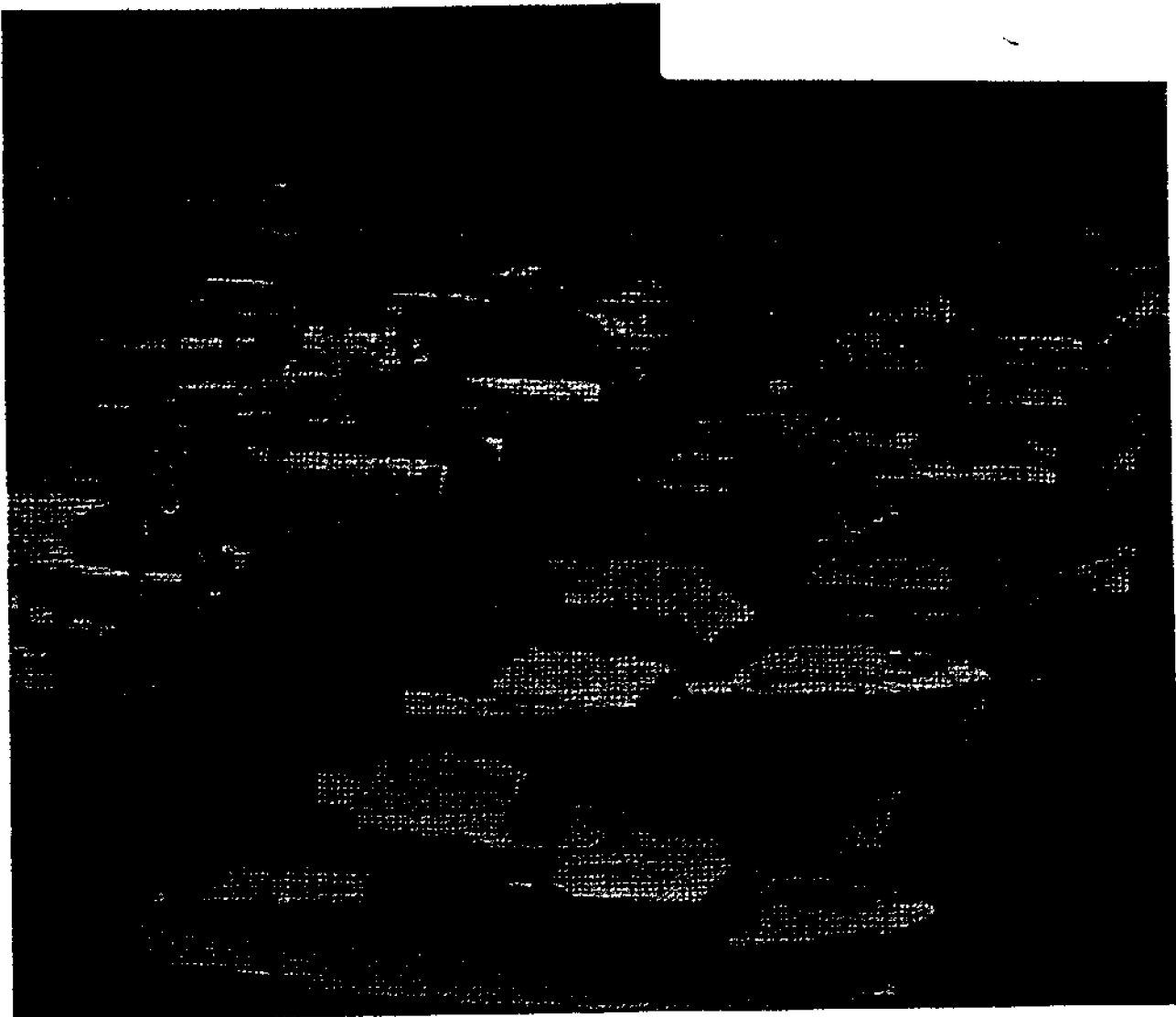


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**The New York Commercial Marina
and Boatyard Industry, 1972**

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Dick Noden and Tommy Brown

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Photo: Boatyard, Shinnecock Canal, Long Island, New York.
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THE NEW YORK COMMERCIAL MARINA
AND BOATYARD INDUSTRY, 1972

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ABSTRACT

With estimated annual gross revenues of \$95 million, commercial marinas and boatyards represent one of New York State's most important recreational industries. Interviews with 161 of the nearly 700 firms in the State disclosed that marinas offer a wide array of boating services, but these services differ with respect to geographical location and size of firm. Typically, marinas are well established firms, with high fixed costs, operating on a small profit margin. Operators stated they were little affected by public marinas, and their most serious problems centered on zoning regulations, dredging, and insurance.

THE NEW YORK COMMERCIAL MARINA AND BOATYARD INDUSTRY, 1972

INTRODUCTION

Boating is a major outdoor recreational activity in the State of New York. In 1972 there were almost 400,000 registered boats,¹ plus an estimated 150,000 non-registered watercraft, for a total of approximately 550,000 pleasure craft in New York. Sixty-two percent of the total registered boats were under 16 feet in length, and 93 percent were under 25 feet in length. Appendix A lists the number of registered boats in New York by length in 1971 (N.Y. State Parks and Recreation, 1972).

The water resources available to the New York boating public are extremely diversified. In addition to the Atlantic Coastline and the Great Lakes, there are also many rivers and canals, plus numerous inland lakes suitable for recreational boating activities. State recreation planners estimated that on an average summer weekend day, nearly 400,000 New Yorkers participated in recreational boating in 1972.

To provide the services required for this large and diversified boating public, approximately 1,526 waterfront facilities exist throughout the State. The types and quantities of boating services provided by these 1,526 facilities vary tremendously. About 525 of these marine facilities are launching sites, gas docks, boat rentals, boat sales, boat repair yards, fish stations, motels, camps, cottages, restaurants, etc. Most of these facilities have only small numbers of berthings which are directly related to the facility or business, and usually are not offered as seasonal rentals to the boating public. The remaining 1,001 facilities are marinas, boatyards, or private yacht and boat clubs. Municipal² and State agencies account for 81 marinas, private yacht and boat clubs account for an additional 227 facilities, leaving 693 commercial marinas and boatyards (Table 1). This report will focus only on the commercial marina and boatyard firms in New York State.

¹ Only boats with motors are required to be registered in New York; this excludes many other watercraft such as canoes, rowboats, and sailboats without auxiliary engines.

² Includes county, city, town, village, Federal, school districts, quasi-public, and non-profit or community service organizations.

TABLE 1. NEW YORK WATERFRONT MARINE FACILITIES¹

Agency	Number of Facilities	Number of Berthings
<u>Commercial</u>		
Marinas and Boatyards	693	52,571 ²
Others ³	<u>342</u>	
	1,035	
<u>Private</u>		
Yacht and Boat Clubs	227	15,531 ⁴
Launching Sites	<u>3</u>	
	230	
<u>Municipal and Others⁵</u>		
Marinas ⁶	51	7,765
Launching Sites	<u>88</u>	
	139	
<u>State</u>		
Marinas ⁶	30	2,324
Launching Sites	<u>92</u>	
	122	
<hr/>		
TOTALS	1,526	78,191

¹ Source: New York State Parks and Recreation. New York State Outdoor Recreation Facilities Inventory. Card 3: Marine Inventory. Albany. Received August 1974 (unpublished).

² Approximately 94 of the 693 commercial firms listed on the State marine facilities inventory had unknown berthing capacities. Therefore, the 52,571 berthings were estimated by determining the average number of berthings for 599 firms and expanding this average (76) to 693 firms.

³ Others include: launching sites, gas docks, boat rentals and charters, boat repair yards, fish stations, motels, camps, cottages and restaurants.

⁴ The State marine facilities inventory listed 227 private yacht and boat clubs but only provided berthing capacities for 101; therefore this figure (15,531) was estimated by determining an average for the 101 clubs, then expanding the average (68) to 227 clubs.

⁵ Others include: county, city, village, town, Federal, school districts, quasi-public, and non-profit or community service organizations.

⁶ The majority of these marinas also include launching facilities.

Purpose

The purpose of this report is to furnish information on some of the characteristics and problems associated with commercial marinas and boatyards in the State of New York. Items investigated include increases firms have experienced or plan in facilities and services, types of services provided, relationships between commercial and public marinas, internal business characteristics, and economic considerations of these firms. The commercial marina and boatyard industry clearly provides the majority of pleasure boating services in New York, and information about these firms will provide additional insight into one of the most important recreational industries in the State.

In light of the recent impetus towards management and planning of the coastal zone, decisions will be made in the near future on the most beneficial ways to utilize this valuable and limited resource. The marine facilities which provide most of the required services for the boating public are concentrated along the shoreline of this zone, and are in direct competition with numerous other activities which also require and/or use this limited resource. This same type of competition also exists along many of the waterfronts of the major rivers and lakes throughout the State.

State recreational planners predict that participation in pleasure boating will increase by almost 28 percent by 1990, and that 600,000 new boaters alone are expected in the New York Metropolitan Region by this date (N.Y. State Parks and Recreation, 1972). Furthermore,

these estimates assume that the absolute growth in boating will not be constrained by the supply of facilities and that boaters will find higher boating density acceptable. The New York Metropolitan Region is forecast to be operating 40 percent above capacity by 1990, indicating a need for added facilities that can accommodate more than 100,000 boaters. It is not clear that commercial services or public facilities can adequately meet these expanding needs. A similar situation, although not so extreme, will exist elsewhere in the State and raise the same policy question (N.Y. State Parks and Recreation, 1972).

Currently, approximately 68 percent of all waterfront marine facilities are provided by the commercial sector, 24 percent are provided by private, municipal and others, leaving the remaining eight percent operated by the State. If only marinas and boatyards are considered, 69 percent (693) are commercial operations, 23 percent (227) are private yacht and boat clubs, 5 percent (51) are municipal and others, and only three percent (30) are State marinas.

In view of the two problem areas mentioned above--(1) intense competition for waterfront space, and (2) coping with present and future demands for boating services--information is needed to determine whether the commercial sector can compete and expand sufficiently to meet the current and predicted demands for services by the boating public. If the commercial marinas and boatyards are encountering problems which preclude them from meeting increasing demands, then the State may have to play a more significant role in either providing certain facilities (marinas), or help the commercial sector overcome problems in order to adequately supply existing and predicted needs.

Methods

The New York commercial marina and boatyard industry represents a very complex and heterogeneous group of firms. Marinas are often thought of as firms providing summer berthings, winter storage, and related dockside services, whereas boatyards are usually establishments more associated with launching and hauling, repairs and maintenance, and often winter storage. However, many commercial marina and boatyard operations in New York provide all or portions of both sets of services. In addition, such marine establishments may also sell new and used boats, engines, marine equipment and supplies. Because of the diversity in the many different types of boating services, no meaningful distinction can be made between any one marina or boatyard in the State. It was operationally decided that to be included as a commercial marina or boatyard in this study, a firm must possess the following characteristics: (1) be open to the general public--thus excluding private yacht and boat clubs; (2) be a commercial business--thereby excluding municipal, State, and other non-profit marinas; and (3) have 10 or more berthings (either moorings or slips) available for rent to the boating public.

In New York there are approximately 700 commercial marinas or boatyards which meet the above definition.* Most of these commercial firms are concentrated on waterways within or adjacent to urban population centers (i.e. Metropolitan New York, Rochester, and Buffalo). A few noticeable exceptions are the Thousand Islands area, Lake Champlain and the Finger Lakes district, where the water resources and natural environment attract many recreational boaters requiring marina related facilities.

* Although approximately 700 commercial marinas and boatyards are listed on the State's marine facilities inventory, only 599 have known berthing capacities.

Partially reflecting the large urban population location in Metropolitan New York, the greatest concentration of commercial marinas and boatyards are found in Suffolk and Nassau Counties on Long Island. These two counties, together with the five Boroughs of New York City, account for 50 percent of the total commercial marinas and boatyards with known berthing capacities in the State. A majority of the remaining commercial marinas and boatyards are dispersed across the State in counties located along the Hudson River-Barge Canal System, St. Lawrence River, Finger Lakes, Lake Champlain, Lake Ontario, or Lake Erie. Thirty-six of the interior counties have less than five commercial marinas,* and 12 have none (Figure 1). Appendix B provides the number of marina facilities, marinas and boatyards, and known berthing capacities by county and operating agency.

Of the approximately 600 commercial marinas and boatyards with known berthing capacities, a stratified random sample of 30 percent (175) was selected by waterway, and data were collected by personal interviews during the spring of 1973. Of the firms interviewed, 161 satisfied the definition requirements and provided sufficient information to be included in this report. The remaining 14 firms were excluded for the following reasons: five had less than ten berthings for rent to the public, two were in business for less than one year, two were no longer in business, three operators were either not available or refused to be interviewed, and two were non-profit organizations. A copy of the interview questionnaire form is included in Appendix C.

Type of Analysis

The data generated from the 161 interviews will be analyzed by two methods: (1) on a regional basis; and (2) by the berthing capacity of the facilities. The State was divided into three major regions: (1) New York City and Long Island; (2) The Great Lakes and St. Lawrence River; and (3) Inland Waters (Figure 2). The regional analysis was undertaken because it was believed that differences between commercial marinas and boatyards may vary significantly in each of the three regions. For example, problems associated with the types and quantities of services provided by marinas on inland waterways may be considerably different from the problems encountered by marinas located on the Great Lakes or the Atlantic coastline.

* Throughout this report, the terminology "marinas," "boatyards," or "marinas and boatyards" refers to commercial facilities as defined on the previous page.

