27.9	17.0	27.5	19.6	33.3	26.0	41.0	36.4	30.0		4.8	14.3				9.4

Scorpionfish, California		1.8	0.5	1.4			4.4	0.7	1.7											
Sculpin, pithead		0.6					1.5													
Sculpin, staghorn			0.5		0.8			0.7												1.2
Sculpin, unidentified			0.5					0.7												
Silversides				0.5															11.1	
Sunfish, ocean	0.4										2.0									
Surfperch, shiner	0.4					0.8														
Topsmelt				0.5					0.6											
Turbot, hornyhead		0.6	0.5		0.4		1.5	0.7												0.6
Turbot, spotted			0.5					0.7												
Turbot, unspecified				0.5	0.4				0.6	1.8										
Whiting, Pacific																				
Total % Freq. Incidents	67.8	66.7	55.7	57.9	45.1	73.9	72.1	54.2	56.7	66.1	86.3	64.6	61.5	77.3	80.0	41.3	42.9	0.0	33.3	36.3
<b>Elasmobranchs</b>																				
Ray, bat	1.3	1.2		1.0	1.7	0.8			1.1	5.4	3.9	2.1								0.6
Ray, Pacific electric	0.4			0.5	2.1				0.6							1.6				2.9
Shark, horn		0.6					1.5													
Shark, unspecified	0.4															1.6				
Skate, long-nosed			0.5					0.7												
Skate, unspecified																				
Stingray, round				0.5					0.6											
Total % Freq. Incidents	2.1	1.8	0.5	1.9	3.8	0.8	1.5	0.7	2.2	5.4	3.9	2.1				3.2				3.5
<b>Invertebrates &amp; Plants</b>																				
Algae, marine	0.9	0.6	0.5	0.5				0.7								3.2	14.3		11.1	

Cnidaria (Sea Anemones)	0.4																1.6						
Crab, box			0.5					0.7															
Crab, Dungeness				0.5	5.1															11.1	7.0		
Crab, rock unspecified		1.2	1.0	0.5				0.7	0.6				2.1	2.6									
Crab, sheep		0.6											1.0										
Crab, Shore			1.0					0.7						2.6									
Crab, swimming																							
Crab, unspecified		1.2	0.5	0.5			1.5	0.7	0.6				1.0										
Eelgrass	0.9	0.6	1.0	2.9	0.4		1.7		1.3	3.4	1.8							14.3					
Gorgonians (sea fans)	0.4				0.4		0.8														0.6		
Grass, Turtle				0.5					0.6														
Jellyfish	0.4			1.0	16.0										10.0		1.6			22.2	21.6		
Kelp	16.7	24.6	17.2	17.2	15.6		15.1	22.1	16.3	18.0	19.6		7.8	26.0	20.5	13.6		27.0	28.6		11.1	15.2	
Kelp, feather boa			2.1	1.4	0.8				2.6	1.7												1.2	
Lobster, California spiny				0.5						0.6													
Salps																							
Sea cucumber			1.0						1.3														
Sea Cucumber, warty		0.6						1.5															
Sea Hare			0.5	0.5					0.7	0.6													
Sea Slug			0.5											2.6									
Sea stars	1.3	1.8	2.1	1.4	3.4		0.8	1.5	1.3	1.1				2.1	5.1			3.2			11.1	4.7	
Squid, jumbo	0.4						0.8																
Squid, market (Egg Cases)	8.6	0.6	15.6	12.9	8.4		5.9		18.3	14.0	7.1		2.0	1.0	5.1	9.1	10.0		19.0			8.8	
Surfgrass					0.4																	0.6	
Tunicates					0.4																	0.6	
Urchin, Purple																							
Total % Freq. Incidents	30.0	31.6	43.8	40.2	51.1		25.2	26.5	45.1	41.0	28.6		9.8	33.3	38.5	22.7	20.0		55.6	57.1	0.0	66.7	60.2

Total All Incidents	233	171	192	209	237	119	68	153	178	56	51	96	39	22	10	63	7	0	9	171
Total Observed Landings	136	114	95	130	130	73	61	68	104	72	37	51	27	22	11	26	2	0	4	50

Table 6-8. Expanded salmonids bycatch in Pacific sardine fisheries in Oregon and Washington, 2000-2010.

	Chinook		Coho		Pink	Unidentified		Total		Grand Total
	Live	Dead	Live	Dead	Live	Live	Dead	Live	Dead	
<b>2010</b>										
Oregon <sup>2/</sup>										
Washington <sup>3/</sup>	87	288	53	328						756
<b>2009</b>										
Oregon <sup>2/</sup>								126	115	241
Washington <sup>3/</sup>	56	186	34	212						488
<b>2008</b>										
Oregon <sup>2/</sup>								123	75	198
Washington <sup>3/</sup>	45	149	27	170						391
<b>2007</b>										
Oregon <sup>2/</sup>								349	170	519
Washington <sup>3/</sup>	33	108	20	124				53	232	285
<b>2006</b>										
Oregon <sup>2/</sup>								164	93	257
Washington <sup>3/</sup>	31	101	19	116				50	217	267
<b>2005</b>								411	176	587
Oregon <sup>2/</sup>	47	156	29	178				76	334	410
Washington <sup>3/</sup>										
<b>2004</b>										
Oregon <sup>2/</sup>								518	305	823
Washington	35	225	19	105	0	39	0	93	330	423
<b>2003</b>										
Oregon <sup>2/</sup>								315	185	500
Washington	92	262	81	231	0	173	0	346	493	839
<b>2002</b>										



Oregon <sup>2/</sup>								199	81	280
Washington	150	356	61	765	0	200	0	411	1211	1532
<b>2001</b>										
Oregon <sup>1/</sup>	45	45	201	134	22	45	0	313	179	492
Washington	449	170	571	504	0	80	0	1100	674	1774
<b>2000</b>										
Oregon <sup>1/</sup>	43	72	159	43	0	303	43	505	158	663
Washington	38	3	276	116	0	7	0	321	119	440

1/ Oregon salmon bycatch data 2000-2001 are expanded from a bycatch rate of salmon/trip based on vessel observation program.

2/ Oregon salmon bycatch data 2002-2008 are from logbooks.

3/ Washington totals calculated from observed 2000-2004 observed bycatch rates.

TABLE 6-9. Reported logbook and observed catches of non-target species caught in Oregon sardine fishery, 2006-2010.

Species	2006 Logbook data	2007 Logbook data	2008 Logbook data	2009 Logbook data	2010 Logbook data
Blue shark	3	0	1		0
Thresher shark	2	3 (2 of 3 released alive)	0		0
unknown shark	1	5	0		0
Salmonids	257 (55% alive; 45% dead)	519 (67% alive; 33% dead)	198 (62% alive, 38% dead)	248 (53% alive, 47% dead)	186 (59% alive, 41% dead)
Mackerel	292,150 lbs.	473,441 lbs.	59,205 lbs.	30,872 lbs.	15,280 lbs.
Anchovy	1,000 lbs.	500 lbs.	8,300 lbs.	12,045 lbs.	20,450
Pacific Herring	0	0	52,200 lbs.	2,000 lbs.	0
Pacific Hake	250 lbs.	0	525 lbs.	0	0
Squid	150 lbs.	0	225 lbs.	0	30 lbs.
Jelly fish	<100 lbs	0	0	0	0
Spiny Dogfish	-	-	-	200 lbs.	0

TABLE 6-10. Recorded incidental catch (mt) in Oregon sardine fishery, 2001-2010 (from fish ticket data).

