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CHARACTERISTICS OF THE LOUISIANA SHRIMP FLEET, 1978.

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Commercial fishermen landed a record 1.7 billion pounds of seafood in Louisiana during 1978. Menhaden comprised 90 percent of the total landings and 34 percent of the total value. Shrimpers landed 104 million of shrimp pounds (heads-on, valued at 101 million dollars). The 1978 shrimp fishery in Louisiana produced the largest shrimp landings and value in the country. Economic information on the large, valuable shrimp fishery is sparse. Concerns about the quality of estuarine habitat and the ability of the shrimp fishery to absorb additional investment and employment emphasize the need for information. This report compiles data on resident commercial shrimpers and their businesses. The data presented primarily originate from license records of the Louisiana Department of Wildlife and Fisheries and personal interviews of shrimpers during a Sea Grant research project.

Shrimpers

It is fundamental to the understanding of the shrimp fishery to know not only the quantity of shrimp landed but also who harvests the shrimp. In terms of economic incentive shrimpers can be classed as either commercial or sport. Neither of these classes consists of people who are essentially alike in their harvest of shrimp. The commercially licensed shrimpers operate a variety of boats and vessels. Boats, used primarily inshore, range from 14 to 52 feet in length and use trawls, wing nets, or both to harvest shrimp. Vessels range from 36 to 90 feet in length and operate entirely offshore, entirely inshore, or divide their time between inshore and offshore. The commercial fishery is further complicated by the presence of full-time and part-time shrimpers. Prior to developing a less aggregated description of commercial shrimpers, a brief review of the sport shrimp situation is presented.

Sport shrimpers using a 16 foot trawl and limiting the catch to 100 pounds (heads-on) per boat per day are not licensed in Louisiana. The number of these shrimpers was estimated to be 30,000 (USFWS 1968). Sport shrimpers choosing to use a trawl larger than 16 feet must obtain a license. Records of the Louisiana Department of Wildlife and Fisheries (LDWF) provide an estimate of 10,875 licensed sport shrimpers in 1978 (Roberts and Sass 1979). The catch of licensed sport shrimpers is not restricted. However, no portion of the catch can be sold. Sport shrimpers are numerous and also vary in the size of gear used.

LDWF license information in October 1978 provided an estimate of 14,830 commercial shrimpers. There were 13,827 of the shrimpers operating undocumented boats. The remaining 1,003 operated Coast Guard documented vessels. Vessels are normally larger than boats, shrimp more days, travel further offshore and to neighboring states, and generally are operated by full-time shrimpers. A survey of 160 shrimpers operating

boats (undocumented) during 1978 revealed that 90 percent retained full-time employment other than shrimping. The inshore shrimp fishery predominately used by these boat shrimpers therefore provided a source of supplemental income to a large group of licensed shrimpers. Eighty-six percent of these part-time shrimpers had jobs while 11 percent were retired. The remaining 3 percent were either students or fishermen for other species.

Knowledge of the number and intent of shrimpers provides insight to the yield of shrimp. The reported commercial shrimp harvest emanates from statistics collected by the National Marine Fisheries Service (NMFS). The large number of small shrimp docks and the direct marketing of shrimp by some part-time shrimpers make data collection difficult. A significant amount of commercially caught shrimp may not be included in the statistics. The productivity of estuarine areas in Louisiana can be more accurately reflected if better harvest estimates are obtained. Part of the estimation problem has to do with the fact that part-time commercial shrimpers may not utilize shrimp docks included in NMFS surveys or they use direct marketing techniques. Sport shrimpers also benefit from estuarine productivity by harvesting shrimp. The combined harvest of resident Louisiana sport and commercial shrimpers for 1978 is estimated in Table 1. There are two shortcomings to the estimation process. Sport and commercial shrimpers occasionally discard undersize shrimp. No estimates are available as to the amount of the discard in pounds. The amount of shrimp landed by non-resident shrimpers is unknown. The estimates were developed on the assumption that resident shrimpers unloaded all of their catch in Louisiana. To the extent that residents land shrimp in adjoining states, the estimates would be high. Also depending on the extent of non-residents unloading shrimp in Louisiana, the estimates would be conservative.

