

White Seabass Fishery Management Plan 2010-2011 Annual Review



Prepared by

Department of Fish and Game
Marine Region
May 2012



White Seabass Fishery Management Plan 2010-2011 Annual Review

Executive Summary

The California Fish and Game Commission (Commission) adopted the White Seabass Fishery Management Plan (WSFMP) in June 2002. The WSFMP includes a provision for annual monitoring and assessment of the white seabass fisheries. The White Seabass Scientific and Constituent Advisory Panel (WSSCAP) was established to assist the Department of Fish and Game (Department) and the Commission with the review of the fishery assessments, management proposals, and plan amendments. The annual review includes fishery-dependent data (e.g., commercial and recreational landings and length frequencies), and fishery-independent data (e.g., recruitment information) if available, as well as documented changes within the social and economic structure of the recreational and commercial industries that utilize the white seabass resource within California. The review also includes information on the harvest of white seabass from Mexican waters and other relevant data. Based on the results of the annual review, in cooperation with the WSSCAP, the Department will provide management recommendations, if needed, to the Commission.

To assist the Commission in determining if management measures need to be modified or added, the WSFMP framework includes, and the Commission adopted, points of concern criteria to help determine when management measures are needed to address resource issues. The points of concern are:

1. catch is expected to exceed the current harvest guideline or quota;
2. any adverse or significant change in the biological characteristics of white seabass (age composition, size composition, age at maturity or recruitment) is discovered;
3. an overfishing condition exists or is imminent;
4. any adverse or significant change in the availability of white seabass forage or in the status of a dependent species is discovered;
5. new information on the status of white seabass is discovered;
6. an error in data or stock assessment is detected that significantly changes estimates of impacts due to current management.

The Department and WSSCAP met on April 26, 2012 to review the 2010-2011 fishery season (September 1 to August 31), and together agreed that none of the points of concern were met. Additional social and economic information along with the catch information from Mexico support this conclusion. As a result, the Department does not recommend any changes to the management of white seabass or to the WSFMP at this time.

Background

The WSSCAP annually reviews current information to evaluate the status of the white seabass resource based on points of concern adopted to implement the WSFMP, and to consider whether current management measures provide adequate protection to the resource. If a resource conservation issue is found, based on the points of concern, the WSSCAP will provide its recommendation, rationale, and analysis to the Department, which will recommend to the Commission the appropriate management measure(s) to address the issue(s).

Results

Analysis of the points of concern (Table 1) showed that none of the criteria were met in 2010-2011.

Table 1. Analysis of the points of concern.		
Criteria	Analysis	Result
Catch is expected to exceed the current harvest guideline or quota.	2010-2011 total catch = 824,518 pounds; Optimum Yield = 1.2 million pounds; Total catch is below optimum yield.	No action necessary
Any adverse or significant change in the biological characteristics of white seabass (age composition, size composition, age at maturity or recruitment) is discovered.	Recreational and commercial fishery length-frequencies showed no significant change that would indicate a problem in the fishery. No new information on age composition, age at maturity, or age at recruitment.	No action necessary
An overfishing condition exists or is imminent.	See analysis in Table 2. No overall overfishing condition noted.	No action necessary
Any adverse or significant change in the availability of white seabass forage or in the status of a dependent species is discovered.	Forage species are fairly stable in aggregate. Data indicate an increase in or steady availability for three of the forage species, and a decrease in availability for two of the forage species.	No action necessary
New information on the status of white seabass is discovered.	No new information.	No action necessary
An error in data or stock assessment is detected that significantly changes estimates of impacts due to current management.	Minor adjustments to the recreational and commercial catch estimates were made to improve estimates. No significant errors detected.	No action necessary

Point of Concern: Expectation of optimum yield being exceeded.

The Commission established a fishing season of September 1 through August 31 of the following year. The Commission also adopted an optimum yield. The optimum yield is based on a maximum sustainable yield proxy of the unfished biomass, and is currently

set at 1.2 million pounds. In the 2010-2011 season, the total recreational and commercial harvest was 824,518 pounds, 69 percent of the allowable catch (Appendix A, Table 1).

