Texas Commercial Fisheries Profile

by Michael Haby, Dewayne Hollin and Mel C. Russell
Texas Marine Advisory Service

Overview

The U.S. seafood production, utilization and marketing sectors are simultaneously America's oldest industry and one of the most forward looking, innovative industrial groups. Careful product handling, new processing and packaging technology, and aggressive market development activities have placed seafoods on a more equal footing with other meats. In fact, the last few years have demonstrated impressive growth in consumption of various marine food products.

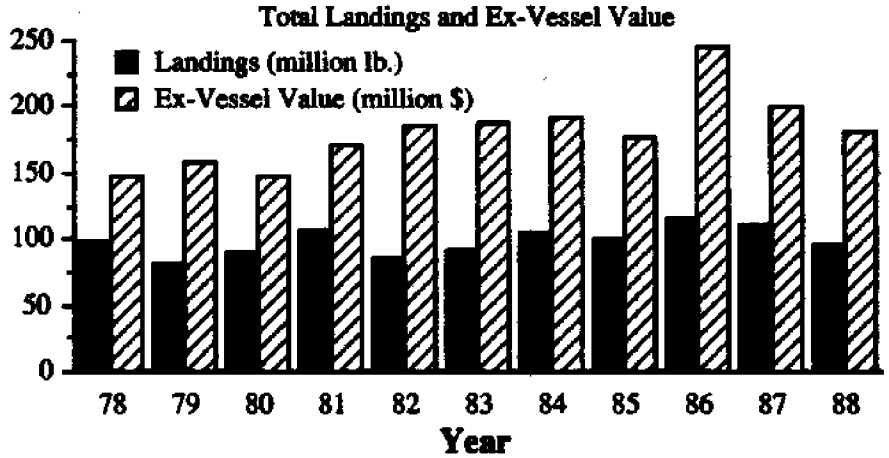
One way of evaluating differenes in product markets nationwide is through per capita consumption information. Per capita estimates are a synthetic measurement that computes the amount of a certain item each person consumes in a year. It is calculated by first standardizing the annual customer base to include all civilian residents and then dividing the total, annual use of the product — seafoods in this case — by the civilian, resident population for that year. Per capita consumption of all seafoods increased from 13.4 pounds to 15.0 pounds between 1978 and 1988, a 12 percent increase (Table 1).* Per capita seafood consumption has averaged 13.7 pounds during the last 11 years.

During 1988, Texas producers landed 96.5 million pounds of seafood products with a dockside value of $181.4 million.** Total seafood production in Texas has averaged 97.9 million pounds valued at more than $180.5 million in the last 11 years. Total landings have ranged from 81.4 million pounds in 1979 to 116 million in 1986. Cumulative, dockside value has ranged from about $148 million in 1978 to slightly more than $246 million in 1986 (Figure 1). The record year for Texas seafood landings was 1986, when 116 million pounds of marine food products were produced with a combined ex-vessel value of $246.5 million!

Table 1
Selected Per Capita Consumption Data: 1978-1988

Year	All Seafood: Annual usage per person in pounds	All Seafood: Percent change over previous year
1978	13.4	—
1979	13.0	-3.0
1980	12.8	-1.5
1981	12.9	.8
1982	12.3	-4.7
1983	13.1	6.5
1984	13.7	4.6
1985	14.4	5.1
1986	14.7	2.1
1987	15.4	4.8
1988	15.0	-2.6

Figure 1
Texas Commercial Fisheries: 1978–1988
Total Landings and Ex-Vessel Value



*Per capita consumption information and national landings data were obtained from Holliday, M.C. and B.K. O'Bannon. 1989. **Fisheries of the United States, 1988.** Current Fisheries Statistics No. 8800, U.S.D.C., NOAA, NMFA, Washington, D.C. 116 pp.

Time series data for Texas seafood landings and value were obtained from telephone interviews with Texas Parks and Wildlife Department personnel and from: Quast, W.D., T.S. Searcy and H.R. Osburn. 1987. **Trends in Texas Commercial Texas Fisheries Landings, 1977-1987. Management Data Series No. 149. Texas Parks and Wildlife Department, Coastal Fisheries Branch, Austin, Tex. 57 pp.

