Boating Recreation in Oregon:

Economic Importance, Trends, and Implications for the Future

by

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Abstract

The lakes, rivers, and coastal waters of Oregon have long provided the state's residents and visitors with unique recreational boating environs and opportunities. However, this popular activity represents more than a form of recreation: boating is an important component of the Oregon economy. Each year, boaters spend millions of dollars in association with boating activities and this spending impacts the state economy by generating revenue for businesses and by providing income and employment for individuals. Furthermore, recreational boating activity in Oregon has continued to increase over a period of decades, suggesting that the associated economic impacts have also grown in magnitude. In 1996, a study was conducted by the Oregon State Marine Board, Oregon Sea Grant, and Oregon State University to assess the economic impact of boating recreation activities in Oregon. The purpose of this assessment was to provide legislators and policy makers with information that could be used to enhance effective decision making at the legislative and administrative level of state government. Several methodologies were utilized to gather data on boater expenditure patterns and use-levels. These data were subsequently combined to generate estimates of total spending by boaters. Additionally, where sufficient data were available, an economic input-output model was used to estimate resultant economic impacts, including personal income generated and employment. The results of this study suggest that annual boater expenditures are associated with the generation of hundreds of millions of personal income dollars and thousands of employment positions.

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I. Introduction

Oregon's incredible diversity of waterways – from its whitewater rivers, pristine lakes, coastal estuaries, and the majestic Pacific Ocean – provide both visitors and residents with an almost countless array of settings and opportunities for recreational boating activities, including river rafting, sailing, power boating, and charter fishing, just to name a few. With nearly 4 million user days attributed to registered boaters alone in 1995[1], there can be no doubt that boating constitutes an extremely popular and valuable form of recreation in Oregon. The popularity of boating is self evident to anyone who has had the chance to travel the state or recreate on its waterways. Boating for the sake of recreation occurs on virtually every navigable waterway in the state (and perhaps a few that most would not consider navigable). Yet boating is obviously more than a wonderful form of recreation: it is also an important component of the Oregon economy. As such, informed decision-making which affects recreational boating is contingent in part upon the consideration of its economic importance. The Oregon State Marine Board (OSMB), the state's recreational boating agency, funded a study in 1996 in an ongoing effort to monitor and assess boating's importance to the Oregon economy. The study, conducted in cooperation with Oregon Sea Grant (OSG) and Oregon State University (OSU), served as the centerpiece of an OSMB internship designed to provide training in a number of areas for an OSU graduate student. The following sections briefly outline the scope of this internship and summarize resultant work products. The study to assess the economic importance of recreational boating is subsequently appended in full to this document and serves as the focal point of the overall internship report.

II. Internship Overview

The Oregon State Marine Board

Since OSMB funded the graduate student internship and provided substantial resources to the intern throughout the course of the position, a brief description of the agency's function and purpose is appropriate and should serve to provide context.

The Oregon State Marine Board was created in 1959 to help ensure that the state's waterways are safe and enjoyable for a wide range of users. Located in Salem, OSMB is dedicated to improving recreational boating throughout Oregon and serves boaters through facility improvements, law enforcement, education, and registration. More specifically, OSMB:

- titles and registers recreational vessels, currently numbering more than 192,000;
- establishes statewide boating regulations, trains and contracts with county sheriffs and the State Police for marine law enforcement and safety;
- promotes safe boating by publishing information brochures, providing boating-education courses, and sponsoring water-safety programs for youth;
- provides grants to develop and maintain accessible boating facilities and to protect water quality;

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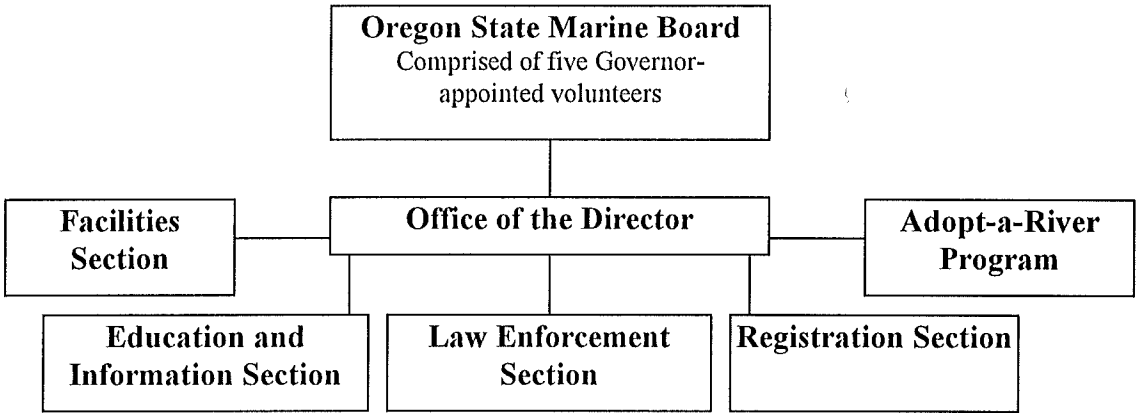
[1] Oregon State Marine Board (OSMB). 1996. *1995 Statewide Boating Survey.* Salem: Oregon State Marine Board.

- co-sponsors the Oregon Adopt-A-River program;
- registers guides and outfitters and licenses charter boats.

All OSMB programs are funded by registration fees and marine fuel taxes paid by boaters. No general fund tax dollars are utilized by the agency. Boater-paid fees go back to boaters in the form of services and facilities such as boat ramps, parking lots and restrooms[2].

state ? any fed ?

Institutional Structure of the State Marine Board



Scope of Internship and Summary of Work Products

From April 1996 to July 1997 the author of this document was employed by OSMB, initially as an intern and ultimately as a public information assistant in the Information and Education Section of the agency. This OSMB/OSG-developed internship was designed with two primary objectives in mind. These included:

- providing an OSU graduate student with a professional growth opportunity by serving as a staff member of the Information and Education Section of OSMB;
- providing the same student with the opportunity to conduct an economic impact assessment of boating recreation in Oregon.

In fulfillment of the first of these two objectives, the intern was assigned general duties and specific projects. General duties primarily included:

- the development and implementation of public information boating safety campaigns;
- the development of news releases;
- direct communication with the media, governmental institutions, boating organizations, and agency constituents to convey boating-related information and to conduct agency business.

A number of specific projects yielded a variety of work products. These projects were

[2] OSMB. 1996. *1995 Statewide Boating Survey.* Salem: Oregon State Marine Board.

primarily (but not exclusively) oriented towards boater education. Work products included:

- an informational brochure on boating under the influence of alcohol;
- a report on the findings of a study to assess the effectiveness of an OSG/OSMB joint publication (*Boating in Oregon Coastal Waters*);
- revision of a comprehensive guide to Oregon boating facilities (*Oregon Boating Facilities Guide*).

In fulfillment of the second objective, the intern was also assigned primary responsibility for the work necessary to conduct and complete an economic impact assessment of boating recreation in Oregon. The following sections provide an overview of the underlying purpose and implications of this work.