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Pacific mackerel	52.8	126.3	158.3	161.5	316.1	665	699.7	56.8	49.5	39.2
Jack mackerel	1.2	0.3	3.2	24.1	3.6	1.4	8	1.6	2.0	<0.01
Pacific herring	-	3.3	-	10.3	0.1	1.2	-	55.8	-	-
Northern anchovy	-	0.2	-	1.0	68.4	8.6	<0.001	2.4	<0.001	1.2
American shad	-	0.3	-	1.2	-	0.44	-	0.3	0.003	-
Pacific hake	-	-	0.1	-	-	0.002	-	0.005	<0.001	-
Pacific sanddab	-	-	-	-	-	<0.001	0.002	-	-	-
Dover sole	-	-	-	-	-	-	0.002	-	-	-
Sablefish	-	-	-	-	-	0.01	-	-	-	-
Sharks	-	-	0.3	0.3	0.4	0.16	0.14	0.01	1.1	-
Squid	-	-	-	13.9	-	-	-	-	0.003	-
Jellyfish	-	-	-	5.5	-	-	-	-	<0.001	-

Table 6-11. Species noted as encountered on CDFG Live Bait Logs, 1996-2010.

Year	Days Fished	Jack Mackerel	Pacific Mackerel	Barracuda	Herring	Grunion	Smelts (Atherinids)	Shiner Surperch	White Croaker	Queenfish	Market Squid	Pacific Bonito
2010	632	1	47								11	1
2009	848	2	77	6						1		1
2008	891	2	92	7							2	6
2007	970	2	245	22				2	1	1	7	12
2006	940	7	169	3								2
2005	1,045	49	188	27							1	6
2004	1,059	87	214	13						1	1	8
2003	1,123	18	140	23							2	
2002	1,105	9	147	1						1		
2001	1,052	11	176	56		1						
2000	488	25	87	34		1						
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 6-12. Estimates of Pacific sardine and Northern anchovy live bait harvest in California. Data for 1939-1992 from Thomson et al. (1994), and 1993-2009 from CDFG 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	1976	6,202	0
1940	1,820	0	1977	6,410	0
1941	1,435	0	1978	6,013	107
1942	234	0	1979	5,364	0
1943	WII	WII	1980	4,921	12
1944	WII	WII	1981	4,698	6
1945	WII	WII	1982	6,978	38
1946	2,493	0	1983	4,187	193
1947	2,589	0	1984	4,397	53
1948	3,379	0	1985	3,775	11
1949	2,542	0	1986	3,956	17
1950	3,469	0	1987	3,572	216
1951	4,665	0	1988	4,189	50
1952	6,178	0	1989	4,594	100
1953	5,798	0	1990	4,842	543
1954	6,066	0	1991	5,039	272
1955	5,557	0	1992	2,572	1,807
1956	5,744	0	1993	669	176
1957	3,729	0	1994	2,076	1,506
1958	3,843	0	1995	1,278	2,055
1959	4,297	0	1996	703	1,801
1960	4,225	0	1997	1,077	2,344
1961	5,364	0	1998	304	2,037
1962	5,595	0	1999	453	2,411
1963	4,030	0	2000	834	1,270
1964	4,709	0	2001	1,238	1,245
1965	5,645	0	2002	965	1,701
1966	6,144	0	2003	1,085	3,028
1967	4,898	0	2004	192	3,900
1968	6,644	0	2005	1,464	2,949
1969	4,891	0	2006	476	3,629
1970	5,543	0	2006	476	3,629
1971	5,794	0	2007	700	3,358

1972	5,307	0	2008	686	2,943
1973	5,639	0	2009	764	2,663
1974	5,126	0	2010	508	2,016
1975	5,577	0			

TABLE 6-13. Ratio of anchovy to sardine in reported live bait catch in California, 1994-2009. Values are in metric tons with the assumption that 1 scoop =12.5 lbs.

Year	Anchovy	Sardine	Total	Proportion Anchovy	Proportion Sardine
2010	508	2,016	2,524	0.20	0.80
2009	764	2,663	3,427	0.22	0.78
2008	686	2,943	3,629	0.19	0.81
2007	700	3,358	4,058	0.17	0.83
2006	476	3,629	4,105	0.12	0.88
2005	1,464	2,949	4,413	0.33	0.67
2004	192	3,900	4,092	0.05	0.95
2003	1,085	3,028	4,113	0.26	0.74
2002	965	1,701	2,666	0.36	0.64
2001	1,238	1,245	2,483	0.5	0.5
2000	834	1,270	2,104	0.4	0.6
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	3,420	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 6-14. Recorded incidental catch (mt) in Washington sardine fishery, 2000-2010 (from fish landing receipts).

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Mackerel	4.32	272.4 4	259.32	52.40	22.34	19.04	40.61	35.73	6.32	4.31	2.09
Pacific Herring			0.02						4.69		
Misc				0.34			1.37			2.34	
Northern Anchovy						1.81					
American Shad			0.18						<0.01		

Sharks	0.10	0.01							<0.01	<0.01	
Chinook		<0.01		<0.01							
Coho	<0.01										
Starry Flounder	<0.01										

Table 9-1. West coast landings (mt) and real<sup>1</sup> exvessel revenues (2010 \$) for Pacific sardine, Pacific mackerel<sup>2</sup>, jack mackerel, anchovy and market squid, 1981-2010.

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	\$6,396	35,388	\$15,431,360	17,778	\$7,741,690	52,309	\$6,936,247	23,510	\$10,759,683
1982	2	\$1,075	36,065	\$14,506,254	19,617	\$7,956,232	42,155	\$4,323,424	16,308	\$7,140,467
1983	1	\$336	41,479	\$15,436,327	9,829	\$3,443,120	4,430	\$801,669	1,824	\$1,456,237
1984	1	\$1,606	44,086	\$15,330,909	9,154	\$2,534,990	2,899	\$768,581	564	\$560,536
1985	6	\$2,541	37,772	\$11,795,409	6,876	\$2,322,040	1,638	\$428,783	10,276	\$7,124,374
1986	388	\$145,377	48,089	\$13,685,455	4,777	\$1,456,610	1,557	\$412,346	21,278	\$7,940,318
1987	439	\$107,847	46,725	\$11,406,965	8,020	\$2,040,399	1,467	\$528,793	19,984	\$6,757,799
1988	1,188	\$283,349	50,864	\$13,568,438	5,068	\$1,314,653	1,518	\$689,004	37,316	\$12,487,407
1989	837	\$310,668	47,713	\$11,229,323	10,745	\$2,638,185	2,511	\$1,110,487	40,974	\$11,961,026
1990	1,664	\$292,105	40,092	\$8,211,763	3,254	\$678,515	3,259	\$958,283	28,447	\$7,249,464
1991	7,587	\$1,321,779	32,067	\$7,905,981	1,712	\$368,065	4,068	\$964,089	37,389	\$8,988,395
1992	18,056	\$2,711,654	19,045	\$5,793,568	1,526	\$345,356	1,166	\$323,510	13,112	\$3,534,642
1993	15,347	\$2,186,223	12,129	\$2,132,092	1,950	\$389,579	2,003	\$676,128	42,830	\$14,528,002
1994	11,644	\$2,099,411	10,293	\$1,990,758	2,906	\$528,322	1,859	\$762,737	55,383	\$19,870,026
1995	40,256	\$4,827,484	8,823	\$1,561,182	1,877	\$396,053	2,016	\$500,349	70,252	\$30,293,153
1996	32,553	\$4,197,653	9,730	\$1,754,364	2,437	\$406,550	4,505	\$932,878	80,561	\$29,118,624
1997	43,290	\$5,811,814	20,168	\$3,640,145	1,533	\$323,477	5,779	\$1,062,162	70,329	\$27,027,403
1998	43,312	\$4,686,481	21,561	\$3,285,983	1,777	\$495,236	1,584	\$317,232	2,895	\$2,101,322
1999	60,476	\$6,617,032	9,094	\$1,394,468	1,557	\$254,913	5,311	\$1,223,588	92,101	\$42,595,796
2000	67,982	\$9,088,125	22,058	\$3,662,050	1,451	\$342,270	11,832	\$1,804,837	118,903	\$34,007,983
2001	75,801	\$11,165,354	7,618	\$1,471,709	3,839	\$741,567	19,345	\$1,750,029	86,203	\$20,672,582
2002	96,897	\$12,741,635	3,744	\$630,820	1,026	\$250,351	4,882	\$748,854	72,895	\$21,938,990
2003	71,923	\$8,569,322	4,213	\$774,818	231	\$85,945	1,929	\$402,091	45,056	\$29,853,595



