



Washington
Department of
**FISH and
WILDLIFE**

Summary Report of the 2009 Experimental Purse Seine Fishery For Pacific Sardine (*Sardinops sagax*)

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March 2010

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**WASHINGTON DEPARTMENT OF FISH AND WILDLIFE SUMMARY OF THE
2009 EXPERIMENTAL PURSE SEINE FISHERY FOR PACIFIC SARDINE
(*Sardinops sagax*)**

Management

Pacific sardines are managed under the Pacific Fishery Management Council's Coastal Pelagic Species (CPS) fishery management plan. Through the Pacific Council process, scientists develop and review an annual coastwide stock assessment incorporating data from federally sponsored surveys and state-managed fisheries. The Pacific Council's Scientific and Statistical Committee reviews that assessment and develops a recommendation for an annual coastwide harvest guideline for the Council. The Council considers all of the information presented through its advisory bodies and public comment and adopts a coastwide annual harvest guideline for the following year. The harvest guideline is allocated seasonally with releases on January 1st, July 1st, and September 15th (Table 1). In 2009, the overall coastwide harvest guideline was 66,932 metric tons (mt). Since the total 2009 allocation was down 25% compared to 2008 and down 56% compared to 2007, there was concern that Washington, Oregon, and California sardine fishermen would harvest the periodic allocations quickly and there would not be enough sardines to cover incidental catch of sardines in fisheries targeting other coastal pelagic species, such as squid and anchovy. To this end, small amounts of sardines were set aside during each period for incidental catch.

Table 1. Harvest Guideline Release for 2009 Allocation.

	Jan. 1 – June 30	July 1 – Sept. 14	Sept. 15 – Dec. 31	Total
Coastwide Total				66,932
EFP Set Aside				2,400
Incidental Set Aside	1,000	1,000	4,500	6,500
Directed Allocation	22,006	24,543	11,483	58,032

An additional 2,400 mt of sardines were also set aside for Experimental Fishery Permits (EFP). Twelve hundred metric tons were set aside for the Northwest Sardine Survey (NWSS), a group of Washington and Oregon sardine fishermen and industry representatives that banded together in 2008 to conduct aerial surveys to photograph and measure sardine biomass off the Washington and Oregon coast. Another 1,200 mt was set aside for the California Wetfish Producers Association EFP which worked with NWSS to accomplish the aerial surveys during the summer months.

In Washington, participation in the sardine fishery has been managed under Emerging Commercial Fishery provisions (WAC 220-88-010) since 2000, and the number of licenses has been limited since 2003. The Washington Department of Fish and Wildlife (WDFW) and sardine fishermen chose to limit participation in the Washington fishery largely due to the rapid expansion of the sardine fishery in the Pacific Northwest.

In August of 2009, Washington's sardine fishery moved from an emerging fishery into standard rules. Under standard rules, the sardine fishery will continue to be limited entry. Up to 18 licenses will be issued initially in 2010, but provisions are written into the Revised Code of Washington for the director to issue up to an additional 25 temporary permits. Since the sardine fishery no longer functions under the Emerging Commercial provisions, but is now a limited entry fishery functioning under standard rules, sardine licenses can be bought, sold, or traded with other fishermen. When the sardine fishery was under the Emerging Commercial Fishery provisions sardine permits were not allowed be sold or traded to others who were interested in participating in the sardine fishery.

Permits and Regulations

In 2009, sixteen fishers were eligible to receive a Washington Sardine Experimental Fishery Permit. The initial qualifying criteria for the experimental fishery permits included owning a 2008 sardine permit, having a minimum of 50% ownership in the vessel designated on the Washington coastal sardine permit, and renewal of the fishing license by April 1.

A full description of permit conditions and fishing regulations that applied in 2009 is contained in Appendix A.

Fishery Description

A total of 8,009 mt of sardines were landed in the directed fishery in Washington in 2009, distributed over 173 landings with 57% landed in the second period (July) and 43% in the third period (September; Figure 1). The average landing into Washington State was about 46 mt. All landings were made into Westport or Ilwaco with the majority of the catch (95%) occurring in waters adjacent to Washington. A total of 238 sets were made with 203 (85%) of them successful. The average catch per successful set was about 44 mt (Figure 2).