III. Study to Assess the Economic Impact of Boating Recreation

Background

By investing in quality public boating facilities and promoting safe waterways, OSMB contributes to the health of the boating industry in Oregon. However, up until the mid-1980s, no work to comprehensively measure the economic importance of this diverse industry to Oregon had ever been conducted. To accomplish this, OSMB funded a study in 1985 to assess the economic scope and importance of recreational boating in Oregon[3]. The results of that work confirmed what many already knew: that recreational boating activities are more than just fun...they also result in significant contributions to the Oregon economy, including the provision of income and livelihood for many of the state's citizens. Verifying the importance of the boating industry subsequently provided OSMB with an additional source of information which could be combined with other sources to enhance informed decision-making.

Ten years later, in 1995, the total number of boats registered with OSMB had increased by approximately 30 percent, from less than 150,000 to over 190,000 vessels[4]. This growth rate outpaced the state's population growth for the same period, suggesting that the importance of the industry, in terms of economic contributions, had likely also increased. To gage the magnitude of this economic growth and assess the current worth of the industry, OSMB once again sought assistance from OSU and OSG in conducting a study of recreational boating in Oregon.

Purpose

By funding this new study of the economic impact of recreational boating in Oregon, OSMB sought explicitly to document industry trends and the current magnitude of associated economic impacts. More tacitly, perhaps, staff members at OSMB also recognized that the validity of the agency is contingent in a sense on the real or perceived magnitude of a number of

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[3] Palazzi, D. 1986. *The Economic Importance of Boating Recreation in Oregon*. Salem, Oregon: Oregon State Marine Board.

[4] Registered boats include all motorized boats and sailboats 12 feet or more in length. They do not include non-motorized craft, nor does registered boating encompass boating activities such as ocean charterboat fishing or river cruises. These activities account for additional economic impacts.

values associated with recreational boating, including economic. One could go on to speculate that the results of this study could be used strategically by the agency to influence decision-making at the legislative level, although it might be politically difficult for OSMB to state publicly that this was an underlying goal of the work.

In fact, OSMB had important legislation before the Oregon State Legislature in 1997, including a registration fee increase bill. In addition, the Office of the Director was seeking critical legislative approval for the agency's budget. To achieve these ends, the director of OSMB presented to the legislature a package of information outlining the agency's legislative agenda and budgetary needs. The results of the economic study of boating were included in this package, which also included fiscal updates and section progress reports. In a legislative session fraught with battles over budget and program reductions engendered by property tax limitations and a resulting shift of income tax dollars to compensate, OSMB's budget and fee increase bill passed easily.

Implications

It is difficult or perhaps impossible to identify precisely what role the results of the most recent economic study of recreational boating played in the 1997 legislative outcomes so favorable to OSMB. What can be said is that the leadership of OSMB has twice funded studies to assess the economic impact of boating recreation in Oregon. Furthermore, in the case of the most recent study, results were presented to legislators at several stages of the legislative process at a time when the agency was seeking approval for a number of items, some of which were critical to the agency's continued effectiveness. These facts imply that there is a perception among agency leadership that such work can influence decision-making at the legislative level. The positive nature of legislative outcomes for OSMB in 1997 suggest, too, that the agency was able to demonstrate to legislators the significant economic contribution made by recreational boating, the value of having a boating regulatory agency, and the strength and value of the boating constituency.

Appendix

Boating Recreation in Oregon:

Economic Importance, Trends, and Implications for the Future

A Report to the Oregon State Marine Board

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The authors of this study relied greatly on the assistance, effort, guidance, patience, kindness, and hospitality of many individuals. Workers who provided valuable assistance and information on whitewater activities and use included Louise Austermuehle and Mike Walker of the Bureau of Land Management and Ken Vines of the U. S. Forest Service. David Povey of the University of Oregon provided information, insights, and materials that were indispensable to the subsection on Columbia Gorge Windsurfing. A heartfelt thanks must also go to Doug Davis and Jack McCarty, who provided past-and-present information on Oregon charterboat fishing, as well as generous hospitality. Other indispensible information on Oregon charterboat fishing was provided by Shannon Davis and Hans Radtke of The Research Group in Corvallis. Technical assistance with I-O model analysis was provided by Kristen Aldred-Cheek and Laurie Houston of OSU's Department of Forest Resources. Special thanks must be given to Laurie for her countless and repeated IMPLAN runs. Thanks also to Marlene Sharp of OSU's Austin Family Business Center, Agnes Ferngren of OSU's College of Business, and Pam Bodenroeder of OSU's Survey Research Center.

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List of Acronyms

ANBT	Aquatic Nature-Based Tourism
BLM	Bureau of Land Management
CMRB	Commercial Motorized Recreational Boating
IMPLAN	IMpact analysis for PLANing
I-O	Input-Output
MTB	Motorized Tour Boat
NRRB	Non-Registered Recreational Boating
ODFW	Oregon Department of Fish and Wildlife
OPRD	Oregon Parks and Recreation Department
OSMB	Oregon State Marine Board
OSU	Oregon State University
RRB	Registered Recreational Boating
USFS	United States Forest Service

Executive Summary

Purpose

The primary objective of this study was to assess the scope of recreational boating in Oregon and the contribution of boating activities to the state economy. For purposes of this study, recreational boating activities were defined as Registered Recreational Boating (RRB), Commercial Motorized Recreational Boating (CMRB), and Non Registered Recreational Boating (NRRB). With the exception of RRB, each primary category was further subdivided into distinct forms of boating activities. The analysis component of this study used expenditure patterns for some boating activities. For other boating activities and industry components, estimates of direct economic impact were made based on the best available information.

Methods

Methods used in this study included combining boater expenditure information with input-output (I-O) models in order to estimate the total economic impact of components of RRB, CMRB, and NRRB in Oregon. Use estimates and boater population estimates were derived from primary sources, as well as government agency and private sector sources. Therefore, the impacts reported in this study are only as accurate as the primary and secondary source data from which they were derived (see Chart E.1, page 3).

how good are they? (not included in report) pg

Results

Study results indicate that boating recreation has a significant impact on the economy of Oregon. As expected, travel, recreation and tourism-related businesses such as retail trade, restaurants, lodging places, and water-based amusement and recreation services are the economic sectors most directly impacted by boating expenditures. Although the greatest impacts are found in these sectors, the indirect and induced effects of boating recreation are significant throughout the state economy. Following is a summary description of recreational boating components and their associated economic impacts.

what are they?

appears to be income & employment

Summary of Recreational Boating in Oregon: Descriptions and Economic Impacts

An Economic Description of the Marine Trades

The Marine Trades are composed of manufacturers, retail and wholesale enterprises, and service businesses that produce, sell, or provide products and services for recreational boating activities. Manufacturers build and repair boats, boat trailers, boat motors and other boating-related equipment. Retail and wholesale firms sell boats and related products either indirectly or directly to the boating public. Service enterprises include private and public businesses such as marinas, moorage facilities, storage facilities, and boat launches. Based on available information, the Marine Trades in 1995 provided at least 1,500 jobs for Oregonians. Additionally, Oregon's

source is 1986 ?

Marine Trades are estimated to have exceeded $613 million in sales in 1995 (see Table E.1) It must be noted here that these data are not sufficient to comprehensively describe the economic impact of recreational boating because boaters spend money in sectors other than the Marine Trades such as lodging, restaurants, and general retail trade.

why include? not referenced

Table E.1a: Economic Description of the Oregon Marine Trades in 1995

Sector	SIC	Number of Enterprises	Average Employment	Annual Payroll ($)
Marine Manufacturing	3732 Boat Building and Repair	48	900	20,295,754
Marine Retail Trade	5551 Boat Dealers	70	454	11,578,774
Marinas Moorage	4493 Marinas	38	172	3,189,166
	Total	156	1,526	35,063,694

Sources: Oregon Department of Employment 1996.