2004	89,339	\$11,521,005	3,708	\$657,489	1,160	\$305,502	7,019	\$936,805	40,068	\$22,619,614
2005	86,464	\$11,286,487	3,586	\$641,064	294	\$240,977	11,414	\$1,247,210	55,755	\$34,828,334
2006	86,608	\$9,957,524	6,610	\$944,199	1,174	\$213,591	12,960	\$1,430,751	49,180	\$28,894,266
2007	127,789	\$13,803,006	5,759	\$884,212	646	\$151,040	10,548	\$1,185,653	49,475	\$30,291,463
2008	87,190	\$14,853,125	3,597	\$710,093	323	\$54,633	14,654	\$1,688,286	38,101	\$26,954,670
2009	67,084	\$12,618,478	5,138	\$1,114,142	121	\$19,418	3,519	\$519,913	92,474	\$57,064,489
2010	66,817	\$12,279,278	2,104	\$414,660	314	\$62,667	1,284	\$565,604	129,909	\$70,702,439

Source: PacFIN - 2008-2010 data extracted March 16, 2011.

<sup>1</sup>Real values are current values adjusted to eliminate the effects of inflation. This adjustment has been made by dividing current values by the current year GDP implicit price deflator, with a base year of 2010.

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

Table 9-2. West coast landings (mt) and real<sup>1</sup> exvessel revenues (2010 \$) for Pacific sardine, Pacific mackerel<sup>2</sup>, jack mackerel, anchovy and market squid by fishery sector, 1981-2010.

Year	Landings (mt)					Exvessel Revenues (2010 \$)				
	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	\$6,395	\$14,928,998	\$7,639,434	\$6,141,561	\$2,497,942
1982	1.8	33,955.4	19,326.2	38,955.4	5,696.4	\$989	\$13,736,969	\$7,838,383	\$3,739,429	\$1,450,335
1983	0.6	37,826.4	7,345.3	3,629.0	858.2	\$312	\$14,388,553	\$2,825,220	\$498,286	\$631,541
1984	0.8	36,868.2	3,618.6	345.8	73.5	\$1,115	\$13,833,754	\$1,323,014	\$234,661	\$82,803
1985	3.7	35,001.6	6,647.4	200.4	6,055.9	\$1,576	\$11,177,551	\$2,215,932	\$114,791	\$3,197,513
1986	304.1	46,086.2	4,586.0	313.0	14,533.7	\$111,559	\$13,251,758	\$1,352,781	\$118,660	\$5,112,345
1987	391.6	45,751.5	7,810.0	251.4	13,831.2	\$98,781	\$11,202,594	\$1,983,596	\$99,059	\$4,490,311
1988	1,185.4	50,793.8	4,945.6	252.7	31,526.8	\$282,051	\$13,526,773	\$1,264,750	\$111,222	\$10,258,663
1989	598.4	47,633.9	10,703.7	733.6	33,317.4	\$110,075	\$11,192,632	\$2,586,270	\$541,718	\$9,318,338
1990	1,536.8	37,554.1	3,060.3	352.5	20,399.7	\$246,057	\$7,713,066	\$616,759	\$177,258	\$5,050,400
1991	6,601.5	31,753.3	1,648.9	1,004.1	29,210.1	\$1,161,335	\$7,817,995	\$340,220	\$313,729	\$6,051,379
1992	14,924.3	18,181.7	1,096.8	347.3	4,526.3	\$2,093,463	\$5,658,244	\$316,056	\$110,640	\$1,027,363
1993	14,669.7	11,765.8	1,272.1	421.6	32,293.0	\$2,062,055	\$2,095,156	\$253,722	\$145,079	\$10,133,219
1994	9,348.8	9,902.8	2,512.2	506.1	33,909.1	\$1,337,785	\$1,919,564	\$384,587	\$230,373	\$11,229,131
1995	34,496.8	8,144.3	1,597.1	682.3	59,780.7	\$4,128,051	\$1,453,461	\$264,301	\$259,752	\$26,018,342
1996	24,384.9	8,857.7	2,065.1	758.2	61,647.8	\$2,954,281	\$1,571,825	\$368,464	\$321,747	\$22,146,957
1997	29,893.7	15,178.6	830.0	1,666.8	52,392.3	\$3,634,917	\$3,039,913	\$239,290	\$263,302	\$19,815,415
1998	32,816.9	19,507.9	1,012.4	579.5	2,405.3	\$3,848,633	\$3,076,778	\$413,539	\$151,596	\$1,778,664
1999	42,221.6	8,781.4	927.5	3,655.3	80,423.6	\$4,864,086	\$1,374,013	\$236,420	\$691,808	\$37,308,093
2000	42,195.5	21,877.8	1,218.8	4,832.7	93,621.7	\$5,606,587	\$3,643,348	\$283,374	\$674,699	\$26,670,860
2001	44,720.5	6,751.8	3,623.9	7,572.0	71,137.3	\$5,916,929	\$1,312,697	\$685,728	\$946,223	\$16,854,238
2002	44,564.9	3,368.3	1,003.6	1,943.1	40,307.2	\$5,429,338	\$586,944	\$243,075	\$344,061	\$11,565,662
2003	25,276.7	3,981.5	135.9	847.7	21,608.8	\$2,439,380	\$737,133	\$64,149	\$212,369	\$14,435,981
2004	28,432.8	3,085.9	1,027.1	2,869.4	26,821.2	\$3,104,386	\$580,410	\$284,315	\$509,624	\$14,941,918
2005	26,026.2	3,242.8	210.9	4,959.1	45,525.5	\$2,804,855	\$596,692	\$57,237	\$767,507	\$28,862,495
2006	28,728.8	5,840.7	1,025.8	5,071.5	43,112.0	\$3,693,790	\$880,909	\$180,522	\$772,352	\$25,399,212
2007	46,147.0	4,891.1	459.9	2,668.5	31,132.3	\$5,232,662	\$801,955	\$111,063	\$310,232	\$19,296,459
2008	31,013.4	3,249.0	214.7	2,027.3	27,969.3	\$3,533,703	\$648,405	\$43,164	\$252,009	\$19,681,009
2009	12,485.2	5,028.7	97.7	1,663.0	60,640.2	\$1,801,439	\$1,103,869	\$18,407	\$247,558	\$38,307,359
2010	28,298.3	2,050.4	295.5	305.6	80,451.1	\$3,663,112	\$411,130	\$62,002	\$135,056	\$44,140,670
<b>Northern California</b>										
1981	<0.1	1,361.1	213.4	4,820.9	12,824.8	\$1	\$474,605	\$97,570	\$673,180	\$8,261,637

