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by John P. Warren and C.E. Bryan

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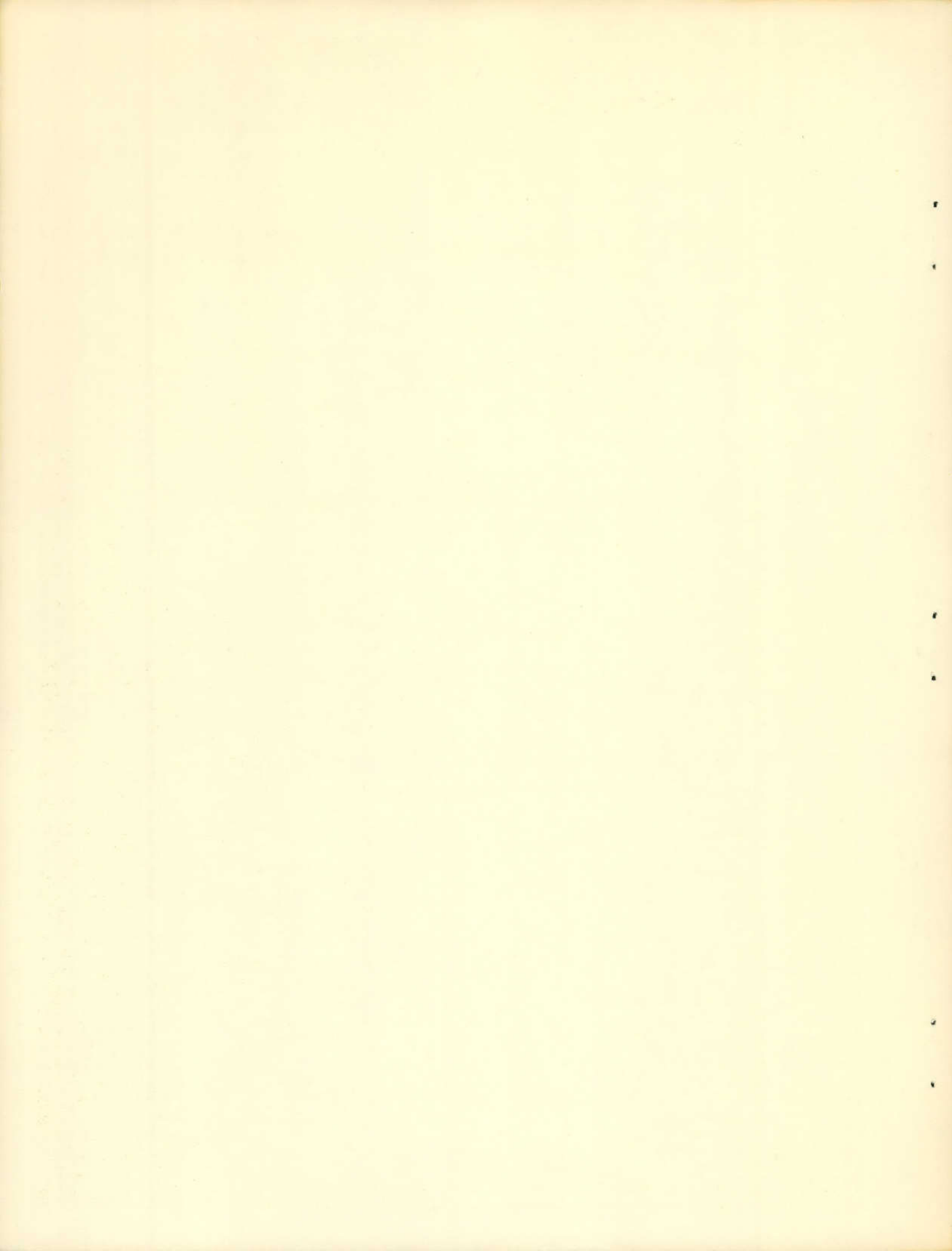
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THE TEXAS SHRIMP FLEET: A DESCRIPTION

ABSTRACT

Commercial shrimp accounted for about 95% of the value of seafood products landed in Texas during 1978. A description of the shrimp fleet was developed to determine the number of vessels involved, vessel size, type of shrimping activity for which vessels are licensed and vessel home port.

In fiscal year 1979 the Texas Parks and Wildlife Department issued 8406 commercial shrimp boat licenses consisting of three types--Gulf boat, bay boat and bait boat. It was found that 1640 of the vessels held more than one type of license and that the actual number of individual licensed vessels was 6395.