The National Marine Fisheries Service Laboratory in Galveston is responsible for collecting detailed information related to shrimp landings and value. These data are incorporated into the Texas Parks and Wildlife publication.

The Texas seafood complex is big business. This sector is comprised of numerous shore-based facilities that provide necessary services to the fleet, a large processing and distribution infrastructure, and, obviously, the harvesting component. Much of this industry is located along the 1,000 miles of Texas' coastal margin from Brownsville to Sabine Lake. Other components of the Texas seafood industry, however, are located in major market areas, and use large amounts of labor in processing and distribution. The harvesting component alone employs 15,000 people, and there are about 7,500 vessels licensed to fish in Texas (as of 1987). The fleet is about evenly split between the 3,000 Gulf trawlers and the 3,400 bay boats. On a statewide basis, Texas seafood production generates an annual economic impact of approximately $650 million.*

Texas Fishing Seasons

Seafood production is a seasonal process. Shrimp harvest occurs from June through October. This period is when the brown shrimp move out of estuaries and bays and return to the Gulf to mature and spawn. Oysters primarily are harvested November through April, with peak harvests coinciding with the Christmas holiday season. Bay systems are carefully monitored by the Texas Department of Health for water quality and by the Texas Parks and Wildlife Department for oyster size and density. The decision to open or close a particular water body is based on careful monitoring by these two agencies. Blue crabs are harvested throughout the year with peak production occuring from May to November. Since they burrow into the bay substrate in January and February, there is little harvesting of them at this time. The menhaden fishery is seasonal, with harvest occurring from May through October. This fishery is inactive from December to April.

Texas Seafood Products

Shrimp

Traditionally, shrimp is the most valuable fishery in the nation and historically Texas is a major contributor in both tonnage and value. Typically, Louisiana and Texas produce the majority of shrimp. Louisiana generally produces more tonnage than Texas, but Texas is unsurpassed in landed value. Texas shrimp production has accounted for about 40 percent of the total U.S. catch in the past ten years. With all eight Gulf and South Atlantic states participating in the harvesting of shrimp, it is astounding that one state can make such a significant contribution to total, domestic production.

In Texas, shrimp production typically accounts for more than 90 percent of total harvest value. In 1986, Texas shrimpers set a new production record by harvesting more than 93.5 million pounds valued at more than $229.1 million. In the last 11 years, the Texas shrimp catch has averaged $168.9 million, compared to the total seafood value of approximately $180.5 million. Shrimp production has ranged from 68 million pounds in 1979 to 97 million pounds in 1986. Total ex-vessel value of the Texas shrimp fishery has fluctuated between a low of $140 million in 1980 to a record high of $229 million in 1986 (Figure 2). In terms of historic, average catch, the Gulf of Mexico generates about 65 million pounds while Texas bay systems produce about 17.4 million pounds. In ex-vessel dollars, about $150 million is produced in the Gulf of Mexico

