

Economic Data Collection Program
First Receiver and Shorebased Processor Report
Draft Report for PFMC Review

Do Not Cite

Northwest Fisheries Science Center¹

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Summary

This report summarizes information collected from West Coast groundfish first receivers and shorebased processors as a part of the Economic Data Collection (EDC) program, which was enacted to monitor the economic effects of the 2011 transition of the West Coast groundfish trawl fishery to a catch share program. The catch share program consists of cooperative programs for the at-sea mothership and catcher-processor fleets, and an individual fishing quota (IFQ) program for the shorebased trawl fleet. Annual EDC submissions are required from all companies with first receiver site licenses and companies that buy headed and gutted IFQ groundfish from first receivers. This report, and its companion reports covering the other sectors, is the first in what is expected to be an annual series of reports. The scope and methods used are expected to be expanded and refined with each annual publication.

This report covers the years 2009 to 2011. It contains information from first receivers and shorebased processors about annual processing operations, number of employees and payroll, and facility characteristics. The weight and costs of fish purchases by species, and weight and revenue for product production are provided. The report also contains variable and fixed cost information, production, revenues, and calculated net revenue. Finally, a breakdown of costs, revenue, and net revenue per pound of production, and per pound of fish purchased provide basic metrics of the economic performance of first receivers and shorebased processors.

1 Introduction

1.1 Background

In January 2011, the West Coast groundfish trawl fishery transitioned to a catch share program. The catch share program consists of an individual fishing quota (IFQ) program for the shorebased trawl fleet, and cooperative programs for the at-sea mothership and catcher-processor fleets. The Economic Data Collection (EDC) Program¹ was implemented as part of these new regulations to monitor the economic effects of the catch share program. Annual economic data submissions are required from all fishery participants: catcher vessels, motherships, catcher-processors, and first receivers and shorebased processors §50 CFR 660.114. Baseline, pre-catch share data, was submitted in 2011 for the 2009 and 2010 operating years. Data for the first year the fishery operated under catch shares (2011), was submitted in 2012.

This draft report summarizes the 2009-11 EDC first receiver and shorebased processor survey data. The EDC Program has enhanced the quantity and quality of economic information available for analysis and the management of the West Coast groundfish trawl fishery. While cost earnings data are available for some of the catcher vessels in the groundfish fishery from voluntary cost and earnings surveys², this is the first economic data collection from first receivers and shorebased processors. In addition to the first receiver and shorebased processor report, there are four companion reports:

- Economic Data Collection Program, Administration and Operations Report, Draft Report for the SSC Economic Subcommittee Review (March 2013)
- Economic Data Collection Program, Catcher-Processor Report, Draft Report for the SSC Economic Subcommittee Review (March 2013)
- Economic Data Collection Program, Catcher Vessel Report, Draft Report for the SSC Economic Subcommittee Review (March 2013)
- Economic Data Collection Program, Mothership Report, Draft Report for the SSC Economic Subcommittee Review (March 2013)

¹Additional information on the EDC Program, including the EDC data collection forms can be found at www.nwfsc.noaa.gov/edc

²Lian, C.E. 2010. West Coast limited entry groundfish trawl cost earnings survey protocols and results for 2004. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-NWFSC-107, 35 p.

The Administration and Operations report describes the EDC Program administration and fielding of the surveys, the EDC forms, data QA/QC and data processing, and safeguarding confidential information. The other EDC reports provide basic data summaries for the catcher vessel, catcher-processor, and first receiver and shorebased processor forms.

This first receiver and shorebased processor report and other reports, listed above, comprise the first of what is expected to be an annual series of reports. It is envisioned that over time the scope of these reports will expand, and the methods used will be refined with each annual publication. As such, the data summaries and analyses may change in subsequent years as improvements are implemented. In general, the report provides summaries as sector totals or means. Future reports will contain additional summaries that describe the variation of the data, either numerically or graphically. They are not contained in this report due to time constraints.

1.2 Purpose of the report

This report, as well as the other three EDC data summary reports have multiple objectives. The first is to provide basic economic data summaries that can be used for a variety of purposes associated with fishery management. Since much of the data collected are confidential under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 2007, the data are summarized as averages or totals for each question on the EDC forms. Thus summarized, the reports make the data available to the public for both research and informational purposes.

Second, the data summary reports provide information about the performance of the catch share program. This includes information that can be used to monitor whether and to what degree the goals of the program are being met. It is expected that additional modeling and analysis will be included in each subsequent year that will provide more detailed information about the performance of the program. These reports will serve as the basis for the 5-year review of the catch share program that is mandated in the MSA, as well as the NMFS National Catch Shares Performance Indicators. Currently, with just a single year of catch share EDC data, it may be difficult to draw firm conclusions about the performance of the program. In addition, the catch share program may have a transitional period in the first few year as participants learn about the system and develop new business strategies.

Third, the reports either provide or serve as the basis for economic models that will be used as part of the Pacific Fishery Management Council's (PFMC) biennial specification process for groundfish management. These models include the IO-PAC model, as well as estimates of revenue, costs, and net revenue.

Lastly, and perhaps most importantly, the data reports are expected to provide a useful catalyst for feedback on the data collected and its analysis.

1.3 First receiver and shorebased processor form administration

Completion of EDC forms is mandatory for participants in the catch share program. The regulations for defining who is required to complete an EDC form differs between the baseline data collection (2009 and 2010) and all annual/ongoing data collections for 2011 onward. Under 50 CFR part 660 and section 402(a) of the Magnuson-Stevens Act (16 U.S.C. 1801, et seq.) all owners and lessees a of shorebased processor and all buyers that receive groundfish or whiting harvested with a limited entry trawl permit as listed in the Pacific States Marine Fisheries Commission's state fish ticket database were required to submit an Economic Data Collection (EDC) Form in 2009 and 2010. Beginning in 2011, a first receiver site licenses was required to land catch share harvested fish. The regulation require all owners of a first receiver site license in 2011 and beyond, and all owners and lessees of a shorebased processor (as defined under "processor" at 660.11, for purposes of EDC) that received round or headed-and-gutted IFQ species groundfish or whiting from a first receiver in 2011 and beyond to submit an EDC form for that year. Owners of multiple facilities are required to submit a form for each processing facility. A first receiver site license application will not be considered complete until the required EDC for that license owner associated with that license is submitted.

A calendar year is used to determine which vessels meet the criteria. For example, in 2012 data were collected from all owners of a first receiver site license in 2011. The forms are fielded on this schedule in order to allow participants the time necessary to complete their taxes, which may contain some information that is required on the EDC forms.

If a form has missing information, or the information provided on the form is believed to be incorrect, EDC Program staff attempt to contact the participant to correct the information. On occasion the participant cannot be reached or the participant cannot provide the missing information. In these cases, the missing or inaccurate data are treated on a case by case basis during analysis as documented in the Administration and Operations report. Data are validated and verified with external data sources whenever possible. These data sources include the Permit Office and state fish tickets.

1.4 About the survey participants

First receiver and shorebased processor operations range from independent catcher vessel owners who unload and truck their own fish, to large multi-facility processing companies with a wide range of product offerings. Many respondents who provide information do not own a physical processing facility and thus do not incur many of the costs on the form. Thus, the summary statistics often are calculated with a large number of zeroes, as can be seen in the comparison of means to medians for many of the variables.

1.5 Understanding the report

Not all business entities with a first receiver license process fish, and much of the survey does not correspond to this type of operation. On 2009 and 2010 forms, a company was permitted to leave most of the survey blank if they did not process any groundfish or whiting. This was changed on the 2011 form and all participants are required to answer all questions. Thus, the data available for this report are from first receivers and shorebased processors who processed in 2009 and 2010, and for all first receivers and shorebased processors in 2011. Based on the information provided on production activities, Table 1.1 shows the number of active processors who provided data used to populate the tables in this report. In 2009 and 2010, this number is the total number used to calculate the mean and median, as indicated in the N headers of the columns in the report. In 2011, the EDC Program received forms from first receivers or shorebased processors that did not report any processing activity, however the total number of companies, regardless of whether they processed fish is used to calculate summary statistics.

Owners of multiple facilities are required to submit a form for each processing facility. For the ease of analysis and to protect confidentiality, businesses that reported for multiple facilities are considered a single "entity". For questions not applicable to a company's particular business operation, the participant is instructed on the form to fill in "Not Applicable" or "NA", which for the purposes of calculating averages and medians in this report are converted to 0. If a particular category had only "NA" responses for all participants, a "—" symbol is used. The "—" symbol also represents cases where the information was not requested on the form for that survey year. In 2009 and 2010 only values from businesses with processing activity are reported in the report, from 2011 onward the values for average and median in every case will reflect the number of businesses who submitted forms. Thus, comparison pre and post baseline is difficult, as the population providing responses has changed along with the new IFQ program regulations.

All data submitted via the EDC Program are confidential under 402(b) of the Magnuson-Stevens Act (16 U.S.C. 1801, et seq.) and under NOAA Administrative Order 216-100. In order to protect these data, a rule of three and a rule of 90-10 are implemented. The rule of three requires a response from at least three companies in order to show a summary statistic. The 90-10 rule requires that no single company's value should comprise over 90 percent of the value of the value displayed. The tables show a '***' for data points where there were less than three companies reporting the information, and/or if one company's responses accounted for greater than 90 percent of the average value. Zeroes are shown if all companies reported zeroes. More information about how confidential data are protected in the EDC Program can be found in the Administration and Operations report.

Table 1.1: Number of companies that reported processing activity and number of companies that submitted EDC forms, number of forms that are complete, forms that were submitted, and total forms owed survey year.

Status	2009	2010	2011
Companies that processed fish	23	25	26
Companies that submitted forms	29	37	35
Complete forms	37	45	48
Submitted forms	37	45	50
Total forms owed	55	58	52

2 Facility Value

2.1 Appraisal value of facility

As mentioned in the introduction, some first receivers act only as offloaders and thus do not have a processing facility. In addition, some business respondents rent a physical location and thus were not able to provide a facility appraised value. Thus, the median for these variables is 0.

Table 2.1: Values from last appraisal of facility.

	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Market value of facility from last appraisal	\$262,435	\$0	\$392,205	\$0	\$167,844	\$0
Replacement value of facility from last appraisal	\$1,116,161	\$0	\$1,234,668	\$0	\$596,616	\$0

3 Employment

This section provides information about number of employees, number of hours worked, and labor costs. These figures include full, part-time, and temporary employees. Workers involved directly with production and non-production employees are provided separately.

3.0.1 Production workers

Production workers include workers at the facility up through and including the line-supervisor level who are engaged in fabricating, processing, assembling, inspecting, receiving, packing, warehousing, shipping, maintenance, repair, janitorial staff, product development, or transporting product on site. The EDC form asks for production worker employment figures for the week that includes the 12th day of the month, thus the following tables present a weekly snapshot of employment for each month throughout the year.

Table 3.1: Weekly employment. Number of production workers for the week that includes the 12th of the month.

Month	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
January	65	29	71	35	58	10
February	53	27	59	23	50	11
March	54	28	54	23	36	10
April	54	28	56	27	38	12
May	64	32	79	37	41	10
June	95	72	86	54	64	12
July	119	113	97	86	97	30
August	90	37	110	73	93	34
September	87	37	82	41	84	38
October	83	35	74	37	61	18
November	67	32	68	28	48	11
December	125	138	102	69	76	18

Table 3.2: Weekly employment. Hours worked by production workers for the week that includes the 12th of the month.

Month	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
January	1,729.5	956.0	1,488.1	537.0	1,680.8	476.0
February	898.1	451.2	1,408.1	415.0	1,376.9	454.0
March	1,196.4	823.3	1,266.8	512.0	1,056.0	431.5
April	1,251.5	834.0	1,636.9	590.0	1,276.4	399.5
May	2,064.2	986.9	2,684.8	1,037.0	1,730.4	394.0
June	2,965.8	2,015.9	2,781.2	1,466.0	2,817.2	508.8
July	5,487.7	2,641.8	3,627.6	2,317.0	4,706.5	1,440.2
August	2,985.5	1,402.0	3,986.9	1,258.2	5,075.5	1,479.2
September	2,400.8	983.0	2,781.2	749.8	3,890.9	1,513.1
October	3,583.6	1,041.0	2,007.0	1,295.0	2,338.0	597.0
November	2,230.3	882.9	1,865.3	604.2	1,647.6	431.0
December	4,633.0	3,108.0	5,020.3	1,266.9	3,334.0	742.0

3.0.2 Non-production employees

All non-production employees include those involved in supervision above the line-supervisor level, as well as individuals in the company responsible for sales, advertising, credit, collection, installation, the cafeteria, recordkeeping, clerical and routine office functions, guard services, executive management, purchasing, finance, and legal affairs. Companies that do not track hours for salaried employees are asked to assume a forty-hour workweek. These employment figures, similar to the production worker data above, are for the week that includes the 12th of March.

Table 3.3: Weekly employment. Number of non-production employees and hours worked for the week that includes March 12 .

	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Hours Worked	534.2	204.0	689.9	200.0	347.4	180.5
Number of employees	8.7	6.0	10.7	5.0	6.6	4.0

4 Costs

This section of the report describes the cost data that are collected on the EDC first receiver and shorebased processor form. For the purposes of the EDC, costs are divided into two categories, variable costs and fixed costs. Variable costs vary with the level of fish production, and generally include items such as fish inputs, additives, labor, and utilities. Fixed costs do not vary with the level of production, and generally include items such as plant facility costs and processing equipment. The designation of a cost as variable or fixed depends on many factors, including the relevant time horizon and use of the data. While some costs would clearly be considered fixed (e.g., the purchase of processing machinery), others are more difficult to categorize as fixed versus variable. For the purposes of this report, we consider the costs listed in Table 4.1 to be fixed, and the costs listed in Tables 4.2, 4.3, 4.4, 4.5, and all tables listed under Section 4.2.6 to be variable. The EDC Program will continue to explore, and possibly improve, the categorization of these costs.

In order to conduct economic analyses of specific fisheries it is important to have costs broken out by fishery. At this time, the EDF Program is investigating methods to accomplish this for first receivers and shorebased processors.

Finally, there are a variety of costs that are associated with running a first receiver or shorebased processing facility that are not requested on the EDC form. This is because it is difficult to determine the share of the costs associated with the facility. These costs include items that can be used for activities other than processing of fish, or are too difficult to allocate to a particular facility in a multi-facility company. These expenses include trucks, and professional fees. In general, the EDC forms attempt to collect costs that are directly related to facility maintenance and processing operations, and not costs that are related to activities or equipment beyond the processing facility (one exception is off-site product freezing and storage). For these reasons, the EDC aggregated measures of costs (variable costs, fixed costs and total costs) underestimate the true costs of operating a business.

4.1 Fixed Costs

4.1.1 Buildings and processing equipment costs

Participants were asked in 2009 and 2010 about selected expenses only if they processed fish. In 2011, this information was requested regardless of whether they processed fish if they possessed a first receiver site license. Because less than half of the respondents provided a value for capitalized expenditures on buildings in 2010 and 2011, and new and used machinery and processing equipment in 2011, the median for these categories is 0.

Table 4.1: Buildings and processing equipment costs. Capitalized expenditures, rental or lease payments, processing equipment expenses, repair and maintenance expenses.

Cost	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Capitalized expenditures on buildings	\$267,939	\$3,782	\$266,477	\$122	\$104,247	\$0
Capitalized expenditures on new and used machinery and equipment	\$955,849	\$111,496	\$974,876	\$68,000	\$321,096	\$15,230
Processing equipment	\$21,341	\$8,900	\$22,332	\$9,914	\$19,530	\$5,526
Rental or lease of buildings, job-site trailers, and other structures	\$112,460	\$116,290	\$108,750	\$110,400	\$96,896	\$88,436
Repair and maintenance on facility buildings, machinery, and equipment	\$220,075	\$140,857	\$214,175	\$92,965	\$193,781	\$81,206

4.2 Variable Costs

4.2.1 Labor expenses

Labor expenses include wages, bonuses, benefits, payroll taxes, and unemployment insurance.

Table 4.2: Employment expenses. Total annual labor expenses for all employees (includes wages, bonuses, benefits, payroll taxes, and unemployment insurance).

Expense	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Production workers	\$1,478,164	\$978,974	\$1,295,123	\$626,987	\$1,437,784	\$389,250
Non-production employees	\$392,130	\$274,900	\$415,817	\$276,700	\$375,234	\$208,178

4.2.2 Permit costs

Not enough processors reported permit costs to be able to display this information.