Table E.1b: Estimated Annual Sales of the Oregon Marine Trades

Marine Manufacturing	Marine Wholesale Trade	Marine Retail Trade	Marinas Moorage	Total
$346,157,620	$118,407,434	$111,892,193	37,391,822	**$613,849,069**

Sources: Palazzi 1986.

based on his estimates per boat

The Economic Impact of Recreational Boating Activities

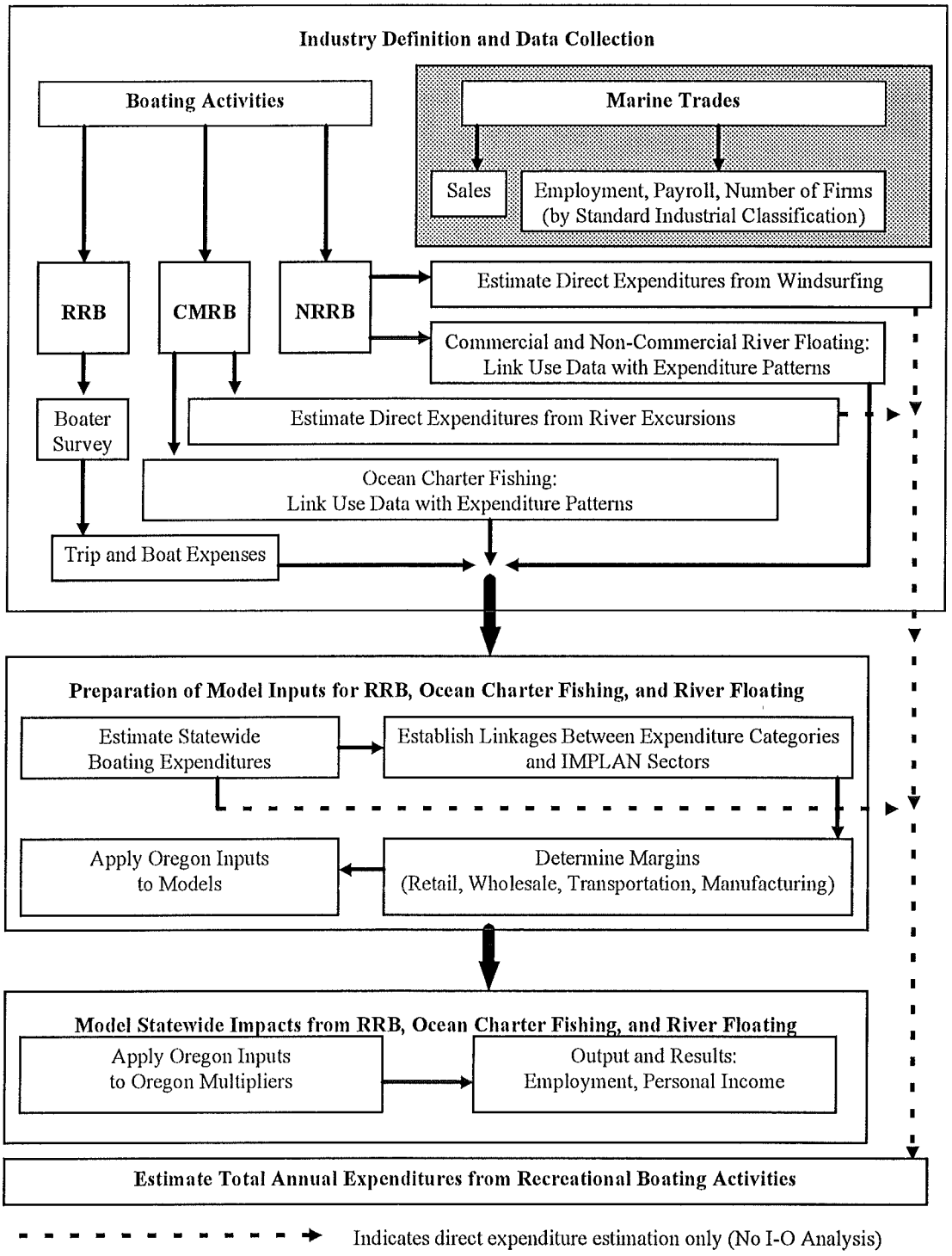
Significant economic impacts result from boater expenditures on a variety of boating activities (see Table E.2). This study groups these activities into the categories of RRB, CMRB, and NRRB. For some activities, sufficient information was available to make estimates of impacts such as employment and personal income. In other cases, only intitial boater expenditures were estimated.

= 1 6 2 ?

Registered Recreational Boating

Boating in Oregon has grown continuously over the last 40 years and, with the recent increases in Oregon's population, this trend is expected to continue. In 1995, there were approximately 190,000 boats registered with the state of Oregon – one boat for every 16.7 Oregonians. (Registered boats include all motorized boats and sailboats 12 feet and greater in length.) Boaters accrued almost 4 million boating days and spent over $858 million in association with boating activities and boat-related expenses. Based on analyses conducted for this report, this spending is estimated to have generated nearly $538 million in personal income and provided employment directly or indirectly for over 25,000 individuals.

Chart E.1: Oregon Boating Recreation Study Methodology



Estimated impacts exclude expenditures in Oregon by non-resident boaters who utilize Oregon waters for their boating activities. Unfortunately, however, the limited resources available for this study made an assessment of these impacts impractical. Therefore, economic impacts accrued from in-state spending by non-residents are assumed to be offset by Oregon boater spending on boating activities outside of the state. what supports this assumption?

Commercial Motorized Recreational Boating

Commercial Motorized Recreational Boating, or CMRB, is a broad industry that includes river cruising, whale-watching, inland guided fishing trips, ocean charterboat fishing, and motorized tour or "jet" boating. Some of these activities, such as river cruising, motorized tour boating, and whale-watching, have experienced significant growth in recent years. Although it has suffered declines associated with decreased salmon populations, charterboat fishing continues to be an important economic and social component of many coastal communities. In 1995, river cruising, jet-boat tours, and charterboat fishing are estimated to have generated nearly $17 million in patron expenditures.

Non-Registered Recreational Boating

This segment, like CMRB, is composed of a variety of commercial and non-commercial recreational activities that involve thousands of users on an annual basis. Non-Registered Recreational Boating includes windsurfing, whitewater rafting trips, kayaking, canoeing, and non-motorized guided angling trips. Windsurfing is centered in the Columbia River Gorge. In 1995, an estimated 300,000 user days were attributable to Columbia Gorge windsurfing. Gorge windsurfers are estimated to have spent $21 million during 1995. Data to estimate impacts from these expenditures were unavailable.

Other NRRB activities utilize numerous Oregon rivers. Secondary user data from managing agencies suggest that commercial and non-commercial float use continues to increase in Oregon. Conservative estimates indicate that float use on Oregon rivers exceeded 1.4 million boating days in 1995. Based on these use estimates, commercial and non-commercial float trip patron expenditures exceeded $110 million. This spending was associated with over $70 million in personal income and approximately 3,302 jobs.

Conclusion

Boating in Oregon is big business. All told, in 1995 recreational activities such as whitewater rafting, drift fishing, motorized boating, charterboat fishing, windsurfing, and river excursions were associated with just over $1 billion in direct expenditures and approximately 29,000 jobs (see Table E.2). Furthermore, based on boat registrations, use trends for a number of activities, and projected population growth, the value of this industry, in terms of dollars, employment, and recreational opportunities, will continue to grow.