The combined 1978 production of all participants was estimated to be 93.6 million pounds. NMFS commercial landings were reported to be 64.5 million pounds. The productivity of the shrimp fishery in Louisiana for this one year is shown to be much higher than available statistics suggest.

Physical Characteristics

The mix of commercial shrimpers suggests that the equipment used to harvest shrimp would be diverse. A complete description of the shrimp fleet must recognize the diversity between vessels and boats as well as full-timers and part-timers.

Arranging the boats and vessels by the areas shrimped is a useful method of depicting the characteristics. Shrimpers using undocumented boats essentially spend all of the shrimping time in Louisiana waters. The vessel shrimpers can shrimp inshore and offshore. However, many vessels are too large to operate effectively inshore.

The data in Table 2 are arranged in inshore, inshore/offshore, and offshore categories to account for differences in characteristics by area of operation. Four elements of the table indicate that the inshore shrimper category is one containing a variety of users. It was previously reported that 90 percent of the sampled inshore shrimpers indicated full-time employment other than shrimping. The average size of boat in

the inshore category is much smaller than expected for a commercial operator. The influence of part-time shrimpers in the inshore category is further exemplified by the predominance of outboard-powered fiberglass boats. Boats of this type are not suited for the rigors of commercial use. The inshore/offshore and offshore categories exhibited characteristics expected of a comparison of categories essentially based on vessel size. Wood and steel as preferred hull materials were markedly of different importance in the categories.

Boats and vessels can utilize a wide range of gear. The range in gear characteristics is presented in Table 3. Part-time inshore shrimpers owned on the average only one fully rigged trawl. Full-time inshore shrimpers owned two fully rigged trawls averaging 35 feet in size. The larger vessels in the other two categories had large trawl investments and used up to four trawls simultaneously. Louisiana law prohibits the use of more than one trawl of 50 feet maximum length in inshore waters. This is the reason some vessels in the inshore/offshore category are rigged to use only one trawl. The doublerigged vessels in the second category can use a single 50 foot net inshore but the single rigged boats are not able to pull two nets offshore. The wing net is a popular net attached to a rectangular frame and mounted on a boat. One wing net is fished from each side of the boat. Shrimping with wing nets occurs primarily at night in bayous, channels, and passes. This night shrimping from anchored or slow moving boats is conducive to use of the gear by part-time shrimpers.

Electronic equipment on shrimp boats and vessels is devoted entirely to communication and navigation purposes. The electronics complement can differ between vessels. The difference in investment can consequently be large. Prior to describing the investment in boats and vessels, the electronic equipment inventory needs to be detailed. The presence of part-timers is the basis for a large percentage of the inshore fleet having no electronic aids (Table 4). The vessels operating all or a portion of the time offshore have a full range of available communication and navigation aids. This equipment will increase the investment of the average vessel owner.

Economic Characteristics

The mix of vessels and boats of varied sizes used by full-time and part-time shrimpers complicates an economic description of the commercial shrimp fishery. Total investment in the shrimp fleet can be accurately depicted by distinguishing between economic units. The vessel and boat characteristics of the previous section must be recalled in the process. Additionally, vessels within size groups can differ in value due to construction materials and year of construction. Identifying the total value of investment in the Louisiana shrimp fishery is then a process that could be subject to error. However, sufficient detail is available in Table 5 to determine total market value of harvesting units dependent on the shrimp resource.

Investment

The investment in harvesting units was $172 million in 1979. Although the size and gear of boats as depicted in Tables 2 and 4 appear

minimal when compared to vessels, the large number of boats results in over half of the total investment devoted to the inshore boat fishery. Many of the boats sampled were small, outboard-powered, and made of fiberglass. These characteristics are conducive to family recreational use by the 90 percent of boat shrimpers surveyed who indicated full-time employment other than shrimping. Attributing the full market value of the boat fleet to commercial shrimping may overestimate the segment's role. A definitive solution to the problem would likely be possible only after a study of boat owner motivations.

