FEASIBILITY STUDY OF A SEAFOOD INDUSTRIAL PARK FOR SOUTH CAROLINA

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FEASIBILITY STUDY OF A SEAFOOD INDUSTRIAL PARK FOR SOUTH CAROLINA[1]

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CHAPTER I

INTRODUCTION

BACKGROUND AND OVERVIEW OF THE PROBLEM

Historically, the commercial fisheries in South Carolina have played a colorful and prominent role in the coastal economy. The State's seafood industry, characterized by pride and tradition, is concentrated primarily in six coastal counties with Horry, Georgetown, Charleston and Beaufort counties accommodating the largest commercial fishing communities. Although the seafood industry is small compared to other industries on the basis of its total contribution to the State's economy, it is still important in coastal communities.

During recent years, scientists have analyzed the development potentials of the South Carolina seafood industry (Hite,1968; Laurent, et.al., 1975). While it appears feasible to expand certain fisheries through improved marketing, processing, etc., a number of interrelated factors must be dealt with if the South Carolina seafood industry as a whole is to be profitably expanded and the fisheries resources themselves more effectively managed.

The seafood industry is fragmented and characterized by small businesses. There are approximately 96 firms, mostly individual proprietorships (commonly dock/boat owners), engaged in the actual catching and handling of seafood along the 189 miles of South Carolina coastline.

The central problem is that of poorly equipped and widely scattered harbors, docks and facilities. At the present time, many fishermen must seek a separate anchorage to obtain many services, including the following:

(1) Fuel and ice
(2) Engine repairs
(3) Electronic and navigational equipment repair
(4) Marine railway - hull repair
(5) Dealers, buyers, processors
(6) Inspection and advisory services

This condition is unsatisfactory since there is no single facility or base where all these services are adequately provided in South Carolina.

There are three other major areas of concern facing the industry. First is transportation inefficiencies. Isolated and scattered locations of docks and limited storage capacity result in excessive handling, transportation and storage costs (Laurent, et. al., 1975). Consequently, the marketing system is inefficient and subject to increasing costs. Second is pollution control costs. The 1983 EPA effluent guidelines and the new FDA regulations on shellfish sanitation will significantly affect South Carolina's small seafood processors and dealers. In many cases, the compliance with these rules and regulations will be impossible, forcing the small man out of business. Finally, lack of accessibility to a continuous market is hampering the industry at the primary producing, wholesaling and retailing levels. Because of the numerous unloading and processing installations, buyer selection is unpredictable. It is very difficult to attract large volume marketing organizations such as major retail chains and institutional buyers because of the lack of large quantities of seafood concentrated in easily accessible locations in South Carolina.

FORMULATION OF STUDY

The above problems are not unique to South Carolina but can be generally applied to North Carolina and Georgia as well. In response to these problems, the Coastal Plains Regional Commission created a Seafood Ad-Hoc Committee in May 1974 to formulate specific recommendations for assisting and developing the industry. This committee was composed of representatives from North Carolina, South Carolina and Georgia and its meetings were attended by experts

from the Federal, State and private sectors.

After nearly a year of deliberation and site visits, the Committee presented its findings and recommendations. The first priority recommendation was that each state look into the feasibility of a seafood industrial park for improving the economic health of the seafood industry.

The seafood industrial park concept provides for a base that would allow a logical and unimpeded flow of seafood products through the various levels of harvesting, processing and distribution. Such a complex would serve to revitalize the fishing industry and allow an expansion of employment, income and capital accural in an established seafood industry. Also, the port would probably attract new processors and related fishery concerns.

The original rationale for recommending a centralized seafood port facility consisted of the following basic components:

(1) Efficiencies resulting from concentrating goods and services at a single point would benefit both buyers and sellers.
(2) Centralized waste disposal facilities for both processors and boats would meet State and Federal standards.
(3) Concentrated volumes of landed seafood would attract buyers and sellers which might lead to expanded and improved markets.
(4) Centralized holding and handling facilities to match seasonal supplies with year-round demand would be available.
(5) Centralized facilities would stimulate improved product quality thereby increasing returns to fishermen and greater consumer satisfaction.
(6) Capital available to the industry would be more efficiently utilized.

Based on this recommendation, the Coastal Plains Regional Commission approved $60,000 for preliminary feasibility studies in South Carolina and Georgia. The State of North Carolina had already been studying the problem for several years and had, in fact, chosen a site for construction of a facility at Wancheese. The purpose of this report is to present results of the South Carolina study which was designed to identify the users, location, components and potential economic impacts of a modern seafood industrial park for South Carolina. This report is a "benchmark" study and should not be construed as an official proposal to establish a seafood industrial park in South Carolina.

METHODOLOGY

The basic method used to determine the desirability and/or need for a seafood industrial park in South Carolina consisted of a preliminary mail survey followed by dockside interviews. We felt that a mail survey would return the greatest quantity and variety of responses and at relatively low cost. The sample consisted of all fishermen and seafood dealers licensed to operate in South Carolina.

The survey questionnaires and a cover letter describing the purpose of the survey were mailed on 27 May 1975 (see Appendix A). Approximately 10 percent of these questionnaires were returned. On 27 June 1975 survey questionnaires were again mailed to all licensed commercial fishermen and seafood dealers (see Appendix B) urging a response from those individuals who had not responded. This resulted in an additional response of approximately 13 percent.

Table 1.1 presents a summary of the number of responses in the mail survey. We assume that those individuals who responded to the survey were not entirely representative of the overall population of seafood harvestors and marketers. Those who did respond were either strongly for or strongly against the proposed concept for South Carolina. Those individuals who were neutral or were a-

TABLE 1.1 - NUMBER OF RESPONSES IN THE MAIL SURVEY

	CATEGORY	NUMBER OF QUESTIONNAIRES MAILED	RETURNED	RETURNED % OF QUESTIONNAIRES
1.	Total In-State	631	146	23.14
	Beaufort County	237	47	19.83
	Charleston County	265	72	27.17
	Colleton County	29	6	20.69
	Georgetown County	65	7	10.77
	Horry County	17	4	23.53
	Jasper County	18	10	55.55
2.	Total Out-of-State	171	27	15.79
3.	Total Responses	802	173	21.57

gainst the project for ideological or economic reasons tended not to respond.

As a follow-up to the mail survey, approximately 20 percent of the fisherman/dealer population were interviewed either at dockside or by appointment at home or office. The method used was the patterned interview during which the same set of questions was asked of all those interviewed (see Appendix C).

CHAPTER II

INDUSTRY INTEREST

It would be desirable to have a centralized seafood industrial park in South Carolina if, and only if, a reasonable chance of success could be expected. Such probability of success would depend to a large extent on acceptance and use of the proposed facility by fishermen and seafood dealers. It is therefore imperative to estimate the number of users, types of facilities needed, and the general attitude toward such a port.

NUMBER OF USERS

A user refers to a fishermen or dealer who would use the proposed facility if it were located conveniently to his home. Data from the survey (Table 2.1) indicate a positive attitude toward the use of such a facility by fishermen with 83 percent of in-state fishermen indicating that they would use the facilities. Approximately 54 percent of the dealers who responded to the mail survey indicated they would also use the facilities.

A higher percentage of dealers and fishermen in Beaufort County indicated that they would use a seafood industrial park. Approximately 60 percent of the dealers responding in Beaufort County reflected a positive attitude toward use of the facility as opposed to only 33 percent of the dealers in Charleston County. About 85 percent of the fishermen in Beaufort County indicated they would dock their vessels at the proposed port, as compared to 84 percent of the fishermen in Charleston County.

It is estimated that a seafood industrial park located in Beaufort County would attract 72 users. This total would be composed of 34 users from Beaufort County, 8 users from Jasper County, 4 users from Colleton County and 26 sporadic users from out-of-state.

Interestingly, potential users generally appear to own larger vessels than non-users. More than half the total users operate vessels exceeding 51 feet in length while less than 38 percent of the total non-users having vessels of comparable size (Table 2.2). This indicates that operators of larger vessels would probably have a higher demand for the proposed facility than owners of smaller boats.

FACILITIES WANTED

Facilities most desired by in-state fishermen were marine hardware, supply, net making and repair, and ice plant and ice storage facilities. These were desired by 74 percent of in-state fishermen. However, more than 90 percent of potential out-of-state users wanted shrimp packing houses and diesel fuel and gasoline sales stations.

The facilities most desired by users from in-state dealers were central freezing and cold storage units. Surprisingly, only 35 percent of the in-state dealers were concerned with centralized waste treatment facilities. Nevertheless, we feel that this would be a major advantage and attracting force of a consolidated fishing port in light of future federal waste disposal requirements.

DESIRABILITY OF PORT FACILITY

To further document the desirability and/or need of a seafood industrial park for South Carolina, fishermen and dealers participating in the study were asked to comment on three questions relative to desirability of the project. (Table 2.4)

TABLE 2.1 - NUMBER OF USERS VERSUS NON-USERS OF A CENTRALIZED SEAFOOD INDUSTRIAL PARK BY COUNTY

ITEM	FISHERMEN				DEALERS				TOTAL FISHERMEN & DEALERS			
	USERS		NON-USERS		USERS		NON-USERS		USERS		NON-USERS	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
1. Total In-State	87	83	18	17	14	54	12	46	101	77	30	23
Beaufort County	28	85	5	15	6	60	4	40	34	79	9	21
Charleston County	47	84	9	16	4	33	8	67	51	75	17	25
Other Counties	12	75	4	25	4	100	0	0	16	80	4	20
2. Total Out-of-State	26	100	0	0	0	0	1	100	26	96	1	4

Source: Mail Survey by South Carolina Marine Resources Center, Charleston, 1975.

TABLE 2.2 - DISTRIBUTION OF USERS AND NON-USERS BY SIZE OF BOAT OR VESSEL.

SIZE OF BOAT OR VESSEL	PERCENT OF TOTAL USERS	PERCENT OF TOTAL NON-USERS
<10'	3.77	0
10-15	8.49	12.50
16-20	9.43	20.83
21-25	3.77	8.33
26-30	1.89	0
31-35	1.89	4.17
36-40	8.49	0
41-45	6.60	4.17
46-50	6.60	12.50
51-55	9.43	12.50
56-60	12.26	8.33
61-65	10.38	4.17
66-70	6.60	4.17
71-75	7.55	4.17
76-80	2.83	0
81-85	.94	0
86-90	0	4.17
< 91'	0	0

Source: Mail Survey by South Carolina Marine Resources Center, Charleston, South Carolina, 1975.

TABLE 2.3 - FACILITIES NEEDED AT A SEAFOOD INDUSTRIAL PARK BASED ON POSITIVE RESPONSES FROM THOSE INDIVIDUALS FAVORING A CENTRALIZED PORT

FACILITY ITEMS	PERCENT OF TOTAL OUT OF STATE FISHERMEN	PERCENT OF TOTAL IN-STATE FISHERMEN	PERCENT OF TOTAL IN-STATE DEALERS
Shrimp packing house	95	62	52
Crab packing and picking house	44	55	45
Shellfish shucking house	17	22	23
Shellfish packing and shipping house	20	20	23
Fish packing plant	54	51	58
Independent landing facilities	54	54	65
Independent docking facilities	63	71	61
Central freezer and cold storage facility	44	69	94
Ice Plant or ice storage facility	76	74	68
Liquid waste disposal facility	32	38	26
Marine hardware, supply, net making and repairs	71	74	52
Marine electronics service	59	54	45
Diesel engine service	66	57	35
Marine railway	83	68	61
Diesel fuel and gasoline sales	90	55	52
Grocery supplies	51	32	23
Fishermen's meeting room	37	47	55
Gear storage area	22	39	32
Solid waste disposal processing facility (shrimp head, fish scrap, etc.)	29	43	35

Source: Mail Survey by South Carolina Marine Resources Center, Charleston, South Carolina, 1975.

TABLE 2.4 - QUESTIONS AND ANSWERS CONCERNING THE DESIRABILITY OF A SEAFOOD INDUSTRIAL PARK

1. Do you think that a centralized seafood port facility would be beneficial to you?

No Benefit	Some Benefit			Very Beneficial
1	2	3	4	5
		No. of Responses	Mean Response	
Beaufort County:	Fishermen	n=45	$\bar{X}$= 4.5	
	Dealers	n= 8	$\bar{X}$= 2.2	
Charleston County:	Fishermen	n=39	$\bar{X}$= 2.8	
	Dealers	n= 9	$\bar{X}$= 1.4	
Other Counties:	Fishermen	n=16	$\bar{X}$= 4.1	
	Dealers	n= 3	$\bar{X}$= 3.6	
Out-of-State:	Fishermen	n=10	$\bar{X}$= 3.9	

2. Do you think a centralized seafood port facility would benefit the local community?

No Benefit	Some Benefit			Very Beneficial
1	2	3	4	5
		No. of Responses	Mean Response	
Beaufort County:	Fishermen	n=45	$\bar{X}$= 4.5	
	Dealers	n= 9	$\bar{X}$= 2.1	
Charleston County:	Fishermen	n=39	$\bar{X}$= 3.0	
	Dealers	n= 9	$\bar{X}$= 1.7	
Other Counties:	Fishermen	n=16	$\bar{X}$= 4.1	
	Dealers	n= 3	$\bar{X}$= 3.6	
Out-of-State:	Fishermen	n=10	$\bar{X}$= 4.5	

3. Do you feel that such a facility would be beneficial to the South Carolina Seafood Industry?

No Benefit	Some Benefit			Very Beneficial
1	2	3	4	5
		No. of Responses	Mean Response	
Beaufort County:	Fishermen	n=46	$\bar{X}$= 4.8	
	Dealers	n= 8	$\bar{X}$= 3.1	
Charleston County:	Fishermen	n=39	$\bar{X}$= 3.1	
	Dealers	n= 9	$\bar{X}$= 2.2	
Other Counties:	Fishermen	n=15	$\bar{X}$= 4.5	
	Dealers	n= 3	$\bar{X}$= 3.6	
Out-of-State:	Fishermen	n=10	$\bar{X}$= 4.8	
	Dealers			

The scaled answers obviously reflect the marked differences in attitude of fishermen and dealers. Responses from Beaufort County were much higher than those from other coastal areas, indicating an apparent positive regard for the proposed facility. However, the rather low response of the dealers should be placed in proper perspective. There are 28 dealers located in Beaufort County, and only 6 or about 20% of them were interested enough to agree to an interview. The dealer is a dominant figure in South Carolina seafood industry and functions as the primary wholesaler in the marketing system. There is a considerable concentration of power at the dealer level, and because of this "power" their participation in the development and establishment of a modern harbor complex would be essential. Without the dealer's acceptance and use of the proposed facility by dealers, the project would probably fail.

MANAGEMENT OF THE PORT

Another pertinent point which surfaced in the dockside survey was related to the owning and operating organization favored by the seafood industry. A self-governing type of organization would be the method of management preferred by fishermen and seafood dealers (Table 2.5).

A self-governing port is one controlled by users and other interested organizations. This includes county and state departments, all of whom are represented on a governing body, usually called a board (or trust, authority, or commission). The board is generally composed of appointed members, presided over by a chairman.

The South Carolina Ports Authority was specifically not favored as an operating organization by the industry. The State Ports Authority was established by Act 626 of the South Carolina General Assembly in 1942. It is responsible for operating and administering the port facilities in Port Royal, Charleston, and Georgetown. Additionally, the State Ports Authority is charged with designing, constructing and maintaining terminal facilities; operation of terminal railroads; and development of channels and harbors. The authority has the power to issue bonds, subject to approval of the Budget and Control Board, to raise funds needed to accomplish its works.

SUMMARY

Fishermen and dealers in Beaufort County appear more receptive to the seafood industrial park concept than those in Charleston County. Therefore, such a port would probably be more successful in Beaufort rather than Charleston. However, construction of such a facility still appears to be a speculative venture because of the general lack of support at seafood dealer level.

CHAPTER III

SITE SELECTION

The primary objective of this chapter is to identify the most suitable locations for the proposed seafood industrial park. The first section deals with preliminary reconnaissance, the second with site selection criteria and location preferred by the industry and the third section describes candidate port sites.

PRELIMINARY RECONNAISSANCE

Existing records and available information were collected and reviewed. These included the following:

(1) General documents-variable scaled survey maps, marine charts, navigation data, tidal records, aerial photographs, etc.
(2) Specialized documents-e.g. dredging history, disposal problems for selected water-course, geological records, data on similar projects recently completed, etc.

Coastal areas in South Carolina were visited to assess general possibilities for site selection. The coast was divided into

TABLE 2.5 - OWNING AND OPERATING ORGANIZATION FAVORED BY FISHERMEN AND DEALERS

TYPE OF ORGANIZATION	BEAUFORT COUNTY		CHARLESTON COUNTY		OTHER COUNTIES		OUT OF STATE	TOTAL
	FISHERMEN	DEALERS	FISHERMEN	DEALERS	FISHERMEN	DEALERS	FISHERMEN	
1. Self-governing (board, trust, authority, Commission)	28	4	14	1	12	2	7	68
2. Private (Industry Owned)	6	0	3	3	3	0	0	15
3. Public/State	8	1	5	0	0	0	1	15
4. County	1	0	0	0	0	0	1	2
5. Others: Coop., etc.	1	0	2	0	0	0	1	4

Source: Dock-side Survey by South Carolina Marine Resources Center, Charleston, South Carolina, 1975.

three districts for geographical definition (Figure 1): (a) Northern District - the coastal areas from Little River to Winyah Bay entrance, including Horry and Georgetown counties: (b) Central District - the coastal area from Winyah Bay to North Edisto River, including Charleston and Berkeley counties; and (c) Southern District - the area between North Edisto River and Savannah River, including Beaufort, Colleton, and Jasper counties.

Next a series of charts was reduced to workable baseline maps, and clusters of docks and landing places were located in each district. Also, general locations of fishing grounds, based on information obtained in the field, were outlined on the charts. The docks were Alpha-numerically coded to show volume and type of product by area and the number of docks handling said products in the established districts.

The central and southern districts handle a much larger volume of products than the northern area of the State. (Table 3.1). The central district has the greatest number of docks (37) with Charleston, McClellanville, and Rockville representing the focal points of products distribution. The southern district, primarily the Beaufort County area, contains 35 individual docks and landing places which are widely dispersed in the Hilton Head, Port Royal Sound and Beaufort/St. Helena Sound areas. As the data shows, the northern district is more oriented towards finfish while the central and southern districts are the major shrimp and crab producing areas. Based on landing figures collected by the Fisheries Statistics Section (Division of Marine Resources, S.C.W.M.R.D.), the southern district produced more seafood products by volume than the other two districts in 1974. However, the total dollar value was less than that of the central district.

After the preliminary reconnaissance, a more specific siting study was initiated to delineate high priority areas for seafood port development. The northern district was eliminated at the outset because of the limited status of the commercial fisheries in the area and the low availability of land.

SITE SELECTION CRITERIA AND LOCATION PREFERRED BY THE INDUSTRY

Site selection criteria were principally those suggested by the Coastal Plains Regional Commission, although other criteria deemed important were also considered. These criteria included: (1) physical, (2) economic, (3) environmental - biological and (4) social factors (Table 3.2). The five locations considered for the facility were Charleston, McClellanville, Rockville, Port Royal and St. Helena. Each of the above locations were given a score for each criterion. The possible scores were 5 for good, 3 for medium, and 1 for poor.

Next, each criterion was given a relative weight. The weights ranged from 10 for the most important criterion to 3 for the least important. Values were derived for each criterion at each location by multiplying the weight of each criterion by the rank of each location for each criterion.

The results heavily favored Port Royal and St. Helena, which had total criteria point scores of 50, followed by McClellanville with 392, Rockville with 390 and Charleston with 388.

Port Royal was the most preferred area among fishermen and dealers for port development according to the information obtained on the dock-side survey. This result coincided with the preliminary siting study based on point and rank system. Charleston and St. Helena were also ranked highly by the industry (Table 3.3).

Fishermen and dealers were also asked their reasons for choosing a specific location. Major reasons for choosing the Port Royal Sound areas were (1) proximity to fishing grounds, (2) closeness to home port, (3) increased local employment, and (4) improved efficiency in seafood processing and marketing (Table 3.4). Major reasons for choosing the Charleston area were summarized in Table 3.5.

