



Washington
Department of
FISH and
WILDLIFE

Summary Report of the 2008 Experimental Purse Seine Fishery for Pacific Sardine (*Sardinops sagax*)

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**WASHINGTON DEPARTMENT OF FISH AND WILDLIFE (WDFW)
SUMMARY OF THE 2008 EXPERIMENTAL PURSE SEINE FISHERY
FOR PACIFIC SARDINE (*Sardinops sagax*)**

Management

Pacific sardines (or pilchards) 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 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 2008, the overall coastwide harvest guideline was 89,093 mt. Since the total 2008 allocation was down 41% 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, a small amount of sardines were set aside during each period for incidental catch. In 2008, each period consisted of the adjusted allocation (directed sardine catch) and a set aside (sardine catch in other fisheries).

Table 1. Harvest Guideline Release for 2008 Allocation.

	Jan. 1-June 30 35%	July 1-Sept. 14 40%	Sept. 15-Dec. 31 25%	Total
Allocation (mt)	31,183	35,637	22,273	89,093
Set Aside (mt)	4,633	1,069	3,207	8,909
Adjusted Allocation (mt)	26,550	34,568	19,066	80,184

In Washington, participation in the sardine fishery has been managed under the Emerging Commercial Fishery provisions (WAC 220-88-010) since 2000, and the number of licenses has been limited since 2003. WDFW decided to limit participation in the Washington fishery largely due to the rapid expansion of the sardine fishery in the Pacific Northwest. Oregon began the Northwest fishery in 1999, yielding 771 mt in sardine landings. Landings in the Northwest then increased to 37,923 mt in 2002 and 36,862 mt in 2003. In 2007, Northwest landings reached 46,715 mt.

Permits and Regulations

In 2008, sixteen fishers were eligible to receive a Washington sardine experimental fishery permit. The initial qualifying criteria for the experimental fishery permits included owning a 2007 sardine permit, a minimum of 50% ownership in the vessel designated on a Washington coastal pilchard permit, and renewal of their fishing license by April 1.

A full description of permit conditions and fishing regulations that applied in 2008 is contained in Appendix A.

Fishery Description

A total of 6,432 mt of sardines were landed into Washington in 2008, distributed over 150 landings with 65.6% landed in the second period and 34.4% in the third period. Fifty two percent of the landings occurred in July, 14% in August and 34% occurred in September (Figure 1). The average landing into Washington State was about 43 mt. All landings were made into Westport or Ilwaco with the majority of the catch (76%) occurring in waters adjacent to Washington. A total of 191 sets were made with 174 (91%) of them successful. The average catch per successful set was about 36 mt (Figure 2).

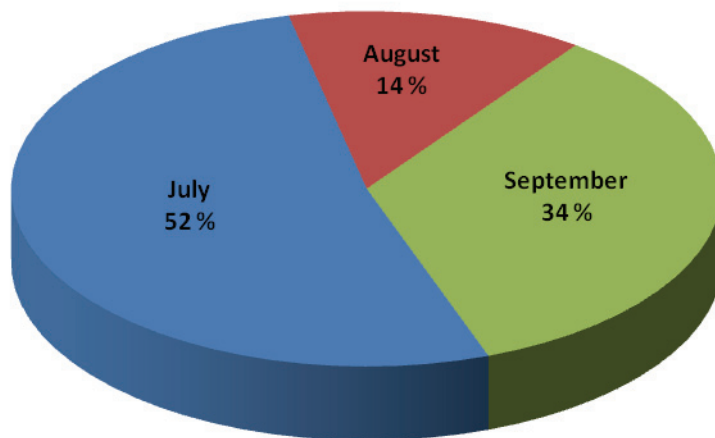


Figure 1. Washington sardine landings by month.