1982	<0.1	2,060.6	281.6	3,003.7	10,611.3	\$86	\$744,265	\$112,651	\$493,053	\$5,689,099
1983	<0.1	3,465.4	2,458.5	653.1	961.5	\$24	\$973,839	\$590,609	\$227,077	\$819,858
1984	0.3	7,165.0	5,486.3	2,432.9	488.0	\$491	\$1,470,424	\$1,195,837	\$465,834	\$474,975
1985	2.2	2,719.0	228.1	1,397.0	3,890.1	\$965	\$591,858	\$105,897	\$280,649	\$3,602,516
1986	84.5	1,999.9	191.1	1,200.9	6,319.8	\$33,818	\$431,301	\$103,722	\$250,197	\$2,713,293
1987	47.9	963.0	210.2	1,100.7	5,953.9	\$9,044	\$199,927	\$56,804	\$312,611	\$2,214,691
1988	3.0	65.2	121.9	1,188.6	5,196.9	\$1,265	\$36,945	\$49,836	\$508,170	\$2,018,498
1989	238.0	69.1	41.5	1,684.0	7,149.5	\$200,295	\$28,058	\$51,851	\$467,059	\$2,508,727
1990	127.1	2,509.9	194.0	2,845.5	8,047.1	\$45,896	\$478,427	\$61,745	\$711,712	\$2,198,745
1991	985.9	300.8	43.8	2,986.0	8,175.9	\$160,444	\$79,327	\$24,123	\$585,832	\$2,935,404
1992	3,127.7	386.8	112.2	773.3	8,559.7	\$618,172	\$124,500	\$27,873	\$163,168	\$2,500,512
1993	676.1	39.5	400.8	1,529.0	7,057.4	\$123,262	\$19,968	\$132,046	\$489,226	\$3,353,196
1994	2,295.1	40.4	191.7	1,273.8	15,921.3	\$761,625	\$26,799	\$132,998	\$461,889	\$7,129,801
1995	5,681.2	461.4	109.4	1,203.7	3,197.7	\$687,168	\$86,239	\$105,547	\$135,893	\$1,407,455
1996	7,988.2	710.5	91.8	3,659.0	5,004.9	\$1,182,522	\$127,761	\$18,308	\$525,704	\$1,976,440
1997	13,359.8	3,217.6	329.6	4,050.8	8,490.8	\$2,085,533	\$571,050	\$83,100	\$743,335	\$3,918,436
1998	10,493.4	1,469.7	39.9	901.7	14.1	\$836,757	\$192,496	\$20,536	\$87,319	\$20,112
1999	17,475.1	6.5	24.2	1,558.1	306.7	\$1,640,931	\$14,470	\$2,283	\$447,217	\$103,880
2000	11,367.5	41.1	50.5	6,920.8	7,125.9	\$1,210,009	\$8,394	\$34,601	\$1,070,067	\$2,394,692
2001	7,102.6	172.8		11,704.9	8,026.6	\$1,750,891	\$25,121		\$718,926	\$2,255,729
2002	13,779.2	0.3	1.9	2,706.7	25,953.3	\$1,597,360	\$662	\$508	\$317,843	\$8,424,387
2003	7,920.9	1.0	19.8	705.7	16,729.1	\$792,123	\$5,130	\$2,943	\$96,390	\$11,134,452
2004	15,837.5	490.0	<0.1	3,890.8	5,707.0	\$1,419,587	\$60,475	\$18	\$332,473	\$3,365,733
2005	8,509.3	0.4	0.5	6,192.2	1,916.9	\$665,079	\$826	\$359	\$423,940	\$1,090,924
2006	17,841.9	31.8	140.9	7,705.0	511.2	\$1,770,403	\$10,662	\$32,651	\$609,726	\$272,613
2007	34,781.9	123.4	166.8	7,704.4	25.3	\$3,323,968	\$19,760	\$37,741	\$836,523	\$16,925
2008	26,711.7	206.6	59.5	12,216.0	65.6	\$4,177,429	\$34,417	\$11,045	\$1,330,708	\$45,786
2009	25,011.9	14.3		978.4	1,183.0	\$3,791,485	\$2,137		\$108,880	\$919,449
2010	4,305.5	<0.1	<0.1	717.5	20,137.6	\$572,570	\$4	\$12	\$327,609	\$11,054,425

**Pacific Northwest**

1981		<0.1		1.3			\$3		\$626	
1982		<0.1		5.2			\$83		\$19,130	
1983		8.3		2.9			\$14,993		\$10,325	
1984		3.1		10.1			\$1,654		\$18,528	
1985		<0.1	<0.1	11.7			\$4	\$2	\$21,331	
1986		<0.1		22.1			\$1		\$34,856	
1987		1.5		77.6			\$889		\$100,360	
1988		0.6		40.4			\$567		\$53,884	