FIGURE I

FISHING DISTRICTS OF SOUTH CAROLINA

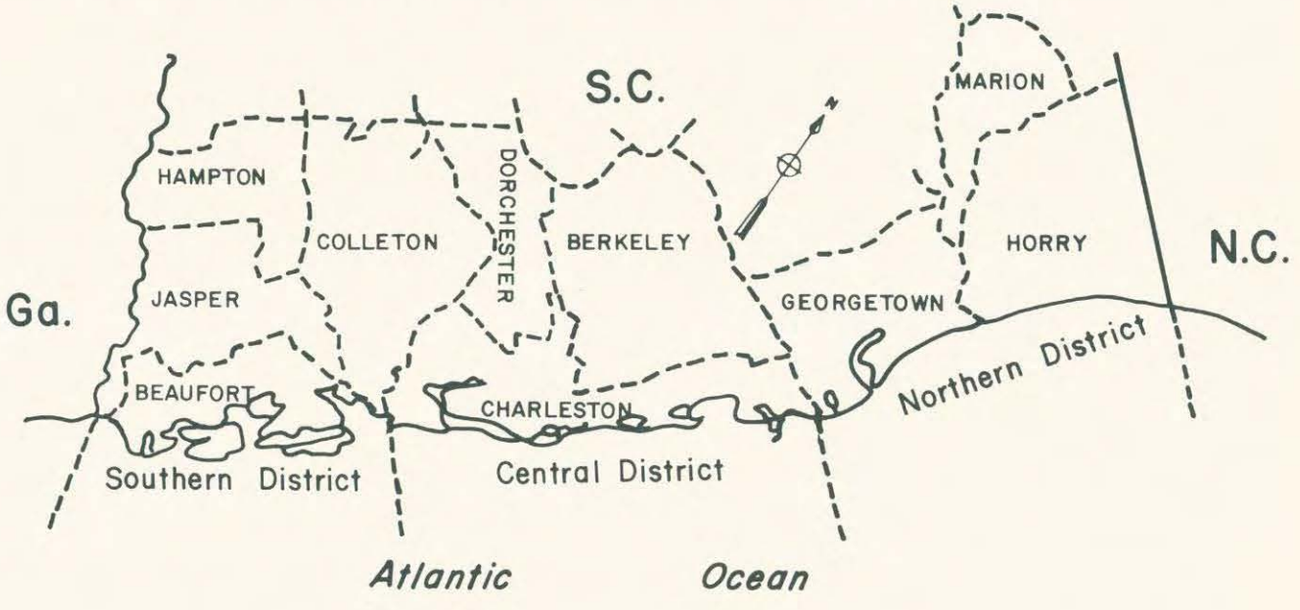


TABLE 3.1 - NUMBER OF DOCKS IN EACH FISHING DISTRICT HANDLING MAJOR VOLUMES OF COMMERCIAL FISHERIES PRODUCTS

DISTRICT	PRODUCT	ANNUAL VOLUME OF PRODUCT (IN THOUSANDS OF POUNDS) =25	25<=50	50<=100	100<=200	200<=500	>500	TOTAL ALL DOCKS
NORTHERN	Shrimp	0		1	0	2	0	3
	Crab	0		0	0	5	0	5
	Finfish	0	6	2	3	0	0	11
	Oyster/Clam	4	1	0	0	0	0	5
	TOTALS	4	7	3	3	7	0	24
CENTRAL	Shrimp	0	0	4	4	6	0	14
	Crab	0	0	0	10	1	1	12
	Finfish	0	0	1	2	0	0	3
	Oyster/Clam	6	1	1	0	0	0	8
	TOTALS	6	1	6	16	7	1	37
SOUTHERN	Shrimp	0	0	11	2	5	0	18
	Crab	0	0	0	4	1	2	7
	Finfish	0	0	0	0	0	0	0
	Oyster/Clam	6	2	2	0	0	0	10
	TOTALS	6	2	13	6	6	2	35

TABLE 3.2 - SITE SELECTION CRITERIA, RANK AND SCORE USED IN SEAFOOD PORT SITING STUDY

CRITERIA	RELATIVE WEIGHT OF CRITERION	PORT ROYAL		ST. HELENA		ROCKVILLE		CHARLESTON		MCCLELLANVILLE	
		RANK	POINTS	RANK	POINTS	RANK	POINTS	RANK	POINTS	RANK	POINTS
A. Physical											
1. Access to ocean	10	5	50	5	50	3	30	5	50	3	30
2. Proximity to fishermen	5	3	15	3	15	1	5	5	25	1	5
3. Proximity to fishing grounds	9	5	45	5	45	5	45	3	27	5	45
4. Availability of transportation	5	3	15	3	15	3	15	5	25	3	15
5. Space for expansion	8	5	40	5	40	5	40	1	8	3	24
6. Cost of land	5	3	15	3	15	3	15	1	5	3	15
7. Availability of land	5	5	25	5	25	3	15	1	5	3	15
8. Soil suitability	-	-	-	-	-	-	-	-	-	-	-
9. Access to waste treatment system	3	1	3	1	3	1	3	1	3	1	3
10. Ownership of land	-	-	-	-	-	-	-	-	-	-	-
11. Conductivity to growth of fishing industry	10	5	50	5	50	5	50	5	50	5	50
B. Economic											
12. Effect on local employment	9	5	45	5	45	3	27	1	9	3	27
13. Secondary benefits (effect on tourism & other industries)	9	5	45	5	45	3	27	3	27	3	27
14. Effect on economies of scale	9	5	45	5	45	1	9	1	9	3	27
15. Ability of locality to withstand financial stress caused by supplying services	9	3	27	3	27	1	9	5	45	1	9
C. Environmental - Biological											
16. Ability to increase harvest	8	5	40	5	40	5	40	5	40	5	40
17. Existing environmental quality of area	10	5	50	5	50	5	50	1	10	5	50
D. Social											
18. Acceptance by community	10	3	30	3	30	(?)	10	5	50	(?)	10
TOTAL POINTS		66	540	66	540	47	390	48	388	47	392

TABLE 3.3 - LOCATIONS PREFERRED BY FISHERMEN AND DEALERS

	LOCATIONS	BEAUFORT CO. FISHER-MEN	BEAUFORT CO. DEAL-ERS	CHARLESTON CO. FISHER-MEN	CHARLESTON CO. DEAL-ERS	OTHER CO. FISHER-MEN	OTHER CO. DEAL-ERS	OUT-OF STATE FISHERMEN	TOTAL
1.	Port Royal Area	26	4	1	0	3	0	3	37
2.	St. Helena Sound Area	16	2	2	0	3	0	1	24
3.	Rockville	2	0	0	1	0	0	0	3
4.	Charleston	1	0	20	3	0	1	3	28
5.	McClellanville	0	0	3	1	2	1	2	9

Source: Dockside Survey by South Carolina Marine Resources Center, Charleston, South Carolina, 1975.

TABLE 3.4 - MAJOR REASONS FOR CHOOSING PORT ROYAL AREA

	REASONS	NUMBER OF FISHERMEN AND DEALERS INDICATED
1.	Near to fishing grounds	30
2.	Near to home port	24
3.	Increase local employment	14
4.	Improve efficiency in seafood processing and marketing	13
5.	Acceptance by local community	11
6.	Conductivity to growth of fishing industry	9
7.	Good transportation	7
8.	Availability of land	7
9.	Increase tourism and other industry	4
10.	Maintain environmental quality	3
11.	Others	4

Source: Dockside Survey by South Carolina Marine Resources Center, Charleston, South Carolina, 1975.

TABLE 3.5 - MAJOR REASONS FOR CHOOSING CHARLESTON AREA

	REASONS	NUMBER OF FISHERMEN AND DEALERS INDICATED
1.	Near to fishing grounds	17
2.	Good transportation	15
3.	Near to home port	12
4.	Improve efficiency in seafood processing and marketing	11
5.	Increase local employment	10
6.	Increase tourism and other industry	8
7.	Conductivity to growth to	7
8.	Acceptance by local community	6
9.	Availability of land	6
10.	Maintain environmental quality	5
11.	Others	11

Source: Dockside Survey by South Carolina Marine Resources Center, Charleston, South Carolina, 1975.

Among the in-state fishermen queried about the distance between a base of operations and the fishing grounds, about 36% said that the maximum range of travel should be 5-10 miles. This is probably not a realistic expectation. A little over 22% indicated they would travel 16-20 miles from the port to the fishing grounds (see Table 3.6).

The convenience of the fishing port to the fishermen's home is an important factor in consideration of site selection and predictions as to user-demand. Analysis of the survey data shows that 29% of the fishermen interviewed would prefer to live within 5-10 miles of the port (Table 3.7). Approximately 24% indicated they would be willing to travel up to 20 miles from home to work.

This factor represents a critical area regardless of where the port is located because there are so many small fishing communities throughout coastal South Carolina. There was no indication during the survey that the fishermen would be willing to move nearer to a port facility should such a complex be established. In contrast, a similar survey in Georgia showed that approximately 35% of the fishermen would be willing to move their place of residence to a new port (Ersoz, personal communication). This factor could definitely have an adverse impact on effective use of the port facilities.

CANDIDATE PORT SITES

At this time the Port Royal area would appear to be the most appropriate site for a seafood industrial park. In addition to a favorable rating on all the physical, economic, environmental/biological and social selection criteria employed, Port Royal is a logical point for centralizing landings in the southern part of the state.

The town of Port Royal offers some advantages for the development of a seafood industrial port (see Figure 2). A proposed site on Battery Creek just east of the existing State Ports Authority facility would be a possible area for development. A deep water harbor is already present and state-owned land could possibly be used. Laurent (1975) also mentions this site in reference to a State dock and dockside facilities. Channel maintenance dredging should be minimal here.

One major drawback of this particular site is the potential environmental damages associated with port development, since the adjacent marshlands would have to be filled.

Another high priority site for a seafood industrial park is the Port Victoria area on Colleton River (Figure 2). Approximately 4,000 acres of land have been devoted to industrial purposes in and around Port Victoria near Bluffton, South Carolina. Thus, sufficient property for port expansion would be available if needed.

The lower Beaufort County land use plan calls for a new railroad spur to Port Victoria from the Seaboard Coast Line tracks which run perpendicular to U. S. Highway 278. Also, two new highways are proposed that will link lower Beaufort County more directly with the State and regional highway network. The first of these new highways will connect I-95 with Highway 278 east of Port Victoria, while the other road will traverse Callawassee Island to shorten the travel time and distance between the development north of Broad River and the Bluffton-Hilton Head area (see Figure 3, Foldout back cover).

As indicated in Figure 3, most of the land in lower Beaufort County will continue to be classified for agricultural use or in an open space classification. Other than the minor expansion of a few existing small community areas, the large timber stands, wooded areas and marsh areas should remain open.

Considering the recent controversies over the location of Badische Anilin and Soda Fabrik and Chicago Bridge and Iron in the Port Victoria industrial area, the possibilities of locating a seafood industrial park might well be welcomed as an alternative use of the area. Such devel-

TABLE 3.6 - RESPONSES CONCERNING MAXIMUM CONVENIENT DISTANCE FROM THE PORT TO THE FISHING GROUNDS

RANGE OF MAXIMUM DISTANCE IN MILES	PERCENT OF TOTAL IN-STATE RESPONSE	PERCENT OF TOTAL OUT-OF-STATE RESPONSE
less than 5	17.78	0
5-10	35.55	27.27
11-15	11.11	4.55
16-20	22.22	31.82
21-25	3.33	4.55
26-30	2.22	13.64
31-35	0	0
36-40	1.11	4.55
41-45	0	0
46-50	3.33	4.55
greater than 50	3.33	9.10
TOTAL	100.00	100.00

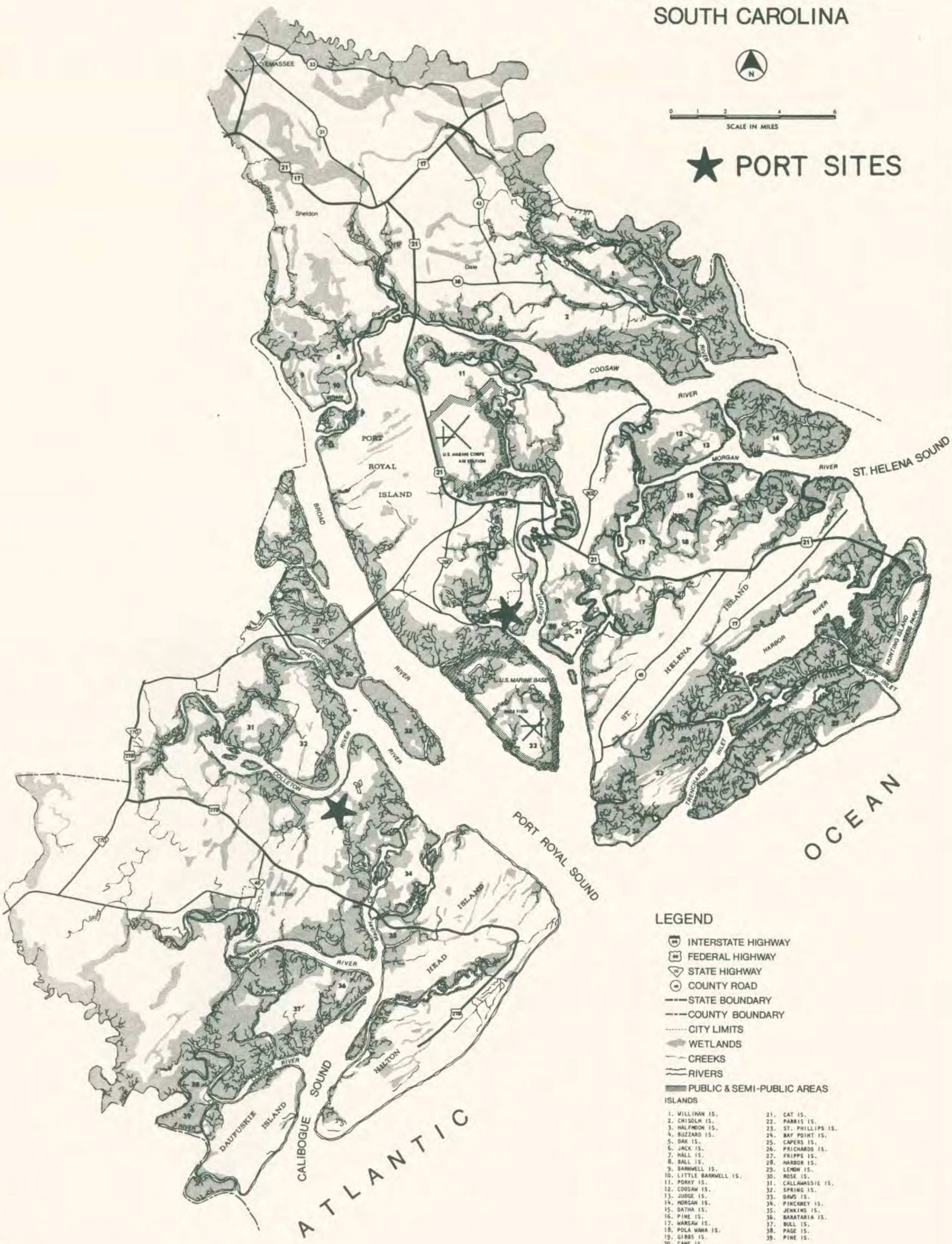
Source: Mail Survey by South Carolina Marine Resources Center, Charleston, South Carolina, 1975.

TABLE 3.7 - RESPONSES OF THE MAXIMUM CONVENIENT DISTANCE FROM HOME TO THE PORT

RANGE OF MAXIMUM DISTANCE IN MILES	PERCENT OF TOTAL IN-STATE RESPONSE	PERCENT OF OUT-OF-STATE RESPONSE
less than 5	4.35	0
5-10	29.35	10.53
11-15	10.87	0
16-20	23.91	5.26
21-25	8.70	5.26
26-30	7.61	15.79
31-35	1.09	0
36-40	1.09	15.79
41-45	1.09	0
46-50	7.61	15.79
greater than 50	4.31	31.58
TOTAL	100.00	100.00

Source: Mail Survey by South Carolina Marine Resources Center, Charleston, South Carolina, 1975.

FIGURE 2
BEAUFORT COUNTY
SOUTH CAROLINA



PREPARED FOR
SOUTH CAROLINA WILDLIFE AND MARINE RESOURCES DEPARTMENT
BY LBC&W CONSULTANTS-PLANNING, RESEARCH, MANAGEMENT, INC.
COLUMBIA, SOUTH CAROLINA

opment would represent a relatively "clean" industrial complex as opposed to the "hard industry" type represented by Badische Anilin and Soda Fabrik and other interests.

The development of a seafood port at Port Victoria would fit well with the present land use development scheme for Hilton Head island. Aesthetic values may no longer be viewed as an unnecessary luxury in planning an industrial operation, since they may have as real and immediate an impact upon the investment of development capital as the more generally acknowledged functional factors.

Both the Port Royal and Port Victoria sites offer suitable protection from wind and storms; the approach channels are navigable and maintenance dredging requirements should be relatively low. Neither site, however, lends itself to an enclosed harbor facility because of the large sediment loads in local waters. An enclosed harbor with a dead-end boat basin would act as a sediment trap and require frequent dredging and environmental concerns. A linear dock along the shoreline would have the advantage of not interfering with tidal action in the river, thus helping to maintain the necessary navigable depth of water.

SUMMARY

This chapter examines alternative locations for the proposed seafood industrial park. Based on site selection criteria and industry preference, a site on Battery Creek just east of the existing State Ports Authority facility appears to be the most appropriate site for a seafood industrial park. Another site for the proposed facility is the Port Victoria area near Bluffton. Both the Port Royal and Port Victoria sites are located in Beaufort County.

CHAPTER IV

SOCIO-ECONOMIC PROFILE OF BEAUFORT COUNTY

Detailed analysis of the sociological and economic characteristics of Beaufort County is not within the scope of this study. However, some descriptions presented in this chapter will provide a basic understanding of the economic and sociological conditions of Beaufort County. These conditions may help to indicate the economic effects of a seafood industrial park on Beaufort County.

PHYSICAL ENVIRONMENT

GEOGRAPHIC SETTING

Beaufort County is located in the southeastern coastal section of South Carolina, historically known as the Carolina lowcountry. The topography is generally level, affording insufficient fall for proper and effective drainage. The county, broken by marshes, flats and estuaries and 64 islands, encompasses approximately 637 square miles.

The soil is sandy with lesser amounts of sand and silt loams. Soil conditions are a major factor influencing development within Beaufort County; over 50 percent of the land is classified as having severe or very severe limitations for any type of development.

CLIMATE AND VEGETATION

The climate of Beaufort County is classified as humid subtropical. Summertime daily high temperatures average in the high 80's and 90's, and winters tend to be mild. Rainfall is abundant, averaging 49 inches per year.

Because of the nature of the soil and climate, the major forest types found in the county are longleaf-slash pine and loblolly-short leaf pine. In the last few years, many local people have turned to tree farming. However, tree farming has not reduced the poverty level to any significant extent since forestry is not labor intensive, and wages for workers are generally low.

NATURAL RESOURCES

Beaches along Hilton Head Island, Fripp Island and the Atlantic Ocean are valuable natural resources. Waters in the many inlets around Beaufort abound with oysters, blue crabs and shrimps.

Fresh water is another valuable natural resource. The Savannah River provides an adequate and reliable fresh water source.

SOCIAL CHARACTERISTICS

POPULATION TRENDS

Total population for the county has steadily increased by 15.7 percent since 1960. The Bluffton division shows the greatest increases since 1960 at 67.5 percent. The St. Helena and Sheldon divisions have lost populations in the last decade. The Port Royal division has at least temporarily stabilized (Table 4.1)

The composition of the county's population is rapidly changing, becoming increasingly white, due to a substantial emigration of non-whites (especially among young) and even greater emigration of whites. Also, the county has a significant trend toward urbanization (307%). This is probably due to lack of employment opportunities in the rural areas.

POTENTIAL LABOR FORCE

Table 4.2 presents data on age distribution of the Beaufort County population 14 years old or older as determined by a household survey conducted by Clemson University in 1970. This part of the population is normally considered the potential labor force. The survey indicated that there were 36,900 persons in the county 14 years or older, almost 50 percent of whom were over 40 years old.

The survey also indicated that about 12,000 persons would be interested in seeking industrial employment, should such become available in the Port Royal area. Almost one-half of these 12,000 persons was currently employed. Nevertheless, it appears that there is ample potential labor force in Beaufort County for new industrial enterprises and that perhaps as many as 3,000-6,000 workers could be hired without disrupting the existing labor market.

EDUCATIONAL ATTAINMENT

Table 4.3 shows the median school years completed in Beaufort County and South Carolina for 1960 and 1970. Beaufort County's educational level showed a substantial increase during this decade. The 1970 figures of educational accomplishment for the county were impressive (median of 12.0 years of school) compared to that of the entire state.

HOUSING CONDITIONS

The inventory of housing conditions undertaken simultaneously with the Beaufort County Joint Planning Commission's land use survey during the winter of 1972, is based on an external appearance survey which classifies each residential structure on the basis of obvious structural conditions and maintenance deficiencies. The grading system on which the results were derived is as follows:

Sound - Housing that is generally in good condition; only maintenance is required to keep the property stable.

Minor Repair - Housing needing either painting or the replacement of minor parts, such as porches or window frames.

Major Repair - Housing that has started to decline and has some major deficiency requiring extensive repair to bring the structure up to average. Examples of this type of deficiency would be cracked foundations, roofs in bad condition and walls out of plumb.

Dilapidated - Housing in such a condition that razing is more feasible than repair.

For the purpose of this study, sound

TABLE 4.1 - POPULATION TRENDS IN BEAUFORT COUNTY

ITEM	1960	1970	CHANGE 1960-1970 EXPRESSED AS %
Total Population	44,187	51,136	15.7
1. Population by Race and Sex:			
Total White	27,083	33,864	25.0
Male	17,050	20,536	20.4
Female	10,033	13,328	32.8
Total Non-white	17,104	17,272	1.0
Male	8,460	8,981	6.2
Female	8,644	8,291	-4.1
2. Population by Residence:			
Total Urban	6,298	25,657	307.4
Total Rural	37,889	25,479	-32.8
3. Population by Subdivision:			
Beaufort Division	16,686	22,382	34.1
Bluffton Division	3,135	5,252	67.5
Port Royal Division	15,025	15,254	1.5
St. Helena Division	6,048	5,718	-5.5
Sheldon Division	3,293	2,530	-23.2

Source: United States Census of Population, 1960 and 1970.

TABLE 4.2 - ESTIMATED POTENTIAL LABOR FORCE, BY AGE, BEAUFORT COUNTY, SOUTH CAROLINA, SUMMER 1970

AGE	NUMBER	% OF TOTAL
14-29	12,000	33
30-39	6,600	18
40-49	7,700	21
50-65	7,800	21
66 and over	2,800	7
TOTAL	36,900	100

Source: Household Survey of Beaufort County, Department of Agricultural Economics and Rural Sociology, Clemson University, Clemson, South Carolina, Summer 1970.

TABLE 4.3 - MEDIAN SCHOOL YEARS COMPLETED IN BEAUFORT COUNTY AND SOUTH CAROLINA, PERSONS 25 YEARS OF AGE AND OLDER. 1960 and 1970

AREA	1960	1970	CHANGE IN PERCENT 1960 - 1970
Beaufort County	9.9	12.0	21.2
South Carolina	8.7	10.5	20.7

Source: United States Census of Populations, 1960 and 1970 Social and Economic Characteristics, South Carolina.

and minor repair would indicate housing in standard condition, and major repair and dilapidated are structures which would be described as substandard.

As Table 4.4 indicates, about 55 percent of housing in Sheldon, and 38 percent of housing in St. Helena Island were classified as substandard. In Beaufort city 21 percent of housing was classed in the substandard category. In contrast, some of the most beautiful houses in the state are located on Hilton Head Island in Beaufort County. The land alone for a house on this island may cost $40,000 or more.

TRANSPORTATION FACILITIES

Beaufort County has two airports, both classified as utility general aviation airports (airports with runways of 4,000 feet or less). Air transportation via major commercial carriers is not available, except for some service provided by Air South at the airport located on Hilton Head Island. Complete passenger facilities are located nearby in Charleston and Savannah.

The Seaboard Coastline Railroad operates the only lines in Beaufort County. One line extends southward from Yamassee, through the City of Beaufort, and into the Port Royal area. This line is intersected by another SCL line at Coosaw and Lobeco which, in turn, connects to Savannah through Ridgeland and Hardeeville. The General Assembly has indicated its willingness to finance a SCL spur (13 miles, $2.2 million) from existing lines to the proposed port of Victoria Bluff and also finance the necessary terminal facilities for this purpose.

Highway access through Beaufort County is excellent, particularly to destination points north and south. There are, however, major transportation problems within the County. The geographical configuration of the area, dotted with islands (nearly 70 of ten acres or more) and intersected by a number of waterways, creeks and lowlands cause indirect routings of many roadways. For example, the distance between Beaufort and Hilton Head Island, approximately 15 miles by air, is at least twice that distance by car along a circuitous route which actually requires the traveler to go through Jasper County and return. Future highway planning should place heavy emphasis on improving inner circulation patterns.

UTILITIES

Five public service districts provide water to approximately 43 percent of Beaufort County's total population. Thirty-seven percent of the county's residents are furnished water through the Beaufort-Jasper Water Authority alone.

Human waste disposal is a serious problem in Beaufort County. It has been estimated that 1,000 households are linked to a 60 year old municipal collection system which discharges raw sewage into a public watercourse; that 2,000 may have sanitary septic tanks; that 8,000 may have unsanitary septic tanks, or else some kind of privy; and that between 600 and 900 may have no sanitary facilities. Informed residents indicate there may be as many as 10,000 persons (one fifth of the households) which do not have indoor toilets.

MILITARY INSTALLATIONS

Several major military installations are located in Beaufort County, including the Parris Island Marine Base, the U. S. Marine Air Station and the U. S. Naval Hospital. These U. S. Department of Defense installations are to a large extent self-contained, drawing approximately one or two hundred military retirees to the county annually. The installations have probably led to a rise in bank deposits, real estate value and construction, financing, insurance, and legal businesses that accompany real estate development.