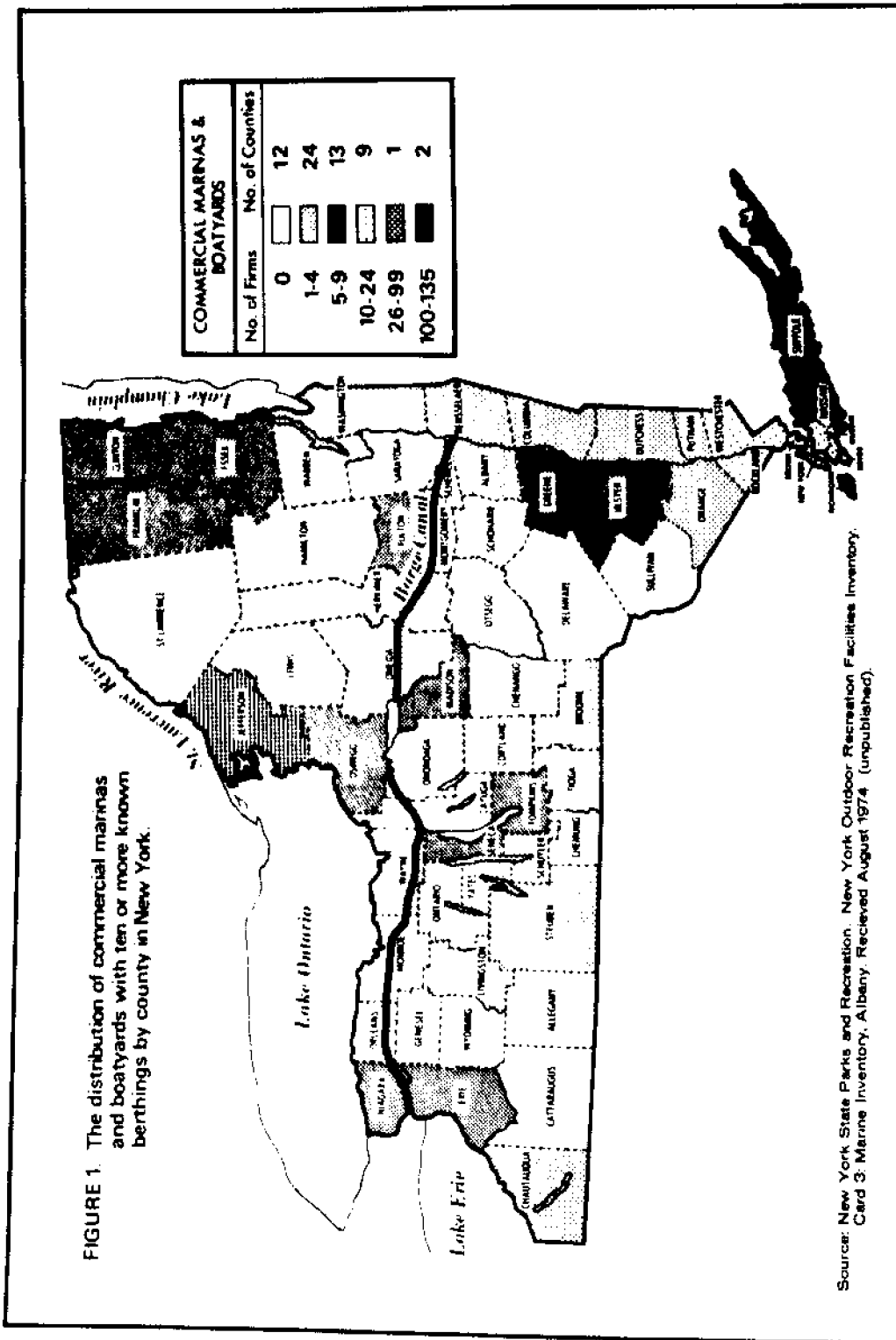


FIGURE 2. Three major waterway regions of New York

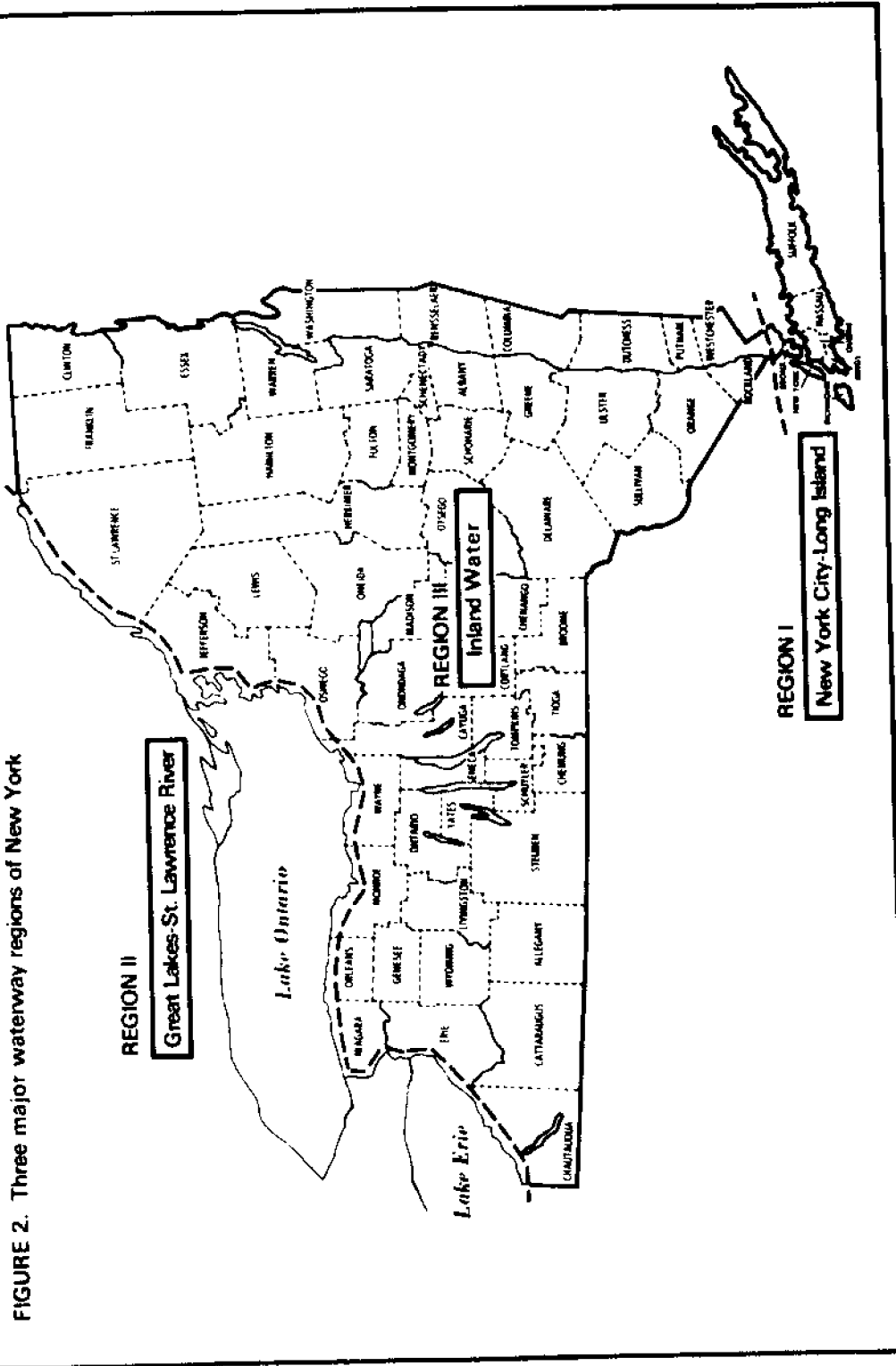


Table 2 indicates the 161 sampled firms by three size categories according to berthing capacity.* The first grouping contains 74 commercial marinas and boatyards with between 10 and 49 berthings, the second group contains 47 sampled firms of between 50 and 99 berthings, and the third group contains 40 sampled firms of 100 or more berthings. Berthing capacity, the only available indication of a firm's physical size, was used to investigate the relationships between certain kinds of services and operational problems to the size of the firm. Hereafter, firms will often be referred to as "smaller," "medium," and "larger" according to the size groupings indicated in Table 2.

TABLE 2. THE 161 SAMPLED COMMERCIAL MARINAS AND BOATYARDS BY SIZE AND REGIONS IN NEW YORK, 1972

<u>Regions</u> [†]	Firms Grouped by Number of Berthings			TOTALS
	10-49	50-99	100 or more	
I. New York City-Long Island	44	24	21	89
II. Great Lakes-St. Lawrence	13	10	12	35
III. Inland Waters	17	13	7	37
TOTALS	74	47	40	161

[†] From the universe of 599 commercial marinas and boatyards with known berthing capacities, 301 firms were located in the New York City-Long Island Region, 119 firms were located in the Great Lakes-St. Lawrence Region, and 179 firms were located in the Inland Waters Region.

* Berthing capacity is any combination of 10 or more moorings or slips that are available for rent to the general public.

PHYSICAL CHARACTERISTICS

Information concerning the amount of land area, length of shoreline, and quantity of surface water available for moorings will describe the physical characteristics of the commercial marinas and boatyards sampled in New York.

Land Area

The amount of land area owned by commercial marinas and boatyards varies by location and size of firms. Firms located in New York City and on Long Island owned an average of 2.6 acres, compared to 4.1 acres for firms on the Great Lakes-St. Lawrence River, and 6.6 acres for the firms located on Inland Waters. Fifty-two percent (53) of the firms in the New York City-Long Island Region owned less than two acres of land; of these, 64 percent (34) fell within the smaller size grouping of 10 to 49 berthings. The small amount of land owned by firms in this region can likely be attributed to greater competition for waterfront acreage, resulting in higher land values, which may have forced the larger firms to concentrate their operations or lease additional lands. Also, some of the smaller firms, with greater than average amounts of land, specialized in repairs and winter storage, and thereby required more land (Table 3).*

Not only do the firms located on the Great Lakes-St. Lawrence and Inland Waters own more land than their down-state counterparts, but a more definite relationship exists upstate with respect to acreage and number of berths. Of the firms with over 100 berthings, 86 percent (7) of the Inland firms, and 50 percent (6) of the firms on the Great Lakes-St. Lawrence averaged over five acres of land, compared with only one percent (2) of the larger firms in the New York City-Long Island Region.

Shoreline

The length of shoreline owned by sampled marinas and boatyards discloses several patterns related both to size of firm and location by regions. Typically across the State, firms with smaller berthing capacities had shorter lengths of shoreline than did larger firms. The smaller firms averaged 392 feet of shoreline, medium firms averaged 597 feet of shoreline, and the larger firms averaged 966 feet of shoreline.

* Throughout the Tables in this report not all of the 161 commercial marinas and boatyards answered all of the questions; therefore the total number of marinas and boatyards in each Table may total less than 161.

TABLE 3. LAND ACREAGE OWNED BY 157 COMMERCIAL MARINAS AND BOATYARDS
IN NEW YORK, 1972

<u>Regions</u> Acres of Land	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Less than 1 acre	22	5	2	29	(34%)
1 to 1.9 acres	12	8	4	24	(18)
2 to 2.9 acres	2	2	3	7	(18)
3 to 3.9 acres	2	6	5	13	(15)
4 to 4.9 acres	0	1	4	5	(6)
5 or more acres	4	2	2	8	(9)
Subtotals	42	24	20	86	(100%)
Means	2.0	2.9	3.6	2.6	
<u>II. Great Lakes-St. Lawrence</u>					
Less than 1 acre	3	1	0	4	(11%)
1 to 1.9 acres	5	2	1	8	(23)
2 to 2.9 acres	2	1	0	3	(9)
3 to 3.9 acres	2	3	2	7	(20)
4 to 4.9 acres	1	1	3	5	(14)
5 or more acres	0	2	6	8	(23)
Subtotals	13	10	12	35	(100%)
Means	2.2	3.5	6.3	4.1	
<u>III. Inland Waters</u>					
Less than 1 acre	1	0	0	1	(3%)
1 to 1.9 acres	4	1	0	5	(14)
2 to 2.9 acres	3	3	0	6	(17)
3 to 3.9 acres	2	2	1	5	(14)
4 to 4.9 acres	2	0	0	2	(6)
5 or more acres	4	6	7	17	(46)
Subtotals	16	12	8	36	(100%)
Means	4.3	6.7	9.8	6.6	
TOTALS	71	46	40	157	
MEANS	2.7	4.0	5.7	3.9	

In the New York City-Long Island Region, 61 percent (54) of the firms sampled owned less than 350 feet of waterfront, and not unlike land area, just over one-half (32) of these firms had **fewer than 50 berths**. In this region, only firms with 100 or more berthings possessed more than 1,000 linear feet of shoreline. Regardless of size, upstate firms averaged 60 percent more shoreline than firms in the New York City-Long Island Region (Table 4).

In the New York City-Long Island Region, smaller firms averaged 2.0 acres of land with 264 feet of shoreline, while the larger firms averaged 3.6 acres of land with 915 feet of shoreline. Thus, comparing larger firms with smaller firms, the mean land acreage ratio is 1.8, whereas the mean shoreline ratio is 3.5. This denotes a difference in the spatial configuration of land ownership; large firms tended to own land in a more elongated pattern along the waterfront than smaller firms. For firms located on upstate waters, the length of shoreline also increases with size of firm, but the shoreline per acre decreases, whereas the reverse relationship is true for the New York City-Long Island firms (Tables 3 and 4).

Mooring Area

Often associated with marina and boatyard operations are water areas set aside for the mooring of boats. Data from the sampled firms indicate that approximately 21 percent (34) of the firms had moorings. Moorings were most common in the New York City-Long Island Region, where they were used by 31 percent (27) of the firms studied (Table 5).

The water area (acres) used by the sampled firms with moorings averaged one acre per firm. Statewide, there is little relationship between size of firms and size of mooring areas, except in the New York City-Long Island Region, where 56 percent (15) of the smaller firms offered limited areas for moorings, and a few larger firms (5) had mooring areas about double the average size for this region. Of the firms offering moorings, only seven were located on upstate waters, and the insufficient number of observations make it impossible to generalize with regard to size of firm or location (Table 5).

TABLE 4. LENGTH OF SHORELINE FOR 157 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Regions Length in Feet	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Less than 200 feet	22	9	2	33	(38%)
201 to 350 feet	10	7	4	21	(23)
351 to 500 feet	4	3	1	8	(9)
501 to 650 feet	4	3	5	12	(14)
651 to 1,000 feet	3	2	2	7	(8)
1,001 or more feet	0	0	7	7	(8)
Subtotals	43	24	21	88	(100%)
Means	264	407	915	458	
<u>II. Great Lakes-St. Lawrence</u>					
Less than 200 feet	2	1	1	4	(12%)
201 to 350 feet	7	3	1	11	(32)
351 to 500 feet	1	1	1	3	(8)
501 to 650 feet	1	2	2	5	(15)
651 to 1,000 feet	1	0	3	4	(12)
1,001 or more feet	1	2	4	7	(21)
Subtotals	13	9	12	34	(100%)
Means	734	798	876	774	
<u>III. Inland Waters</u>					
Less than 200 feet	4	1	0	5	(14%)
201 to 350 feet	4	2	0	6	(17)
351 to 500 feet	3	2	0	5	(14)
501 to 650 feet	1	2	1	4	(11)
651 to 1,000 feet	5	3	2	10	(30)
1,001 or more feet	0	2	3	5	(14)
Subtotals	17	12	6	35	(100%)
Means	456	825	1,321	731	
TOTALS	73	45	39	157	
MEANS	392	597	966	587	

TABLE 5. WATER ACREAGE AVAILABLE FOR MOORINGS AT 160 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Regions	Acres of Water	Firms Grouped by Number of Berthings			TOTALS	
		10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>						
	No moorings	28	18	16	61	(69%)
	0.1 to 1 acre	13	4	1	18	(21)
	1.1 to 4 acres	2	2	2	6	(7)
	4.1 to 6 acres	--	--	1	1	(1)
	6.1 or more acres	--	1	1	2	(2)
	Subtotals	43	24	21	88	(100%)
	Means	0.5	0.8	0.9	0.7	
<u>II. Great Lakes-St. Lawrence</u>						
	No moorings	12	8	12	32	(91%)
	0.1 to 1 acre	--	--	--	--	--
	1.1 to 4 acres	--	--	--	--	--
	4.1 to 6 acres	--	1	--	1	(3)
	6.1 or more acres	1	1	--	2	(6)
	Subtotals	13	10	12	35	(100%)
	Means	0.5	5.4	0	3.8	
<u>III. Inland Waters</u>						
	No moorings	14	12	7	33	(88%)
	0.1 to 1 acre	--	--	--	--	--
	1.1 to 4 acres	--	--	--	--	--
	4.1 to 6 acres	1	--	--	1	(3)
	6.1 or more acres	2	1	--	3	(9)
	Subtotals	17	13	7	37	(100%)
	Means	2.2	1.2	0	2.0	
TOTALS		73	47	40	160	
MEANS		0.8	1.8	0.9	1.0	

BUSINESS OPERATIONS

This section will identify the types of firms which make up the commercial marina and boatyard industry, and will discuss the length and kinds of ownership and management found and types of activities used to promote these businesses.

Types of Firms

As mentioned previously, the mixture of firms defined as commercial marinas and boatyards offer a wide range of boating services. When owners or managers were asked which term (marina, boatyard, combination marina and boatyard, or other) best described their particular operation, 60 percent (96) denoted a combination of marina and boatyard, 23 percent (37) indicated marina, 15 percent (24) stated boatyard, and two percent (4) indicated that "other" best described their operation (Table 6).

TABLE 6. 161 COMMERCIAL MARINAS AND BOATYARDS BY TYPES OF FIRM IN NEW YORK, 1972

<u>Type of Firm</u>	<u>Firms Grouped by Number of Berthings</u>			<u>TOTALS</u>	
	10-49	50-99	100 or more	Number	Percent
Combination Marina and Boatyard	34	33	29	96	(60%)
Marina	19	11	7	37	(23)
Boatyard	18	3	3	24	(15)
Other	3	-	1	4	(2)
TOTALS	74	47	40	161	(100%)

With respect to type of firm in relationship to number of berthings, the 96 "combination marinas and boatyards" have the least deviation in their distribution among the three size groupings of firms. However, the majority (72 percent) of the larger firms with over 100 berthings were classified as "combination marina and boatyard" firms. For the other categories of firms (marina, boatyard and other), the majority of those studied had between 10 and 49 berthings (Table 7). The four respondents who classified their operation as "other" owned firms that still satisfied the definition for commercial marinas and boatyards; however, the boating services offered were secondary to another type of business. The firms classified as "other" included a restaurant-bar, bait sales and boat rentals, cottages and campsites, and campground with trailer sales.

Within each of the three regions, the percentages of "combination marinas and boatyard" -- 53 percent for the New York City-Long Island Region, 63 percent for the Great Lakes-St. Lawrence Region, and 73 percent for the Inland Waters Region -- was notably higher than for either "marinas" or "boatyards." The lower percentage of "combination marinas and boatyards" in the New York City-Long Island Region is attributed to the higher percentage of "boatyards" in this region. From the sample, 20 "boatyards" were located in this region, compared to only four "boatyards" in both of the upstate regions. The percentage of firms classified as only "marinas" is relatively constant regionally, varying only from 19 percent on Inland Waters to 26 percent in the Great Lakes-St. Lawrence Region (Table 7).

The different types of firms which comprise the commercial marina and boatyard industry were derived by asking the respondents how they classified their operation. Although this categorization was a subjective decision on the part of the respondent, it further illustrates the complexity of this recreation industry in New York.

Years of Operation

The mean length of operation for all sampled firms was 28 years. Table 8 indicates the number of years each of the sampled marinas and boatyards had been in business at the same location, although not necessarily under continuous ownership. Two definite patterns of age of firms appeared from the sample: (1) a majority of the firms (97, or 61 percent) have been in business for more than 16 years; and (2) only five firms (three percent) were less than five years old, four of which were from the New York City-Long Island Region. All new firms sampled had less than 100 berthings; otherwise little difference existed between age and size of firms. Approximately one-half of firms in New York City-Long Island and Great Lakes-St. Lawrence Regions had been in operation for over 20 years, compared to only 30 percent of Inland firms.