4.2.3 Utility expenses

Many respondents did not provide expenses on natural gas, either because they did not incur this expense or because that information was not available. Because less than half of respondents reported a positive value, the median expense on this category is \$0 (Table 4.3).

4.2.4 Other expenses

Some new categories were added in the 2011 survey reflecting feedback on the baseline surveys. Thus information on these categories of spending is only available for 2011 and beyond (Table 4.4).

4.2.5 Custom processing

Custom processing is when a third party, processes fish that are owned by the respondent. The processing occurs outside the facility responding to the EDC. Because most processors did not

Table 4.3: Utility expenses.

Expense	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Electricity	\$161,155	\$88,416	\$160,415	\$102,800	\$139,804	\$62,798
Natural gas	\$49,464	\$741	\$41,914	\$0	\$10,722	\$0
Nitrogen gas	—	—	—	—	\$16,737	\$0
Propane gas	\$19,796	\$5,179	\$35,659	\$6,648	\$25,431	\$5,003
Water	\$66,782	\$21,051	\$79,499	\$25,995	\$75,184	\$7,666
Sewer, waste, and byproduct disposal	\$32,789	\$16,698	\$37,923	\$16,194	\$37,997	\$5,905

report any custom processing activity in all three-survey years, the median costs and revenue for this table are 0 (Table 4.5).

Table 4.4: Other expenses.

Expense	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Cleaning and custodial supplies	—	—	—	—	\$12,161	\$2,493
Freight costs for supplies	\$73,601	\$0	\$69,423	\$0	\$47,874	\$0
Insurance (property, product, and personal liability)	\$130,839	\$92,096	\$118,678	\$79,793	\$60,473	\$37,367
Licensing fees	—	—	—	—	\$9,119	\$5,791
Non-fish ingredients (additives)	\$31,165	\$0	\$27,055	\$0	\$46,368	\$0
Off-site product freezing and storage	\$139,266	\$40,948	\$152,168	\$47,892	\$189,330	\$2,650
Offloading	—	—	—	—	\$23,324	\$0
Packing materials	\$577,670	\$165,813	\$486,598	\$141,459	\$405,614	\$68,266
Production supplies	\$98,607	\$40,627	\$102,990	\$25,295	\$40,626	\$9,446
Shoreside monitoring	\$7,879	\$7,790	\$18,278	\$200	\$3,744	\$293
Taxes (property and excise)	—	—	—	—	\$41,953	\$12,158

Table 4.5: Custom processing: cost, revenue, and weight of custom processing activities

Expense	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Cost of custom processing of non-whiting groundfish	56,406	0	16,822	0	24,513	0
Cost of custom processing of non-whiting groundfish, non-groundfish fish	59,118	0	52,225	0	29,023	0
Cost of custom processing of whiting	37,063	0	75,788	0	92,319	0
Revenue from custom processing of non-whiting groundfish	344	0	3,594	0	20,866	0
Revenue from custom processing of non-whiting, non-groundfish fish	16,487	0	19,341	0	33,244	0
Revenue from custom processing of whiting	2,043	0	2,038	0	14,346	0
Weight custom processing of whiting	168,298	0	273,477	0	350,299	0
Weight of custom processing of non-whiting groundfish	177,382	0	55,287	0	73,454	0
Weight of custom processing of non-whiting groundfish, non-groundfish fish	269,671	0	224,221	0	92,672	0

4.2.6 Fish purchases

Respondents are asked to provide the weight and cost of fish received during the survey year. This includes the weight of fish paid for, and weight of those not paid for due to size or quality reasons, as well as the weight of fish not paid for that were transferred from outside the facility.

The cost requested is the gross cost of fish paid for from vessel or non-vessel sources, which includes the value of any taxes paid on behalf of delivering vessels. Purchase weight and cost information is requested by categories for different species types and sources, including Limited Entry (LE) Trawl and LE Fixed Gear for catch share groundfish species, as well as other vessels and non-vessel sources for these species and a selection of non-catch share groundfish species. In the tables below, LE Trawl represents fish acquired directly from a vessel registered to a LE permit with a trawl endorsement and caught with either trawl or fixed gear. LE Fixed Gear sources are those vessels with a fixed gear endorsement. This does not include fish caught with a fixed gear on a LE permit with a trawl endorsement, i.e., the gear switching provision of the catch share program. Other vessels are those without either a LE Trawl or LE Fixed Gear endorsement. Non-vessel sources include fish acquired from other entities, including other first receivers, processors, wholesale dealers, brokers, aquaculture producers, and transfers from outside the facility.

The following tables do not include fish received for custom processing, and do include post season adjustments and fish purchased that are then custom processed by another processor outside the facility. As stated in the introduction to this report, respondents fill out the EDC form according to their fiscal year, so pounds listed for each species may not have been purchased during the calendar year indicated by the column header, and therefore these values may not align directly to state-fish ticket data.

4.2.7 Total cost and weight of fish purchases by source and species

Table 4.6: Total purchase weight and value of whiting by source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Pacific whiting	Fixed Gear	0	0	0	0	—	—
Pacific whiting	LE Fixed Gear	—	—	—	—	***	***
Pacific whiting	LE Trawl	6,843,007	87,129,912	8,561,000	102,130,197	22,675,265	204,027,788
Pacific whiting	Non-vessel	—	—	—	—	2,166,789	24,279,500
Pacific whiting	Other	***	0	526,172	6,519,875	—	—
Pacific whiting	Other Vessel	—	—	—	—	***	***

Table 4.7: Total purchase weight and value of dover, thornyheads, and sablefish by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Dover sole	Fixed Gear	7,376	18,638	***	***	—	—
Dover sole	LE Fixed Gear	—	—	—	—	193	457
Dover sole	LE Trawl	8,062,773	23,121,194	6,402,776	20,008,309	6,572,008	15,364,917
Dover sole	Non-vessel	—	—	—	—	418,242	798,723
Dover sole	Other	***	***	471,143	1,249,786	—	—
Dover sole	Other Vessel	—	—	—	—	***	***
Sablefish	Fixed Gear	10,838,873	3,569,118	11,690,893	3,674,081	—	—
Sablefish	LE Fixed Gear	—	—	—	—	10,017,023	2,558,688
Sablefish	LE Trawl	11,531,390	5,478,644	8,802,431	3,981,229	8,875,222	2,975,103
Sablefish	Non-vessel	—	—	—	—	1,920,880	750,515
Sablefish	Other	2,435,284	1,015,701	3,604,747	1,705,355	—	—
Sablefish	Other Vessel	—	—	—	—	8,614,729	1,620,421
Thornyheads	Fixed Gear	5,929	7,648	***	***	—	—
Thornyheads	LE Fixed Gear	—	—	—	—	141,223	135,279
Thornyheads	LE Trawl	2,337,480	4,529,363	2,154,851	3,960,391	1,643,623	2,657,570
Thornyheads	Non-vessel	—	—	—	—	30,296	62,305
Thornyheads	Other	***	***	***	0	—	—
Thornyheads	Other Vessel	—	—	—	—	2,659	4,295

Table 4.8: Total purchase weight and value of other groundfish by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
English sole	Fixed Gear	***	***	***	***	—	—
English sole	LE Fixed Gear	—	—	—	—	0	0
English sole	LE Trawl	160,907	511,120	95,510	299,093	74,430	158,819
English sole	Non-vessel	—	—	—	—	0	***
English sole	Other	***	***	***	***	—	—
English sole	Other Vessel	—	—	—	—	***	***
Petrale sole	Fixed Gear	***	***	***	***	—	—
Petrale sole	LE Fixed Gear	—	—	—	—	***	***
Petrale sole	LE Trawl	3,013,174	3,799,266	1,597,218	1,387,003	2,039,701	1,415,873
Petrale sole	Non-vessel	—	—	—	—	597,149	337,725
Petrale sole	Other	506,952	398,494	277,237	163,765	—	—
Petrale sole	Other Vessel	—	—	—	—	228	161
Rex sole	Fixed Gear	***	***	***	***	—	—
Rex sole	LE Fixed Gear	—	—	—	—	0	0
Rex sole	LE Trawl	354,667	1,034,291	285,842	865,280	271,410	733,793
Rex sole	Non-vessel	—	—	—	—	76,259	72,869
Rex sole	Other	0	***	74,690	90,201	—	—
Rex sole	Other Vessel	—	—	—	—	1,849	5,072

Table 4.9: Total purchase weight and value of other groundfish (cont.) by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Arrowtooth flounder	LE Fixed Gear	—	—	—	—	***	***
Arrowtooth flounder	LE Trawl	—	—	—	—	1,234,126	4,110,655
Arrowtooth flounder	Non-vessel	—	—	—	—	***	***
Arrowtooth flounder	Other Vessel	—	—	—	—	972	9,504
Lingcod	Fixed Gear	10,405	12,692	8,588	10,420	—	—
Lingcod	LE Fixed Gear	—	—	—	—	2,994	3,367
Lingcod	LE Trawl	151,074	226,111	93,664	137,955	358,058	457,219
Lingcod	Non-vessel	—	—	—	—	153,684	155,864
Lingcod	Other	105,949	83,597	100,384	86,007	—	—
Lingcod	Other Vessel	—	—	—	—	12,668	12,915
Rockfish	Fixed Gear	74,636	115,976	182,382	224,163	—	—
Rockfish	LE Fixed Gear	—	—	—	—	68,684	70,233
Rockfish	LE Trawl	1,458,329	2,094,010	878,578	1,665,487	1,576,424	2,921,468
Rockfish	Non-vessel	—	—	—	—	1,810,213	2,082,579
Rockfish	Other	0	***	1,362,707	1,871,696	—	—
Rockfish	Other Vessel	—	—	—	—	77,555	83,341

Table 4.10: Total purchase weight and value of other groundfish (cont.) by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Sanddab	LE Fixed Gear	—	—	—	—	***	***
Sanddab	LE Trawl	—	—	—	—	177,065	302,823
Sanddab	Non-vessel	—	—	—	—	14,481	16,344
Sanddab	Other Vessel	—	—	—	—	***	***
Sharks, skates and rays	Fixed Gear	9,327	43,151	15,749	58,003	—	—
Sharks, skates and rays	LE Fixed Gear	—	—	—	—	32,796	22,378
Sharks, skates and rays	LE Trawl	520,991	2,672,161	734,108	2,847,569	804,333	2,594,783
Sharks, skates and rays	Non-vessel	—	—	—	—	0	***
Sharks, skates and rays	Other	0	***	112,493	197,319	—	—
Sharks, skates and rays	Other Vessel	—	—	—	—	33,519	70,123

Table 4.11: Total purchase weight and value of crab and shrimp by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Crab	All	38,564,966	18,956,335	71,597,376	35,744,855	—	—
Crab	Non-vessel	—	—	—	—	7,941,561	3,135,104
Crab	Vessel	—	—	—	—	65,056,155	27,035,993
Shrimp	All	11,341,178	29,998,269	15,481,708	41,668,220	—	—
Shrimp	Non-vessel	—	—	—	—	5,499,974	6,673,515
Shrimp	Vessel	—	—	—	—	25,703,576	52,811,385

Table 4.12: Total purchase weight and value of costal pelagics, salmon, and tuna by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Coastal pelagics	All	5,376,267	47,657,255	5,297,512	46,244,386	—	—
	Non-vessel	—	—	—	—	458,326	311,887
	Vessel	—	—	—	—	4,605,648	39,367,648
Salmon	All	6,169,533	4,822,417	16,229,749	6,650,876	—	—
	Non-vessel	—	—	—	—	8,303,967	3,201,382
	Vessel	—	—	—	—	12,341,500	8,413,789
Tuna	All	8,954,246	8,509,052	12,849,193	10,470,768	—	—
Tuna	Non-vessel	—	—	—	—	0	***
Tuna	Vessel	—	—	—	—	12,115,888	6,106,023

Table 4.13: Total purchase weight and value of halibut, herring, and sturgeon by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
California halibut	All	568,491	117,882	687,627	148,683	—	—
California halibut	Non-vessel	—	—	—	—	497,716	85,666
California halibut	Vessel	—	—	—	—	639,225	137,372
Pacific halibut	All	2,417,068	517,439	1,894,548	272,335	—	—
Pacific halibut	Non-vessel	—	—	—	—	986,142	104,444
Pacific halibut	Vessel	—	—	—	—	1,211,238	193,757
Pacific herring	All	0	0	***	***	—	—
Pacific herring	Non-vessel	—	—	—	—	***	***
Pacific herring	Vessel	—	—	—	—	***	***
Sturgeon	Non-vessel	—	—	—	—	541,823	187,734
Sturgeon	Vessel	—	—	—	—	202,118	78,091

Table 4.14: Total purchase weight and value of echinoderms, shellfish, squid, other species by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Echinoderms	All	***	***	***	***	—	—
	Non-vessel	—	—	—	—	***	***
	Vessel	—	—	—	—	***	***
Other species	All	2,214,987	10,331,014	4,163,521	16,223,819	—	—
Shellfish	All	6,619,728	2,341,880	5,870,718	1,977,295	—	—
	Non-vessel	—	—	—	—	7,112,699	2,747,281
	Vessel	—	—	—	—	0	0
Squid	All	397,069	413,525	645,485	861,281	—	—
	Non-vessel	—	—	—	—	484,286	335,060
	Vessel	—	—	—	—	0	***

4.2.8 Mean cost and weight of fish purchases by source and species

Table 4.15: Average purchase weight and value of whiting by source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Pacific whiting	Fixed Gear	0	0	0	0	—	—
Pacific whiting	LE Fixed Gear	—	—	—	—	***	***
Pacific whiting	LE Trawl	297,522	3,788,257	342,440	4,085,208	708,602	6,375,868
Pacific whiting	Non-vessel	—	—	—	—	67,712	758,734
Pacific whiting	Other	***	0	21,924	260,795	—	—
Pacific whiting	Other Vessel	—	—	—	—	***	***

Table 4.16: Average purchase weight and value of dover, thornyheads, and sablefish by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Dover sole	Fixed Gear	321	810	***	***	—	—
Dover sole	LE Fixed Gear	—	—	—	—	6	14
Dover sole	LE Trawl	350,555	1,005,269	256,111	800,332	205,375	480,154
Dover sole	Non-vessel	—	—	—	—	13,070	24,960
Dover sole	Other	***	***	18,846	49,991	—	—
Dover sole	Other Vessel	—	—	—	—	***	***
Sablefish	Fixed Gear	471,255	155,179	467,636	146,963	—	—
Sablefish	LE Fixed Gear	—	—	—	—	313,032	79,959
Sablefish	LE Trawl	501,365	238,202	352,097	159,249	277,351	92,972
Sablefish	Non-vessel	—	—	—	—	60,028	23,454
Sablefish	Other	105,882	44,161	144,190	68,214	—	—
Sablefish	Other Vessel	—	—	—	—	269,210	52,272
Thornyheads	Fixed Gear	258	333	***	***	—	—
Thornyheads	LE Fixed Gear	—	—	—	—	4,413	4,227
Thornyheads	LE Trawl	101,630	196,929	86,194	158,416	51,363	83,049
Thornyheads	Non-vessel	—	—	—	—	947	1,947
Thornyheads	Other	***	***	***	0	—	—
Thornyheads	Other Vessel	—	—	—	—	83	134

Table 4.17: Average purchase weight and value of other groundfish by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
English sole	Fixed Gear	***	***	***	***	—	—
English sole	LE Fixed Gear	—	—	—	—	0	0
English sole	LE Trawl	6,996	22,223	3,820	11,964	2,326	4,963
English sole	Non-vessel	—	—	—	—	0	***
English sole	Other	***	***	***	***	—	—
English sole	Other Vessel	—	—	—	—	***	***
Petrale sole	Fixed Gear	***	***	***	***	—	—
Petrale sole	LE Fixed Gear	—	—	—	—	***	***
Petrale sole	LE Trawl	131,008	165,185	63,889	55,480	63,741	44,246
Petrale sole	Non-vessel	—	—	—	—	18,661	10,554
Petrale sole	Other	22,041	17,326	11,089	6,551	—	—
Petrale sole	Other Vessel	—	—	—	—	7	5
Rex sole	Fixed Gear	***	***	***	***	—	—
Rex sole	LE Fixed Gear	—	—	—	—	0	0
Rex sole	LE Trawl	15,420	44,969	11,434	34,611	8,482	22,931
Rex sole	Non-vessel	—	—	—	—	2,383	2,277
Rex sole	Other	0	***	2,988	3,608	—	—
Rex sole	Other Vessel	—	—	—	—	58	159