EDUCATIONAL INSTITUTIONS

Beaufort County has two excellent educational facilities for those pursuing post-high school education. The Universi-

TABLE 4.4 - HOUSING CONDITIONS - BEAUFORT COUNTY

	SOUND		MINOR REPAIR		SUBSTANDARD DETERIORATED		DILAPIDATED	
	NO.	%	NO.	%	NO.	%	NO.	%
Sheldon	70	30	34	15	51	22	75	33
St. Helena Island	347	34	287	28	191	19	195	19
City of Beaufort	1,566	57	605	22	465	17	110	4

Source: Land Use Survey, Winter, 1972, Division of Administration, Office of the Governor. Development Plan, Beaufort, South Carolina, October 1970, Beaufort County Joint Planning Commission.

ty of South Carolina has located a regional campus in the area. There is also training available at the Beaufort Regional Technical Center.

RECREATIONAL FACILITIES

Included in this category are both public and private facilities and major open space areas. There are extensive recreational facilities throughout Beaufort County including Hunting Island State Park, Hilton Head Island, Fripp Island, numerous boat landings, and extensive privately owned game management areas.

EMPLOYMENT AND INCOME TRENDS

EMPLOYMENT

The average work force in Beaufort County in 1973 amounted to 15,680 persons as compared to 13,200 in 1969 (Table 4.5). This table shows that the county's civilian employment is concentrated in non-manufacturing sections which include contract construction, transportation, communication, public utilities, wholesale and retail trade; finance, insurance, and real estate; services and government. Less than four percent of employment in Beaufort County was in manufacturing sectors.

Total employment in agricultural sectors decreased about 55 percent between 1969 and 1973 in the county. Based on the decline in agricultural employment, it appears that a large percentage of those who emigrated to urban centers during the past came from the agricultural sector.

INCOME

Per capita income in Beaufort County during 1973 was $5,120 which was considerably higher than the state averages ($3,885). Between 1971-73, Beaufort's average per capita personal income rose about 33.1% (Table 4.6). The gain in personal income could be attributed largely to the Vietnam war build-up which resulted in a large increase in personnel at Beaufort's military installations.

Average per capita income is misleading because it may reflect a population with both extremely high and extremely low incomes. About 56 percent of income tax returns for Beaufort County residents reported adjusted gross income about $15,000 (Table 4.7). Most of these were wealthy residents of Hilton Head Island. If their incomes had been excluded from the county's totals, per capita income for remaining residents would have been below state averages.

Average annual income per employer in each of several economic sectors has been computed and is shown in Table 4.8, along with comparable data for the state as a whole. In most cases, pay in Beaufort County is comparable to other areas in the State. However, average annual pay per employee in manufacturing, agriculture, forestry, and fisheries was much lower than the State figures.

INDUSTRIAL GROWTH TRENDS

AGRICULTURAL SECTOR

Agriculture constitutes the traditional base of the Beaufort County economy. Yet all components of the agricultural sector have been in decline in recent years, and in 1970 they accounted for only about 5 percent of total sales in the County. In 1960, more than 9,500 persons were engaged in agriculture in Beaufort County. In 1969, the number had declined to 1,050. From 1959 to 1964, the number of farms in the County declined by about 20 percent, and this decline is probably continuing. The decline in agricultural employment and number of farms seems to indicate that farm operations have become heavily mechanized, thus releasing human resources to seek other forms of employment.

MANUFACTURING SECTOR

In Table 4.5 we noted that about four percent of the employment in the County is

TABLE 4.5 - WORK FORCE ESTIMATES, BEAUFORT COUNTY, 1969 AND 1973.

ITEM	1969	1973	CHANGE IN PERCENT 1969-1973
Civilian labor force	13,200	15,680	18.8
1. Unemployment	600	660	10.0
Percent of labor force	4.5	4.2	-6.7
2. Employment	12,600	15,020	19.2
3. Non-agricultural employment	11,550	12,660	9.6
4. Wage and salary workers except domestics	9,500	10,793	13.6
5. Food and kindred products	350	330	-5.7
6. Manufacturing	800	1,030	28.8
7. Other manufacturing	450	700	55.6
8. Contract construction	900	1,750	94.4
9. Transportation, communication, and utilities	300	420	40.0
10. Wholesale and retail trade	1,400	2,210	57.9
11. Finance insurance, real estate	700	1,770	152.9
12. Service	1,300	2,600	100.0
13. Government	4,000	2,990	-30.3
14. Other non-manufacturing	100	90	-10.0
15. Self-employed, unpaid family workers and domestic	2,050	1,867	-8.9
16. Agricultural employment	1,050	503	-54.7

Source: South Carolina Employment Security Commission, South Carolina's Manpower in Industry, Research and Statistics Section.

TABLE 4.6 - PER CAPITA PERSONAL INCOME IN BEAUFORT COUNTY AND SOUTH CAROLINA

AREA	1969	1971	1973	PERCENTAGES CHANGE 1969-71	1971-73	1969-73
Beaufort County	$3,704	$3,848	$5,120	3.9	33.1	38.2
South Carolina	$2,767	$3,174	$3,885	14.7	22.4	40.4

Source: South Carolina Statistical Abstract, Division of Research and Statistical Services, Columbia, South Carolina.

TABLE 4.7 - NUMBER OF INCOME TAX RETURNS FOR BEAUFORT COUNTY RESIDENTS BY ADJUSTED GROSS INCOME CLASS, 1973

INCOME INTERVAL	NUMBER OF INCOME TAX RETURNS	% OF TOTAL RETURNS
$ 1,000	811	7.2
$ 1,000 - $ 2,999	1,951	17.4
$ 3,000 - $ 4,999	1,872	16.7
$ 5,000 - $ 5,999	1,676	15.0
$ 7,000 - $ 8,999	1,356	12.1
$ 9,000 - $10,999	1,013	9.1
$11,000 - $12,999	717	6.4
$13,000 - $14,999	468	4.2
$15,000 - Over	1,326	11.9
TOTAL	11,190	100.0

Source: South Carolina Statistical Abstract, Division of Research and Statistical Services, Columbia, South Carolina.

TABLE 4.8 - AVERAGE ANNUAL PAY PER FICA COVERED EMPLOYEE BY SECTOR, BEAUFORT COUNTY AND SOUTH CAROLINA, 1974

	INDUSTRY GROUP	BEAUFORT COUNTY	SOUTH CAROLINA	BEAUFORT COUNTY AS % OF SOUTH CAROLINA
1.	Manufacturing	$5,469	$7,796	70.2
2.	Non-manufacturing	7,194	7,140	100.8
3.	Agriculture, forestry and fisheries	4,429	6,348	69.8
4.	Contract construction	7,748	8,212	94.4
5.	Transportation, communication, and public utilities	7,643	9,549	80.0
6.	Wholesale trade	5,101	5,293	96.4
7.	Finance, insurance, and real estate	9,995	8,333	119.9
8.	Services	6,342	6,245	101.6
TOTAL ALL INDUSTRIES		7,036	7,439	94.6

Source: Computer from average monthly covered employment, total annual payroll, average weekly wage, and employing units by county, South Carolina, 1974. South Carolina Employment Security Commission.

in manufacturing activities. Current manufacturing operations in the County are geared largely to apparel, food processing and other light industry with traditionally low wages (Table 4.9). Growth of manufacturing in the County in the decade of the sixties was slow.

Beaufort County had 509 workers employed in food and kindred product industries in 1970. However, these industries had only 362 workers in 1975. Seafood processing plants were the most important industries in the area. In 1975, seafood processing plants employed 350 workers.

TRADE SECTOR

Wholesale and retail activities compose a large part of the trade sector of Beaufort County's economy. Between 1958 and 1972 the number of wholesale establishments increased by 29 and the number of employees increased by 112 (Table 4.10). Sales were up by $19 million and payrolls increased by approximately $1.4 million for the county.

The City of Beaufort is considered by many as the capital of the low country. The number of retail establishments increased by 179 from 1958 to 1972 (Table 4.11). The number of employees increased by 1,155 during the same period. Retail sales increased by $61 million with payrolls increasing by about $7 million.

TOURISM AND RECREATION SECTOR

Beaufort County has developed a major tourism and recreation industry since 1960. This industry is now the second most important component of the County's economic base, accounting for about 6 percent of all gross sales in the County. The three major sectors directly involved in tourism and recreation activities are hotels and lodging places, eating and drinking establishments and gasoline service stations.

Tourism and recreation activities also have indirect impacts on many other sectors of the local economy, particularly wholesale and retail trade establishments and households which supply labor. The rapid growth of tourism and recreation activities in Beaufort County has been, in large part, tied to the development of the Hilton Head resort complex.

MILITARY SECTOR

Military activity was one of the most important influences on the Beaufort County economy in 1970, accounting for nearly one-half of all sales in the County. The military sector of the County's economy is comprised of the Parris Island Marine Base and the Laurel Bay Marine Air Station. Direct military spending in the County is primarily reflected in payrolls totaling almost $82 million in 1970. The County's economy is heavily dependent on military spending. Reductions in military operations in the County would have profound effects on local economic activity and the operation of such vital services as public education. Beaufort County needs economic growth to use its labor supply and increase its tax base. Such growth would cushion possible future reductions in the level of military operations in the County.

SUMMARY

The economic and sociological characteristics of Beaufort County were examined in this chaper, and it was concluded that Beaufort County is definitely in need of large manufacturing installations such as a seafood industrial complex. Several facts point up this need.

1. The soil is of poor quality which limits agricultural and forestry development in the county.

2. Two of the six subdivisions in Beaufort County lost population during 1960 to 1970. Port Royal Division remained unchanged in its population. The lack of employment opportunities in the area is reflected in the decline in population.

TABLE 4.9 - MANUFACTURING - BEAUFORT COUNTY, 1970 and 1975

INDUSTRY CLASSIFICATION	1970		1975	
	EMPLOYMENT	% OF TOTAL EMPLOYMENT	EMPLOYMENT	% OF TOTAL EMPLOYMENT
Food and kindred products	509	46.4	362	25.0
Apparel products	125	11.4	496	34.2
Lumber and wood products	100	9.1	0	0
Paper and allied products	11	1.0	17	1.2
Chemical and allied products	98	8.9	78	5.4
Stone, clay and glass products	155	14.1	378	26.1
Fabricated metal products	100	9.1	117	8.1
TOTAL EMPLOYMENT	109	100.0	1,450	100.0

Sources: South Carolina Industrial Directory, State Development Board, 1970 and 1975.

TABLE 4.10 - WHOLESALE TRADE TRENDS IN BEAUFORT COUNTY

ITEM	1958	1963	1967	1972	% CHANGE 1958-1963	% CHANGE 1963-1967	% CHANGE 1967-1972
Establishment	20	27	28	49	35	4	75
Employees	129	200	144	241	55	-28	67
Sales ($000)	4,734	6,726	10,156	24,070	42	51	137
Payrolls ($000)	267	554	781	1,648	106	41	73

Source: United States Census of Business, 1958, 1963, and 1967. United States Census of Wholesale Trade, 1972.

TABLE 4.11 - RETAIL TRADE TRENDS IN BEAUFORT COUNTY

ITEM	1958	1963	1967	1972	% CHANGE 1958-1963	% CHANGE 1958-1963	% CHANGE 1967-1972
Establishment	223	214	257	402	-4	29	46
Employee	875	911	1,135	2,030	4	25	79
Sales ($000)	21,982	24,473	34,938	83,439	11	43	139
Payrolls ($000)	1,959	2,301	3,219	8,980	17	40	179

Sources: United States Census of Business, 1958, 1963, and 1967. United States Census of Manufactures, 1972.

TABLE 4.12 - SELECTED SERVICE TRENDS IN BEAUFORT COUNTY

ITEM	1958	1963	1967	1972	% CHANGE 1958-1964	% CHANGE 1963-1967	% CHANGE 1967-1972
Establishments	92	118	165	264	28	40	60
Employees	360	412	633	857	14	54	35
Sales ($000)	2,170	2,741	6,292	14,841	26	130	136
Payrolls ($000)	687	908	2,033	4,194	32	124	106

Sources: United States Census of Business, 1958, 1963, and 1967. United States Census of Manufactures, 1972.

3. Housing conditions in the Beaufort County indicate substantial poverty in the area. In 1972, about 55 percent of housing units in Sheldon were classified as deteriorating or dilapidated.

4. Average per capita personal income for the county ($5,120) was higher than the state average ($3,885) in 1973. However, if personal incomes of wealthy persons in the Hilton Head Island resort community were excluded, average per capital income would be below the state average.

5. Only 1,450 people were employed in the manufacturing sector in 1975. If manufacturing employment opportunities do not improve in the future, skilled and unskilled labor forces may continue to decline.

6. Nearly one-half of the county's income depends on military installations. Income from this source is likely to fluctuate with defense needs.

CHAPTER V

THE BEAUFORT COUNTY SEAFOOD INDUSTRY

This chapter presents a description of the economic and biological conditions of the Beaufort County seafood industry. An attempt is also made to compare characteristics of fishermen, fishing vessels, and seafood dealers in Beaufort County with those in other counties. This may provide the necessary background for evaluating the components of a seafood industrial park and the future of the seafood industry in Beaufort County.

FISHERY LANDINGS

The significance of the seafood industry in Beaufort County can be determined to some degree by measuring its contribution to the State's total production and the dockside value of the catch. Table 5.1 presents a 10-year comparative analysis of the volume and value of seafood production for the southern district of South Carolina, the entire State and the South Atlantic Region. Beaufort County is the major source of production for the Southern district with Colleton and Jasper counties contributing only minor fractions of total landings. As revealed in Table 5.1, fishery landings have been relatively stable in the State's southern district, ranging between 7 and 9 million pounds annually except for 1968 and 1971 when record catches of over 10 million pounds were recorded. These landings represent 33 to 51 percent of the total South Carolina catch.

Dockside values have fluctuated between $1.3 million and $4.7 million over the 10-year period. The variance in value is due primarily to changes in price of shrimp from year to year.

It is readily apparent that the Beaufort County area ranks as a major seafood producing and handling center in South Carolina. However, the State, when viewed as a component of the entire South Atlantic Region, is not in a competitive position with North Carolina and Florida (Figure 4). South Carolina and Georgia obviously do not produce the volume of seafood that North Carolina and the east coast of Florida do.

Table 5.2 gives a 4-year monthly average of landings and dockside values in Beaufort County. One can readily see the seasonality of the landings and the relative importance by species from these data.

Shrimp is the State's major fishery, with annual landings averaging almost 2.6 million pounds over the past 4 years. The shrimp catch during this same period was worth an average annual dockside value of approximately $2.5 million. The blue crab fishery is the second most important in Beaufort County (Table 5.2). Although production is higher in volume than shrimp, value at dockside is less than $1 million. The oyster fishery ranks third in Beaufort County, with annual landings over the 1972-75 period averaging less than a million pounds and even less in terms of dockside dollars (Table 5.2). Finfish landings, consisting of about 5 species in

TABLE 5.1 - 10-YEAR COMPARATIVE ANALYSIS OF FISHERIES LANDINGS AND VALUES FOR SOUTHERN DISTRICT OF SOUTH CAROLINA[a]/ AND THE SOUTH ATLANTIC REGION[b]/

YEAR	SOUTH ATLANTIC LANDINGS (LBS.)	$	SOUTH CAROLINA LANDINGS (LBS.)	$	SOUTHERN DISTRICT LANDINGS (LBS.)	$	% OF SOUTHERN DISTRICT IN SOUTH CAROLINA LANDINGS (LBS.)	$
1966	349,252,083	24,247,649	23,191,181	4,199,249	8,076,389	1,655,825	34%	39%
1967	336,051,479	21,849,107	18,867,208	3,219,668	7,281,017	1,308,103	38%	40%
1968	322,121,477	28,453,705	21,318,644	5,607,739	7,199,376	2,391,145	33%	42%
1969	303,376,661	31,462,109	20,647,230	5,248,162	10,251,169	2,485,368	49%	47%
1970	265,351,373	26,104,617	16,032,058	4,246,075	8,227,304	1,675,485	51%	39%
1971	238,307,488	35,859,100	24,152,876	8,151,448	10,971,504	3,423,010	45%	41%
1972	261,076,835	36,074,727	21,890,006	7,667,169	9,225,246	2,868,663	42%	37%
1973	214,817,967	48,278,114	21,066,780	11,264,800	9,017,185	4,169,706	42%	37%
1974	278,126,933	42,169,785	18,207,046	6,726,956	9,270,289	2,979,170	51%	44%
1975	-	-	19,512,044	12,764,285	8,645,325	4,670,931	44%	36%

[a]/Beaufort County accounts for most of the production in this area.

[b]/South Atlantic Region - North Carolina, South Carolina, Georgia, and East Coast of Florida.

Figure 4.- SOUTH ATLANTIC FISHERIES LANDINGS

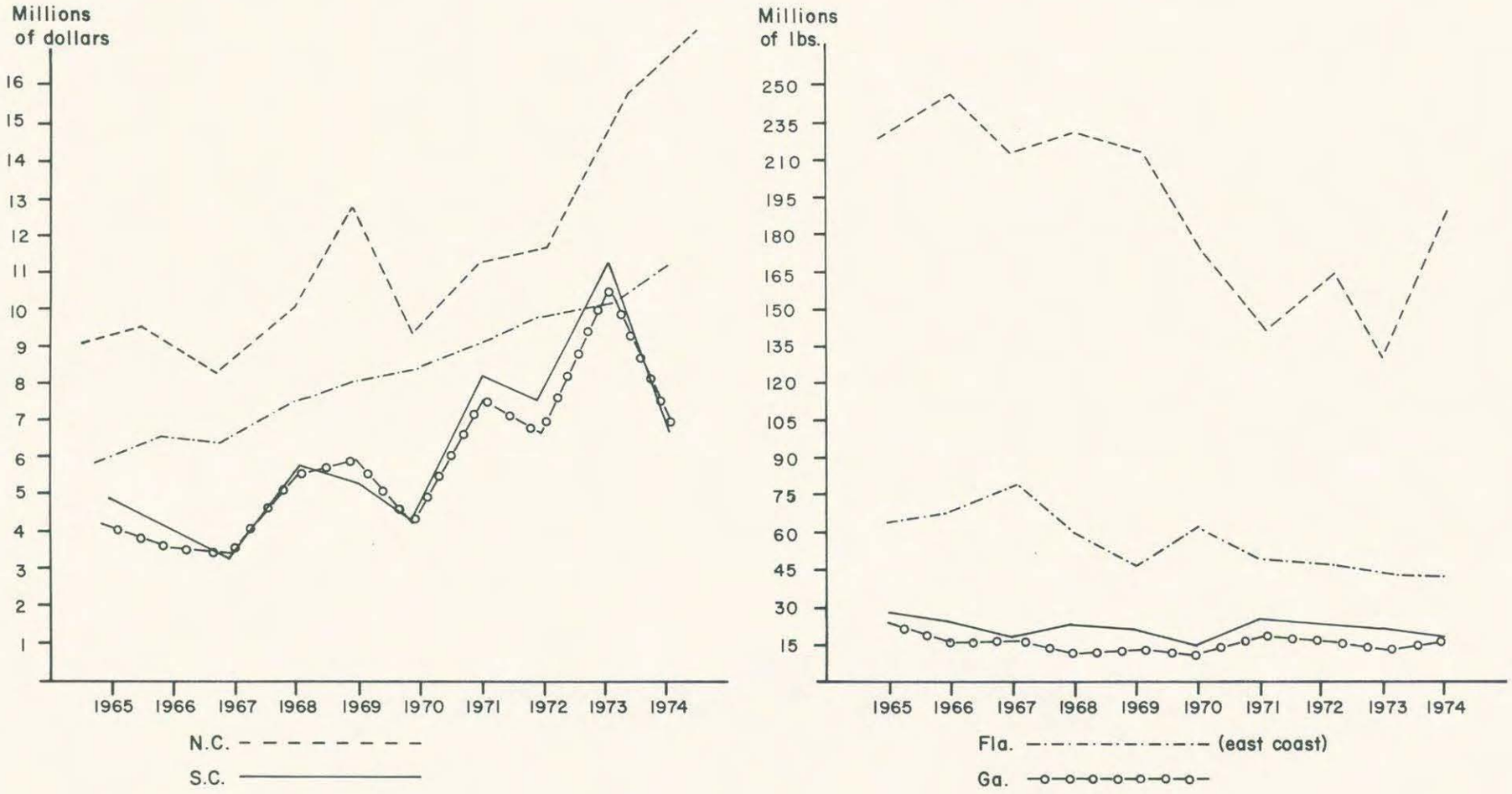


TABLE 5.2 - FOUR YEAR AVERAGE COMMERCIAL FISHERIES LANDINGS IN BEAUFORT COUNTY, 1972 - 1975

MONTH	SHRIMP		CRABS		SHELLFISH		FINFISH		TOTAL	
	POUNDS (000)	VALUE $	POUNDS (000)	VALUE $	POUNDS (000)	VALUE $	POUNDS (000)	VALUE $	POUNDS (000)	VALUE $
January	15.0	8.3	280.0	34.2	160.1	95.4	0	0	455.1	137.9
February	0	0	135.7	16.2	143.6	83.1	1.8	1.	281.1	100.3
March	0	0	193.2	25.2	120.5	72.0	4.7	1.1	318.4	98.3
April	16.3	17.0	183.9	26.6	66.3	37.0	.5	0.1	267.0	80.7
May	169.7	188.3	489.9	67.3	4.9	3.1	4.5	1.3	669.1	260.0
June	297.2	294.5	579.5	78.3	0	0	5.6	0.9	882.7	374.0
July	235.2	183.9	714.4	79.3	0	0	7.2	1.4	956.8	264.5
August	251.5	242.0	754.4	77.5	0	0	22.0	4.0	1,018.0	323.6
September	589.1	568.0	774.3	89.1	3.2	1.7	9.5	1.8	1,346.1	606.6
October	435.2	459.1	900.7	105.1	13.6	12.6	9.8	1.8	1,359.3	578.5
November	361.7	337.9	627.2	69.0	62.7	37.7	7.0	1.3	1,058.6	445.8
December	210.8	159.9	200.9	27.8	98.2	62.1	5.2	1.3	515.1	251.1
TOTAL	2,581.7	2,458.9	5,834.1	695.6	673.1	404.7	77.8	16.0	9,127.3	3,521.3

Beaufort County, represent a minor portion of the commercial catch (Figure 5).

CHARACTERISTICS OF THE SEAFOOD HARVESTING SECTOR

The average characteristics of five categories of fishermen are shown in Table 5.3. The five types of fishermen were similar in age and fishing experience, although shrimp fishermen from out of state tended to be somewhat older.

Of 30 shrimp fishermen sampled in Beaufort County, only 8 fished occasionally for finfish. Likewise, only 5 of 38 fishermen interviewed in Charleston County fished for finfish. This corresponds fairly well with the relatively low finfish production in the central and southern districts of the State.

The approximate number of days spent fishing during the year also reflects a high degree of seasonality within the fisheries. The Beaufort County sample indicated that 144 days were spent shrimping as compared to 228 days for crabbing per fisherman. The Charleston sample was comparable for days spent shrimping, (147 days). Also, the Charleston data show that a significant amount of time was spent shrimping in out of state waters. However, only 11 of 30 Beaufort fishermen fished in waters outside South Carolina. Charleston County had 19 of 38 fishermen participating in out of state fishing operations.

Approximately 16% of the Beaufort County fishermen that were interviewed indicated that they held jobs other than fishing while about 32% of those fishermen in Charleston had non-fishery employment. This could be because non-fishery jobs are more difficult to find in Beaufort County than in Charleston County.