1989		4.9		61.8			\$1,863		\$86,133	
1990		10.4		50.3			\$5,754		\$64,062	
1991		0.7	19.3	54.5			\$311	\$3,590	\$55,186	
1992		468.2	316.5	41.7			\$4,228	\$1,153	\$47,670	
1993		310.1	276.6	19.9			\$7,098	\$3,763	\$15,358	
1994		285.5	202.3	39.4			\$17,386	\$10,729	\$37,940	
1995		197.0	148.6	130.0			\$5,944	\$9,758	\$89,391	
1996		126.7	260.5	85.6			\$31,590	\$11,124	\$84,428	
1997		1,763.5	373.7	59.1			\$24,997	\$1,086	\$54,463	
1998	1.0	583.6	724.5	102.5		\$1,003	\$16,493	\$61,161	\$78,316	
1999	776.9	305.9	604.5	97.8		\$111,645	\$5,957	\$15,615	\$84,555	
2000	14,369.8	138.2	181.1	78.8		\$2,262,460	\$10,069	\$24,294	\$59,981	
2001	23,907.6	692.6	215.2	68.0		\$3,489,032	\$133,433	\$55,724	\$84,881	
2002	38,543.5	374.8	20.4	231.8		\$5,713,639	\$43,121	\$6,760	\$86,950	
2003	37,178.1	213.8	75.4	252.9		\$5,187,278	\$30,382	\$18,851	\$81,206	
2004	45,045.3	129.1	132.9	226.5		\$6,992,728	\$15,521	\$21,154	\$78,383	
2005	51,831.2	341.4	80.4	232.1	14.5	\$7,800,529	\$43,330	\$182,583	\$41,295	\$8,180
2006	40,031.2	706.2	7.1	169.7	27.2	\$4,491,685	\$51,845	\$419	\$40,307	\$16,757
2007	46,808.8	740.5	14.8	158.0	0.6	\$5,245,072	\$61,323	\$1,217	\$36,924	\$307
2008	29,384.3	66.6	48.3	368.6		\$7,135,034	\$10,332	\$423	\$93,684	
2009	29,507.0	57.6		851.3		\$7,021,970	\$6,278		\$145,958	
2010	33,129.2	50.8	4.0	258.6		\$7,909,433	\$3,502	\$12	\$102,939	
<b>Other</b>										
1981		55.9	6.3	217.1	0.2		\$27,754	\$4,685	\$120,881	\$104
1982		48.5	9.5	190.9	0.4		\$24,937	\$5,197	\$71,813	\$1,033
1983		179.1	25.5	144.7	3.9		\$58,941	\$27,290	\$65,981	\$4,838
1984		49.7	49.3	110.1	2.7		\$25,077	\$16,138	\$49,557	\$2,759
1985		51.8	0.2	28.5	330.3		\$25,998	\$210	\$12,013	\$324,345
1986		3.1	0.1	21.4	424.1		\$2,394	\$109	\$8,633	\$114,680
1987	<0.1	9.0		37.6	199.2	\$22	\$3,555		\$16,763	\$52,797
1988	0.1	4.0	<0.1	36.6	592.1	\$34	\$4,154	\$68	\$15,727	\$210,245
1989	0.2	4.9	0.1	31.7	506.8	\$297	\$6,770	\$65	\$15,577	\$133,960
1990	0.3	17.3	<0.1	10.5	0.3	\$153	\$14,516	\$11	\$5,250	\$319
1991		11.8	0.1	23.8	2.6		\$8,348	\$132	\$9,342	\$1,611
1992	<0.1	8.1	0.3	3.3	26.5	\$19	\$6,598	\$273	\$2,032	\$6,767
1993	0.7	13.4	<0.1	32.1	3,479.5	\$908	\$9,869	\$48	\$26,463	\$1,041,587
1994		64.6	<0.1	40.2	5,553.0		\$27,008	\$8	\$32,536	\$1,511,094
1995	77.5	20.2	21.9	11.4	7,273.2	\$12,265	\$15,538	\$16,447	\$15,313	\$2,867,356

1996	180.3	35.2	19.6	2.2	13,908.6	\$60,849	\$23,187	\$8,653	\$999	\$4,995,228
1997	36.1	8.2		2.4	9,445.5	\$91,364	\$4,184		\$1,060	\$3,293,552
1998	0.9	0.3			475.0	\$89	\$214			\$302,546
1999	3.0	0.2	0.8	0.1	11,370.7	\$370	\$27	\$596	\$8	\$5,183,823
2000	49.0	0.6	<0.1	<0.1	18,154.9	\$9,070	\$239	\$2	\$91	\$4,942,430
2001	70.4	0.5	0.1		7,038.8	\$8,501	\$458	\$117		\$1,562,614
2002	9.2	<0.1	<0.1		6,634.6	\$1,298	\$94	\$8		\$1,948,941
2003	1,547.2	16.8		122.9	6,717.8	\$150,541	\$2,174		\$12,127	\$4,283,163
2004	23.1	2.9	<0.1	32.4	7,540.0	\$4,304	\$1,083	\$17	\$16,325	\$4,311,963
2005	97.4	1.1	1.9	30.7	8,297.7	\$16,025	\$216	\$798	\$14,470	\$4,866,736
2006	6.3	30.9		14.2	5,530.1	\$1,646	\$784		\$8,366	\$3,205,684
2007	51.6	4.0	4.6	16.9	18,317.3	\$1,304	\$1,176	\$1,019	\$1,974	\$10,977,773
2008	80.6	75.3		41.7	10,065.8	\$6,960	\$16,939		\$11,885	\$7,227,874
2009	80.2	37.1	20.9	26.7	30,650.6	\$3,584	\$1,857	\$1,011	\$17,516	\$17,837,682
2010	1,084.2	3.0	14.2		29,312.7	\$134,165	\$26	\$641		\$15,507,344

Source: PacFIN - 2008-2010 data extracted March 16, 2011.

<sup>1</sup>Real values are current values adjusted to eliminate the effects of inflation. This adjustment has been made by dividing current values by the current year GDP implicit price deflator, with a base year of 2010.

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

Table 9-3. Average annual real<sup>1</sup> exvessel prices (2010 \$) for Pacific sardine, Pacific mackerel, jack mackerel<sup>2</sup>, anchovy, and market squid, 1981 - 2010

Year	Pacific Sardine \$/lb	Pacific Mackerel \$/lb	Jack Mackerel \$/lb	Anchovy \$/lb	Squid \$/lb
1981	\$0.19	\$0.20	\$0.20	\$0.06	\$0.21
1982	\$0.24	\$0.18	\$0.18	\$0.05	\$0.20
1983	\$0.15	\$0.17	\$0.16	\$0.08	\$0.36
1984	\$0.73	\$0.16	\$0.13	\$0.12	\$0.45
1985	\$0.19	\$0.14	\$0.15	\$0.12	\$0.31
1986	\$0.17	\$0.13	\$0.14	\$0.12	\$0.17
1987	\$0.11	\$0.11	\$0.12	\$0.16	\$0.15
1988	\$0.11	\$0.12	\$0.12	\$0.21	\$0.15
1989	\$0.17	\$0.11	\$0.11	\$0.20	\$0.13
1990	\$0.08	\$0.09	\$0.09	\$0.13	\$0.12
1991	\$0.08	\$0.11	\$0.10	\$0.11	\$0.11
1992	\$0.07	\$0.14	\$0.10	\$0.13	\$0.12
1993	\$0.06	\$0.08	\$0.09	\$0.15	\$0.15
1994	\$0.08	\$0.09	\$0.08	\$0.19	\$0.16
1995	\$0.05	\$0.08	\$0.10	\$0.11	\$0.20
1996	\$0.06	\$0.08	\$0.08	\$0.09	\$0.16
1997	\$0.06	\$0.08	\$0.10	\$0.08	\$0.17
1998	\$0.05	\$0.07	\$0.13	\$0.09	\$0.33
1999	\$0.05	\$0.07	\$0.07	\$0.10	\$0.21
2000	\$0.06	\$0.08	\$0.11	\$0.07	\$0.13
2001	\$0.07	\$0.09	\$0.09	\$0.04	\$0.11
2002	\$0.06	\$0.08	\$0.11	\$0.07	\$0.14
2003	\$0.05	\$0.08	\$0.17	\$0.09	\$0.30
2004	\$0.06	\$0.08	\$0.12	\$0.06	\$0.26
2005	\$0.06	\$0.08	\$0.37	\$0.05	\$0.28
2006	\$0.05	\$0.06	\$0.08	\$0.05	\$0.27
2007	\$0.05	\$0.07	\$0.11	\$0.05	\$0.28
2008	\$0.08	\$0.09	\$0.08	\$0.05	\$0.32
2009	\$0.09	\$0.10	\$0.07	\$0.07	\$0.28
2010	\$0.08	\$0.09	\$0.09	\$0.20	\$0.25

Source: PacFIN - 2008-2010 data extracted March 16, 2011.

<sup>1</sup>Real values are current values adjusted to eliminate the effects of inflation. This adjustment has been made by dividing current values by the current year GCP implicit price deflator, with a base year of 2010.