Point of Concern: Changes in the biological characteristics of white seabass.

Sampling of the commercial fishery for length data (Appendix A, Figure 1) was greatly improved for the 2007-2008 season due to the hiring of a dedicated person assigned to collect this data. Increased effort to sample commercially caught white seabass continues to the present season. The commercial fishery continues to harvest white seabass across a wide size range. In 2010-2011, 100 percent of the fish sampled were larger than the minimum size limit of 28 inches (711 mm) and approximately half of the fish sampled were larger than 45 inches (1143 mm). Based on previous age-at-length information from reading otoliths and from a previously calculated weight/length relationship, those fish larger than 45 inches are likely more than 11.5 years old and weigh more than 29 pounds.

Sampled length frequency data for the recreational fishery are presented in Appendix A, Figure 2. In the 2009-2010 season the Department prepared and distributed a brochure targeting recreational anglers to improve compliance with the recreational minimum size limit for white seabass. In both the 2009-2010 and 2010-2011 seasons, less than four percent of the fish measured were less than the minimum size limit of 28 inches (711 mm). This is a significant improvement from the previous three seasons, in which 17-19 percent of all fish measured were less than minimum legal size. This season 454 legal-sized fish were measured from the recreational fishery. Of the legal-sized fish measured from the recreational fishery approximately half of the fish measured were larger than 44 inches (1117 mm) total length. Based on previously calculated weight/length relationship, those fish larger than 44 inches are likely more than 11 years old and weigh more than 27.5 pounds.

Point of Concern: An overfishing condition exists or is imminent.

Three criteria (Table 2), all of which must be met to establish a point of concern, determine if an overfishing condition exists or is imminent. For the commercial fishery, there must be a 20 percent decline in landings in each of two consecutive seasons compared to the prior 5-season running average. Commercial landings of white seabass (Appendix A, Table 2) totaled 519,505 pounds in the 2010-2011 season; this is a 10 percent increase when compared to the prior 5-season running average (472,614 pounds). In the 2009-2010 season commercial landings totaled 482,660 pounds; this is an 11 percent increase compared to the prior 5-season running average (433,621 pounds). The WSSCAP and the Department agreed that the overfishing criterion for the commercial fishery was not met.

For the recreational fishery, the overfishing criterion is defined as a 20 percent decline in each of two consecutive seasons for both the number of fish and the average weight (Appendix A, Table 3). In the recreational fishery, the number of fish caught in the

2010-2011 season increased 43 percent when compared to the previous season. The average weight of fish caught in the 2010-2011 season increased 20 percent when compared to the previous season. The WSSCAP and the Department agreed that the overfishing criterion for the recreational fishery was not met.

The final criterion for determining if an overfishing condition exists is a 30 percent decline in the recruitment index for juvenile white seabass compared to the prior 5-season running average of recruitment. The Ocean Resources Enhancement and Hatchery Program (OREHP) had routinely conducted standardized field studies four times a year (August, October, April and June) for juvenile recruitment. However, reductions in funding curtailed survey effort during the 2004-2005 through 2007-2008 seasons. In the 2008-2009 season, the Southern California Sport Fishing Enhancement Stamp fund was insufficient to cover all of the OREHP activities as well as the gill net recruitment surveys, and since then there has been a hiatus in gill net sampling. Because no white seabass recruitment surveys occurred in the 2010-2011 season, this part of the criterion could not be addressed in this report.

Based on the analysis of all three overfishing criteria, the WSSCAP and the Department agreed that the overall overfishing criterion for the fishery was not met.

Table 2. Analysis to determine if the white seabass resource is overfished (Criteria taken from California Code of Regulations, Title 14).		
Criteria	Analysis	Result
A 20 percent decline in the total annual commercial landings of white seabass for the past two consecutive seasons compared to the prior 5-season running average of landings, based on landing receipt data.	2010-2011 519,505 pounds = 10% increase 5-season average = 472,614 pounds 2009-2010 482,660 pounds = 11% increase 5-season average = 433,621 pounds	Criterion not met
A 20 percent decline in both the number of fish and the average weight of white seabass caught in the recreational fishery for the same two consecutive seasons, as determined by the best available data.	2010-2011 12,599 fish = 43% increase 29.1 pound average = 20% increase 2009-2010 8,788 fish = 29% decrease 24.3 pound average = 20% increase	Criterion not met
A 30 percent decline in recruitment indices for juvenile white seabass compared to prior 5-season running average of recruitment, as determined by the best available data.	Criterion not analyzed	N/A

Point of Concern: Any adverse or significant change in the availability of white seabass forage or in the status of a dependent species is discovered.