Figure 2

Texas Commercial Fisheries: 1978–1988

Shrimp Landings and Ex-Vessel Value

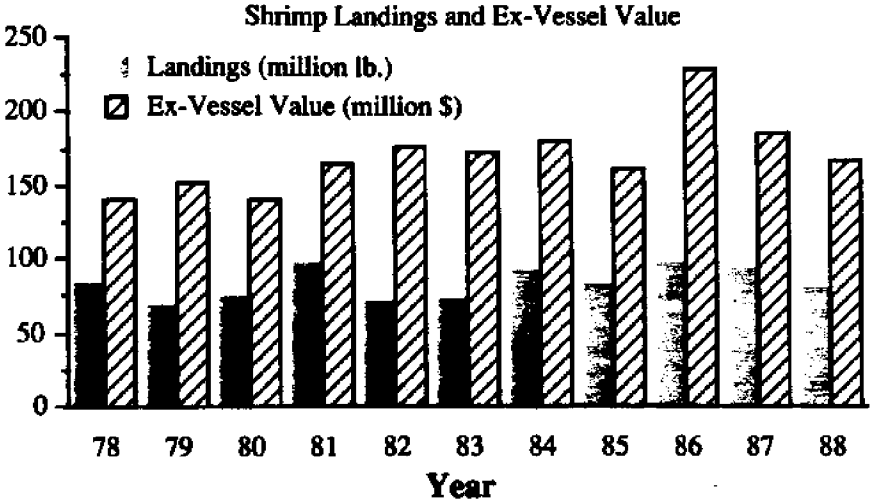


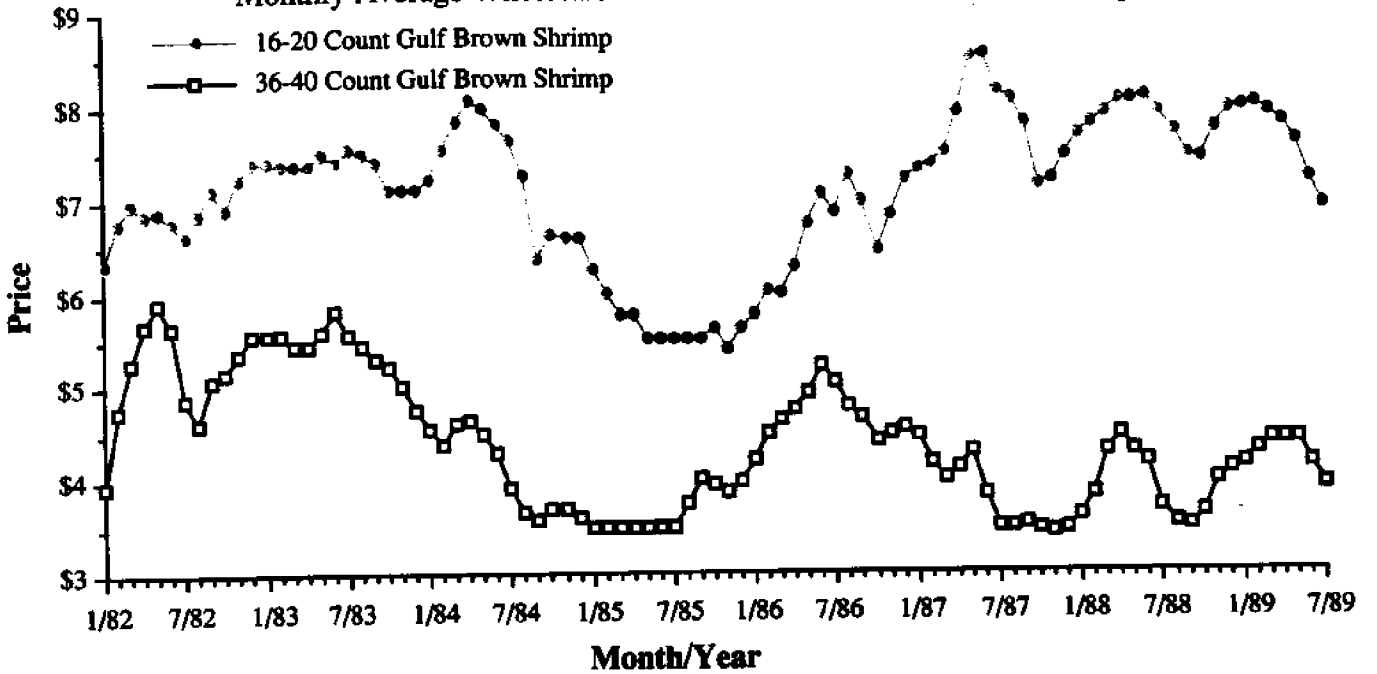
Table 2
Selected Per Capita Consumption Data: 1978-1988

Year	Seafood Annual use (pounds)	Shrimp Annual use (pounds)	Shrimp as percent of total use
1978	13.4	1.5	11.2%
1979	13.0	1.3	10.0%
1980	12.8	1.4	10.9%
1981	12.9	1.5	11.6%
1982	12.3	1.5	12.2%
1983	13.1	1.7	13.0%
1984	13.7	1.9	13.9%
1985	14.4	2	13.9%
1986	14.7	2.2	15.0%
1987	15.4	2.3	14.9%
1988	15.0	2.4	16.0%

**Regional and Statewide Economic Impacts of Sport Fishing, Other Recreational Activities, and Commercial Fishing Associated with Major Bays and Estuaries of the Texas Gulf Coast. Executive Summary prepared for the Texas Water Development Board by Texas A&M University Departments of Recreation and Parks and Agricultural Economics. August 1987. Texas Agricultural Experiment Station, College Station, Tex.*

Figure 3

Monthly Average Wholesale Prices for Headless Gulf Brown Shrimp



while production from Texas bays accounts for $19 million.