TABLE 8. TYPE OF FIRM BY REGION FOR 161 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

<u>Regions</u> Type of Firm	<u>Firms Grouped by</u> <u>Number of Berthings</u>			<u>TOTALS</u>	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Combination Marina and Boatyard	19	15	13	47	(53%)
Marina	9	7	5	21	(24)
Boatyard	15	2	3	20	(22)
Other	1	--	--	1	(1)
Subtotals	44	24	21	89	(100%)
<u>II. Great Lakes-St. Lawrence</u>					
Combination Marina and Boatyard	5	7	10	22	(63%)
Marina	5	2	2	9	(26)
Boatyard	2	1	--	3	(9)
Other	1	--	--	1	(3)
Subtotals	13	10	12	35	(100%)
<u>III. Inland Waters</u>					
Combination Marina and Boatyard	10	11	6	27	(73%)
Marina	5	2	--	7	(19)
Boatyard	1	--	--	1	(3)
Other	1	--	1	2	(5)
Subtotals	17	13	7	37	(100%)
TOTALS	74	47	40	161	

TABLE 8. YEARS OF OPERATION FOR 160 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Regions	Years of Operation	Firms Grouped by Number of Berthings			TOTALS	
		10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>						
	1 to 5 years	3	1	--	4	(5%)
	6 to 10 years	5	4	2	11	(13)
	11 to 15 years	7	6	4	17	(19)
	16 to 20 years	6	2	5	13	(15)
	21 to 40 years	13	6	8	27	(30)
	41 or more years	9	5	2	16	(18)
	Subtotals	43	24	21	88	(100%)
	Means	30	27	23	28	
<u>II. Great Lakes-St. Lawrence</u>						
	1 to 5 years	--	--	--	--	--
	6 to 10 years	3	1	2	6	(17%)
	11 to 15 years	1	2	3	6	(17)
	16 to 20 years	3	2	--	5	(14)
	21 to 40 years	3	1	5	9	(26)
	41 or more years	3	4	2	9	(26)
	Subtotals	13	10	12	35	(100%)
	Means	27	34	28	30	
<u>III. Inland Waters</u>						
	1 to 5 years	--	1	--	1	(3%)
	6 to 10 years	4	2	2	8	(22)
	11 to 15 years	5	3	2	10	(27)
	16 to 20 years	2	4	1	7	(18)
	21 to 40 years	2	3	1	6	(16)
	41 or more years	4	--	1	5	(14)
	Subtotals	17	13	7	37	(100%)
	Means	28	18	27	24	
TOTALS		73	47	40	160	
MEANS		29	26	25	28	

From the age structure of the firms sampled, it appears that during the past two decades, when recreational boating experienced its greatest growth, not as many new firms were established as one would expect. This lack of additional firms may be attributed to two reasons. First, even though the number of recreational boats increased notably during this period, chiefly due to new technology of mass production using fiberglass construction, the great majority of the boats were of the smaller outboard type, usually transported and stored on trailers, and therefore did not require many of the boating services offered by commercial marinas and boatyards. Secondly, the older and established firms have expanded their facilities and services to accommodate increased demands generated by the greater number of larger boats during the past twenty years.

Ownership

Commercial marinas and boatyards exhibit three types of ownership: (1) individual; (2) partnership; and (3) corporation. Fifty-four percent of all firms sampled were corporations of fewer than 10 stockholders. The remaining firms were owned by individuals (39 percent) or partnership (6 percent). The smaller firms were owned primarily by individuals, while firms of over 50 berthings were owned predominantly by corporations. The distribution of types of ownership is very similar for the three regions in the State (Table 9).

Approximately one-third (53) of the respondents who were owners of commercial marinas and boatyards indicated they also had another occupation or business; owners of smaller operations were more likely to have another occupation or business. Occupations of these 53 respondents were: managers (16); professional or technical (8); sales or clerical (7); and laborers (4); craftsmen (4); operatives (4); and other types of occupations (10).

Management

Eighty percent (128) of the commercial marinas and boatyards were managed by their owners. Hired professional managers accounted for an additional nine percent (14), and combinations of owners and paid managers represented the remaining 11 percent (18) of the firms. Firms with professional managers or combinations of owners and hired managers are rather evenly distributed regardless of size of firms. Twenty percent of the firms located on the Great Lakes-St. Lawrence River had professional managers compared to only seven percent for the New York City-Long Island firms, and three percent for the Inland Water firms (Table 10).

TABLE 9. TYPE OF OWNERSHIP FOR 158 COMMERCIAL MARINAS AND BOATYARDS
IN NEW YORK, 1972

Regions Type of Ownership	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Corporation	19	12	17	48	(55%)
Individual	4	9	2	32	(37)
Partnership	2	3	2	7	(8)
Subtotals	42	24	21	87	(100%)
<u>II. Great Lakes-St. Lawrence</u>					
Corporation	5	6	8	19	(54%)
Individual	8	4	3	15	(43)
Partnership	--	--	1	1	(3)
Subtotals	13	10	12	35	(100%)
<u>III. Inland Waters</u>					
Corporation	6	8	5	19	(53%)
Individual	10	3	2	15	(41)
Partnership	1	1	-	2	(6)
Subtotals	17	12	7	36	(100%)
TOTALS	72	46	40	158	

TABLE 10. TYPES OF MANAGEMENT FOR 160 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

<u>Regions</u> Type of Management	<u>Firms Grouped by Number of Berthings</u>			<u>TOTALS</u>	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Owner	37	20	14	71	(80%)
Hired Manager	1	3	2	6	(7)
Owner and hired manager	6	1	5	12	(13)
Subtotals	44	24	21	89	(100%)
<u>II. Great Lakes-St. Lawrence</u>					
Owner	11	5	9	25	(71%)
Hired Manager	2	4	1	7	(20)
Owner and hired manager	0	1	2	3	(9)
Subtotals	13	10	12	35	(100%)
<u>III. Inland Waters</u>					
Owner	16	10	6	32	(89%)
Hired Manager	0	1	0	1	(3)
Owner and hired manager	1	1	1	3	(8)
Subtotals	17	12	7	36	(100%)
<u>TOTALS</u>	74	46	40	160	

Firms studied had been under their present management for an average of 12.3 years. While one-third of the firms (53) had been under the same management for less than six years, almost 60 percent (93) had retained the same management for at least 10 years. Only 15 percent of the firms (25) had continuous management for over 20 years. Marinas and boatyards located on Inland Waters typically have been under their present management a lesser number of years (8.6 average) than firms located in the New York City-Long Island Region or in the Great Lakes-St. Lawrence Region (12.8 and 15.6 average years respectively) (Table 11). This is probably related to the more recent development of the industry in Inland Waters, where few firms have been in operation a lesser number of years, compared to the other two regions in the State.

Seasonality of Business

Because of climatic considerations, the recreational boating season in New York is limited to the warmer months of the year. Eighty-five percent (136) of the sampled firms indicated the boating season (from spring launch to winter haul-out) was nine months or less. Only in the New York City-Long Island Region did some firms experience a longer boating season, extending to 10 or 11 months due to the warming influence of the Atlantic Ocean.

Regardless of the length of the boating season, 65 percent (103) of the commercial marinas and boatyards were open all year (Table 12). On the average, the 56 firms not open all year were open less than seven months. Smaller firms were closed for business for a longer period during the winter than were larger firms. Twenty-one percent of firms of fewer than 50 berthings were closed at least five months of the year, compared to only five percent for firms of at least 100 berthings.

Promotional Practices

Respondents were asked what types of promotional activities they used to attract customers. The most often used method, advertisements in newspapers, was utilized by 50 percent of the respondents. Other types of advertising in order of most frequent use were: yellow pages in telephone directories--35 percent; boat shows--23 percent; brochures--15 percent; and television and radio--11 percent (Table 13). Other promotional practices not included in Table 13 were speaking engagements--one percent; and other types of advertisement (e.g. cruising guides, billboards, etc.)--26 percent. Since 27 percent of the respondents employed no form of advertisement, many of those who did advertise utilized more than one form of media, as is evident from the percentages in Table 13.

TABLE 11. THE NUMBER OF YEARS UNDER PRESENT MANAGEMENT FOR 158
COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Regions Years under Management	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
1 to 5 years	13	13	4	30	(34%)
6 to 10 years	13	4	4	21	(24)
11 to 15 years	6	2	3	11	(12)
16 to 20 years	4	1	5	10	(12)
21 or more years	8	4	5	17	(19)
Subtotals	44	24	21	89	(100%)
Means	12.5	12.0	14.4	12.8	
<u>II. Great Lakes-St. Lawrence</u>					
1 to 5 years	3	3	3	9	(27%)
6 to 10 years	4	1	3	8	(24)
11 to 15 years	4	3	1	8	(24)
16 to 20 years	1	1	-	2	(7)
21 or more years	1	2	3	6	(18)
Subtotals	13	10	10	33	(100%)
Means	10.7	20.0	17.5	15.6	
<u>III. Inland Waters</u>					
1 to 5 years	5	6	3	14	(39%)
6 to 10 years	4	4	3	11	(30)
11 to 15 years	6	-	1	7	(19)
16 to 20 years	1	1	-	2	(6)
21 or more years	-	2	-	2	(6)
Subtotals	16	13	7	36	(100%)
Means	9.1	8.8	7.4	8.6	
TOTALS	73	47	38	158	
MEANS	11.4	12.8	14.0	12.3	

TABLE 12. MONTHS OPEN FOR BUSINESS FOR 159 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Regions Months Open	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
I. <u>New York City-Long Island</u>					
7 months or less	4	1	1	6	(7%)
8 to 11 months	10	6	5	21	(23)
12 months	30	17	15	62	(70)
Subtotals	44	24	21	89	(100%)
Means *	6.8	7.1	7.0	6.9	
II. <u>Great Lakes-St. Lawrence</u>					
7 months or less	3	2	1	6	(18%)
8 to 11 months	3	2	3	8	(24)
12 months	6	6	8	20	(58)
Subtotals	12	10	12	34	(100%)
Means *	5.7	6.1	6.7	6.1	
III. <u>Inland Waters</u>					
7 months or less	8	3	0	11	(31%)
8 to 11 months	3	-	1	4	(12)
12 months	5	10	6	21	(57)
Subtotals	16	13	7	36	(100%)
Means *	4.4	6.7	7.6	5.8	
TOTALS	72	47	40	159	
MEANS*	6.1	6.8	7.0	6.5	

* For firms open less than 12 months per year.

TABLE 13. TYPES OF PROMOTIONAL PRACTICES FOR 161 COMMERCIAL MARINA AND BOATYARDS IN NEW YORK, 1972

Regions Methods	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Newspapers	18	11	10	39	(44%)
Yellow Pages	28	9	12	44	(55)
Boat Shows	11	6	5	22	(25)
Brochures	6	5	3	14	(16)
TV - Radio	2	--	2	4	(5)
No Promotion	9	7	3	19	(21)
<u>II. Great Lakes-St. Lawrence</u>					
Newspapers	6	6	7	19	(54%)
Yellow Pages	2	1	5	8	(23)
Boat Shows	2	3	4	9	(26)
Brochures	1	3	1	5	(14)
TV - Radio	1	3	3	7	(20)
No Promotion	6	2	3	11	(31)
<u>III. Inland Waters</u>					
Newspapers	9	9	4	22	(60%)
Yellow Pages	2	1	1	4	(11)
Boat Shows	1	3	2	6	(16)
Brochures	2	1	2	5	(14)
TV - Radio	1	3	2	6	(16)
No Promotion	7	2	2	11	(30)

SERVICES PROVIDED

The commercial marinas and boatyards of New York State provide a multitude of services to the boating public. Undoubtedly, two of the most important services provided are berthings (either slips or moorings) for boats during the summer months, and the analogous service of winter storage. During the boating season, many firms also offer such dockside services as: gas and oil, water and electricity, food and ice, and sewage pumpout facilities. Other related dockside services may include restrooms, showers, lodging, and restaurants.

Another very necessary group of boating services furnished by the industry is repairs and sales. Most firms have special equipment and skilled personnel to perform repairs and maintenance on boats and related marine equipment (e.g. engines, radios, navigational aids, electrical systems, etc.). In addition, marine supplies, insurance, new or used boats, and engines are often sold by these marine firms. Finally, two other auxiliary services important to the marina user, security and launching facilities, will be discussed under services.

Summer Berthings

"Berthings," as defined previously, include slips or docks, moorings, and other types of facilities.* To be included in the sample for this study, a firm could offer any combination of berthings (slips, moorings, or other) so long as at least ten berthings were available for rent to the public. Almost all of the firms sampled (95 percent) provided slips for berthings, 12 percent had moorings available, and 12 percent provided other types of berthing facilities to the boating public. Approximately 20 percent of the firms offered more than one type of facility for berthing boats. Firms located in the New York City-Long Island Region more frequently offered moorings for berthing than did firms located throughout the remainder of the State. However, firms located in the Great Lakes-St. Lawrence Region, and Inland Waters Region offered more of the "other" types of berthings (Table 14).

The 161 marinas averaged 71 berthings per firm. Regionally, firms on the Great Lakes-St. Lawrence averaged 90 berthings, compared to an average of 66 berthings for the firms in the New York City-Long Island and Inland Water Regions. The higher overall average for the Great Lakes-St. Lawrence firms is attributed to the greater number of berths among large size firms in this region (which average 172 berthings), in contrast to the large firms from the other two regions (which average 142 and 153 berthings) (Table 14).

* Other types of berthing facilities include dry stack, boats stored and launched from trailers by the marina, and berthings between poles.

TABLE 14. TYPES AND QUANTITIES OF BERTHING AT 161 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Regions Type of Berthings	Firms Grouped by Number of Berthings			TOTALS
	10-49	50-99	100 or more	
<u>I. New York City-Long Island</u>				
Slips	946 (36) ¹	1,424 (22)	2,675 (21)	5,044 ¹ (82)
Moorings	140 (6)	145 (3)	283 (3)	568 (12)
Other ²	30 (4)	-- (1)	245 (3)	275 (7)
Subtotals	1,116	1,569	3,203	5,888
Means	25	65	153	66
<u>II. Great Lakes-St. Lawrence</u>				
Slips	351 (13)	621 (9)	1,901 (12)	2,873 (34)
Moorings	7 (1)	54 (2)	-- (-)	61 (3)
Other ²	39 (4)	-- (-)	162 (2)	201 (6)
Subtotals	397	675	2,063	3,135
Means	131	68	172	90
<u>III. Inland Waters</u>				
Slips	433 (17)	896 (13)	857 (7)	2,186 (37)
Moorings	37 (3)	15 (1)	-- (-)	52 (4)
Other ²	52 (5)	-- (-)	138 (2)	190 (7)
Subtotals	522	911	995	3,426
Means	31	70	142	66
TOTALS	2,035	3,155	6,261	11,499
MEANS	28	67	157	71

¹ Number within parenthesis refers to number of firms, and 20 percent of the firms offered more than one type of berthing.

² Other includes dry stack, boats stored and launched from trailers by marina, and berthings between poles.

Statewide, the cost of berthing a boat is determined by several types of pricing systems. The cost is derived either on a monthly, seasonal, or yearly basis, according to boat length categories (e.g. boats 20 to 25 feet in length), or per foot of boat length. The most frequently used type of pricing system for berthings was a seasonal rate by boat length categories, or a monthly rate per foot of boat length. Almost no variations existed between the types of pricing systems for berthings and the size or location of firms.

While the various methods of charging made price comparisons difficult, average seasonal berthing rates for boats less than 30 feet in length were \$123 on Inland Waters, \$138 in the Great Lakes-St. Lawrence Region, and \$210 in the New York City-Long Island Region. Average seasonal rates were \$310 upstate and \$75 in New York City-Long Island.

Winter Storage

The types of winter boat storage encountered were dry uncovered or covered, dry stack, and wet uncovered or covered. Sixty-seven percent (107) of all sampled firms used dry uncovered as the most frequent type of winter storage, followed by dry covered winter storage, used by 42 percent (69) of the firms. The dry covered method of winter storage was more often used by firms located on the Great Lakes-St. Lawrence and Inland Waters, than by firms from the New York City-Long Island Region.

The wet storage method was less frequently used since it requires locations where the water does not freeze, or where bubbler or heating systems have been installed to maintain circulation to prohibit the water from freezing. There are advantages in wet storage because of the structural stress placed upon hulls (especially large wooden hulls) when boats are out of water for long periods of time. Thirty-seven percent (33) of the firms in the New York City-Long Island Region employed wet storage methods, whereas only two firms located in the Great Lakes-St. Lawrence Region offered wet storage, and no firms on Inland Waters utilized this method of winter storage (Table 15).

Dry stack winter (and sometimes summer) storage of smaller craft is becoming more widely used because it allows the storage of many boats in a limited amount of space. However, only seven of the firms sampled offered this type of storage, six of which were in the New York City-Long Island Region. Thirty-six percent of the firms offered combinations of more than one type of winter storage. A brief comparison of Tables 14 and 15 indicates that overall storage capacities exceeded berthing capacities by 35 percent, regionally, the least amount of storage facilities in relationship to berthings was found in the Great Lakes-St. Lawrence Region (only 19 percent).

The pricing systems for winter storage included the same classifications as those used for summer berthings--either on a monthly, seasonal, or yearly basis, by boat length categories, or per foot of boat length. For the two methods of winter storage most often used (dry uncovered and covered), 85 percent of the firms who offered dry uncovered, and 72 percent of the firms who offered dry covered storage, determined the price on a seasonal per foot of boat length basis. Seasonal price per foot of boat length was also most frequently used for dry stack and wet methods of winter storage.

TABLE 15. TYPES AND QUANTITIES OF WINTER STORAGE AT 161 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Regions	Firms Grouped by Number of Berthings			TOTALS
	10-49	50-99	100 or more	
<u>I. New York City-Long Island</u>				
Dry uncovered	2,526 (27)*	1,975 (19)	2,785 (17)	7,286 (63)*
Dry covered	230 (9)	198 (7)	580 (7)	1,008 (23)
Dry stack	--- (1)	40 (1)	585 (5)	625 (6)
Wet covered or uncovered	286 (15)	154 (5)	711 (13)	1,151 (33)
	Subtotals	3,042	2,367	4,661
	Means	69	99	222
<u>II. Great Lakes-St. Lawrence</u>				
Dry uncovered	406 (7)	384 (6)	1,470 (9)	2,314 (22)
Dry covered	332 (7)	501 (6)	670 (6)	1,503 (20)
Dry stack	---	---	---	---
Wet covered or uncovered	8 (1)	2 (1)	---	10 (2)
	Subtotals	746	887	2,140
	Means	57	89	178
<u>III. Inland Waters</u>				
Dry uncovered	295 (8)	595 (8)	770 (6)	1,660 (22)
Dry covered	633 (10)	888 (10)	546 (6)	2,067 (26)
Dry stack	---	---	90 (1)	90 (1)
Wet covered or uncovered	---	---	---	---
	Subtotals	928	1,483	1,406
	Means	55	114	201
TOTALS	4,716	4,737	8,207	17,714
MEANS	64	101	205	110

* Number within parentheses refers to number of firms.