Prey species (northern anchovy, jack mackerel, market squid, Pacific mackerel, and Pacific sardine) are highly mobile and their distributions are affected by oceanographic conditions. A review of white seabass forage species (Appendix A, Figures 3, 4, and 5) revealed some changes in availability.

Both Pacific mackerel and Pacific sardine have annual stock assessments conducted by the National Marine Fisheries Service and these stock assessments include annual biomass estimates. Pacific mackerel biomass estimates for 2011 show a decrease. Pacific sardine biomass estimates for 2011 show an increase.

Using commercial fishery landings as a proxy (as there are currently no biomass estimates or stock assessments for these species) there is evidence of an increase in availability of market squid. Jack mackerel decreased from the previous year. Northern anchovy landings were similar to those of the previous two years.

Based on the analysis of all of the prey species, the WSSCAP and the Department agreed that this point of concern was not met.

Other Points of Concern:

The remaining two points of concern (Table 1) consider any new information on the status of white seabass, and any errors in data or stock assessment which were found.

There is no new information on stock status and there were no significant errors found in the data.

Additional Information

The Department has used some basic social and economic information to characterize the commercial fishery and provided those summaries to the WSSCAP (Appendix A, Table 4). As a social information indicator, the number of commercial vessels landing white seabass has been tracked over time. In the past two seasons the number of vessels has increased significantly. This increase in the number of vessels occurred mostly in the hook-and-line fishery statewide. An economic information indicator of the most common ex-vessel price per pound has also been tracked over time. The ex-vessel price per pound has shown a steady increase over time and is presently at its highest at \$4.00 per pound for all gears combined. No similar social or economic data are available for the recreational fleet.

Information about the take of white seabass in Mexican waters was considered by the WSSCAP. California commercial fishermen are prohibited by Mexican law to fish in the territorial seas of Mexico, and no landings of white seabass from Mexico by California commercial fishermen were reported in 2010-2011. Recreational anglers may fish in Mexico under the authority of a Mexican sport fishing license. During the 2010-2011 season, Commercial Passenger Fishing Vessel log book data reported 134 white seabass taken in Mexico, similar to the 138 reported taken in the prior season. No additional information about either the recreational or commercial catch of white seabass in Mexico is available.

Appendix A – Data Analyses

Season	Recreational	Commercial	Total
2004/05	128,472	287,694	416,166
2005/06	199,083	391,301	590,384
2006/07	253,183	421,388	674,571
2007/08	150,988	653,264	804,252
2008/09	140,861	414,459	555,320
2009/10	195,602	482,660	678,262
2010/11	305,013	519,505	824,518

Source: California Recreational Fisheries Survey extracted from the RecFIN database at <http://www.recfm.org/forms/est2004.html>, and California Department of Fish and Game Commercial Fisheries Information System (includes commercial landing receipt and CPFV logbook data).

Season	Pounds Landed	Prior 5-season average	Percent change from previous 5-season average
2001/02	402,537	178,581	125
2002/03	483,410	246,967	96
2003/04	305,688	316,788	-4
2004/05	287,694	325,234	-12
2005/06	391,301	339,004	15
2006/07	421,388	374,126	13
2007/08	653,264	377,896	73
2008/09	414,459	411,867	1
2009/10	482,660	433,621	11
2010/11	519,505	472,614	10