Over half (3303) of the vessels were \leq 7.6 m (25 ft) and many of these probably represented part-time shrimpers. There were 1605 vessels between 7.6 m (25 ft) and 16.75 m (55 ft), which generally represented commercial bay and bait shrimpers, and 1487 vessels $>$ 16.75 m (55 ft) which largely represented Gulf shrimpers.

Of the 6395 vessels, 93.2% were based in coastal counties; 60% of vessels listed one of the following as home port: Fulton/Rockport/Aransas Pass/Corpus Christi, Galveston, Houston, Brownsville/Port Isabel, Baytown, Beaumont, Port Arthur, Kemah/Seabrook, Texas City, Freeport/Brazoria, Port Lavaca, Palacios and San Leon/Dickinson. The home ports for the remaining vessels included over 300 cities in Texas and other states.

INTRODUCTION

Commercial landings of seafood products represent a major economic sector of the Texas economy. These landings were valued at about \$148 million in 1978 (U. S. Dept. of Commerce 1979). By far the greatest single component of this industry, in terms of ex-vessel value, is the Texas shrimp fishery. Shrimp landings (\$141 million) represented about 95% by value of all fish and shellfish landings in Texas during 1978.

The shrimp fishery is a complex system that has proven to be highly adaptable to changing biological and economic conditions. It is an industry that only recently has come under the scrutiny of economists and other social scientists, due largely to increasing public awareness of and concern for marine and estuarine resources.

Increasing fishing pressure on the resource makes efficient public management essential--not only to insure the survival of the resource, but also to maintain the industry which the resource supports. An important aspect of management for the shrimp industry is a description of the fleet; however, at this time, very little is known relative to the number of vessels in the Texas fleet with respect to home port, vessel size and type of shrimping activity.

In general, the commercial fishery can be divided into two major categories: Gulf shrimping and bay shrimping. The bay fishery can be further divided into general bay shrimping and bait shrimping. Typically, Gulf boats are larger and more powerful. They stay out of port several days to several weeks at a time and have greater facilities for storage of fuel, supplies, ice and catch. These vessels unload at dockside when they finish a fishing trip. The shrimp are generally unloaded in a heads-off state and packed in ice. The main season for Gulf boats is from late spring through early or mid-winter, although some Gulf shrimp are taken throughout the year if the weather is suitable.

Bay boats are smaller and less powerful than Gulf vessels and return daily to the docks to unload their catch which is usually made up of smaller shrimp unloaded fresh (heads-on) or live for fishing bait. These boats trawl the waters of the several major bay systems on the Texas coast and some work the Gulf waters adjacent to the bays. In Texas there is a spring bay shrimping season from May 15 to July 15 and a fall season from August 15 to December 15. Some commercial bay and bait shrimpers turn to crabbing, oystering or fishing during off-seasons.

Bait shrimpers may trawl bay waters throughout the year except at night during the fall open season. Commercial bait shrimpers sell their catch to coastal bait dealers serving the sport fishing industry. Vessels licensed for commercial baitfishing must keep one half of their shrimp catch alive and are limited to 68.2 kg (150 lb) per day.

Recreational shrimping is also allowed in the bays and Gulf during open season and for bait year-round with the purchase of an individual bait-shrimp trawl license. In fiscal year 1979, 10,349 of these licenses

were sold. Holders of the individual bait-shrimp license may catch 1.9 ℓ (2 qt) of shrimp per day per person or 3.8 ℓ (4 qt) per day per boat for bait and are allowed 6.8 kg (15 lb) per day during the spring and fall seasons in major bays.

The three general types of commercial shrimping are represented in licensing regulations of the Texas Parks and Wildlife Department (TPWD) which licenses vessels for Gulf, bay or bait shrimping. Licenses are sold for individual vessels for each type of shrimping activity and a given vessel can hold one or any combination of two or three licenses. Since the TPWD requires information such as vessel length, home port and home county from license purchasers, the license records represent a valuable data set from which to derive a description of the commercial shrimping fleet.

FLEET SIZE AND GEOGRAPHIC DISPERSION

According to TPWD data, 406 licenses^a were issued during 1979 for commercial shrimping (total for all three license categories). However, since many boat owners purchase two or all three types of licenses, this figure clearly overstates the number of licensed vessels involved in shrimping in Texas. Sorting the TPWD license data to isolate multiple license holders revealed that there were 6395 individual licensed commercial shrimp vessels operating on the Texas coast during 1979 (Table 1).