Berthing Occupancy and Policies

Eighty-nine percent (144) of the 161 firms were either filled to capacity during periods of the boating season or had advance reservations for all berths. Seventy-one percent (114) of the firms had advance reservations for all berthings. More of the larger firms were filled than were either the medium or smaller firms, and in the New York City-Long Island Region all of the larger firms were full during some periods of the boating season (Table 16). The 47 firms not filled by advance reservations were 76 percent occupied during the season. This left approximately 600 vacant berthings; however, 67 percent (440) of these berthings were occupied on weekends and/or holidays, primarily by transient boats. A majority of the remaining 160 vacant berthings were accounted for by firms in the Buffalo area that had lost a significant number of their customers to a recently completed State marina.

Most marinas offered some berthings for transient boats, and three firms in the sample catered almost exclusively to transient customers. Forty-six percent (75) of the respondents indicated they would accept advance reservations from transient boaters. Few firms (9) required a minimum reservation period, and 31 firms would not take reservations during certain periods of the year. Sixty-six firms utilized a "float plan," whereby customers inform the marina operator of their trip itinerary before leaving the marina. Fifty firms used this opportunity to rent the unoccupied berthings to transient boaters (Table 17).

Dockside and Related Services

Two general patterns exist concerning other kinds of boating services provided by the marinas and boatyards sampled in New York. First, where large concentrations of boats are located, as along the southeastern shore of Long Island, certain kinds of services tend to become more specialized, and are often provided by other types of marine-related firms. But for locations where scattered concentrations of fewer boats exist, as along the Great Lakes-St. Lawrence River and Inland Waters, each firm tends to provide most of the important services required by the boating public. For example, of the firms sampled in the New York City-Long Island Region, 67 percent of the firms provided gasoline for sale, while 97 percent of the sampled firms located in the Great Lakes-St. Lawrence and Inland Water Regions offered gasoline service. Since the concentration of pleasure craft is so high in many areas of the Long Island Region, many of the major oil companies provide gasoline docks to supply this large market of recreational boats. Therefore relatively fewer marina and boatyard firms provide gasoline service on Long Island compared with firms located in upstate New York.

TABLE 16. OCCUPANCY INFORMATION FOR 161 COMMERCIAL MARINAS AND BOATYARDS
IN NEW YORK, 1972

<u>Regions</u>	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Firms with all berthings reserved in advance	32	15	18	65	(73%)
Other firms completely occupied during periods of the season	7	6	3	16	(67)
Subtotals	39	21	21	81	(80)
<u>II. Great Lakes-St. Lawrence</u>					
Firms with all berthings reserved in advance	11	4	9	24	(69%)
Other firms completely occupied during periods of the season	1	3	2	6	(17)
Subtotals	12	7	11	30	(86%)
<u>III. Inland Waters</u>					
Firms with all berthings reserved in advance	9	11	5	25	(68%)
Other firms completely occupied during periods of the season	5	2	1	8	(22)
Subtotals	14	13	6	33	(90%)
<u>TOTALS</u>	65	41	38	144	(89%)

TABLE 17. TRANSIENT BERTHING INFORMATION FOR COMMERCIAL MARINAS AND ROATYARDS IN NEW YORK, 1972

Regions	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
(Number of Firms)	(44)	(24)	(21)	(89)	(100%)
Accepted reservations	15	11	12	38	(43)
Minimum reservation period	4	2	1	7	(8)
Not accept reservations	8	5	5	18	(20)
Utilized a "float plan"	7	12	9	28	(32)
Rented berthing while customer away	6	8	7	21	(24)
<u>II. Great Lakes-St. Lawrence</u>					
(Number of Firms)	(13)	(10)	(12)	(35)	(100%)
Accepted reservations	6	4	6	16	(46)
Minimum reservation period	--	1	1	2	(6)
Not accept reservations	--	1	2	6	(2)
Utilize a "float plan"	6	4	8	18	(51)
Rented berthing while customer away	5	4	3	12	(34)
<u>III. Inland Waters</u>					
(Number of Firms)	(17)	(13)	(7)	(37)	(100%)
Accepted reservations	8	7	6	21	(57)
Minimum reservation period	--	--	--	--	(--)
Not accept reservations	4	1	2	7	(19)
Utilize a "float plan"	6	8	6	20	(54)
Rented berthing while customer away	4	7	6	17	(46)

Second, the larger a firm, the more diversified were the services it offered. The availability of gasoline service by size of firms in the New York City-Long Island Region produces an example of this phenomenon. Eighty-six percent of the larger firms provided gasoline sales, compared to 52 percent of the smaller firms (Table 18). And this relationship between the size of firms and number of different kinds of services offered holds relatively true for the entire State.

TABLE 18. DOCKSIDE AND RELATED SERVICES PROVIDED BY 89 COMMERCIAL MARINAS AND BOATYARDS IN THE NEW YORK CITY AND LONG ISLAND REGION, 1972

<u>Services</u>	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
Number of Firms by Size	44	24	21	89	(100%)
Oil	38	22	18	78	(88)
Gasoline	23	19	18	60	(67)
Water (dockside)*	40	22	21	83	(93)
Electricity (dockside)	36	21	21	78	(88)
Pumpout (sewage)*	7	4	2	13	(15)
Ice	17	14	17	48	(54)
Food	7	5	4	16	(18)
Restrooms	36	19	20	75	(84)
Showers	9	5	11	25	(28)
Restaurant	9	8	5	22	(25)
Bar	6	4	4	14	(16)
Lodging	2	1	--	3	(3)
Marine Supplies	31	23	17	71	(81)
Marine Insurance	1	5	1	7	(8)
Launching Ramp	12	7	6	25	(28)
Boat and Motor Rentals	7	4	2	13	(15)
<u>Sales</u>					
Boat	24	15	13	52	(88)
Motor	27	16	14	57	(64)
Trailer	13	11	10	34	(38)
<u>Repairs</u>					
Inboard Engines	31	18	19	68	(77)
Wood Boats	31	16	18	65	(74)
Fiberglass Boats	28	16	18	62	(71)
Outboard Engines	25	18	16	59	(66)

* For the source of water and types of sewage treatment systems used see Appendix E.

The numbers and percentages of firms (by size) that provided certain dockside and related services for each of the three major regions of the State, are displayed in Tables 18, 19, and 20. Both by size of firm and location, the basic boating services (i.e. gasoline, water and electricity, restrooms, marine supplies, repairs, and sales) are provided by the majority of the firms. However, some related services (i.e. food, lodging, restaurants, and marine insurance) are provided by less than 25 percent of the sampled firms, and the availability of certain other services (i.e. sewage pumpout, boat and motor rentals, and launching facilities) varies considerably by both size of firm and region within the State.

Finally, another important auxiliary service provided by marinas is security, as recreational pleasure boats and related equipment can represent a large investment. One rule of thumb in estimating the cost of a completely equipped boat 30 feet and over in length is about \$1,000 per foot. Since it is the larger and more expensive craft which require dockage and storage facilities at marinas or boatyards, some type of security is usually provided to protect the boats and the facility. Sixty percent (96) of all firms sampled provided around-the-clock security, 91 percent (146) utilized local police patrol surveillance, and 97 percent (156) also used illumination as a form of security.

TABLE 19. DOCKSIDE AND RELATED SERVICES PROVIDED BY 35 COMMERCIAL MARINAS AND BOATYARDS IN THE GREAT LAKES AND ST. LAWRENCE RIVER REGION, 1972

<u>Services</u>	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
Number of Firms by Size	13	10	12	35	(100%)
Oil	13	10	12	35	(100)
Gasoline	12	10	12	34	(97)
Water (dockside)*	7	7	10	24	(75)
Electricity (dockside)	9	9	11	29	(83)
Pumpout (sewage)*	4	7	2	13	(37)
Ice	6	7	8	21	(64)
Food	1	--	2	3	(9)
Restrooms	13	9	9	31	(94)
Showers	2	4	1	7	(22)
Restaurant	3	1	4	8	(23)
Bar	3	--	3	6	(17)
Lodging	3	1	2	6	(17)
Marine Supplies	10	9	9	31	(94)
Marina Insurance	--	2	1	3	(9)
Launching Ramp	9	4	5	18	(51)
Boat and Motor Rentals	6	5	5	16	(46)
<u>Sales</u>					
Boat	8	8	9	25	(71)
Motor	6	8	8	22	(63)
Trailer	6	8	6	20	(57)
<u>Repairs</u>					
Inboard Engines	9	9	10	28	(80)
Wood Boats	7	8	9	24	(69)
Fiberglass Boats	9	7	9	25	(71)
Outboard Engines	7	9	8	24	(69)

* For the source of water and types of sewage treatment systems used, see Appendix E.

TABLE 20. DOCKSIDE AND RELATED SERVICES PROVIDED BY 37 COMMERCIAL MARINAS AND BOATYARDS LOCATED IN THE INLAND WATERS REGION, 1972

<u>Services</u>	<u>Firms Grouped by Number of Berthings</u>			<u>TOTALS</u>	
	10-49	50-99	100 or more	Number	Percent
Number of Firms by Size	17	13	7	37	(100%)
Oil	16	13	7	36	(97)
Gasoline	16	13	7	36	(97)
Water (dockside)*	10	8	7	25	(68)
Electricity (dockside)	10	9	7	26	(70)
Pumpout (sewage)*	5	8	5	18	(49)
Ice	10	10	7	27	(73)
Food	1	3	2	6	(16)
Restrooms	15	12	7	34	(92)
Showers	7	6	4	17	(46)
Restaurant	3	5	1	9	(24)
Bar	3	2	1	6	(16)
Lodging	2	--	--	2	(5)
Marine Supplies	11	13	7	31	(84)
Marine Insurance	1	1	-	2	(5)
Launching Ramp	12	9	5	26	(70)
Boat and Motor Rentals	5	5	-	10	(28)
<u>Sales</u>					
Boat	9	12	6	27	(73)
Motor	8	10	5	23	(62)
Trailer	8	9	4	21	(58)
<u>Repairs</u>					
Inboard Engines	9	11	7	27	(73)
Wood Boats	5	11	7	23	(62)
Fiberglass Boats	7	11	6	24	(65)
Outboard Engines	7	11	6	24	(65)

* For the source of water and types of sewage treatment systems used, see Appendix E.

PAST AND PLANNED INCREASES IN BOATING SERVICES

To indicate the industry's ability to keep pace with increasing demands, the 161 sampled firms were asked to determine what increases in services were implemented in the past, and what was planned for the near future. Forty percent (65) of the firms increased berthing and storage facilities, repairs, supplies, sales, food, and lodging over the past three years (1969-1972). Looking ahead toward the next three years (1972-1975), 44 percent (71) of the firms were planning to add or increase similar services in slightly greater quantities than in the previous three years.

Past Increases in Services

During the three year period 1969-1972, 65 of the 161 firms increased at least one type of boating service, and berthings were expanded by more firms (52) than was any other type of service. Other increased services in order were: boat and engine repairs, winter storage, marine supplies, boat and engine sales, food, and lodging. More services were increased or added by firms located on Inland Waters than in other regions. For example, 49 percent of the Inland firms increased berthings, compared to 37 and 24 percent respectively for firms in the Great Lakes-St. Lawrence and New York City-Long Island Regions (Table 21).

About one-third (52) of the firms sampled increased berthing capacities, and about one-sixth (24) increased winter storage facilities between 1969 and 1972. This represented an additional 1,326 berthings and 1,015 storage spaces over the three year period, or an annual average of 2.8 berthings and 2.1 storage spaces for the 161 firms. If the annual averages are expanded for the 693 commercial firms in the State, this would result in approximately 1,940 berthings and 1,450 storage spaces being added to the existing supply of facilities for each of the three years preceding 1972. This accounts for an estimated 3.7 percent annual increase in commercial berthings for the entire State. When the expanded berthing data are broken down regionally and compared with the existing known commercial supply within each region, it becomes apparent that annual percentage increases are greater for the Inland Waters and Great Lakes-St. Lawrence Regions than for the New York City-Long Island Region (Table 22).

TABLE 21. NUMBER OF FIRMS THAT INCREASED BOATING SERVICES BETWEEN 1969-1972, FOR 161 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

<u>Regions</u> Services	<u>Firms Grouped by</u> <u>Number of Berthings</u>			<u>TOTALS</u>	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Berthings	7	5	9	21	(24%)
Storage	5	2	8	15	(17)
Repairs	6	2	3	11	(12)
Supplies	3	1	2	6	(7)
Sales	3	1	1	5	(6)
Food	3	1	-	4	(4)
Lodging	-	-	-	-	-
<u>II. Great Lakes-St. Lawrence</u>					
Berthings	4	4	5	13	(37%)
Storage	-	2	-	2	(5)
Repairs	3	1	1	5	(14)
Supplies	1	-	-	1	(3)
Sales	-	-	-	-	-
Food	1	-	-	1	(3)
Lodging	1	-	-	1	(3)
<u>III. Inland Waters</u>					
Berthings	5	8	5	18	(49%)
Storage	2	3	3	8	(22)
Repairs	3	3	5	11	(30)
Supplies	1	2	3	6	(16)
Sales	-	3	3	6	(16)
Food	1	1	2	4	(11)
Lodging	1	-	1	2	(5)

TABLE 22. ESTIMATED PAST INCREASES IN BERTHING CAPACITIES FOR
COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1969-1972

Regions	Number Commercial Firms ¹	Known Berthing Capacity ¹	Annual Expanded Berthings ²	Annual Percent Increase
New York City-Long Island	318	28,370	818	2.9%
Great Lakes-St. Lawrence	87	5,136	211	4.1%
Inland Waters	194	11,921	671	5.6%
TOTALS	599	45,427	1,700	3.7%
EXPANDED TOTAL ³	693	52,571	1,940	3.7%

¹ Source: New York State Department of Parks and Recreation Marine Facilities Inventory. Includes only commercial firms with 10 or more known berthings.

² Annual expanded berthings were calculated from berthings added by the sampled firms in each region for the three-year period, and then expanded by the total number of firms within each region having a known capacity of 10 or more berthings.

³ The Marine Facilities Inventory also included approximately 94 commercial marinas or boatyards for which the berthing capacities were unknown. Therefore, the State's total commercial berthing capacity is really greater than 45,427 berthings. Based upon an average of 76 berths per firm, for 599 firms with 10 or more berthings should increase the State total to approximately 52,571.

Between 1970 and 1971, the number of registered boats increased by about two percent (2,490) in the New York City-Long Island Region, compared to an estimated increase of 2.9 percent (818) in commercial berthings during the same year. Although registered boats increased by 2,490, and berthings by 818, only about 20 percent of all registered boats in the State are of sufficient size to require permanent berthing (N.Y. State Parks and Recreation, 1972). Therefore, approximately 500 boats required berthings, assuming the increase in registered boats by length for this region is proportionate to that of the entire State. Thus it appears that the commercial firms supplied a sufficient number of berthings to accommodate the demand for the year 1970-1971 in this region. However, it must be remembered that the demand for berths on Long Island during this time included not only that generated by new boat sales, but also that of waiting lists for better facilities generated from sales in prior years.

For the upstate regions of New York, registered boats increased by 2,768 and berthings by an estimated 882 during 1970-71. Following the above reasoning (i.e. only 20 percent of the registered boats require berthings), the estimated number of berthings (882) supplied by the commercial firms met the demand for berthings (554) by the boating public. Although it appears that sufficient numbers of berthings were provided for the entire State, specific areas could exist where demand may have exceeded the supply.*

Planned Increases in Services

Forty-four percent (71) of the sampled firms planned to expand some boating services during the three year period of 1972-1975. Again, as with past increases in services, more firms planned to provide additional berthings and storage facilities than other types of boating services. In general, the same kinds of services (i.e. repairs, supplies, sales, and food) were planned to increase, but in somewhat greater quantities than in the past three year time period. The one noted exception was that 16 percent (26) of the firms indicated they planned to install sewage pumpout equipment. The distribution of planned additional boating services exhibited only slight differences by either size of firm or location throughout the State (Table 23).

* The annual increase in registered boats is not available for other years, and it is conceivable that changes greater than, or less than, the amount (5,256) for 1970-1971, occurred during other years. But regardless of the increase in recreational boats requesting berthings, any analysis of the supply and demand relationship between boats and berthings excludes almost one-third of the total berthing capacity of the State provided by the public and private sectors, and it can not be assumed this is a static quantity. In addition, the lack of complete supply inventory berthing data also makes any such comparisons somewhat questionable.