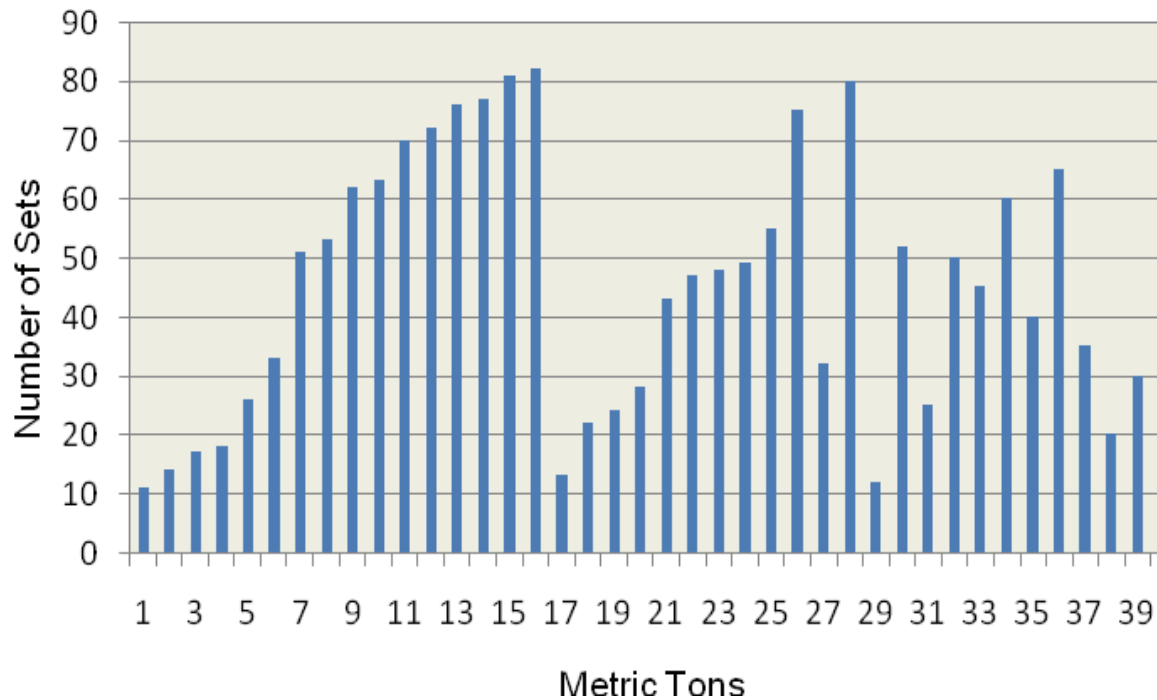


Figure 2. Amount of sardines produced per successful set.

The fishery typically opens on April 1; however, due to the small quota in 2008 and the quota being divided into three periods the fishery opened on July 1. In past years, the first landing into Washington was usually around late June or early July. Only 5 of the 16 permit holders participated in the 2008 fishery. Three of the permit holders—one from Ilwaco and two from Westport—accounted for 73% of the total landings.

Vessels fishing out of Ilwaco and Westport sometimes use spotter planes. In general, pilots receive about 10-15% of the landing revenue. Ex-vessel price per pound in the fishery averaged \$0.08 - \$0.10 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).