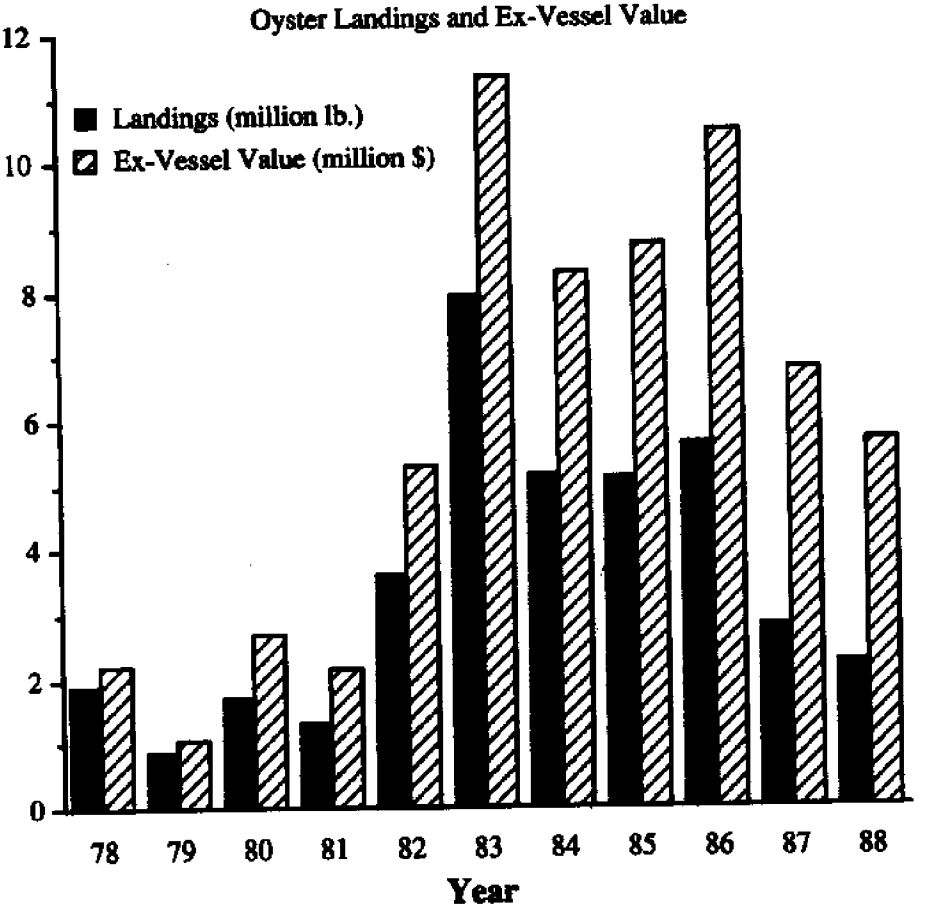
The domestic market for shrimp is large and growing. Total annual shrimp consumption has increased from 548.2 million pounds in 1985 to 667 million pounds in 1988 — a 22 percent increase in just three years. Since 1976, shrimp has accounted for an increasing proportion of total per capita consumption, and today 16 percent of total per capita seafood consumption is attributable to shrimp (Table 2). On a per capita basis, total seafood consumption has increased about 12 percent between 1978 and 1988 while shrimp consumption has increased 60 percent. This tremendous growth in the United States has been achieved with minimal directed consumer advertising or promotion, suggesting that shrimp is truly America's favorite seafood product.

Historically, Texas shrimp producers have competed with other countries since the U.S. currently imports between 68 percent and 75 percent of the shrimp consumed. Shrimp farming, which accounts for about 24 percent of world shrimp production, has imposed additional downward pressure on the price of medium-sized shrimp, the size customarily produced through aquaculture. While wholesale prices for larger shrimp (such as 16-20) have trended up since 1982, trends for medium-sized shrimp are lower since 1982 (Figure 3).