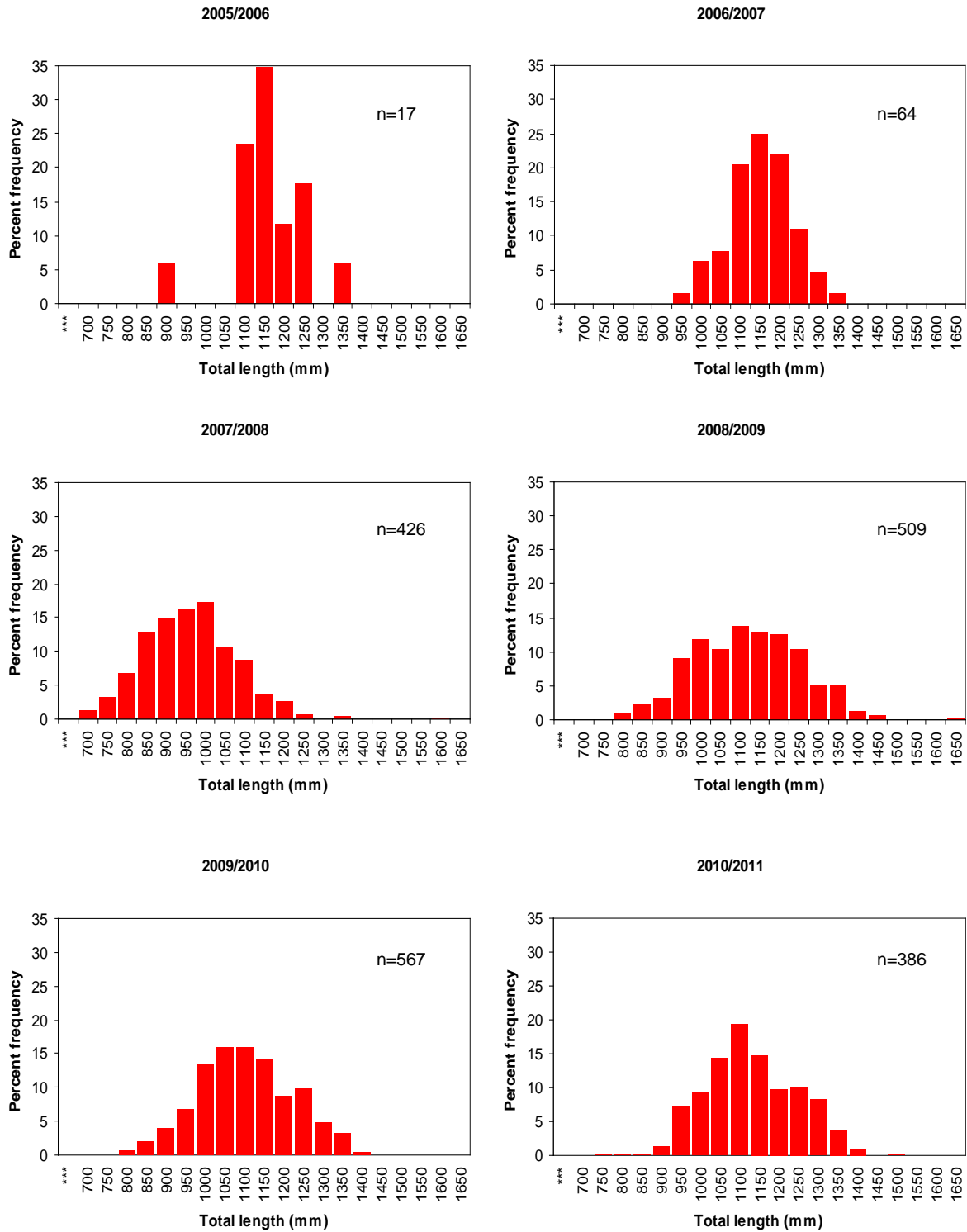
Source: California Department of Fish and Game Commercial Fisheries Information System (includes commercial landing receipt data).

Season	Total number of fish caught	Percent change in number of fish from prior season	Average weight in pounds	Percent change in weight from prior season
2004/05	8,179	NA	15.4	NA
2005/06	10,734	34	13.1	-15
2006/07	7,255	-34	18.5	41
2007/08	7,593	5	19.3	4
2008/09	6,799	-17	19.8	3
2009/10	8,788	29	24.3	23
2010/11	12,599	43	29.1	20

Source: California Recreational Fisheries Survey extracted from the RecFIN database at <http://www.recfm.org/forms/est2004.html>, and California Department of Fish and Game Commercial Fisheries Information System (includes Commercial Passenger Fishing Vessel logbook data).