Steel vessels in the medium and large classes accounted for a large share of the total vessel investment. Concern over additional investment in the vessel fishery when the brown and white shrimp stocks are thought to be fully utilized is warranted. Table 5 provides insight as to how quickly investment can increase. If additions to the vessel fleet are steel hulled vessels centered in the medium and large classes, investment can increase rapidly. As the wooden hulled vessels age and are replaced, investment will increase significantly. Vessel and boat investment should be reviewed periodically to assess the growth in investment.

Gulf shrimpers often experience appreciation in the value of well-maintained vessels. The appreciation, whether rooted in increasing replacement costs or favorable profit prospects, may attract additional capital to the fishery. Prospects for vessel appreciation and the benefits of capital gains sheltered income would be more appealing to investors intending to be absentee owners. In 1978, 24 percent of the vessels surveyed operated with hired captains. In fact, the survey data suggest that capital appreciation has been significant. The vessels less than 66 feet averaged 133 percent appreciation between purchase price and spring 1979 market value over an average period of 7.2 years. Surprisingly, the larger vessels, primarily constructed of steel, appreciated by a lesser amount, 73 percent over a 5.4 year period. The more rapidly appreciating group of vessels was primarily constructed of wood. This may reflect competitive bidding by the evidently larger group of people capable of ownership of the less than 66 foot vessels. As for boats, the part-time shrimpers using mostly small fiberglass boats with resale values associated more with pleasure boating markets than shrimping experienced a 12.5 percent appreciation over an average of 4.5 years. As one might expect, the boats of full-time shrimpers showed a greater amount of appreciation, 40.3 percent over a 4.7 year period.

Shrimping Experience

The number of years of experience serves as an indication of career commitment to shrimping and may explain part of the variability in yields between similar fishing units. A "good captain" hypothesis is plausible but difficult to statistically verify. The data indicated a positive relationship between fishing unit size and captain's experience. Using the criterion that years licensed as a captain reflected experience, boat captains averaged 11 years, captains of vessels less than 66 feet averaged 17 years, and captains of larger vessels 19 years.

Vessel Ownership

The prospect that rapid vessel appreciation may be an inducement for absentee owners to enter the fishery was previously explored. Ownership patterns in a fishery may be associated with several key factors impacted by resource management and vice versa. The 24 percent of surveyed vessels operating with hired captains differed from owner-operated vessels in four key areas. Hired captains operated vessels averaging 67 feet as opposed to 58 feet for owner-operators. As expected the larger vessels of the hired captains allowed them to operate more days (190 versus 168) in 1978. However, hired captains caught 8 percent less shrimp and had operating expenses 39 percent higher than owner-operators. The calendar 1978 shrimp season was one of high catches and favorable prices. If these disparities between owner-operated and hired captain vessels occur in good years, unfavorable conditions would likely impact the latter significantly. Additional monitoring of this element of commercial shrimping is warranted.

Specialization

Commercial fishermen often do not face the alternatives for productive uses of their resources encountered by agricultural food producers. Shrimp vessels, to a lesser extent boats, in Louisiana were shown by survey to be highly specialized. Only 5 percent of the vessels directed effort to species other than shrimp. Sixty-three percent of this small group targeted oysters as an additional species. Another subtle indicator of specialization is the degree to which shrimpers generate income from the marketing of incidental finfish catch. Only 19 percent of the vessels sold a portion of the incidental catch. The income potential was further constrained by markets, quality, and fish size. Sixty percent of those selling some of the incidental catch responded that they were not able to sell all of the food fish harvested. The conclusion is that shrimp vessels are highly specialized units dependent almost entirely on income from the sale of shrimp.

Due to the large percentage of boat shrimpers who supplement job income by shrimping, the survey disclosed few multi-species shrimpers. An indirect method was used to gain insight to the frequency that full-time shrimpers were involved in other fisheries. There were 2,252 licensed oyster fishermen in Louisiana in 1978. Twenty-two percent (503) of the oyster licensees also held commercial shrimp licenses. Twenty-five percent of the 832 licensed crabbers also held shrimp licenses. A few licensees participated in all three fisheries. This information suggests that the full-time boat shrimper can use his small, shallow draft boat to react to favorable prices and yields in other fisheries.