The data also provided a profile of geographic distribution of shrimp vessel ownership by size class between coastal and non-coastal counties. The five length classes were chosen somewhat arbitrarily. Class 1 represents small commercial boats ≤ 7.6 m (25 ft) in length and probably includes part-time shrimpers. Classes 2 and 3 include mainly commercial bay boats of > 7.6 -12.2 m (25-40 ft) and > 12.2 -16.75 m (40-55 ft) in length. Classes 4 and 5 represent essentially Gulf vessels > 16.75 -21.3 m (55-70 ft) and those > 21.3 m, respectively.

The majority (93.2%) of licensed shrimp vessels were registered in the 17 coastal counties (listed at the bottom of Table 1) and in out-of-state port cities. As vessel length class increased, the proportion of coastal county ownership increased. The smallest length class showed the lowest proportion of coastal county ownership. This is to be expected since most boats ≤ 7.6 m are easily transportable whereas most larger boats are not. Hence, small boats need not be located near the Gulf to engage in shrimping. The indicated proportion of 89.4% probably overstates the number of small boats actively involved in commercial shrimping. The reason for this is because large areas of coastal counties are not adjacent to port locations and many small boats included in the coastal county totals are undoubtedly maintained out of the water and transported to launch areas for occasional shrimping. For example, the city of Houston and other metropolitan areas lie within coastal counties. A large number

^aThe number of licenses reported in this paper are based on the TPWD license renewal system and, due to late renewals, may not correspond exactly to the actual number sold during the fiscal year.

of the smallest boats licensed in Houston probably spend most of the time in garages and backyards. Hence, although larger vessel classes probably consist almost entirely of commercial shrimp boats, very little can be concluded with respect to the activities of the 3303 boats in length class 1. A more complete description of the ≤ 7.6 -m (25 ft) class of shrimp boats must await additional data.

Table 2 presents a breakdown of vessels by length class for the 13 most important ports (in terms of number of shrimp vessels) on the Texas coast. These port areas constitute 60% of the Texas shrimp fleet home ports. The remaining vessels list over 300 home ports in Texas and other states.

In terms of number of shrimp boats, the Fulton to Corpus Christi area, Galveston area and Brownsville/Port Isabel area are among the leading ports (Table 2). Houston is also a leading home port although the majority of Houston registrations represent very small boats many of which are probably owned by part-time shrimpers. Ports such as Beaumont, Baytown, Port Arthur and Texas City primarily contain small vessels more likely to be involved in bay shrimping rather than Gulf shrimping. Brownsville/Port Isabel contains very few small vessels and a relatively large number of larger Gulf vessels as would be expected in this important Gulf shrimping area.

VESSEL SIZE AND LICENSING ARRANGEMENTS

It would be expected that most Gulf shrimp licenses would be associated with large vessels and bay and bait licenses with smaller vessels. Table 3 shows that, in general, this is the case. Table 3 also presents a breakdown for all combinations of licenses relative to vessel size class. All duplication has been removed from the data in Table 3. For example, in row 1 (representing length class) any licensed boat is in one license class or combination column only. That is, any class 1 boat holding a Gulf license in combination with any other shrimp license is not included in the Gulf license column.

The majority of multiple license combinations are held by owners of vessels in the three smaller length classes. Vessels > 16.75 m (55 ft) are almost all operated under Gulf licenses alone. A curious aspect of the Table 3 breakdown is that 373 boats ≤ 7.6 m held Gulf shrimp licenses alone. Intuition would indicate that single license holders among owners of the smallest boats would select either bay or bait licenses, so trawling operations could be undertaken in waters more suitable to small boat operation and capacities. These small boats probably trawl for white shrimp in the shallow, nearshore Gulf.

In terms of single licenses, the bay shrimp license is most popular with 37.7% of all shrimp vessels being operated under this license alone (compared with 30.3% with Gulf and 6.4% with bait shrimp licenses). Among two license combinations, the Gulf and bait combination is relatively rare as would be expected due to the differences in vessel and gear requirements for these two types of shrimping. Only 5.8% of licensed vessels hold all three types of shrimp licenses.

SUMMARY

According to TPWD data, 8406 licenses were issued for commercial shrimping in 1979. These licenses were for three distinct types of shrimping--Gulf, bay and bait. A large number of shrimping vessels hold multiple license combinations. When these combinations were isolated, it was determined that 6395 individual vessels were licensed commercially by Texas to shrimp in the state's waters.