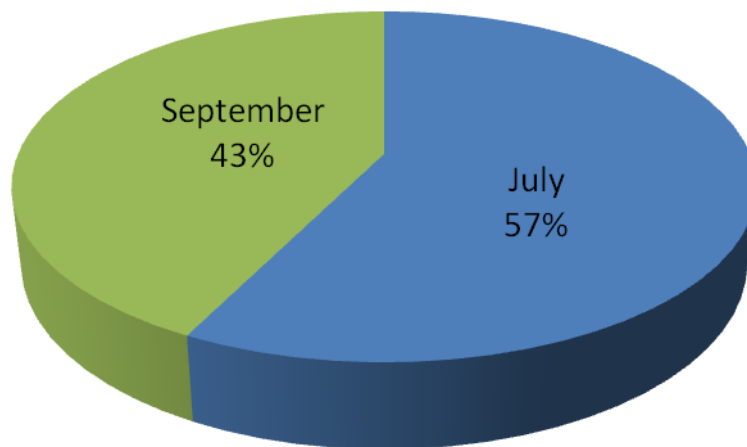


Figure 1. Washington sardine landings by month.

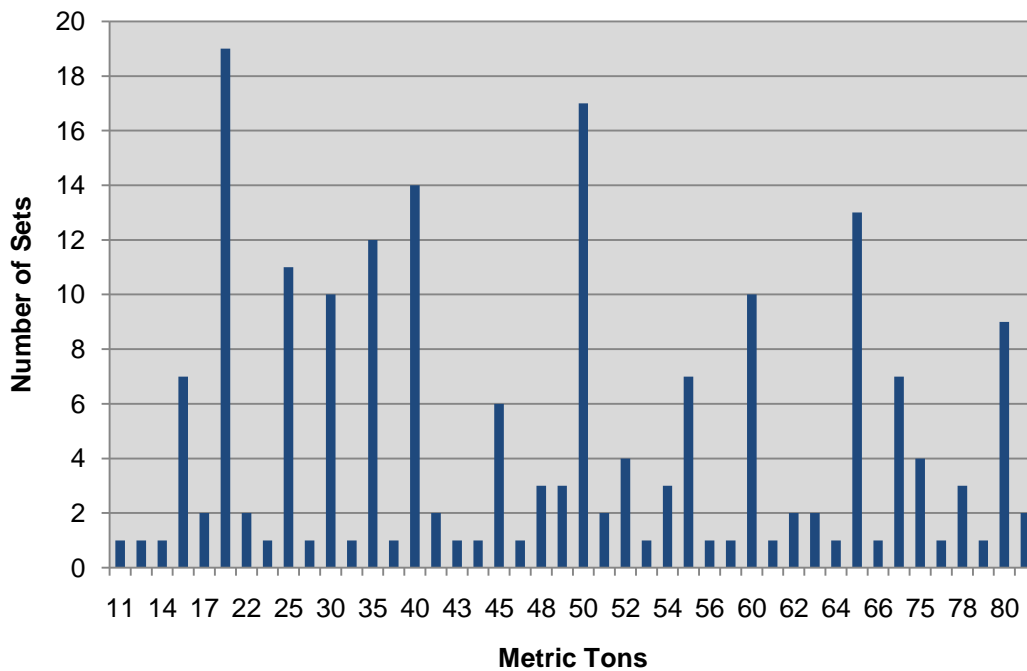


Figure 2. Amount of sardines produced per successful set.

By state regulation, Washington permit holders can begin landing sardine beginning April 1. However, due to the small quota in 2009 and its division across three fishing periods, Washington fishers were not able to begin fishing until July 1. Only six of the 16 permit holders participated in the July portion of the 2009 fishery. An additional two vessels joined the sardine fishery in September. The two fishermen who joined the fishery in September were not part of the original 16 permits issued in April. They were able to obtain a sardine license when the fishery moved from experimental to standard rules in late August.

Vessels fishing out of Ilwaco and Westport sometimes use spotter planes to locate sardines. In general, pilots receive about 10-15% of the landing revenue. Ex-vessel price per pound in the fishery averaged \$0.08 - \$0.11 across the season.

Logbooks

Logbooks continue to be required (Appendix B), which allows WDFW to collect data on the location of the sardine sets (Figure 3).

