

West Coast Catcher Boat Survey Summary 1997-1998



Economics Data Program

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Overview of 1997-1998 West-Coast Catcher-Vessel Survey Summary

Introduction

Surveys addressing revenue and expense data for fishing activity were distributed to 284 vessel owner/operators that either owned or leased a limited-entry West-Coast trawl permit. Thirty-four surveys were returned. According to the 'Vessel Classification Rules' in the Description of the U. S. and West Coast Commercial Fishing Fleet and Seafood Processors document¹, 29 were classified as 'Large Groundfish Trawlers'; the remaining were classified as either 'Shrimpers', 'Crabbers', or 'Other'. The current report summarizes the responses of those 'Large Groundfish Trawlers' who returned surveys.

Assessing the representation of the surveyed group

Due to the low (14.6%) response rate and the potential biases of a voluntary survey, we assessed how representative the surveyed group was of the overall West-Coast trawl fleet. We limited our analysis to the 'Large Groundfish Fleet', as 29 of 34 survey respondents were assigned to this classification (although there were 29 in total, there were only 28 in either year). Using information available for the entire fleet, we compared the 28 'Large Groundfish Trawlers' who returned surveys to the remaining 'Large Groundfish Trawlers' who did not respond to the survey (n=195 in 1997 and n=166 in 1998) for each year. Results from our analysis provide no significant evidence of a difference between the respondents and non-respondents, indicating survey results are also likely to be representative of the entire fleet. Details of the analysis follow.

Statistical analysis

The Pacfin Database houses information on catch-landings, revenue, and physical characteristics for all vessels in the fleet. Using this data, we were able to compare the distribution of the respondents to that of the non-respondents for the following variables: 1) total revenue; 2) groundfish revenue including halibut; 3) groundfish revenue excluding halibut; 4) vessel length; and 5) vessel net-weight (see Table 1).

We used a non-parametric *Kolmogorov-Smirnov two sample test*² to compare these two groups. A test was performed on each of the five variables for each year, resulting in a total of 10 separate tests (see Table 2). Results from these tests indicate the distribution of the respondents did not differ from the distribution of the non-respondents ($0.414 \geq p \geq 0.768$ for seven of the tests, see Table 2)³. One test in each year provides only weak evidence of a difference between the respondents and the non-respondents: the analysis of combined groundfish and halibut revenue. But the analyses on the revenue from groundfish only, indicate no evidence of a difference between the respondents and non-respondents.

¹ According to the Vessel Classification Rules a serial hierarchy determines what type classification a fishing vessel is assigned. A vessel is assigned to one and only one classification or 'order', even if the vessel meets the criteria for more than one, in which case it is assigned to the first classification/order for which it meets the criteria. The hierarchy and the criteria for each classification/order are listed in Appendix 1.

A vessel will be assigned to the 'Large Groundfish Trawler' order if 1) it does not meet the criteria for any of the previous classification/orders (Mothership/Cather Processor, Alaska Fisheries Vessel, or Pacific Whiting Onshore and Offshore Trawler) and 2) is defined by having 33% of their revenue associated with groundfish (including sablefish and halibut) that is caught with anything but fixed-gear. Their total revenue must be greater than \$100,000.

² We considered using a one-sample *Kolmogorav-Smirnov goodness of fit test with a known population distribution* (the entire 'Large Trawler Fleet') to determine whether respondents differed in distribution from the population. We and those statisticians with whom we consulted could find justification for either test (the one sample or the two-sample test), after much consideration we opted for the *two-sample Kolmogorav-Smirnov test*. Although it could easily be argued the one-sample test with a known population distribution is the more appropriate test, it is also less conservative. For this reason we selected the *two-sample Kolmogorav-Smirnov test* comparing the distribution of the respondents to that of non-respondents.

³ In most statistical tests a low p-value is chosen in order to be conservative in '*rejecting the null hypothesis*'. In contrast, we want to be conservative in *failing to reject the null hypothesis*, therefore using a higher p-value to determine significance would be more conservative for this analysis. Actual p-values for individual tests are included in Table 2.

Overall the tests provide no substantial evidence that the respondents differ from the non-respondents in terms of total revenue, groundfish revenue and vessel physical parameters. Therefore, we have more confidence that the survey information is representative of the entire 'Large Groundfish Trawlers' fleet.

Survey Results

The following pages summarize the results. This report is limited only to those vessels classified as 'Large Groundfish Trawlers'. A copy of the survey is provided and it includes mean responses to each survey item where appropriate. The mean value is provided for questions that require a value response. For 'yes-no' or categorical questions the total number of each response type is provided. The number of responses may vary depending on the survey item for two reasons: 1) not all surveys were returned to us complete and 2) the group of 'Large Groundfish Trawlers' was not identical between 1997 and 1998.⁴ Consequently, we provide the number of responses (*n*) for each survey item. Additional tables and figures summarize survey information. Figures provide the mean response for each item and when a response to an item was 'zero' the zero was included in the calculation of the mean. The response summary provided within the survey, gives two types of means: 1) one that includes 'zero' responses when calculating the mean and 2) another where 'zero' responses were excluded when calculating the mean.

⁴ A total of 29 unique vessel who returned surveys were classified as 'Large Groundfish Trawlers' in at least one of the two years (1997-1998), although in either year a maximum of 28 vessels were classified as 'Large Groundfish Trawlers'. Therefore, the maximum number of responses for survey items that are specific to a given year is 28. However, some survey items are not specific to a given year. For these more general survey questions, we assigned the classification 'Large Groundfish Trawler' to any respondent who was classified as a 'Large Groundfish Trawler' in either 1997 or 1998 or both years. The maximum number of responses for these items is 29.

Table 1. Comparison of West Coast Large Groundfish Trawler Fleet and West Coast Large Groundfish Trawler Survey Respondents.

Group	N	Mean Total Revenue	Standard Deviation	Mean Groundfish Revenue	Standard Deviation	Groundfish Revenue (% of Total)	Mean Vessel Length (ft)	Standard Deviation	Mean Net Weight (tons)	Standard Deviation
1998 TOTAL	194	\$245,675	\$128,913	\$214,891	\$127,402	87.5%	64.93	14.24	62.18	31.62
1998 SURVEYED	28	\$226,600	\$83,835	\$202,160	\$72,297	89.2%	60.89	11.11	54.68	26.12
1997 TOTAL	223	\$303,531	\$146,475	\$258,481	\$140,571	85.2%	63.69	14.73	60.41	33.32
1997 SURVEYED	28	\$308,867	\$134,202	\$274,402	\$121,388	88.8%	61.00	10.98	54.82	25.98

Table 2. Kolmogorav-Smirnov two-sample test comparing Large Groundfish Trawlers who responded to survey and the Large Groundfish Trawlers who did not respond to survey.