Mobility

Mobility of commercially licensed shrimpers among the three inshore management zones is of concern in management (Fig. 1). The May inshore season is not opened on the same date in all three zones. The central zone frequently opens first. Opinions differ as to the influence this has on drawing shrimpers on a temporary basis to stress the ice and processing capabilities of the central zone. In the western and central

zones, the pattern of mobility was similar for both vessels and boats. Of the people that reported shrimping inshore, the majority stayed within their zone of residence, spending more than 90 percent of their time there. This was also the pattern for boats in the eastern zone. Although vessels in the eastern zone were also shrimping in the eastern zone for the majority of the inshore time, the percentage of time was 63 percent compared to at least 90 percent in other zones. The survey results may be interpreted to mean that mobility is not likely to impact management. One caution is that the 10 percent of shrimping occurring outside of a home zone can take place for a short period of time. This mobile effort for a short period immediately following an opening date can result in a different conclusion. It can increase crowding externalities and the stress placed on fuel, ice, and market services.

Some resident vessels travel to adjoining states for a portion of the shrimp season. While interstate mobility is important to regional management, the Sea Grant survey concentrated on the intrastate mobility of vessels between inshore and offshore areas. The distinct seasons in the three inshore areas are important to the vessel fleet. Fifty-five percent of the vessels shrimped inshore during 1978. Only 15 percent (81) of this group shrimped exclusively inshore. The remaining 472 of the 553 operators shrimping inshore (Table 1) also shrimped offshore. In addition to the 472 vessel operators shrimping inshore as well as offshore, there were 450 vessels that shrimped offshore exclusively. The inshore-offshore mobility and the associated different catch rates are the basis for the catch estimates of Table 1.

Financial Aspects: Expenses

The high percentage (90%) of boat shrimpers pursuing shrimp as a supplemental source of income negates the value of calculating financial averages. Additional sampling would be necessary to accurately depict the economic picture of boat shrimpers. The emphasis will then be on the vessel sample. Vessels were arranged into three groups on the basis of length. Expenses were identified as those relating to fixed costs, variable costs related to effort, and variable costs related to catch. The existence of the share method of compensating the labor of crewmen makes it expedient to differentiate between variable costs.

The three vessel groups are: (1) those less than or equal to 50 feet, (2) those 51-65 feet inclusive, and (3) those greater than or equal to 66 feet. Complete financial information was obtained from 129 of 162 vessel operators surveyed. The distribution of the sample is group (1)--37 vessels; group (2)--48 vessels and group (3)--44 vessels. Figures in Table 6 identify the expenses of operating the average shrimp vessel in each group. A useful comparison arises when the expenses are averaged over the number of days fished. The total cost and effort cost per day increase as vessel size increases. There are different origins of the increases. The total cost of a day's fishing for a medium vessel was $173 higher than a smaller vessel. Forty dollars of this results from the higher cost of effort. However, the higher total cost of larger vessels compared to medium vessels is to a larger degree due to the cost of producing effort. One hundred of the $177 higher daily cost of the larger vessel is the result of the higher expense of effort. The shrimping strategy of the large vessels is therefore more sensitive to

increases in the major cost of producing effort. Diesel fuel is by far the largest effort-related cost.

The figures of Table 6 can be used to develop estimates of the gross impact of operating expenditures by vessel shrimpers. Total expenditures produced a gross impact of slightly over $75 million in 1978 (Table 7). Approximately 56 percent of the expenditures were related to income payments. Captains and crew received over $40 million dollars in 1978 for providing labor and management services.

Share Methods

Crewmen receive a share of the catch or proceeds from the sale of the catch as compensation. The system of paying crewmen is complex because numerous share methods occur. Additionally, similar vessels do not use a common share method. The variability in share methods among similar vessels can be explained by differences in crew size, experience of the crew, and the shrimp catch. Share methods must be compared on a common basis for identification of the payments accruing to the labor element of shrimping.

Eight share methods are listed in Table 8. The methods are converted to a common basis--the percentage of gross returns that the crew receives. Deducting various vessel expenses incurred during the trip prior to determining the crew payment is the prevalent practice. All expense deduction methods involve groceries. The two most frequently occurring methods also deduct all or a portion of the ice expense. This is thought to encourage ice conservation when the crew prepares the shrimp catch for storage.