Beaufort trawlers are older and less valuable than those from Charleston County (Table 5.4). Over 400 shrimp vessels, 299 of which are resident boats, operate out of Beaufort County, and the number of resident trawlers has increased by over 10% per year over the past three years (Table 5.5).

There were 299 resident shrimp trawlers and boats operating out of Beaufort County in 1975. This does not include the 105 non-resident trawlers licensed in Beaufort County. The number of trawler licenses has increased approximately 40 percent over the past three years.

The number of boats used in the blue crab fishery has decreased by about 8 percent over the past few years. This survey showed 91 boats actively operating in the Beaufort County crab fishery. This figure did not include trawlers which catch crabs incidental to shrimping or trawl for crabs during the off season.

A total of 299 shrimp trawlers in Beaufort County represented a total capital investment of about $9.9 million, considering vessel and gear investments. In contrast, the capital investment in the harvesting sector of the blue crab fishery of Beaufort County represents approximately $370,000 (Table 5.6). This total investment of approximately $10.3 million indicates the size and importance of the fishing sector in the County.

CHARACTERISTICS OF THE WHOLESALING AND PROCESSING SECTOR

Seafood dealers in Beaufort on the average have more boats and less docking space than Charleston dealers (Table 5.7). Very few dealers in the sample had freezer facilities, and the few facilities available were too small for storing large volumes of fishery products. The number of people employed by individual dealers varied considerably during the peak season and off-season, with a high of 44 being hired in Beaufort.

A general view of the business operations of dealers in Beaufort County revealed that the ancillary services provided were poor (Table 5.8). Support services such as fuel, ice and net repairs were more commonly provided. The vast majority of dealers are in packing and

FIG.5 - Volumetric Relationship of Species Composition in Commercial Fisheries Landings - Beaufort County.

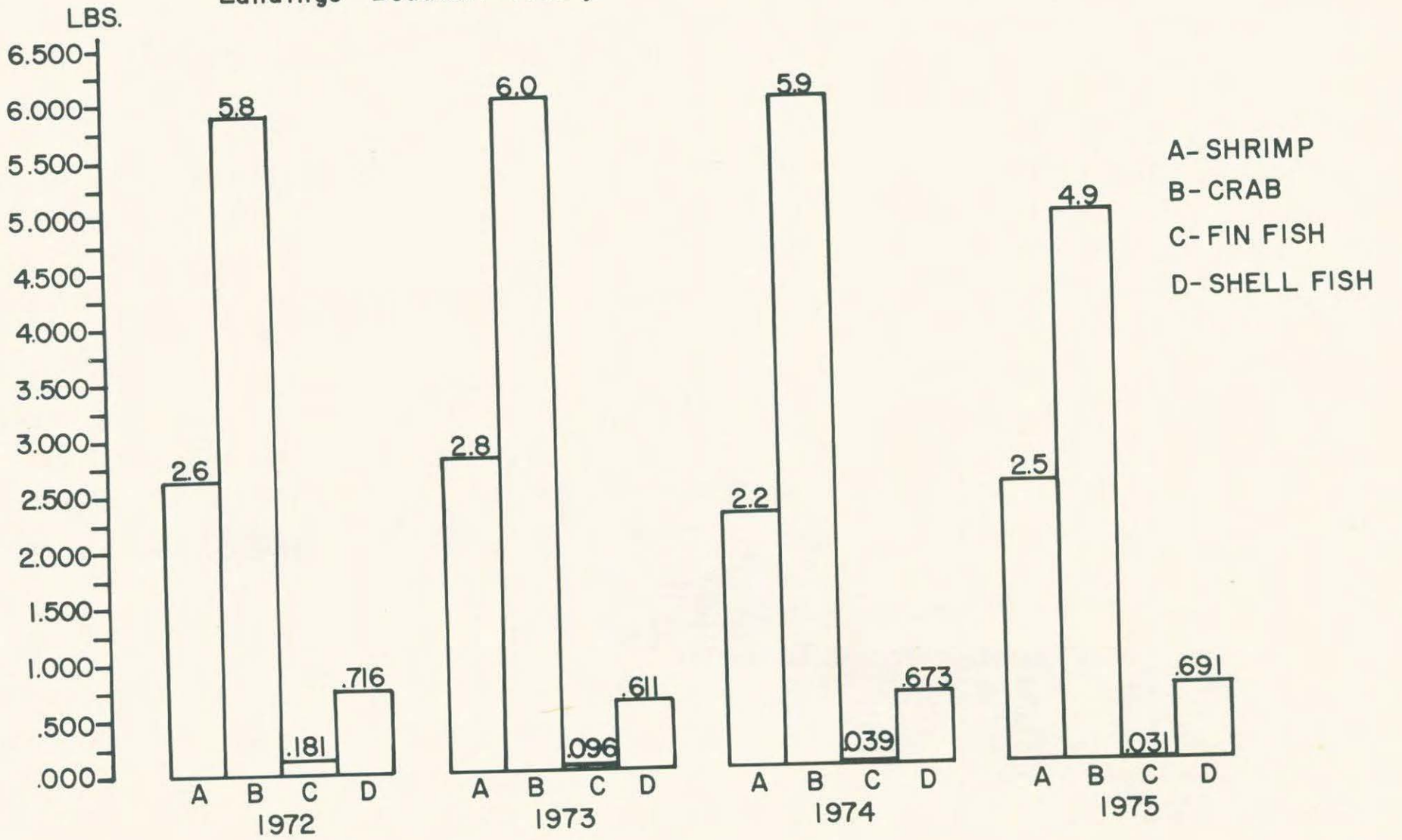


TABLE 5.3 - CHARACTERISTICS OF COMMERCIAL FISHERMEN, 1975

	BEAUFORT COUNTY: SHRIMP FISHERMEN	BEAUFORT COUNTY: CRAB FISHERMEN	CHARLESTON CO: SHRIMP FISHERMEN	OTHER CO: SHRIMP FISHERMEN	OUT-OF-STATE: SHRIMP FISHERMEN
Number of fishermen in sample	30	16	38	9	11
Average age (year)	38	39	38	39	45
Fishing experience (years)	14	9	10	12	12
Days spent fishing in South Carolina	144	228	147	142	81
Days spent fishing in other states (for those fishermen fished outside South Carolina)	51	0	61	28	142
No. of fishermen who fished in other states	11	0	19	5	11
No. of fishermen who sold incidental catch	20	4	35	9	11
No. of fishermen with non-fishery employment	5	2	12	1	5
No. of fishermen who also fished finfish in S.C.	8	2	5	2	3

Source: Dockside Survey, South Carolina Marine Resources Center, 1975.

TABLE 5.4 - CHARACTERISTICS OF COMMERCIAL FISHING BOATS AND VESSELS, 1975

CHARACTERISTICS	BEAUFORT CO. SHRIMP TRAWLER	BEAUFORT CO. CRAB BOAT	CHARLESTON CO. SHRIMP TRAWLER	OTHER CO. SHRIMP TRAWLER	OUT-OF-STATE SHRIMP TRAWLER
Number of trawlers in sample	46	23	49	22	13
Age (years)	18	4	13	14	17
Length (feet)	54	19	60	50	62
Beam (feet)	16	6	17	16	19
Horsepower	229	90	245	192	282
No. of trawlers with radar	14	0	30	10	7
No. of men on the trawler	3	1	3	3	3
No. & size of net	2-60'	0	2-65'	2-55'	2-70'
No. of pots	0	80	0	0	0
Current value of trawler ($)	31,202	3,264	44,482	22,968	53,500
Ice consumption per week in:					
Peak season (blocks)	22	1	21	17	26
Off season (blocks)	11	0	12	11	11

Source: Dockside Survey, South Carolina Marine Resources Center, 1975.

TABLE 5.5 - NUMBER OF COMMERCIAL FISHING BOATS AND VESSELS IN BEAUFORT COUNTY 1972 and 1975

ITEM	1972	1975	CHANGE 1972 - 1975 AMOUNT	CHANGE 1972 - 1975 PERCENT
Shrimp trawlers[a]/	213	299	86	40.4
Crab boats	99	91	-8	-8.1

[a]/A total of 105 non-resident trawlers were not included. In 1975, there were 105 non-resident trawlers in the County.

Source: Marine Resources Division, South Carolina Wildlife and Marine Resources Department

Table 5.6 - ESTIMATED CAPITAL INVESTMENT OF COMMERCIAL FISHING INDUSTRY, BEAUFORT COUNTY, 1975.

ITEM	AVERAGE PER VESSEL			NUMBER OF VESSELS	TOTAL CAPITAL INVESTMENT
	VESSEL VALUE	GEAR VALUE	GEAR AND VESSEL VALUE		
Shrimp Vessel	$31,202	$2,000	$33,202	299	$9,927,398
Crab Boats	3,264	800	4,064	91	369,824
TOTAL					$10,297,222

TABLE 5.7 - CHARACTERISTICS OF SEAFOOD DEALERS, SOUTH CAROLINA, 1975

CHARACTERISTICS	BEAUFORT COUNTY: DEALERS	CHARLESTON COUNTY: DEALERS	OTHER COUNTIES: DEALERS
Number of dealers in sample	10	9	3
	mean		
Linear footage of dock (feet)	337	359	635
Number of vessels regularly docked out the dealer's facility: in-state	12	8	4
Packing and handling house (square feet)	2,513	2,237	1,695
Cooler size (square feet)	377	359	324
Number of dealers with freezer facility	3	5	2
Freezer size (square feet)	173	550	270
Number of people employed:			
peak season	44	36	11
off season	7	7	5

TABLE 5.8 - BUSINESS OPERATIONS OF SEAFOOD DEALERS IN BEAUFORT COUNTY, 1975

ITEM	NUMBER OF DEALERS[a]/	PERCENT OF TOTAL DEALERS IN SAMPLE
A. Type of Services Provided to Fishermen:		
Fuel	8	100
Ice	7	88
General repairs to net	3	38
Railway	2	25
Groceries	2	25
Others	3	38
B. Type of Seafood Business Operated:		
Packing	8	100
Buying	5	63
Processing[b]/	1	13
Storage	4	50
Retail	5	63
Transportation	2	25
Wholesale	7	88
C. Type of Seafood Handled:		
Shrimp	8	100
Crabs	5	63
Oysters	2	25
Finfish	6	75
Others	3	38

[a]/Two dealers with incomplete records were excluded in the analysis.

[b]/The dealer processed some fish for local restaurants only.

wholesaling. Product storage capacity was extremely limited. This in turn limited market potential.

Since the dealer is the primary wholesaler, he typically determines the ex-vessel price for seafood received at his dock. The dealer provides certain services, as shown above, to the fisherman and in return he has the privilege of buying from these fishermen for resale to processors and secondary wholesalers. Generally, dealers resell to middlemen and processors below the retail level. For example, one survey shows that Florida constitutes a large market for shrimp handled in Beaufort County (Table 5.9).

Over 60 percent of the seafood, except crabs, consumed in South Carolina during 1972 was shipped in from out of state (Table 5.10). This results in excessive cross-handling, where South Carolina seafood is shipped out of state while substantial quantities are brought in from other states for local consumption.

The problems of cross-hauling are also vividly reflected in the value of processed fishery products, since very little South Carolina seafood remains in the State for processing. Figure 6 illustrates the relative position of South Carolina in the South Atlantic region. More than half of the processed value of fishery products in South Carolina is represented by fur seal skins, which are imported for processing. The value of processing is apparent when analyzing the Georgia situation. As shown in Figure 4, Georgia ranks at the bottom in the South Atlantic region for total fishery landings and ex-vessel earnings. However, Georgia compares favorably with Florida in the value of processed fishery products; a significant portion of this processing is based on imported raw fishery products.

PROBLEMS FACING SEAFOOD DEALERS

Fluctuations in fisheries production was ranked as the important problem by about 62 percent of the dealers interviewed during this study (Table 5.11).

Another problem voiced by seafood dealers was a lack of capital. Some 38 percent of dealers interviewed indicated a shortage of capital as a major problem. As mentioned earlier, seafood dealers in Beaufort County have less docking space, cold storage and freezer facilities than dealers in Charleston County. The general lack of cold storage facilities was identified as an important problem as was the shortage of dependable labor.

THE FISHERY RESOURCES BASE

The purpose of this section is to evaluate the available information on exploited and unexploited fish and shellfish resources in Beaufort County and to estimate the potential of these resources to support a modern seafood port.

SHRIMP RESOURCE

Shrimp represent the principal fishery resource in South Carolina, and the fishery is based almost entirely on three shallow-water penaeid species (white shrimp, Penaeus setiferus; brown shrimp, P. aztecus aztecus; and pink shrimp, P. duorarum duorarum). White shrimp account for the bulk of landings in South Carolina, with Beaufort County being one of the most productive white shrimp areas in the State.

Major shrimping areas in South Carolina within six miles of shore include the area from Winyah Bay and Bulls Bay to Tybee Roads. The most productive inshore areas include waters of St. Helena, Port Royal and Calibogue Sounds and Bulls Bay. For the most part, shrimping in South Carolina waters is a near-shore activity. Catches decline beyond three to four miles from shore. The shrimp fishery in South Carolina is generally considered to be yielding near-maximum catches from the traditional fishing grounds of the State. Although the number of resident shrimp trawlers in Beaufort County has increased by over 40 percent during the past four years, landings have not significantly changed (Table 5.12). This is also true

TABLE 5.9 - THE LARGEST MARKET AND SECOND LARGEST MARKET FOR SEAFOOD DEALERS, BEAUFORT COUNTY, 1975

TYPE OF PRODUCT	NO. OF DEALERS	LARGEST MARKET				SECOND LARGEST MARKET			
		FLORIDA	GEORGIA	N. C.	S. C.	FLORIDA	GEORGIA	N. C.	S. C.
Shrimp	8	5	1	1	1	2	2	2	2
Crab	5	0	0	0	5	0	0	0	5
Oyster	1	0	1	0	0	0	0	0	1
Clam	2	1	0	0	1	1	0	0	1
Finfish	6	1	0	0	5	1	0	0	5

.ABLE 5.10 - BALANCE SHEET, SOUTH CAROLINA SEAFOOD PRODUCTION AND CONSUMPTION, BY TYPE OF SEAFOOD, 1972

PRODUCT	S.C. LANDINGS	EXPORTED QUANTITY	% OF S.C. LANDINGS	TOTAL S.C. CONSUMPTION	IMPORTS	
					QUANTITY	% OF S.C. CONSUMPTION
Oyster meat	1,119,853	999,314	89.2	1,243,448	1,122,909	90.3
Fresh shrimp (processed, head-off)	5,133,746	4,691,112	91.4	3,937,584	3,494,950	88.8
Blue crabs (meat)	1,113,367	531,760	47.8	595,819	64,212	10.8
Clam meat (meat & shell)	357,846	343,713	96.1	129,526	115,393	89.1
Sea bass	547,320	536,160	98.0	114,541	103,381	90.3
King Mackerel	1,126	900	79.9	18,751	18,525	98.9
Spot	2,268,960	2,212,840	97.5	142,646	86,526	60.7
Other finfish	2,394,300	64,600	2.7	15,218,968	12,899,268	84.8

Source: Table 6, Eugene A. Laurent, et. al., 1975 Economic Organization of the South Carolina Marine Fisheries Industry, report of a special study for the Coastal Plains Regional Commission.

Figure 6.-DOLLAR VALUE OF PROCESSED FISHERY PRODUCTS-SOUTH ATLANTIC

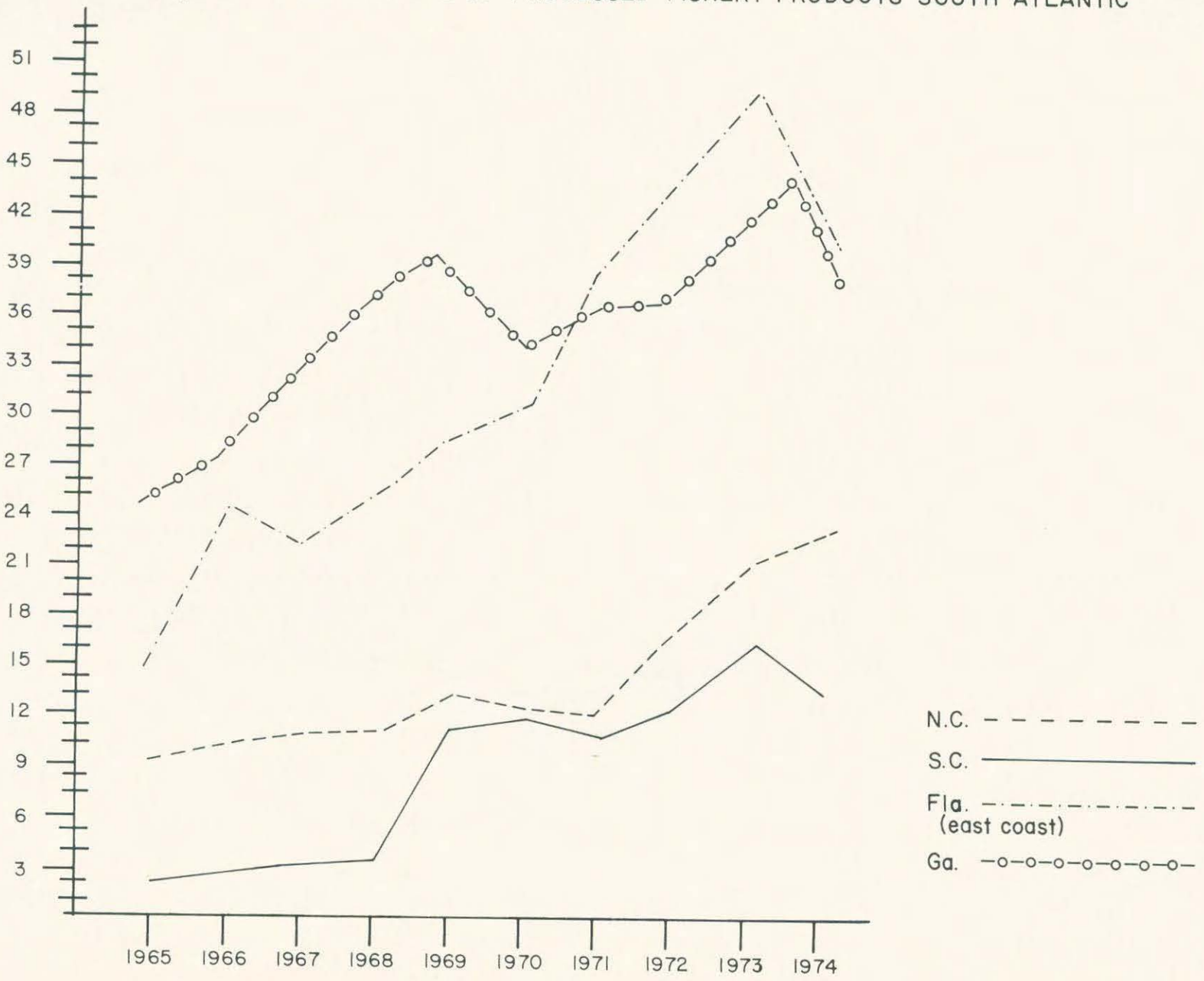


TABLE 5.11 - IMPORTANT PROBLEMS FACING SEAFOOD DEALERS IN BEAUFORT COUNTY, 1975

PROBLEMS	% OF DEALERS RANKED AS THE 1ST MOST IMPORTANT PROBLEM	% OF DEALERS RANKED AS THE 2ND MOST IMPORTANT PROBLEM	% OF DEALERS RANKED AS THE 3RD MOST IMPORTANT PROBLEM
Fluctuation in production	62	25	13
Lack of capital	38	25	13
Lack of cold storage facility	0	13	38
Shortage of workers	0	25	0
Lack of market information	0	12	0
Marketing and advertising	0	0	25
Competition from other buyers	0	0	13

for the State as a whole.

In short, the South Carolina shrimp fishery appears to have reached a plateau of capacity after certain periods of marked growth. Unless extensive new grounds are discovered offshore or unless very high prices make it worthwhile to fish the present grounds much more thoroughly or some extraordinary outside stimulus can be applied, landings will remain at present levels.

According to Eldridge (1975) three factors will affect future commercial landings in the South Atlantic region: (1) the recreational catch of shrimp; (2) the harvesting of under-exploited species, such as rock shrimp, and (3) the extent of coastal alteration projects which adversely affect nursery grounds.

The recreational catch of shrimp probably represents an important portion of the total catch in South Carolina, especially in Beaufort County where "weekend trawlers" (small runabouts with try nets) fish the creeks, sounds and bays, often illegally. The effect of increases in the recreational shrimp fishery on the commercial landings is unknown and is dependent upon growth, natural mortality and emigration rates of shrimp.

Increased effort in harvesting of under-exploited species could substantially affect future landings. During the off-season or in poor stretches of the regular shrimping season, fishermen have fished the deeper continental shelf zone for royal red shrimp. Commercial production of this species has been limited and it does not constitute a significant off-season fishery as yet. However, several offshore exploratory surveys have been conducted and potential does exist for expanded commercial harvesting of this species (McKenzie, 1975).

Rock shrimp (Sicyonia brevirostris) also appear to be a potential commercial species in South Carolina. Some of the more industrious South Atlantic shrimpers have landed significant quantities of rock shrimp in the past. Lunz (1975) discussed the occurrence of this species off the South Carolina coast.

The third factor influencing the future yield of shrimp in South Carolina is the rate of coastal alteration and destruction of nursery grounds. This will ultimately be a deciding factor in the managment of a viable shrimp resource.

BLUE CRAB RESOURCE

The blue crab supports the largest fishery in Beaufort County and the entire State in terms of pounds landed. This fishery ranks second only to shrimp in value. During the past four years (1972-1975), production of blue crabs in Beaufort County has averaged a little over 5.8 million pounds worth approximately $696,000 at dockside. Blue crab landings have fluctuated dramatically over the years, with rather pronounced fluctuations during the period of 1965-1968 (Table 5.13). McKenzie (1970) discussed factors related to these fluctuations and how they were reflected in annual commercial yields. However, since 1969, landings have stabilized somewhat. Beaufort County continues to produce about 80 percent of the total volume for South Carolina (Table 5.12). About 84 percent of the crabs purchased by licensed South Carolina buyers are bought in Beaufort County (Rhodes, 1973).

Crabbing effort is primarily a function of two factors in Beaufort County; (1) relative abundance of crabs; and (2) demand by processors. The successful operation of two local crab meat processors depends on the availability of crabs from local waters as well as outside sources. Apparently a much larger catch from Beaufort County waters could be processed if greater harvesting efforts were present. It appears that the Beaufort County crab resource could probably support more intensive harvesting activities. Only 113 crab trap licenses were sold in Beaufort County during 1975. Based on an average of 62 traps per fisherman (Rhodes 1973), this would amount to approximately 7,000 traps being fished in literally thousands of acres of open water habitat for crabs. Also, only about 5 per

TABLE 5.12 - COMMERCIAL SHRIMP LANDINGS OF SOUTHERN DISTRICT OF SOUTH CAROLINA, 1966 - 1975*

YEAR	SOUTHERN DISTRICT POUNDS (000)	SOUTHERN DISTRICT VALUE $	SOUTH CAROLINA POUNDS (000)	SOUTH CAROLINA VALUE $
1966	1,700	872,683	4,264	2,152,305
1967	1,371	564,914	4,090	1,655,188
1968	2,517	1,457,913	6,336	3,663,697
1969	2,533	1,509,272	5,819	3,428,461
1970	1,633	942,782	4,952	2,878,735
1971	3,928	2,502,616	10,753	6,388,225
1972	2,628	891,466	8,085	5,546,550
1973	2,847	3,073,750	8,256	8,906,784
1974	2,341	1,717,906	7,430	4,588,644
1975**	2,919	3,566,853	8,623	10,511,000

*Thousand of pounds, heads-on.