Table 4.18: Average purchase weight and value of other groundfish (cont.) by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Arrowtooth flounder	LE Fixed Gear	—	—	—	—	***	***
Arrowtooth flounder	LE Trawl	—	—	—	—	38,566	128,458
Arrowtooth flounder	Non-vessel	—	—	—	—	***	***
Arrowtooth flounder	Other Vessel	—	—	—	—	30	297
Lingcod	Fixed Gear	452	552	344	417	—	—
Lingcod	LE Fixed Gear	—	—	—	—	94	105
Lingcod	LE Trawl	6,568	9,831	3,747	5,518	11,189	14,288
Lingcod	Non-vessel	—	—	—	—	4,803	4,871
Lingcod	Other	4,606	3,635	4,015	3,440	—	—
Lingcod	Other Vessel	—	—	—	—	396	404
Rockfish	Fixed Gear	3,245	5,042	7,295	8,967	—	—
Rockfish	LE Fixed Gear	—	—	—	—	2,146	2,195
Rockfish	LE Trawl	63,406	91,044	35,143	66,619	49,263	91,296
Rockfish	Non-vessel	—	—	—	—	56,569	65,081
Rockfish	Other	0	***	54,508	74,868	—	—
Rockfish	Other Vessel	—	—	—	—	2,424	2,604

Table 4.19: Average purchase weight and value of other groundfish (cont.) by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Sanddab	LE Fixed Gear	—	—	—	—	***	***
Sanddab	LE Trawl	—	—	—	—	5,533	9,463
Sanddab	Non-vessel	—	—	—	—	453	511
Sanddab	Other Vessel	—	—	—	—	***	***
Sharks, skates and rays	Fixed Gear	406	1,876	630	2,320	—	—
Sharks, skates and rays	LE Fixed Gear	—	—	—	—	1,025	699
Sharks, skates and rays	LE Trawl	22,652	116,181	29,364	113,903	25,135	81,087
Sharks, skates and rays	Non-vessel	—	—	—	—	0	***
Sharks, skates and rays	Other	0	***	4,500	7,893	—	—
Sharks, skates and rays	Other Vessel	—	—	—	—	1,047	2,191

Table 4.20: Average purchase weight and value of crab and shrimp by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Crab	All	1,676,738	824,188	2,863,895	1,429,794	—	—
Crab	Non-vessel	—	—	—	—	248,174	97,972
Crab	Vessel	—	—	—	—	2,033,005	844,875
Shrimp	All	493,095	1,304,273	619,268	1,666,729	—	—
Shrimp	Non-vessel	—	—	—	—	171,874	208,547
Shrimp	Vessel	—	—	—	—	803,237	1,650,356

Table 4.21: Average purchase weight and value of coastal pelagics, salmon, and tuna by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Coastal pelagics	All	233,751	2,072,055	211,900	1,849,775	—	—
Coastal pelagics	Non-vessel	—	—	—	—	14,323	9,746
Coastal pelagics	Vessel	—	—	—	—	143,927	1,230,239
Salmon	All	280,433	209,670	649,190	266,035	—	—
Salmon	Non-vessel	—	—	—	—	259,499	100,043
Salmon	Vessel	—	—	—	—	385,672	262,931
Tuna	All	389,315	369,959	513,968	418,831	—	—
Tuna	Non-vessel	—	—	—	—	0	***
Tuna	Vessel	—	—	—	—	378,622	190,813

Table 4.22: Average purchase weight and value of halibut, herring, and sturgeon by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
California halibut	All	24,717	5,125	27,505	5,947	—	—
California halibut	Non-vessel	—	—	—	—	15,554	2,677
California halibut	Vessel	—	—	—	—	19,976	4,293
Pacific halibut	All	105,090	22,497	75,782	10,893	—	—
Pacific halibut	Non-vessel	—	—	—	—	30,817	3,264
Pacific halibut	Vessel	—	—	—	—	37,851	6,055
Pacific herring	All	0	0	***	***	—	—
Pacific herring	Non-vessel	—	—	—	—	***	***
Pacific herring	Vessel	—	—	—	—	***	***
Sturgeon	Non-vessel	—	—	—	—	16,932	5,867
Sturgeon	Vessel	—	—	—	—	6,316	2,440

Table 4.23: Average purchase weight and value of echinoderms, shellfish, squid, other species by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Echinoderms	All	***	***	***	***	—	—
Echinoderms	Non-vessel	—	—	—	—	***	***
Echinoderms	Vessel	—	—	—	—	***	***
Other species	All	96,304	449,175	166,541	648,953	—	—
Shellfish	All	287,814	101,821	234,829	79,092	—	—
Shellfish	Non-vessel	—	—	—	—	222,272	85,853
Shellfish	Vessel	—	—	—	—	0	0
Squid	All	17,264	18,797	25,819	34,451	—	—
Squid	Non-vessel	—	—	—	—	15,134	10,471
Squid	Vessel	—	—	—	—	0	***

4.2.9 Median cost and weight of fish purchases by source and species

Table 4.24: Median purchase weight and value of whiting by source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Pacific whiting	Fixed Gear	0	0	0	0	—	—
Pacific whiting	LE Fixed Gear	—	—	—	—	***	***
Pacific whiting	LE Trawl	8,570	122,442	0	0	0	0
Pacific whiting	Non-vessel	—	—	—	—	0	0
Pacific whiting	Other	***	0	0	0	—	—
Pacific whiting	Other Vessel	—	—	—	—	***	***

Table 4.25: Median purchase weight and value of dover, thornyheads, and sablefish by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Dover sole	Fixed Gear	0	0	***	***	—	—
Dover sole	LE Fixed Gear	—	—	—	—	0	0
Dover sole	LE Trawl	12,717	29,076	799	1,776	0	0
Dover sole	Non-vessel	—	—	—	—	0	0
Dover sole	Other	***	***	0	0	—	—
Dover sole	Other Vessel	—	—	—	—	***	***
Sablefish	Fixed Gear	0	0	0	0	—	—
Sablefish	LE Fixed Gear	—	—	—	—	0	0
Sablefish	LE Trawl	57,133	37,022	12,371	5,402	37	79
Sablefish	Non-vessel	—	—	—	—	0	0
Sablefish	Other	0	0	0	0	—	—
Sablefish	Other Vessel	—	—	—	—	0	0
Thornyheads	Fixed Gear	0	0	***	***	—	—
Thornyheads	LE Fixed Gear	—	—	—	—	0	0
Thornyheads	LE Trawl	1,619	4,692	359	999	24	41
Thornyheads	Non-vessel	—	—	—	—	0	0
Thornyheads	Other	***	***	***	0	—	—
Thornyheads	Other Vessel	—	—	—	—	0	0

Table 4.26: Median purchase weight and value of other groundfish by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
English sole	Fixed Gear	***	***	***	***	—	—
English sole	LE Fixed Gear	—	—	—	—	0	0
English sole	LE Trawl	925	1,306	4	12	0	0
English sole	Non-vessel	—	—	—	—	0	***
English sole	Other	***	***	***	***	—	—
English sole	Other Vessel	—	—	—	—	***	***
Petrale sole	Fixed Gear	***	***	***	***	—	—
Petrale sole	LE Fixed Gear	—	—	—	—	***	***
Petrale sole	LE Trawl	42,551	34,732	6,046	5,099	0	0
Petrale sole	Non-vessel	—	—	—	—	0	0
Petrale sole	Other	0	0	0	0	—	—
Petrale sole	Other Vessel	—	—	—	—	0	0
Rex sole	Fixed Gear	***	***	***	***	—	—
Rex sole	LE Fixed Gear	—	—	—	—	0	0
Rex sole	LE Trawl	150	739	131	479	0	0
Rex sole	Non-vessel	—	—	—	—	0	0
Rex sole	Other	0	***	0	0	—	—
Rex sole	Other Vessel	—	—	—	—	0	0

Table 4.27: Median purchase weight and value of other groundfish (cont.) by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Arrowtooth flounder	LE Fixed Gear	—	—	—	—	***	***
Arrowtooth flounder	LE Trawl	—	—	—	—	0	0
Arrowtooth flounder	Non-vessel	—	—	—	—	***	***
Arrowtooth flounder	Other Vessel	—	—	—	—	0	0
Lingcod	Fixed Gear	0	0	0	0	—	—
Lingcod	LE Fixed Gear	—	—	—	—	0	0
Lingcod	LE Trawl	112	351	825	727	192	343
Lingcod	Non-vessel	—	—	—	—	0	0
Lingcod	Other	0	0	0	0	—	—
Lingcod	Other Vessel	—	—	—	—	0	0
Rockfish	Fixed Gear	0	0	0	0	—	—
Rockfish	LE Fixed Gear	—	—	—	—	0	0
Rockfish	LE Trawl	23,522	36,533	12,817	15,764	11,488	16,562
Rockfish	Non-vessel	—	—	—	—	0	0
Rockfish	Other	0	***	0	0	—	—
Rockfish	Other Vessel	—	—	—	—	0	0

Table 4.28: Median purchase weight and value of other groundfish (cont.) by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Sanddab	LE Fixed Gear	—	—	—	—	***	***
Sanddab	LE Trawl	—	—	—	—	0	0
Sanddab	Non-vessel	—	—	—	—	0	0
Sanddab	Other Vessel	—	—	—	—	***	***
Sharks, skates and rays	Fixed Gear	0	0	0	0	—	—
Sharks, skates and rays	LE Fixed Gear	—	—	—	—	0	0
Sharks, skates and rays	LE Trawl	162	1,419	294	349	0	0
Sharks, skates and rays	Non-vessel	—	—	—	—	0	***
Sharks, skates and rays	Other	0	***	0	0	—	—
Sharks, skates and rays	Other Vessel	—	—	—	—	0	0

Table 4.29: Median purchase weight and value of crab and shrimp by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Crab	All	659,106	307,659	2,293,558	1,267,984	—	—
Crab	Non-vessel	—	—	—	—	0	0
Crab	Vessel	—	—	—	—	328,131	142,966
Shrimp	All	0	0	0	0	—	—
Shrimp	Non-vessel	—	—	—	—	0	0
Shrimp	Vessel	—	—	—	—	0	0

Table 4.30: Median purchase weight and value of coastal pelagics, salmon, and tuna by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Coastal pelagics	All	0	0	0	0	—	—
	Non-vessel	—	—	—	—	0	0
	Vessel	—	—	—	—	0	0
Salmon	All	0	0	116,225	19,957	—	—
	Non-vessel	—	—	—	—	0	0
	Vessel	—	—	—	—	32,917	5,662
Tuna	All	1,782	1,759	124,839	62,946	—	—
Tuna	Non-vessel	—	—	—	—	0	***
Tuna	Vessel	—	—	—	—	2,200	1,103

Table 4.31: Median purchase weight and value of halibut, herring, and sturgeon by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
California halibut	All	0	0	0	0	—	—
	Non-vessel	—	—	—	—	0	0
	Vessel	—	—	—	—	0	0
Pacific halibut	All	0	0	0	0	—	—
	Non-vessel	—	—	—	—	0	0
	Vessel	—	—	—	—	0	0
Pacific herring	All	0	0	***	***	—	—
	Non-vessel	—	—	—	—	***	***
	Vessel	—	—	—	—	***	***
Sturgeon	Non-vessel	—	—	—	—	0	0
	Vessel	—	—	—	—	0	0

Table 4.32: Median purchase weight and value of echinoderms, shellfish, squid, other species by species and source.

Species	Source	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Echinoderms	All	***	***	***	***	—	—
Echinoderms	Non-vessel	—	—	—	—	***	***
Echinoderms	Vessel	—	—	—	—	***	***
Other species	All	891	312	820	1,178	—	—
Shellfish	All	0	0	0	0	—	—
Shellfish	Non-vessel	—	—	—	—	0	0
Shellfish	Vessel	—	—	—	—	0	0
Squid	All	0	0	0	0	—	—
Squid	Non-vessel	—	—	—	—	0	0
Squid	Vessel	—	—	—	—	0	***

5 Depreciation

Depreciation in the following table includes depreciation for all capital investments on buildings and new and used machinery and equipment taken during the survey year. Depreciation is excluded from the calculations of both fixed and variable costs (Section 4) and net revenue (Section 7.2). It is collected for use in the IO-PAC model.

Table 5.1: Depreciation.

	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Depreciation	\$300,497	\$179,452	\$247,226	\$140,463	\$168,429	\$56,841

6 Revenue

Participants are asked to provide revenue from production of purchased fish as well as from custom processing, offloading, and the sale or lease of quota and permits.

6.1 Revenue from custom processing, offloading, and sale or lease of quota and permits

Participants are asked to provide revenue from a variety of other activities, including revenue from custom processing, sale and lease of quota shares and pounds, and offloading.

Table 6.1: Other revenue.

Revenue Source	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Custom processing of non-whiting, non-groundfish fish	\$16,487	\$0	\$19,341	\$0	\$33,244	\$0
Custom processing of whiting	\$2,043	\$0	\$2,038	\$0	\$14,346	\$0
Custom processing of non-whiting groundfish	\$344	\$0	\$3,594	\$0	\$20,866	\$0
Offloading	—	—	—	—	\$58,211	\$0

6.2 Production activities

The product weight and value from production activities free-on-board (FOB) plant are requested for each survey year. Free-on-board plant indicates that the buyer both takes responsibility and liability for the product and pays shipping costs. These production values exclude freight charges, revenue from products made in previous years, products made from custom processing performed for another company, and any additional payments received that covered shipping, handling, or storage costs associated with sale beyond the plant. The total value of fish production does include products made in that survey year and held in inventory at the end of the year, products shipped to other facilities in the same company, products made from custom processing performed by another facility, and any post-season adjustments.

The same species categories are provided as in the fish purchase section, this time divided into product categories that include processed fresh, frozen, unprocessed, and other, as well as additional categories for whiting. There is also a category for non-species specific products such as fishmeal, fish oil, and bait.

6.3 Total value and weight of fish production by product type and species

Table 6.2: Total production weight and value of whiting by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Pacific whiting	Fillet	5,913,750	5,401,941	9,633,726	8,203,630	12,203,027	18,735,603
Pacific whiting	Frozen	***	***	1,252,309	3,753,097	9,063,573	31,185,386
Pacific whiting	Headed-and-gutted	33,977,602	60,355,185	16,728,738	29,511,159	24,041,049	40,067,088
Pacific whiting	Other	***	0	***	***	—	—
Pacific whiting	Roe	0	0	0	0	0	0
Pacific whiting	Surimi	***	***	***	***	***	***
Pacific whiting	Unprocessed	139,670	1,378,853	72,041	643,186	1,241,390	8,382,239

Table 6.3: Total production weight and value of dover, thornyheads, and sablefish by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Dover sole	Fresh	14,309,647	6,385,055	13,812,198	5,553,627	12,014,561	3,606,959
Dover sole	Frozen	2,724,165	1,269,881	1,990,081	1,266,720	1,609,438	605,338
Dover sole	Other	***	0	***	***	***	***
Dover sole	Unprocessed	***	***	506,386	1,093,883	341,412	1,164,817
Sablefish	Fresh	5,017,556	1,233,221	6,583,020	1,269,233	5,226,343	1,636,120
Sablefish	Frozen	27,114,518	5,527,723	30,130,688	5,599,424	30,305,667	4,230,991
Sablefish	Other	***	***	***	0	***	***
Sablefish	Unprocessed	1,581,598	568,547	1,981,888	689,801	2,510,753	708,948
Thornyheads	Fresh	232,621	193,672	366,276	316,184	***	***
Thornyheads	Frozen	4,215,773	1,797,303	4,506,427	2,034,275	3,862,581	1,131,368
Thornyheads	Other	0	0	***	***	3,182	1,471
Thornyheads	Unprocessed	105,012	85,212	193,557	286,025	570,171	538,341

Table 6.4: Total production weight and value of other groundfish by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
English sole	Fresh	448,652	210,604	232,878	104,091	222,159	69,653
English sole	Frozen	98,143	80,929	47,051	43,396	38,185	15,646
English sole	Other	0	0	0	0	0	0
English sole	Unprocessed	28,926	43,145	12,701	25,219	15,936	34,945
Petrale sole	Fresh	4,996,318	1,446,848	1,844,320	464,474	2,379,350	432,981
Petrale sole	Frozen	633,253	206,578	303,380	101,104	357,728	85,422
Petrale sole	Other	0	0	0	0	***	***
Petrale sole	Unprocessed	1,554,753	1,005,201	678,714	362,575	1,075,550	500,910
Rex sole	Fresh	609,140	374,400	363,372	181,933	477,728	222,022
Rex sole	Frozen	398,446	265,406	411,887	324,736	265,624	163,305
Rex sole	Other	0	0	***	***	0	0
Rex sole	Unprocessed	51,024	72,418	27,514	52,140	28,635	56,829