1998	Max Difference	P-value
Total Revenue	0.140	0.705
Groundfish Revenue (incl. halibut)	0.243	0.111
Groundfish Revenue (excl. halibut)	0.178	0.414
Vessel Length	0.200	0.277
Vessel Net-Weight	0.153	0.600
1997	Max Difference	P-value
Total Revenue	0.130	0.768
Groundfish Revenue (incl. halibut)	0.206	0.227
Groundfish Revenue (excl. halibut)	0.165	0.479
Vessel Length	0.157	0.543
Vessel Net-Weight	0.140	0.687

Table 3. West Coast Large Trawler Revenue Summary

Revenue information is provided by type of catch. If a vessel did not land any fish of a given category, the revenue for that catch type is zero; zeros are included when calculating a group mean.

	1997 (n=28)	1998 (n=28)
TOTAL	\$308,867	\$226,600
Standard Deviation	\$134,202	\$83,835
Groundfish and Halibut (non-fixed)	\$274,402	\$202,160
Standard Deviation	\$121,388	\$72,297
Percent of Total	89.60%	90.30%
Groundfish (non-fixed)	\$268,706	\$196,273
Standard Deviation	\$125,576	\$76,996
Percent of Total	87.30%	87.30%
Halibut Revenue (non-fixed)	\$5,696	\$5,887
Standard Deviation	\$26,898	\$20,971
Percent of Total	2.30%	3.00%
Crab	\$14,280	\$17,021
Standard Deviation	\$38,682	\$49,653
Percent of Total	4.40%	5.80%
Shrimp	\$18,645	\$6,578
Standard Deviation	\$34,371	\$16,025
Percent of Total	5.40%	3.50%
All Other Species	\$1,520	\$842
Standard Deviation	\$2,197	\$1,333
Percent of Total	0.60%	0.40%