**Preliminary January through November.

TABLE 5.13 - SOUTH CAROLINA BLUE CRAB PRODUCTION BY GEAR AND CONTRIBUTIONS FROM SOUTHERN DISTRICT, (1960 - 1972)

YEAR	OTTER TRAWL		TRAPS		TROT LINE		TOTAL LBS. S. C.	TOTAL LBS. SOUTHERN DISTRICT	% OF SOUTH CAROLINA
	LBS.	% OF S. C.	LBS.	% OF S. C.	LBS.	% OF S. C.			
1960	1,309,700	18.4	3,682,000	51.7	2,129,100	29.9	7,120,800	4,928,730	69.2
1961	392,700	8.4	2,586,400	55.4	1,693,000	36.2	4,672,100	3,538,720	75.7
1962	791,000	12.5	3,790,100	59.8	1,756,500	27.7	6,337,600	5,023,378	79.3
1963	998,800	11.3	6,333,100	71.6	1,507,300	17.1	8,839,200	6,470,849	73.2
1964	653,100	6.9	4,352,700	46.1	4,430,300	47.0	9,436,100	7,339,265	77.8
1965	168,300	2.3	5,770,700	77.8	1,481,000	20.0	7,419,940	6,021,322	81.2
1966	0	0.0	5,516,200	96.4	208,300	3.6	5,724,458	5,020,755	87.7
1967	682,200	13.0	4,363,000	83.15	202,000	3.85	5,247,203	4,573,233	87.2
1968	143,700	3.7	3,556,800	92.1	161,700	4.2	3,862,201	3,279,586	84.9
1969	496,900	6.0	7,489,400	90.8	262,700	3.2	8,249,735	7,029,117	85.2
1970	3,200	.1	6,815,800	98.0	130,500	1.9	6,949,524	6,007,379	86.4
1971	566,000	7.6	6,712,400	90.2	162,100	2.2	7,507,886	6,278,767	83.6
1972	410,400	5.0	6,968,900	93.2	38,700	1.1	7,422,447	5,895,720	79.4
									80.8

TABLE 5.14 - 10-YEAR COMPARISON OF OYSTER PRODUCTION FOR SOUTH CAROLINA IN POUNDS OF SHUCKED OYSTER MEATS AND CONTRIBUTIONS OF SOUTHERN DISTRICT

YEAR	SOUTH CAROLINA	% INCREASE/DECLINE SOUTH CAROLINA	SOUTHERN DISTRICT	SOUTHERN DISTRICT AS % OF SOUTH CAROLINA PRODUCTION
1966	2,614,816	-9.32 (from 1965)	1,284,183	49.1
1967	2,255,476	-8.63	1,272,835	56.4
1968	2,119,925	-9.40	1,326,806	62.6
1969	964,668	-45.5	670,059	69.5
1970	852,010	-8.83	556,646	65.3
1971	1,101,369	+7.74	678,085	61.6
1972	1,119,853	+9.83	590,972	52.8
1973	878,014	-7.84	577,433	65.8
1974	1,119,021	+7.85	788,512	70.5
1975	1,016,740	-9.09	681,527	67.0

cent of the total catch for South Carolina is caught by trawls. Most of the trawl crabs are taken in Beaufort County during the fall and winter after the shrimp season. However, equally large quantities of crabs are caught incidental to shrimping operations and are not utilized because of handling conflicts. The possible use of these crabs creates a potential for expanding the volume of crabs landed.

Another area of potential development within the crab fishery is the soft-shell crab. This fishery is a very profitable one in the Virginia/Maryland area and, with proper interests, could probably be developed to commercial scale in South Carolina. In South Carolina the production of soft-shell crabs has been limited largely because of the inability of fishermen to obtain crabs in shedding conditions. It is felt that production of soft-shell crabs in the Beaufort County areas has definite possibilities at least as a supplement to the income of fishermen. It appears that both the supply and demand for soft-shell crabs are sufficient to warrant business ventures and the resource base is unexploited for this type of fishing.

OYSTER RESOURCES

The long-term trend in the production of oysters in South Carolina is definitely downward (Table 5.14). A biological scarcity or depletion of supply is not sufficient to explain the decline in production. High production costs especially labor costs and labor shortages, and the inability of the industry to mechanize are reflected in this downward trend. Also, management policies (Gracy and Keith, 1972) may account for a decline in production to a certain degree.

Since 1966 annual oyster production has fallen from 2.6 million lbs. of shucked oyster meats to approximately 1 million pounds during 1975. Earlier production came largely from steam cannery operations which have all but vanished from coastal fisheries except for one cannery in Beaufort County. This cannery currently represents the largest oyster business in the State.

Historically, oyster production has been related to the availability of hand labor. In recent years, there has been a drastic shortage of labor, and recruitment of new labor into the industry has been insignificant. The labor force, mostly Black, has migrated to other more attractive occupations (Gracy and Keith, 1972).

Prior to the demand for South Carolina oysters in the shell during the mid 1950's from Chesapeake Bay, the oyster fishery was oriented along two basic lines: (1) shucking and sale of fresh raw shucked oysters in local areas; and (2) steam shucking and canning of low grade cluster oysters for sale and shipment throughout the Southeastern United States. Today, the oyster industry is primarily comprised of three types of operations:

(1) Raw Shucked Oysters - Distribution of raw shucked oysters was limited in the Southeast until about 1955 when the appearance of MSX in Chesapeake Bay hampered production there and increased the demand for South Carolina oysters. However, subsequent declines in labor probably cancelled out potential advantages to be gained from the northern market. During this same period, increases in breaded seafood products helped to maintain South Carolina oyster production, and today the industry is supplying raw oysters to out of state processors from which demand has been inconsistent.

(2) Shell Stock Oysters - This operation is broken down into high quality single oysters in the shell for table use, seed oysters and cluster oysters primarily trucked out of state for processing.

High quality single oysters are accepted in northern markets at profitable prices. However, the inability of South Carolina to meet demands for high quality oysters during peak market periods has hampered expansion.

(3) Canned Oysters - There is great need for large volumes of low grade cluster oysters for canning. Such oysters must be hand gathered. Approximately 50 percent of

the total cluster oyster production in South Carolina is steamed shucked and canned in Beaufort.

There are 60 commercial oyster leases in South Carolina encompassing some 6,122 acres of oyster bottoms. There are 11 leases in Beaufort County (2,886 acres) producing about 60 percent of the total South Carolina oyster production. The average yield of oysters per acre is 50.34 United States bushels (Gracy and Keith 1975).

Compared with the average yield of 50 bushels per acre for the State, Beaufort County produces approximately 77 bushels per acre (based on 1975 figures). It is reasonable to suppose that the yield per acre could be increased substantially since average yield on well cultivated beds approximates 120 bushels. Grounds capable of supporting up to 1500 bushels per acre have been found in Maryland (Comm. Fish. Maryland, 1953). South Carolina has a longer growing season than northern states and should, under proper cultivation, be capable of producing much larger volumes of oysters than are now being harvested. The oyster resource in South Carolina has tremendous potential for development. In addition to present grounds, which are not being harvested properly, there are hundreds of acres in the Savannah River basin which are not fully used (McKenzie, 1969).

The lack of hand labor has been identified as probably the single most critical factor for the decline in oyster production (Gracy and Keith, 1972). It is obvious that until the labor problem is solved through mechanization or increased monetary incentives, the harvesting sector is limited.

CLAM RESOURCE

Although 1975 was a record year for production of hard clams in South Carolina, the resource base appears to be rather limited, especially in the Beaufort County area. The clam fishery has expanded over the last two years and new markets have developed. However, most of this activity has been in the Santee Delta area. This resource has not been readily available to the Beaufort fishermen, and there does not appear to be a sufficient resource base for large-scale commercial clamming operation in Beaufort County. A modest increase in volume and sales through improved markets and clam mariculture could probably be expected.

FINFISH RESOURCE

South Carolina has never produced large quantities of finfish as compared to other states on the Atlantic seaboard. Over the past 10 years, the total finfish catch has fluctuated from 10.6 million pounds in 1966 to 2.8 million pounds in 1974. Beaufort County accounts for less than 2 percent of the State's total finfish landings, with Horry County producing the bulk (Table 5.15). The finfish catch in South Carolina is primarily composed of the following five species ranked in order of importance in landings; spot, catfish, alewives, seabass and mullet. Spot and mullet are the only species which have consistently been caught in excess of a million pounds annually. Until now, finfisheries of South Carolina have been of these basic types: (1) the haul-seine fishery in Horry County; (2) the sale of finfish caught incidental to shrimping and, (3) the off-season catch of demersal fish by hand lines and traps (Rhodes, 1974).

Among factors which have influenced finfishing in South Carolina are the following:

(1) Biological availability
(2) Economic incentive for fishing - relative prices
(3) Seasonality of production - small, scattered, irregular catches
(4) Lack of technology for preparation and distribution

A logical explanation for the poor history of finfish production in South Carolina may be found in biological scarcity. Although economic forces do exert control over production, the incentive to

TABLE 5.15 - FINFISH LANDINGS FOR SOUTH CAROLINA AND CONTRIBUTIONS OF SOUTHERN DISTRICT (1966 - 1975)

YEAR	SOUTH CAROLINA POUNDS	SOUTHERN DISTRICT POUNDS	% OF SOUTHERN DISTRICT TO S.C. LANDINGS
1966	10,565,968	71,008	.7
1967	7,260,835	62,202	.9
1968	8,996,195	75,673	.8
1969	5,526,537	18,663	.3
1970	3,192,119	19,113	.6
1971	4,772,705	82,597	1.7
1972	5,215,566	93,173	1.8
1973	3,885,695	92,730	2.4
1974	2,757,716	42,598	1.5
1975	3,321,979	40,658	1.2

catch finfish has not been evident in South Carolina.

In addition to problems of scarcity, the demand for southern finfish is weakened by the increasing market competition from the cheap, mass produced, packaged products such as fillet, steaks, and fish sticks produced in New England and Canada. There is a general lack of larger fish (i.e., cod, haddock, ocean perch) for processing in South Carolina. The small, scattered, irregular and highly seasonal catches of various species in South Carolina is a limiting factor. Despite the fact previously cited, significant volumes of fresh fish are served in restuarants all along the coast. Even this demand is largely met by imports.

LATENT FISHERY RESOURCES

There may be additional fishery resources off the South Carolina coast which could add significantly to the total fisheries production. It is well documented that the live bottom and continental shelf-edge habitats of South Carolina support large concentrations of demersal fish (Bearden and McKenzie, 1971). The potential economic value of these resources has been recognized recently by commercial fishermen and related fisheries interests.

However, these resources have not been significantly exploited to date. The major limiting factors in development of this fishery in past years have been:

(1) The reluctance of fishermen to expand operations to the off-shore area due to increased expenses and unfamiliarity of fishing grounds.

(2) Economic factors, including market instability and absence of on-shore processing.

(3) Insufficient knowledge on the part of fishermen as to availability and harvesting techniques.

It appears that fishing for demersal species off the South Carolina coast utilizing traditional handline gear (manual or powered snapper reels) is the least feasible method for a full scale commercial venture. Results of a study by Bearden and McKenzie (1971) indicate that higher priced species, such as red snappers, fluctuate in availability considerably from year to year in various areas; these fish were not usually abundant enough to warrant full scale commercial handline fishing. Handline fishing for pink porgy, snapper, grouper, et., as a supplement to the use of fish traps, does appear to have some potential for a full time sea bass operation.

Commercial fishing with traps for sea bass has become well established off South Carolina. After much experimentation, most fishermen have found that the modified crab trap similar to that described by Rivers (1966) is the most efficient gear for this type of fishing. In recent years, some minor innovations, such as the use of steel reinforcing rod around the edges of the traps, have evolved (Rhodes, 1974).

Trawling with roller rigged fish trawls on the live bottom and shelf edge habitats off South Carolina has considerable potential (Struhsaker, 1969). Further exploratory trawling is needed to determine the availability of black sea bass. Commercial quantities of vermillion snapper, pink porgy and grouper are available to this type of operation (Rhodes and Bearden, unpublished data). Large areas of comparatively even bottom were located east of Charleston in 17-18 fathoms and were fished during August and September of 1970. Large concentrations of sea bass mixed with pink porgy were found in this area, and trawling with roller rigged gear should be possible. Successful trawling operations of this type require a high degree of skill and experience as well as sophisticated gear and electronic equipment. In addition, handling and marketing problems involved in such an operation may discourage full scale trawling for demersal fishes on the Continental Shelf (Rhodes, 1974). Currently, it appears that exploitation of demersal fishery resources off this coast may be primarily limited to trap and trap/handline combina-

tions both on a part-time and full-time basis. The recent introduction of new high rise trawls may well change that assessment.

A major need at this time is for commercial scale pilot projects to determine the economic feasibility of fish trawling operations for sea bass, vermillion and red snapper, pink porgy and other species in the 10-40 fathom depth range.

In addition to problems and needs associated with gear and methods of fishing, the availability of demersal fishes on the Continental Shelf area appears to fluctuate considerably on a seasonal and yearly basis. The reasons for such variation are not known. Sport fishermen along the South Carolina coast have reported declines over the past few years in catches of snapper and grouper. Such changes may be due to fluctuations in environmental conditions, to other natural factors, or to over-fishing by commercial and sport fishermen.

Other major problems regarding the feasibility of full scale year around bottom fishing operations are related to marketing. Although red and vermillion snapper bring consistently high prices (1.00-$1.25/lb.), the market for sea bass has fluctuated widely in past years, and no well established market exists for pink porgy at this time. Prices on northern markets for grouper have ranged up to $0.60 per pound year-round. The sea bass market is easily flooded, even though whole fish of this species have brought prices of $0.90-$1.00 per pound for large sizes on major northern markets. The sea bass market has been excellent during the spring through fall in recent years. However, during winter when South Carolina shrimpers enter the fishery on a seasonal basis, prices have often dropped to $0.20-0.30 per pound or less. In the past, catches of 2,000-6,000 pounds of sea bass per boat for a two day trip by a crew using 15-20 traps have been common. However, the fishermen have been entirely dependent on existing market conditions. Most fishermen either sell their catch to a local fish dealer at dockside for comparatively low prices or ship their fish to larger markets in New York or Baltimore (Rhodes, 1974). There is little doubt that fishermen need better market information and more reliable sources for disposing of their catch at fair prices. In spite of the problems associated with marketing and demand, it is felt that the potentials for full scale bottom fishing operations off the South Carolina coast are good. At present there are a number of large shrimp trawlers which are idle after the shrimp season. If a suitable trawl net or trap/handline fishery were developed, it could mean year-round fishing for these boats. This, in turn, would offer better employment opportunities for the crew members and enable the fishery to keep trained men.

SUMMARY

This chapter has provided information on characteristics of the seafood industry and fishery resource base in Beaufort County. The major findings are summarized below:

(1) Landings of shrimp have remained relatively stable despite the fact that the number of vessels has increased sharply in recent years.

(2) Shrimp fishermen spent about 144 days each in shrimping and crab fishermen spent about 228 days each in crabbing in South Carolina, 1975.

(3) Shrimp fishermen in Beaufort County had less non-fishery employment and operated smaller and older vessels than shrimp fishermen in Charleston County.

(4) Only 37 percent of shrimp fishermen in Beaufort County fished outside of South Carolina compared to 50 percent of shrimp fishermen in Charleston.

(5) Seafood dealers in Beaufort County have more vessels tied up at their docks and less docking space than those in Charleston.

(6) Very few seafood dealers have freezing facilities.

(7) Lack of capital and fluctuation in fish production were the most important problems facing the seafood industry.

(8) The shrimp resource appears to have little potential for increasing production, while oyster, clam, crab and finfish resources are only partially utilized. This indicates that if the seafood industrial park is built, greater landings in non-shrimp fisheries will result.

(9) Demersal fishes on the live bottom off South Carolina have considerable potential for fishery development. Further biological and economic studies are needed in order to facilitate full scale trawling operations.

CHAPTER VI

ECONOMIC IMPACT OF A SEAFOOD INDUSTRIAL PARK ON BEAUFORT COUNTY

The primary purpose of this chapter is to analyze the potential economic impact(s) that could possibly be generated by a seafood industrial park in Beaufort County. Although the construction of facilities may generate income for local contractors and businessmen, these income effects are essentially transitory in that income stops upon completion of the construction phase. This aspect is of little concern to the local community and is excluded in the analysis.

The impact analysis might assist the people in the community to partially answer the following questions:

(1) If the seafood industrial park is built in Beaufort County, where will its effect be felt in the local economy and to what extent?

(2) What effect would commercial fishermen and seafood dealers receive from the new facility?

This study did not employ input-output and regression analysis techniques for estimating economic impacts. Such an undertaking would have required far more time and resources than were available.

DIRECT IMPACT

IMPACT ON EMPLOYMENT

Table 6.1 gives an estimate of the operating labor for a seafood industrial park in South Carolina. The complex could directly employ over 400 people when all basic and support units are in operation. However, these will not be all new jobs. Over 72 percent of these employees would be unskilled. Although these figures are estimates, it indicates that the unskilled labor force would be the principal beneficiary of the port. This is important in an area with a large number of people with low educational levels. Since there is a strong tendency toward emigration in Beaufort County due to a general lack of employment opportunities, the port could be a catalyst for the recruitment of younger and more educated people. Actual work hours per week for individual employees are vitually impossible to determine, although there are seafood workers in Beaufort County who enjoy full time employment. However, most workers do not work a full work week, and current seafood processing employment is characterized as seasonal.

Associated with direct employment of the seafood industrial park is additional secondary employment as a result of multiplier effects. The size of the employment multiplier is determined by the relationship between basic and non-basic employment for the area under study. The numerical value of the employment multiplier has not been estimated. When this employment multiplier is taken into account, direct employment of 410 people in the seafood industrial park would have a net positive effect on the employment in Beaufort County.

TABLE 6.1 - ESTIMATED OPERATING LABOR FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

	TYPE OF LABOR			
	MANAGER & CLERICAL	SKILLED	UNSKILLED	TOTAL
1. Administration Office	3		2	5
2. Vessel Services Units:				
Ice and Fuel Station	4		4	8
Gear Storage Shop			1	1
Engine Repair Shop	6	26		32
Marine Electronic Shop	2	4		6
Marine Hardware Shop	3		3	6
Net Repair Shop	2	4		6
Marine Railway Yard	3	28		31
3. Seafood Handling Units:				
Cold Storage	1		1	2
Dealers (8)	9		126	132
Processing Plant	7	3	150	160
Fish Meal Plant	2	2	2	6
4. General Service Units:				
Fish Market	2		1	3
Seafood Restaurant	1	2	2	5
Grocery Store	1		1	2
Lounge	1		1	2
TOTAL EMPLOYMENT	47	69	294	410

IMPACT ON SEAFOOD VALUE

The purpose of the following value added analysis is to measure the contribution of the more important species to the final fisheries value after processing. The value added analysis was based on 1973 landings. Data obtained from processors, primary wholesalers, and published secondary sources in South Carolina were used in the analysis. Table 6.2 presents a summary of the present situation with blue crabs and oysters representing the only processed fishery products. Table 6.3 analyzes the value added under the assumption that all commercial fishery catches in Beaufort County are to be processed in the county. Such an assumption may or may not be entirely realistic but was used for the purpose of demonstrating the potential impact of seafood value from processing facilities in the park. The processed values of seafood are estimated on the basis of wholesale prices of seafood products.

Shrimp - Growth of income from the shrimp fishery will depend on improvements in the quality of product through the possibilities of adding value by processing. At present there is practically no processing of shrimp in South Carolina (Table 6.2) but the estimated added value of such processing could be $3.9 million (Table 6.3). This would inflate the total value of shrimp in the Beaufort area to approximately $7 million.

Crabs - The estimated value added from processing all crabs landed in Beaufort County would be about $2.3 million (Table 6.3). Approximately 95 percent of the crabs landed in Beaufort are now processed by two companies. Current value added by their processing is $2.2 million for blue crabs landed. This shows that additional value added to blue crabs by processing is very limited unless crab landings are increased substantially.

Finfish - There is no processing of finfish in South Carolina (Table 6.2) and at present volumes the value added (Table 6.3) due to processing would be insignificant. There is little doubt that the growing popularity of packaged products has lessened the demand for the unprocessed finfish of South Carolina except in the restaurant trade. Unfortunately, the prospect of meeting competition is not very bright. The evidence is quite clear that South Carolina produces no more than insignificant quantities of the species that experience has demonstrated may be packaged profitably, e. g. flounder.

Oysters - The value added to oysters landed in Beaufort County is estimated at just less than $200,000. This was based on the fact that 60 percent of the oysters landed in this area are already processed. If the earnings of the oyster fishery are to grow significantly, the production must be increased. Production and marketing are functions which mutually affect one another. One development which would encourage the type of processing and selling that South Carolina needs is a marked expansion in the physical production of oyster beds.

Clams - There is no processing of clam meats in South Carolina. The value added is insignificant now (less than $10/thousand) due to low volumes. Potential for future expansion in the Beaufort area is limited by the resource.

In summary, the present level value of fishery products in Beaufort County is about $4.2 million. With processing, which is limited at the present time to crabs and oysters, the added value is about $2.3 million (landed and processed value - $6.5 million). Landings of shrimp, finfish, and clams are shipped out of state for processing and freezing.

Assuming that all seafood landed in Beaufort County could possibly be consolidated and processed at a seafood port facility, the value added by processing would increase to $6.4 million at the wholesale level. Thus, the total landed and processed value for fishery products in Beaufort County would approximate $10.5 million. This indicates that the value of seafood would increase by $4.1 million if all Beaufort landings were processed in Beaufort County.

TABLE 6.2 - ACTUAL LANDED AND PROCESSED VALUE OF SEAFOOD IN BEAUFORT COUNTY, 1973

TYPE OF SEAFOOD	LANDINGS IN POUNDS	LANDED VALUE ($)	PROCESSED PRODUCT IN POUNDS	PROCESSED & LANDED VALUE ($)	VALUE ADDED ($)
Shrimp (heads-off)	2,846,792	3,073,750	0	3,073,750	0
Blue crab (shell & meat)	6,097,829	779,811	868,940	2,949,961[a]/	2,170,150
Finfish (raw)	96,725	17,944	0	17,944	0
Oyster (meat)	563,195	336,933	337,917	455,737[b]/	118,744
Clam (meat)	48,089	23,427	0	23,427	0
Total		4,231,925		6,520,819	2,288,894

[a]/Based on 85% loss of weight in processing

95% landings process in Beaufort County and $3.35 per pounds for processed product.

[b]/Based on 60% of landing processed in Beaufort County and $.95 per pound for processed product.

TABLE 6.3 - PROJECTION OF LANDED AND PROCESSED VALUE OF SEAFOOD IN BEAUFORT COUNTY, 1973, (ASSUMES ALL CATCHES PROCESSED IN BEAUFORT COUNTY).