Figure 4

Texas Commercial Fisheries: 1978–1988

Oyster Landings and Ex-Vessel Value



Oysters

The eastern oyster is a popular species and is found in most Texas bays. Oysters are harvested primarily by dredges. Oysters are plagued by many natural predators, diseases and parasites, and in some areas they may become unsafe for human consumption as a result of pollution. Oyster production, therefore, is subject to wide fluctuations. For example, oyster production has fluctuated between a low of 889,000 pounds in 1979 to a record crop of 7.9 million pounds in 1983. In 1988, 2.3 million pounds of oyster meats were produced in the Texas bay complex.

The Texas oyster fishery ranks a distance second to shrimp in value. In the last 11 years, the average dockside value of the state's oyster fishery has been approximately $5.9 million. On a dockside basis, this fishery has contributed as little as $1 million to Texas' total seafood value, and as much as $11.3 million (Figure 4).

Texas became a more important supply source for oysters nationwide in the mid-1980s (Table 3). Declining harvests from "traditional" East Coast estuaries were responsible in part, and current information indicates that reduced oyster production on the East Coast is still a source of concern.

Blue Crab

Blue crab is the second largest shellfish industry in Texas on the basis of volume, but third when value is considered. The Texas blue crab industry has produced an average of 8.4 million pounds of crab meat in the last 11 years. The annual ex-vessel value of this delicacy averaged $2.9 million between 1978 and 1988. About 11 million pounds of crabs were produced in 1988 with an ex-vessel value of nearly $4.2 million (Figure 5).

Finfish

Finfish production, including black drum, flounder, sheepshead, snapper and other valuable species landed by Texas commercial fishermen, amounted to about 3.8 million pounds in 1988 with an ex-vessel value of $4.5 million. Sixty-eight percent of the finfish landed in Texas were harvested from the Gulf of Mexico using various configurations of longline gear. The 11-year average annual harvest was about 3.4 million pounds with an average value of $2.8 million (Figure 6). The computed dockside value per pound for the finfish catch has been increasing since

Table 3
Texas' Percentage Contribution to the Total Domestic Oyster Supply (including the western oyster): 1978-1988

Year	Total U.S. Production (in pounds of meat)	Texas Production (in pounds of meat)	Texas Contribution to U.S. Oyster Harvests
1978	50,983,000	1,907,000	3.7%
1979	48,041,000	888,800	1.9%
1980	49,081,000	1,738,500	3.5%
1981	50,052,000	1,309,400	2.6%
1982	54,328,000	3,633,100	6.7%
1983	50,160,000	7,940,800	15.8%
1984	48,287,000	5,167,700	10.7%
1985	44,173,000	5,133,900	11.6%
1986	40,544,000	5,649,300	13.9%
1987	39,807,000	2,843,600	7.1%
1988	31,892,000	2,269,600	7.1%

Figure 5
Texas Commercial Fisheries: 1978–1988
Blue Crab Landings and Ex-Vessel Value

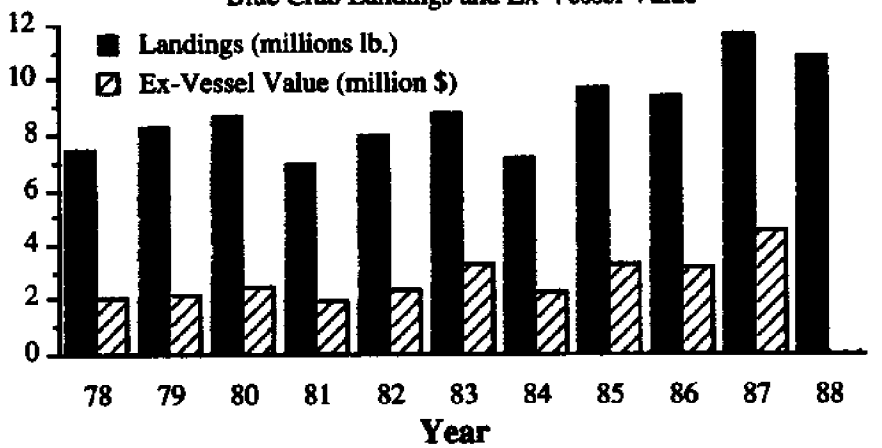


Figure 6
Texas Commercial Fisheries: 1978–1988
Finfish Landings and Ex-Vessel Value