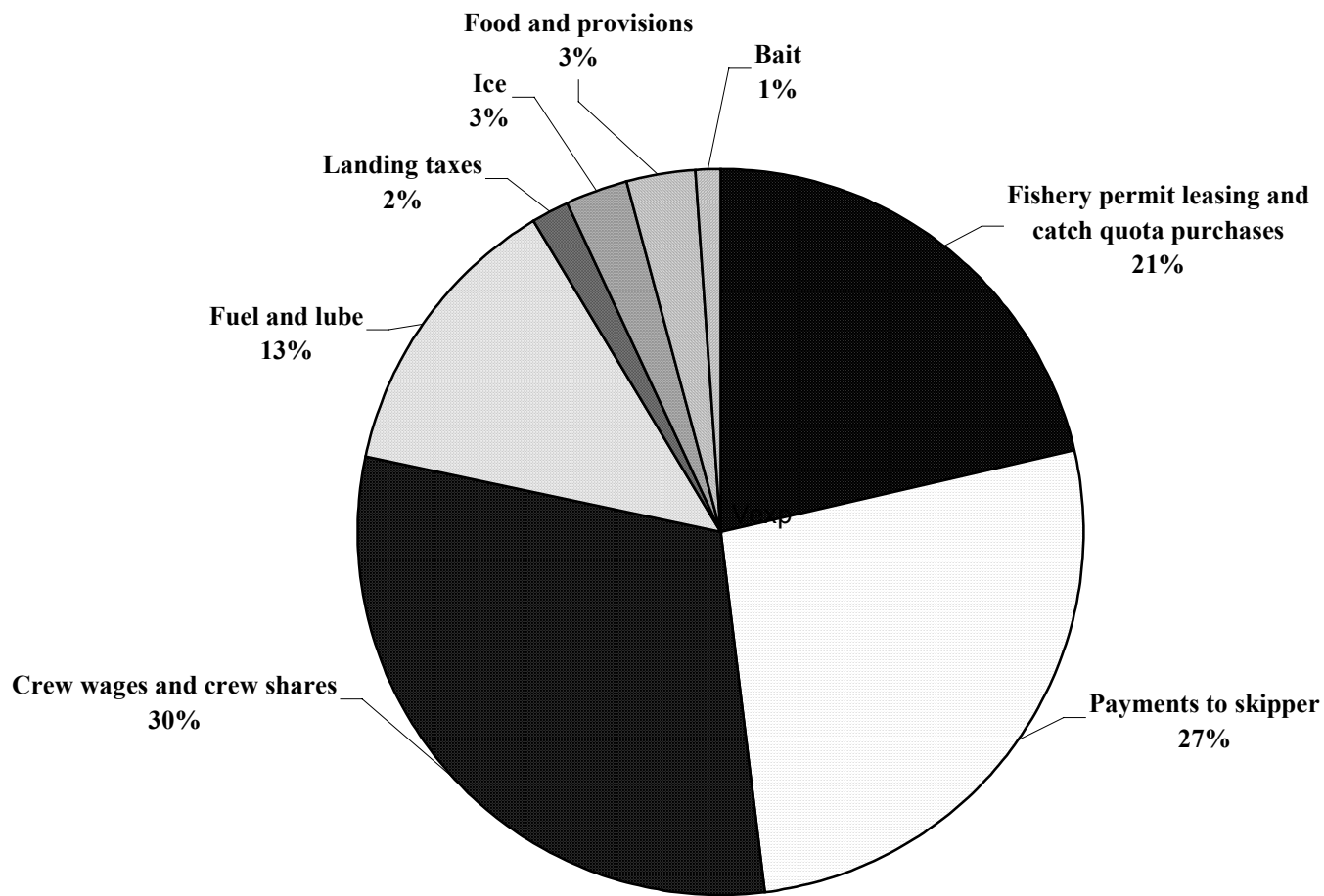


Figure 1. 1998 Variable Expenses

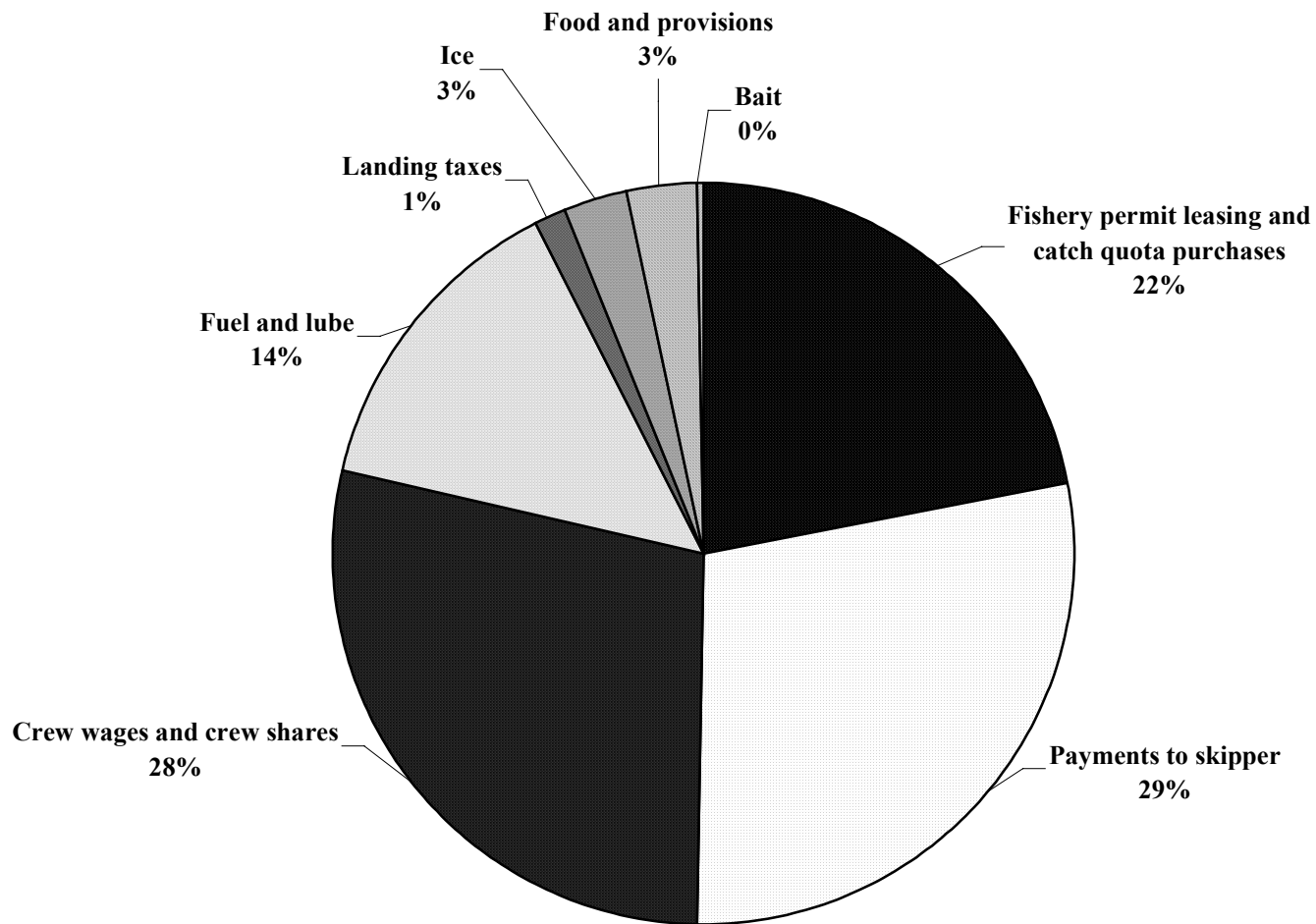


Figure 2. 1997 Variable Expenses

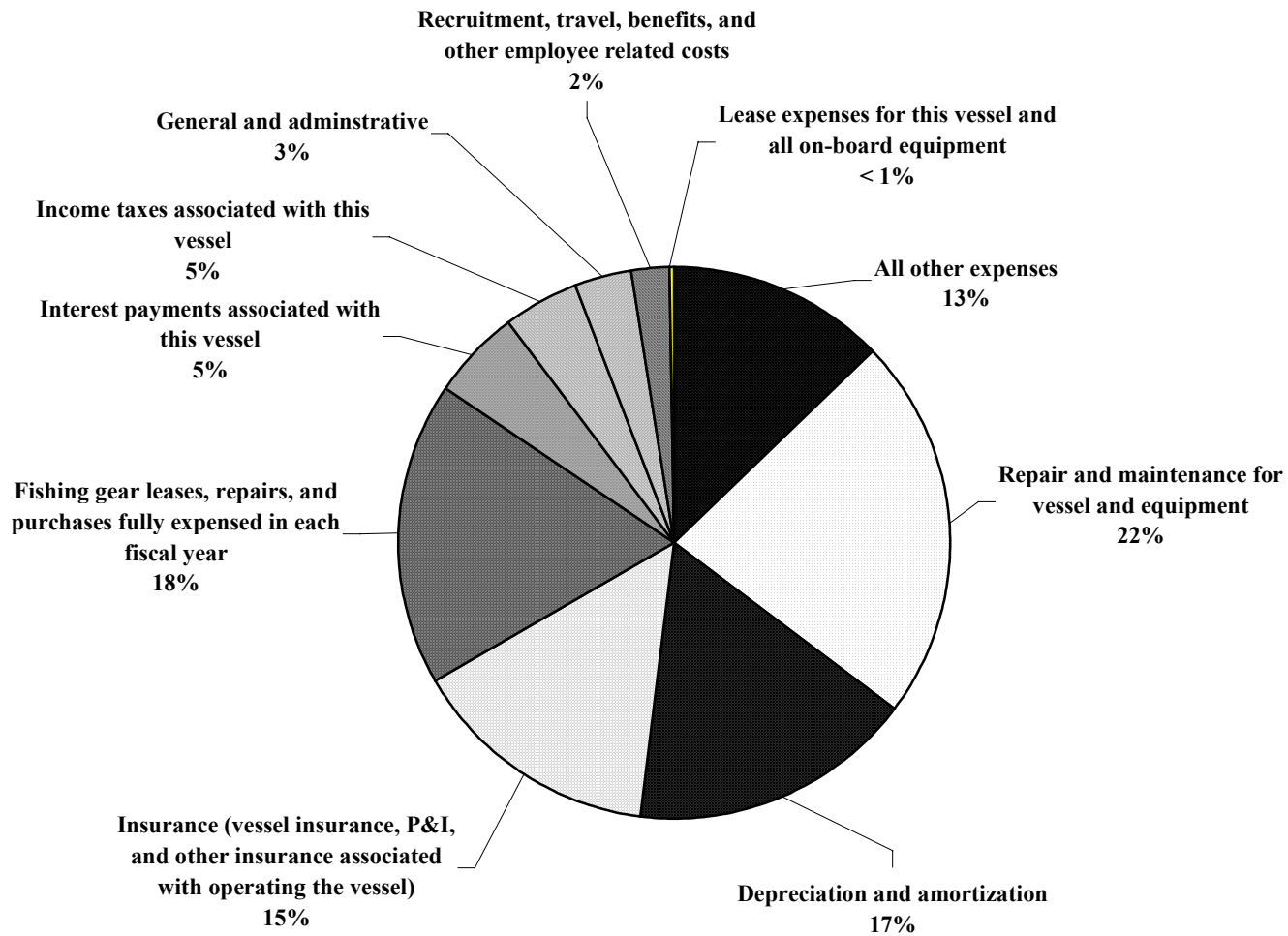


Figure 3. 1998 Fixed Expenses

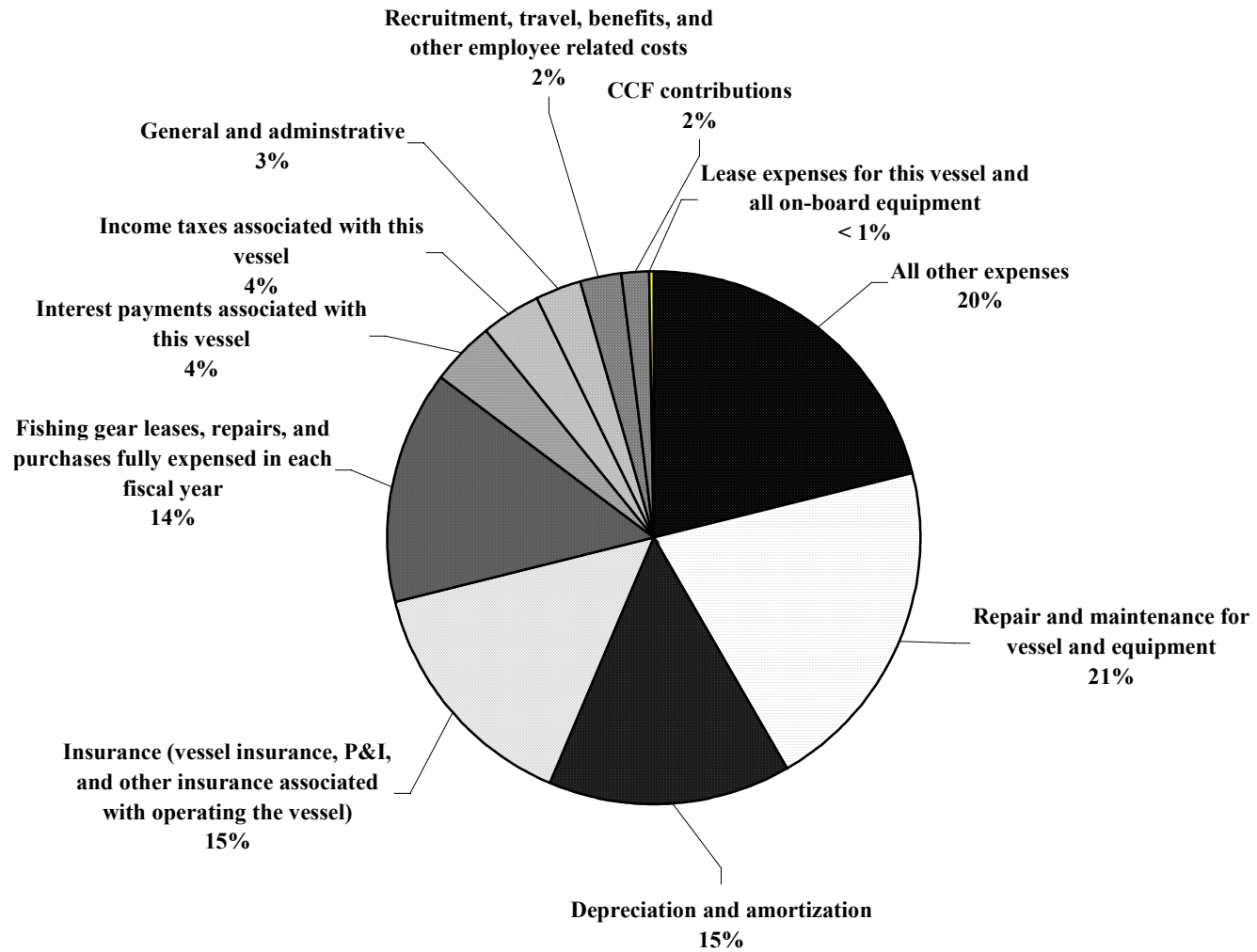


Figure 4. 1997 Fixed Expenses

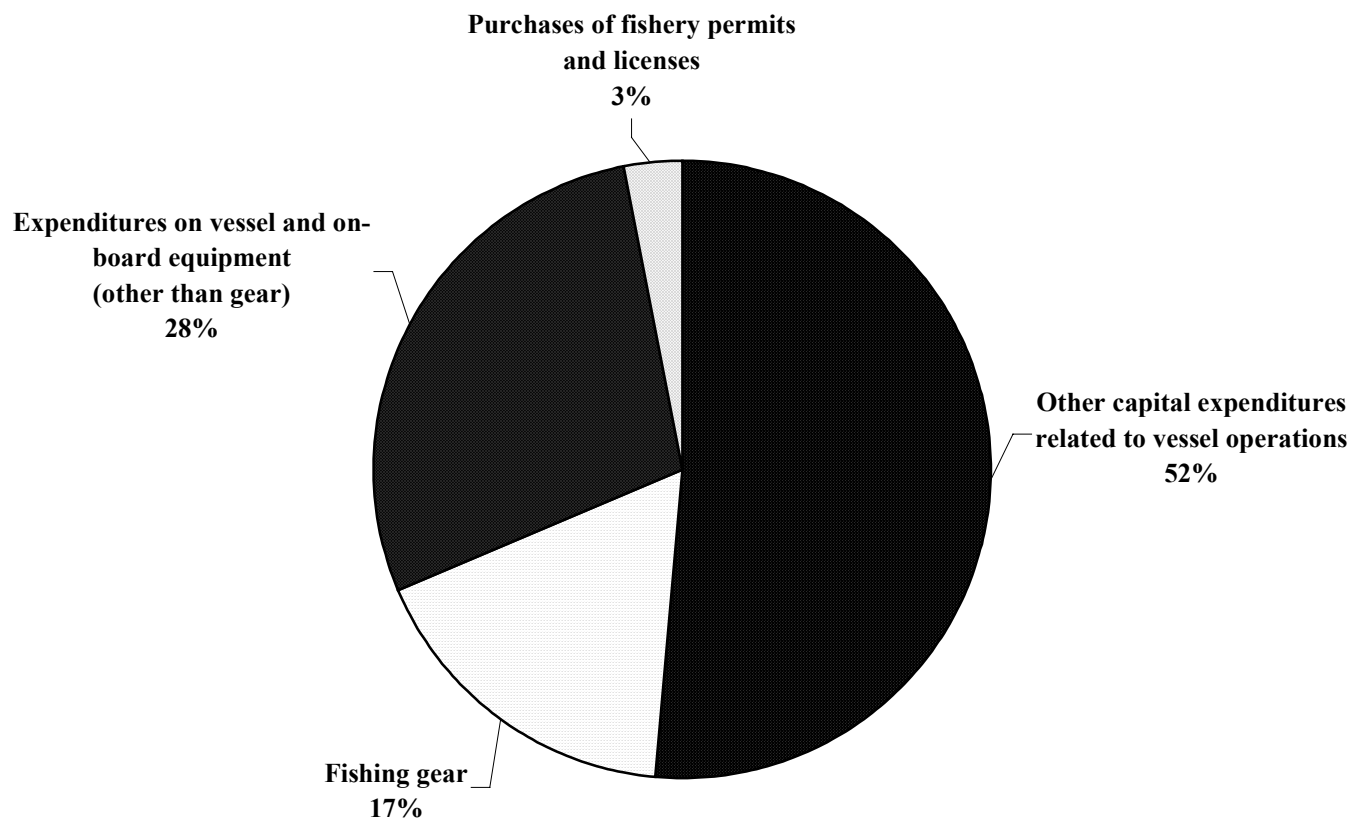


Figure 5. 1998 Capitalized Expenses

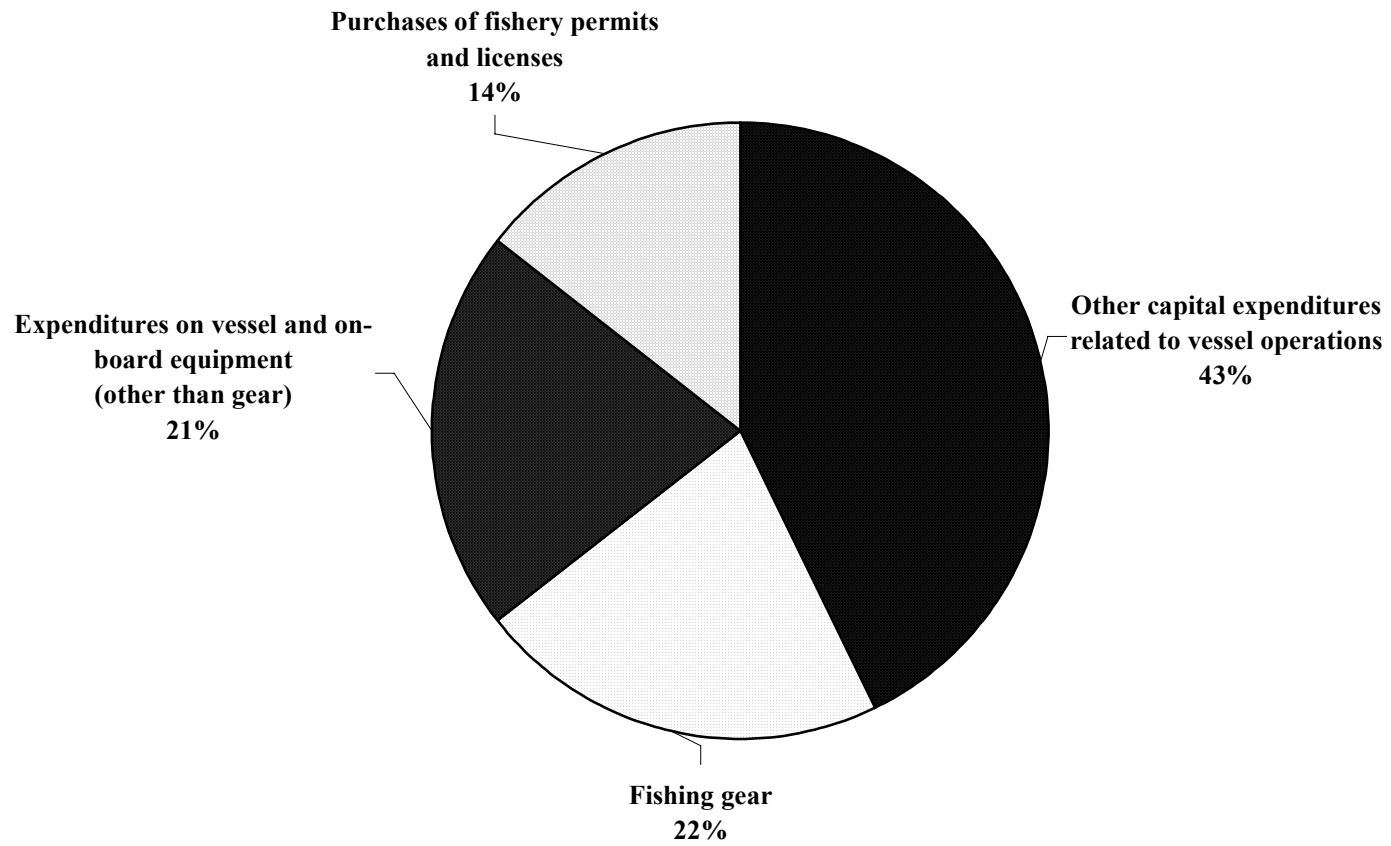


Figure 6. 1997 Capitalized Expenses