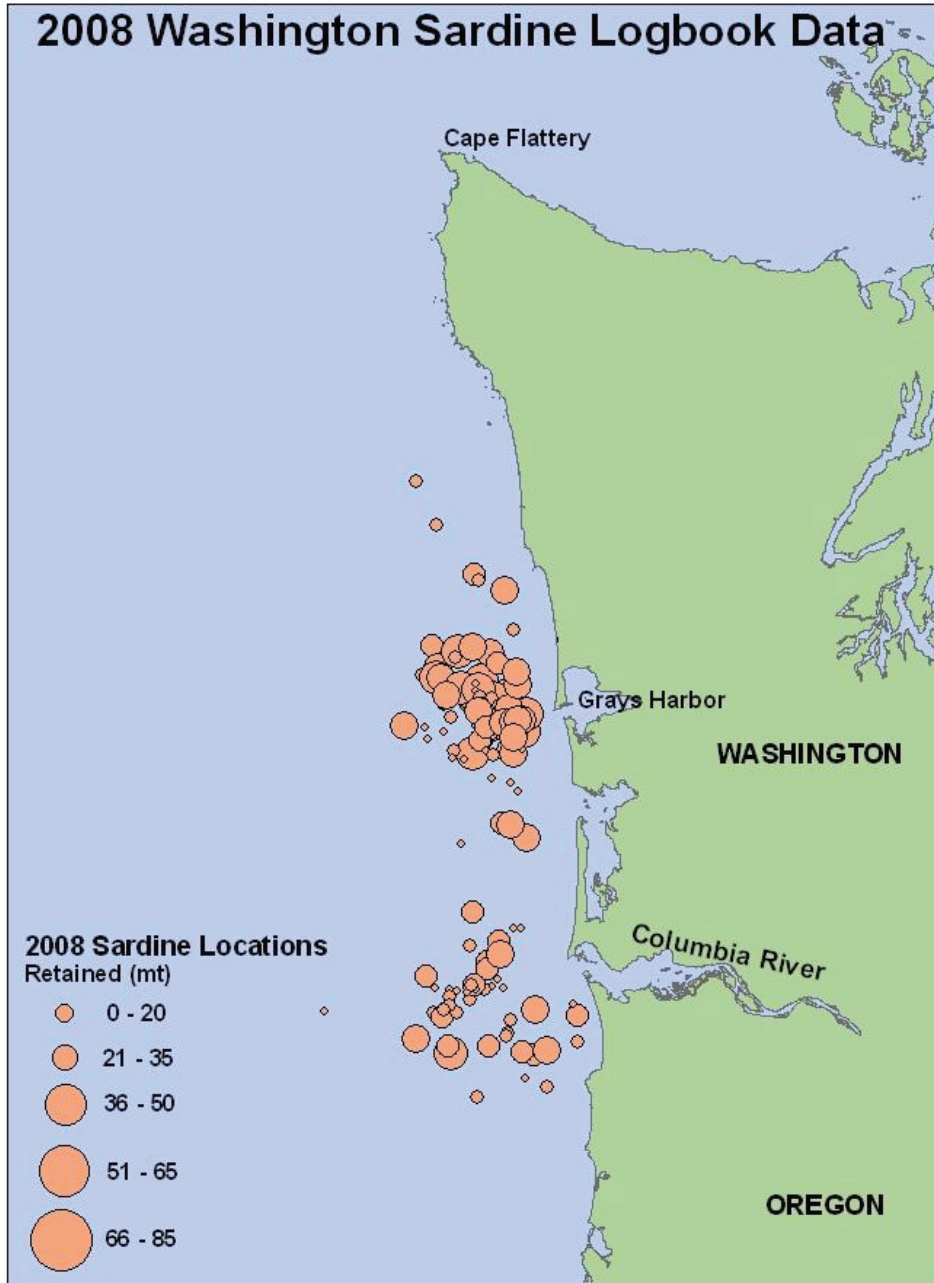


Figure 3. 2008 Washington sardine fishery set locations.

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 of the 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.

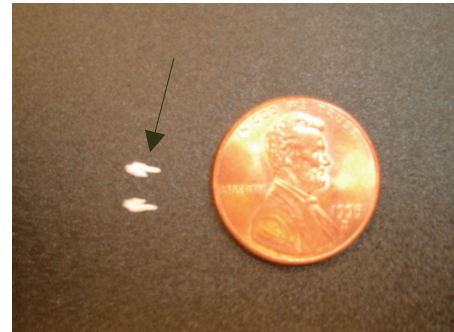


Figure 4. Sardine otoliths.

Most of the samples analyzed in 2008 were females (52%), with the highest subcategory overall being females with a sexual maturity of 2 (Figure 5). There was one female with a sexual maturity of 1, four with a sexual maturity of 3 and none with code 4. All of the males sampled were maturity code 2.

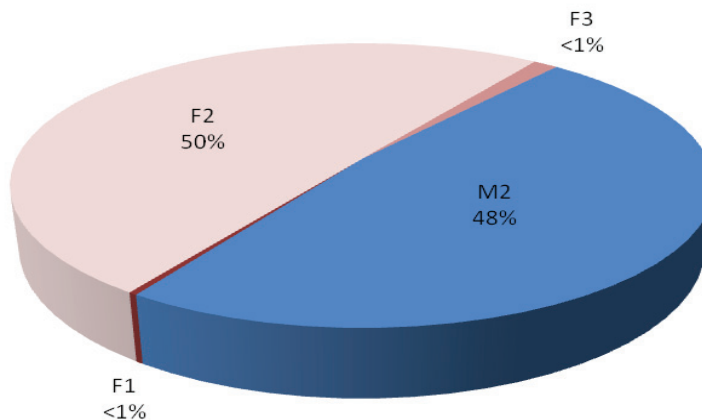


Figure 5. Sex and maturity of sardine samples.