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

Table 9-4. West coast landings (mt) and real<sup>1</sup> exvessel revenues (2010 \$) for Pacific sardine, Pacific mackerel<sup>2</sup>, jack mackerel, anchovy and market squid by state, 1981-2010.

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
<b>California</b>										
1981	15	\$6,396	35,388	\$15,431,357	17,778	\$7,741,690	52,308	\$6,935,622	23,510	\$10,759,683
1982	2	\$1,075	36,065	\$14,506,171	19,617	\$7,956,232	42,150	\$4,304,294	16,308	\$7,140,467
1983	1	\$336	41,471	\$15,421,334	9,829	\$3,443,120	4,427	\$791,344	1,824	\$1,456,237
1984	1	\$1,606	44,083	\$15,329,255	9,154	\$2,534,990	2,889	\$750,053	564	\$560,536
1985	6	\$2,541	37,772	\$11,795,406	6,876	\$2,322,038	1,626	\$407,452	10,276	\$7,124,374
1986	388	\$145,377	48,089	\$13,685,454	4,777	\$1,456,610	1,535	\$377,490	21,278	\$7,940,318
1987	439	\$107,847	46,724	\$11,406,076	8,020	\$2,040,399	1,390	\$428,433	19,984	\$6,757,799
1988	1,188	\$283,349	50,863	\$13,567,871	5,068	\$1,314,653	1,478	\$635,119	37,316	\$12,487,407
1989	837	\$310,668	47,708	\$11,227,460	10,745	\$2,638,185	2,449	\$1,024,354	40,974	\$11,961,026
1990	1,664	\$292,105	40,081	\$8,205,995	3,254	\$678,515	3,208	\$894,221	28,447	\$7,249,464
1991	7,587	\$1,321,779	32,066	\$7,905,670	1,693	\$364,476	4,014	\$908,903	37,389	\$8,988,395
1992	18,052	\$2,711,654	18,577	\$5,789,341	1,209	\$344,202	1,124	\$275,840	13,112	\$3,534,642
1993	15,346	\$2,186,223	11,819	\$2,124,993	1,673	\$385,816	1,959	\$637,831	42,830	\$14,528,002
1994	11,644	\$2,099,411	10,008	\$1,973,372	2,704	\$517,593	1,789	\$695,792	55,383	\$19,870,026
1995	40,256	\$4,827,484	8,626	\$1,555,238	1,728	\$386,295	1,886	\$395,730	70,252	\$30,293,153
1996	32,553	\$4,197,653	9,603	\$1,722,773	2,177	\$395,426	4,419	\$848,451	80,561	\$29,118,624
1997	43,290	\$5,811,814	18,401	\$3,614,454	1,160	\$322,391	5,720	\$1,007,699	70,329	\$27,027,403
1998	43,311	\$4,685,478	20,978	\$3,269,482	1,052	\$434,075	1,481	\$238,916	2,895	\$2,101,322
1999	59,700	\$6,505,387	8,788	\$1,388,511	952	\$239,298	5,214	\$1,139,033	92,101	\$42,595,796
2000	53,612	\$6,825,665	21,920	\$3,651,981	1,269	\$317,977	11,753	\$1,744,857	118,903	\$34,007,983
2001	51,893	\$7,676,322	6,925	\$1,338,260	3,624	\$685,844	19,277	\$1,665,148	86,203	\$20,672,582
2002	58,353	\$7,027,996	3,369	\$587,699	1,005	\$243,591	4,650	\$661,904	72,895	\$21,938,990
2003	34,745	\$3,382,044	3,999	\$744,436	156	\$67,093	1,676	\$320,886	45,056	\$29,853,595
2004	44,293	\$4,528,278	3,579	\$641,968	1,027	\$284,349	6,793	\$858,423	40,068	\$22,619,614
2005	34,633	\$3,485,958	3,244	\$597,734	213	\$58,394	11,182	\$1,205,916	55,740	\$34,820,154
2006	46,577	\$5,465,840	5,904	\$892,354	1,167	\$213,172	12,791	\$1,390,444	49,153	\$28,877,508
2007	80,980	\$8,557,934	5,018	\$822,890	631	\$149,823	10,390	\$1,148,729	49,475	\$30,291,156
2008	57,806	\$7,718,091	3,531	\$699,761	274	\$54,210	14,285	\$1,594,603	38,101	\$26,954,670
2009	37,577	\$5,596,508	5,080	\$1,107,863	119	\$19,418	2,668	\$373,954	92,474	\$57,064,489
2010	33,688	\$4,369,846	2,053	\$411,159	310	\$62,655	1,026	\$462,664	129,901	\$70,702,439

**Oregon**

1981			<1	\$3						
1982			<1	\$83			<1	\$199		
1983			8	\$14,993						
1984			3	\$1,495						
1985			<1	\$4	<1	\$2	<1	\$70		
1986			<1	\$1						
1987			1	\$889						
1988			1	\$567			<1	\$2		
1989			5	\$1,783			<1	\$24		
1990			10	\$5,529						
1991			<1	\$252	19	\$3,590				
1992			462	\$224	317	\$1,155				
1993			280	\$1,213	277	\$3,763				
1994			252	\$13,313	202	\$10,729	1	\$277		
1995			189	\$4,835	149	\$9,758	<1	\$658		
1996			61	\$5,093	258	\$10,212				
1997			1,611	\$2,994	373	\$982				
1998	1	\$1,003	538	\$11,176	686	\$56,617				
1999	776	\$109,541	259	\$1,286	496	\$5,923				
2000	9,528	\$1,434,165	119	\$7,632	161	\$21,515	<1	\$375		
2001	12,780	\$1,976,069	322	\$39,120	183	\$49,070				
2002	22,711	\$3,386,828	127	\$7,767	9	\$4,599	3	\$2,135		
2003	25,258	\$3,458,687	160	\$21,916	74	\$18,712	39	\$3,659		
2004	36,111	\$5,569,027	107	\$12,859	126	\$19,329	13	\$5,298		
2005	45,110	\$6,859,748	318	\$39,361	70	\$179,549	68	\$1,744	14	\$8,180
2006	35,668	\$4,011,506	665	\$37,375	5	\$96	9	\$18	27	\$16,757
2007	42,144	\$4,737,929	702	\$51,708	14	\$1,031	5	\$2,311	1	\$307
2008	22,949	\$5,771,848	58	\$7,957	46	\$423	260	\$57,740		
2009	21,481	\$5,341,129	53	\$4,811			39	\$8,760		
2010	20,749	\$5,226,062	49	\$2,872			138	\$31,869		
<b>Washington</b>										
1981							1	\$626		
1982							5	\$18,931		
1983							3	\$10,325		
1984			<1	\$159			10	\$18,528		
1985							12	\$21,261		
1986							22	\$34,856		
1987							78	\$100,360		



1988						40	\$53,882	
1989			<1	\$80		62	\$86,109	
1990			<1	\$239		50	\$64,062	
1991			<1	\$59		54	\$55,186	
1992			6	\$4,004		42	\$47,670	
1993			30	\$5,885		44	\$38,297	
1994			33	\$4,073		70	\$66,668	
1995			7	\$1,109		130	\$103,961	
1996			65	\$26,497	3	\$912	86	\$84,428
1997			156	\$22,696	1	\$104	59	\$54,463
1998			46	\$5,325	39	\$4,544	103	\$78,316
1999	1	\$2,104	47	\$4,671	108	\$9,692	98	\$84,555
2000	4,842	\$828,295	19	\$2,437	20	\$2,779	79	\$59,606
2001	11,127	\$1,512,963	371	\$94,329	32	\$6,654	68	\$84,881
2002	15,833	\$2,326,811	248	\$35,354	12	\$2,161	229	\$84,815
2003	11,920	\$1,728,591	54	\$8,466	2	\$139	214	\$77,547
2004	8,934	\$1,423,701	22	\$2,662	7	\$1,825	213	\$73,085
2005	6,721	\$940,781	24	\$3,969	11	\$3,034	164	\$39,551
2006	4,363	\$480,179	41	\$14,470	2	\$323	161	\$40,289
2007	4,665	\$507,143	38	\$9,615	1	\$186	153	\$34,613
2008	6,435	\$1,363,186	9	\$2,375			109	\$35,944
2009	8,026	\$1,680,841	4	\$1,467			812	\$137,198
2010	12,381	\$2,683,371	2	\$630	1	\$12	120	\$71,070

Source: PacFIN - 2008-2010 data extracted March 16, 2011.