Figure 7. FUEL CONSUMPTION: Mean fuel consumption by activity

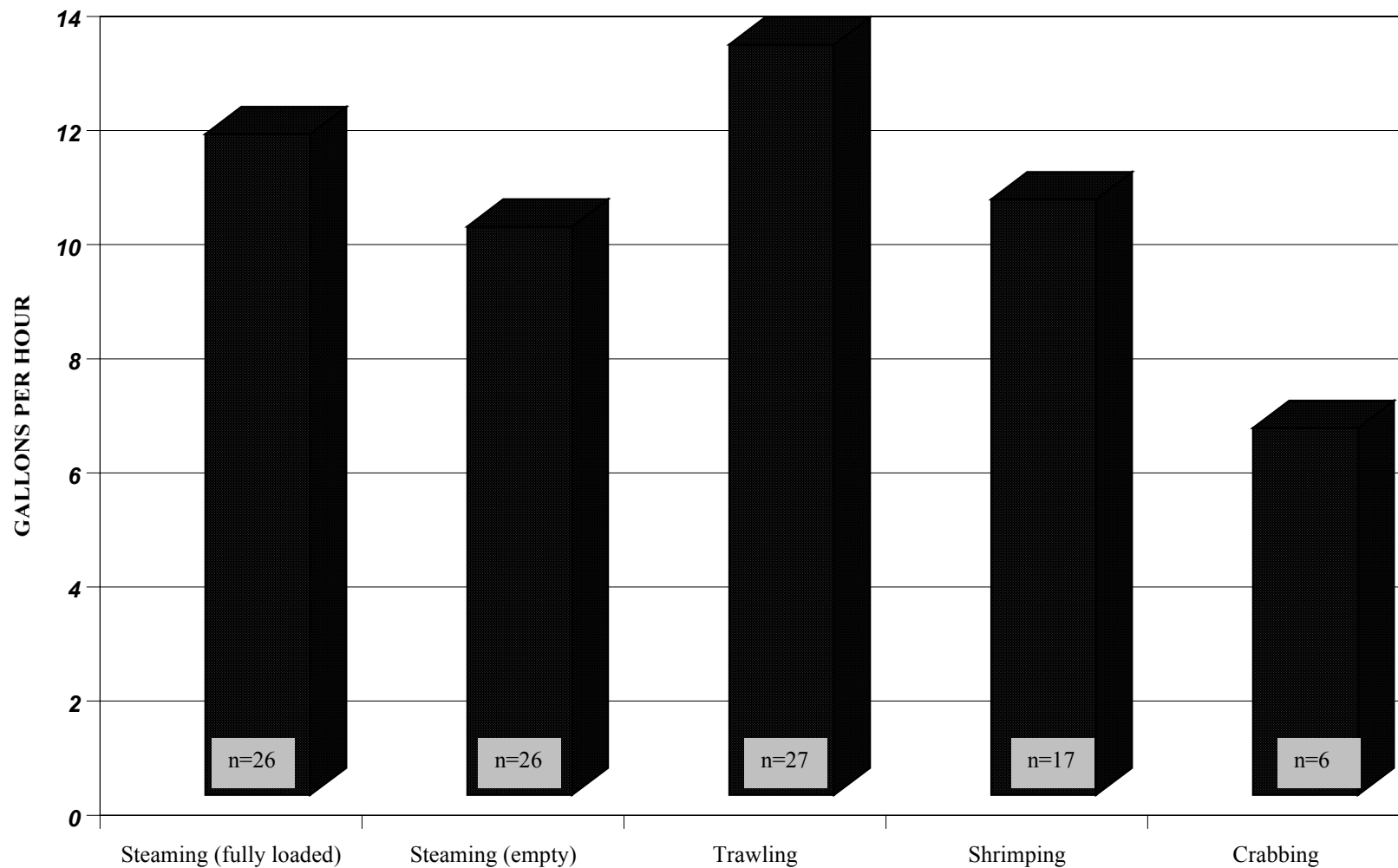
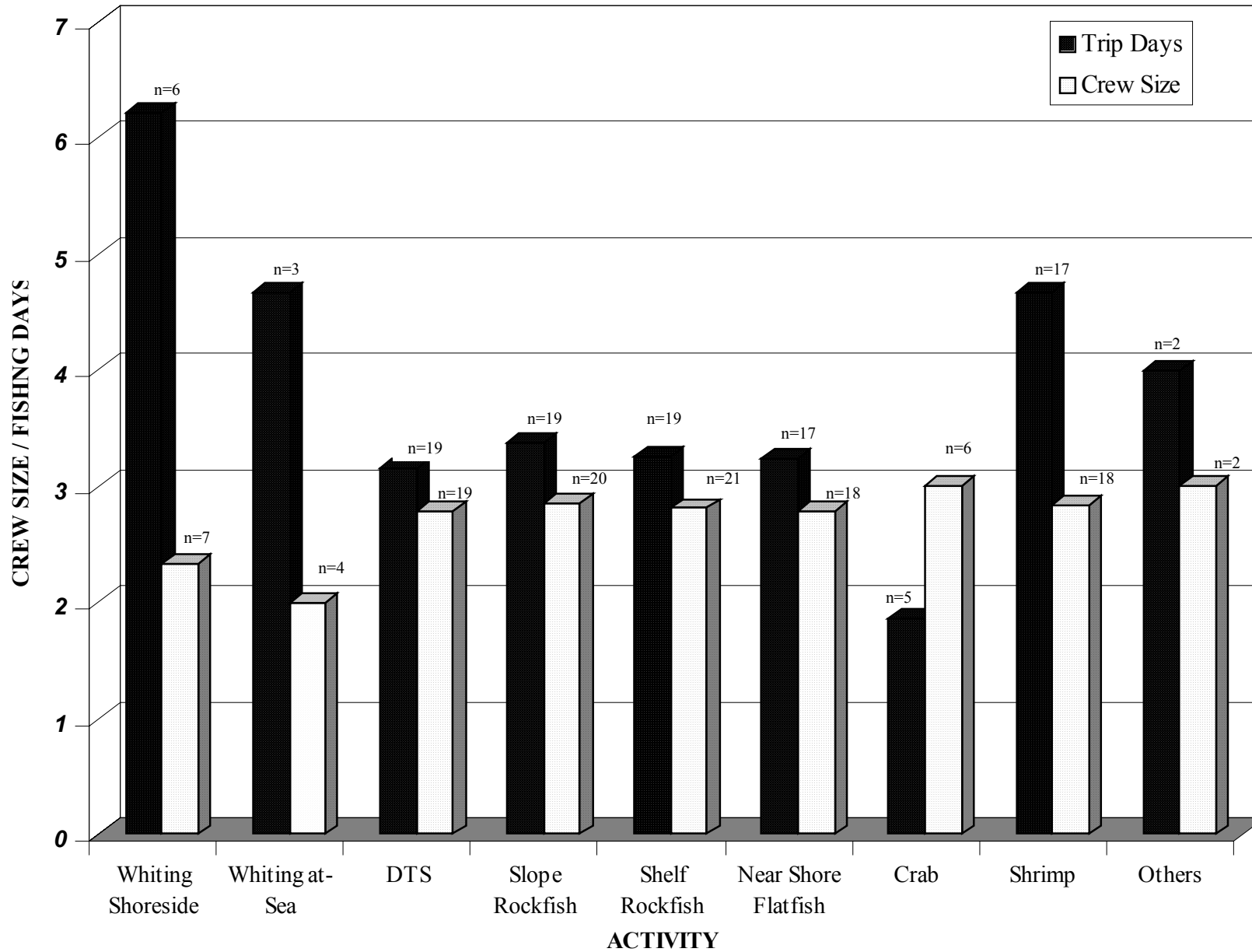


Figure 8. Crew Size and Fishing Days per Trip by Activity



WEST COAST CATCHER VESSEL SURVEY

Vessel Characteristics

1. What is the maximum pounds of fish and live fish this vessel can safely deliver per trip?
a. 78,250 (n=28) LBS. OF FISH **b. 21,187 (n=8) LBS. OF LIVE FISH**

2. Please indicate whether or not the vessel has each of the following storage facilities:
(Circle one number for each)

	<u>YES</u>		<u>NO</u>
a. Freezer Hold.....	4		24
b. Live Fish/Crab Hold	8		20
c. Ice Hold.....	27		2
d. RSW.....	4		22

3. For each of the following activities, please give the average fuel consumption of the vessel per hour during 1998. If not applicable, please write "NA".

ACTIVITY	GALLONS PER HOUR
a. Trawling	13.15 (n=27)
b. Crabbing	7.50 (n=6)
c. Shrimping	11.06 (n=17)
d. Steaming – fully loaded with fish	11.58 (n=26)
e. Steaming – empty	9.96 (n=25)

4. What was the starting date of this vessel’s 1998 fiscal year? **Not applicable.**

(___/___/___) (mm/dd/yy) STARTING DATE OF 1998 FISCAL YEAR

5. If the vessel’s fiscal year changed in 1997, 1998 or 1999, please check this box .

Yes = 29 No = 0

6. What was the most recent survey value (fair market value) of this vessel, rounded to the nearest 100 dollars, and survey date?