Further studies of some industry components should be considered to assess and project growth rates and economic impacts, as well as to ensure the quality of boating experiences and the industry's economic health.

Table E.2: Estimated Annual Economic Impacts of Oregon Boating Recreation Activities

Activity Type	Total Expenditures ($)	Personal Income Generated ($)	Employment (jobs)	Total User Days
RRB	**858,518,544**[1]	**537,954,164**	**25,595**	**3,904,000**
CMRB	**16,919,714**	**3,398,046**	**NA**	**475,600**
River Cruises	5,500,000	NA	190	275,000
Motorized Tour Boats	7,240,000	NA	NA	162,000
Charterboats	4,179,714	3,398,046	NA	38,600
Guided Fishing	NA	NA	NA	NA
Coastal Eco-cruises	NA	NA	NA	NA
NRRB	**131,451,524**	**70,563,452**	**3,302**	**1,770,429**
Windsurfing	20,999,987	NA	NA	300,429
Whitewater/float	110,451,537	70,563,452	3,302	1,470,000
Total	**1,006,889,782**	**611,915,662**	**28,897**	**6,150,029**

[1]This figure represents total annual boater expenses resulting from boat expenses ($556,496,050) and trip expenses ($302,082,382). For further explanation, please see Section IV.

I. Introduction

The lakes, rivers and coastal waters of Oregon have long provided the state's residents and visitors with unique recreational boating environs and opportunities. However, this popular activity represents more than a form of recreation: boating is an important component of the Oregon economy. Each year, boaters spend millions of dollars in association with boating activities and this spending impacts the state economy by generating revenue for businesses and by providing income and employment for individuals. Furthermore, recreational boating activity in Oregon has continued to increase over a period of decades, suggesting that the associated economic impacts have also grown in magnitude.

Data collected by the Oregon State Marine Board (OSMB) indicate that, historically, the growth rate of boats registered in Oregon has consistently out-paced population growth rates. For instance, between 1982 and 1992, the total number of days of boat use increased in Oregon by 67 percent. During this same interval, the state's population grew by about 12 percent and new boats registered with OSMB increased by 31 percent. Expectations are that boat registrations will continue to increase at about the same rate as population growth in the years to come (OSMB 1993, 1996b).

A decade has passed since Oregon State University (OSU) conducted a study of boating recreation in Oregon and published information (Palazzi 1986) on the industry's economic importance has become outdated. In light of recreational boating's growth in Oregon, a new study was conducted in 1996 with financial support from OSMB, in combination with Oregon Sea Grant and other OSU contributions.

The research methodology for this study had two components: 1) primary data on consumer expenditure patterns were gathered through a sampling of recreational boaters and 2) secondary data on boating recreation activity in Oregon were acquired from a variety of sources.

Although time and resource constraints for this study necessitated reliance on secondary data for some boating components, primary data on Oregon registered recreational boater expenditures were acquired through mail surveys sent to a small, stratified random sample of owners of registered vessels. The survey was sent to 216 individuals drawn randomly from a database of all boats twelve feet or greater in length registered with OSMB. These data were used to project expenditures of the overall boating population. Secondary data on recreational consumer information gathered from other studies and natural resource management agencies were utilized to determine expenditure patterns for river rafting and charterboat customers.

small sample considering impact adv.
response rate?

Trip expenditure data from recreational boaters, river floating, and charterboat customers were analyzed using an input-output model (IMPLAN) developed by the U. S. Forest Service to determine the economic coefficients of each recreational activity.

IMPLAN calculates the economic impact that registered boating, river floating, and charterboat fishing has on the Oregon economy. The model estimates economic multipliers that show the dispersal of dollars and jobs through the Oregon economy generated by boating-related business and recreation activity (see Appendix A for more information on the use of Input-Output analysis).

In addition, secondary data were used to assess the economic magnitude of expenditures in several other sectors of Oregon's recreational boating industry. Ultimately, this study provides comprehensive documentation of the scope and economic impact of recreational boating in Oregon.

II. The Marine Trades: Manufacturing, Sales, and Services

The Marine Trades in Oregon encompass a broad range of manufacturing, sales, and service enterprises which can be described using a variety of methods. For purposes of this study, characteristics of the Marine Trades are described using Standard Industrial Classification (SIC) data from the Oregon Department of Employment and other published sources (Palazzi 1986, Benyounes 1993). However, because some boater expenditures go to sectors not represented by any comprehensive SIC, these data sources cannot be used to account for all boater expenditures. Hence, the information described in this section should only serve as a point of comparison for estimates of economic impact derived from boating activities and presented in the sections that follow.

2.1 Description of Marine Trades Sectors

Marine Trades sectors adopted for this study are outlined below. They include:

- Marine manufacturing;
- Marine wholesale trade;
- Marine retail trade and;
- Marinas, moorage and other marine transportation services (Palazzi 1986, Benyounes 1993).

2.1.1 Marine Manufacturing

This sector includes boat building and repairs contained in Standard Industrial Classification (SIC) 3732, and manufacturing of boat trailers, sails, marine electrical and communication accessories, and other marine-related product manufacturing dispersed among several other SICs, including SIC 3799 (Transportation Equipment) and SIC 5088 (Transportation Equipment and Supplies) (Benyounes 1993).

2.1.2 Marine Wholesale Trade

This sector includes all firms that sell boats, boat trailers, boat motors, and other boat-related equipment at the wholesale level (Benyounes 1993).

2.1.3 Marine Retail Trade

This sector includes all firms that sell boats, boat trailers, and other boat-related equipment at the retail level. The majority of activities in this Marine Trades sector are contained in SIC 5551 (Boat Dealers). Examples of enterprises in this sector are dealers in new and used boats and retail stores that specialize in marine hardware and ancillary items (Benyounes 1993).

2.1.4 Marinas, Moorage and Other Marine Transportation Services

where's 2.2 ? Inf Sources

This sector primarily provides rental moorage space, along with ancillary services, including gas dock facilities, boat storage, boat launching ramps, boat rentals, and small retail outlets. Most of these services are contained in SIC 4493 (Marinas) (Benyounes 1993).

2.~~2~~3 *Results*

Payrolls, average employment, and number of enterprises in 1995 for SICs 3732, 5551, and 4493 were acquired from the Oregon Department of Employment. Respectively, these SICs provide information on number of enterprises, average annual employment, and annual payroll for the marine manufacturing, marine retail trade, and marina sectors. Based on Employment Department data, these three SICs accounted for 156 enterprises employing over 1,500 persons at a total payroll of over $35 million in 1995 (see Table 2.1a). Since SICs do not differentiate between commercial vs. recreational enterprises, figures likely include enterprises engaged in Marine Trades manufacturing, sales, and services for commercial uses, such as commercial fishing boat repair. In addition, because no single SIC encompasses the marine wholesale trade sector, payroll, employment, and number of firms for this sector were unavailable.

Table 2.1a: Economic Description of the Oregon Marine Trades in 1995

Sector	SIC	Number of Enterprises	Average Employment	Annual Payroll ($)
Marine Manufacturing	3732 Boat Building and Repair	48	900	20,295,754
Marine Retail Trade	5551 Boat Dealers	70	454	11,578,774
Marinas Moorage	4493 Marinas	38	172	3,189,166
	Total	156	1,526	35,063,694

Sources: Oregon Department of Employment 1996.