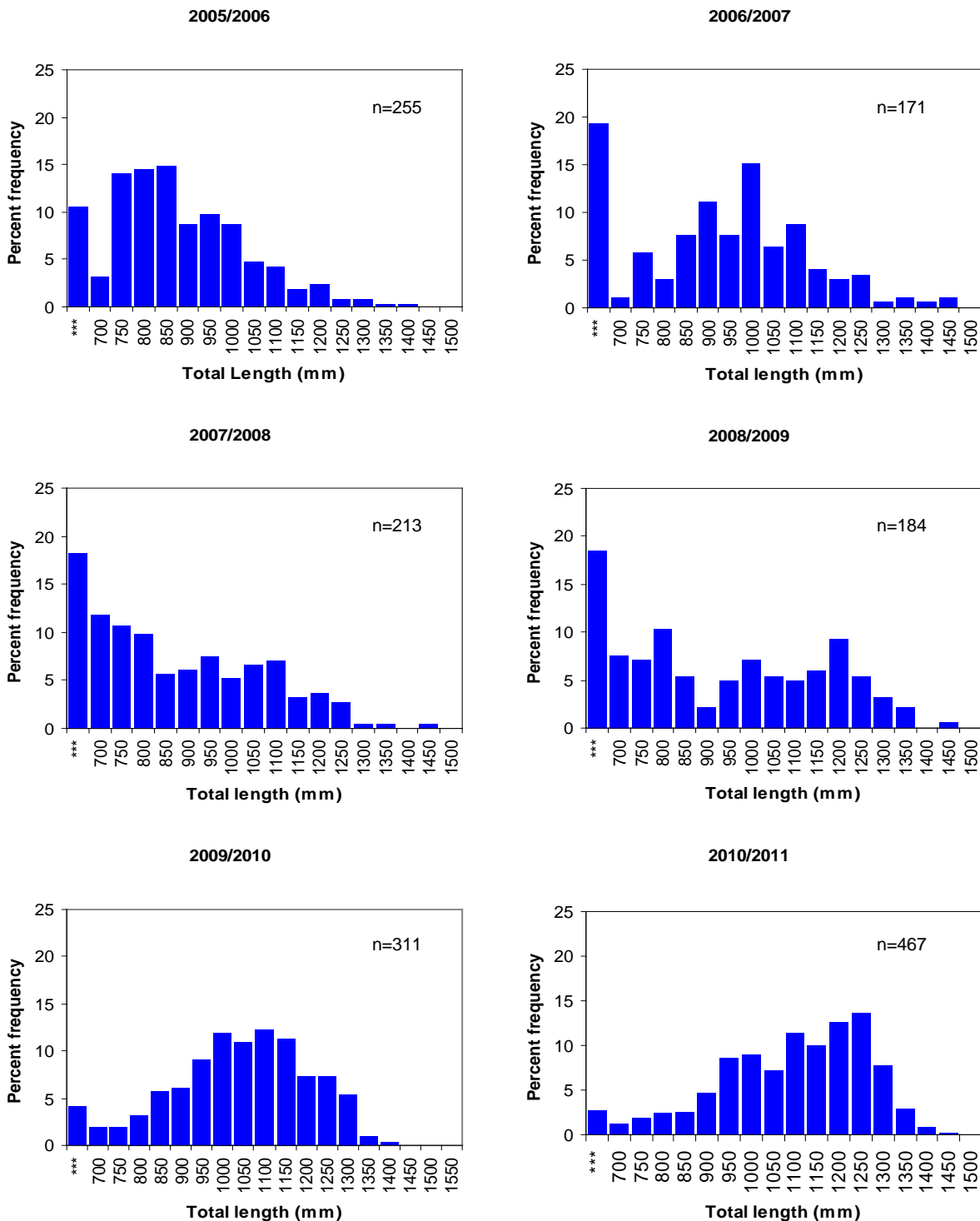
Season	Total number of vessels landing white seabass	Most common ex-vessel price per pound
2001/02	216	\$2.25
2002/03	157	\$2.50
2003/04	117	\$2.50
2004/05	77	\$2.50
2005/06	95	\$3.00
2006/07	97	\$3.00
2007/08	96	\$3.50
2008/09	93	\$3.50
2009/10	183	\$3.50
2010/11	254	\$4.00

Source: California Department of Fish and Game Commercial Fisheries Information System (includes commercial landing receipt).