US \$ 337,750 (n=28) SURVEY VALUE

7. What was the date of the vessel’s last survey? (___/___/___) (mm/dd/yy) **Not applicable.**

8. Does the survey value shown above reflect the value of permits and moratorium qualifications associated with the vessel at the time of the survey? *(Circle one number)*

YES = 0 NO = 27

9. What was the insured value, rounded to the nearest 100 dollars, of this vessel and all on-board equipment in fiscal year 1998, excluding permits and licenses?

US \$ 305,000 (n=28) 1998 INSURED VALUE

Expenditures

10. For each of the expense categories below, first provide the total annual expenditures for fiscal year 1997 and then the amount attributable to each month. Then provide this information for 1998. Please record the information in the month that the cost was incurred. If you were *not active* during a month, please circle that month. If you do not maintain an expenditure category by month please provide those expenditures that are tracked monthly. Round all answers to the nearest 100 dollars.

EXPENSE CATEGORY	FISCAL YEAR 1997	FISCAL YEAR 1998
a. Fishery permit leasing and catch quota purchases	\$48,789 n=15 (\$146,367 n=5) *	\$39,709 n=17 (\$135,011 n=5) *
b. Payments to skipper (including bonuses and payroll taxes but excluding benefits and insurance)	\$63,278 n=24 (\$66,030 n=23) *	\$49,575 n=26 (\$58,589 n=22) *
c. Crew wages/crew shares (including bonuses and payroll taxes but excluding benefits and insurance)	\$63,831 n=25 (\$72,535 n=22) *	\$56,683 n=25 (\$64,617 n=22) *
d. Fuel and lube	\$30,620 n=25 (\$31,897 n=24) *	\$24,242 n=25 (\$24,242 n=25) *
e. Landing taxes paid	\$2,870 n=18 (\$4,305 n=12) *	\$2,878 n=17 (\$3,494 n=14) *
f. Ice	\$6,321 n=25 (\$6,870 n=23) *	\$5,041 n=24 (\$5,761 n=21) *
g. Food and provisions	\$6,698 n=19 (\$7,953 n=16) *	\$6,153 n=22 (\$6,769 n=20) *
h. Bait	\$903 n=15 (\$3,867 n=4) *	\$1,841 n=12 (\$5,522 n=4) *

11. Please provide the total **capitalized expenditures** associated with each of the following categories for this vessel for fiscal years 1997 and 1998. Round all answers to the nearest 100 dollars.

CAPITALIZED EXPENDITURE	1997 (US\$)	1998 (US\$)
a. Purchases of fishery permits and licenses (capitalized)	\$10,264 n=19 (\$16,251 n=12) *	\$2,758 n=17 (\$5,210 n=9) *
b. Fishing gear (nets, net electronics, doors, cables, etc.)	\$15,337 n=20 (\$19,171 n=16) *	\$15,995 n=19 (\$17,877 n=17) *
c. Expenditures on vessel and on-board equipment (other than fishing gear)	\$15,176 n=15 (\$20,695 n=11) *	\$26,383 n=15 (\$32,979 n=12) *
d. Other capital expenditures related to vessel operations	\$30,507 n=14 (\$38,827 n=11) *	\$47,769 n=11 (\$58,385 n=9) *

*The mean for those responses with a value of greater than zero.

12. In the table below, please provide the total expenses associated with the following categories for fiscal years 1997 and 1998. **Do not include expenditures that were expenses listed in question 9 (pages 2 and 3) or capitalized above in question 10.** Round all answers to the nearest 100 dollars.

EXPENSE CATEGORY	1997 (US\$)	1998 (US\$)
a. Lease expenses for this vessel and all on-board equipment	\$386 n=14 <i>(mean excluding zeros not available)</i>	\$421 n=15 <i>(\$1,580 n=4) *</i>
b. Repair and maintenance expenses for vessel and equipment (including shipyard accrual and purchases of parts and equipment that were expensed in each fiscal year)	\$26,045 n=22 <i>(\$26,045 n=22) *</i>	\$25,749 n=20 <i>(\$25,749 n=20) *</i>
c. Fishing gear leases, repairs and purchases fully expensed in each fiscal year (e.g., nets, net electronics, doors, cables, etc.)	\$18,151 n=21 <i>(\$21,176 n=18) *</i>	\$20,529 n=18 <i>(\$23,095 n=16) *</i>
d. Insurance (vessel insurance, P&I, and other insurance associated with operation of the vessel)	\$18,452 n=21 <i>(\$18,452 n=21) *</i>	\$16,771 n=21 <i>(\$16,771 n=21) *</i>
e. Recruitment, travel, benefits and other employee related costs (excluding food and provisions and other employee expenses included in question 9)	\$3,153 n=17 <i>(\$4,466 n=12) *</i>	\$2,493 n=13 <i>(\$3,241 n=10) *</i>
f. General and Administrative (including professional services and management fees)	\$3,636 n=19 <i>(\$4,064 n=17) *</i>	\$3,770 n=19 <i>(\$4,477 n=16) *</i>
g. CCF contributions	\$2,091 n=11 <i>(mean excluding zeros not available)</i>	\$0 n=9
h. Income taxes associated with this vessel	\$4,536 n=13 <i>(\$5,360 n=11) *</i>	\$5,251 n=11 <i>(\$6,418 n=9) *</i>
i. Interest payments associated with this vessel	\$4,767 n=17 <i>(\$7,367 n=11) *</i>	\$5,813 n=17 <i>(\$8,235 n=12) *</i>
j. Depreciation and amortization	\$18,699 n=15 <i>(\$18,699 n=15) *</i>	\$19,231 n=18 <i>(\$20,362 n=17) *</i>
k. All other expenses associated with this vessel not included in questions 9 or 10 above	\$26,660 n=16 <i>(\$30,468 n=14) *</i>	\$14,724 n=16 <i>(\$18,122 n=13) *</i>

*The mean for those responses with a value of greater than zero.

Fishery Participation and Revenues

13. During either 1997 or 1998, did this vessel participate in fisheries that were not West Coast fisheries?
(Circle one number)

1 NO (Skip to Question number 14) = 26

2 YES = 2

→ 13a. Please tell us the location of these non-West Coast fisheries and give the beginning and ending dates (mm/yy) in which you were active in these fisheries. Also provide revenue estimates (rounded to the nearest 100 dollars) and typical crew size (including skipper).

Responses not provided to protect confidentiality

14. For each fishery in which this vessel participated in 1998, please provide the typical trip length in days and the typical crew size (including skipper).