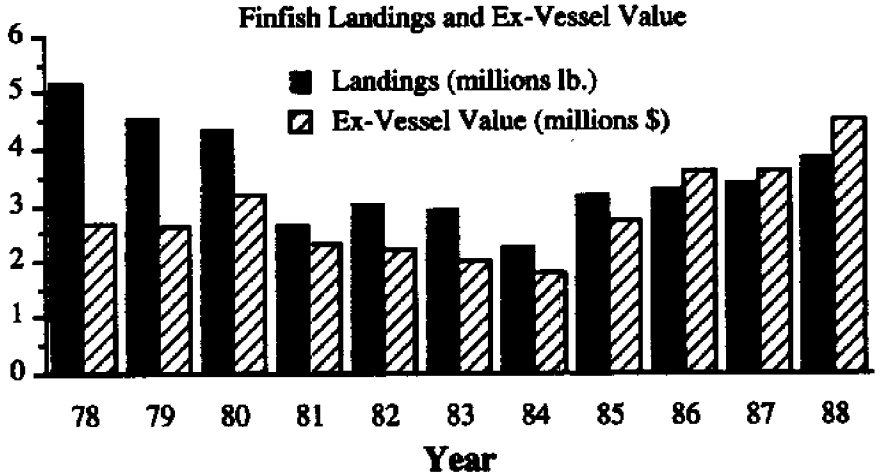


Table 4
Importance of Water Body Determined by Percent of Average Total Landings: 1978-1988
(in millions of pounds)

Location	Shrimp		Oysters		Crab		Finfish		Total	
	Pounds	Percent	Pounds	Percent	Pounds	Percent	Pounds	Percent	Pounds	Percent
Gulf of Mexico	65.1	78.9	.0	.0	.0	.3	1.1	31.0	66.2	67.6
Sabine Lake	.1	.1	.0	.0	.4	5.2	.0	.1	.5	.5
Galveston Bay System	5.3	6.5	2.4	68.0	1.9	23.0	.5	15.3	10.2	10.4
Matagorda Bay System	5.0	6.0	.3	7.7	1.0	11.8	.1	2.7	6.3	6.5
San Antonio Bay System	1.8	2.2	.7	19.6	2.7	31.6	.1	2.3	5.3	5.4
Aransas Bay System	3.2	3.9	.2	4.7	2.1	24.9	.2	6.0	5.7	5.8
Corpus Christi Bay System	1.9	2.2	.0	.0	.2	2.2	.4	11.7	2.4	2.5
Laguna Madre Bay System	.1	.2	.0	.0	.1	1.0	1.0	30.9	1.3	1.3
Total landings by commodity	82.6		3.5		8.4		3.4		97.9	

Table 5
Importance of Water Body Determined by Percent of Average Ex-Vessel Value: 1978-1988
(in millions of dollars)

Location	Shrimp		Oysters		Crab		Finfish		Total	
	Pounds	Percent	Pounds	Percent	Pounds	Percent	Pounds	Percent	Pounds	Percent
Gulf of Mexico	149.6	88.6	.0	.0	.0	.3	1.3	47.2	150.9	83.6
Sabine Lake	.1	.0	.0	.0	.2	5.4	.0	.1	.2	.1
Galveston Bay System	5.9	3.5	4.1	70.4	.7	24.7	.3	8.9	11.0	6.1
Matagorda Bay System	5.9	3.5	.4	7.4	.3	10.5	.0	1.6	6.7	3.7
San Antonio Bay System	1.8	1.1	1.0	17.3	.8	29.3	.1	1.9	3.7	2.1
Aransas Bay System	3.5	2.0	.3	4.9	.7	23.2	.1	5.3	4.6	2.5
Corpus Christi Bay System	2.0	1.2	.0	.0	.1	2.2	.2	7.9	2.3	1.3
Laguna Madre Bay System	.1	.0	.0	.1	.1	4.4	.8	27.2	1.0	.5
Total value by commodity	168.9		5.9		2.9		2.8		180.5	

1984. In 1986, the ex-vessel price per pound for Texas finfish passed the $1 per pound mark for the first time in history, and in 1988 the computed ex-vessel price per pound was $1.17. This primarily was due to production of Gulf species such as red snapper, grouper and tuna.