TABLE 23. NUMBER OF FIRMS THAT PLAN INCREASES IN BOATING SERVICES
BETWEEN 1972-1975, FOR 161 COMMERCIAL MARINAS AND BOATYARDS
IN NEW YORK, 1972

<u>Regions</u> Services	<u>Firms Grouped by</u> <u>Number of Berthings</u>			<u>TOTALS</u>	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Berthings	14	6	6	26	(29%)
Storage	9	6	6	21	(24)
Pumpout	6	3	6	15	(17)
Repairs	2	-	1	3	(3)
Supplies	2	-	-	2	(2)
Sales	3	2	1	6	(7)
Food	1	-	1	2	(2)
<u>II. Great Lakes-St. Lawrence</u>					
Berthings	6	3	3	12	(34%)
Storage	2	2	4	8	(22)
Pumpout	-	1	2	3	(8)
Repairs	1	1	-	2	(6)
Supplies	-	1	-	1	(3)
Sales	-	-	3	3	(8)
Food	-	-	2	2	(6)
<u>III. Inland Waters</u>					
Berthings	11	8	2	21	(57%)
Storage	5	3	3	11	(30)
Pumpout	3	5	-	8	(22)
Repairs	2	3	-	5	(14)
Supplies	1	-	-	1	(3)
Sales	2	1	1	4	(11)
Food	-	3	-	3	(8)

Some 37 percent (59) of the firms sampled intended to increase berthing capacities, and 25 percent (40) of the firms planned to increase storage space for boats during 1972-1975. This represents an estimated increase of approximately 2,770 berthings and 2,500 storage spaces annually for the 693 commercial marinas and boatyards in New York. On a regional basis most of the additional berthings are planned for the Great Lakes-St. Lawrence Region (7.9 percent), followed by the New York City-Long Island Region (3.7 percent), and the Inland Waters Region (2.9 percent) (Table 24). The annual percentage of planned increase for commercial berthings of four percent for the entire state is slightly higher than the 3.7 percent increase experienced during the 1969-1971 period.

Neither past nor planned future storage capacities increased at a rate comparable to the number of berthings (i.e. 1969-1972 added 1,940 berthings and 1,450 storage units, and 1972-1975 planned expansion is 2,770 berthings and 2,500 storage units). This can be attributed to greater existing storage capacities in relationship to berthings. The inventory data from the 161 sampled firms indicate that storage capacities exceeded berthing capacities by approximately 35 percent for the entire State. This figure ranked from a low of 18 percent for the Great Lakes-St. Lawrence Region to a high of 41 percent for the New York City-Long Island Region.

TABLE 24. ESTIMATED PLANNED INCREASES IN BERTHING CAPACITIES FOR COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972-1975

Regions	Number Commercial Firms ¹	Known Berthing Capacity ¹	Annual Expanded Berthings ²	Annual Percent Increase
New York City-Long Island	318	28,370	1,058	3.7%
Great Lakes-St. Lawrence	87	5,136	405	7.9%
Inland Waters	194	11,921	314	2.9%
TOTALS	599	45,427	1,804	4.0%
EXPANDED TOTALS ³	693	52,571	2,772	4.0%

¹ Source: New York State Department of Parks and Recreation Marine Facilities Inventory. Includes only commercial firms with 10 or more known berthings.

² Annual expanded berthings were calculated from berthings added by the sampled firms in each region for the three-year period, and then expanded by the total number of firms within each region having a known capacity of 10 or more berthings.

³ The Marine Facilities Inventory also included approximately 94 commercial marinas or boatyards for which the berthing capacities were unknown. Therefore, the State's total commercial berthing capacity is really greater than 45,427 berthings. Based upon an average of 76 berths per firm, for 599 firms with 10 or more berthings should increase the State total to approximately 52,571.

RELATIONSHIP TO THE PUBLIC MARINAS

To determine any conflicts that may exist between commercial firms and public marinas, respondents were asked the distance to the nearest public marina, what advantages they felt the public marinas possessed, how these advantages have affected their operations, and what advantages they believe their firms had over public marinas.

Distance from Public Marina

Typically, any influence of a public marina on a commercial firm would be related to the distance between them. Almost one-half (69) of the 142 respondents indicated that a public facility was located within one mile. Firms in the Inland Waters Region were located further from public marinas than were firms elsewhere in the State. About 20 percent (28) of the firms were located over seven miles from the nearest public marinas, and therefore probably are not seriously affected by the public facilities (Table 25).

Effects of Public Marinas

Approximately 60 percent (75) of the respondents indicated the public marinas had no effect on their business, while 21 percent (27) respondents believed the public marinas somehow hindered their operation. Only two of these respondents mentioned that public facilities took away customers, and both of these firms were located in the Great Lakes-St. Lawrence Region. Surprisingly 16 percent (21) of the operators stated that public facilities actually helped their businesses, and this was especially true for the smaller firms in the New York City-Long Island Region* (Table 26).

Thirty percent of the respondents stated that public marinas offered no advantages over their own operations. However, many operators believed the public marinas possessed the following advantages: lower prices (29 percent), unlimited financial backing (15 percent), better appearance (seven percent), more space (four percent), and miscellaneous other advantages (24 percent) (Table 27).

Most of the respondents (70) felt the greatest advantage they had over public marinas was in offering a full-service type of operation that included not only berths, but also repairs, sales, and other services. Thirty-two of the respondents thought there were no differences, or did not know of any, in comparing their firm to the nearest public marina. But 38 believed that commercial firms possessed some kind of advantages, the most noticeable of which was personal service (Table 28).

* Because more respondents in this region classified their firms as "boatyards," the effect of public marinas could be complementary.

TABLE 25. DISTANCE TO PUBLIC MARINA FOR 142 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

<u>Regions</u> Miles	<u>Firms Grouped by</u> <u>Number of Berthings</u>			<u>TOTALS</u>	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Less than 1 mile	22	12	9	43	(48%)
1.1 to 2.0 miles	6	4	-	10	(11)
2.1 to 4.0 miles	6	2	8	16	(18)
4.1 to 7.0 miles	5	3	-	8	(9)
7.1 to 15 miles	1	2	1	4	(5)
15.1 miles or more	4	1	3	8	(9)
Subtotals	44	24	21	89	(100%)
<u>II. Great Lakes-St. Lawrence</u>					
Less than 1 mile	6	3	7	16	(59%)
1.1 to 2.0 miles	1	-	-	1	(4)
2.1 to 4.0 miles	3	-	-	3	(11)
4.1 to 7.0 miles	-	1	-	1	(4)
7.1 to 15 miles	1	2	1	4	(15)
15.1 miles or more	1	-	1	2	(7)
Subtotals	12	6	9	27	(100%)
<u>III. Inland Waters</u>					
Less than 1 mile	4	5	1	10	(39%)
1.1 to 2.0 miles	2	-	-	2	(8)
2.1 to 4.0 miles	2	-	-	2	(8)
4.1 to 7.0 miles	1	1	-	2	(8)
7.1 to 15 miles	1	2	2	5	(20)
15.1 miles or more	1	2	2	5	(20)
Subtotals	11	10	5	26	(100%)
TOTALS	67	40	35	142	

TABLE 26. EFFECTS OF PUBLIC MARINAS ON 128 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

<u>Regions</u>	<u>Firms Grouped by Number of Berthings</u>			<u>TOTALS</u>	
	<u>10-49</u>	<u>50-99</u>	<u>100 or more</u>	<u>Number</u>	<u>Percent</u>
<u>I. New York City-Long Island</u>					
No Effect	27	11	13	51	(70%)
Hindered	2	2	2	6	(8)
Helped	9	1	1	11	(15)
Brought Repair Service	2	1	-	3	(4)
Other	4	2	1	7	(10)
Took Away Gasoline, Launch or Transient Customers	-	-	-	-	--
<u>II. Great Lakes-St. Lawrence</u>					
No Effect	6	3	6	15	(56%)
Hindered	3	2	4	9	(33)
Helped	1	2	-	3	(11)
Brought Repair Service	-	-	-	-	--
Other	1	-	-	1	(4)
Took Away Gasoline, Launch or Transient Customers	1	-	1	2	(7)
<u>III. Inland Waters</u>					
No Effect	3	3	3	9	(32%)
Hindered	4	6	2	12	(43)
Helped	4	2	1	7	(25)
Brought Repair Service	-	-	-	-	--
Other	1	-	-	1	(4)
Took Away Gasoline, Launch or Transient Customers	-	-	-	-	--

TABLE 27. ADVANTAGES THAT OPERATORS OF 116 COMMERCIAL MARINAS AND BOATYARDS THOUGHT PUBLIC MARINAS HAD IN NEW YORK, 1972

<u>Regions</u>	<u>Firms Grouped by Number of Berthings</u>			<u>TOTALS</u>	
	<u>10-49</u>	<u>50-99</u>	<u>100 or more</u>	<u>Number</u>	<u>Percent</u>
<u>I. New York City-Long Island</u>					
None	11	3	4	18	(26%)
Lower Prices	13	5	4	22	(31)
Unlimited Financing	2	3	3	8	(11)
Appearance	1	3	2	6	(9)
More Space	1	2	-	3	(4)
Other	6	4	4	14	(20)
<u>II. Great Lakes-St. Lawrence</u>					
None	5	2	2	9	(38%)
Lower Prices	2	1	4	7	(29)
Unlimited Financing	-	1	4	5	(21)
Appearance	-	-	-	-	--
More Space	1	-	-	1	(4)
Other	3	1	1	5	(21)
<u>III. Inland Waters</u>					
None	3	2	3	8	(36%)
Lower Prices	3	1	1	5	(23)
Unlimited Financing	-	4	-	4	(18)
Appearance	1	1	-	2	(9)
More Space	-	1	-	1	(5)
Other	4	3	2	9	(41)

TABLE 28. ADVANTAGES THAT OPERATORS OF 116 COMMERCIAL MARINAS AND BOATYARDS FELT THEY HAD OVER PUBLIC MARINAS IN NEW YORK, 1972

Regions	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Full Service	26	8	12	46	(66%)
None	10	9	5	24	(35)
Personal Service	4	-	2	6	(9)
Other	11	6	4	21	(30)
<u>II. Great Lakes-St. Lawrence</u>					
Full Service	4	5	5	14	(61%)
None	3	-	2	5	(22)
Personal Service	-	-	-	--	--
Other	4	4	1	9	(39)
<u>III. Inland Waters</u>					
Full Service	4	6	-	10	(44%)
None	3	1	4	8	(34)
Personal Service	-	-	-	--	--
Other	4	3	1	8	(35)

In comparing prices on a competitive basis with neighboring marinas, 60 percent (89) of the respondents indicated that prices were about the same, 25 percent (38) believed they had lower prices, and 15 percent (23) indicated their prices were higher. More equity in pricing existed between firms located in the Inland Water Region than in the other two regions of the State (Table 29).

TABLE 29. 150 COMMERCIAL MARINAS AND BOATYARDS PRICES COMPARED TO NEIGHBORING MARINAS IN NEW YORK, 1972

<u>Regions</u>	<u>Firms Grouped by Number of Berthings</u>			<u>TOTALS</u>	
	<u>10-49</u>	<u>50-99</u>	<u>100 or more</u>	<u>Number</u>	<u>Percent</u>
<u>I. New York City-Long Island</u>					
Higher Prices	7	4	3	14	(17%)
Lower Prices	10	6	4	21	(25)
Same	25	12	11	48	(58)
Subtotals	42	22	19	83	(100%)
<u>II. Great Lakes-St. Lawrence</u>					
Higher Prices	1	2	4	7	(22%)
Lower Prices	4	1	3	8	(25)
Same	8	6	3	17	(53)
Subtotals	13	9	10	32	(100%)
<u>III. Inland Waters</u>					
Higher Prices	-	2	-	2	(6%)
Lower Prices	6	2	1	9	(26)
Same	10	8	6	24	(68)
Subtotals	16	12	7	35	(100%)
TOTALS	71	43	36	150	

EMPLOYMENT

On an annual basis, managers of commercial marinas and boatyards experience a wide fluctuation in the number of employees and types of labor required to operate their firms. This fluctuation is caused by the seasonal nature of the business, and the diversity and quantities of services offered by firms within the industry. Employment data have been divided into two categories: (1) operator-family, which include owners, operators (if not owners), partners, spouses and working age children; and (2) other hired employees.

Operator-Family Employees

The number of operator-family employees averaged 2.1 individuals for the 159 firms supplying information. Forty-one percent (65) of the firms employed one person, and 85 percent (134) employed two persons from this category. As one would expect, usually no more than two operator-family individuals worked. This is relatively true regardless of size for firms in the New York City-Long Island Region, and in the Great Lakes-St. Lawrence Region. However, firms located on inland waters employed an average of 2.7 operator-family persons (Table 30). This disparity is apparently attributable to the employment of working age children by 56 percent of the inland firms, whereas the labor input by working age children is negligible for the firms located in the New York City-Long Island and Great Lakes-St. Lawrence Regions.

Hired Employees

The 2.1 average number of operator-family employees was augmented by an average of 4.2 additional hired employees, for an average total of 6.3 employees per firm. However, two conditions should be noted concerning this average figure of 6.3 employees: (1) the hired employees category also included part-time help; and (2) 29 percent (46) of the firms had six or more hired employees, which tends to disproportionately increase the average for the remaining 113 firms. Over one-half (55 percent) of the firms employed two or less additional workers either full or part-time.

The average number of additional hired employees increases with size of firm by berthing capacity. However, the medium size inland firms employed an average of 5.7 hired employees, while the largest size inland firms hired only 3.4 workers (Table 31). This may be attributed to the small number of observations (7), or to larger firms offering fewer services than medium size firms in this region.

TABLE 30. NUMBER OF OPERATORS AND FAMILY EMPLOYED BY 159 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

<u>Regions</u> Number of Individuals	<u>Firms Grouped by Number of Berthings</u>			<u>Total Number of Firms</u>	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
One	24	10	4	38	(43%)
Two	14	8	14	36	(41)
Three or Four	6	6	3	15	(16)
	<hr/>				
	Subtotals	44	24	21	89 (100%)
	Means	2.0	2.1	2.1	2.0
<u>II. Great Lakes-St. Lawrence</u>					
One	7	5	7	19	(56%)
Two	4	2	4	10	(29)
Three or Four	2	2	1	5	(15)
	<hr/>				
	Subtotals	13	9	12	34 (100%)
	Means	1.9	1.8	2.1	1.9
<u>III. Inland Waters</u>					
One	4	3	1	8	(21%)
Two	10	8	5	23	(64)
Three to Five	2	2	1	5	(15)
	<hr/>				
	Subtotals	16	13	7	36 (100%)
	Means	2.7	2.8	2.3	2.7
<hr/>					
TOTALS		73	46	40	159
MEANS		2.1	2.2	2.1	2.1

This category includes owners, operators (if not owners), partners, spouses, and working-age children.

TABLE 31. NUMBER OF HIRED EMPLOYEES FOR 159 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Regions Number of Employees*	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
I. New York City-Long Island					
Zero	14	3	4	21	(24%)
One	12	9	2	23	(26)
Two	3	3	2	8	(9)
Three	5	3	-	8	(9)
Four	3	1	2	6	(6)
Five or more	7	5	11	23	(26)
Subtotals	44	29	21	89	(100%)
Means	3.4	3.5	6.1	4.1	
II. Great Lakes-St. Lawrence					
Zero	-	2	2	4	(12%)
One	6	2	1	9	(27)
Two	1	-	2	3	(9)
Three	1	-	1	2	(6)
Four	2	1	1	4	(12)
Five or more	3	4	5	12	(34)
Subtotals	13	9	12	34	(100%)
Means	3.1	6.0	7.0	5.2	
III. Inland Waters					
Zero	7	1	-	8	(22%)
One	4	1	2	7	(19)
Two	2	1	2	5	(14)
Three	-	1	-	1	(3)
Four	1	2	1	4	(11)
Five or more	2	7	2	11	(31)
Subtotals	16	13	7	36	(100%)
Means	1.9	5.7	3.4	3.6	
TOTALS	73	46	40	159	
MEANS	3.0	4.6	5.9	4.2	

* Also includes part-time employees.

Since 55 percent (88) of all firms sampled hired two or less full or part-time employees, this would indicate that at least one-half of the approximately 700 commercial marinas and boatyards in New York are likely to be small, family-run businesses.

When the average number of total employees is plotted monthly, seasonal variations in employment become apparent. The total average employment during the winter months from December to March showed the lowest average employment for all firms. A sharp increase in the number of employees occurs during April and May, peaking during the summer months, followed by a significant decrease during the months of September, October and November (Figure 3).

Regardless of the size of firms, nearly the same proportionate fluctuations occurred in the average number of employees between the winter and summer months. The greatest winter to summer increase in average total employment was 3.8 workers, experienced by the medium size firms. In contrast, the smaller and larger size firms increased an average of 2.5 and 2.7 persons respectively. Figure 3 also indicates that during the winter months, firms of fewer than 100 berthings employ about one-half as many employees as do the larger firms. This may be attributed to larger firms offering more repair and storage related services, and to more small firms closing during the winter.

Figure 4 breaks down the average number of total employees into two groupings: (1) office, lodging, restaurant and bar, and other indoor employees; and (2) those employees who provide dock and repair yard services. It is evident from Figure 4 that both groups of employees experience an increase during the summer months, but that the relative average increase is roughly twice as great for dock and yard employees as for office and other types of employees. The pattern of increased average number of employees for the two groups of employees is about the same irrespective of the size of firms.

FIGURE 3. Average number of total employees by size of firms per month for 159 commercial marinas and boatyards in New York, 1972.