Methods 1, 2, and 3 of Table 8 are clearly the dominant methods. Note that in column three these methods result in the crewmen receiving the equivalent of 26, 25, and 25 percent of the vessel's gross revenue. This indicates that the majority of the crewshare methods, although apparently different, actually convert to the same percentage payment to crew labor. Due to differences in crew size, the percentage of the vessel's revenue after certain expenses differs for methods 1, 2, and 3. Column 4 of Table 8 indicates that the larger vessels use method 3. The larger vessels average more crewmen as evidenced by the difference between columns 3 and 4 associated with method 3. The average number of crewmen is smaller for vessels using method 1. This is reflected by the higher percentage of the vessel's gross returns per crewman even though column 3 percentages for methods 1, 2, and 3 are almost identical.

Insurance

The review of the share methods depicted the complexity of the major component of the "cost related to catch" entry in Table 6. Just as this explanation was necessary for a better understanding of shrimp fishery expenses, the subject of vessel insurance is one that complicates interpretation of the "fixed cost" entry in Table 6.

Premiums on hull insurance and liability (property and indemnity--commonly referred to as P & I) insurance may be paid by certain vessels. Generally, mortgaged vessels are required by lenders to have hull

insurance in the amount of the mortgage. Liability insurance is frequently used in conjunction with hull coverage. Shrimpers will do without liability insurance more frequently than hull insurance. The fixed cost row of Table 6 was constructed as if all vessels paid insurance. For this reason, an explanation of how the insurance cost included in the fixed cost row was determined is necessary. The fixed cost for the smaller vessels includes an insurance cost of $2,200. However, only 8 percent of the small vessels had insurance coverage. The $2,200 reflects the average cost of insurance for those shrimpers with coverage. This average cost was used in the table to reflect the situation faced by an entrant. Individuals purchasing any size vessel will likely be financing the purchase and will therefore find it necessary to carry insurance. The percentage of vessels with insurance costs will approximate the percentage with mortgages. Vessels without insurance costs simply represent ownership willing to accept a higher risk, i.e., the vessels are self-insured. The incidence of insurance and the average cost for various vessel groups are presented in Table 9. The percentage of vessels insured increases with vessel size. Vessels in the larger class have lower average ages. Thus, the high incidence of insurance reflects the fact that the newer vessels are likely to be mortgaged.

Summary

In 1980 the shrimp fishery in the fishery conservation zone of the Gulf of Mexico came under the management of the Gulf Regional Fisheries Management Council. This signifies that forthcoming decisions will affect shrimpers as well as the shrimp. Shrimp are managed via alterations in the traditional activities of shrimpers. The socioeconomic considerations of managing shrimpers to derive the optimum yield from shrimp will require heretofore unavailable information. This report depicted the physical and economic characteristics of vessels and their operators. Managing shrimpers and estimating the impact of management measures without fundamental information about shrimpers and their businesses may yield unexpected results.

The complexity of the users of the shrimp resource was depicted. Shrimpers can not be suitably classified as commercial or sport. There are vessel shrimpers, full-time boat shrimpers, and part-time boat shrimpers. There are few common characteristics in their fishing platforms. More diversity exists in the average catch and operating expenses. Sport shrimpers are also a diverse group. Some purchase licenses in order to pull larger trawls and not be restricted by legal catch limits imposed on unlicensed sport shrimpers. The mixture of motivations among shrimpers makes estimation of the annual shrimp catch subject to conservative error. Estimates in Table 1 demonstrated that the published statistics on the 1978 commercial shrimp catch could have underestimated the production by 45 percent. The underestimate results from the exclusion of production from most of the part-time commercial shrimpers and all of the sport shrimpers. Improved estimates of the shrimp catch are necessary in order to better understand the productivity of nursery grounds and identify impacts on the shrimping industry.