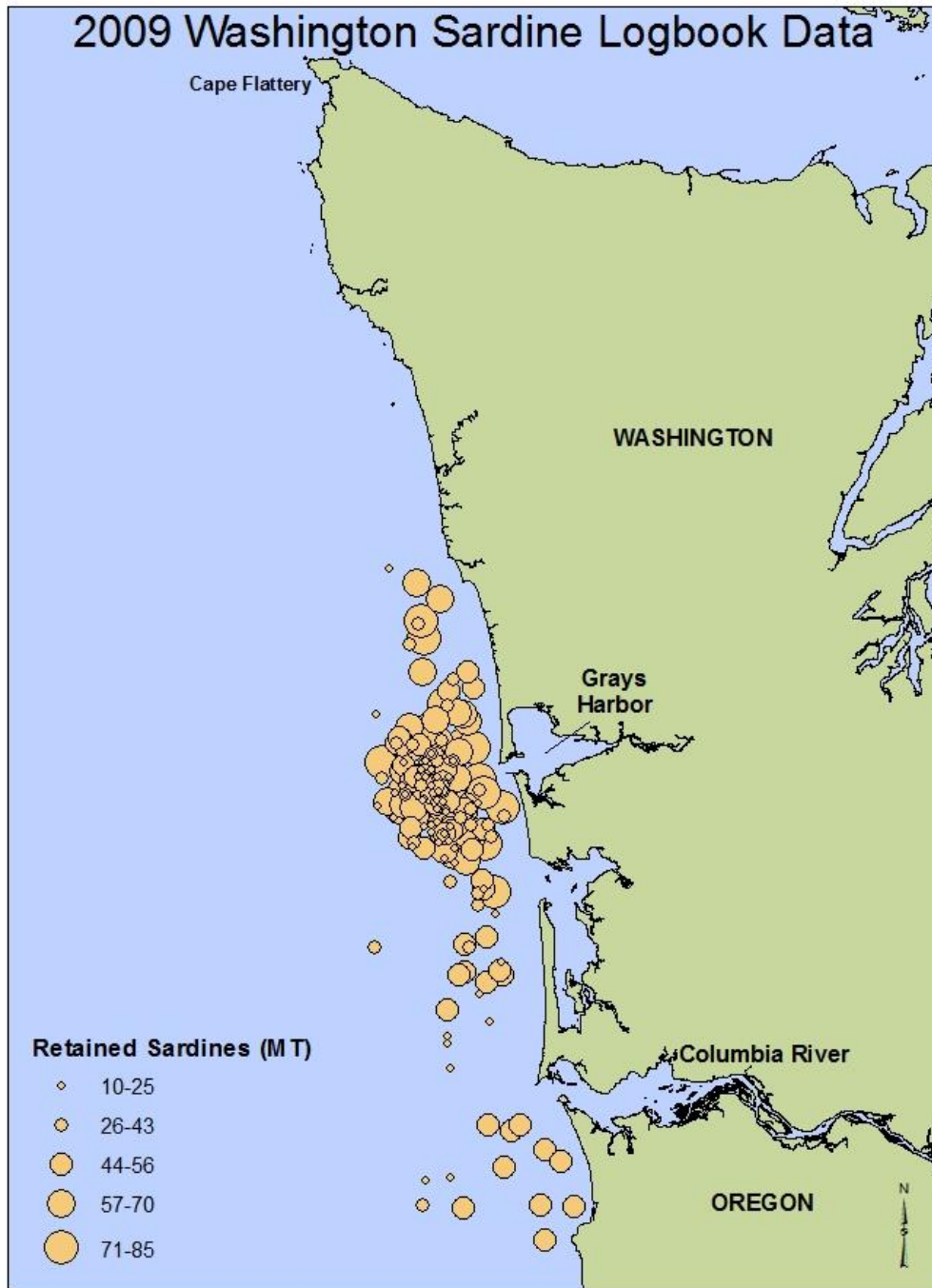


Figure 3. 2009 Washington sardine fishery set locations.

Biological Samples

WDFW staff coordinated the collection of biological samples with Oregon Department of Fish and Wildlife (ODFW) staff to ensure sample coverage was evenly distributed throughout the Northwest fishery. Each state (Washington, Oregon, and California) is asked to collect a minimum of one sample of twenty-five sardines per 1,000 mt landed. WDFW collected twelve biological samples of twenty-five sardines each (300 sardines total).

Both WDFW and ODFW staff extracted sardine otoliths, which measured about 1.5-3.0 mm in length. These otoliths were sent to the WDFW laboratory in Olympia, Washington, for age reading (Figure 4). Catch date, vessel name, sardine length, weight, sex, and maturity were recorded for each pair of otoliths.

Sex and maturity were determined by using the California Department of Fish and Game (CDFG) Standard Maturity Guide for Wetfish, which is based on Hjort, J. (1914) State of Sexual Organs.