TYPE OF SEAFOOD	LANDED VALUE ($)	PROCESSED PRODUCT IN POUNDS	PROCESSED & LANDED VALUE ($)	VALUE ADDED ($)
Shrimp (head-off & peeled)	3,073,750	2,448,241	7,001,969[a/]	3,928,219
Blue Crab (meat)	779,811	914,674	3,064,158	2,284,347
Finfish	17,944	24,181	22,488[b/]	4,544
Oyster (meat)	336,993	563,195	536,725	199,792
Clam (Chowder)	23,427	48,089	32,989[c/]	9,562
TOTAL	4,231,925	3,998,380	10,658,329	6,426,464

[a/]Based on 14% loss of weight in peeling after de-heading and $2.96 per pound.

[b/]Based on 75% loss of weight in processing and $.93 per pound.

[c/]Based on $0.686 per pound of chowder clam.

COST SAVINGS IN WASTE DISPOSAL FACILITIES

A possible advantage of the seafood industrial park would be a centralized waste disposal facility. Waste treatment and disposal techniques are potential problems for the seafood dealer. By July 1977, industries must presumably meet effluent limits reflecting the best practical control technology. By July 1983, industries must completely eliminate the discharge of pollutants where it is technologically and economically achievable. Guidelines for the seafood industry have been established through the Environmental Protection Agency. Essentially, the shrimp industry in South Carolina will be affected most. Screens, grease traps and in-plant "housekeeping" improvements must be accomplished soon in order to comply with impending EPA regulations. By 1983, shrimp dealers will have to install dissolved aeration floatation equipment and/or aerated lagoons.

The average seafood dealer in South Carolina cannot afford to meet the EPA standards, which could require capital investments of $50,000 - $100,000 in 1976. Consequently, many of the present dockside dealers/operators will be forced out of business if alternatives are not available. The seafood industrial park would offer centralized waste treatment. This aspect of the facility alone would have a significant economic impact on the local fisheries.

EFFECT ON VESSEL OWNERS

Under current conditions, fishermen have to obtain parts and services from several places for vessel repair and maintenance. If the seafood industrial park were built and successfully occupied, commercial fishermen would have central access to all vessels and gear repair services. Thus, vessel owners could reduce costs and time on vessel repairs and increase efficiency of vessel operations. Facilities most desired by fishermen include marine hardware, supply and net repairs, ice plant, cold storage and electronic repairs.

The centralized seafood facilities port might encourage current and prospective vessel owners to invest in larger and more efficient vessels and gears for offshore fishing. This would probably increase fish landings in the area and help develop an offshore ocean fishery.

EFFECTS ON SEAFOOD MARKET CHANNELS

The current marketing pattern for seafood in Beaufort County as well as in South Carolina as a whole appears to involve the shipment of catches to Florida, Georgia, or New York by local dealers and purchases from out of state markets by several wholesalers. This marketing pattern is partly due to the general lack of in-state market channels for South Carolina seafood products and partly due to a reluctance to invest in processing, cold storage and freezing facilities by local seafood dealers. The availability of processing, cold storage, freezing, and canning facilities in the seafood industrial park could change the current seafood marketing pattern. Centralized processing and storage facilities would allow the assembly of large quantities of seafood products. Centralized volumes of fish landings would probably attract likely buyers and sellers to establish in-state market channels for South Carolina seafood products.

INDIRECT IMPACTS

MULTIPLIER EFFECTS

An output multiplier simply measures the amount of money or income that shows up directly in other community businesses as a result of a given dollar figure of output value produced by the specific industry. The input-output matrix for Beaufort County constructed by Laurent and Hite (1975) indicated that the output multiplier for food and kindred products was 1.88. This shows that a one dollar change in final demand for the seafood product will result in a change in total output in

the Beaufort County area of 1.88.

Assuming all local seafood production was processed in Beaufort County, the seafood value would increase by about $4.1 million (Tables 6.2 and 6.3). Because of an output multiplier of 1.88, an increase of $4.1 million would bring the total effect of $7.7 million into the Beaufort economy. This amount is potential income that could be generated by the seafood complex based on 1973 landings and prices.

EFFECT ON LOCAL TAX BASE AND PROPERTY VALUE

If the State should build and lease such a facility it would not become a part of the local tax base, since the facility would remain State property. Some existing dockside dealers would be relocated to the park. These dealers presently have an average capital investment of approximately $55,000. The county would lose some of this tax base with the total amount of losses depending on the number of dealers relocating in the park and how they resolve their investments. However, in the long run, the local tax base should increase because the park would provide new revenues for a wide area through better employment and new businesses.

EFFECTS ON TOURISM AND RECREATION

A modern seafood industrial park would provide local color to the Port Royal area. The park could attract many visitors. The opportunity to witness the hard work and skill of the fishermen, a seafood market, restuarant, and lounge could provide further tourist satisfaction.

The rapid growth of tourism and recreation activities in Beaufort County is largely tied to development of the Hilton Head resort complex. The development of a seafood industrial complex could be attraction for the county's tourism and recreation sector.

SUMMARY

This section has provided an economic impact analysis of the proposed seafood industrial park. The major economic impacts are:

(1) About 410 employment opportunities will be created for the local community; many of these, however, would result from relocation and not represent new jobs for the Beaufort County area.

(2) Direct income of $4.1 million could be generated to the local economy because of an increase in seafood value.

(3) Indirect income of $3.6 million could be added to the county due to the multiplier effects of added seafood value.

(4) The facility would reduce capital needs for waste disposal and those services most desired by fishermen would be available.

CHAPTER VII

FUNDING AND FINANCIAL PERFORMANCE OF SEAFOOD INDUSTRIAL PARK

The purpose of this chapter is to analyze financial performance and funding sources of a modern harbor and dock facility for the seafood industry. The facility is designed to be large enough to accommodate 75 vessels. This is based on findings of the mail survey that a total of 72 users would dock their vessels at the park. The port site is assumed to be either at Port Royal or at Port Victoria in Beaufort County.

The financial performance of a seafood industrial park can be affected by the operating methods of the park. Thus, two operating scenarios are presented

for consideration. Plan I assumes that all dock and seafood facilities in the park will be built by the State government and operated by a self-governing organization. This organization will (1) operate the waste treatment plant, (2) supply ice and fuel, and (3) rent dock and facilities. The remaining facilities are assumed to be leased to seafood dealers, brokers, processors and others. Construction will be partially financed through a loan with repayment under this plan. In contrast to Plan I, Plan II assumes that only the dock and other common use facilities will be built by the government. The lessees will construct their own facilities and buildings. Construction will be primarily funded through Federal grants with little repayment debts. The financial performance of these two plans are presented in this chapter.

PLAN I

CONSTRUCTION COSTS AND FUNDING

Estimates on construction costs were obtained from the Planning and Design Section of the South Carolina State Ports Authority. These figures are the best available at present, but costs could increase dramatically in coming years. Total project costs under this plan are $5,063,237 (Table 7.1). Figure 7 represents the conceptual design that the above cost estimates were based on. Figure 8 (foldout back cover) is an alternate concept for consideration.

In determining sources of funding, special consideration was given to those government agencies which could provide either grants and/or loans to finance the construction of such a seafood industrial park. In addition to the Coastal Plains Regional Commission (CPRC), the Economic Development Administration (EDA) was seen to be a viable means to obtain such funds. Revenue bonds could be used to supply working capital funds (Table 6.2).

The EDA can provide assistance either through project grants or direct loans. In order for these grants to become available, a project must qualify by fulfilling the present needs of an area. It must improve the opportunities for the successful establishment or expansion of industrial or commercial plants or facilities. This would assist in the creation of additional long-term employment opportunities or provide some benefits to the long-term unemployed and members of low income families.

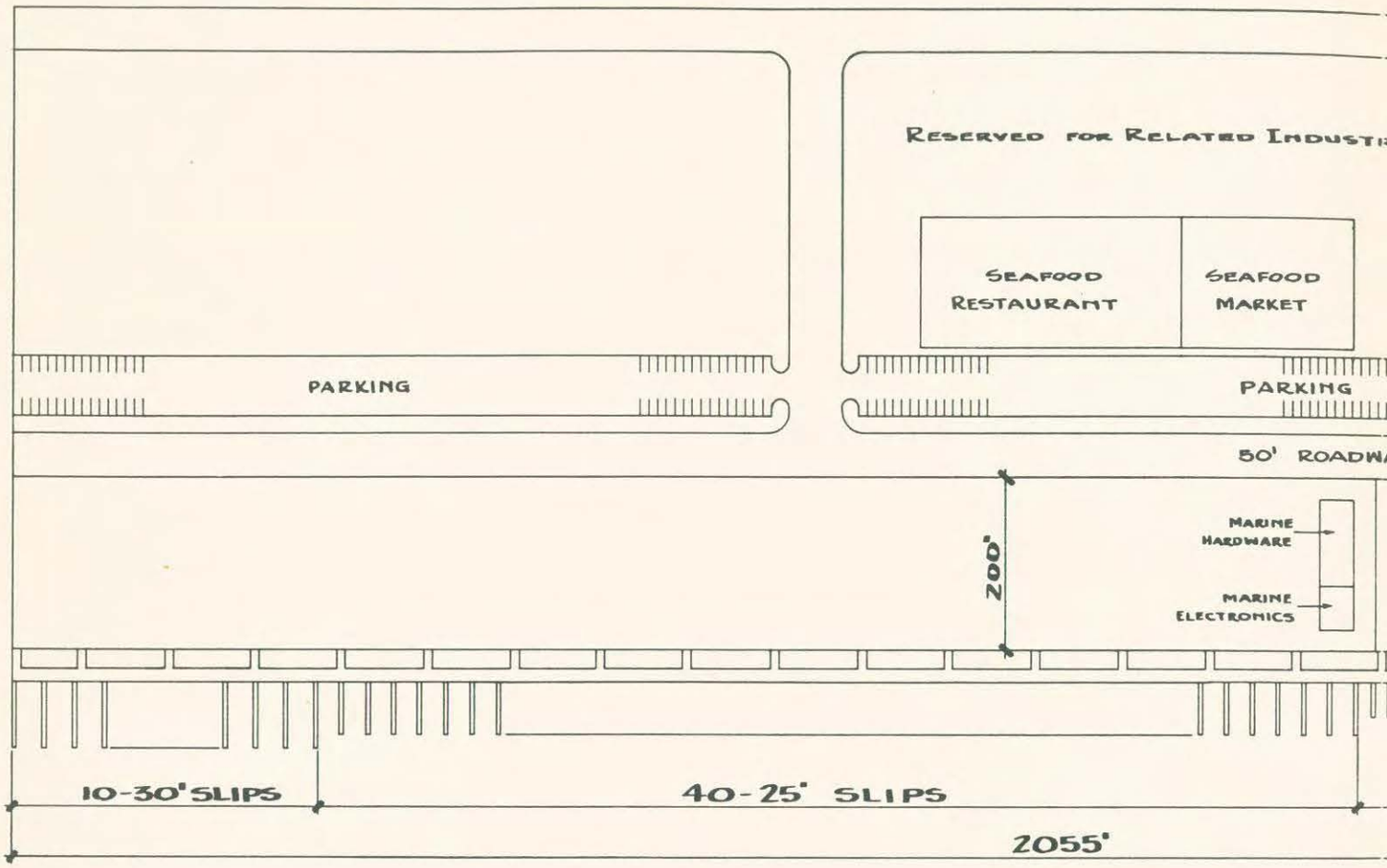
The objectives of grants are to assist in the construction of public facilities needed to initiate and encourage long-term economic growth where such growth is lagging. Grants are made for such public facilities as water and sewer systems, access roads to industrial parks, and port facilities. States and their agencies, private and public non-profit organizations are eligible. Grants may be provided to finance up to 50% of total project costs; funds could not be disbursed for costs incurred until all contracts for construction have been awarded.

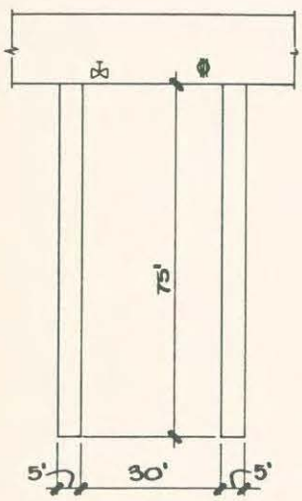
The EDA, through its business assistance program, is empowered to make direct loans to help businesses expand or establish plants in redevelopment areas. This is primarily for projects that cannot be financed through banks or other private lending institutions. Loans may be used for the acquisition of fixed assets only (i.e., land, buildings, machines and equipment). Maximum terms are 25 years with these funds not being disbursed until all other funds have been injected into the project.

The CPRC functions in much the same way as the EDA. Table 7.2 shows that $2.9 million could be provided by CPRC on a federal grant. The total dock construction costs, $1.4 million, would come from the EDA. The working capital of $300,000 could be financed by a revenue bond. The State and/or local Government could also provide an additional source of funding on a matching basis.

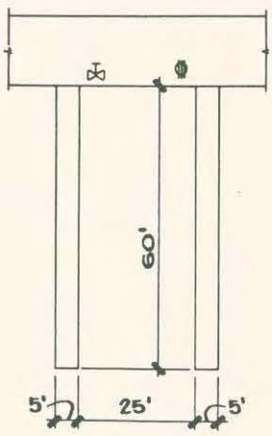
TABLE 7.1 - ESTIMATED CONSTRUCTION COST FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

ITEMS	COST (DOLLARS)
Dock	
Process and Service Area	
975' x 15' marginal pier	$ 214,841
975' fender system	48,750
10 ramps 15' x 22'	23,100
Total Process and Service Area	$ 286,691
Berth Area	
2,055' x 15' marginal pier	$ 452,819
20 ramps 15' x 22'	46,200
75 finger piers 20, 750 square feet	145,250
9,975' timber fender system	498,750
Total Berth Area	$1,143,019
Total for Dock	$1,429,710
Facilities	
Fill and grade 359,000 cubic yards	$ 369,750
Base and pave 39,333 square yards roadway	113,627
Dredging 66,000 cubic yards	85,000
Sewage plant and piping	250,000
Well, pump and piping	200,000
Electrical	100,000
Ice plant	100,000
Buildings:	
Office, lounge, grocery 50' x 150'	90,000
Cold storage 50' x 75'	93,750
Ice, fuel, pump-out 40' x 80'	38,400
Gear storage (2) @ 40' x 200'	192,000
Seafood dealers 8 @ 30' x 50'	144,000
Engine repair shop 40' x 150'	72,000
Marine electronic shop 45' x 50'	27,000
Marine hardware shop 45' x 100'	54,000
Freezing and packaging house 150' x 150'	270,000
Canning plant 150' x 150'	270,000
Fish meal plant 75' x 100'	90,000
Net repair shop 40' x 150'	72,000
Seafood market 45' x 100'	54,000
Seafood restaurant 45' x 200'	108,000
Total for Facilities	$2,913,527
Land Costs (60 acres)	$ 720,000

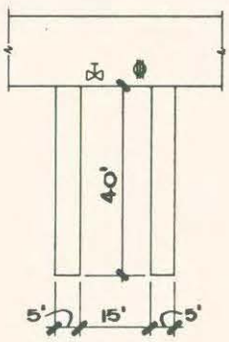




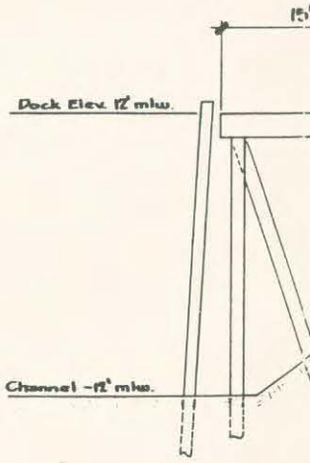
TYP. 30' SLIP



TYP. 25' SLIP



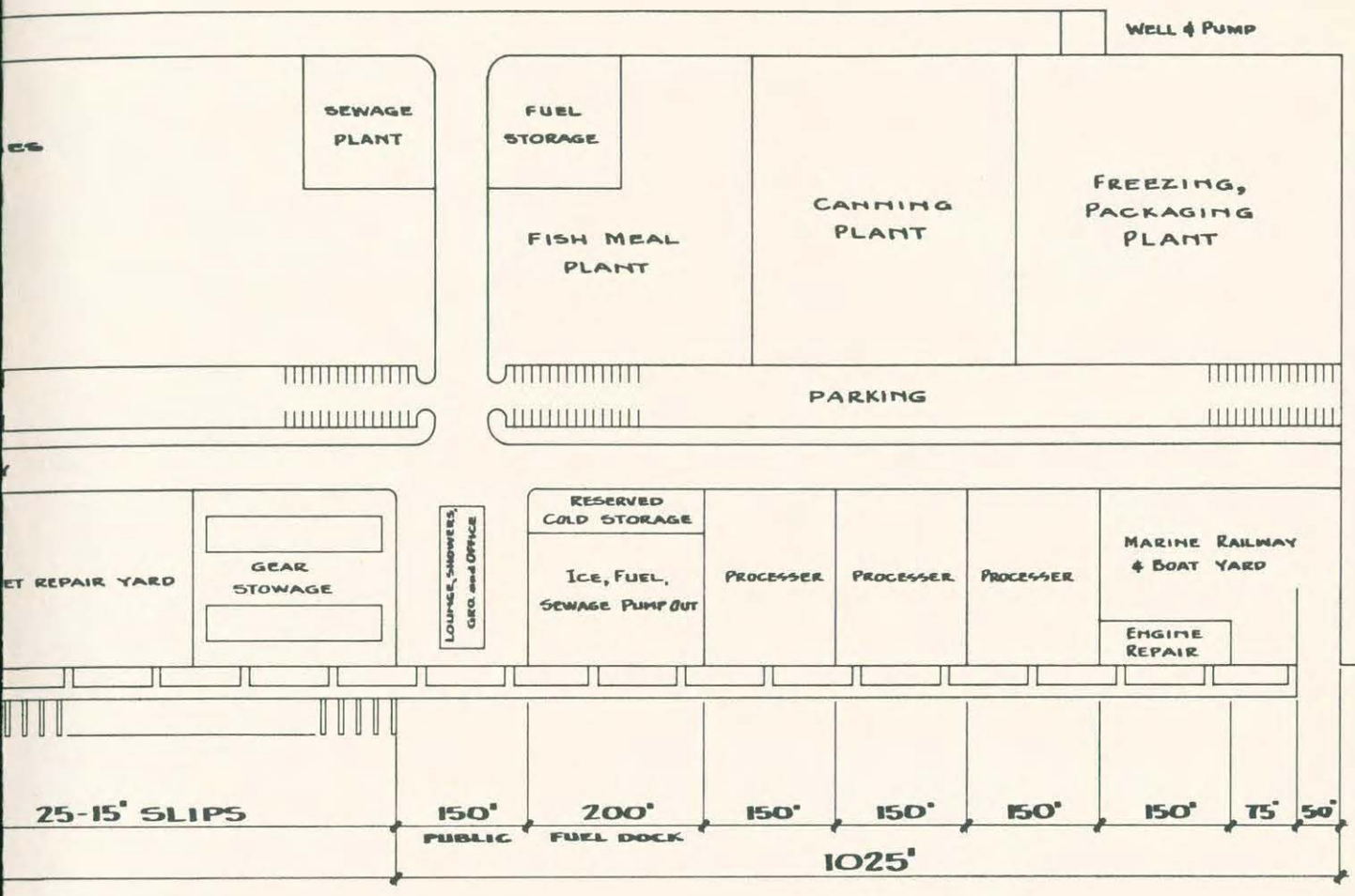
TYP. 15' SLIP

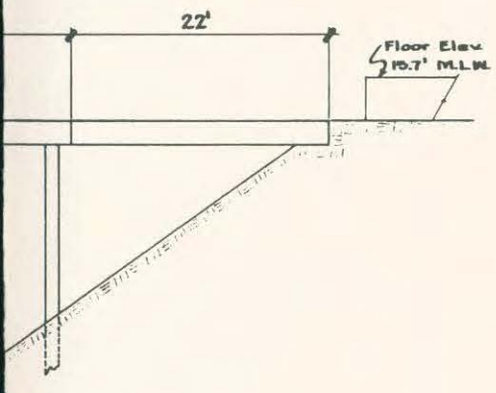


TYPICAL D

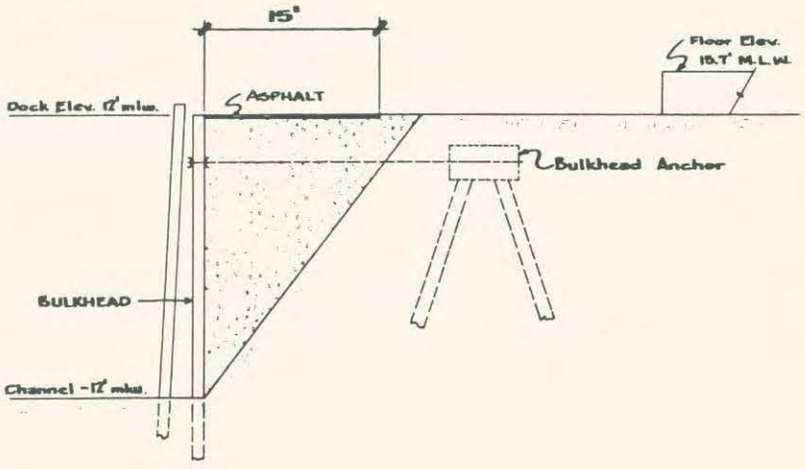
LEGEND:

- Fresh Water Outlet
- 220/110 volt Outlet





OCK SECTION



BULKHEAD ALTERNATE

South Carolina State Ports Authority

PROPOSED SEAFOOD INDUSTRIAL PARK

REVISIONS			Prepared For South Carolina Wildlife and Marine Resources Department
NO	DATE	BY	
			DWG BY Bunch / PROJECT NO
			CHK'D BY / SCALE / DRAWING NO
			APP'D BY / DATE DEC 4, 1975

TABLE 7.2 - SOURCE AND COST OF CAPITAL FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

SOURCE	AMOUNT	TERMS (YEARS)	INTEREST RATE (%)	ANNUAL INTEREST PAYMENT	ANNUAL PRINCIPAL REPAYMENT
Economic Development & Administration (Loan)	$ 720,000	25	8	$40,772	$28,800
Revenue Bond	300,000	20	7.50	14,001	15,000
Economic Development Administration (Grant)	1,429,710	-	-	-	-
Coastal Plains Regional Commission (Grant)	2,913,527	-	-	-	-
TOTAL	5,363,237			54,773	43,800

FINANCIAL PERFORMANCE

A project like this must show financial performance capable of repaying its debts while covering operating costs.

The generation of revenue from this port would come largely from concession and tenancy contracts. The Port Authority would be responsible for the letting of contracts with tenancy comprised of the home fleet of fishing vessels and industry related businesses dock-side (packing houses, boat yard, etc.). Concessions either fully or partially under jurisdiction of the Port Authority would be ice and fuel sales.