Published data on sales for the firms represented by SICs 3732, 5551, and 4493 were not available. However, sales for Oregon Marine Trades sectors were estimated at over $613 million based on information from Palazzi (1986) (see Table 2.1b). The 1986 estimates were derived by coupling sales data from a comprehensive 1977 assessment of Washington Marine Trade sectors with an Oregon to Washington ratio of businesses per sector (bps). Dollar amounts were adjusted to 1985 values using the Consumer Price Index for all Urban Consumers (CPI-U). The 1995 per sector sales estimates were in turn derived by adjusting 1985 values to 1995 values using the CPI-U. This approach relies upon the assumptions made by Palazzi; it also assumes that Marine Trades sectors in Oregon have remained static since 1985. However, data from the Oregon Department of Employment on SICs 3732 and 5551 indicate that in 1985 these two SICs accounted for 114 enterprises with an average employment of 904 positions and a total payroll of $16.6 million (prior to 1987, there was no SIC for Marinas and Moorages). In 1995 these same two SICs accounted for 118 enterprises employing 1,354 persons at a total payroll of $31.9

million (Oregon Department of Employment 1996). This information suggests that the sectors encompassed by SICs 3732 and 5551 have not remained static.

Table 2.1b: Estimated Annual Sales of the Oregon Marine Trades

Marine Manufacturing	Marine Wholesale Trade	Marine Retail Trade	Marinas Moorage	Total
$346,157,620	$118,407,434	$111,892,193	37,391,822	**$613,849,069**

Sources: Palazzi 1986.

2.3 Conclusion

Due to a lack of recent secondary data on Oregon Marine Trades sectors, a comprehensive and inclusive assessment of the magnitude of the industry could not be determined. Furthermore, a portion of the economic impact that results from boater expenditures accrues to sectors other than those encompassed by the Marine Trades (e.g., restaurants, lodging, travel, etc.). The following sections utilize alternative methodologies to estimate the comprehensive economic impact of boating activities. These methodologies focus on obtaining estimates of boater expenditures to all relevant economic sectors.

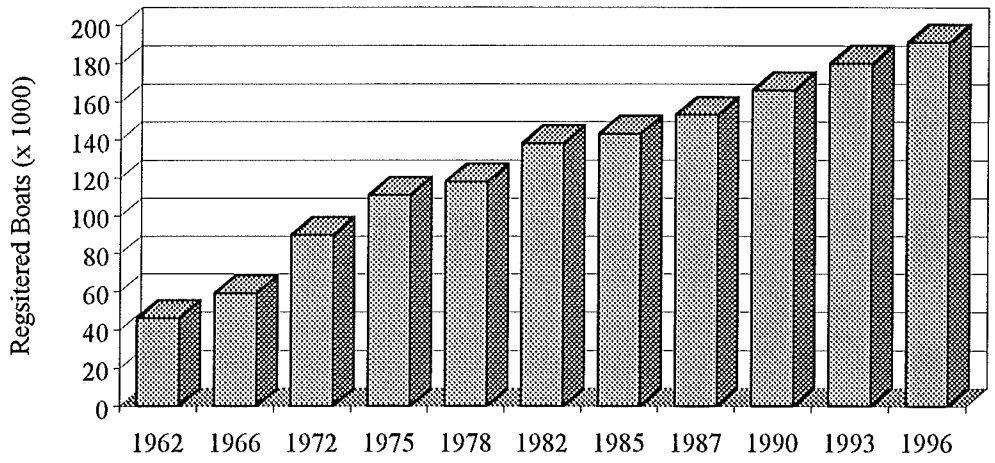
III. Registered Recreational Boating

3.1 Background

Registered Recreational Boating (RRB) comprises a significant portion of recreational boating in Oregon. With 353 miles of coastline and over 6,000 freshwater environments, Oregon is noted for its rich boating opportunities (Palazzi 1986).

The number of boats registered with OSMB have increased from approximately 46,000 in 1962 to over 190,000 in 1996 (see Chart 3.1). Since the early 1960s, the growth rate of boat registrations has exceeded the state's population growth, increasing from 30 registered boats per 1000 population in 1962 to almost 60 per 1000 in 1995. Furthermore, the number of boats registered in Oregon is expected to continue to grow at least as fast as population growth and perhaps faster (OSMB 1996b).

Chart 3.1: Oregon Registered Boats



Source: OSMB 1996a.

During summer 1996, researchers at Oregon State University and Oregon Sea Grant conducted a study to determine the economic impact of RRB to Oregon. The study was funded by OSMB and its goal was to evaluate spending by boaters and how that spending affects the state economy through the generation of personal income and employment.

3.2 Research Methodology

To obtain information about RRB expenditures, a questionnaire was mailed to a sampling of registered boat owners. This section outlines survey design and objectives, as well as the procedures that were used to obtain results.

3.2.1 Sample Selection

A random sample of 216 addresses was selected from a database of all Oregon registered boats in July 1996 (The size of the sample was constrained by the limited resources available for this study.) Oregon State Marine Board records indicated that 191,915 boats were registered in Oregon in 1996. Based on the approach used by Palazzi (1986), all boats less than twelve feet in length (a total of 27,581) were omitted from the sample, leaving a population of 164,334 from which to draw a sample. To obtain a diverse geographic representation, the sample was designed to include six registered boats from each of Oregon's 36 counties. The sample selection was obtained from a random query of OSMB's registration database and was conducted by Oregon Department of Administrative Services technical staff.

3.2.2 Mail Procedure

After the sample was selected, a mailing procedure based on Salant and Dillman followed (Salant and Dillman 1994). The procedure consisted of four parts (see also Appendix B):

- Week 1: letter of greeting seeking participation from potential respondents mailed to each addressee;
- Week 2: questionnaire mailed to each addressee;
- Week 3: follow-up reminder postcard mailed to each addressee who had not yet submitted a completed survey and;
- Week 4: questionnaire mailed to each addressee who had not yet submitted a completed survey.

3.2.3 Instrument Design

The survey instrument was a modified version of the instrument used by Palazzi (see Appendix C). The instrument was reviewed for style and effectiveness by staff at the Survey Research Center of Oregon State University. The survey was designed to acquire information on boater activities and characteristics from September 1, 1995 to August 31, 1996. Additionally, several questions sought information on boater expenditures associated with boat ownership and boating activities during the same period.

3.3 Survey Results

3.3.1 Response Rates

Questionnaires were mailed to 216 addressees. Of these, eight were unclaimed or undeliverable. Of the remainder, 147 were completed and returned for a response rate of 70.67 percent. To be statistically meaningful, target response rates for surveys of this kind should not be less than 60 percent (Salant and Dillman 1994). Hence, the realized response rate for this survey is considered more than adequate.

respondents not operators in gl

3.3.2 Boating Characteristics

Responses indicated that the majority of Oregon boat operators (97 percent) own inboard (33 percent) or outboard (64 percent) motorized craft. Approximately 95 percent of these craft are powered by gasoline, with the balance powered by diesel fuel or electricity. Close to 47 percent of respondents indicated that their boats were between 12 and 16 feet in length. Nearly 70 percent of respondents indicated that fishing was the activity for which they most often used their boat. Water skiing (15.54 percent), day or overnight cruising (12.83 percent), and "other" (2.70 percent) accounted for the remainder of boating activities (Neely et al. 1996). On average, respondents traveled approximately 52 miles one-way to engage in a boating activity. According to *1996 Statewide Boating Survey* results, the typical primary registered boat operator accrued 24.2 boating days in 1995 (OSMB 1996b). A "boating" or "user day" is defined as all or part of any day the operator used his/her boat to participate in a boating activity. Regarding boating characteristics, the results of this survey are fairly consistent with other sources, including the results of the *1996 Statewide Boating Survey* which received feedback from close to 2.5 percent of the entire population of registered boat owners (see Table 3.1). Differences are most likely attributable to boats of less than twelve feet in length that were not surveyed for the economic study.