Table 6.5: Total production weight and value of other groundfish (cont.) by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Arrowtooth flounder	Fresh	—	—	—	—	811,717	723,819
	Frozen	—	—	—	—	0	***
	Other	—	—	—	—	0	0
	Unprocessed	—	—	—	—	***	***
Lingcod	Fresh	341,611	90,891	298,017	71,080	757,940	190,394
	Frozen	59,673	10,035	50,764	24,990	192,812	56,133
	Other	***	***	***	***	***	***
	Unprocessed	111,294	91,137	77,144	47,407	128,565	49,792
Rockfish	Fresh	3,042,198	1,125,641	2,584,703	969,887	3,031,688	1,077,178
	Frozen	749,333	377,321	404,130	216,772	602,256	328,508
	Other	***	***	0	0	305,371	164,986
	Unprocessed	574,183	495,486	639,377	606,900	1,529,458	1,269,854

Table 6.6: Total production weight and value of other groundfish (cont.). by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Sanddab	Fresh	—	—	—	—	44,890	9,734
Sanddab	Frozen	—	—	—	—	219,926	69,070
Sanddab	Other	—	—	—	—	***	***
Sanddab	Unprocessed	—	—	—	—	182,817	183,558
Sharks, skates and rays	Fresh	218,342	191,964	58,015	35,079	90,230	37,368
Sharks, skates and rays	Frozen	1,520,332	1,129,559	1,690,729	909,944	1,919,674	925,751
Sharks, skates and rays	Other	***	***	0	0	***	***
Sharks, skates and rays	Unprocessed	0	***	256,189	466,423	513,347	707,500

Table 6.7: Total production weight and value of crab and shrimp by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Crab	Canned	826,638	55,493	1,013,802	63,733	***	***
Crab	Fresh	38,312,882	7,057,529	49,977,449	11,409,357	34,238,692	6,041,141
Crab	Frozen	33,563,409	6,472,240	53,753,583	12,440,746	62,628,800	10,931,573
Crab	Other	0	***	484,027	48,271	0	***
Crab	Unprocessed	948,270	426,111	1,061,282	474,383	4,886,322	1,878,616
Shrimp	Canned	0	0	0	0	***	***
Shrimp	Fresh	5,448,903	3,399,192	5,053,940	3,194,768	3,641,513	1,178,126
Shrimp	Frozen	23,400,774	8,404,742	24,194,901	12,013,054	53,080,118	17,737,167
Shrimp	Other	0	0	***	***	0	0
Shrimp	Unprocessed	***	***	***	***	3,574,616	3,988,514

Table 6.8: Total production weight and value of coastal pelagics, salmon, and tuna by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Coastal pelagics	Canned	—	—	—	—	0	0
Coastal pelagics	Fresh	701,362	2,123,256	***	0	0	***
Coastal pelagics	Frozen	6,125,610	14,942,716	4,798,377	13,140,214	11,671,008	35,701,334
Coastal pelagics	Other	5,989,043	25,396,479	6,480,189	27,659,354	***	***
Coastal pelagics	Unprocessed	***	***	0	***	74,364	28,897
Salmon	Canned	***	***	***	***	***	***
Salmon	Fresh	7,140,642	2,037,991	11,896,653	2,656,044	14,840,395	3,465,156
Salmon	Frozen	***	***	6,693,301	2,334,364	9,373,401	4,373,480
Salmon	Other	373,543	129,618	***	0	0	0
Salmon	Smoked	188,639	18,553	459,965	52,874	***	***
Salmon	Unprocessed	875,682	251,299	1,630,254	402,952	3,678,462	1,614,458
Tuna	Canned	***	***	***	***	74,621	16,966
Tuna	Fresh	632,757	189,187	643,442	161,753	666,674	148,803
Tuna	Frozen	13,708,109	9,871,138	13,703,705	8,167,287	16,176,910	6,157,748
Tuna	Other	***	***	***	***	***	***
Tuna	Unprocessed	0	***	462,273	291,717	3,565,005	1,709,289

Table 6.9: Total production weight and value of halibut, herring, and sturgeon by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
California halibut	Fresh	***	***	833,761	97,252	423,213	41,061
California halibut	Frozen	***	***	***	***	***	***
California halibut	Other	0	0	***	***	***	***
California halibut	Unprocessed	504,382	97,423	***	***	861,591	147,375
Pacific halibut	Fresh	3,037,733	540,653	1,297,073	136,244	1,451,049	151,686
Pacific halibut	Frozen	298,273	44,963	169,415	19,185	170,472	17,108
Pacific halibut	Other	***	***	***	***	***	***
Pacific halibut	Unprocessed	240,401	49,440	***	***	808,681	105,791
Pacific herring	Fresh	0	0	0	0	0	0
Pacific herring	Frozen	0	0	0	0	***	0
Pacific herring	Other	0	0	0	0	0	0
Pacific herring	Unprocessed	0	0	0	0	***	***
Sturgeon	Canned	0	0	0	0	0	0
Sturgeon	Fresh	463,768	99,750	1,075,917	218,060	777,401	136,059
Sturgeon	Frozen	66,889	5,015	99,466	23,403	***	***
Sturgeon	Other	***	***	0	0	0	0
Sturgeon	Unprocessed	0	0	***	***	***	***

Table 6.10: Total production weight and value of echinoderms, shellfish, squid, other species by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Echinoderms	Fresh	***	***	***	***	***	***
Echinoderms	Frozen	0	0	0	0	0	0
Echinoderms	Other	0	0	0	0	***	***
Echinoderms	Unprocessed	***	***	***	***	***	***
Nonspecies specific	Bait	—	—	—	—	***	***
Nonspecies specific	Fish oil	***	***	***	***	***	***
Nonspecies specific	Fishmeal	***	***	***	***	0	***
Nonspecies specific	Other	***	***	***	***	***	0
Other species	Other	5,729,806	11,914,308	6,364,470	18,845,944	—	—
Shellfish	Fresh	***	***	***	0	***	***
Shellfish	Frozen	***	0	***	0	***	***
Shellfish	Other	0	0	0	0	0	0
Shellfish	Unprocessed	7,582,139	2,210,683	6,481,000	1,836,309	6,490,475	2,042,437
Squid	Fresh	848	816	***	***	***	***
Squid	Frozen	490,282	291,748	794,558	753,678	630,361	349,881
Squid	Other	0	0	***	***	0	0
Squid	Unprocessed	***	***	***	***	749	680

6.4 Average value and weight of fish production by product type and species

Table 6.11: Average production weight and value of whiting by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Pacific whiting	Fillet	257,120	234,867	385,349	328,145	381,345	585,488
Pacific whiting	Frozen	***	***	50,092	150,124	283,237	974,543
Pacific whiting	Headed-and-gutted	1,477,287	2,624,138	669,150	1,180,446	751,283	1,252,097
Pacific whiting	Other	***	0	***	***	—	—
Pacific whiting	Roe	0	0	0	0	0	0
Pacific whiting	Surimi	***	***	***	***	***	***
Pacific whiting	Unprocessed	6,073	59,950	2,882	26,799	38,793	270,395

Table 6.12: Average production weight and value of dover, thornyheads, and sablefish by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Dover sole	Fresh	622,159	277,611	552,488	222,145	375,455	112,717
Dover sole	Frozen	118,442	55,212	79,603	50,669	50,295	18,917
Dover sole	Other	***	0	***	***	***	***
Dover sole	Unprocessed	***	***	20,255	43,755	10,669	36,401
Sablefish	Fresh	218,155	53,618	263,321	50,769	163,323	51,129
Sablefish	Frozen	1,178,892	240,336	1,205,228	223,977	947,052	132,218
Sablefish	Other	***	***	***	0	***	***
Sablefish	Unprocessed	68,765	24,719	79,276	27,592	78,461	22,155
Thornyheads	Fresh	10,114	8,421	14,651	12,647	***	***
Thornyheads	Frozen	183,294	78,144	180,257	81,371	120,706	35,355
Thornyheads	Other	0	0	***	***	99	46
Thornyheads	Unprocessed	4,566	3,705	7,742	11,441	17,818	16,823

Table 6.13: Average production weight and value of other groundfish by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
English sole	Fresh	19,507	9,157	9,315	4,164	6,942	2,177
English sole	Frozen	4,267	3,519	1,882	1,736	1,193	489
English sole	Other	0	0	0	0	0	0
English sole	Unprocessed	1,258	1,876	508	1,009	498	1,092
Petrale sole	Fresh	217,231	62,906	73,773	18,579	74,355	13,531
Petrale sole	Frozen	27,533	8,982	12,135	4,044	11,179	2,669
Petrale sole	Other	0	0	0	0	***	***
Petrale sole	Unprocessed	67,598	43,704	27,149	14,503	33,611	15,653
Rex sole	Fresh	26,484	16,278	14,535	7,277	14,929	6,938
Rex sole	Frozen	17,324	11,539	16,475	12,989	8,301	5,103
Rex sole	Other	0	0	***	***	0	0
Rex sole	Unprocessed	2,218	3,149	1,101	2,086	895	1,776

Table 6.14: Average production weight and value of other groundfish (cont.) by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Arrowtooth flounder	Fresh	—	—	—	—	25,366	22,619
Arrowtooth flounder	Frozen	—	—	—	—	0	***
Arrowtooth flounder	Other	—	—	—	—	0	0
Arrowtooth flounder	Unprocessed	—	—	—	—	***	***
Lingcod	Fresh	14,853	3,952	11,921	2,843	23,686	5,950
Lingcod	Frozen	2,594	436	2,031	1,000	6,025	1,754
Lingcod	Other	***	***	***	***	***	***
Lingcod	Unprocessed	4,839	3,962	3,086	1,896	4,018	1,556
Rockfish	Fresh	132,269	48,941	103,388	38,795	94,740	33,662
Rockfish	Frozen	32,580	16,405	16,165	8,671	18,821	10,266
Rockfish	Other	***	***	0	0	9,543	5,156
Rockfish	Unprocessed	24,964	21,543	25,575	24,276	47,796	39,683

Table 6.15: Average production weight and value of other groundfish (cont.). by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Sanddab	Fresh	—	—	—	—	1,403	304
Sanddab	Frozen	—	—	—	—	6,873	2,158
Sanddab	Other	—	—	—	—	***	***
Sanddab	Unprocessed	—	—	—	—	5,713	5,736
Sharks, skates and rays	Fresh	9,493	8,346	2,321	1,403	2,820	1,168
Sharks, skates and rays	Frozen	66,101	49,111	67,629	36,398	59,990	28,930
Sharks, skates and rays	Other	***	***	0	0	***	***
Sharks, skates and rays	Unprocessed	0	***	10,248	18,657	16,042	22,823

Table 6.16: Average production weight and value of crab and shrimp by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Crab	Canned	35,941	2,413	40,552	2,549	***	***
Crab	Fresh	1,665,777	306,849	1,999,098	456,374	1,069,959	188,786
Crab	Frozen	1,459,279	281,402	2,150,143	497,630	1,957,150	341,612
Crab	Other	0	***	19,361	1,931	0	***
Crab	Unprocessed	41,229	18,527	42,451	18,975	152,698	58,707
Shrimp	Canned	0	0	0	0	***	***
Shrimp	Fresh	236,909	147,791	202,158	127,791	113,797	36,816
Shrimp	Frozen	1,017,425	365,424	967,796	480,522	1,658,754	554,286
Shrimp	Other	0	0	***	***	0	0
Shrimp	Unprocessed	***	***	***	***	111,707	124,641

Table 6.17: Average production weight and value of coastal pelagics, salmon, and tuna by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Coastal pelagics	Canned	—	—	—	—	0	0
Coastal pelagics	Fresh	30,494	92,315	***	0	0	***
Coastal pelagics	Frozen	266,331	649,683	191,935	525,609	364,719	1,115,667
Coastal pelagics	Other	260,393	1,104,195	259,208	1,106,374	***	***
Coastal pelagics	Unprocessed	***	***	0	***	2,324	903
Salmon	Canned	***	***	***	***	***	***
Salmon	Fresh	310,463	88,608	475,866	106,242	463,762	111,779
Salmon	Frozen	***	***	267,732	93,375	292,919	136,671
Salmon	Other	16,241	5,636	***	0	0	0
Salmon	Smoked	8,202	807	18,399	2,115	***	***
Salmon	Unprocessed	38,073	10,926	65,210	16,118	114,952	50,452
Tuna	Canned	***	***	***	***	2,332	530
Tuna	Fresh	27,511	8,226	25,738	6,470	20,834	4,650
Tuna	Frozen	596,005	429,180	548,148	326,691	505,528	192,430
Tuna	Other	***	***	***	***	***	***
Tuna	Unprocessed	0	***	18,491	11,669	111,406	53,415

Table 6.18: Average production weight and value of halibut, herring, and sturgeon by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
California halibut	Fresh	***	***	33,350	3,890	13,225	1,283
California halibut	Frozen	***	***	***	***	***	***
California halibut	Other	0	0	***	***	***	***
California halibut	Unprocessed	21,930	4,236	***	***	26,925	4,605
Pacific halibut	Fresh	132,075	23,507	51,883	5,450	45,345	4,740
Pacific halibut	Frozen	12,968	1,955	6,777	767	5,327	535
Pacific halibut	Other	***	***	***	***	***	***
Pacific halibut	Unprocessed	10,452	2,150	***	***	25,271	3,306
Pacific herring	Fresh	0	0	0	0	0	0
Pacific herring	Frozen	0	0	0	0	***	0
Pacific herring	Other	0	0	0	0	0	0
Pacific herring	Unprocessed	0	0	0	0	***	***
Sturgeon	Canned	0	0	0	0	0	0
Sturgeon	Fresh	20,164	4,337	43,037	8,722	24,294	4,252
Sturgeon	Frozen	2,908	218	3,979	936	***	***
Sturgeon	Other	***	***	0	0	0	0
Sturgeon	Unprocessed	0	0	***	***	***	***

Table 6.19: Average production weight and value of echinoderms, shellfish, squid, other species by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Echinoderms	Fresh	***	***	***	***	***	***
Echinoderms	Frozen	0	0	0	0	0	0
Echinoderms	Other	0	0	0	0	***	***
Echinoderms	Unprocessed	***	***	***	***	***	***
Nonspecies specific	Bait	—	—	—	—	***	***
Nonspecies specific	Fish oil	***	***	***	***	***	***
Nonspecies specific	Fishmeal	***	***	***	***	0	***
Nonspecies specific	Other	***	***	***	***	***	0
Other species	Other	249,122	518,013	254,579	753,838	—	—
Shellfish	Fresh	***	***	***	0	***	***
Shellfish	Frozen	***	0	***	0	***	***
Shellfish	Other	0	0	0	0	0	0
Shellfish	Unprocessed	329,658	96,117	259,240	73,452	202,827	63,826
Squid	Fresh	37	35	***	***	***	***
Squid	Frozen	21,317	12,685	31,782	30,147	19,699	10,934
Squid	Other	0	0	***	***	0	0
Squid	Unprocessed	***	***	***	***	23	21

6.5 Median value and weight of fish production by product type and species

Table 6.20: Median production weight and value of whiting by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Pacific whiting	Fillet	0	0	0	0	0	0
Pacific whiting	Frozen	***	***	0	0	0	0
Pacific whiting	Headed-and-gutted	0	0	0	0	0	0
Pacific whiting	Other	***	0	***	***	—	—
Pacific whiting	Roe	0	0	0	0	0	0
Pacific whiting	Surimi	***	***	***	***	***	***
Pacific whiting	Unprocessed	0	0	0	0	0	0

Table 6.21: Median production weight and value of dover, thornyheads, and sablefish by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Dover sole	Fresh	677	1,882	0	0	0	0
Dover sole	Frozen	0	0	0	0	0	0
Dover sole	Other	***	0	***	***	***	***
Dover sole	Unprocessed	***	***	0	0	0	0
Sablefish	Fresh	0	0	62,251	9,741	0	0
Sablefish	Frozen	0	0	13,127	5,402	0	0
Sablefish	Other	***	***	***	0	***	***
Sablefish	Unprocessed	0	0	0	0	0	0
Thornyheads	Fresh	0	0	0	0	***	***
Thornyheads	Frozen	0	0	0	0	0	0
Thornyheads	Other	0	0	***	***	0	0
Thornyheads	Unprocessed	0	0	0	0	0	0