Sexual maturity codes 1-4 were used for the sardine samples:

<u>Code</u>	<u>Description</u>
(1)	Virgin individuals.
(2)	Maturing virgins or recovering spent. Males intermediate; no milt present.
(3)	Yoked oocytes visible. Milt is present and oozing in males.
(4)	Hydrated oocytes present.

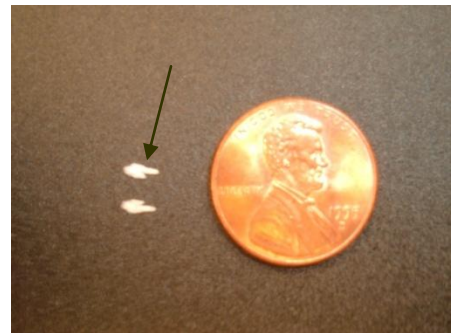
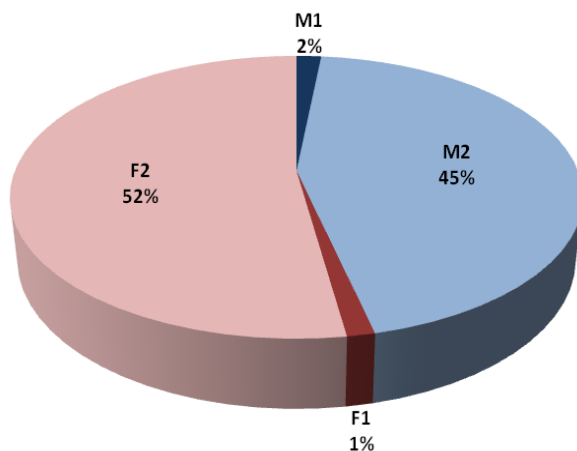


Figure 4. Sardine otoliths.

Most of the samples analyzed in 2009 were females (54%), with the highest subcategory overall being females with a sexual maturity of 2 (Figure 5). All sardines sample had a maturity level of one or two. Typically there is also a very small amount of



sardines with a maturity level of three although none were found in Washington's landings this year. A maturity level of four has never been found in Washington's sardine fishery.

Figure 5. Sex and maturity of 2009 sardine samples.

The standard length of sardines sampled ranged from 175 mm to 299 mm and weighed between 92 and 192 grams (Figure 6). In 2009, the average length of the samples remained constant over the season, however; sardines were only sampled during July and September.