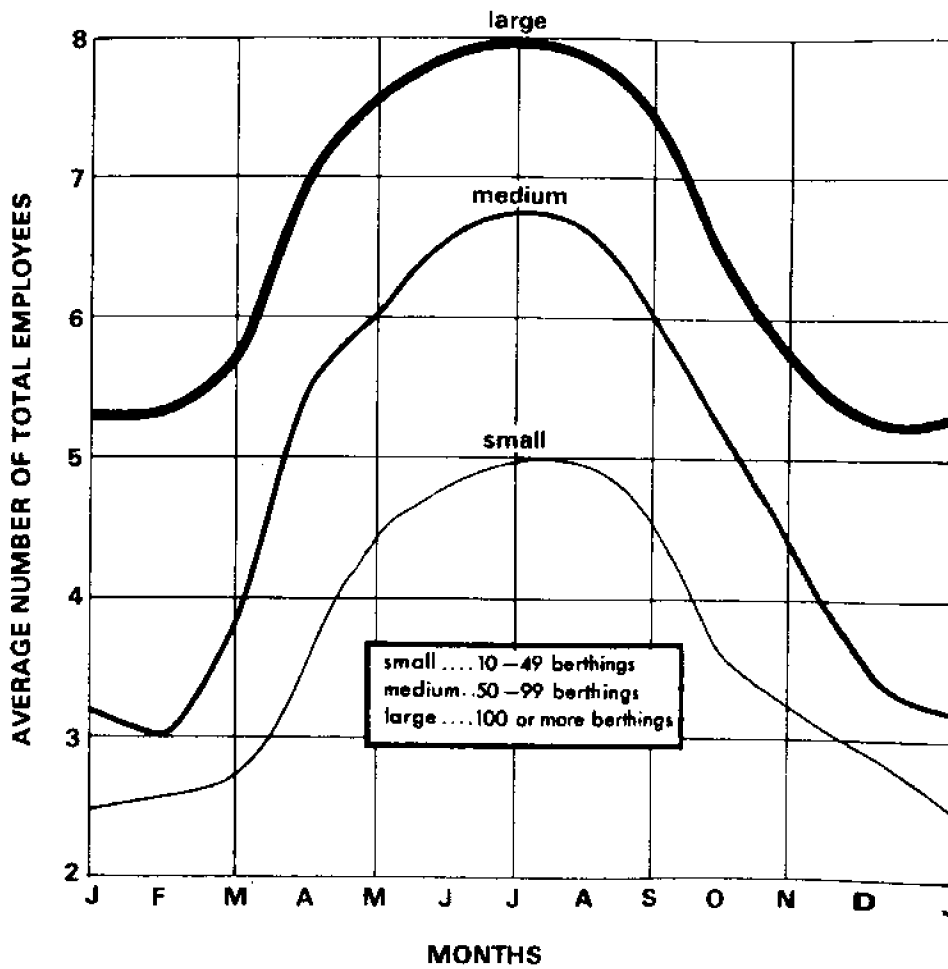
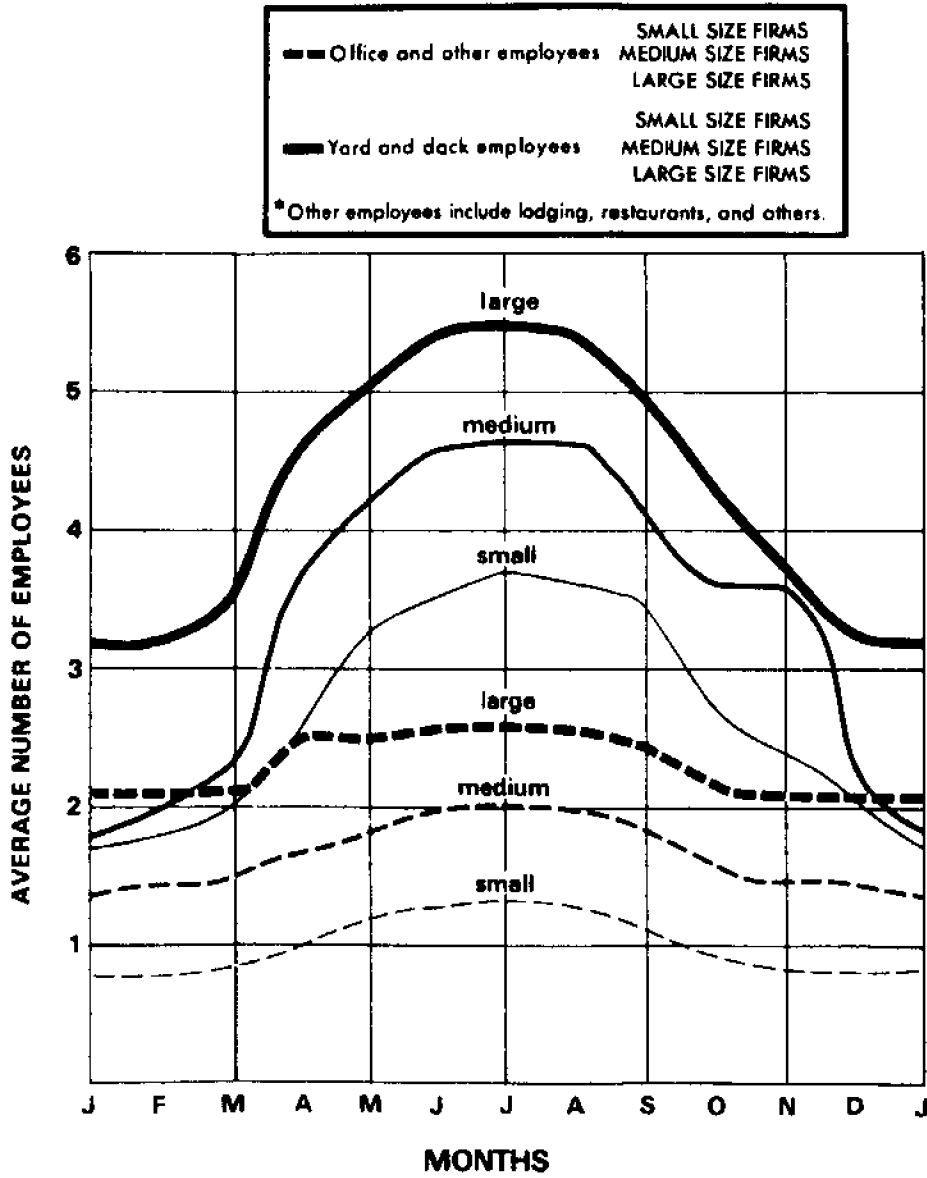


FIGURE 4. Average number of office and other employees, and yard and dock employees by size of firms, for 159 commercial marinas and boatyards in New York, 1972*



Office and other employees
Yard and dock employees

SMALL SIZE FIRMS
MEDIUM SIZE FIRMS
LARGE SIZE FIRMS

SMALL SIZE FIRMS
MEDIUM SIZE FIRMS
LARGE SIZE FIRMS

*Other employees include lodging, restaurants, and others.

ECONOMIC ANALYSIS

One objective of this study was to gain a better understanding of the economic viability and importance of New York's marina industry. The questionnaire used in the study asked for complete data on receipts and expenditures of firms, plus an estimate of their fair market value.

Unfortunately, we were unable to obtain sufficiently complete data on enough firms to do a detailed economic analysis. This was undoubtedly due to several reasons. First, neither Sea Grant nor Cornell University had a previous history of working with marina operators in either a research or extension capacity, and it was difficult in such a short time to develop sufficient rapport to convince firms of the advantages of releasing financial data for the study. Second, financial data for the previous year were often not kept at the marina, but rather, at an owner's home, other place of business, or at an accountant's office. In some of these cases marina operators indicated the data were not readily available, and in others they simply did not want to release the data. Third, some businesses kept poor records, and it was difficult, if not impossible, to gain accurate data, even when given access to financial records.

Despite these problems, sufficient information was gained to derive useful qualitative information about the industry. This information is presented in the belief that it will be of interest, and of potential use, to those involved with marinas in various capacities.

Revenues

Although many firms did not provide us with specific revenue itemizations, 130 of the 161 marinas surveyed (81 percent) provided sufficient information for us to estimate their gross incomes for 1972. We believe these data are sufficient to gain a broad understanding of the size and diversity of the industry.

The 130 firms providing data on receipts were placed in seven gross revenue categories. From Table 32 we can see that the median firm in each of the three regions had gross revenues in the \$50,001 to \$100,000 range. The only notable regional difference in size of firms, expressed in terms of gross revenue, is that no inland firms providing data had gross incomes of greater than \$550,000. While 43 percent of the inland firms had gross revenues ranging from \$100,001 to \$550,000 (compared to 32 percent for the firms in the other two regions), four Great Lakes-St. Lawrence firms (16 percent) and seven New York City-Long Island firms (nine percent) had gross revenues between \$550,000 and \$2.5 million.

While Table 32 seems to show a similar distribution of firms in various gross revenue categories, the absence of inland firms in the upper two categories, combined with a few very large firms on Long Island, causes mean gross revenues to differ markedly. The mean 1972 gross income for firms providing data was approximately \$228,000 for New York City-Long Island, \$116,000 on the Great Lakes-St. Lawrence, and \$63,000 for inland firms. Although no source was cited, Koppelman (1974) claims that the average marina in the United States does an average annual gross of \$87,000.

TABLE 32. GROSS REVENUES OF 130 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Revenue Category	Regions			TOTALS
	New York City- Long Island	Great Lakes- St. Lawrence	Inland Waters	Number Percent
Less than \$20,000	11 (15%)	4 (16%)	6 (20%)	21 (16%)
\$20,000 to \$50,000	18 (24)	7 (28)	6 (20)	31 (24)
\$50,001 to \$100,000	15 (20)	2 (8)	5 (17)	22 (17)
\$100,001 to \$250,000	17 (23)	3 (12)	6 (20)	26 (20)
\$250,001 to \$550,000	7 (9)	5 (20)	7 (23)	19 (15)
\$550,001 to \$1,000,000	3 (4)	2 (8)	-	5 (4)
Over \$1,000,000	4 (5)	2 (8)	-	6 (5)
TOTALS	75	25	30	130 (100%)

For the industry as a whole, both in the New York City-Long Island Region and upstate, there is a strongly positive relationship between number of berths and gross revenue (Table 33). However, this should not be interpreted to signify that the majority of revenues of these commercial marinas was derived from berth rentals.

TABLE 33. MEAN NUMBER OF BERTHS BY GROSS INCOME CATEGORIES FOR 129 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Gross Revenue Categories	Regions		STATE TOTALS
	New York City-Long Island	Upstate New York	
Mean Number of Berths (Number of Firms)			
Less than \$20,000	37 (11)	35 (10)	36 (21)
\$20,000 to \$50,000	54 (15)	48 (13)	51 (28)
\$50,001 to \$100,000	68 (17)	90 (7)	74 (24)
\$100,001 to \$250,000	107 (9)	97 (19)	100 (28)
Over \$250,000	128 (12)	107 (16)	116 (28)

We were able to discern the largest gross revenue producing item for 127 of the 161 firms sampled. Examination of Table 34 shows the diversity of New York's marine industry. While berth rentals, and associated launching and hauling, was listed more frequently than any other item as the largest revenue producer for the New York City-Long Island Region, it was superseded by sales in both of the two upstate regions. It is even more notable that berth rentals, launching and hauling was the leading revenue producing item of only 24 percent of marinas statewide.

TABLE 34. THE LARGEST GROSS REVENUE COMPONENT FOR 127 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Largest Revenue Component	Regions			TOTALS
	New York City- Long Island	Great Lakes- St. Lawrence	Inland Waters	Number Percent
Boat and Engine Sales	19 (25%)	12 (46%)	12 (39%)	41 (32%)
Berth Rentals, Launching, Hauling	22 (29)	7 (27)	2 (7)	31 (24)
Fuel Sales	9 (12)	1 (4)	10 (32)	20 (16)
Repairs	16 (21)	2 (8)	1 (3)	19 (15)
Storage	6 (8)	1 (4)	3 (10)	10 (8)
Marine Supplies	1 (1)	1 (4)	3 (10)	5 (4)
Boat Rentals	2 (3)	1 (4)	-	3 (2)
Bait	2 (3)	-	-	2 (2)
Restaurant	-	1 (4)	-	1 (1)
TOTALS	77	26	31	132* (100%)

* Five firms are double counted because two components produced equally high gross revenues.

Of the 127 firms described in Table 34, 86 were engaged in new boat or engine sales. Of those 86, boat and engine sales was the leading revenue producer for 63 percent on the Great Lakes-St. Lawrence, 52 percent of those located inland, and 43 percent of New York City-Long Island marinas. Although boat and engine sales is a large gross revenue producing item, a number of firms had limited floor space, and viewed sales as a sideline. For some firms, especially those in upper gross revenue brackets, sales was viewed as important, but was nevertheless superseded in revenue produced by repairs, berth rentals-launching-hauling, or storage. For still other firms, boat and engine sales was the principal component of the business, even to the extent that the only management interest in providing berth rentals was as an incentive to potential purchasers of boats.

The relative positions of largest revenue components by region can probably be explained by density of boats and marinas. Some of the largest businesses in boat and engine sales occur on Long Island. Yet, with numerous commercial marinas in the region (approximately 318), combined with substantially less acreage per firm than upstate marinas (and consequently less space for business diversification), and a growth rate in registered boats of only two percent per annum, one would expect a smaller proportion of New York City-Long Island firms to have large boat and engine sales volumes.

On the other hand, because the boating industry is older in the New York City-Long Island Region than upstate, and since approximately 125,000 boats are used principally in this region, one would expect a better market for repairs. This may explain the larger proportion of firms involved in large repair businesses and categorized as boatyards in the New York City-Long Island Region.

Since marinas are generally less dense inland than on coastal waters, one would expect fuel to be provided by a greater proportion of inland firms. The 32 percent of inland firms having fuel as their largest revenue component confirms this. Over 95 percent of Great Lakes-St. Lawrence and inland firms provide fuel sales, but it is the principal revenue component of inland firms more often than of Great Lakes-St. Lawrence firms.

Economic Impact

If the 81 percent of sampled firms providing us with economic data are representative of all commercial marinas and boatyards in New York, expansion and summation of regional data will give an estimate of the statewide economic scope of the industry. Expansion of gross revenue means show that New York commercial marinas were a \$94 million industry in 1972. Regionally, New York City-Long Island marinas grossed about \$72 million, Great Lakes-St. Lawrence marinas about \$10 million, and inland marinas about \$12 million.

The only known previous information on economic impact of marinas is a 1965 estimate of \$59.3 million spent by boaters on Long Island (Koppelman, 1974). The author cites no study from which this estimate was derived, but indicates it is a total estimate of boating expenditures, and not just those incurred at commercial marinas. At that time, total recreation activities of Long Islanders, estimated at \$106.8 million, was surpassed only by food, shelter, and overall transportation expenses.

Another measure commonly used as an indicator of the economic impact or scope of an industry is total investment. Since firms usually do not keep accurate records of total investment overtime, this study sought to estimate the worth of commercial marinas by asking management for its best estimate of the fair market values of its firm.

For the 81 firms whose management felt they could provide this estimate, the mean estimated fair market value was \$320,000 per firm. Regional means were \$362,000 for New York City-Long Island firms, and \$256,000 for upstate firms. While we must emphasize that only one-half of the firms surveyed were able to estimate fair market values, and therefore we can not be sure that these firms are representative of all commercial marinas in the State, we can say that the mean number of berths of reporting firms does not differ statistically from that of non-reporting firms. Furthermore, since the percentage of New York City-Long Island firms reporting fair market value was somewhat better than that for upstate firms, direct expansion of the above statewide mean fair market value should provide at least a ballpark estimate of the total statewide investment in commercial marina and boatyard facilities having at least 10 berthings in 1973.

Performing these expansions, we find a total statewide investment, as represented by management estimate of fair market value, in excess of \$216 million. Approximately \$133 million of this total is represented by New York City-Long Island facilities, while the estimated value of upstate firms is \$83 million.

Economic Viability

Previously published reports indicate that the marina industry is a relatively low profit industry. Rick (1968) indicates that the profit margin of the industry is less than five percent, and a 1974 industry study of 75 marinas and boatyards nationally indicated average net earnings before taxes were 5.8 percent (NAEBM, 1974). Probably because of the difficulty in obtaining financial data, previous studies by universities and other public agencies have not provided information on profits.

Only 63 of the 161 firms surveyed statewide provided sufficient information for us to examine profit, and these data do not include depreciation, since management almost universally did not have that figure available. While we do not know whether these data are representative of all New York marinas, the magnitude of profits is similar to that of the two previous studies.

These 63 reporting firms showed a profit of approximately 10 percent of gross income, (after all expenditures except depreciation had been subtracted). The depreciation figure, if available, could realistically cut this profit rate by half. Average 1972 profits of the 63 firms providing data were approximately 6.2 percent of estimated fair market value. Again, the insertion of a depreciation figure and income taxes would reduce this profit level, perhaps by as much as 50 percent.