Table 6.22: Median production weight and value of other groundfish by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
English sole	Fresh	0	0	0	0	0	0
English sole	Frozen	0	0	0	0	0	0
English sole	Other	0	0	0	0	0	0
English sole	Unprocessed	0	0	0	0	0	0
Petrале sole	Fresh	140	40	4,000	690	0	0
Petrале sole	Frozen	0	0	0	0	0	0
Petrале sole	Other	0	0	0	0	***	***
Petrале sole	Unprocessed	0	0	0	0	0	0
Rex sole	Fresh	0	0	0	0	0	0
Rex sole	Frozen	0	0	0	0	0	0
Rex sole	Other	0	0	***	***	0	0
Rex sole	Unprocessed	0	0	0	0	0	0

Table 6.23: Median production weight and value of other groundfish (cont.) by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Arrowtooth flounder	Fresh	—	—	—	—	0	0
Arrowtooth flounder	Frozen	—	—	—	—	0	***
Arrowtooth flounder	Other	—	—	—	—	0	0
Arrowtooth flounder	Unprocessed	—	—	—	—	***	***
Lingcod	Fresh	49	22	30	93	0	0
Lingcod	Frozen	0	0	0	0	0	0
Lingcod	Other	***	***	***	***	***	***
Lingcod	Unprocessed	0	0	0	0	0	0
Rockfish	Fresh	10,806	14,519	6,145	10,345	0	0
Rockfish	Frozen	0	0	0	0	0	0
Rockfish	Other	***	***	0	0	0	0
Rockfish	Unprocessed	0	0	0	0	1,943	2,441

Table 6.24: Median production weight and value of other groundfish (cont.). by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Sanddab	Fresh	—	—	—	—	0	0
Sanddab	Frozen	—	—	—	—	0	0
Sanddab	Other	—	—	—	—	***	***
Sanddab	Unprocessed	—	—	—	—	0	0
Sharks, skates and rays	Fresh	0	0	0	0	0	0
Sharks, skates and rays	Frozen	0	0	0	0	0	0
Sharks, skates and rays	Other	***	***	0	0	***	***
Sharks, skates and rays	Unprocessed	0	***	0	0	0	0

Table 6.25: Median production weight and value of crab and shrimp by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Crab	Canned	0	0	0	0	***	***
Crab	Fresh	12,452	4,151	620,646	227,070	0	0
Crab	Frozen	893,946	206,832	333,494	41,328	13,734	2,289
Crab	Other	0	***	0	0	0	***
Crab	Unprocessed	0	0	0	0	0	0
Shrimp	Canned	0	0	0	0	***	***
Shrimp	Fresh	0	0	0	0	0	0
Shrimp	Frozen	0	0	0	0	0	0
Shrimp	Other	0	0	***	***	0	0
Shrimp	Unprocessed	***	***	***	***	0	0

Table 6.26: Median production weight and value of coastal pelagics, salmon, and tuna by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Coastal pelagics	Canned	—	—	—	—	0	0
Coastal pelagics	Fresh	0	0	***	0	0	***
Coastal pelagics	Frozen	0	0	0	0	0	0
Coastal pelagics	Other	0	0	0	0	***	***
Coastal pelagics	Unprocessed	***	***	0	***	0	0
Salmon	Canned	***	***	***	***	***	***
Salmon	Fresh	0	0	11,957	1,437	0	0
Salmon	Frozen	***	***	0	0	0	0
Salmon	Other	0	0	***	0	0	0
Salmon	Smoked	0	0	0	0	***	***
Salmon	Unprocessed	0	0	0	0	0	0
Tuna	Canned	***	***	***	***	0	0
Tuna	Fresh	0	0	0	0	0	0
Tuna	Frozen	0	0	11,541	6,358	0	0
Tuna	Other	***	***	***	***	***	***
Tuna	Unprocessed	0	***	0	0	0	0

Table 6.27: Median production weight and value of halibut, herring, and sturgeon by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
California halibut	Fresh	***	***	0	0	0	0
California halibut	Frozen	***	***	***	***	***	***
California halibut	Other	0	0	***	***	***	***
California halibut	Unprocessed	0	0	***	***	0	0
Pacific halibut	Fresh	0	0	0	0	0	0
Pacific halibut	Frozen	0	0	0	0	0	0
Pacific halibut	Other	***	***	***	***	***	***
Pacific halibut	Unprocessed	0	0	***	***	0	0
Pacific herring	Fresh	0	0	0	0	0	0
Pacific herring	Frozen	0	0	0	0	***	0
Pacific herring	Other	0	0	0	0	0	0
Pacific herring	Unprocessed	0	0	0	0	***	***
Sturgeon	Canned	0	0	0	0	0	0
Sturgeon	Fresh	0	0	0	0	0	0
Sturgeon	Frozen	0	0	0	0	***	***
Sturgeon	Other	***	***	0	0	0	0
Sturgeon	Unprocessed	0	0	***	***	***	***

Table 6.28: Median production weight and value of echinoderms, shellfish, squid, other species by species and product type.

Species	Product	2009 N=23		2010 N=25		2011 N=32	
		Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)	Value (\$)	Weight (lbs.)
Echinoderms	Fresh	***	***	***	***	***	***
Echinoderms	Frozen	0	0	0	0	0	0
Echinoderms	Other	0	0	0	0	***	***
Echinoderms	Unprocessed	***	***	***	***	***	***
Nonspecies specific	Bait	—	—	—	—	***	***
Nonspecies specific	Fish oil	***	***	***	***	***	***
Nonspecies specific	Fishmeal	***	***	***	***	0	***
Nonspecies specific	Other	***	***	***	***	***	0
Other species	Other	9	34	0	0	—	—
Shellfish	Fresh	***	***	***	0	***	***
Shellfish	Frozen	***	0	***	0	***	***
Shellfish	Other	0	0	0	0	0	0
Shellfish	Unprocessed	0	0	0	0	0	0
Squid	Fresh	0	0	***	***	***	***
Squid	Frozen	0	0	0	0	0	0
Squid	Other	0	0	***	***	0	0
Squid	Unprocessed	***	***	***	***	0	0

7 Net Revenue and Economic Profit

Net returns from operating a first receiver or shorebased processor are presented in this section. The level of net returns not only indicates whether a vessel is a viable ongoing business, but also the size of net benefit that is created from society's perspective. Two different measures of net returns are examined. They differ in the types of costs that are taken into account, and therefore, their interpretation and use. The first is a monetary, financial measure that attempts to track a first receiver or shorebased processor's net cash flow, which we call *net revenue*. It is calculated as revenue minus monetary costs. The only costs that are included are those that are actually paid or associated with a financial transaction. The second measure attempts to track the broader economic performance of a business and includes all costs regardless of whether there is a cash or financial transaction. Costs are measured by their true resource costs, which may or may not be equal to monetary outlays. This measure is called *economic profit*¹. The distinction between the two measures is probably most easily understood through an examples relevant a first receiver or shorebased processor.

Labor costs for the net revenue measure are the total payments to the crew and captain. If work is performed that is not paid for, then it is not included as a cost. This commonly occurs in commercial fishing when the owner of a vessel is also the captain, but does not draw a captain's wage. In this case, the net revenue is higher than it would be if the captain drew a wage or hired a captain. In the end, the vessel owner-captain is not necessarily any worse off since s/he is the residual claimant to the net revenue. However, the net revenue would be higher than a comparable vessel that hired a captain.² Economic profit, on the other hand, accounts for the cost associated with an owner's time that is used as a captain. This is called an opportunity cost in the economics literature and is typically approximated by the wage of a comparably productive captain³.

One difference between net revenue and economic profit is the treatment of facility capital costs. Net revenue only includes costs that are actually paid, which includes items such as facility repair, maintenance, and upgrades. Economic profit would also include the opportunity cost of owning the facility, a capital asset. By owning a facility, the owner foregoes other investment opportunities that would provide a rate of return. This is called the opportunity cost

¹Whitmarsh D., James C., Pickering H., Neiland A. 2000. The profitability of marine commercial fisheries: a review of economic information needs with particular reference to the UK. *Marine Policy*, Vol. 24(3), pp. 257-263

²The same would also be true when a vessel owner does not receive a wage for work performed to repair or maintain a vessel or gear.

³A more accurate measure would be the owner-captain's most valued wage off the vessel

of capital⁴, and is typically approximated by the market rate of return associated with businesses of comparable risk, multiplied by the market value of the vessel.

Both net revenue and economic profit are useful measures for fishery management. Net revenue attempts to measure the annual financial well-being of receiving/processing operations. It can be used to determine if there is a monetary gain or loss, or how changes in fishery management may affect the level of monetary gain or loss. Economic profit is a better indicator of the long-term viability of fishery operations since it includes all costs, and values the costs at their opportunity cost. It can be used to estimate whether there are incentives or disincentives to invest in capital, or enter and leave the fishery. It is also a better measure of the net benefit of the fishery to the nation.

Calculations of net revenue are included in this draft report. The cost categories used in net revenue, based on those reported in the EDC forms, are discussed below. Currently, calculations of economic profit are beyond the scope of the report. Economic profit relies on opportunity costs, which may be different from some of the costs reported on the EDC forms, so additional methods and analyses are required. The EDC Program economists will continue to work on developing measures of economic profit so that it may be included in future reports.

7.1 Net Revenue

Net revenue is calculated two ways: using only variable costs, and using variable costs plus fixed costs (total costs)⁵. The first calculation is called *variable cost net revenue*, while the second is called *total cost net revenue*. Variable cost net revenue is useful to examine changes in fishery operations that are not so great as to affect fixed costs. For example, the cost processing an additional metric ton of fish is better represented by only considering variable costs. Total cost net revenue is usually a better summary measure of financial gain or loss for an entire year, season, or fishery.

There are several caveats associated with the net revenue calculations in this report. As noted in the Section 4, there are a variety of costs that are associated with running a facility that are not requested by the EDC form because it is difficult to determine the share of the cost associated with the facility. These costs include items that can be used for activities other than processing fish, or are too difficult to allocate to a particular facility in a multi-facility company. These expenses include office space, vehicles and transport trucks, storage of equipment, and professional fees. In general, the EDC forms attempt to only capture costs that are directly related to facility maintenance and processing operations, and not costs that are related to activities or equipment outside of the facility. Therefore, the EDC calculated net revenue is an underestimate of the true net revenue. The difference is likely much greater for total cost net revenue than variable cost net revenue since most of the excluded costs are fixed costs.

⁴See Boardman, Anthony, David Greenberg, and Aidan Vining. *Cost-Benefit Analysis: Concepts and Practice*, Prentice Hall, NJ. 2000. pp. 31-32.

⁵See Section 4 for a more complete discussion of variable and fixed costs used in this report

Another caveat is that the EDC forms do not collect information about income taxes or financing costs. This has several implications. The first is that these costs are not included in the net revenue calculations. Therefore, net revenue is greater than it would be otherwise. The second is that in lieu of financing information (principal and interest payments), EDC total cost net revenue uses the total costs associated with facility and equipment purchases, repair, maintenance and improvements. For example, if a new engine is purchased, the total cost of the engine is used, even though the actual cash outlay, if it were financed, would only be the principal and interest payments made that year. It is likely that many larger capital costs, and perhaps some operating costs, are financed. This would mean that the actual cash outlays in a particular year for those items would be less than what is used in the EDC for the net revenue calculation. Over time, this may balance out to some degree because previously financed or purchased capital and equipment are also not included, except for the year in which they are purchased.⁶ Moreover, total cost net revenue is expected to be representative of actual total cost net revenue only when averaged over many years and across facilities because relatively large capital costs occur periodically.

7.2 Net revenue for West Coast activities

Average net revenue is calculated for all companies that processed fish in 2009 and 2010 and all companies that submitted EDC forms for 2011 onward.

West Coast revenue includes the total value of production and revenue from custom processing and offloading.

The variable and fixed costs do not include costs related to acquiring limited entry permits, quota shares, or quota pounds.

Variable cost net revenue = West Coast revenue – West Coast variable costs

Total cost net revenue = West Coast revenue – (West Coast variable costs + West Coast fixed costs)

⁶At best it is just a partial balancing out because the interest payments are not accounted in the EDC data

Table 7.1: Revenue, costs, and net revenue

Expense	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Revenue	\$12,540,529	\$11,465,886	\$12,556,129	\$7,310,501	\$12,749,160	\$5,753,340
(Variable costs)	\$10,390,181	\$7,625,324	\$11,490,956	\$8,404,064	\$11,034,941	\$4,161,968
Variable cost net revenue	\$2,150,348	\$312,043	\$1,065,173	\$179,012	\$1,714,219	\$472,614
(Fixed costs)	\$1,577,664	\$582,650	\$1,586,610	\$362,400	\$735,550	\$214,956
Total cost net revenue	\$572,684	-\$57,462	-\$521,438	-\$91,139	\$978,668	\$65,897

7.3 Total cost net revenue rates

The total cost net revenue calculated above in Section 7.2 are provided as rates in the following table to provide the total cost net revenue per pound of fish purchased and per pound of fish product produced. The total weights used in these calculations exclude custom processing activities (see Sections 4.2.6 and 6.2) Additionally, the same rates are calculated for variable cost net revenue and the components that are used to calculated the two.

Table 7.2: Revenue, costs, and total and variable cost net revenue by pounds produced and pounds of fish purchased.

Expense	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Revenue per production pounds	\$1.297	\$1.911	\$1.455	\$1.724	\$1.61	\$3.424
Revenue per purchase pounds	\$0.953	\$1.477	\$0.943	\$1.211	\$0.903	\$2.657
Variable cost per production pounds	\$1.075	\$1.271	\$1.332	\$1.982	\$1.394	\$2.477
Variable cost per purchase pounds	\$0.789	\$0.982	\$0.863	\$1.392	\$0.782	\$1.922
Variable cost net revenue per production pounds	\$0.222	\$0.052	\$0.123	\$0.042	\$0.216	\$0.281
Variable cost net revenue per purchase pounds	\$0.163	\$0.04	\$0.08	\$0.03	\$0.121	\$0.218
Fixed cost per production pounds	\$0.163	\$0.097	\$0.184	\$0.085	\$0.093	\$0.128
Fixed cost per purchase pounds	\$0.12	\$0.075	\$0.119	\$0.06	\$0.052	\$0.099
Total cost net revenue per production pounds	\$0.059	\$-0.01	\$-0.06	\$-0.021	\$0.124	\$0.039
Total cost net revenue per purchase pounds	\$0.043	\$-0.007	\$-0.039	\$-0.015	\$0.069	\$0.03

8 Cost Per Pound of Fish Purchases

The average cost per pound of fish purchases by species (or species group) was calculated in two ways. First, a sector-wide average fish cost per pound by source is calculated (Section 8.1). This represents the cost per pound by species for all fish that are delivered shoreside. The second is the mean (and median) of the cost per pound of fish across companies (Section 8.2). These means (and medians) represent the cost of fish per pound for an average company on the West Coast, whereas the industry-wide cost per pound of fish represents the average cost per pound of fish coast-wide.

8.1 Sector-wide fish cost per pound by source

The industry-wide cost C per pound of fish inputs $WT^{fishinputs}$ by species (or species group) e and source of fish s is

$$\frac{\sum_{n=1}^N C_{n,e,s}}{\sum_{n=1}^N WT_{n,e,s}^{fishinputs}} \quad \forall e, s$$

where N is the total number of companies that submitted EDC data. The industry-wide cost per pound of fish by species or species group and source of fish is calculated for each survey year.

As described in Section 4.2.6, in the following tables, LE Trawl represents fish acquired directly from a vessel registered to a Limited Entry (LE) permit with a trawl endorsement and caught with either trawl or fixed gear. LE Fixed Gear Vessels sources are those vessels without a limited entry trawl with a fixed gear endorsement. This does not include fish caught with a fixed gear on a LE permit with a trawl endorsement. Other vessels are those without either a LE Trawl or fixed gear endorsement, including open access fisheries. Non-vessel sources include fish acquired from other entities, including other first receivers, processors, wholesale dealers, brokers, aquaculture producers, and transfers from outside the facility.

Table 8.1: Sector-wide cost per pound: whiting, dover, thornyheads, sablefish.