Of these 6395 vessels, 93.2% of the owners were based in coastal counties. Almost 100% of the larger vessel owners were based in coastal counties. Based on numbers of licensed shrimp vessels, the most important Texas shrimp ports are Fulton/Rockport/Aransas Pass/Corpus Christi, Galveston, Houston, Brownsville/Port Isabel, Baytown, Beaumont, Port Arthur, Kemah/Seabrook, Texas City, Freeport/Brazoria, Port Lavaca, Palacios and San Leon/Dickinson.

In terms of vessel size, over half (3303) of the licensed shrimping vessels were ≤ 7.6 m (25 ft) in length. However, many of these are probably only occasionally used for shrimping. There were 1227 and 378 vessels in the 7.6-12.2 m (25-40 ft) and 12.2-16.75 m (40-55 ft) length classes, respectively. These are generally representative of commercial bay and bait shrimpers. The two classes of greatest length--16.75-21.3 m (55-70 ft) and > 21.3 m--contained 1132 and 355 vessels, respectively. These are almost exclusively (97.2%) employed in trawling Gulf waters for shrimp.

In evaluating the number of shrimp vessels relative to fishing activity, 1937 vessels were licensed only for Gulf shrimping, 2409 for bay shrimping and 409 for bait shrimping. The remaining 1640 licensed commercial shrimping vessels operated under various multiple license combinations. License sales for both commercial and recreational fishermen indicated that as many as 16,744 vessels and boats engaged in shrimping in Texas waters during fiscal year 1979.

LITERATURE CITED

- Texas Parks and Wildlife Department. 1979. Unpublished commercial shrimp license data. Austin, Texas.
- U. S. Department of Commerce. 1979. Texas Landings. Current Fisheries Statistics No. 7726, Nat. Oceanic and Atmospheric Administration, Washington, D. C.

Table 1. Commercial shrimp vessels licensed from coastal and non-coastal counties, by length class, 1979.

	Length class					Total
	1	2	3	4	5	
	(≤ 7.6 m)	(> 7.6-12.2 m)	(> 12.2-16.75 m)	(> 16.75-21.3 m)	(> 21.3 m)	
Total	3303	1227	378	1132	355	6395
Coastal counties ^a	2944	1132	345	970	280	5708
Out of state ^b	8	6	23	145	73	255
Subtotal	2952	1175	368	1115	353	5963
Percent of total	89.4	95.8	97.4	98.5	99.4	93.2
Non-coastal	351	52	10	17	2	432
Percent of total	10.6	4.2	2.6	1.5	0.6	6.8

^aIncludes Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Harris, Jackson, Jefferson, Kleberg, Matagorda, Nueces, Orange, Refugio, San Patricio, Victoria and Willacy Counties.

^bIncludes essentially larger vessels from ports in other Gulf States.

Source: Texas Parks and Wildlife Department data.

Table 2. Number of licensed commercial shrimp vessels, by length class, based at major shrimp ports in Texas, 1979.

	Length class					Total
	1	2	3	4	5	
	(≤ 7.6 m)	(> 7.6-12.2 m)	(> 12.2-16.75 m)	(> 16.75-21.3 m)	(> 21.3 m)	
Aransas Pass, Rockport, Fulton and Corpus Christi	138	298	79	256	59	830
Galveston (City)	158	198	101	135	37	629
Houston	428	91	36	18	3	576
Brownsville/ Port Isabel	34	12	12	276	63	397
Baytown	178	26	3	1	0	208
Beaumont	195	12	0	1	0	208
Port Arthur	142	29	12	15	1	199
Kemah/Seabrook	83	74	6	2	1	166
Texas City	126	38	1	0	0	165
Freeport/ Brazoria	70	33	1	11	10	125
Port Lavaca	35	41	17	13	11	117

Table 2. (Cont'd).