The 14 firms providing the greatest return on invested capital (actually estimated fair market value) returned at least 10 percent of estimated fair market value (FMV). Dunn and Bradstreet (1972) indicate a net profit on assets (e.g. fair market value less indebtedness) of at least 10 percent is desirable (regardless of the line of business). A comparison of these 14 firms with the other 49 shows the lack of relationship between net return on invested capital and number of berths. Firms with net income/FMV of less than 10 percent actually averaged more berths than did the 14 more profitable firms, 70 versus 64. Yet the 14 more profitable firms had mean gross incomes of approximately \$440,000, compared to only \$142,000 for the 49 less profitable firms. The more profitable firms not only had much greater sales volumes, but they were also more diversified. Seventy-eight percent of the more profitable firms offered both boat and engine sales, and repairs, compared to only 58 percent of the less profitable firms. As noted previously, large gross incomes, in excess of \$200,000, are usually indicative of large sales or repair businesses, or possibly fuel sales, rather than receipts from berthings.

PROBLEM AREAS

Problems Associated with Expansion

Ninety-eight percent of the sampled firms located in the New York City-Long Island Region, and 74 percent of the firms in the Great Lakes-St. Lawrence and Inland Waters Regions, were under the jurisdiction of some type of zoning regulations. A majority of the firms were either under a commercial or business waterfront classification of zoning, while others fell under such zoning categories as light industry, residential, recreation, or non-conforming (Table 35).

Respondents were asked if zoning ordinances prevented them from building or expanding new facilities. Sixteen percent (25) of the firms indicated that zoning codes did prevent additional expansion; about two-thirds of the restrictions concerned structural buildings, and the other one-third prevented the construction of more docks.

Other hindrances to expansion centered on dredging. Forty-five percent (72) of the respondents mentioned that they would be able to dock additional boats if dredging operations were carried out. Twenty-seven percent (43) of the firms interviewed planned dredging operations. Of the problems associated with dredging, over one-half (37) concerned either the high cost of such operations (20), or in satisfying either zoning or permit procedures (17). Additional problems with dredging dealt primarily with land being leased from another party (8), no place to deposit the tailings (7), and five problems resulted from water areas being too small to allow dredging (Table 36). Also, it appears the smaller firms located in the New York City-Long Island Region and the Great Lakes-St. Lawrence Region experienced a majority of the dredging problems. Many problems on the South shore of Long Island were caused by sand movements narrowing channels as a result of tides and wave action. Most of these firms are primarily interested in maintenance dredging to restore their capacities to previous levels, rather than requesting new dredging to allow for expansion.

TABLE 35. TYPES OF ZONING FOR 124 COMMERCIAL MARINAS AND BOATYARDS
IN NEW YORK, 1972

Regions Types of Zoning	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
Commercial Waterfront	13	6	6	25	(30%)
Business Waterfront	12	9	7	28	(33)
Light Industry	8	3	2	13	(16)
Residential	3	1	1	5	(6)
Recreation	-	-	3	3	(4)
Other	-	1	-	1	(1)
Non-Conforming	6	2	1	9	(11)
Subtotals	42	22	20	84	(100%)
<u>II. Great Lakes-St. Lawrence</u>					
Commercial Waterfront	3	2	2	7	(32%)
Business Waterfront	1	2	2	5	(23)
Light Industry	2	1	4	7	(32)
Residential	-	-	2	2	(9)
Recreation	-	1	-	1	(5)
Other	-	-	-	-	-
Non-Conforming	-	-	-	-	-
Subtotals	6	6	10	22	(100%)
<u>III. Inland Waters</u>					
Commercial Waterfront	4	2	2	8	(44%)
Business Waterfront	1	2	1	4	(22)
Light Industry	1	-	-	1	(6)
Residential	1	1	1	3	(17)
Recreation	-	-	-	-	-
Other	-	-	-	-	-
Non-Conforming	1	-	1	2	(11)
Subtotals	8	5	5	18	(100%)
TOTALS	56	33	35	124	

TABLE 36. PROBLEMS ASSOCIATED WITH DREDGING FOR 43 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

Regions	Firms Grouped by Number of Berthings			TOTALS	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island</u>					
High Cost	9	5	2	16	(40%)
Small Water Area	-	-	-	--	--
Zoning and Permit Problems	9	3	2	14	(35)
Land Leased	2	-	-	2	(5)
No Place for Fill	2	-	-	2	(5)
Other	3	2	1	6	(15)
Subtotals	25	10	5	40	(100%)
<u>II. Great Lakes-St. Lawrence</u>					
High Cost	-	-	1	1	(5%)
Small Water Area	3	-	2	5	(25)
Zoning and Permit Problems	1	-	1	2	(10)
Land Leased	3	-	2	5	(25)
No Place for Fill	3	-	2	5	(25)
Other	2	-	-	2	(10)
Subtotals	12	-	8	20	(100%)
<u>III. Inland Waters</u>					
High Cost	1	1	1	3	(38%)
Small Water Area	-	-	-	-	--
Zoning and Permit Problems	-	1	-	1	(12)
Land Leased	-	1	-	1	(12)
No Place for Fill	-	-	-	-	--
Other	1	2	-	3	(38)
Subtotals	2	5	1	8	(100%)
TOTALS	39	15	14	68	

Insurance

Insurance is an important component of any business. Forty-six percent (74) of the respondents acknowledge a need for insurance companies to develop policies specifically for commercial marina and boatyard operations. The need for a specific type of insurance policy was more frequently mentioned by operators in the New York City-Long Island and Inland Water Regions. Other insurance problems encountered by the respondents were: (1) cost generally high, indicated by 21 percent; (2) the high cost of liability insurance, indicated by 15 percent; (3) finding employee health insurance was a problem for three percent of the respondents; and (4) miscellaneous problems with insurance were recorded by 17 percent of the respondents (Table 37).

TABLE 37. NUMBER OF FIRMS WITH INSURANCE PROBLEMS FOR 161 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

<u>Regions</u>	<u>Firms Grouped by</u> <u>Number of Berthings</u>			<u>TOTALS</u>	
	<u>10-49</u>	<u>50-99</u>	<u>100 or more</u>	<u>Number</u>	<u>Percent</u>
<u>I. New York City-Long Island</u>					
Need for Specific Policy	23	14	13	50	(56%)
Cost	9	8	5	22	(25)
Liability High	10	2	5	17	(19)
Employee Health	--	1	3	4	(5)
Other	5	1	4	10	(11)
<u>II. Great Lakes-St. Lawrence</u>					
Need for Specific Policy	2	1	2	5	(14%)
Cost	2	2	1	5	(14)
Liability High	1	--	2	3	(9)
Employee Health	--	--	--	--	--
Other	--	2	1	3	(9)
<u>III. Inland Waters</u>					
Need for Specific Policy	9	7	3	19	(51%)
Cost	1	4	1	6	(16)
Liability High	2	2	--	4	(11)
Employee Health	--	--	--	--	--
Other	4	6	5	15	(41)

Breakwaters

Breakwaters are usually constructed to provide shelter and protection for marinas located on waters which produce adverse weather conditions that could threaten the facility. Twenty-five of the commercial marinas and boatyards sampled had breakwaters. The distribution of firms with breakwaters indicate no pattern either by size of firm or location in the State (Table 38).

TABLE 38. COMMERCIAL MARINAS AND BOATYARDS WITH BREAKWATERS IN NEW YORK, 1972

<u>Regions</u>	<u>Firms Grouped by Number of Berthings</u>			<u>TOTALS</u>	
	<u>10-49</u>	<u>50-99</u>	<u>100 or more</u>	<u>Number</u>	<u>Percent</u>
New York City-Long Island	4	2	3	9	(36%)
Great Lakes-St. Lawrence	2	3	3	8	(32)
Inland Waters	3	3	2	8	(32)
TOTALS	9	8	8	25	(100%)

About one-third (9) of the respondents with breakwaters indicated problems with these safeguards. Four were legal in nature, three were natural problems on the Great Lakes, and two were problems associated with damage by barges on inland waters. Although only nine of the 161 sampled firms experienced problems associated with breakwaters, if this number is expanded for the approximately 700 commercial firms in the State, this could represent about 40 firms with similar breakwater problems statewide. Due to the tremendous investments breakwater facilities require, both sound advice and insurance are key needs for operators. The federal flood insurance program does not insure structures located in the water, and such insurance is not readily available from other sources.

FUTURE BUSINESS OUTLOOK

To assess how respondents viewed their business future, they were first asked to estimate the fair market value of their total operation (e.g. land, buildings, equipment, etc.), and then asked if they would be willing to sell at the end of the season if they were offered this amount. Forty-two percent (68) of the respondents indicated they would sell for the estimated value and another 33 percent (53) were unsure. Thus, only 25 percent of the respondents would not sell their businesses based upon their assessment of the firm's fair market value.

Given the previous financial history of the firms, respondents were then asked if they expected to be in business three years into the future. Only one percent stated no, while four percent were unsure, and 95 percent indicated they planned to be in business in 1975.

Several explanations might be offered for the above reactions of respondents to staying in business: (1) the respondents' estimated market value is somewhat inflated; (2) respondents are not aware of potential buyers; or (3) marina operators enjoy their work sufficiently that they are willing to continue in their business for limited financial returns. One possible explanation is that many firms do not generate sufficient returns on their investments to attract buyers, and due to the inertia of the business (i.e. fixed capital assets), many owners probably have no alternative but to accept rather marginal returns on their investments.

While firms have previously expanded regionally on a par with boater demand, these data raise questions about the ability of the industry to continue to do so. The following points summarize our reasons for this concern:

- (1) Firms frequently expressed the belief that current land, building and interest costs make new marina construction unfeasible as a commercial venture. Long Island operators indicated the only real opportunity for new entrepreneurs to enter the industry was by purchasing an existing firm. Our data generally substantiate this concern on a statewide basis; only five of the 161 marinas studied were less than five years old. However, four of the five marinas were located in the New York City-Long Island region, suggesting that this region still has some space for expansion of the industry.
- (2) The demand for shoreline for other industrial/commercial uses, combined with low profit/fair market value ratios, raises the possibility that firms may sell out to non-marina entrepreneurs (such as housing, sand and gravel, and other waterfront industries) if zoning is not prohibitive.
- (3) Forty-two percent of firms studied indicated they would sell if offered their estimates of the firm's fair market value.
- (4) The number of firms unable to expand due to lack of space or zoning regulations is increasing.

- (5) Although the energy crisis of 1974 reduced boat sales for a few months, the outlook for boating sales was stable through the fall of 1975, and limited growth in sales should continue. In fact large boat sales continue to increase over past years.

Regionally, these problems will probably become apparent over the next ten years. We expect the New York City-Long Island region will be faced with additional land use competition within its coastal zone, of which demands for new marinas will be a part. The development of the salmonid stocking program in the Great Lakes, if successful, will greatly increase boating demand in this area. While the process of obtaining necessary permits for locating, dredging, and constructing a new facility is tedious, and risks of storm damage (currently uninsurable) on the Great Lakes are high, the outlook for market demand appears to be excellent at this time. Other upstate areas generally have space for at least limited expansion, and boating sales will probably increase modestly despite higher fuel costs. Potential entrepreneurs in all areas of the State will face the problem of very high construction costs.

In any given locale, the future business outlook of the commercial sector can be closely tied to actions taken by the public sector. This is particularly true upstate, where marinas are less dense, and construction of a single public marina can have a significant impact on nearby commercial marinas. To illustrate, even in or near a metropolitan area where all existing berths are occupied, and several marinas have waiting lists, the opening of a 300 slip public marina might significantly affect the business of surrounding commercial marinas for a period of two or three years, even assuming demand continues to increase. What appears to be an ample total waiting list to justify a new marina may be artificial because:

- (1) The list may be dated. Some boaters may have found a berth, others may have moved, and still others may no longer be interested. Undoubtedly, boaters no longer interested in a berth seldom remember to call a marina and ask that their names be removed from the list.
- (2) Boaters desiring a local berth may have their names on the waiting list of every marina in the area, thus inflating any total count.

Thus, closer communications between the public and commercial sectors seems extremely important in planning for the gradually expanding boating demand expected in the foreseeable future.

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APPENDIX A

THE NUMBER OF REGISTERED BOATS BY LENGTH IN NEW YORK, 1971*

Class by Length	Number	Percent
A under 16 feet	239,416	61.6%
1 16-25 feet	128,058	31.4
2 26-39 feet	24,284	6.1
3 40-64 feet	1,448	0.4
4 65 feet or more	23	--
uncoded	<u>2,135</u>	<u>0.5</u>
TOTALS	395,364	100.0%

* Source: New York State Department of Parks and Recreation. 1973
Analysis of New York State Motorboat Registrations 1970-1971. State
of New York, Albany.

APPENDIX B

COMMERCIAL, MUNICIPAL, PRIVATE, AND STATE BOATING FACILITIES WITH TEN OR MORE KNOWN BERTHING
BY COUNTY IN NEW YORK

COUNTY	COMMERCIAL				MUNICIPAL ²			
	Marinas and Boatyards ³	Berthing Moorings	Berthing Slips	Other Marine Facilities ⁴	Marinas ³	Berthing Moorings	Berthing Slips	Launching Sites
Albany	3	30	187	4	--	--	--	--
Allegany	--	--	--	1	--	--	--	--
Bronx	19	823	1,248	8	--	--	--	--
Broome	2	30	--	1	--	--	--	--
Cattaraugus	--	--	--	1	1	50	234	--
Cayuga	10	52	491	6	1	--	40	1
Chautauqua	2	15	50	12	--	--	--	2
Chemung	--	--	--	--	--	--	--	--
Chenango	--	--	--	--	--	--	--	--
Clinton	9	270	433	6	1	--	40	1
Columbia	1	--	19	--	--	--	--	--
Cortland	2	24	--	--	--	--	--	--
Delaware	--	--	--	--	--	--	--	--
Dutchess	3	--	320	1	--	--	--	--
Erie	8	6	577	17	--	--	--	8
Essex	8	162	352	8	--	--	--	4
Franklin	7	--	315	3	--	--	--	--
Fulton	8	--	355	3	--	--	--	--
Genesee	--	--	--	--	--	--	--	--

APPENDIX B
(Continued)

COUNTY	COMMERCIAL				MUNICIPAL ²			
	Marinas and Boatyards ³	Berthing Moorings ³	Berthing Slips	Other Marine Facilities ⁴	Marinas ³	Berthing Moorings ³	Berthing Slips	Launching Sites
Greene	6	33	219	--	--	--	--	--
Hamilton	2	--	30	3	--	--	--	1
Herkimer	3	26	60	2	2	33	33	1
Jefferson	54	54	2,781	33	2	--	100	4
Kings	21	50	2,576	6	--	--	--	2
Lewis	4	78	120	--	--	--	--	--
Livingston	1	--	13	--	--	--	--	--
Madison	9	5	582	3	--	--	--	--
Monroe	13	2	1,084	4	--	--	--	--
Montgomery	--	--	--	--	(2 no data)	--	40	1
Nassau	99	582	8,057	52	6	653	746	13
New York	2	--	165	--	--	--	--	1
Niagara	9	--	622	12	1	--	11	6
Oneida	2	--	290	10	--	--	--	--
Onondaga	22	153	1,267	3	1	20	20	1
Ontario	3	--	206	1	--	--	--	2
Orange	1	6	24	--	--	--	--	--
Orleans	2	--	40	8	--	--	--	--
Oswego	6	--	516	14	--	--	--	--
Otsego	4	--	68	3	--	--	--	--

APPENDIX B
(Continued)

COUNTY	COMMERCIAL						MUNICIPAL ²			
	Marinas and Boatyards ³	Berthing Moorings	Berthing Slips	Berthing Facilities ⁴	Other Marine Facilities	Marinas ³	Berthing Moorings	Berthing Slips	Launching Sites	
Putnam	2	25	28	1		--	--	--	--	
Queens	19	684	1,715	11		--	--	3		
Rensselaer	3	--	57	2		--	--	--	--	
Richmond	9	71	771	4		1	60	--	--	
Rockland	10	6	1,170	1		--	--	--	1	
St. Lawrence	12	45	425	17		1	--	10	10	
Saratoga	16	13	641	10		1	--	10	1	
Schenectady	--	--	--	2		--	--	--	--	
Schoharie	--	--	--	--		--	--	--	--	
Schuyler	3	--	225	4		1	--	172	1	
Seneca	5	--	327	7		--	--	--	2	
Steuben	1	--	12	1		--	--	--	1	
Suffolk	132	186	10,327	85		25	300	2,843	18	
Sullivan	--	--	--	2		--	--	--	--	
Tioga	--	--	--	--		--	--	--	--	
Tompkins	5	--	459	1		1	--	71	--	
Ulster	9	--	561	6		--	--	--	2	
Warren	2	--	75	14		--	--	--	--	
Washington	3	--	79	4		1	10	50	--	

APPENDIX B
(Continued)

COUNTY	COMMERCIAL				MUNICIPAL ²			
	Marinas and Boatyards ³	Berthing Moorings	Berthing Slips	Other Marine Facilities ⁴	Marinas ³	Berthing Moorings	Berthing Slips	Launching Sites
Wayne	3	80	60	14	--	--	--	1
Westchester	19	397	1,490	16	5	603	1,630	--
Wyoming	--	--	--	1	--	--	--	--
Yates	1	--	30	7	--	--	--	--
TOTALS	599	3,908	41,519	436	51	1,729	6,038	88
EXPANDED TOTALS ⁵	693	4,519	48,005					

¹ Source: New York State Department of Parks and Recreation. n.d. "New York State Outdoor Recreation Facilities Inventory Card 3: Marine Inventory." Albany, (unpublished) Received August 1974.

² Municipal also includes: county, city, village, town, Federal, school districts, quasi-public, and non-profit or community service organizations.