Menhaden

The menhaden industry is classified as an industrial fishery since the processed products are not used for direct human consumption in the United States. Menhaden are typically converted into fish meal and oil. The meal is high in protein and is used in livestock and aquaculture feeds. The extracted oil historically has been exported to western Europe as an ingredient in food manufacturing, but now is highly sought in the U.S. as an additive in aquaculture feeds. This addition provides cultured products with omega-3 fatty acids, a compound considered nutritionally beneficial.

Schools of menhaden are located with spotter planes, which then direct the boat. A large net, called a purse seine, is then used to surround the fish. Menhaden are found in dense schools, and it is not uncommon to harvest as many as 200,000 fish with one setting of the net.

Menhaden are harvested off Texas, but are landed commercially in Louisiana for processing. Production off Texas in 1988 amounted to 80.5 million pounds with a dockside value of $4.2 million. On average, about 104.6 million pounds of menhaden have been produced in the past 10 years. At the ex-vessel level, this species is valued at approximately $4.4 million per year.

Fish and Shellfish Landings by Geographic Region

Seafood products are normally landed at the port nearest the harvest site. To explore the contribution of the Gulf of Mexico and various bay systems to total production and dockside value of seafood in Texas, landings and ex-vessel value data collected by the Texas Parks and Wildlife Department and the National Marine Fisheries Service were averaged for the 11-year period of 1978 through 1988 (Tables 4 and 5).

These figures indicated that production from the Gulf of Mexico has averaged 68 percent of total landings and 84 percent of ex-vessel value. The Gulf has accounted for the majority of shrimp landings (79 percent) and ex-vessel value (89 percent).* The essence of shrimp value in the market-

place is size, so the difference between landings and value can be partially explained by the size of shrimp harvested. Since Gulf shrimp are typically larger than bay shrimp, they command a greater ex-vessel price. This is further illustrated by noting that the annual average ex-vessel value per pound of Gulf shrimp was $2.30 from 1978 through 1988 compared with $1.11 for shrimp harvested in the bay complex.

Galveston Bay is synonymous with Texas' oyster production. From 1978 through 1988, 68 percent of the Texas oyster harvest and 70 percent of the total dockside value originated from Galveston Bay. To the south, San Antonio Bay produced about 20 percent of the total harvest, and 17 percent of the total dockside value for this fishery.

Blue crab production is more diffused throughout the Texas bay complex. Galveston, San Antonio and Aransas Bays collectively account for approximately 80 percent of crab production and 77 percent of total ex-vessel value.

The Gulf also is an important contributor to finfish landings, accounting for 31 percent of landings in the period studied. The Laguna Madre also contributed 31 percent of total commercial finfish landings, but the value of Gulf landings is greater (47 percent to 27 percent) due to production of high-valued snappers, groupers and tuna destined for the fresh market.

Outlook

Catch per unit effort data and historic landings information suggest that traditional species of shrimp, blue crab and oysters are being harvested at their maximum sustainable levels. There are, however, several species of fish and shellfish that are showing promise in the world marketplace but have yet to be fully utilized. Deepwater finfish such as shark, tilefish, yellow edge grouper and wenchman snapper show potential for greater utilization, as do megalops shrimp and rock shrimp. Other resources such as butterfish, which are abundant in Gulf waters, have little demand locally, but have historically been accepted in foreign markets.

Inshore fisheries also may be enhanced through clam and oyster aquaculture, and the soft shell crab industry has yet to reach its full potential.

Texas seafood businesses have the capacity to grow through a combination of increased local processing (both primary and secondary), which will add value to the seafood product line, and through the use of alternative species to meet the ever-increasing seafood demands of a nutrition-conscious public.

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*The Gulf of Mexico and the vast bay complex comprises the penaeid shrimp habitat. Shrimp spawn offshore, and the larvae are driven into the bay systems by winds and currents. As the shrimp mature, the complete their life cycle by returning to the Gulf, usually in late spring and summer. It is not surprising that production levels in the Gulf and in the bay complex typically move in the same direction from year to year (e.g., when bay production is high, Gulf production is also high).

This fact sheet is furnished as a service of the Texas Marine Advisory Service, a cooperative effort of the Texas A&M University Sea Grant College Program, Texas Agricultural Extension Service and the commissioners' courts of participating coastal counties. The advisory service staff works to apply the eucational and research capabilities of the University to the problems of coastal communities and marine-related industries.

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