Table 3.1: Comparison of Survey Results for Boating Characteristics

Boating Characteristics	Other Sources	*1996 Boating Economic Impact Survey*
Type of Boat:		
outboard motor	69.50 %	64.38 %
inboard motor	25.80 %	32.88 %
other	4.70 %	2.74 %
total	100.00 %[a]	100.00 %[c]
Typical Activity:		
fishing	58.60 %	68.92 %
water skiing	14.30 %	15.54 %
cruising	19.30 %	12.83 %
other	7.90 %	2.70 %
total	100.00 %[b]	100.00 %[c]

Source: [a]OSMB 1996a, [b]OSMB 1996b, [c]Neely et al. 1996.

3.3.3 Boating Expenditures

To determine the economic impact of registered recreational boating in Oregon, the survey was designed to obtain information on boaters' trip-related and annual boat-related spending.

Two questions sought information on trip-related spending. Trip-related expenditures include spending on retail trade, restaurants and taverns, lodging and camping, agency user fees, automobile travel expenses, boat fuel and oil, docking, moorage and launch fees, and equipment rental. If a respondent left all categories in both trip-related questions blank, this was considered a non-response. However, a response to any trip-related expenditure category, including a zero, constituted a response to trip-related expenditure queries.

A total of 140, or 95 percent of respondents provided at least some information on trip-related expenditures (see Table 3.2). Responses indicate that these 140 boaters spent an average of $145.47 per boat trip ($20,366/140 = $145.47) or $77.38 per boating day (see section 3.4.1 for calculation of boating days/trip) in 1995 (OSMB 1996b, Neely et al. 1996).

Table 3.2: Boating Expenditures per Trip per Category

Survey Category	Aggregate Expenditures ($)	Expenditures per Boater per Trip ($)	% of Total per Survey Category
Retail Trade	5,921.45	42.30	29.08
Restaurants & Taverns	1,608.00	11.49	7.90
Hotel & Motel Lodging	778.00	5.56	3.82
Other Lodging	1,625.00	11.60	7.98
Agency User Fees	1,559.00	11.14	7.65
Travel Expenses	4,625.55	33.04	22.71
Fuel & Oil (Boat)	3,026.00	21.61	14.86
Docking Fees, etc.	1,152.00	8.23	5.66
Equipment Rental	71.00	0.50	0.35
Total	20,366.00	145.47	100

Source: Neely et al. 1996.

A total of 142 boaters (97 percent of respondents) responded to the survey question which sought information on annual boat-related expenses associated with boat ownership, upkeep, and maintenance (see Table 3.3). Annual boat-related expenses include expenditures such as "new expenses," repairs and maintenance, off-season storage, insurance, fuel and oil, docking and moorage fees, and equipment rental. These respondents spent a total of $420,396 for all categories for an average annual expenditure of $2,960.54 per registered boat.

what is this?

put def. here (see p. 15)

Some per-trip and annual expenditure categories were similar (fuel and oil), and although respondents were asked to distinguish between such spending, some double-counting may have occurred in these categories. However, if such double counting did occur, any subsequent overestimation of economic impact is likely to have been negligible.

based on?

Table 3.3: Annual Boat-Related Expenditures per Category

new boat?

Survey Category	Aggregate Expenditures ($)	% of Total
New Expenses	324,475	77.20
Repairs & Maintenance	28,913	6.90
Out of Season Storage	1,755	0.40
Insurance	13,775	3.30
Fuel & Oil	31,903	7.60
Docking & Moorage Fees	18,675	4.40
Equipment Rental	900	0.20
Total	420,396	100

Source: Neely et al. 1996.

3.4 The Economic Impact and Trends of Registered Recreational Boating

To estimate the economic impact of RRB in Oregon, survey results for trip-related expenditures were expanded to represent all registered boats. Similarly, boat-related expenditures were intitially expanded to represent boats of twelve feet or more in length. IMPLAN allocations for water-based recreation were used to proportionately spread direct expenditures throughout the I-O model's sectors. The model was then run to produce estimates of Oregon personal income and employment generated in association with spending by boaters. The following sections briefly describe the procedure that was utilized and the results yielded by the IMPLAN model.

It should be noted that results are subject to model limitations. These limitations imply that calculated economic impacts such as personal income generated and employment are not necessarily completely dependent on RRB activity. In other words, if RRB expenditures were to decline significantly in a given year, any associated loss of RRB personal income and jobs might be mitigated by substitution spending (e.g., on other recreational activities that have similar expenditure patterns).

3.4.1 Trip-Related Registered Recreational Boating Expenditures

To calculate total statewide direct expenditures associated with RRB trip activities, expenditure information was combined with information from other sources and expanded proportionately to provide an estimate of total statewide expenditures for all registered boats.

Results of the *1996 Statewide Boating Survey* indicate that, in 1995, the average boater took 12.9 boat trips and accrued 24.2 boating days (OSMB 1996b). Hence, the average 1995 boat trip was 1.88 days in length (24.2 boating days/12.9 boat trips = 1.88 boating days/boat trip). Section 3.3.3 shows that the average expenditure per boater per trip in 1995 was $145.47. Therefore, total direct trip-related expenditures in 1995 were calculated as follows:

Total Direct Expenditures = (Total Number of 1995 Boating Days/Number of Days per Trip) x (Cost per Trip)

= (3,904,000 days/1.88 days/trip) x ($145.47/trip) = $302,082,382

Hence, total statewide direct expenditures associated with RRB trips from September 1, 1995 to August 31, 1996 were approximately $302 million (see Table 3.7). Because the *1996 Statewide Boating Survey* polled a sample of *all* boats registered with OSMB, the approach used to calculate total 1995 trip-related expenditures may be somewhat biased toward boats twelve feet and more in length.

3.4.2 Estimated Economic Impact of Trip-Related Registered Recreational Boating Expenditures

To estimate the personal income and employment generated by RRB trip spending, total statewide expenditures were allocated proportionately into appropriate IMPLAN sectors. A detailed outline of IMPLAN sector allocations for 1995 boat trip expenditures is presented in Appendix D. In some cases, a survey category made up a single IMPLAN sector. For example,

all estimated statewide expenditures for the single survey category "Restaurants and Taverns" were allocated to IMPLAN sector 454: Eating and Drinking Establishments. In other cases, estimated statewide expenditures for more than one survey category were allocated to a single IMPLAN sector. For example, expenditures on survey categories "Hotel and Motel Lodging" and "Other Lodging" were allocated to IMPLAN sector 463: Hotels and Lodging Places. Finally, some survey categories, such as "Retail Trade" or "Travel Expenses," were allocated to multiple relevant IMPLAN sectors and associated margins.