Differences in equipment used by boat and vessel shrimpers was shown to be further complicated due to areas of operation. Some vessels shrimp entirely inshore, others both inshore and offshore, or a third group entirely offshore. Consequently, these groups harvest shrimp of

different sizes with corresponding differences in prices and income. Regulations should be developed with consideration given to differences in gear and equipment used by vessel grounds and the two distinct inshore groups of boat shrimpers.

The existence of three vessel groups based on area of operation, full-time boat shrimpers, and boat shrimpers supplementing their job income complicates an economic description of the shrimp fishery. Total investment in commercial shrimping vessels, boats, and equipment was estimated to be $172 million. Slightly over 50 percent of the resident shrimp harvesting investment was attributed to boats. The boat fishery is dominated by part-time shrimpers. Vessels less than 66 feet have appreciated in value more rapidly than larger vessels. The appreciation has been rapid overall due to high market demand for shrimp and rising replacement costs.

The operators of this large vessel investment were shown to be either owner-operators (76%) or hired captains (24%). Hired captains operated larger boats, shrimped more days in 1978, caught less shrimp, and had higher per day operating expenses than owner-operators. Some Louisiana lenders aware of this difference are more conservative when considering a loan on a vessel to be operated by a hired captain.

Shrimp vessels are highly specialized. Only 5 percent of the vessels directed effort at earning income from other species. The incidental catch yielded income to 19 percent of resident shrimp vessels. The implication is that market and environmental conditions pertinent to shrimp alone determine the ability of vessels to amortize debt.

The costs of shrimping were identified as related to catch, effort, or overhead. Small and medium sized vessels exhibited similar relationships between the cost categories. The vessels over 65 feet in length had a higher percentage of their cost devoted to producing effort. They were the most costly vessels to operate per day. The shrimping strategy of large vessels would be subject to more impact from regulations affecting effort.

Gross economic impact of vessel shrimping amounted to $78 million in 1978. Income payments to crew approached $27 million while captains earned income of $19 million. Fifty-eight percent of the expenditures in the vessel harvesting aspect of shrimping represented income payments. Although several methods to compensate the crew were used, 70 percent of the methods converted to essentially the same percentage of the vessel's gross revenue. Approximately 25 percent of a vessel's gross revenue was devoted to paying the crew.

Table 1. Summary of estimated Louisiana catch from boat and vessel shrimpers, 1978.

	Number	Heads-off Catch (lbs)
Licensed full-time boats*	1,244	16,719,360¶
Licensed part-time boats*	12,168	17,132,544
Licensed vessels		
Inshore catch*	553**	10,940,021
Offshore catch*	922**	29,540,111¶
Licensed sport†	10,875	4,884,071
Unlicensed sport§	30,000	14,400,000
		93,616,107

*Results from a 1979 Sea Grant survey of 160 undocumented shrimp boats and 162 vessels operating during 1978.

†The number of licensed sport shrimpers in 1978 obtained from Louisiana Wildlife and Fisheries Department license sales. The average annual catch of 463 pounds heads-off was obtained from Duffy (1978).

§Derived from the USFWS study of sport shrimpers reported to have averaged 480 pounds annually.

¶These figures represent estimates of the shrimp reported landed at the traditionally surveyed ports and dealers.

**Not exclusive of duplication. Refer to the discussion on mobility for explanation.

Table 2. Characteristics of Louisiana shrimp boats and vessels, 1978.

	Inshore Boats	Inshore/Offshore Vessels	Offshore Vessels
Length (ft)			
Range	14-52	36-65	66-90
Avg.	21	53	78
Year Built (%)			
Prior to 1974	57	81	76
1974 or later	43	19	24
Year Bought (%)			
Prior to 1974	35	51	54
1974 or later	65	49	46
Horsepower (avg.)			
Inboard	207*	199	352
Inboard/Outboard	180		
Outboard	85		
Hull Material (%)			
Aluminum	12	0	0
Fiberglass	57	0	6
Steel	1	10	74
Wood	30	90	20

*The inshore sample consisted of 32% inboard, 14% inboard/outboard, and 54% outboard.

Source: A 1978 Sea Grant survey of 322 commercial shrimpers.

Table 3. Gear characteristics of Louisiana commercial shrimpers, 1978.