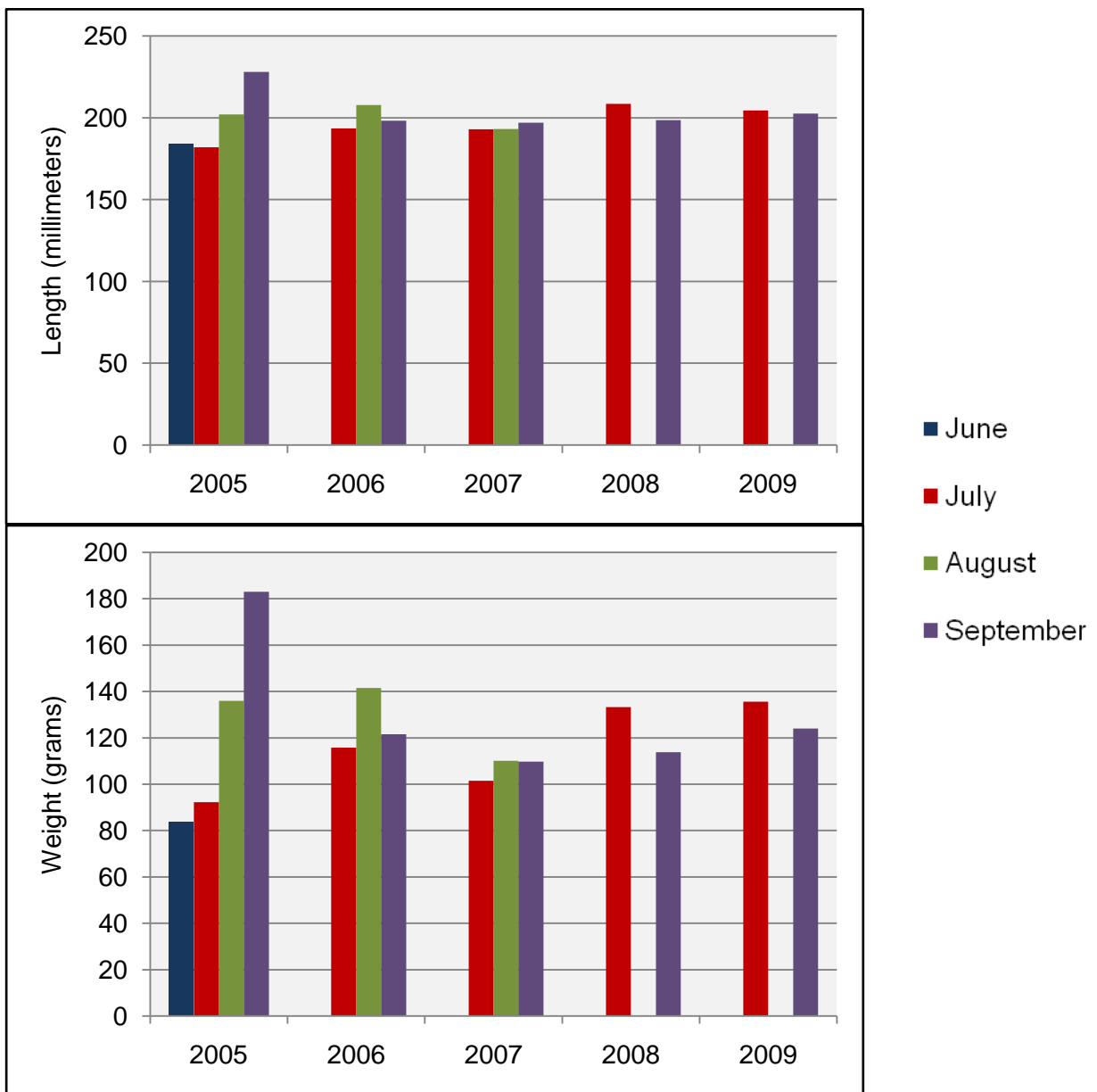


Figure 6. Average lengths and weights taken from sardine samples ,2005-2009.

Comparison of Past Data

During the last six years, the number of vessels participating in Washington’s sardine fishery has fluctuated. In 2004, 14 vessels participated in the fishery harvesting almost 9,000 mt. In 2009, eight vessels participated in the fishery and harvested 8,009 mt (Table 2).

Table 2. Comparison Summary of Washington Sardine Fisheries, 2004-2009.

	2009	2008	2007	2006	2005	2004
Landings (mt)	8,009	6,432	4,663	4,362	6,714	8,911
# Landings	173	150	106	108	207	236
# Vessels	8	5	6	7	11	14

In past years, sardine landings were distributed throughout June, July, August, September, and occasionally October and November. However, since the quota became considerably smaller in 2008 and 2009 sardine landings were limited to July and September. In 2005-2007, the majority of sardines were landed in September but in 2008 and 2009, the majority of sardines were landed in July (Figure 7).