After allocating statewide boating trip expenditures into IMPLAN sectors, the I-O model was run to produce estimates of economic impact, including personal income generated and employment. These estimates are summarized below (see Table 3.4). IMPLAN results indicate that trip-related spending was associated with 7,809 employment positions and over $173 million in personal income.

Table 3.4: Economic Impact of Trip-Related Boating Expenditures

Impacts	Direct	Indirect	Induced	Total
Employment (jobs)	5,054	809	1,946	7,809
Personal Income Generated ($)	101,698,795	24,906,765	46,998,249	173,603,809

Source: Neely et al. 1996.

3.4.3 Annual Registered Boat-Related Expenditures

To calculate total direct expenditures associated with boat ownership, survey results were first allocated to appropriate IMPLAN sectors. The distribution of aggregate expenditures for the survey category "New Expenses" into appropriate IMPLAN sectors is based on the approach used by Lipton and Miller in a study of the economic impact of recreational boating in Maryland. Based on the work by Lipton and Miller, "New Expenses" were distributed among expenditure categories and associated margins. These categories, custom designed for the Maryland boating study, include engine purchases, electronic equipment purchases, sail purchases, new boating equipment purchases, boating equipment repair, new boat trailer purchases, new boat purchases, and used boat purchases (Lipton and Miller 1995). Table 3.5 illustrates how the aggregate dollar amount of the category "new expenses" from the survey were allocated to various IMPLAN sectors. Allocation of remaining survey categories to IMPLAN sectors is also outlined in Table 3.5.

more food

Total direct statewide expenditures resulting from registered boat ownership were calculated as follows:

$$\text{Total Direct Expenditures} = \frac{\text{(Aggregate Sample Expenditures)}}{\text{(Number of Respondents)}} \times \text{Number of Registered Boats} > 12 \text{ ft.}$$

$$= (\$420{,}396 \div 142) \times 164{,}334 = \$486{,}516{,}593$$

Hence, total statewide annual boat-related expenditures from September 1, 1995 to August 31, 1996 were estimated to have exceeded $486.5 million (see Table 3.8).

3.4.4 Estimated Economic Impact of Annual Boat-Related Expenditures

Personal income and employment associated with annual boat-related spending were estimated by proportionately allocating total statewide expenditures into appropriate IMPLAN sectors, as outlined in Table 3.5. In some cases, a survey category made up a single IMPLAN sector. For example, all estimated statewide expenditures for the single survey category "Insurance" were allocated to IMPLAN sector 460: Insurance Agents and Brokers. In other cases, estimated statewide expenditures for more than one survey category were allocated to a single IMPLAN sector. For example, expenditures to survey categories "Out-of-Season Storage" and "Docking and Moorage Fees" were allocated to IMPLAN sector 488: Amusement and Recreation. Finally, some survey categories, such as "New Expenses" or "Fuel and Oil," were allocated to multiple IMPLAN categories and associated margins.

Table 3.5: Allocation of Boat-Related Expenditures Among IMPLAN Sectors

Survey Category	IMPLAN Sector	Code	Expenditures ($)
New Expenses	Motor Freight Transportation	435	1,916.96
	Internal Combustion Engines	308	11,447.78
	Misc. Retail	455	161,061.37
	Wholesale Trade	447	2,136.32
	Communications Equipment	400	9,453.08
	Canvas Products	128	1,160.73
	Motor Vehicle Parts & Accessories	386	34,773.32
	Travel Trailers & Campers	397	2,417.81
	Boat Building & Repair	393	100,107.61
Repairs & Maintenance	Automobile Repair And Services	479	28,913.00
Docking/Moorage/ Storage	Amusement & Recreation	488	20,430.00
Insurance	Insurance Agents & Brokers	460	13,775.00
Fuel & Oil	Petroleum Refining	210	8,632.95
	Lubricating Oils And Greases	213	8,632.95
	Pipe Lines, Except Natural Gas	438	551.74
	Automotive Dealers & Service Stations	441	3,634.94
	Automobile Repair And Services	479	10,450.44
Equipment Rental	Equipment Rental	473	900.00
Total			**420,396.00**

Source: Neely et al. 1996, Lipton and Miller 1993.

After allocating owners' statewide annual boat-related expenditures to IMPLAN sectors, the I-O model was run to produce estimates of economic impact, including personal income and employment. These estimates are summarized below (see Table 3.6). IMPLAN results indicate that annual spending associated with boat ownership (of boats 12 feet or greater in length) throughout the course of the survey year accounted for 17,300 employment positions and generated over $318.5 million in personal income.

Table 3.6: Economic Impacts of Annual Boat-Related Expenditures

Impacts	Direct	Indirect	Induced	Total
Employment (jobs)	12,248	1,370	3,682	17,300
Personal Income Generated ($)	192,230,979	40,093,518	86,243,031	318,567,529

Source: Neely et al. 1996.

3.4.5 Total Estimated Economic Impact of Registered Recreational Boating in Oregon

The total economic impact of RRB was projected by applying estimates for boats surveyed to all registered boats in Oregon. This approach assumes that boat trip and boat-related spending patterns for the 164,334 registered boats greater than twelve feet in length is representative of all 191,915 boats registered in Oregon. Trip expenditures of $302 million, as calculated in section 3.4.1, represent the projected total expense for all registered boat trips in 1995. Projections for annual boat-related expenditures for all registered boats reveal that these expenses exceeded $556 million in 1995 (see Table 3.7).

Table 3.7: Total Economic Impacts of 1995 Oregon Registered Recreational Boating

	Economic Impacts		
	Expenditures ($)	Personal Income Generated ($)	Employment (number of jobs)
Trip Expenditures	302,082,382	173,603,809	7,809
Boat Expenditures	556,436,162	364,350,355	17,786
Total	858,518,544	537,954,164	25,595

Based on these projections, RRB was associated with over $858 million in total expenditures, $537 million in total personal income, and 25,595 employment positions. Once again, I-O models do not account for boater substitution spending. Hence, significant reductions in RRB-related spending might be partially off-set by spending on other forms of recreation. In other words, spending by recreational boaters represents money that is recirculating in the local economy, but would not necessarily be lost to that economy if recreational boating opportunities were not available.

3.4.6 Comparison of Results

Study results regarding RRB compare well with a similar but more intensive study of Maryland boating recreation conducted by Lipton and Miller in 1993. In Maryland in 1993 there were a total of 190,436 registered and documented recreational vessels. The Maryland study showed that trip-related expenditures totaled approximately $438.5 million and annual boat-related expenditures totaled $428.5 million. In Oregon in 1995, there were a total of 191,915 registered boats which accounted for approximately $302 million in trip-related expenditures and $556.5 million in annual boat-related expenditures. Therefore, total estimated annual RRB

expenditures were $867 million and $858 million for Maryland and Oregon respectively. Hence, the economic impact of RRB in Maryland and Oregon are well-correlated, as one would expect based on the respective number of registered boats.

but expenditures were diff!

MD		OR
438.5	vs	302
428.5	vs	556.5

could use?