***all sub-legal fish were grouped together
 Source: Department of Fish and Game Market Sampling Program

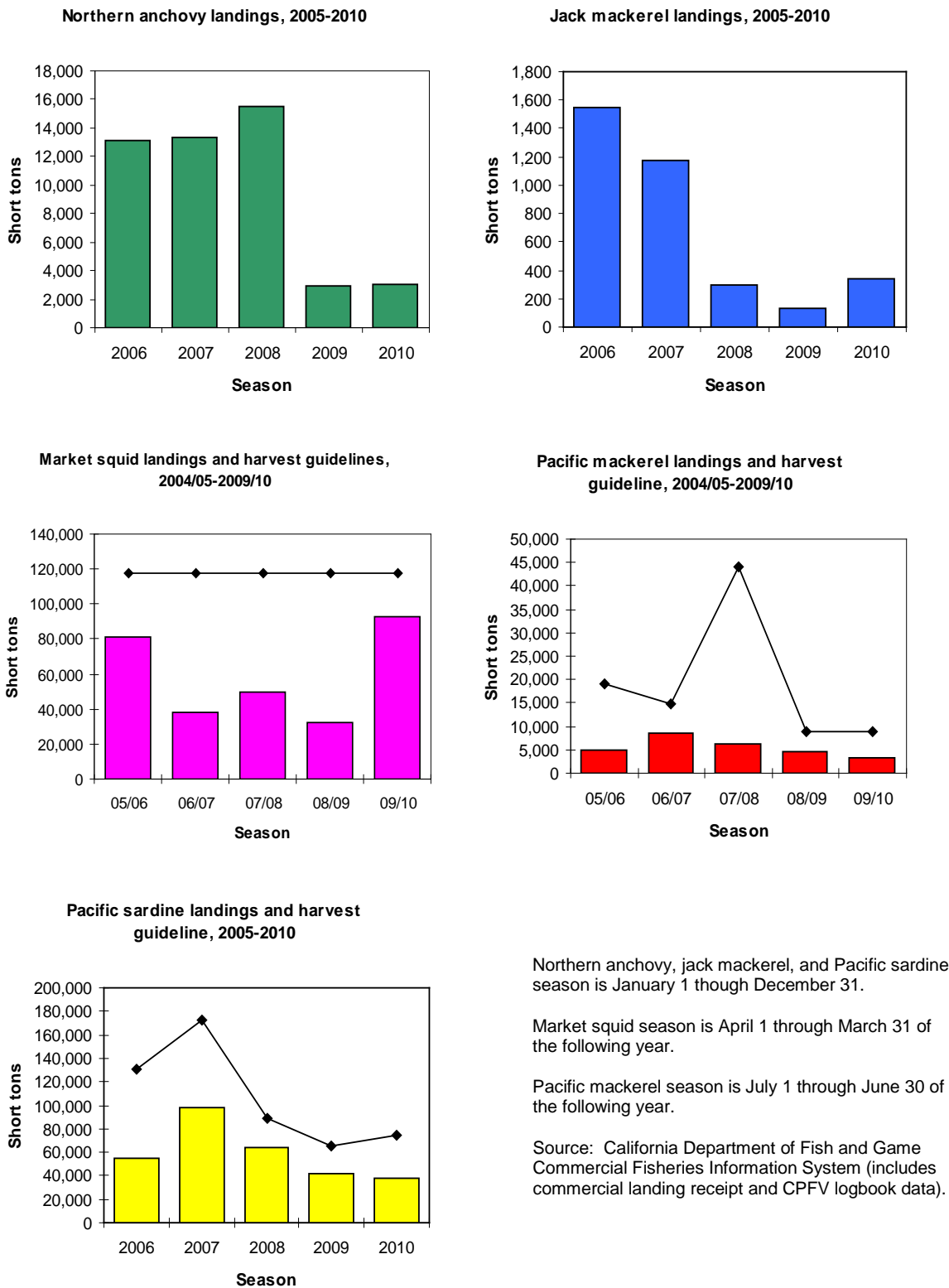
Figure 1. Commercial white seabass sampled length frequencies, 2005/06 – 2010/11.