1998	Typical Trip days	Typical Crew Size
a. Whiting shoreside	9.33 n=6	3.00 n=7
b. Whiting at-sea	9.33 n=3	3.00 n=4
c. DTS	3.16 n=19	2.79 n=19
d. Slope Rockfish	3.37 n=19	2.85 n=20
e. Shelf Rockfish	3.26 n=19	2.81 n=21
f. Near shore flatfish	3.24 n=17	2.79 n=19

1998	Typical Trip days	Typical Crew Size
g. Crab	2.60 n=5	3.50 n=6
h. Shrimp	4.94 n=17	3.00 n=18
Other (specify)	4.00 n=2	3.00 n=2

15. Excluding revenues for which there is a West Coast fish ticket and revenues reported in question 12, please give the total amount of revenue received in fiscal years 1997 and 1998 (rounded to the nearest 100 dollars) for each of the following categories for this vessel:

Revenue Category	1997 (\$)	1998 (\$)
a. Income derived from leasing of permits or catch rights normally associated with this vessel (exc. fish tickets)	\$33,379 n=14 (mean excluding zeros not available)	\$25,957 n=14 (mean excluding zeros not available)
b. All other income derived from other vessel operation (e.g. tendering, charters)	\$15,357 n=14 (mean excluding zeros not available)	\$18,071 n=14 (mean excluding zeros not available)

*The mean for those responses with a value of greater than zero.

Other

16. Please give the total dollar amount of gear lost in 1997 by gear type and then the dollar amount lost in each month. Record lost gear value in the month of loss, not the month of replacement. Give this same information for 1998.

Gear Type	Value of Gear Lost	
	1997	1998
a. Trawl	\$5949 n=19 <i>(\$11,304 n=10) *</i>	\$3972 n=17 <i>(\$9,646 n=7) *</i>
b. Pot	\$2690 n=10 <i>(\$6,725 n=4) *</i>	\$1768 n=11 <i>(\$4,863 n=4) *</i>
c. Net	\$833 n=9 <i>(mean excluding zeros not available)</i>	\$0 n=10
d. Line	\$18 n=10 <i>(mean excluding zeros not available)</i>	\$43 n=11 <i>(mean excluding zeros not available)</i>
e. Other	\$0 n=9	\$0 n=10

*The mean for those responses with a value of greater than zero.

17. In the table below, please estimate your average monthly per gallon fuel prices in 1998 for this vessel.

1998	Estimated price per gallon of fuel					
	JAN	FEB	MAR	APR	MAY	JUN
Price/ gallon of Fuel	\$0.7525 <i>n=16</i>	\$0.7642 <i>n=12</i>	\$0.7613 <i>n=15</i>	\$0.7346 <i>n=13</i>	\$0.7260 <i>n=15</i>	\$0.7444 <i>n=16</i>

1998 contin ued	Estimated price per gallon of fuel					
	JUL	AUG	SEP	OCT	NOV	DEC
Price/ gallon of Fuel	\$0.7681 <i>n=16</i>	\$0.7756 <i>n=16</i>	\$0.7806 <i>n=16</i>	\$0.8063 <i>n=16</i>	\$0.8047 <i>n=17</i>	\$0.8236 <i>n=14</i>

18. Does this vessel use a crew share system to pay its crew? (*Circle one number*)

1 NO (*Please turn the page*) = 0

2 YES = 28

→ 18a. In the West Coast groundfish fisheries, which of the following expenses were subtracted from your total revenues (gross stock) before calculating the crew share? (*Circle one number for each*)

	Deducted	Not Deducted
a. Fuel and Lube	13	16
b. Food	16	13
c. Fish landings taxes	17	10
d. Other (specify) _____	11	1
e. Other (specify) _____	3	0

18b. In the West Coast groundfish fisheries, what percentage of the net share (gross stock minus the expenses indicated above in 17a) goes to:

a. Boat share	57.4%	(<i>n=28</i>)
b. Crew share (including skipper)	42.6%	(<i>n=28</i>)

Appendix 1. Vessel Classification Rules, from the Description of the U.S. West Coast Commercial Fishing Fleet and Seafood Processors, prepared by Hans Radtke and Shannon Davis, The Research Group, for the Pacific States Marine Fisheries Commission.

Order	Vessel Category	Rule Description
1	Mothership/Catcher Processor	Identified by vessel documentation
2	Alaska Fisheries Vessel	Alaska revenue is greater than 50% of that vessel's total revenue
3	Pacific Whiting Onshore and Offshore Trawler	Pacific whiting PacFIN revenue plus U.S. West Coast offshore revenue is greater than 33% of that vessel's total revenue, and total revenue is greater than \$100,000
4	Large Groundfish Trawler	groundfish (including sablefish, halibut, and California halibut) revenue from other than fixed gear is greater than 33% of that vessel's total revenue, and total revenue is greater than \$100,000
5	Small Groundfish Trawler	groundfish (including sablefish, halibut, and California halibut) revenue from other than fixed gear is greater than 33% of that vessel's total revenue, and total revenue is greater than \$15,000
6	Sablefish Fixed Gear	sablefish revenue from fixed gear is greater than 33% of that vessel's total revenue, and total revenue is greater than \$15,000
7	Other Groundfish Fixed Gear	groundfish (including halibut and California halibut), other than sablefish, revenue from fixed gear is greater than 33% of that vessel's total revenue, and total revenue is greater than \$15,000
8	Pelagic Netter	pelagic species revenue is greater than 33% of that vessel's total revenue, and total revenue is greater than \$15,000
9	Migratory Netter	highly migratory species revenue from gear other than troll or line gear is greater than 33% of that vessel's total revenue, and total revenue is greater than \$15,000
10	Migratory Liner	highly migratory species revenue from troll or line gear is greater than 33% of that vessel's total revenue, and total revenue is greater than \$15,000
11	Shrimper	shrimp revenue is greater than 33% of that vessel's total revenue, and total revenue is greater than \$15,000
12	Crabber	crab revenue is greater than 33% of that vessel's total revenue, and total revenue is greater than \$15,000
13	Salmon Troller	salmon revenue from troll gear is greater than 33% of that vessel's total revenue, and total revenue is greater than \$5,000
14	Salmon Netter	salmon revenue from gill or purse seine gear is greater than 33% of that vessel's total revenue, and total revenue is greater than \$5,000
15	Other Netter	other species revenue from net gear is greater than 33% of that vessel's total revenue, and total revenue is greater than \$15,000
16	Lobster Vessel	lobster revenue is greater than 33% of that vessel's total revenue, and total revenue is greater than \$15,000
17	Diver Vessel	revenue from sea urchins, geoduck, or other species by diver gear is greater than 33% of that vessel's total revenue, and total revenue is greater than \$5,000
18	Other > \$15 Thousand	all other vessels not above who have total revenue greater than \$15,000
19	Other <= \$15 Thousand	all other vessels not above who have total revenue less than or equal to \$15,000