REVENUES FROM DOCK RENTAL

Rental of berths of the first year should not be expected to exceed 50 vessels, while second year leases should be around 75 (Table 7.3). Leasing of docking space to a commercial fishing vessel is a totally new concept to the industry in this state and is one that may be met with some consternation. There are numerous advantages to the fishermen, however, that should show benefits outweighing costs. Some of these benefits include his right to choose with which processor he will do business without fear of losing docking space and related services. He may even market his own catch if he so chooses. A work yard of sufficient space would be provided so that he may maintain his fishing equipment in good condition. His investment would be protected from loss due to vandalism or other causes during non-working hours by the park security force. Shrimpers who use this facility will also have a private berth (See Figure 5). This would alleviate some of the inconveniences involved in shuffling boats in the early morning hours and facilitate in loading and unloading of gear.

Lease fees for berthage are estimated on a $1.50 per foot basis monthly and would be calculated on the dockside space of each slip. Revenues to the facility the first year are estimated at $20,250. Second year revenues are approximately $30,150 (Table 7.3).

REVENUES FROM FACILITIES RENTAL

In Plan I, the Port Authority would construct buildings to house tenants. The standard lease would run for a period of five years with a five year option of renewal.

As in dock rentals, occupancy the first year could not be expected to be 100%. A minimum of twelve tenant businesses are estimated to locate within the park during year one. Primarily fleet support operation, revenues from these leases are expected to be $94,1000 (Table 7.4).

The second year of operation would possibly bring tenancy to 100%; however, this is probably not a realistic assumption. If all twenty-one buildings were leased, annual revenues would increase to $251,100. This substantial increase is due to the leasing of larger structures such as a freezing-packaging plant, canning plant, and a seafood restuarant.

Fee computation is based on $2.00 per square foot per year for all components except the Boat Yard. This unit rental is based on $1.50 per front foot per month for dockside space and $1.00 per front foot per month for nondockside space.

FUEL SALES

Arrangements for providing fuel to the resident fleet would be made through a concession partially controlled by the port. This concession would be let to any vendor who could handle such constant demand. Table 7.5 typifies what revenues could be expected if the operating organization attached a $.02 per gallon levy on all fuel sales.

Fuel consumption figures were based on computations from Marine Business Aid, Extension Marine Advisory Programs, 1974.

TABLE 7.3 - ESTIMATED REVENUES FROM DOCK RENTAL FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

TYPE OF SLIP	SLIP RENTAL FOR MONTH	1ST YEAR		2ND YEAR	
		NO. OF SLIPS LEASED	REVENUES FROM RENTALS	NO. OF SLIPS LEASED	REVENUE FROM RENTALS
15 feet	$22.5	16	$ 4,320	25	$ 5,400
25 feet	$37.5	27	$12,150	40	$18,000
30 feet	$45.0	7	$ 3,780	10	$ 6,750
TOTAL		50	$20,250	75	$30,150

TABLE 7.4 - ESTIMATED REVENUES FROM FACILITY RENTAL FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

FACILITY[a]/	NUMBER OF UNITS	SQUARE FEET/ UNIT	1ST YEAR		2ND YEAR	
			NO. OF UNITS LEASED	REVENUE FROM RENTALS	NO. OF UNITS LEASED	REVENUES FROM RENTALS
Cold storage shop	1	3,750	1	$ 7,500	1	$ 7,500
Gear storage	2	8,000	1	16,000	2	32,000
Seafood dealers	8	1,500	5	15,000	8	24,000
Engine repair shop	1	6,000	1	12,000	1	12,000
Marine electronics and hardware	1	6,750	1	13,500	1	13,500
Net repair shop	1	6,000	1	12,000	1	12,000
Boat yard[b]/	1	-	1	8,100	1	8,100
Seafood market	1	4,500			1	9,000
Seafood restaurant	1	9,000			1	18,000
Freezing, packaging plant	1	22,500			1	45,000
Canning plant	1	22,500			1	45,000
Fish meal plant	1	7,500			1	15,000
Grocery and lounge	1	5,000	1	10,000	1	10,000
TOTAL	21		12	$94,100	21	$251,100

[a]/Facility rental is $2.00/square foot per year.

[b]/Boat yard rental is $1.50 per front foot per month for dockside space and $1.00 per front foot per month for non-dockside space.

TABLE 7.5 - ESTIMATED REVENUES FROM FUEL SALES FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

ITEM	1ST YEAR	2ND YEAR
Number of vessels using park	50	75
Daily fuel consumption per vessel (gallon)	152	152
Number of fishing days	144	144
Fuel sales to vessels (gallon)	1,094,400	1,641,600
Fuel sales to other users (gallon)	109,440	164,160
Total fuel sales (gallon)	1,203,840	1,805,760
Net revenues from fuel sales[a]/ ($)	24,077	36,115

[a]/2¢ net revenue per gallon on fuel sales

Number of fishing days was derived from the dockside survey of this study.

These revenue figures reflect only resident fleet usage. It is highly likely that transient vessels, both pleasure and commercial, could contribute even more to park revenue by their purchase of fuel.

ICE SALES

Ice sales represent a service provided by the operating organization under direct control. The amounts of revenue expected to be generated for the port in its first and second year is exhibited in Table 7.6.

The basis for second year figures is full occupancy by the home fleet of 75 vessels plus expanded tenancy of related park industry. It was learned through the dockside survey that the average shrimp trawler would be expected to use 22 blocks of ice (1 block = 300 lbs.) per week during peak season. Off season consumption would approach 11 blocks. The shrimp fleet would be expected to use 49,500 blocks of ice per year while other facility users could be expected to consume nearly 5,000 blocks. The operating organization should derive net revenues of $164,489 from sales of ice at $3.65/block (Table 7.6).

COST FOR PARK ADMINISTRATION AND TREATMENT PLANT

Total annual costs for administration is estimated at $80,000 (Table 7.7). Employment in the administration sector is expected to be five people, three managers and clerical and two unskilled (Table 7.1). Salaries and fringe benefits would contribute $60,000 while office expenses, utilities, and other contingencies would constitute the balance.

Treatment plant figures were based on plants of comparable size. It was estimated that total expenses would be about $24,860. Major expense items include water, chemicals, electricity, and labor costs. A contingency of 10% was added.

INCOME STATEMENT AND PRO FORMA BALANCE SHEET

In visualizing financial performance and conducting the analysis, an income statement, cash flow table and pro forma balance sheet were prepared (Tables 7.8, 7.9 and 7.10).

Construction time for this project is estimated to be 12 months. During this period, no revenues will be realized, but there will be an outflow of operating capital to cover debt services. Annual interest payment is calculated to be $54,772 and principal repayment of $43,800. The total, $98,573 is a capital expense and comprises the total cash expense for the construction year. The beginning cash balance is reduced from $300,000 to $201,427 at year end (Table 7.9). The park's pro forma balance sheet shows a substantial decrease in net worth at the end of the construction year (Table 7.10). This is due wholly to the sizable debt incurred for financing this project.

Partial occupancy of the park during year I will be reflected in revenues generated. Total revenues will amount to $237,896. Coupled with cash expenses of $268,582 the facility will show a loss of $30,686 (Table 7.8). The port's year end cash balance of operating capital is again reduced, this time to $170,741 (Table 7.9). Net worth is increased to $4,344,642, this time not because of an increase in liabilities, but because of accummulated depreciation. Total liabilities are declining as the port begins to retire its debt (Table 7.10).

Full occupancy after the second year of operation begins to move the facility into a more favorable financial balance. Total revenues are now greater than total expenses.

In fact, the port has moved from a net cash income of -$30,686 after the 1st year of operation to a +$203,044 at the end of the second year. This is an ex-

TABLE 7.6 - ESTIMATED REVENUES FROM ICE SALES FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

ITEM	1ST YEAR	2ND YEAR
Number of vessels using park	50	75
Weekly ice consumption/vessel:		
peak season (blocks)	22	22
off season (blocks)	11	11
Ice sales to vessels (blocks)	33,000	49,500
Ice sales to other facility users (blocks)	3,300	4,950
Total ice sales (blocks)	36,300	54,450
Gross revenue ($)	132,495	198,743
Operating Expenses:		
Electricity	22,750	22,750
Water	792	1,188
Labor costs	6,480	7,200
Others	3,002	3,114
Total Operating Expenses	33,026	34,254
Net Revenue ($)	99,469	164,489

TABLE 7.7 - ESTIMATED ANNUAL OPERATIONAL EXPENSES FOR PARK ADMINISTRATION AND TREATMENT PLANT

EXPENSE ITEMS	ANNUAL OPERATIONAL EXPENSES
Administrative	
Salaries and fringe benefits	$60,000
Office Expenses	5,000
Utilities	10,000
Others	5,000
Total Expenses for Administration	$80,000
Treatment Plant	
Waters	$ 1,500
Chemicals	600
Electricity	4,500
Labor Costs	16,000
Other	2,260
Total Expenses for Treatment Plant	$24,860

TABLE 7.8 - INCOME STATEMENT FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

ITEM	CONSTRUCTION YEAR	1ST YEAR OPERATIONS	2ND YEAR OPERATIONS
1. Revenues:			
Dock rental	0	$ 20,250	$ 30,150
Facility Rental	0	94,100	251,100
Net revenue from fuel sales	0	24,077	36,115
Net revenue from ice sales	0	99,469	164,489
Total Revenues	0	$237,896	$481,854
2. Cash Expenses:			
Administrative	0	$ 80,000	$ 84,800[b]/
Treatment plant	0	24,860	26,352[b]/
Repair and maintenance	0	65,149[a]/	69,085[b]/
Capital expenses	$98,573	98,573	98,573
Total Expenses	$98,573	$268,582	$278,810
3. Net Cash Income (1-2)-98, 573		-30,686	+$203,044

[a]/1.5% of total costs for dock and facilities.

[b]/6% of increased from 1st year.

TABLE 7.9 - CASH FLOW OF OPERATING CAPITAL FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

ITEM	CONSTRUCTION YEAR	1ST YEAR	2ND YEAR
Beginning Cash balance	300,000	201,427	170,741
Cash inflow			
Revenues	0	237,896	481,854
Borrowings	0	0	0
Cash outflow			
Cash expenses	98,573	268,582	278,810
lendings	0	0	0
Year end cash balance	201,427	170,741	373,785

TABLE 7.10 - PRO FORMA BALANCE SHEET FOR SEAFOOD INDUSTRIAL PARK

ITEM	END OF CONSTRUCTION YEAR	END OF 1ST YEAR OPERATIONS	END OF 2ND YEAR OPERATIONS
Assets			
1. Current Assets	$	$	$
Cash	201,427	170,741	373,785
Receivables	-	-	-
Total Current Assets	201,427	170,741	373,785
2. Fixed Assets			
Land	720,000	720,000	720,000
Facilities & Dock	4,343,237	4,343,237	4,343,237
Accummulated Depreciation	0	0	0
Net Fixed Assets	5,063,237	5,150,101	5,286,966
3. Total Assets (1 & 2)	5,264,664	5,320,842	5,610,751
Liabilities			
1. Current Liabilities due within one year on long term debt	43,800	43,800	43,800
2. Long-term liabilities			
EDA Loan	691,200	662,400	633,600
Revenue Bond	285,000	270,000	255,000
Total Long Term	976,200	932,400	888,600
3. Total Liabilities	1,020,000	976,200	932,400
Net Worth	$4,244,664	$4,344,642	$4,678,351

tremely healthy sign and is supported by a substantial increase in the year end cash balance of $170,741 to $373,785 (Table 7.9). Net worth has also shown signs of being on the increase (Table 7.10).

PLAN II

CONSTRUCTION COSTS AND FUNDING

As an alternate, Plan II was developed using primarily the same parameters as in Plan I. Total construction costs here are estimated at $3,436,487 (Table 7.11). This represents a reduction of $1,626,750 in outlays from Plan I. Excluded from this idea are all buildings included in Plan I. Under this plan, the construction of buildings in question would be left up to the individual tenants.

The total project costs are estimated at $3,736,487, which include a working capital of $300,000. Most project costs will be financed by Federal grants. The Coastal Plains Regional Commission and the Economic Development Administration will be approached as the major granting agencies, with the State matching a small percentage of the total costs.

FINANCIAL PERFORMANCE

In this plan also, revenues eventually must equal or exceed costs:

(1) Revenues from Dock Rental
Revenues from this source would not change. Vessels would be charged the same fees as are given in Table 7.3.

(2) Revenues from Facilities Rental
Table 7.12 represents the only other major difference between this and Plan I. As there are no buildings constructed for lease purposes, the port has the authority to change lease fees based on the lot on which the tenant will build his business.

As in Plan I, first year leases are not expected to be more than twelve units. Lot rental is $1.50 per front foot per month for dockside space and $1.00 per front foot per month for nondockside space. Revenues received the first year are expected to total $23,790. Revenues the second year will be $46,314.

The remaining source of revenue would remain the same, continuing at the same level. These sources, as discussed before, are the sale of fuel and ice to port users. The estimated annual operational expenses as exhibited in Table 7.7 would also remain the same.

(3) Income statement and pro forma balance sheet
The construction year would reflect a zero cash income because no principal and interest would be due on the project costs since most funds would be from Federal grants (Table 7.13). A cash flow of $300,000 operating capital would be required during the first 3 years (Table 7.14). The year end cash balance would remain at $300,000. Net worth would equal total assets ($3,736,487) because there would be no liabilities (Table 7.15).

Input of revenue during the first year of operation would total $167,586, enough to take care of cash expenses of $145,607. The port would have a net of $21,979 the first year (Table 7.13). The seafood industrial port's year end cash balance would stand at $321,979, with an increased net worth of $3,812,796 due to accumulated depreciation.

Full occupancy of the park during the second year would bring revenue close to full potential. Total revenues would be $277,068, with cash expenses of $154,343

TABLE 7.11 - CONSTRUCTION COSTS FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

ITEMS	COSTS
Dock	
Process and service area	$ 214,841
Berth area	1,143,019
Total for dock	1,429,710
Facilities	
Ice plant, sewage plant, etc.	1,218,377
Buildings:	
Office 50' x 50'	30,000
Ice, fuel, pump-out 40' x 80'	38,400
Total for facilities	1,286,777
Land	720,000
Total Construction Costs	3,436,487

TABLE 7.12 - ESTIMATED REVENUE FROM LOT RENTAL FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

LOT FOR FACILITY CONSTRUCTION	NO. OF LOTS	FRONTAGE PER LOT FT.	1ST YEAR NO. OF LOTS LEASED	1ST YEAR REVENUE	2ND YEAR NO. OF LOTS LEASED	2ND YEAR REVENUE
Cold storage	1	200	1	$ 2,400	1	$ 2,400
Gear storage	2	225	1	2,700	2	5,400
Seafood dealers	8	56	5	5,040	8	8,064
Engine repair shop	1	150	1	2,700	1	2,700
Marine electronics & hardware	1	200	1	2,400	1	2,400
Net repair shop	1	225	1	2,700	1	2,700
Boat yard	1	275	1	4,050	1	4,050
Seafood market	1	200	-	--	1	2,400
Seafood restaurant	1	400	-	--	1	4,800
Freezing, packaging plant	1	300	-		1	3,600
Canning plant	1	300	-		1	3,600
Fish meal plant	1	200	-		1	2,400
Grocery and lounge	1	150	1	1,800	1	1,800
TOTAL	21		12	$23,790	21	$46,314

Lot rental is $1.50 per front foot per month dockside space.

$1.00 per front foot per month for non-dockside space.

TABLE 7.13 - INCOME STATEMENT FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

ITEM	CONSTRUCTION YEAR	1ST YEAR OPERATION	2ND YEAR OPERATION
1. Revenues:			
Dock Rental	0	$ 20,250	$ 30,150
Lot Rental	0	23,790	46,314
Net Revenue from Fuel Sales	0	24,077	36,115
Net Revenue from Ice Sales	0	99,469	164,489
TOTAL REVENUES	0	$167,586	$277,068
2. Cash Expenses:			
Administrative	0	$ 80,000	$ 84,800[b]/
Treatment Plant	0	24,860	26,352[b]/
Repair and Maintenance	0	40,747[a]/	43,191[b]/
TOTAL CASH EXPENSES	0	$145,607	$154,343
3. Net Cash Income (1-2):	0	+$ 21,979	+$122,725

[a]/1.5% of total costs for dock facilities.

[b]/6% increased from 1st year.

TABLE 7.14 - CASH FLOW OF OPERATING CAPITAL FOR SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

ITEM	CONSTRUCTION YEAR	1ST YEAR	2ND YEAR
Beginning Cash Balance	$300,000	$300,000	$321,979
Cash inflow:			
Revenues	0	167,586	277,068
Borrowing	0	0	0
Cash outflow:			
Cash Expenses	0	145,607	154,343
Lending	0	0	0
Year End:			
Cash Balance	$300,000	321,979	444,704

TABLE 7.15 - PRO FORMA BALANCE SHEET OF SEAFOOD INDUSTRIAL PARK IN SOUTH CAROLINA

	END OF CONSTRUCTION YEAR	END OF 1ST YEAR OPERATION	END OF 2ND YEAR OPERATION
Assets			
1. Current Assets	$	$	$
Cash	300,000	321,979	444,704
Receivables	0	0	0
Total Current Assets	300,000	321,979	444,704
2. Fixed Assets			
Land	720,000	720,000	720,000
Facilities & docks	2,716,487	2,716,487	2,716,487
Accummulated Depreciation	0	54,330	108,659
Net Fixed Assets	3,436,487	3,490,817	3,545,146
3. Total Assets (1 & 2)	3,736,487	3,812,796	3,989,850
Liabilities			
1. Current liabilities Due within one year on long term debt	0	0	0
2. Long-term liabilities			
EDA loan	0	0	0
Revenue Bond	0	0	0
Total Long Term	0	0	0
3. Total Liabilities (1 & 2)	0	0	0
Net Worth	$3,736,487	$3,812,796	$3,989,850

and a net cash income of $122,725. the year end cash balance would increase to $444,704 after the second year of operation (Table 7.14). Net worth would be higher after the second year of operation than during the construction year and the port would be in sound financial condition.

SUMMARY

Plan I would be an extensive plan in that it would provide for the construction of a total facility, including a dock and all related industry within the port. Construction costs for this plan would be $5,063,237 and operating capital for the park would be $300,000. Net cash incomes derived the first year would be -$30,686, with second year net cash incomes at +$203,044.

Plan II differs from Plan I in that it would provide only for the construction of the dock and other common facilities. Construction costs would be $3,436,487, with net cash incomes derived the first year at $21,979. Second year net cash income would be $122,725. In this plan, the project would reach a positive net cash income at the end of the first operation year.

Plan I would, however, show a much greater surplus derived from the second year operation than Plan II. This is attributed to accrued revenues which would be much higher from the leasing of constructed facilities than the leasing of lots. Disadvantages of Plan I would be project costs ($5.3 million) with high annual financial charges of $98,573 for loan and revenue bonds. In contrast to Plan I, Plan II would be less expensive, with little or no debt for the project. In addition, the lessees have flexibility in contracting size of buildings according to their needs and capital availability.

CHAPTER VIII

CONCLUSIONS AND RECOMMENDATIONS

Fishermen and dealers in Beaufort County had a higher level of acceptance and positive regard for a seafood industrial park than those in Charleston County. The probability of success for such a project appeared to be higher in Beaufort County than in any other coastal area of South Carolina. However, there did appear to be a negative attitude among many seafood dealers in Beaufort County toward relocating to such a facility.

Based on site selection criteria and industry preference, the Port Royal Sound area appeared to be the most appropriate site for a seafood industrial park.

An analysis of the economic and sociological characteristics of Beaufort County indicated that the area is in need of industrial growth. The lack of employment opportunities is reflected in a declining population and emigration of young people. Income and housing conditions indicated substantial levels of poverty in Beaufort County. Almost one half of the County's income depends on military installations which are likely to fluctuate with defense needs.

The county's largest and most valuable commercial fishery, the shrimp resource, appears to have little potential for increased production. The oyster, clam, crab and finfish resources are not presently being harvested at optimal levels. There appears to be great potential for increasing finfish landings through an expanded fishing effort on offshore demersal species such as snapper, grouper, porgy, etc. Pelagic fish such as mackerels could also contribute significantly to an expanded fishery in Beaufort County. However, further biological and economic assessments are needed to obtain information needed by local fishermen.

Approximately 410 employment opportunities would be created for the local

community when all the basic and support units are in operation. An increase in the value of seafood would be expected to generate a direct income up to $4.1 million and an indirect income of about $3.6 million to the county due to multiplier effects. Savings to the facility users would be realized through the presence of a waste disposal and treatment plant and vessel repair and maintenance facilities.

Two plans were developed for operating the seafood industrial park. Plan I was an extensive plan in that it provided for the construction of a total facility. This included not only a dock but also all related industry within the park. Total cost for the project under this plan is estimated to be $5.3 million. Net cost incomes for the first and second year of operation are estimated to be -$30,686 and +$203,044, respectively. Plan II provides for only the construction of the dock and common facilities. In this plan, the project would cost $3.7 million and could reach a positive net cash income at the end of the first year of operation. Major advantages of Plan II are no debt and less expense.

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

We conclude that the proposed seafood port and industrial park would be a highly desired undertaking in the Beaufort County area. With certain caveats, we believe the chances of success of the port facility are good and that it would have high probability of solving many of the problems it is intended to solve.

The principal caveat is local acceptance of the concept and ultimate utilization of the facility by a significant percentage of the region's industry. If the facility is built and utilized, we are confident that its chance of success is excellent. If the facility were built but only minimally accepted and utilized, it would not only fail to solve the existing problems of the industry but it would also represent a failure of public investment.

A second reservation concerns the preliminary estimates used in providing the required economic analysis. However, the results of the economic analysis appears to provide considerable cushion for error.

A question of whether the resource base is adequate to permit full development of the facility has been repeatedly raised. This is still open to question in our judgement, but we believe the resource base is adequate to support the facility at a successful level.

In view of the above stated conclusions, we submit the following recommendations for further consideration.

(1) ENGINEERING AND DESIGN WORK

The cost estimates used in calculating financial performance of the project were based on preliminary data. It is therefore recommended that a more functional master plan be developed. More refined engineering, design and cost estimates, based on current cost data, should be developed into an overall construction blueprint for the project. Also, future design considerations should be as site specific as possible in the Beaufort County area.

(2) INTENSIVE INFORMATION AND EDUCATION PROGRAM

The concept of a seafood industrial park for South Carolina has not been placed in proper perspective. There is a general misconception among certain members of the seafood industry over the underlying principles of the concept. More extensive work is needed to establish an appropriate dialogue with fishermen, dealers and processors. Also, it is necessary to obtain a more organized feedback for defining the feasibility of such an undertaking. It is recommended that an intensive effort be made to improve upon the understanding of this concept among the various factions of the seafood industry.

(3) FISHERY RESOURCE ASSESSMENT

The fishery resource base to support a modern seafood port is questionable. We recommend that a resource assessment of the offshore demersal species such as snapper, grouper, porgy, etc. be conducted out of Beaufort County. Special emphasis should be put on the new Rhode Island High Rise Trawl. Additional information on pelagic species (mackerels) should also be compiled for evaluating the potentials of an expanded finfishery in Beaufort County.

ACKNOWLEDGEMENTS

The authors express thanks to William H. Lacey, III for his valuable assistance in the field survey and compilation of statistical data. It was only through his perseverance at dockside that this project was successfully completed.

Special acknowledgement is due William J. Mazorol, Jr., Chief of Planning and Design, South Carolina State Ports Authority, in providing a conceptual design with preliminary budget cost estimates.