	Inshore Boats Part-time	Inshore Boats Full-Time	Inshore/Offshore Vessels	Offshore Vessels
Trawls				
Number owned	1	2	6	8
Footrope length (ft)	28	35	47	58
Single-rigged (%)	100	100	18	
Double-rigged (%)			82	75
Twin Trawls (%)				25
Trawl Doors				
Pairs owned	NA	NA		
One (%)			14	
Two (%)			53	70
Three (%)			16	7
Four or more (%)			17	23
Size (length in ft)			8	10
Wing Nets*				
Size (ft)	9	11		

*Twenty-one percent of the combined inshore shrimpers had wing nets.

Source: A 1978 Sea Grant survey of 322 commercial shrimpers.

Table 4. Electronic equipment on board Louisiana shrimp boats and vessels, 1978.

	Inshore Boats (%)	Inshore/Offshore Vessels (%)	Offshore Vessels (%)
CB Radio	46	100	98
VHF-UHF	4	72	98
Single Side Band		6	57
Radar		40	100
Fathometer		91	100
Autopilot		70	100
Compass		99	100
Loran A		10	84
Loran C		2	20
TV		90	98

Source: A 1978 Sea Grant survey of 322 commercial shrimpers.

Table 5. Market value of Louisiana commercial shrimp vessels and boats, 1979.

	Number	Percent Total Vessels	Average Value	Total Value	Percent of Grand Total
Vessels					
≤50 feet in length					
Wood	428	43	$42,672	$18,263,616	11
51-65 feet in length					
Wood	352	35	61,189	21,538,528	12
Steel	39	4	123,000	4,797,000	3
≥66 feet in length					
Wood	38	4	74,333	2,824,654	2
Steel	133	13	259,968	34,575,744	20
Fiberglass	13	1	170,000	2,210,000	
Total Vessels	1,003			84,209,542	49
Boats (all types)	13,827		6,385	88,285,395	51
Grand Total	14,830			$172,494,937	

Table 6. Expenses of three groups of Louisiana shrimp vessels, 1978.

	≤50 ft		51-65 ft		≥66 ft	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
Cost Related To:						
Catch*	11,713	39	30,481	51	45,789	38
Effort	12,838	42	20,690	35	49,231	41
Fixed Cost	5,891	19	8,385	14	24,949	21
Total Cost	$30,442		$59,556		$119,969	
Days Fished	115		136		195	
Effort Cost/Day	$112		$152		$252	
Total Cost/Day	$265		$438		$615	

*Does not include compensation to the captain. This method is necessary due to the mixture of owner-operators and hired captains.

Table 7. Gross economic impact of shrimp vessel expenditures, 1978.

	≤50 ft	51-65 ft	≥66 ft	Total
Number of Vessels	428	391	184	1,003
Crew Income	5,013,164	11,918,071	8,425,176	25,356,411
Captain Income	5,376,108	7,314,828	4,600,552	17,291,488
All Other Expenses	8,016,012	11,368,325	13,649,120	33,033,457
Total	18,405,284	30,601,224	26,674,848	75,681,356

Table 8. Crewshare methods and conversion to a percentage of gross returns, Louisiana shrimp vessels, 1978.

Share Method	Percent of Vessels	Conversion to Percent Vessel's Gross Revenue	Percent per Crewman
Before Expenses	5	24	18
After Certain Expenses*			
(1) Food and ice	37	26	19
(2) Food and 1/2 ice	22	25	16
(3) Food	12	25	14
(4) Fuel, ice, and food	6	28	15
(5) 1/2 food, 1/2 ice	3	21	21
(6) 1/2 food, 1/4 ice	3	21	18
(7) 1/2 food, 1/2 ice, 1/4 fuel	1	33	33
No Hired Crewmen†	11	-	-

*The normal procedure is for certain expenses to be deducted from the gross return realized from a trip prior to paying the crewmen for their labor.

†Vessels without hired crewmen are husband-wife operations or partnerships with both partners onboard.

Table 9. Incidence and average cost of insurance for shrimp vessels in Louisiana, 1979.