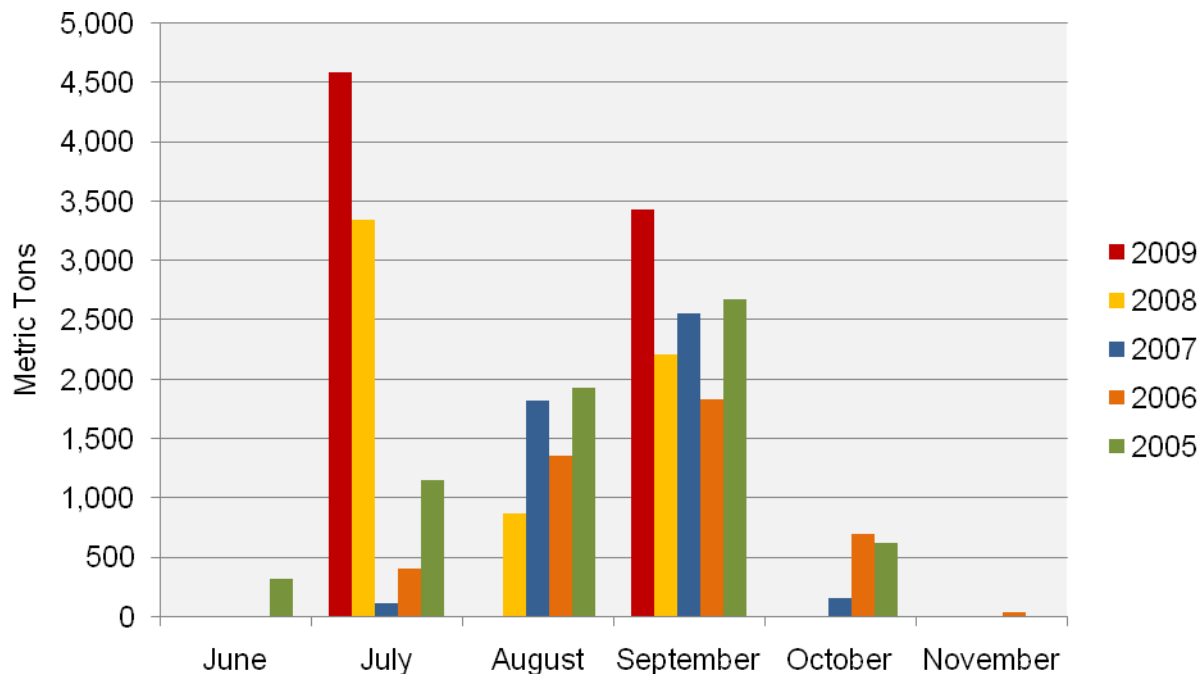


Figure 7. Washington sardine landings by month, 2005-2009.

Summary of WDFW Activities

WDFW staff conducted port sampling, data recording, biological analyses, and weekly landing estimates. WDFW posted weekly estimates on the agency website (<http://wdfw.wa.gov/fish/commercial/sardine>). These were distributed to National Marine Fisheries Service, state agencies, and industry members to track attainment of the harvest guideline in-season. Staff monitored sardine offloads at processing plants for incidental catch data, weighed sub-samples of the sardine catch, and collected logbooks to determine harvest distribution, CPUE, and unobserved bycatch information. Additional staff time was spent extracting otoliths, measuring, weighing, and determining sex and maturity of samples, age-reading and summarizing observer and logbook information.

Appendix A.

2009 WASHINGTON EXPERIMENTAL SARDINE FISHERY PERMIT CONDITIONS

Permits

1. Participants are required to renew their Emerging Commercial Fisheries License (\$185 for residents; \$295 for non-residents) and Experimental Sardine Fishery Permit by April 1, 2009.
2. Permit holder is required to have at least fifty percent ownership in the vessel designated on the emerging license.
3. Permits are non-transferable and must be carried on the fishing vessel during harvest and sale of catch.
4. Permit holder must designate a vessel on the permit a minimum of 48 hours prior to the first sardine fishing trip of each year; vessel designation can be changed provided the vessel has not participated in the current season.
5. A vessel cannot be designated on more than one permit.
6. The permit is subject to revocation by the Director for failure to abide by the conditions of the permit, violation of other fishing regulations, or other valid reason.

Season

7. Permits would be valid during the time period of April 1, 2009 through December 31, 2009

Observer Coverage

8. WDFW retains the right to require certified observers to be onboard for the duration of any trip on which sardines are harvested, and the Director has the discretion to recover costs for observer coverage.

Data Collection

9. Agency employees will be granted full access to the catch and be allowed to gather biological data as needed. Up to 500 sardine per day may be retained by WDFW for biological information.
10. Logbooks are required and will be provided by WDFW. Completed logs must be submitted to the Department by the 15th day following the end of each month in which fishing activity occurred. Logs must be submitted to:

Washington Department of Fish and Wildlife
Attn: Carol Henry
48 Devonshire Road
Montesano, WA 98563

Gear

11. The fishery is open to purse seine gear only, and gear specifications will be detailed to ensure that the net meets a purse seine definition.
12. Legal purse seine gear must be onboard the vessel making the landing.

Species

13. Participants may retain and sell sardine and incidental catches of mackerel, market squid, and anchovy. All other species must be released immediately and care taken to minimize damage to prohibited species.
14. No salmon may be landed on the boat's deck but must be released or dip netted directly from the net before the completion of each set.
15. Consistent with standards in the offshore whiting fishery, a mortality greater than 1 chinook per 20 mt of Pacific sardine would be sufficient to rescind a permit or close the experimental fishery.

Fishing Area

16. The fishery would be restricted from the area inside 3 miles to minimize bycatch, conserve forage fish, and reduce conflicts with the existing baitfish fishery.

Landings

17. All sardine landings made under the authority of this permit into Washington must comply with existing state and federal regulations and requirements.
18. The transfer of catch from one vessel to another vessel is prohibited.
19. All landings must be made to a shoreside processing facility.
20. Not more than 15% of cumulative sardine landings (across the season) can be delivered or processed for the purposes of conversion into fish flour, fish meal, fish scrap, fertilizer, fish oil, other fishery products, or byproducts for purposes other than human consumption or fishing bait. Once a delivery has commenced at a processing plant, all fish onboard the vessel must be offloaded at that plant.