<sup>1</sup>Real values are current values adjusted to eliminate the effects of inflation. This adjustment has been made by dividing current values by the current year GDP implicit price deflator, with a base year of 2010.

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

Table 9-5. West coast CPS landings (mt) and real<sup>1</sup> exvessel revenues (2010 \$) by gear group, 1981-2010.

Year	Roundhaul or Lampara	Dip Net	Pot or Trap	Trawl	Hook and Line	Gillnet	Other or Unknown
<b>Landings (metric tons)</b>							
1981	120,578	8,231	<1	11	9	80	
1982	110,254	3,693	1	13	27	82	
1983	56,944	490	<1	8	2	44	40
1984	56,285	64	<1	4	1	189	
1985	55,494	495	1	20	9	430	<1
1986	75,784	88	4	3	<1	135	
1987	75,048	213	1	6	7	1,314	<1
1988	94,190	140	1	39	1	1,395	<1
1989	102,026	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	802	15	31	
1993	68,346	5,171	2	592	3	44	
1994	78,350	2,997	59	510	49	11	13
1995	120,940	1,410	1	386	121	9	42
1996	128,354	855	1	401	64	23	
1997	138,534	247	<1	2,157	90	14	
1998	69,660	37	<1	1,334	44	5	
1999	166,933	528	72	961	12	10	
2000	219,844	1,568	45	275	420	4	<1
2001	190,196	1,791	1	621	153	3	
2002	178,656	761	<1	10	10	2	
2003	123,128	133	<1	76	10	<1	<1
2004	140,277	790	<1	110	7	<1	63
2005	154,875	2,504	11	106	9	<1	
2006	154,731	1,582	97	33	84	<1	
2007	193,348	826	<1	15	25	<1	<1
2008	143,364	444		51	3	<1	
2009	166,500	1,831	<1	2	3	<1	
2010	197,056	3,301	31	12	2	2	
<b>Revenues (2010 \$)</b>							
1981	\$38,958,716	\$1,774,332	\$316	\$8,216	\$10,141	\$60,963	
1982	\$32,897,464	\$905,052	\$4,277	\$8,300	\$17,560	\$48,858	
1983	\$20,690,538	\$368,741	\$1,780	\$5,232	\$2,530	\$25,505	\$13,524
1984	\$18,941,133	\$64,286	\$3,268	\$3,602	\$1,731	\$90,160	
1985	\$20,789,608	\$559,539	\$1,256	\$16,459	\$6,994	\$236,852	\$1,492
1986	\$23,463,681	\$46,723	\$1,803	\$3,187	\$230	\$72,691	
1987	\$20,288,242	\$69,406	\$3,325	\$4,066	\$3,022	\$417,942	\$15
1988	\$27,737,992	\$53,744	\$1,165	\$48,055	\$817	\$417,457	\$2
1989	\$26,781,148	\$68,220	\$69	\$47,555	\$1,384	\$39,905	
1990	\$17,157,231	\$70,454	\$1,121	\$10,247	\$44,234	\$45,361	
1991	\$19,330,182	\$79,586	\$10,165	\$35,148	\$6,892	\$27,514	
1992	\$11,906,256	\$690,363	\$2,759	\$10,266	\$28,302	\$16,222	
1993	\$18,652,043	\$1,109,858	\$2,466	\$12,912	\$5,058	\$26,818	
1994	\$24,400,821	\$650,325	\$24,369	\$38,658	\$57,100	\$7,691	\$3,330
1995	\$36,852,496	\$490,168	\$713	\$23,572	\$72,577	\$6,224	\$12,182

1996	\$35,942,454	\$253,261	\$659	\$53,698	\$83,215	\$14,725	
1997	\$37,539,667	\$111,668	\$131	\$39,664	\$119,335	\$8,804	
1998	\$10,656,707	\$31,914	\$175	\$99,999	\$74,926	\$3,809	
1999	\$51,731,552	\$239,928	\$20,258	\$42,936	\$32,415	\$7,556	
2000	\$48,214,103	\$492,921	\$12,593	\$33,188	\$110,434	\$2,486	\$120
2001	\$35,080,001	\$468,002	\$486	\$163,216	\$48,521	\$1,987	
2002	\$36,045,158	\$223,761	\$144	\$6,607	\$28,965	\$1,575	
2003	\$39,541,377	\$87,577	\$77	\$19,964	\$31,578	\$142	\$23
2004	\$35,528,483	\$425,518	\$2	\$17,460	\$22,225	\$117	\$39,454
2005	\$46,373,759	\$1,645,136	\$6,937	\$192,683	\$18,266	\$173	
2006	\$40,459,277	\$922,603	\$16,328	\$16,676	\$21,684	\$184	
2007	\$45,757,010	\$522,646	\$31	\$3,589	\$28,233	\$69	\$41
2008	\$43,943,592	\$301,715		\$1,721	\$10,899	\$39	
2009	\$70,258,541	\$1,055,934	\$23	\$476	\$18,467	\$188	
2010	\$82,186,049	\$1,793,103	\$16,819	\$367	\$12,270	\$1,047	

Source: PacFIN - 2008-2010 data extracted March 16, 2011.

<sup>1</sup>Real values are current values adjusted to eliminate the effects of inflation. This adjustment has been made by dividing current values by the current year GDP implicit price deflator, with a base year of 2010.

TABLE 11-1. Commercial harvest (metric tons) of CPS finfish in Ensenada, Baja California, Mexico, for calendar years 2000-2009<sup>1,2,3,4/</sup>. 2010 data are not yet available.

Year	Pacific sardine	Northern anchovy	Pacific mackerel	Jack mackerel
2000	51,173	1,562	7,182	0
2001	22,246	76	4,078	0
2002	43,437	0	7,962	0
2003	30,540	1,287	2,678	0
2004	44,382	1,797	1,530	0
2005	55,323	4,873	2,343	0
2006	57,237	1,567	2,318	0
2007	36,847	4,058	3,057	0
2008	66,866	991	180	0
2009	55,911	2,444	8	0
2010	nd	nd	nd	nd

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

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

3/ Sardine landings for 2004 provided by Manuel Nevarrez, CRIP-INP Guaymas (pers. comm.).