³ The majority of these marinas or boatyards also include launching facilities.

⁴ Other marine facilities include: launching sites, gas docks, boat rentals and charters, boat repair yards, fish stations, motels, camps, cottages, restaurants, etc., and the small berthing capacity associated with these types of facilities is most often directly related to the business or facility and not offered as seasonal rentals to the boating public and therefore not included in these data. Also, locations listed on the inventory but offering no facilities or services were excluded.

⁵ The State marine facilities inventory lists 94 commercial firms and 126 private yacht and boat clubs with berthing capacities unknown. Therefore, these berthing figures were based upon the averages derived from the 599 marinas, and 101 clubs with 10 or more known berthings.

APPENDIX B
(Continued)

COUNTY	PRIVATE					STATE				
	Yacht and Boat Clubs	Berthing Moorings	Berthing Slips	Yacht Clubs with No Data	Marinas ³	Berthing Moorings	Berthing Slips	Launching Sites		
Greene	4	6	79	1	1	--	45	1		
Hamilton	--	--	--	--	--	--	--	16		
Herkimer	--	--	--	--	--	--	--	1		
Jefferson	2	--	80	2	10	--	347	6		
Kings	10	25	439	5	--	--	--	--		
Lewis	--	--	--	--	--	--	--	1		
Livingston	--	--	--	--	--	--	--	1		
Madison			(1 launch site)		--	--	--	1		
Monroe	1	--	75	4	1	--	150	--		
Montgomery	--	--	--	--	--	--	--	--		
Nassau	3	310	22	21	1	--	600	--		
New York	--	--	--	--	--	--	--	--		
Niagara	3	--	100	4	1	--	26	1		
Oneida	--	--	--	--	--	--	--	2		
Onondaga	2	31	51	1	--	--	--	1		
Ontario	3	--	338	--	--	--	--	3		
Orange	2	150	240	--	--	--	--	1		
Orleans	--	--	--	2	--	--	--	--		
Oswego	--	--	--	--	--	--	--	3		
Otsego	--	--	--	--	--	--	--	1		

APPENDIX B
(Continued)

COUNTY	PRIVATE				STATE			
	Yacht and Boat Clubs	Berthing Moorings	Berthing Slips	Yacht Clubs with No Data	Marinas ³	Berthing Moorings	Berthing Slips	Launching Sites
Putnam	--	--	--	--	--	--	--	--
Queens	--	--	--	19	--	--	--	--
Rensselaer	3	200	125	--	--	--	--	--
Richmond	--	--	--	2	--	--	--	--
Rockland	9	124	606	--	--	--	--	--
St. Lawrence	1	--	50	--	2	--	8	11
Saratoga	1	--	80	--	--	--	--	1
Schenectady	--	--	--	--	--	--	--	--
Schoharie	--	--	--	--	--	--	--	1
Schuyler	2	--	125	--	--	--	--	--
Seneca	1	--	30	--	4	--	335	--
Steuben	--	--	--	--	--	--	--	1
Suffolk	11	153	878	38	2	--	91	1
Sullivan	--	--	--	--	--	--	--	3
Tioga	--	--	--	--	--	--	--	--
Tompkins	--	--	--	1	2	--	151	--
Ulster	4	14	123	1	--	--	--	--
Warren	--	--	--	1	--	--	--	--
Washington	--	--	--	1	--	--	--	2

APPENDIX B
(Continued)

COUNTY	PRIVATE				STATE			
	Yacht and Boat Clubs	Berthing Moorings	Berthing Slips	Yacht Clubs with No Data	Marinas ³	Berthing Moorings	Berthing Slips	Launching Sites
Wayne	--	--	--	3	--	--	--	1
Westchester	20	602	773	9	1	200	--	--
Wyoming	--	--	--	--	--	--	--	--
Yates	--	--	--	--	--	--	--	2
TOTALS	101	2,123	4,789	126	30	200	2,124	92
EXPANDED TOTALS ⁵	227	4,771	10,760					

1 Source: New York State Department of Parks and Recreation. n.d. "New York State Outdoor Recreation Facilities Inventory Card 3: Marine Inventory." Albany, (unpublished) Received August 1974.

2 Municipal also includes: county, city, village, town, Federal, school districts, quasi-public, and non-profit or community service organizations.

3 The majority of these marinas or boatyards also include launching facilities.

4 Other marine facilities include: launching sites, gas docks, boat rentals and charters, boat repair yards, fish stations, motels, camps, cottages, restaurants, etc., and the small berthing capacity associated with these types of facilities is most often directly related to the business or facility and not offered as seasonal rentals to the boating public and therefore not included in these data. Also, locations listed on the inventory but offering no facilities or services were excluded.

5 The State marine facilities inventory lists 94 commercial firms and 126 private yacht and boat clubs with berthing capacities unknown. Therefore, these berthing figures were based upon the averages derived from the 599 marinas, and 101 clubs with 10 or more known berthings.

APPENDIX C

SURVEY OF COASTAL MARINA INDUSTRY
FOR 1972

Name of Firm _____ Date: _____
Mailing Address _____ Phone: _____

Name of Body of Water Where Located _____
Name of Owner _____ Approximate Age: _____
Name of Manager _____ Age: _____
Name of Respondent _____ Title: _____
Interviewer _____

1. The term that would best describe your operation:

Marina (Dockage, Supplies) _____
Boatyard (10-20 slips, mainly repairs) _____
Combination (one or more of above
plus sales) _____
Other (Specify) _____

2. The business is organized as a:

Individual Proprietorship _____
Partnership _____
Non-Profit Corporation _____
Corporation (for profit)
10 or fewer stockholders _____
More than 10 stockholders _____
Other (Please Specify) _____

3. Management is provided by (Check all that apply):

Owner _____
Paid Manager _____
Other (Specify) _____

-
4. Does the Manager derive his entire income from this marine operation?
() YES () NO
If NO, what other work is a significant source of his income?

5. Did the owner have an occupation or other business in addition to the marina in 1972? () YES () NO
If YES, what was it? _____
6. The business is open:
 ___ All Year
 ___ Part of the Year - If so, please specify the months in operation

7. Your normal boating season, i.e. period from spring introduction to fall removal of boats, is _____ to _____.
8. Other than marine services, what accommodations or recreational services are available to boaters on or adjacent to this property?

9. How many years has this firm been in business?
 A) As a marina _____
 B) Providing other boating services _____
10. How many years under the present management? _____
11. How many acres of land at this site are owned by your firm? _____
12. What is the total water area available to you for mooring boats?

13. What is your approximate footage of shore line? _____
-

14. Your present water berthing capacity is: (in this and following questions involving number and capacity, please consider both sail and power boats).

	<u>Number</u>	<u>Price</u>			
		<u>Season</u>	<u>Month</u>	<u>Week</u>	<u>Day</u>
		\$/___	\$/___	\$/___	\$/___
<u>Moorings</u>					
16 ft. or less	_____	_____	_____	_____	_____
17-26 ft.	_____	_____	_____	_____	_____
27-40 ft.	_____	_____	_____	_____	_____
41 ft. or more	_____	_____	_____	_____	_____
TOTAL	_____	_____	_____	_____	_____
<u>Slips</u>					
16 ft. or less	_____	_____	_____	_____	_____
17-26 ft.	_____	_____	_____	_____	_____
27-40 ft.	_____	_____	_____	_____	_____
41 ft. or more	_____	_____	_____	_____	_____
TOTAL	_____	_____	_____	_____	_____
<u>Other</u>					
16 ft. or less	_____	_____	_____	_____	_____
17-26 ft.	_____	_____	_____	_____	_____
27-40 ft.	_____	_____	_____	_____	_____
41 ft. or more	_____	_____	_____	_____	_____
TOTAL	_____	_____	_____	_____	_____

15. In 1972, were all your berths reserved in advance for the entire boating season? () YES () NO. If YES, go to Question 17.
16. A) If NO, how many berths were rented for the season? _____
- B) Were there periods of your boating season when all non-seasonal berths were occupied? YES () NO ().
- C) Generally, when were these periods of maximum use?
- Holiday Weekend _____
- Weekend _____
- Weekday _____
- Other _____

17. A) Your present storage capacity is:

DESCRIPTION	NUMBER	UTILIZATION		PRICE			
		SUMMER	WINTER	SEASON	MONTH	WEEK	DAY
<u>Dry-Stack</u>							
16 ft. or less							
17-26 ft.							
27-40 ft.							
41 ft. or more							
TOTAL							
<u>Wet</u>							
16 ft. or less							
17-26 ft.							
27-40 ft.							
41 ft. or more							
TOTAL							
<u>Dry-Covered</u>							
16 ft. or less							
17-26 ft.							
27-40 ft.							
41 ft. or more							
TOTAL							
<u>Dry-Uncovered</u>							
16 ft. or less							
17-26 ft.							
27-40 ft.							
41 ft. or more							
TOTAL							

B) Does the above charge include winterizing the engine?

() YES () NO.

18. How many cars is your parking area able to accommodate? _____

19. Do you provide your customers with:

	<u>YES</u>	<u>NO</u>
Gasoline	---	---
Oil	---	---
Fresh Water (Dockside)	---	---
Electricity (Dockside)	---	---
Ice	---	---
Restrooms	---	---
Marine Supplies	---	---
Showers	---	---
Restaurant	---	---
Marine Insurance	---	---
Bar	---	---
Lodging	---	---
Food	---	---
Boat Sales	---	---
Motor Sales	---	---
Trailer Sales	---	---
Boat and Motor Rentals	---	---

20. Do you repair:

	<u>YES</u>	<u>NO</u>
Fiberglass Boat Bodies	---	---
Wooden Boat Bodies	---	---
Inboard Engines	---	---
Outboard Engines	---	---

21. Have you increased your marina in physical size during the past three years? () YES () NO.

If YES, Explain _____

22. Did this increase the number of boats you can handle? () YES () NO

If YES how many more do you handle in each size class, indicate in Table under Question 24.

23. Have you increased the services offered in the past three years?

() YES () NO.

If YES, what new services do you offer? _____

24. Do you plan to increase your capacity during the next three years?

() YES () NO. If YES, briefly describe the change you envision.

How many additional boats, if any, will this enable you to handle?
Please indicate in Table below.

LENGTH	PAST EXPANSION		FUTURE EXPANSION	
	SUMMER DOCKAGE	WINTER STORAGE	SUMMER DOCKAGE	WINTER STORAGE
16 ft. or less	_____	_____	_____	_____
17-26 ft.	_____	_____	_____	_____
27-40 ft.	_____	_____	_____	_____
41 ft. or more	_____	_____	_____	_____

25. What new services do you plan to offer in the next three years?

26. A) Do you have a public launching ramp? () YES () NO

B) Launching Fee Charged? \$/Launch _____ \$/Season _____

C) Approximately how many boats did you launch in 1972? _____

27. What types of promotional activities do you use to attract people to your marina (please check):

- _____ Brochures
- _____ Newspaper ads
- _____ Public TV and radio
- _____ Speaking engagements
- _____ Boat shows
- _____ No promotion
- _____ Other (Specify) _____

28. In 1972:
- A) Did you accept reservations for transient boaters? () YES () NO
 - B) Did you permit reservations of specific berths? () YES () NO
 - C) Did you have a minimum reservation period? () YES, Days Length _____
() NO
 - D) Were there periods when you would not accept reservations?
() YES, Describe _____
() NO
 - E) About what percent of your 1972 business was reserved in advance? _____%
29. A) Do you have a "Float Plan" whereby a boater states his course of travel before a trip? () YES () NO
- B) If YES, do you rent seasons/weekly/daily berths while these boaters are away? () YES () NO
30. Is the marina illuminated at night? () YES () NO
31. Does the firm provide around-the-clock security? () YES () NO
32. Do town or city police patrol this marina? () YES () NO
33. Do you have head (holding tank) pumping out facilities? () YES () NO
If NO, do you have plans to provide this service in the future?
() YES () NO
34. What type of sewage hookup do you have?
____ City
____ Septic tank
____ Leech field
____ Other (Specify) _____
35. What is your source of water?
____ City
____ Own well
____ Chlorinated lake water
____ Other (Specify) _____
36. Is your firm under zoning regulations? () YES () NO
If YES, in what type zone is your firm located? _____
-

37. Have these codes prevented you from building new facilities or expanding? () YES () NO
If YES, what new facilities would you build? _____
38. Could you dock more boats if dredging operations were carried out at your marina? () YES () NO
39. If YES, are such operations planned? () YES () NO
40. If NO, why not?
___ Too costly
___ Water area too small
___ Zoning codes
___ Not necessary
___ Other (Specify) _____
41. How far is your marina from the nearest public marina? _____
In your estimation how has this public facility affected your operation?
___ Helped
___ Hindered
___ No Effect
___ Other (Specify) _____
42. What advantages does your marina seem to have over this public facility?

43. What advantages does that public facility seem to have over your operation? _____

44. On a competitive basis, would you say your prices are higher, lower, or about the same as neighboring marinas? _____
45. Does your marina have breakwater facilities? () YES () NO
If YES, what, if any, difficulties have you encountered? _____

46. Would your marina operation benefit if insurance companies develop policies specifically for marina operations? () YES () NO

47. What particular problems, if any, have you encountered concerning insurance? _____

48. How much labor went into your 1972 operation?

Worker	*Number (Where Applies)	Average Number of Hours/Week **SUMMER	Average Number of Hours/Week WINTER	Paid	Unpaid
Owner					
Operator (If not owner)					
Partner					
Spouse					
*Working Age Children					
*Hired Help					
*Other (Specify) _____					

**SUMMER defined as respondent specified boating season in Question 7.

49. Number of Employees:

MONTH	YARD	OFFICE	DOCK	LODGING	RESTAURANT (INCLUDING BAR)	OTHER
JANUARY						
FEBRUARY						
MARCH						
APRIL						
MAY						
JUNE						
JULY						
AUGUST						
SEPTEMBER						
OCTOBER						
NOVEMBER						
DECEMBER						

50. Marine services comprise _____% of the gross revenue of your marina.

Gross revenue of business? \$ _____

51. Approximately what percent of your gross income is derived from out-of-state customers? _____%

52. What type of business do you get from visiting boats?

_____ Dockage

_____ Repairs

_____ Marine Supplies

_____ Gas and Oil

_____ Other (Specify) _____

53. Approximately what breakdown of gross receipts come from the following:

<u>SOURCE</u>	<u>DOLLARS</u>
Summer Dockage and Moorings	_____
Launching	_____
Winter and Summer Storage	_____
Hauling	_____
Gasoline	Gallons _____
Oil	Quarts _____
Boat and Engine Sales	_____
Marine Insurance	_____
Hull Repairs	_____
Engine Repairs	_____
Restaurant - including bar	_____
	Seating Capacity _____
Marine Supplies	_____
Lodging	_____
Boat Rental	_____
Boat Charter	_____
Sanitation Services	_____
Other (Specify) _____	_____

54. Approximately what breakdown of expenses go to:

<u>SOURCE</u>	<u>DOLLARS</u>
Payroll	_____
Taxes - Property	_____
Insurance	_____
Interest	_____
Depreciation	_____
Utilities	_____
Maintenance	_____
Supplies	_____
Lease Expense	_____
Advertising	_____
Other (Specify) _____	_____

55. Your total expenses for 1972 were: \$ _____

56. Assuming you wanted to sell your developed marina today, what do you figure is the fair market value of the total unit (Land, Buildings, Equipment, Etc.) Do NOT include non-business portion of residence.

\$ _____

57. If you were offered this amount at the end of the season, would you sell? () YES () NO () UNSURE

58. Given the previous financial history of your firm do you expect to be in business three years from now? () YES () NO () UNSURE

59. What are the uses of the property adjacent to your marina?

60. Are there specific detracting features of this surrounding property?

() YES () NO. If YES, specify _____

APPENDIX D

WATER SOURCES AND TYPES OF SEWAGE TREATMENT SYSTEMS FOR 160 COMMERCIAL MARINAS AND BOATYARDS IN NEW YORK, 1972

<u>Regions</u>	<u>Firms Grouped by Number of Berthings</u>			<u>TOTALS</u>	
	10-49	50-99	100 or more	Number	Percent
<u>I. New York City-Long Island (88 firms)</u>					
<u>Water</u>					
City	17	11	9	37	(42%)
Well	19	10	9	38	(43)
Lake	--	1	--	1	(1)
Other	8	1	3	12	(14)
<u>Sewage</u>					
Septic Tank	19	10	9	38	(43)
City	17	11	9	37	(42)
Leech Field	--	1	--	1	(1)
Other	8	1	3	12	(14)
<u>II. Great Lakes-St. Lawrence (35 firms)</u>					
<u>Water</u>					
City	7	7	7	21	(60)
Well	3	3	2	8	(22)
Lake	2	--	1	3	(9)
Other	1	--	2	3	(9)
<u>Sewage</u>					
Septic Tank	7	5	7	19	(54)
City	3	4	4	11	(31)
Leech Field	--	--	--	--	--
Other	3	1	1	5	(15)
<u>III. Inland Waters (37 firms)</u>					
<u>Water</u>					
City	6	8	4	18	(49)
Well	9	4	1	14	(38)
Lake	2	--	1	3	(8)
Other	--	1	1	2	(5)
<u>Sewage</u>					
Septic Tank	13	7	4	24	(65)
City	1	3	1	5	(13)
Leech Field	1	2	--	3	(8)
Other	2	1	2	5	(13)