Species:Product	2009 N=23	2010 N=25	2011 N=32
	\$ per lb.	\$ per lb.	\$ per lb.
Dover sole: Fixed Gear	0.4	—	—
Dover sole: LE Fixed Gear	—	—	0.42
Dover sole: LE Trawl	0.35	0.32	0.43
Dover sole: Non-vessel	—	—	0.52
Dover sole: Other	—	0.38	—
Pacific whiting: LE Trawl	0.08	0.08	0.11
Pacific whiting: Non-vessel	—	—	0.09
Pacific whiting: Other	—	0.08	—
Sablefish: Fixed Gear	3.04	3.18	—
Sablefish: LE Fixed Gear	—	—	3.91
Sablefish: LE Trawl	2.1	2.21	2.98
Sablefish: Non-vessel	—	—	2.56
Sablefish: Other	2.4	2.11	—
Sablefish: Other Vessel	—	—	5.32
Thornyheads: Fixed Gear	0.78	—	—
Thornyheads: LE Fixed Gear	—	—	1.04
Thornyheads: LE Trawl	0.52	0.54	0.62
Thornyheads: Non-vessel	—	—	0.49
Thornyheads: Other Vessel	—	—	0.62

Table 8.2: Sector-wide cost per pound: other groundfish.

Species:Product	2009 N=23	2010 N=25	2011 N=32
	\$ per lb.	\$ per lb.	\$ per lb.
Arrowtooth flounder: LE Trawl	—	—	0.3
Arrowtooth flounder: Other Vessel	—	—	0.1
Lingcod: Fixed Gear	0.82	0.82	—
Lingcod: LE Fixed Gear	—	—	0.89
Lingcod: LE Trawl	0.67	0.68	0.78
Lingcod: Non-vessel	—	—	0.99
Lingcod: Other	1.27	1.17	—
Lingcod: Other Vessel	—	—	0.98
Rockfish: Fixed Gear	0.64	0.81	—
Rockfish: LE Fixed Gear	—	—	0.98
Rockfish: LE Trawl	0.7	0.53	0.54
Rockfish: Non-vessel	—	—	0.87
Rockfish: Other	—	0.73	—
Rockfish: Other Vessel	—	—	0.93
Sanddab: LE Trawl	—	—	0.58
Sanddab: Non-vessel	—	—	0.89
Sharks, skates and rays: Fixed Gear	0.22	0.27	—
Sharks, skates and rays: LE Fixed Gear	—	—	1.47
Sharks, skates and rays: LE Trawl	0.19	0.26	0.31
Sharks, skates and rays: Other	—	0.57	—
Sharks, skates and rays: Other Vessel	—	—	0.48

Table 8.3: Sector-wide cost per pound: other groundfish (cont.).

Species:Product	2009 N=23	2010 N=25	2011 N=32
	\$ per lb.	\$ per lb.	\$ per lb.
English sole: LE Trawl	0.31	0.32	0.47
Petrale sole: LE Trawl	0.79	1.15	1.44
Petrale sole: Non-vessel	—	—	1.77
Petrale sole: Other	1.27	1.69	—
Petrale sole: Other Vessel	—	—	1.42
Rex sole: LE Trawl	0.34	0.33	0.37
Rex sole: Non-vessel	—	—	1.05
Rex sole: Other	—	0.83	—
Rex sole: Other Vessel	—	—	0.36

Table 8.4: Sector-wide cost per pound: non-groundfish.

Species:Product	2009 N=23	2010 N=25	2011 N=32
	\$ per lb.	\$ per lb.	\$ per lb.
Coastal pelagics: All	0.11	0.11	—
Coastal pelagics: Non-vessel	—	—	1.47
Coastal pelagics: Vessel	—	—	0.12
Crab: All	2.03	2	—
Crab: Non-vessel	—	—	2.53
Crab: Vessel	—	—	2.41
Salmon: All	1.28	2.44	—
Salmon: Non-vessel	—	—	2.59
Salmon: Vessel	—	—	1.47
Shrimp: All	0.38	0.37	—
Shrimp: Non-vessel	—	—	0.82
Shrimp: Vessel	—	—	0.49
Tuna: All	1.05	1.23	—
Tuna: Vessel	—	—	1.98

Table 8.5: Sector-wide cost per pound: non-groundfish (cont.).

Species:Product	2009 N=23	2010 N=25	2011 N=32
	\$ per lb.	\$ per lb.	\$ per lb.
California halibut: All	4.82	4.62	—
California halibut: Non-vessel	—	—	5.81
California halibut: Vessel	—	—	4.65
Other species: All	0.21	0.26	—
Pacific halibut: All	4.67	6.96	—
Pacific halibut: Non-vessel	—	—	9.44
Pacific halibut: Vessel	—	—	6.25
Shellfish: All	2.83	2.97	—
Shellfish: Non-vessel	—	—	2.59
Squid: All	0.96	0.75	—
Squid: Non-vessel	—	—	1.45
Sturgeon: Non-vessel	—	—	2.89
Sturgeon: Vessel	—	—	2.59

8.2 Mean and median fish purchase cost per pound by source

The mean cost C per pound of fish inputs $WT^{fishinputs}$ by species e and source of fish s

$$\frac{\sum_{n=1}^N \frac{C_{n,e,s}}{WT_{n,e,s}^{fishinputs}}}{N} \quad \forall e, s$$

where N is the total number of companies that submitted EDC data. The median is the median of the cost per pound of fish by company, species or species group and source of fish $\frac{C_{n,e,s}}{WT_{n,e,s}^{fishinputs}} \quad \forall e, s$. The mean and median cost per pound of fish by species and source of fish is calculated for each survey year.

Table 8.6: Mean and median fish cost per pound: whiting, dover, thornyheads, sablefish.

Species: Source	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Dover sole: Fixed Gear	\$0.38	\$0.39	—	—	—	—
Dover sole: LE Fixed Gear	—	—	—	—	***	***
Dover sole: LE Trawl	\$0.50	\$0.35	\$0.30	\$0.31	\$0.42	\$0.43
Dover sole: Non-vessel	—	—	—	—	\$1.75	\$0.48
Dover sole: Other	—	—	\$1.12	\$0.48	—	—
Pacific whiting: LE Trawl	\$0.07	\$0.07	\$0.08	\$0.08	\$0.11	\$0.11
Pacific whiting: Non-vessel	—	—	—	—	\$0.14	\$0.15
Pacific whiting: Other	—	—	\$0.13	\$0.11	—	—
Sablefish: Fixed Gear	\$3.10	\$2.77	\$3.27	\$3.05	—	—
Sablefish: LE Fixed Gear	—	—	—	—	\$3.82	\$4.00
Sablefish: LE Trawl	\$1.82	\$1.77	\$1.95	\$1.91	\$2.25	\$2.18
Sablefish: Non-vessel	—	—	—	—	\$3.68	\$3.91
Sablefish: Other	\$6.16	\$2.84	\$3.12	\$2.58	—	—
Sablefish: Other Vessel	—	—	—	—	\$4.79	\$4.95
Thornyheads: Fixed Gear	\$0.77	\$0.75	—	—	—	—
Thornyheads: LE Fixed Gear	—	—	—	—	\$1.31	\$1.01
Thornyheads: LE Trawl	\$0.69	\$0.52	\$0.54	\$0.53	\$0.86	\$0.58
Thornyheads: Non-vessel	—	—	—	—	\$0.49	\$0.54
Thornyheads: Other Vessel	—	—	—	—	\$0.74	\$0.81

Table 8.7: Mean and median fish cost per pound: other groundfish.

Species: Source	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Arrowtooth flounder: LE Trawl	—	—	—	—	\$0.17	\$0.10
Arrowtooth flounder: Other Vessel	—	—	—	—	\$0.11	\$0.10
Lingcod: Fixed Gear	\$0.70	\$0.60	\$0.78	\$0.70	—	—
Lingcod: LE Fixed Gear	—	—	—	—	\$1.07	\$0.83
Lingcod: LE Trawl	\$0.73	\$0.62	\$0.81	\$0.71	\$0.82	\$0.75
Lingcod: Non-vessel	—	—	—	—	\$1.99	\$1.70
Lingcod: Other	\$3.19	\$2.90	\$2.07	\$0.92	—	—
Lingcod: Other Vessel	—	—	—	—	\$1.16	\$1.02
Rockfish: Fixed Gear	\$0.63	\$0.58	\$0.83	\$0.77	—	—
Rockfish: LE Fixed Gear	—	—	—	—	\$0.98	\$1.05
Rockfish: LE Trawl	\$0.57	\$0.50	\$0.56	\$0.50	\$0.64	\$0.55
Rockfish: Non-vessel	—	—	—	—	\$1.19	\$1.04
Rockfish: Other	—	—	\$1.36	\$0.81	—	—
Rockfish: Other Vessel	—	—	—	—	\$0.84	\$0.75
Sanddab: LE Trawl	—	—	—	—	\$0.61	\$0.60
Sanddab: Non-vessel	—	—	—	—	\$2.05	\$1.39
Sharks, skates and rays: Fixed Gear	\$0.16	\$0.15	\$0.23	\$0.24	—	—
Sharks, skates and rays: LE Fixed Gear	—	—	—	—	\$0.91	\$0.41
Sharks, skates and rays: LE Trawl	\$0.22	\$0.18	\$0.27	\$0.20	\$0.33	\$0.30
Sharks, skates and rays: Other	—	—	\$1.32	\$0.72	—	—
Sharks, skates and rays: Other Vessel	—	—	—	—	\$0.89	\$0.82

Table 8.8: Mean and median fish cost per pound: other groundfish (cont.).

Species: Source	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
English sole: LE Trawl	\$0.66	\$0.33	\$0.37	\$0.33	\$0.46	\$0.40
Petrале sole: LE Trawl	\$1.05	\$1.05	\$1.11	\$1.15	\$1.44	\$1.42
Petrале sole: Non-vessel	—	—	—	—	\$3.01	\$2.35
Petrале sole: Other	\$2.90	\$1.76	\$2.86	\$1.70	—	—
Petrале sole: Other Vessel	—	—	—	—	\$1.40	\$1.36
Rex sole: LE Trawl	\$0.38	\$0.37	\$0.37	\$0.36	\$0.43	\$0.37
Rex sole: Non-vessel	—	—	—	—	\$1.36	\$1.38
Rex sole: Other	—	—	\$2.07	\$0.38	—	—
Rex sole: Other Vessel	—	—	—	—	\$0.58	\$0.37

Table 8.9: Mean and median fish cost per pound: non-groundfish.

Species: Source	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Coastal pelagics: All	\$0.68	\$0.12	\$0.83	\$0.12	—	—
Coastal pelagics: Non-vessel	—	—	—	—	\$1.21	\$0.53
Coastal pelagics: Vessel	—	—	—	—	\$0.43	\$0.13
Crab: All	\$2.57	\$1.88	\$2.31	\$1.84	—	—
Crab: Non-vessel	—	—	—	—	\$4.07	\$3.41
Crab: Vessel	—	—	—	—	\$2.50	\$2.42
Salmon: All	\$3.05	\$2.62	\$3.94	\$4.18	—	—
Salmon: Non-vessel	—	—	—	—	\$3.63	\$3.55
Salmon: Vessel	—	—	—	—	\$4.61	\$5.06
Shrimp: All	\$1.45	\$0.32	\$1.83	\$0.37	—	—
Shrimp: Non-vessel	—	—	—	—	\$3.66	\$3.62
Shrimp: Vessel	—	—	—	—	\$1.64	\$0.51
Tuna: All	\$1.41	\$1.00	\$1.53	\$1.04	—	—
Tuna: Vessel	—	—	—	—	\$1.93	\$1.90

Table 8.10: Mean and median fish cost per pound: non-groundfish (cont.).

Species: Source	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
California halibut: All	\$4.95	\$4.50	\$4.13	\$3.95	—	—
California halibut: Non-vessel	—	—	—	—	\$4.85	\$4.66
California halibut: Vessel	—	—	—	—	\$4.83	\$4.84
Other species: All	\$0.57	\$0.18	\$0.50	\$0.34	—	—
Pacific halibut: All	\$4.00	\$3.22	\$5.14	\$4.33	—	—
Pacific halibut: Non-vessel	—	—	—	—	\$7.84	\$6.53
Pacific halibut: Vessel	—	—	—	—	\$6.13	\$6.22
Shellfish: All	\$2.56	\$2.23	\$2.99	\$2.72	—	—
Shellfish: Non-vessel	—	—	—	—	\$2.88	\$2.60
Squid: All	\$0.67	\$0.29	\$0.58	\$0.27	—	—
Squid: Non-vessel	—	—	—	—	\$1.43	\$0.84
Sturgeon: Non-vessel	—	—	—	—	\$4.29	\$3.56
Sturgeon: Vessel	—	—	—	—	\$2.52	\$2.49

9 Revenue Per Pound from Fish Products Produced

Similarly to calculations of average cost per pound of fish, the average revenue per pound of fish production by species was calculated in two ways. First, a sector-wide average fish revenue per pound by product type is calculated (Section 9.1). This represents the revenue per pound by species for all fish that are delivered shoreside. The second is the mean (and median of the revenue) per pound of fish across companies (Section 9.2). These means (and medians) represent the revenue of fish per pound for an average company on the West Coast, whereas the industry-wide revenue per pound of fish represents the average revenue per pound of fish coast-wide.

9.1 Sector-wide revenue per pound by product

The industry-wide revenue R per pound of fish outputs $WT^{fishoutputs}$ by species e and production type o

$$\frac{\sum_{n=1}^N R_{n,e,o}}{\sum_{n=1}^N WT_{n,e,o}^{fishoutputs}} \quad \forall e, o$$

where N is the total number of companies that submitted EDC data. The industry-wide revenue per pound of fish by species or species group and source of fish is calculated for each survey year.

Table 9.1: Sector-wide revenue per pound: whiting, dover, thornyheads, sablefish.

Species: Source	2009 N=23	2010 N=25	2011 N=32
	\$ per lb.	\$ per lb.	\$ per lb.
Dover sole: Fresh	2.24	2.49	3.33
Dover sole: Frozen	2.15	1.57	2.66
Dover sole: Unprocessed	—	0.46	0.29
Pacific whiting: Fillet	1.09	1.17	0.65
Pacific whiting: Frozen	—	0.33	0.29
Pacific whiting: Headed-and-gutted	0.56	0.57	0.6
Pacific whiting: Unprocessed	0.1	0.11	0.15
Sablefish: Fresh	4.07	5.19	3.19
Sablefish: Frozen	4.91	5.38	7.16
Sablefish: Unprocessed	2.78	2.87	3.54
Thornyheads: Fresh	1.2	1.16	—
Thornyheads: Frozen	2.35	2.22	3.41
Thornyheads: Other	—	—	2.16
Thornyheads: Unprocessed	1.23	0.68	1.06

Table 9.2: Sector-wide revenue per pound: other groundfish.

Species: Source	2009 N=23	2010 N=25	2011 N=32
	\$ per lb.	\$ per lb.	\$ per lb.
Arrowtooth flounder: Fresh	—	—	1.12
Lingcod: Fresh	3.76	4.19	3.98
Lingcod: Frozen	5.95	2.03	3.43
Lingcod: Unprocessed	1.22	1.63	2.58
Rockfish: Fresh	2.7	2.66	2.81
Rockfish: Frozen	1.99	1.86	1.83
Rockfish: Other	—	—	1.85
Rockfish: Unprocessed	1.16	1.05	1.20
Sanddab: Fresh	—	—	4.61
Sanddab: Frozen	—	—	3.18
Sanddab: Unprocessed	—	—	1.00
Sharks, skates and rays: Fresh	1.14	1.65	2.41
Sharks, skates and rays: Frozen	1.35	1.86	2.07
Sharks, skates and rays: Unprocessed	—	0.55	0.73

Table 9.3: Sector-wide revenue per pound: other groundfish (cont.).

Species: Source	2009 N=23	2010 N=25	2011 N=32
	\$ per lb.	\$ per lb.	\$ per lb.
English sole: Fresh	2.13	2.24	3.19
English sole: Frozen	1.21	1.08	2.44
English sole: Unprocessed	0.67	0.5	0.46
Petrale sole: Fresh	3.45	3.97	5.5
Petrale sole: Frozen	3.07	3	4.19
Petrale sole: Unprocessed	1.55	1.87	2.15
Rex sole: Fresh	1.63	2	2.15
Rex sole: Frozen	1.5	1.27	1.63
Rex sole: Unprocessed	0.7	0.53	0.5

Table 9.4: Sector-wide revenue per pound: non-groundfish.