We are also grateful to Ellen King who assisted with the dockside interviews in Beaufort County and to Steven Goldstein who participated in the mail survey. Karen Swanson did the graphics and Emily Schroeder and Myra Hair typed the manuscript.

Finally, we thank the many commercial fishermen and seafood dealers who participated. Without their cooperation, this study could not have been completed.

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APPENDICES

APPENDIX A

South Carolina
Wildlife & Marine
Resources Department

James A. Timmerman, Jr., Ph.D.
Executive Director
Edwin B. Joseph, Ph.D.
Director of
Marine Resources Center

May 27, 1975

Dear Sir:

The Marine Resources Division of the South Carolina Wildlife and Marine Resources Department is undertaking a study to determine the feasibility and possible location of a modern port facility designed for commercial fishing craft.

In order for us to properly evaluate the feasibility, location and services to be offered in the facility, we need the views of the commercial fishermen and seafood dealers. Therefore, we would appreciate your taking a few minutes to complete the enclosed questionnaire and return it in the envelope provided as soon as possible.

It should be emphasized that this is just a preliminary study designed to obtain as much information as possible on the need(s) for such a port. This study may or may not result in the development of further plans for a modern seafood port.

If you are willing to offer comments by dockside interviews, we would appreciate your name and address at the end of the questionnaire. All responses will be strictly confidential.

Thank you very much for your time and trouble.

Sincerely yours,

EDWIN B. JOSEPH
Director

EBJ/ess

enclosure

P. O. Box 12559 ■ Charleston, South Carolina 29412 ■ Telephone (803) 795-6350

South Carolina Wildlife & Marine Resources Department

James A. Timmerman, Jr., Ph.D.
Executive Director
Edwin B. Joseph, Ph.D.
Director of
Marine Resources Center

QUESTIONNAIRE

1. Which of the following services or facilities, if available at a modern port, would improve your fishing operation?

1. _____ Shrimp packing house
2. _____ Crab packing and picking house
3. _____ Shellfish shucking house
4. _____ Shellfish packing and shipping house
5. _____ Fish packing plant
6. _____ Independent landing facilities
7. _____ Independent docking facilities
8. _____ Central freezer and cold storage facility
9. _____ Ice plant or ice storage facility
10. _____ Liquid waste disposal facility
11. _____ Marine hardware, supply, net making and repairs
12. _____ Marine electronics service
13. _____ Diesel engine service
14. _____ Marine railway
15. _____ Diesel fuel and gasoline sales
16. _____ Grocery supplies
17. _____ Fisherman's meeting room
18. _____ Gear storage area
19. _____ Solid waste Disposal Processing facility (shrimp heads, fish, scrap, etc.)
20. _____ Other

P. O. Box 12559 ■ Charleston, South Carolina 29412 ■ Telephone (803) 795-6350

2. Assuming all facilities you have checked above were present, would you dock your boat at such a port if it were located at a convenient distance from your home?

_____ Yes _____ No

3. For the port to be convenient, what is the maximum distance you could travel from your home to use such a port?_____

4. For the port to be convenient, what is the maximum distance the port could be from the fishing grounds: _____ Miles.

5. Type of seafood operation. Fisherman _____ Boat Owner _____ Dealer _____.

Your major product. (Check Species)

Shrimp _____
Crab _____
Oyster _____
Finfish _____
Other (Please indicate _____

6. Size of boat or vessel: Length _____ft.
Loaded draft _____ft.

7. Would you be willing to be interviewed in the future concerning this proposed port?

_____ Yes _____ No

8. Do you think South Carolina needs a modern port facility designed for fishing craft?

_____ Yes _____ No

9. If you answered yes to question number 8, where would you prefer to see such a modern seafood port location in South Carolina?

_____(Nearest town)

_____(Nearest body of water)

APPENDIX B

South Carolina
Wildlife & Marine
Resources Department

James A. Timmerman, Jr., Ph.D.
Executive Director
Edwin B. Joseph, Ph.D.
Director of
Marine Resources Center

Dear Sir:

May we again call your attention to the questionnaire mailed to you on 27 May 1975 concerning the possibilities of locating a modern seafood port facility in South Carolina? If you have not responded to this notice previously, we request that you do so as soon as possible. Realizing that this is certainly a busy time of the year for fishermen, we feel that the importance of the questionnaire has probably gone unnoticed by many.

We would emphasize that this Department is not promoting the development of a modern seafood port facility at this time but only trying to determine if it is feasible at all. Therefore, your participation, regardless of whether you are for or against the project, is vital to an accurate assessment of the fisherman's views and needs. Thus far, we have received very few returns on the questionnaires and can only ask for your consideration and help in stressing the success of this study.

Your prompt attention to this matter is appreciated and again we request that you assist us in determing the feasibility of said port facilities.

Sincerely yours,

EDWIN B. JOSEPH
Director

EBJ/ess

P. O. Box 12559 ■ Charleston, South Carolina 29412 ■ Telephone (803) 795-6350

APPENDIX C

QUESTIONNAIRES FOR MODERN

SEAFOOD PORT FACILITY STUDY

"Hello, I' _____. I'm working on a survey about feasibility of a centralized seafood port facility designed for commercial fishing craft for the Marine Resources Division of the South Carolina Wildlife and Marine Resources Department. I would like to ask you a few interesting questions. All information that you give us is strictly confidential and the results are tabulated for the area as a whole not for any one person."

Interviewer: Explain the designed Seafood Port Facility

ASK OF ALL

1. Do you think that a centralized seafood port facility would be beneficial to you.

   No Benefit Very Beneficial

   1 2 3 4 5

2. Do you think a centralized seafood port facility would benefit the local community?

   No Benefit Very Beneficial

   1 2 3 4 5

3. Do you feel that such facility would be beneficial to the South Carolina Seafood industry?

   No benefit Very Beneficial

   1 2 3 4 5

4. Would perfer to have the facility in (check one):

   _____Port Royal area
   _____St. Helena Sound area
   _____Rockville
   _____Charleston
   _____McClellanville

5. What are the major reasons for your choice of this location (check)?

_____near to fishing grounds
_____near to home port
_____availability of land
_____good transportation
_____acceptance by local community
_____conductivity to growth of fishing industry
_____increase local employment
_____increase tourism and other industry
_____improve effenciency in seafood processing and marketing
_____maintain environmental quality
_____other (specify)_____

_____

6. During 1975 are you working primarily as a boat owner, a fisherman, or both, or a dealer? (Check)

_____boat owner
_____fisherman
_____dealer
_____others (specify)_____

_____

Interviewer: If dealers are also boatowners, or fisherman, ask questions in both fisherman and dealer questionnaires.

ASK FISHERMAN OR BOAT OWNER ONLY

1. Did you operate more than one boat during 1975? If yes, how many different boats did you operate altogether?

   Yes _____ Number of boats _____

   No _____

2. I'd like to get some information about your boat?

	Boat 1	Boat 2
Name	_____	_____
Age	_____	_____
Hull material	_____	_____
Length	_____	_____
Beam	_____	_____
Power (H.P.)	_____	_____
Type of gear	_____	_____
Size of gear	_____	_____
Boat's current value	_____	_____
Radar (yes or no)	_____	_____

3. Do you have any employee (include non-payed family help)?

   Yes _____ If yes, how many _____

   No _____

4. Where do you dock now? (Name and location)

   _____

5. How much ice per week do you use?

   peak season: _____blocks; $ _____ cost per block
   off season: _____blocks; $ _____ cost per block

6. Would you please name the fishery(ies) in which you participated?

   _____shrimp
   _____crab
   _____oyster
   _____finfish
   _____others (specify)_____
   _____

7. Do you sell incidental catch taken during the normal fishing operation?

   Yes _____

   No _____

If yes, what is the type of incidental catch?

Food fish _____
Crabs _____
Scrapfish _____
Others _____ (Conchs, Horseshoe crabs, etc.)

8. Do you have any job beside fishing?

Yes _____

No _____

If yes, what specific type or types of work did you do?

JOB I _____

JOB 2 _____

9. How many days per week were you actually fishing in South Carolina, during 1974?

_____ How many months? _____

10. Did you fish in other States?

Yes _____

No _____

If yes, number of days per week? _____ How many months? _____

11. Do you favor the Centralized Seafood Port Facility to be owned and operated by (Check one):

_____ Self-governing (board, trust, authority, commission)

_____ Private (industry owned)

_____ Public/State

_____ County

_____ Others (specify) _____

_____

ASK DEALER ONLY

1. How many boats regularly dock at your facility? _____boats; In State
   _____boats; Out of State

2. What is the linear footage of your dock ? _____feet

3. How many square feet of working area are in your present packing and handling houses? _____square feet
   cooler size? _____square feet

4. What services do you offer the fisherman? (check)

   fuel _____
   ice _____
   groceries _____
   railway _____
   general repairs to net _____
   other _____

5. What kind of seafood business do you do? (Check)

   packing _____
   processing _____
   retail _____
   wholesale _____
   buying _____
   storage _____
   transportation_____
   other (specify) _____
   _____

6. How much ice do you sell per week?

   peak season _____
   off season _____

7. How many people do you employ?

   peak season _____
   off season _____

8. Would you please name the seafood in which you handled?

   _____shrimp
   _____crabs
   _____oysters
   _____finfish
   _____others (Specify)_____
   _____

9. What kind of fish processing do you do? _____
   _____

10. Do you have freezer facilities for holding an inventory of seafood? _____
    Is it a holding freezer or blast-holding? _____
    What is the size in square feet? _____
    Do you plan to expand the freezer? Yes ___ No ___ To What Size _____

11. What is your largest market and second largest market for the products you handled, (give me the name of the city, urban area? _____

_____

_____

Type of Products	Largest Market	Second Largest

12. What % of the products you handled are shipped by the following carriers?

Type of Products	Truck	Rail	Water	Air

13. Rank from 1 to 7 the importance problems you face: (1 for most important problem)

_____ fluctuations in production

_____ marketing and advertising

_____ lack of cold storage facility

_____ shortage of workers

_____ competition from other buyers

_____ lack of market information

_____ lack of capital

14. Do you favor such facility to be owned and operating by (check one):

_____self-governing (board,trust, authority commission)

_____private (industry owned)

_____public/state

_____ county

_____others (specify) _____

_____

Optional:

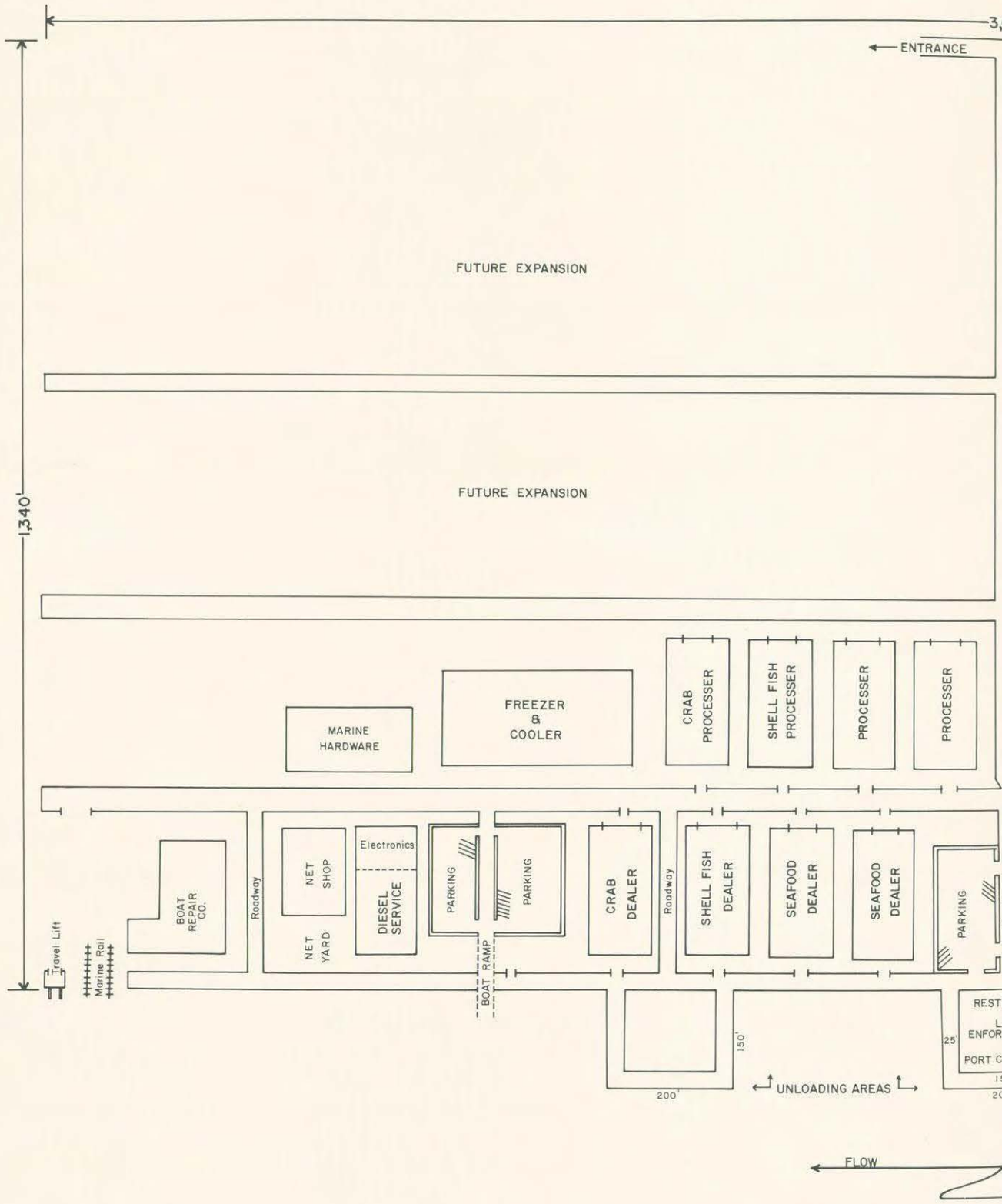
Name _____

Address _____

Thank you very much for your time!

_____ _____

(interviewer's signature) (date)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Electronics
DIESEL SERVICE
PARKING
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BOAT RAMP
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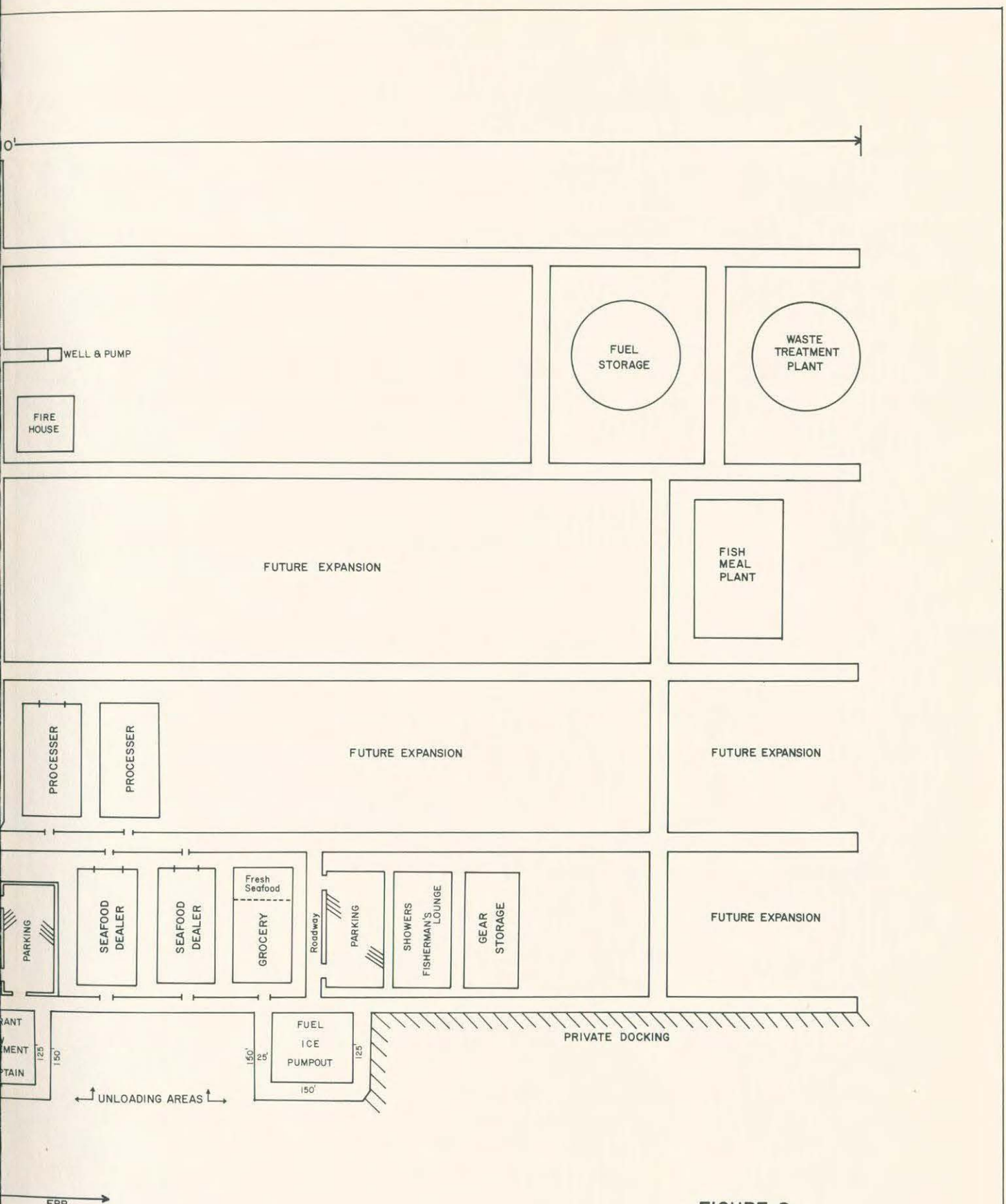


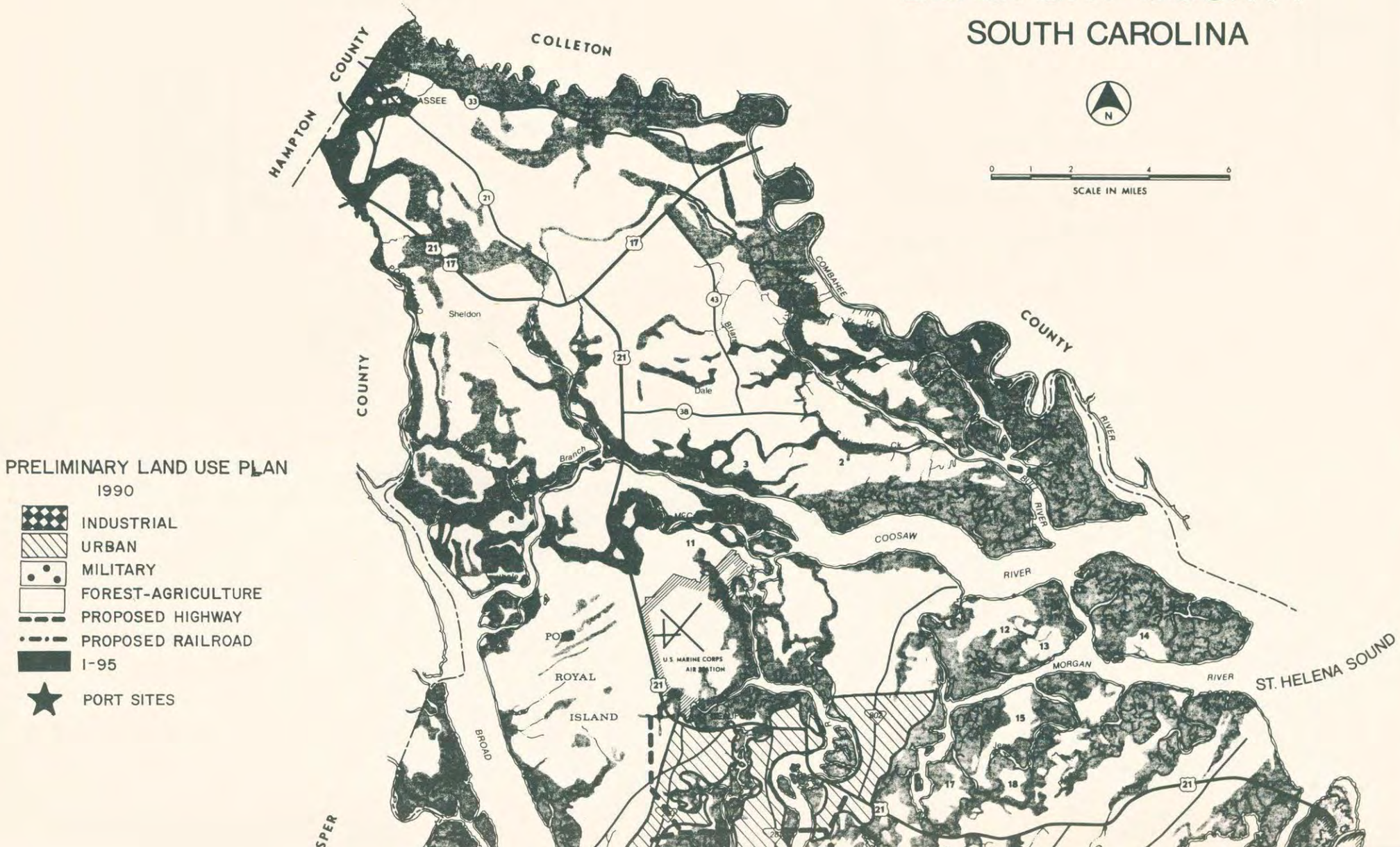
FIGURE 8

SEAFOOD INDUSTRIAL PARK CONCEPT		
BEAUFORT COUNTY - 93 ACRES	1"=100'	
S.C.W.M.R.D.		
26 APR. 76		

FIGURE 3

BEAUFORT COUNTY

SOUTH CAROLINA



LEGEND

- INTERSTATE HIGHWAY
- FEDERAL HIGHWAY
- STATE HIGHWAY
- COUNTY ROAD
- STATE BOUNDARY
- COUNTY BOUNDARY
- CITY LIMITS
- WETLANDS
- CREEKS
- RIVERS
- PUBLIC & SEMI-PUBLIC AREAS

ISLANDS

1. WILLIMAN IS.
2. CHISOLM IS.
3. HALFMOON IS.
4. BUZZARD IS.
5. OAK IS.
6. JACK IS.
7. HALL IS.
8. BALL IS.
9. BARNWELL IS.
10. LITTLE BARNWELL IS.
11. PORKY IS.
12. COOSAW IS.
13. JUDGE IS.
14. MORGAN IS.
15. DATHA IS.
16. PINE IS.
17. WARSAW IS.
18. POLA WANA IS.
19. GIBBS IS.
20. CANE IS.
21. CAT IS.
22. PARRIS IS.
23. ST. PHILLIPS IS.
24. BAY POINT IS.
25. CAPERS IS.
26. PRICHARDS IS.
27. FRIPPS IS.
28. HARBOR IS.
29. LEMON IS.
30. ROSE IS.
31. CALLAWASSIE IS.
32. SPRING IS.
33. DAWS IS.
34. PINCKNEY IS.
35. JENKINS IS.
36. BARATARIA IS.
37. BULL IS.
38. PAGE IS.
39. PINE IS.

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BY LBCSW CONSULTANTS-PLANNING, RESEARCH, MANAGEMENT, INC.
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