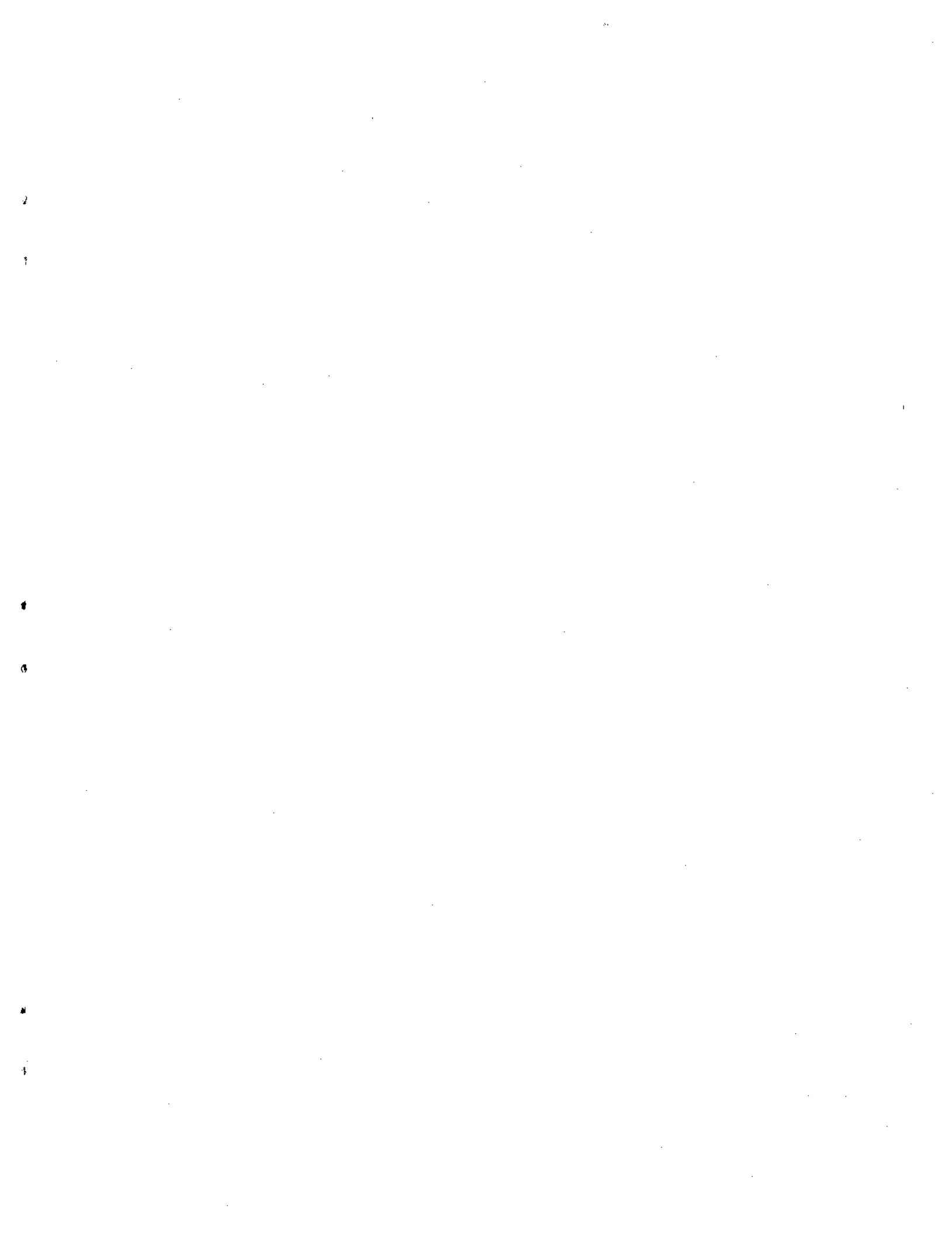
	Length class					Total
	1	2	3	4	5	
	(≤ 7.6 m)	(> 7.6-12.2 m)	(> 12.2-16.75 m)	(> 16.75-21.3 m)	(> 21.3 m)	
Palacios	26	46	13	15	13	113
San Leon/ Dickinson	58	45	3	0	0	106
All other ports	1632	284	94	389	157	2556
Total	3303	1227	378	1132	355	6395

Note: Several out-of-state ports are also important in terms of numbers of vessels licensed to shrimp in Texas waters.

Source: Texas Parks and Wildlife Department data.

Table 3. Licensed commercial shrimp vessels, by license class and length class, 1979.

Length	License class or combination							Total
	Gulf	Bay	Bait	Gulf and bay	Gulf and bait	Bay and bait	Gulf, bay and bait	
1. (< 7.6 m)	373	2002	311	386	15	163	53	3303
2. (> 7.6-12.2 m)	53	346	92	77	14	457	188	1227
3. (> 12.2-16.75 m)	66	54	5	58	6	67	122	378
4. (> 16.75-21.3 m)	1091	7	0	22	1	3	8	1132
5. (> 21.3 m)	354	0	1	0	0	0	0	355
Total	1937	2409	409	543	36	690	371	6395



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