	Vessel Size		
	≤50 ft	51-65 ft	≥66 ft
Percent of Vessels Insured	8	21	79
Cost of Insurance	$2,200	$3,675	$7,158
Percent of Fixed Cost	37	44	29

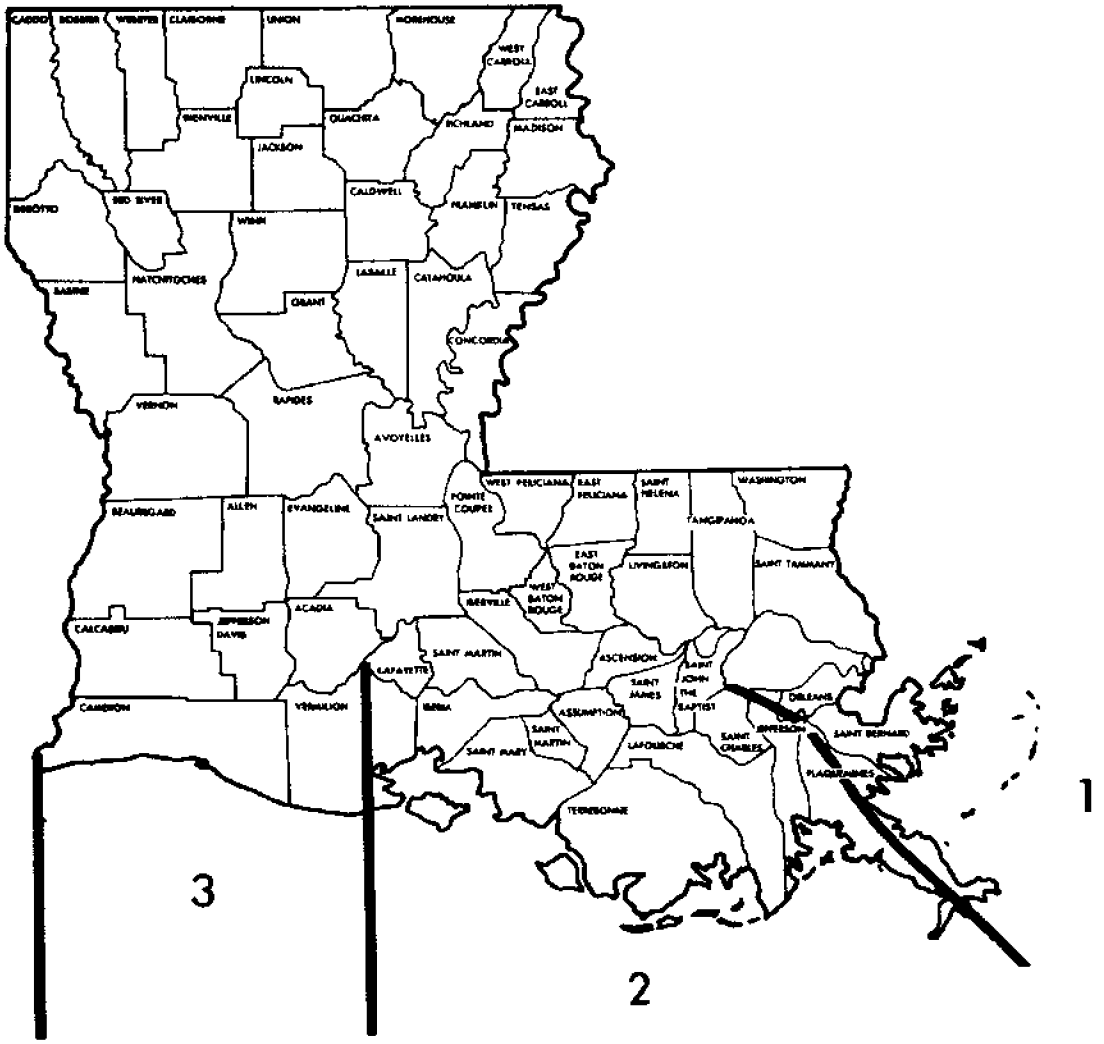

Fig. 1. The three Louisiana Department of Wildlife and Fisheries inshore shrimp management zones.

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