The standard length of the sardine samples ranged from 175 mm to 240 mm and weighed between 85 and 190 grams (Figure 6). In 2008, the average weight of the samples remained fairly constant over the season, however; sardines were only sampled during July and September.

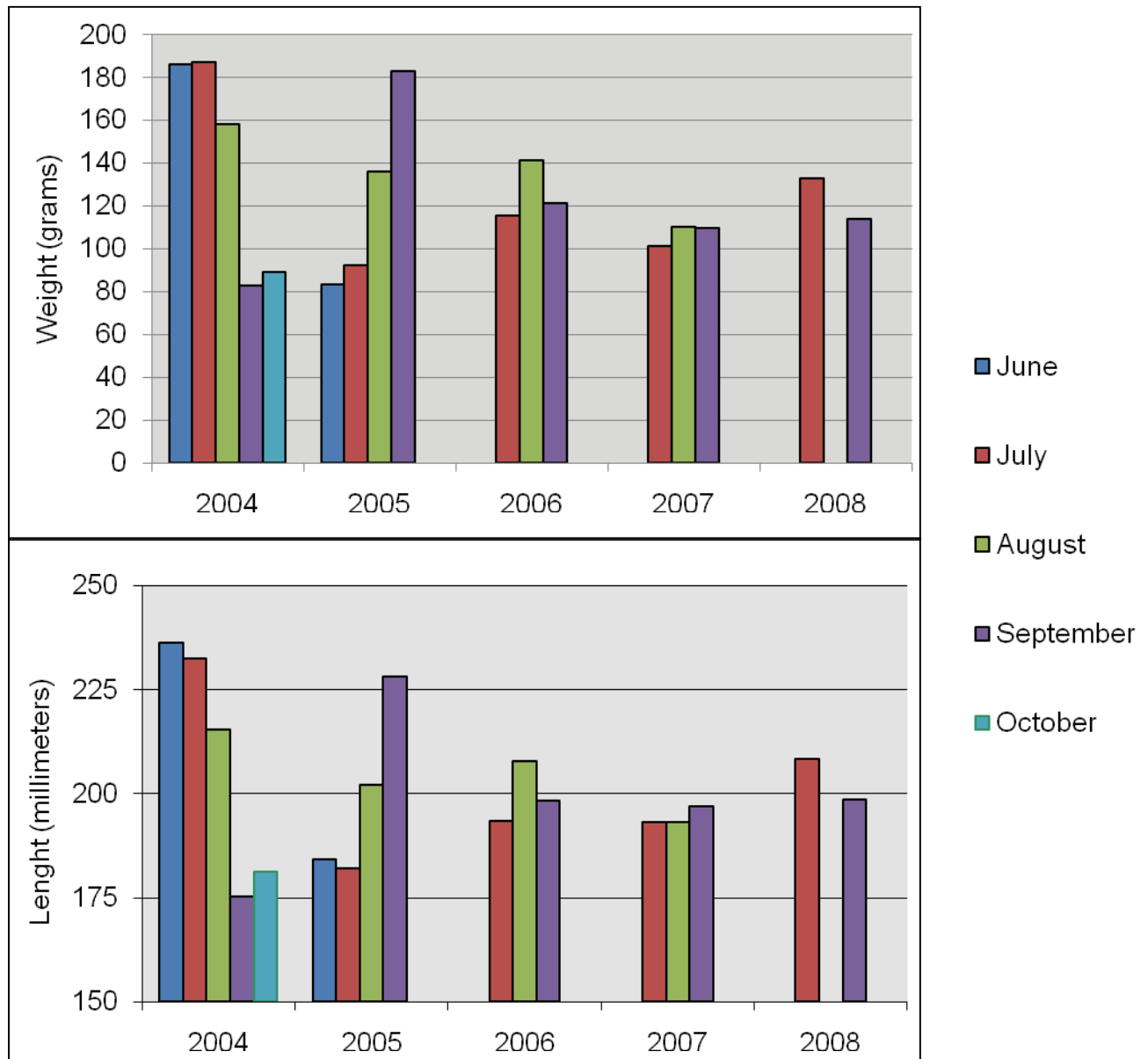


Figure 6. Average lengths and weights taken from sardine samples ,2004-2008.