***all sub-legal fish were grouped together

Source: Sampler examined landed catch data from California Recreational Fisheries Survey extracted from the RecFIN database at <http://www.recfm.org/forms/est2004.html>, and from Department surveys.

Figure 2. Recreational white seabass sampled length frequencies, 2005/06 – 2010/11.



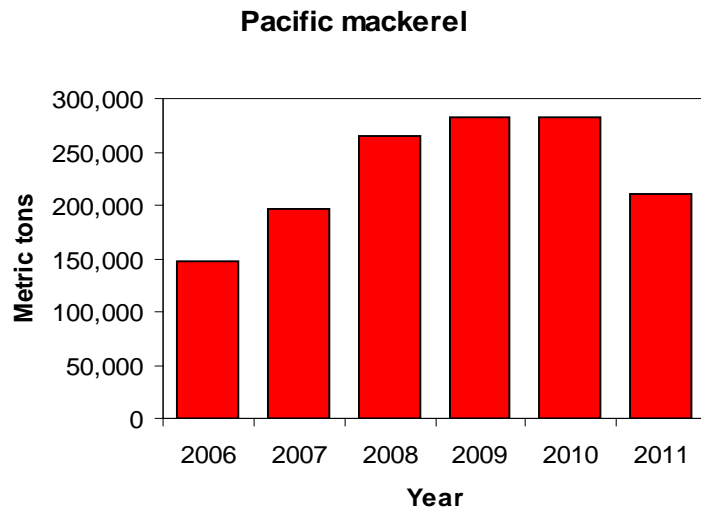
Northern anchovy, jack mackerel, and Pacific sardine season is January 1 through December 31.

Market squid season is April 1 through March 31 of the following year.

Pacific mackerel season is July 1 through June 30 of the following year.

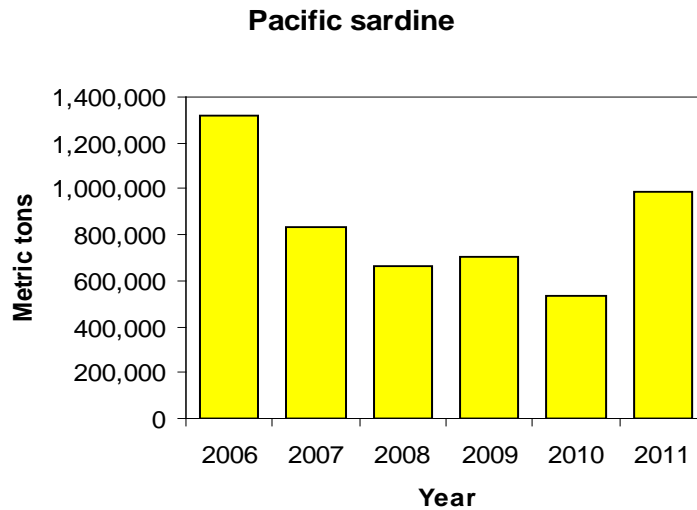
Source: California Department of Fish and Game Commercial Fisheries Information System (includes commercial landing receipt and CPFV logbook data).

Figure 3. Harvest guidelines and commercial catch of white seabass forage species.



Source: Source: Pacific Fishery Management Council. 2011 CPS SAFE document and PFMC proceedings.

Figure 4. Biomass estimates for Pacific mackerel in metric tons, 2006 – 2011.



Source: Source: Pacific Fishery Management Council. 2011 CPS SAFE document and PFMC proceedings.

Figure 5. Biomass estimates for Pacific sardine in metric tons, 2006 – 2011.