4/ CPS landings for 2005-2009 from CONAPESCA: [http://www.conapescasagarpa.gob.mx/wb/cona/cona\\_anuario\\_estadistico\\_de\\_pesca](http://www.conapescasagarpa.gob.mx/wb/cona/cona_anuario_estadistico_de_pesca)

TABLE 11-2. Pacific sardine population numbers (millions) and biomass (mt) by semester for model years 2000 to 2010 (July-June)(Hill et al. 2010). Semester 1 ranges July to December, and semester 2 ranges January to June. Recruitment is defined as number of age-0 fish. Age 1+ biomass as of July 2010 (bold) served as the basis for setting a HG for the U.S. fishery in calendar year 2011.

Model Year	Sem	BIOMASS (mt)			POPULATION NUMBERS-AT-AGE (millions)								
		Total (0+)	Age 1+	SSB	0 (R)	1	2	3	4	5	6	7	8+
2000	1	1,596,060	1,570,120	–	2,928	2,371	7,868	4,213	906	368	649	392	224
2000	2	1,498,340	1,462,260	1,307,820	2,396	1,866	5,986	3,293	721	295	521	314	180
2001	1	1,453,300	1,382,790	–	7,959	1,866	1,330	4,624	2,646	586	240	425	403
2001	2	1,305,320	1,207,360	1,135,870	6,505	1,385	934	3,494	2,077	465	191	339	321
2002	1	1,219,000	1,211,880	–	804	4,995	937	697	2,765	1,678	378	156	538
2002	2	1,059,530	1,049,640	936,174	657	3,565	609	502	2,107	1,301	295	122	420
2003	1	1,102,780	938,186	–	18,578	510	2,469	454	396	1,703	1,059	240	442
2003	2	1,004,280	775,539	745,568	15,189	380	1,690	329	299	1,308	818	186	342
2004	1	1,134,890	1,049,690	–	9,617	12,068	279	1,287	260	242	1,062	665	430
2004	2	1,116,520	998,053	750,929	7,867	9,097	190	910	192	181	801	503	325
2005	1	1,259,200	1,166,640	–	10,448	6,356	7,054	149	731	156	148	654	676
2005	2	1,216,480	1,087,740	886,044	8,549	4,944	5,093	109	545	117	112	495	512
2006	1	1,277,440	1,248,410	–	3,277	6,874	3,804	4,016	88	443	96	91	824
2006	2	1,194,090	1,153,730	958,949	2,681	5,271	2,713	2,968	67	343	74	71	640
2007	1	1,169,840	1,137,980	–	3,596	2,117	3,886	2,111	2,387	54	280	61	581
2007	2	1,013,710	969,441	879,551	2,940	1,552	2,607	1,532	1,807	42	215	47	447
2008	1	943,015	919,328	–	2,674	2,254	1,037	1,921	1,207	1,460	34	175	403
2008	2	777,861	744,938	684,821	2,186	1,574	608	1,278	882	1,103	26	134	309
2009	1	724,442	683,575	–	4,613	1,687	1,013	413	961	699	891	21	361
2009	2	600,657	543,838	501,270	3,773	1,197	595	267	680	513	661	16	270
2010	1	600,034	<b>537,173</b>	–	7,095	2,826	684	377	195	535	414	537	233
2010	2	522,570	435,201	376,250	5,802	2,030	405	234	132	377	296	386	167

TABLE 11-3. Annual U.S. Pacific sardine landings (PacFIN), and HGs (metric tons) since onset of management under the federal CPS-FMP.

Year	SCA	CCA	CA			U.S. Total	HG		HG Total
			Total	OR	WA		South	North	
2000	42,244	11,368	53,611	9,528	4,842	67,980	124,527	62,264	186,791
2001	44,790	7,103	51,893	12,780	11,127	75,800	89,825	44,912	134,737
2002	44,468	13,880	58,348	22,707	15,833	96,887	78,961	39,481	118,442
2003	26,825	7,921	34,746	25,255	11,920	71,921	73,939	36,969	110,908
2004	28,466	15,838	44,304	36,108	8,936	89,348	81,831	40,916	122,747
2005	26,125	8,508	34,633	45,108	6,722	86,464	90,786	45,393	136,179
2006	28,735	17,842	46,576	35,668	4,363	86,607	n/a	n/a	118,937
2007	46,195	34,780	80,975	42,139	4,665	127,780	n/a	n/a	152,564
2008	31,092	26,711	57,804	22,947	6,435	87,186	n/a	n/a	89,093
2009	12,561	25,015	37,576	21,482	8,025	67,083	n/a	n/a	66,932
2010	29,382	4,306	33,688	20,749	12,381	66,817	n/a	n/a	72,039
2011	---	---	---	---	---	---	n/a	n/a	50,526

1/ As of 2003, the 'Southern Subarea' comprises fisheries and landings from Pt. Arena, California (39°N latitude) to the Mexican border.

2/ As of 2006, the U.S. sardine HG was no longer managed by subarea. HG's are now allocated coastwide and released on a seasonal basis.

TABLE 11-4. West Coast Pacific sardine landings (metric tons) by country, 2000-2010.

Year	Ensenada	United	B.C.	Total
	México	States	Canada	
2000	51,173	67,980	1,718	120,871
2001	22,246	75,800	1,600	99,646
2002	43,437	96,887	1,044	141,368
2003	30,540	71,921	954	103,415
2004	44,382	89,348	4,259	137,989
2005	55,323	86,464	3,200	144,986
2006	57,237	86,607	1,558	145,402
2007	36,847	127,780	1,524	166,151
2008	66,866	87,186	10,435	164,487
2009	55,911	67,083	15,334	138,328
2010	56,821*	66,817	22,223	145,861

\*Preliminary

TABLE 11-5. RecFIN estimated recreational harvest of Pacific (chub) mackerel by state (type 'A+B1' estimate in metric tons), 2000-2010. Estimates from 2000-2003 are based on MRFSS sampling. Estimates from 2004-2010 are based on CRFS and ORBS sampling programs, and are not directly comparable to MRFSS.

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	311.60	0.07	0.00	311.67
2006	462.88	0.11	0.00	462.99
2007	238.98	0.91	0.00	239.89
2008	321.52	0.02	0.00	321.54
2009	237.30	0.06	0.00	237.36
2010	233.40	0.00	0.00	233.41

TABLE 11-6. RecFIN estimated recreational harvest of Pacific (chub) mackerel by fishing mode (type 'A+B1' estimate in metric tons), 2000-2010. Estimates from 2000-2003 are based on MRFSS sampling. Estimates from 2004-2010 are based on CRFS and ORBS sampling programs, and are not directly comparable to MRFSS.

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	45.04	41.65	311.67
2006	406.16	14.39	42.44	462.99
2007	187.02	18.76	34.10	239.89
2008	276.35	19.87	25.32	321.54
2009	183.92	13.26	40.17	237.36
2010	199.78	8.93	24.70	233.41

TABLE 11-7. Pacific mackerel harvest guidelines and landings (mt) by July-June fishing season since the onset of management under the federal CPS-FMP.

Fishing Season	Harvest Guideline	U.S. Landings
1999-00	42,819	6,732
2000-01	20,740	19,510
2001-02	13,837	7,814
2002-03	12,535	2,679
2003-04	10,652	4,452
2004-05	13,268	3,938
2005-06	17,419	3,784
2006-07	19,845	6,890
2007-08	40,000	6,286
2008-09	40,000	4,278
2009-10	10,000	3,010
2010-11	11,000	2,085
2011-12	40,514	