Comparison of Past Data

During the eight years in which the sardine fishery has been active, the number of vessels participating has fluctuated. The fishery started with 3 vessels in 2000, peaked at 19 in 2002, and has consistently declined since 2004 (Table 2).

Table 2. Comparison Summary of Washington Sardine Fisheries, 2000-2008.

	2008	2007	2006	2005	2004	2003	2002	2001	2000
Landings (mt)	6432.1	4662.6	4,362.3	6,714	8,911	11,920	15,820	11,121	4,842
# Landings	150	106	108	207	236	288	424	299	153
# Vessels	5	6	7	11	14	10	19	13	3

Sardine landings into Washington started out at 4,791 mt in 2000 and peaked in 2002 at 15,212 mt. The majority of sardines are typically landed during the months of July, August, and September (Figure 7).

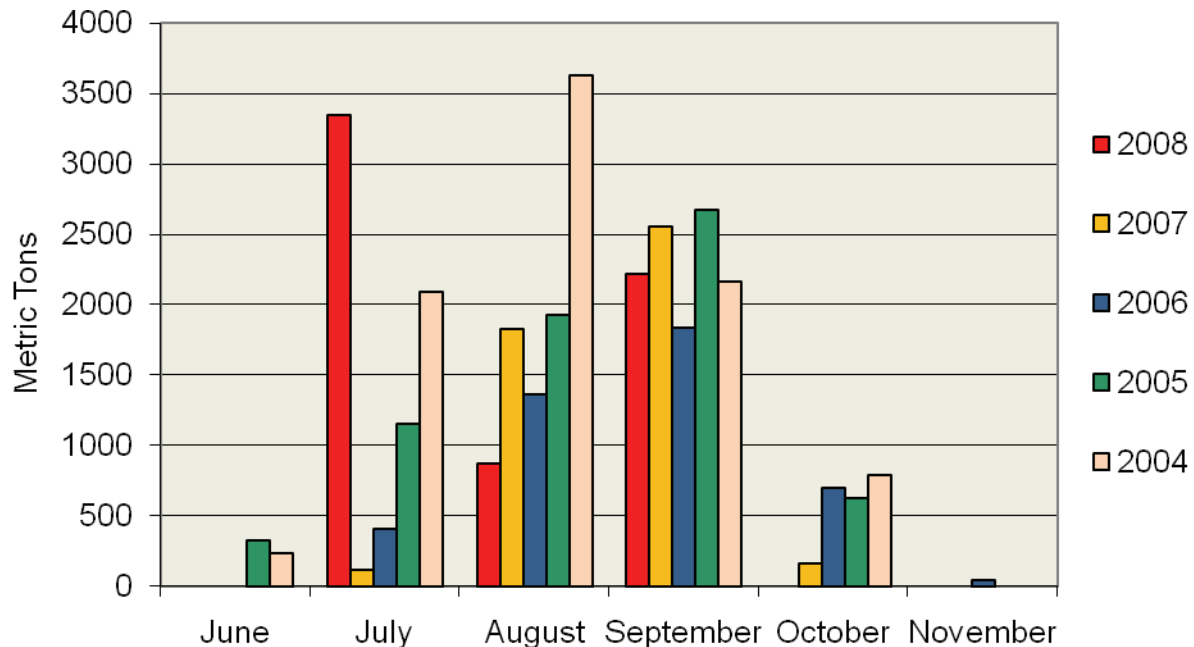


Figure 7. Washington sardine landings by month, 2004-2008.

Summary of WDFW Activities

WDFW staff administered port sampling, data recording, and biological analyses. Staff also produced weekly landing estimates which were posted on the agency website (<http://wdfw.wa.gov/fish/commercial/sardine>) and distributed to National Marine Fisheries, 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.

2008 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, 2008.
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, 2008 through December 31, 2008

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.