Species:Source	2009 N=23	2010 N=25	2011 N=32
	\$ per lb..	\$ per lb..	\$ per lb..
Coastal pelagics: Fresh	0.33	—	—
Coastal pelagics: Frozen	0.41	0.37	0.33
Coastal pelagics: Other	0.24	0.23	—
Coastal pelagics: Unprocessed	—	—	2.57
Crab: Canned	14.9	15.91	—
Crab: Fresh	5.43	4.38	5.67
Crab: Frozen	5.19	4.32	5.73
Crab: Other	—	10.03	—
Crab: Unprocessed	2.23	2.24	2.6
Salmon: Fresh	3.5	4.48	4.28
Salmon: Frozen	—	2.87	2.14
Salmon: Other	2.88	—	—
Salmon: Smoked	10.17	8.7	—
Salmon: Unprocessed	3.48	4.05	2.28
Shrimp: Fresh	1.6	1.58	3.09
Shrimp: Frozen	2.78	2.01	2.99
Shrimp: Unprocessed	—	—	0.9
Tuna: Canned	—	—	4.4
Tuna: Fresh	3.34	3.98	4.48
Tuna: Frozen	1.39	1.68	2.63
Tuna: Unprocessed	—	1.58	2.09

Table 9.5: Sector-wide revenue per pound: non-groundfish (cont.).

Species: Source	2009 N=23	2010 N=25	2011 N=32
	\$ per lb.	\$ per lb.	\$ per lb.
California halibut: Fresh	—	8.57	10.31
California halibut: Unprocessed	5.18	—	5.85
Other species: Other	0.48	0.34	—
Pacific halibut: Fresh	5.62	9.52	9.57
Pacific halibut: Frozen	6.63	8.83	9.96
Pacific halibut: Unprocessed	4.86	—	7.64
Shellfish: Unprocessed	3.43	3.53	3.18
Squid: Fresh	1.04	—	—
Squid: Frozen	1.68	1.05	1.8
Squid: Unprocessed	—	—	1.1
Sturgeon: Fresh	4.65	4.93	5.71
Sturgeon: Frozen	13.34	4.25	—

9.2 Mean and median production revenue per pound by product type

The mean revenue R per pound of fish production by species e and product type o is

$$\frac{\sum_{n=1}^N \frac{R_{n,e,o}}{WT_{n,e,o}^{fishoutputs}}}{N} \quad \forall e, o$$

where N is the total number of companies that submitted EDC data, $WT^{fishoutputs}$ is the weight of fish outputs, and $WT^{fishinputs}$ is the weight of fish inputs. The median is the median of revenue per pound of fish by species and product type $\frac{R_{n,e,o}}{WT_{n,e,o}^{fishoutputs}} \quad \forall e, o$. The mean and median revenue per pound of fish by species and source of fish is calculated for each survey year.

Table 9.6: Mean and median revenue per pound: whiting, dover, thornyheads, sablefish.

Species: Product	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Dover sole: Fresh	\$2.38	\$2.69	\$2.45	\$2.71	\$3.29	\$3.39
Dover sole: Frozen	\$2.98	\$2.21	\$3.61	\$2.06	\$2.58	\$2.80
Dover sole: Unprocessed	—	—	\$0.72	\$0.53	\$0.95	\$0.64
Pacific whiting: Fillet	\$1.18	\$1.27	\$0.99	\$1.00	\$0.70	\$0.52
Pacific whiting: Frozen	—	—	\$0.26	\$0.26	\$0.31	\$0.30
Pacific whiting: Headed-and-gutted	\$0.61	\$0.56	\$0.58	\$0.66	\$0.63	\$0.62
Pacific whiting: Unprocessed	***	***	\$0.10	\$0.10	***	***
Sablefish: Fresh	\$4.83	\$4.84	\$5.30	\$5.45	\$5.10	\$4.09
Sablefish: Frozen	\$4.88	\$5.01	\$5.05	\$5.17	\$6.80	\$6.75
Sablefish: Unprocessed	\$2.38	\$2.65	\$2.49	\$2.89	\$4.74	\$3.64
Thornyheads: Fresh	\$1.45	\$1.76	\$1.08	\$1.07	—	—
Thornyheads: Frozen	\$4.52	\$2.63	\$2.25	\$2.49	\$2.94	\$3.43
Thornyheads: Other	—	—	—	—	***	***
Thornyheads: Unprocessed	\$1.64	\$1.68	\$0.96	\$0.79	\$1.69	\$1.14

Table 9.7: Mean and median revenue per pound: other groundfish.

Species: Product	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Arrowtooth flounder: Fresh	—	—	—	—	\$0.91	\$1.10
Lingcod: Fresh	\$3.39	\$3.30	\$2.84	\$2.70	\$3.96	\$4.21
Lingcod: Frozen	\$7.31	\$3.09	\$2.37	\$2.30	\$4.84	\$5.36
Lingcod: Unprocessed	\$8.17	\$1.55	\$2.06	\$1.62	\$2.29	\$1.47
Rockfish: Fresh	\$2.56	\$2.27	\$2.29	\$2.56	\$2.81	\$3.12
Rockfish: Frozen	\$2.53	\$2.50	\$2.34	\$2.11	\$2.80	\$2.51
Rockfish: Other	—	—	—	—	\$2.83	\$2.41
Rockfish: Unprocessed	\$1.12	\$1.14	\$1.09	\$1.02	\$1.32	\$1.02
Sanddab: Fresh	—	—	—	—	\$3.26	\$3.46
Sanddab: Frozen	—	—	—	—	\$4.82	\$5.08
Sanddab: Unprocessed	—	—	—	—	\$1.05	\$1.13
Sharks, skates and rays: Fresh	\$1.76	\$1.34	\$1.48	\$1.42	\$2.23	\$1.29
Sharks, skates and rays: Frozen	\$1.51	\$1.46	\$1.76	\$1.78	\$2.67	\$2.59
Sharks, skates and rays: Unprocessed	—	—	\$1.41	\$0.58	\$0.83	\$0.60

Table 9.8: Mean and median revenue per pound: other groundfish (cont.).

Species: Product	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
English sole: Fresh	\$2.63	\$2.75	\$2.72	\$2.68	\$3.20	\$3.25
English sole: Frozen	\$1.73	\$1.90	\$1.69	\$1.64	\$2.65	\$2.80
English sole: Unprocessed	\$0.67	\$0.69	\$0.92	\$0.79	\$1.10	\$0.57
Petrале sole: Fresh	\$4.22	\$4.06	\$4.59	\$4.08	\$5.91	\$6.02
Petrале sole: Frozen	\$2.67	\$2.76	\$3.02	\$3.29	\$3.96	\$4.12
Petrале sole: Unprocessed	\$1.81	\$1.84	\$2.32	\$2.11	\$2.68	\$2.51
Rex sole: Fresh	\$1.78	\$1.75	\$2.31	\$1.73	\$2.74	\$2.00
Rex sole: Frozen	\$1.54	\$1.47	\$1.39	\$1.40	\$1.90	\$1.81
Rex sole: Unprocessed	\$0.79	\$0.69	\$0.70	\$0.70	\$0.70	\$0.79

Table 9.9: Mean and median revenue per pound: non-groundfish

Species: Product	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
Coastal pelagics: Fresh	\$2.88	\$0.25	—	—	—	—
Coastal pelagics: Frozen	\$1.16	\$0.39	\$0.98	\$0.35	\$0.99	\$0.49
Coastal pelagics: Other	\$0.23	\$0.25	\$0.23	\$0.24	—	—
Coastal pelagics: Unprocessed	—	—	—	—	\$1.72	\$1.05
Crab: Canned	***	***	***	***	—	—
Crab: Fresh	\$7.65	\$3.73	\$3.63	\$2.92	\$5.53	\$4.16
Crab: Frozen	\$5.60	\$4.72	\$4.56	\$4.24	\$6.23	\$5.85
Crab: Other	—	—	***	***	—	—
Crab: Unprocessed	\$4.15	\$2.59	\$3.00	\$3.00	\$4.43	\$3.00
Salmon: Fresh	\$4.86	\$4.12	\$5.15	\$6.19	\$6.59	\$6.12
Salmon: Frozen	—	—	\$3.72	\$3.64	\$3.79	\$3.62
Salmon: Other	***	***	—	—	—	—
Salmon: Smoked	***	***	***	***	—	—
Salmon: Unprocessed	\$4.27	\$4.79	\$4.89	\$5.28	\$5.07	\$5.39
Shrimp: Fresh	\$2.96	\$2.27	\$3.11	\$2.30	\$3.09	\$2.86
Shrimp: Frozen	\$3.76	\$2.85	\$3.37	\$2.28	\$4.00	\$2.97
Shrimp: Unprocessed	—	—	—	—	\$6.38	\$4.23
Tuna: Canned	—	—	—	—	***	***
Tuna: Fresh	\$2.99	\$1.36	\$3.29	\$1.83	\$6.07	\$5.53
Tuna: Frozen	\$1.80	\$1.35	\$1.92	\$1.73	\$2.65	\$2.38
Tuna: Unprocessed	—	—	\$2.50	\$1.73	\$2.87	\$2.19

Table 9.10: Mean and median revenue per pound: non-groundfish (cont.).

Species: Product	2009 N=23		2010 N=25		2011 N=32	
	Mean	Median	Mean	Median	Mean	Median
California halibut: Fresh	—	—	\$8.32	\$9.62	\$9.24	\$11.02
California halibut: Unprocessed	\$5.60	\$5.41	—	—	\$5.59	\$5.89
Other species: Other	\$1.63	\$1.06	\$1.31	\$0.94	—	—
Pacific halibut: Fresh	\$5.47	\$4.19	\$6.60	\$5.43	\$9.79	\$7.75
Pacific halibut: Frozen	\$5.94	\$5.45	\$8.48	\$8.10	\$11.26	\$11.28
Pacific halibut: Unprocessed	***	***	—	—	\$8.14	\$7.92
Shellfish: Unprocessed	\$3.40	\$4.21	\$3.52	\$4.46	\$3.18	\$3.00
Squid: Fresh	***	***	—	—	—	—
Squid: Frozen	\$6.19	\$0.74	\$1.17	\$0.68	\$1.36	\$0.92
Squid: Unprocessed	—	—	—	—	***	***
Sturgeon: Fresh	\$4.54	\$4.73	\$3.93	\$4.98	\$6.78	\$5.35
Sturgeon: Frozen	***	***	\$4.15	\$3.91	—	—

10 Product Recovery Rates

The industry-wide product recovery rate by species is

$$\frac{\sum_{o=1}^O \sum_{n=1}^N WT_{n,e,o}^{fishoutputs}}{\sum_{s=1}^S \sum_{n=1}^N WT_{n,e,s}^{fishinputs}} \quad \forall e$$

where N is the total number of companies that submitted EDC data, O is the number of product types, and S is number of species. The industry-wide product recovery rate by species or species group is calculated for each survey year. The weight of fish purchased include fish received from trawl vessel, fixed gear vessels, other vessel, and non-vessel sources. Fish purchased and produced may include pre-product types, listed on the EDC form as "unprocessed".

10.1 Product recovery rate fish purchase weight

10.1.1 Total production weight by species

Table 10.1: Total fish production weight by species

Species	2009 N=23	2010 N=25	2011 N=32
	Lbs.	Lbs.	Lbs.
Arrowtooth flounder	—	—	2,333,247
California halibut	22,878	89,012	196,182
Coastal pelagics	30,650,717	34,901,309	17,955,719
Crab	11,397,560	22,527,421	19,716,464
Dover sole	8,538,529	8,054,138	5,357,355
English sole	334,678	168,313	120,244
Lingcod	203,647	140,984	324,932
Other species	2,147,897	8,945,464	—
Pacific halibut	290,088	247,836	201,557
Pacific herring	—	—	2,708
Pacific whiting	75,882,408	49,111,709	105,192,205
Petrale sole	2,492,793	877,819	1,012,944
Rex sole	710,882	490,459	441,751
Rockfish	1,434,610	1,540,902	2,810,307
Sablefish	6,592,400	6,916,532	6,507,969
Salmon	4,448,602	5,036,853	8,846,451
Sanddab	—	—	267,947
Sharks, skates and rays	1,470,794	1,405,160	1,887,182
Shellfish	1,560,672	1,974,530	1,478,289
Shrimp	12,163,411	14,312,005	22,953,593
Squid	258,674	834,843	350,641
Sturgeon	—	—	139,629
Thornyheads	2,076,187	2,159,128	1,674,864
Tuna	7,398,717	8,654,280	4,648,212

10.1.2 Total fish purchase weight by species

As stated in the introduction to this report, respondents fill out the survey according to their fiscal year, so pounds listed for each species here may not have been purchased during the calendar year indicated by the column header, and these values may not align directly to state-fish ticket data.

Table 10.2: Total fish purchase weight by species

Species	2009 N=23	2010 N=25	2011 N=32
	Lbs.	Lbs.	Lbs.
Arrowtooth flounder	—	—	4,942,838
California halibut	22,878	91,140	224,096
Coastal pelagics	37,300,545	41,421,370	18,396,801
Crab	17,435,282	34,123,164	33,466,817
Dover sole	24,639,304	21,665,970	18,436,452
English sole	778,773	487,241	319,769
Lingcod	316,594	225,396	634,735
Other species	4,576,433	10,373,485	—
Pacific halibut	295,770	272,579	224,997
Pacific herring	—	—	3,620
Pacific whiting	124,963,966	124,902,128	237,932,071
Petrale sole	4,116,861	1,553,923	1,886,642
Rex sole	1,177,582	899,876	976,410
Rockfish	3,230,079	3,711,319	5,293,956
Sablefish	9,494,798	8,738,408	8,287,258
Salmon	4,778,802	6,334,256	11,087,381
Sanddab	—	—	383,817
Sharks, skates and rays	3,046,498	3,186,428	3,244,572
Shellfish	1,560,672	1,977,295	1,516,323
Shrimp	30,100,295	41,047,028	65,550,301
Squid	345,198	895,466	361,404
Sturgeon	—	—	228,749
Thornyheads	4,963,762	4,144,705	3,451,274
Tuna	7,459,333	10,475,118	5,655,452

10.2 Mean product recovery rates

Table 10.3: Average product recovery rate

Species	2009 N=23	2010 N=25	2011 N=32
	Average	Average	Average
Arrowtooth flounder	—	—	0.47
California halibut	1	0.98	0.88
Coastal pelagics	0.82	0.84	0.98
Crab	0.65	0.66	0.59
Dover sole	0.35	0.37	0.29
English sole	0.43	0.35	0.38
Lingcod	0.64	0.63	0.51
Other species	0.47	0.86	—
Pacific halibut	0.98	0.91	0.9
Pacific herring	—	—	0.75
Pacific whiting	0.61	0.39	0.44
Petrable sole	0.61	0.56	0.54
Rex sole	0.6	0.55	0.45
Rockfish	0.44	0.42	0.53
Sablefish	0.69	0.79	0.79
Salmon	0.93	0.8	0.8
Sanddab	—	—	0.7
Sharks, skates and rays	0.48	0.44	0.58
Shellfish	1	1	0.97
Shrimp	0.4	0.35	0.35
Squid	0.75	0.93	0.97
Sturgeon	—	—	0.61
Thornyheads	0.42	0.52	0.49
Tuna	0.99	0.83	0.82

11 Markup

The industry-wide markup by species e is

$$\frac{\sum_{o=1}^O \sum_{n=1}^N R_{n,e,o}}{\sum_{s=1}^S \sum_{n=1}^N C_{n,e,s}} \forall e$$

where N is the total number of companies that submitted EDC data, O is the number of product types, and S is number of species. The markup by species is calculated for each survey year. The costs of fish include fish received from all sources. The fish purchases can include pre-processed product types. The production value includes production of unprocessed and processed products.

11.1 Revenue and costs used to calculate markup

11.1.1 Total fish production revenue by species

Table 11.1: Total fish production revenue by species

Species	2009 N=23	2010 N=25	2011 N=32
	Value	Value	Value
Arrowtooth flounder	—	—	\$1,702,537
California halibut	\$ 721,555	\$1,262,874	\$1,361,297
Coastal pelagics	\$ 12,896,703	\$11,460,349	\$13,014,790
Crab	\$ 77,290,802	\$106,290,143	\$105,462,206
Dover sole	\$ 17,628,416	\$16,360,918	\$13,962,474
English sole	\$ 575,722	\$ 292,630	\$ 276,279
Lingcod	\$ 556,653	\$ 452,994	\$1,152,158
Other species	\$ 5,729,806	\$6,364,470	—
Pacific halibut	\$ 3,598,579	\$2,043,805	\$2,458,546
Pacific herring	—	—	\$ 9,358
Pacific whiting	\$ 46,650,415	\$33,100,501	\$52,502,246
Petrale sole	\$ 7,184,323	\$2,826,415	\$3,813,896
Rex sole	\$ 1,058,609	\$ 870,349	\$ 771,987
Rockfish	\$ 4,438,404	\$3,628,211	\$5,454,252
Sablefish	\$ 33,844,434	\$38,701,224	\$38,051,629
Salmon	\$ 12,952,484	\$20,823,765	\$28,336,749
Sanddab	—	—	\$ 462,266
Sharks, skates and rays	\$ 1,804,286	\$2,004,933	\$2,818,476
Shellfish	\$ 8,624,118	\$7,732,009	\$10,313,451
Shrimp	\$ 28,982,683	\$29,515,017	\$60,605,752
Squid	\$ 499,788	\$ 826,135	\$ 631,170
Sturgeon	—	—	\$1,013,383
Thornyheads	\$ 4,553,406	\$5,100,673	\$4,443,300
Tuna	\$ 14,690,905	\$14,898,677	\$20,483,210

11.1.2 Total fish purchase cost by species

Table 11.2: Total fish purchases cost by species

Species	2009 N=23	2010 N=25	2011 N=32
	Value	Value	Value
Arrowtooth flounder	—	—	\$1,335,764
California halibut	\$ 568,491	\$ 687,627	\$1,133,396
Coastal pelagics	\$5,376,267	\$5,297,512	\$5,063,952
Crab	\$38,564,966	\$71,597,376	\$72,982,216
Dover sole	\$8,450,521	\$6,883,313	\$7,001,794
English sole	\$ 266,653	\$ 155,693	\$ 127,167
Lingcod	\$ 267,251	\$ 202,636	\$ 526,181
Other species	\$2,075,233	\$3,983,727	—
Pacific halibut	\$2,417,068	\$1,894,548	\$2,197,380
Pacific herring	—	—	\$ 9,648
Pacific whiting	\$12,665,435	\$9,117,094	\$24,842,071
Petrale sole	\$3,522,586	\$1,907,507	\$2,643,976
Rex sole	\$ 418,631	\$ 358,073	\$ 349,502
Rockfish	\$2,816,399	\$2,423,667	\$3,530,627
Sablefish	\$24,805,547	\$24,098,071	\$29,427,854
Salmon	\$6,169,125	\$16,229,078	\$20,641,730
Sanddab	—	—	\$ 204,042
Sharks, skates and rays	\$ 673,585	\$ 859,245	\$ 982,151
Shellfish	\$6,619,728	\$5,870,718	\$7,112,699
Shrimp	\$11,341,178	\$15,481,708	\$31,199,998
Squid	\$ 396,667	\$ 644,995	\$ 484,441
Sturgeon	—	—	\$ 743,941
Thornyheads	\$2,466,913	\$2,341,662	\$1,817,799
Tuna	\$8,954,246	\$12,849,193	\$15,316,941

11.2 Average industry markup

Table 11.3: Average industry markup table

Species	2009 N=23	2010 N=25	2011 N=32
	Average	Average	Average
Arrowtooth flounder	—	—	1.27
California halibut	1.27	1.84	1.2
Coastal pelagics	2.4	2.16	2.57
Crab	2	1.48	1.45
Dover sole	2.09	2.38	1.99
English sole	2.16	1.88	2.17
Lingcod	2.08	2.24	2.19
Other species	2.76	1.6	—
Pacific halibut	1.49	1.08	1.12
Pacific herring	—	—	0.97
Pacific whiting	3.68	3.63	2.11
Petrable sole	2.04	1.48	1.44
Rex sole	2.53	2.43	2.21
Rockfish	1.58	1.5	1.54
Sablefish	1.36	1.61	1.29
Salmon	2.1	1.28	1.37
Sanddab	—	—	2.27
Sharks, skates and rays	2.68	2.33	2.87
Shellfish	1.3	1.32	1.45
Shrimp	2.56	1.91	1.94
Squid	1.26	1.28	1.3
Sturgeon	—	—	1.36
Thornyheads	1.85	2.18	2.44
Tuna	1.64	1.16	1.34

Appendix A IO-PAC Model Tables

This appendix reports the EDC data for first receivers and shorebased processors that are used in the IO-PAC model¹ was calculated by dividing the total value of production (Table A.1). The average markup (Table A.3) for the IO-PAC model by the total cost of all fish put into production (Table A.2). The costs of fish include fish received from trawl vessel, fixed gear vessels, other vessel, and non-vessel sources. The fish purchased can include pre-processed product types. The production value includes production of unprocessed and processed products.

A.1 Total production revenue

¹Leonard, J., and P. Watson. 2011. Description of the input-output model for Pacific Coast fisheries. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-111, 64 p.

Table A.1: Total value fish production by IO-PAC species

Species	2009 N=23	2010 N=25	2011 N=32
CPS	\$ 12,896,703	\$ 11,460,349	\$ 13,014,790
Crab	\$ 77,290,802	\$106,290,143	\$105,462,206
Dover and Thornyheads	\$ 22,181,823	\$ 21,461,591	\$ 18,408,753
Halibut	\$ 4,320,134	\$ 3,306,679	\$ 3,819,843
HMS	\$ 14,690,905	\$ 14,898,677	\$ 20,483,210
Other groundfish	\$ 13,813,711	\$ 8,070,598	\$ 13,633,376
Sablefish	\$ 33,844,434	\$ 38,701,224	\$ 38,051,629
Salmon	\$ 12,952,484	\$ 20,823,765	\$ 28,336,749
Shrimp	\$ 28,982,683	\$ 29,515,017	\$ 60,605,752
Whiting	\$ 46,650,415	\$ 33,100,501	\$ 52,502,246

A.2 Total fish purchase cost by IO-PAC species

Table A.2: Total cost of fish purchases by IO-PAC species

Species	2009 N=23	2010 N=25	2011 N=32
	\$	\$	\$
CPS	\$ 5,376,267	\$ 5,297,512	\$ 5,063,952
Crab	\$38,564,966	\$71,597,376	\$72,982,216
Dover and Thornyheads	\$10,917,434	\$ 9,224,975	\$ 8,819,593
Halibut	\$ 2,985,559	\$ 2,582,175	\$ 3,330,776
HMS	\$ 8,954,246	\$12,849,193	\$15,316,941
Other groundfish	\$ 7,291,845	\$ 5,050,459	\$ 8,717,496
Sablefish	\$24,805,547	\$24,098,071	\$29,427,854
Salmon	\$ 6,169,125	\$16,229,078	\$20,641,730
Shrimp	\$11,341,178	\$15,481,708	\$31,199,998
Whiting	\$12,665,435	\$ 9,117,094	\$24,842,071

A.3 Markup

Table A.3: Average industry markup by IO-PAC species.

Species	2009 N=23	2010 N=25	2011 N=32
	Average	Average	Average
CPS	2.4	2.16	2.57
Crab	2	1.48	1.45
Dover and Thornyheads	2.03	2.33	2.09
Halibut	1.45	1.28	1.15
HMS	1.64	1.16	1.34
Other groundfish	1.89	1.6	1.56
Sablefish	1.36	1.61	1.29
Salmon	2.1	1.28	1.37
Shrimp	2.56	1.91	1.94
Whiting	3.68	3.63	2.11

A.4 Other IO-PAC inputs

The IO-PAC model uses input from the following summary tables, which show the total value and number of respondents for each category.

Table A.4: Total Production Employee Hours.

Production Employee Hours	2009 N=23		2010 N=25		2011 N=32	
	Total	N	Total	N	Total	N
January	39,777.9	20	37,202.0	23	53,784.7	23
February	20,656.1	20	35,202.8	23	44,060.1	23
March	27,517.3	20	31,669.4	23	33,790.5	23
April	28,784.0	19	40,923.3	22	40,845.5	24
May	47,476.4	19	67,121.1	22	55,372.6	25
June	68,213.1	19	69,531.0	23	90,150.7	25
July	126,217.1	20	90,689.0	23	150,607.2	26
August	68,666.9	20	99,673.2	23	162,414.8	26
September	55,218.8	20	69,529.4	22	124,510.3	26
October	82,422.9	20	50,173.8	22	74,815.0	25
November	51,296.2	19	46,631.3	22	52,722.7	25
December	106,558.7	20	125,508.7	23	106,688.2	24

Table A.5: Total Number of Production Employees.

Number of Production Employees	2009 N=23		2010 N=25		2011 N=32	
	Total	N	Total	N	Total	N
January	1,495.0	20	1,765.0	23	1,848.0	23
February	1,212.0	20	1,471.0	23	1,599.0	23
March	1,233.0	20	1,340.0	23	1,143.0	23
April	1,243.0	19	1,411.0	22	1,225.0	24
May	1,462.0	19	1,977.0	22	1,315.0	25
June	2,195.0	19	2,138.0	23	2,054.0	25
July	2,730.0	20	2,436.0	23	3,099.0	26
August	2,059.0	20	2,750.0	23	2,967.0	26
September	2,011.0	20	2,059.0	22	2,686.0	26
October	1,905.0	20	1,840.0	22	1,955.0	25
November	1,552.0	19	1,711.0	22	1,545.0	25
December	2,881.0	20	2,560.0	23	2,426.0	24

Table A.6: Total Number and Hours of Non-Production Employees.

Non-Production Employees	2009 N=23		2010 N=25		2011 N=32	
	Total	N	Total	N	Total	N
Hours Worked	12,286.4	21	17,246.4	22	11,117.6	28
Number of employees	200.0	21	268.0	22	212.0	28

Table A.7: Total Employee Expenses.

Employment Expenses	2009 N=23		2010 N=25		2011 N=32	
	Total	N	Total	N	Total	N
Non-production employees	\$9,018,992	23	\$10,395,436	25	\$12,007,477	32
Production workers	\$33,997,783	23	\$32,378,076	25	\$46,009,087	32

Table A.8: Total Expenditure on Buildings and Equipment.

Capital Expenditures	2009 N=23		2010 N=25		2011 N=32	
	Total	N	Total	N	Total	N
Capitalized expenditures on buildings	\$6,162,592	14	\$6,661,913	13	\$3,335,907	10
Capitalized expenditures on new and used machinery and equipment	\$21,984,534	21	\$24,371,908	20	\$10,275,056	20
Processing equipment	\$490,838	15	\$558,311	17	\$624,959	19
Rental or lease of buildings, job-site trailers, and other structures	\$2,586,591	22	\$2,718,740	23	\$3,100,685	24
Repair and maintenance on facility buildings, machinery, and equipment	\$5,061,722	22	\$5,354,384	23	\$6,201,007	27

Table A.9: Total Utility Expenses.

Sum of Utilities Expenses	2009 N=23		2010 N=25		2011 N=32	
	Total	N	Total	N	Total	N
Electricity	\$3,706,575	22	\$4,010,386	23	\$4,473,713	27
Natural gas	\$1,137,666	12	\$1,047,859	12	\$343,109	10
Nitrogen gas	\$0	0	\$0	0	***	***
Propane gas	\$455,315	16	\$891,484	19	\$813,781	21
Sewer, waste, and byproduct disposal	\$754,150	20	\$948,087	20	\$1,215,908	24
Water	\$1,535,981	22	\$1,987,467	23	\$2,405,888	24

Table A.10: Total Other Expenses.

Sum of Other Expenses	2009 N=23		2010 N=25		2011 N=32	
	Total	N	Total	N	Total	N
Cleaning and custodial supplies	\$0	0	\$0	0	\$389,167	32
Freight costs for supplies	\$1,692,815	23	\$1,735,573	25	\$1,531,957	32
Insurance (property, product, and personal liability)	\$3,009,296	23	\$2,966,941	25	\$1,935,125	32
Licensing fees	\$0	0	\$0	0	\$291,822	32
Non-fish ingredients (additives)	\$716,795	23	\$676,366	25	\$1,483,764	32
Off-site product freezing and storage	\$3,203,129	23	\$3,804,195	25	\$6,058,569	32
Offloading	\$0	0	\$0	0	\$746,377	32
Packing materials	\$13,286,417	23	\$12,164,947	25	\$12,979,663	32
Production supplies	\$2,267,970	23	\$2,574,746	25	\$1,300,046	32
Shoreside monitoring	\$181,209	23	\$456,947	25	\$119,793	32
Taxes (property and excise)	\$0	0	\$0	0	\$1,342,505	32

Table A.11: Total Custom Processing.

Custom Processing	2009 N=23		2010 N=25		2011 N=32	
	Total	N	Total	N	Total	N
Cost of custom processing of non-whiting groundfish	1,297,339	3	420,546	3	***	***
Cost of custom processing of non-whiting groundfish, non-groundfish fish	1,359,705	3	1,305,629	4	928,741	4
Cost of custom processing of whiting	852,453	3	***	***	***	***
Revenue from custom processing of non-whiting groundfish	***	***	89,854	3	667,714	5
Revenue from custom processing of non-whiting, non-groundfish fish	379,196	6	483,527	7	1,063,806	5
Revenue from custom processing of whiting	***	***	***	***	***	***
Weight custom processing of whiting	3,870,863	3	***	***	***	***
Weight of custom processing of non-whiting groundfish	4,079,781	3	1,382,174	3	***	***
Weight of custom processing of non-whiting groundfish, non-groundfish fish	6,202,438	3	5,605,518	4	2,965,509	3

Table A.12: Total Other Revenue.

Other Revenue	2009 N=23		2010 N=25		2011 N=32	
	Total	N	Total	N	Total	N
Custom processing of non-whiting groundfish	***	***	\$89,854	3	\$667,714	5
Custom processing of non-whiting, non-groundfish	\$379,196	6	\$483,527	7	\$1,063,806	5
Custom processing of whiting	***	***	***	***	***	***
Offloading	\$0	0	\$0	0	\$1,862,756	13

Appendix B Future Improvements

There are several ways in which the EDC Program will continue to improve the data collection administration and operations with regards to first receivers and shorebased processors.

- There are several points in which the identification of buyers and shorebased processors can be improved. In past data collections, there were two issues with identifying shorebased processors and buyers.
 - First, initially, under the catch share program, the buyer of a fish could use the first receiver site license of an offloader to buy groundfish. This meant that there was no first receiver site license for the true buyer and therefore no way to identify this buyer. Recent changes to the regulations¹ now require that all buyers have a first receiver site license for all physical locations where they purchase, take custody, or control an IFQ landing. The name of the buyer should in all cases now match the name on the first receiver permit and that on the e-ticket. The implementation of these regulations should improve EDC data quality and catch-share performance monitoring for the 2013 survey year and beyond.
 - The second issue the identification of shorebased processors. The first receiver site license program, and previously, the state run licensing program for commercial seafood buyers, can be used for all buyers of seafood, but there is currently no method for identifying processors that do not have a first receiver site license and receive round or headed-and-gutted IFQ species groundfish or whiting from a first receiver.
- The EDC is exploring survey instrument changes that better address businesses with multiple locations.

B.1 Cost allocation

EDC methodology for cost allocation for processors is still under development, with further economic analysis and interviews with participants needed. Processing costs likely differ between some fisheries and product type in terms of expenses on labor, additives, equipment,

¹For more detailed information see: Compliance Guide Pacific Coast Groundfish Trawl Rationalization Program: Changes for 2012 and beyond Federal Register: 76 FR 74725, December 1, 2011

utilities, and production supplies. Major cost categories include the gross cost of fish paid for, investments through capitalized expenditures, daily operating expenses including labor and utilities, and various other expenses. EDC processor forms have a variety of measures available to allocate costs including gross weight of fish purchased, total weight of production, gross cost of fish purchased, and total value of production.

With one or a combination of these measures, the EDC Program will explore methods to allocate costs between fishery groups. For analysis, the EDC Program has tentatively chosen the following species groups:

- Whiting
- Catch share groundfish
- Fixed gear groundfish
- Open access groundfish
- Crab
- Shrimp
- Salmon
- Coastal pelagics, and highly migratory species including tuna and herring
- Halibut, including Pacific and California
- Other, including squid, echinoderms, shellfish, sturgeon, and “other”

B.2 Processor Types

In this report, all of the first receivers and processors are analyzed as a single group. In subsequent reports, the EDC Program will attempt to partition the entities into groups that will aid in the analysis and interpretation of the data. Some options are to partition the data by whether they process fish. We will also explore partitions based on the species or groups of species processed. Input from participants and fishery managers would be helpful in determining which partitions would be most useful.