IV. Commercial Motorized Recreational Boating

Commercial Motorized Recreational Boating (CMRB) encompasses a broad range of activities and businesses. These businesses can generally be categorized according to the types of services they provide. Services include excursion boat outings, inland guided fishing trips, ocean fishing charters, and coastal Aquatic Nature-Based Tourism (ANBT). The variety of services provides an equally diverse slate of opportunities for tourists, visitors, and recreationists. Commercial Motorized Recreational Boating opportunities can be found in many areas of Oregon, including the coast, the Columbia and Willamette rivers, along stretches of beautiful whitewater rivers, and elsewhere. The following sections describe the various components that make up CMRB in Oregon. Since reliable information was not always provided, little is known of some of these industry components. Other forms of CMRB have been examined, monitored, and/or regulated for a number of years, so more is known about their contribution to the state's economy.

4.1 Excursion Outings

Excursion outings embody a range of water-based recreational experiences which, for purposes of discussion, will be referred to as *river excursion* trips and *Motorized Tour Boat* (MTB) trips. Both activities generally utilize freshwater and/or inland stretches of river, although tidally influenced stretches of some rivers are used extensively by a number of commercial river excursion and MTB firms.

4.1.1 River Excursion Trips

In the late spring and early summer of 1996, telephone and in-person interviews were conducted with owners/operators of river excursion firms. The overall goal of these interviews was to seek information on a segment of CMRB about which little was known. In fact, the decision to interview owners/operators was based on a fundamental lack of relevant economic data of any kind pertaining to the excursion industry. Interview approaches varied depending on the wishes of the persons interviewed and/or their willingness to participate. Interview objectives included obtaining information on:

- Geographic distribution of the river excursion industry;
- Nature of services and;
- Magnitude of the industry in terms of number and types of vessels, annual passenger counts, revenue generation, and employment.

The interview process revealed that the river excursion industry in Oregon is composed of two fundamentally different sub-segments, characterized as the "day" sub-segment and the "overnight" sub-segment. Little is known of the scope and impact of the overnight excursion industry sub-segment and attempts to establish contacts with industry insiders met with limited success. Where contacts were made, operators were typically reluctant or unable to release information.

4.1.1a Overnight River Excursion Trips

A 1995 joint study of the Columbia River system notes that a number of overnight cruise lines are currently operating on the lower Columbia (BPA et al. 1995). According to the report, several commercial operators offer cruises along the entire Columbia River from Portland to the Lewiston/Clarkston area. Typical trips are eight day/seven night excursions, with stops at communities such as Cascade Locks, Hood River, The Dalles, and other points of interest. Undoubtedly, cruise ship patron expenditures have significant economic impacts in these communities, although no known documentation of these impacts exists. The lack of information is exacerbated by the seasonality of the trade and the transitory nature of the competitors. Although several firms are now consistently focusing on Columbia River markets for at least part of the year, others come and go depending on opportunities in other areas. In 1995, at least eight overnight cruise vessels operated along the Columbia for part of the year. Although most of these vessels were based in Portland during the Columbia cruising season, at least one operated out of the Port of Astoria. Sleeping capacity for these vessels ranged from 49 to 190 passengers, with a combined total capacity of 894 passenger berths (personal communication with Yates 1996). Total annual passenger counts and boating days for 1995 Columbia River overnight excursions are unknown, although it should be assumed that they numbered in the thousands.

why ?

4.1.1b Day River Excursion Trips

For purposes of the study, day river excursion trips, or *day excursions*, are defined as riverboat excursion cruises not exceeding one day in length. Typical day excursions are no more than a few hours in length, and meal service is often provided along with the sightseeing experience. Telephone interviews were conducted with seven different day excursion owners/operators. The interviews were designed to obtain the following information from each person interviewed:

- Business ownership (private vs. public);
- Number of vessels operated by firm;
- Business location;
- Estimated number of similar businesses/vessels in area of operation;
- Vessel capacities;
- Annual number of trips and annual passenger counts;
- Annual revenue generation and;
- Number of employees on payroll.

Due to the sensitive nature of some of the questions, interviews produced a limited amount of useful information. However, a general picture of the economic scope and magnitude of the day excursion industry emerged from the process.

As with the overnight excursion industry, the bulk of day excursion activity in Oregon is based out of the Portland area, with most operators taking on passengers at moorages on the Willamette River in Portland and the Port of Cascade Locks on the Columbia. The seven individuals interviewed accounted for the operation of ten day excursion vessels in 1995-1996, with all but one operating primarily on the Willamette and Columbia rivers. The other was

docked in Florence on the Siuslaw River Estuary. These ten vessels likely constituted most if not all of the 1995-1996 day excursion industry in Oregon, although it is possible that some operators were overlooked.

Of the nine vessels operating on the Willamette and Columbia, two are publicly owned by the Port of Cascade Locks. At 87 and 147 feet in length respectively, the sternwheelers *Cascade Queen* and the *Columbia Gorge* provided a range of excursion opportunities, including harbor tours, lunch, brunch, and dinner cruises (Boss 1996).

Financial information on the Cascade Locks vessels was provided by the Port's business office. According to the Port's 1995 financial statement, the sternwheelers generated over $1.2 million in ticket sales alone. Other revenues were generated from the sale of food, beverages, and gifts ($959,729), bringing total sales revenues associated with the sternwheeler operations to almost $2.2 million for the financial year ending June 30, 1995 (Port of Cascade Locks Business Office 1995). According to General Manager Ken Hutton and Business Manager Tobin White of the Port of Cascade Locks, the two sternwheelers carried an estimated 90,000 passengers on day excursions in 1995 and their operation provided approximately twelve full-time employment positions (pers. comm. 1996). Furthermore, a 1987 study of Columbia River Gorge tourism revealed that the sternwheeler at Cascade Locks ranked sixth as a major Gorge tourist attraction and that more than 55 percent of Gorge visitors were non-Oregon residents (Morse and Anderson 1988). This suggests that day excursion operations in the Columbia Gorge serve to bring new dollars to the state economy by exporting water-based recreation to out-of-state visitors. It follows that visitors to the Gorge have economic impacts beyond those associated with ticket purchases, although the nature and extent of these impacts are unknown.

The balance of Oregon's day excursion industry is privately owned and operated. Hence, accurate information for these operations was more difficult to obtain. However, telephone or personal interviews were conducted with owners and/or operators of all vessels included in the following discussions. To honor pledges of confidentiality, data gathered from these interviews is discussed in the aggregate.

In addition to the two vessels operated by the Port of Cascade Locks, at least eight privately owned and operated vessels provided day excursion opportunities in 1995-1996. These opportunities included moonlight, dinner, historic, and natural or "eco-cruises," suggesting that the industry was fairly diverse in the services that it marketed to tourists, visitors, and water recreationists (Boss 1996).

As previously mentioned, all but the Florence vessel were located in or based out of the Portland area. Most operations were relatively small, family run businesses, although several vessels were operated by out-of-state corporations. These eight vessels range in passenger capacity from 49 to 540, and annual passenger counts per firm ranged from less than 10,000 to approximately 100,000. Estimates placed total 1995 passenger counts for all day river excursion vessels at 275,000 passengers. According to industry representatives, 1995 revenue generated from ticket sales exceeded $5.5 million, with some estimates ranging as high as $10 million. All told, the day excursion industry in Oregon employed approximately 190 individuals as full or part-time (seasonal) workers in 1995 (pers. comm. with operators 1996).

4.1.2 Commercial Motorized Tour Boat Trips

Motorized Tour Boat (MTB) operations have experienced continuous growth in Oregon over the course of several decades. MTBs, often referred to as "jet boats" by the public, are shallow-draft, planing hull vessels powered by hydrojet engines. These craft are capable of navigating stretches of river normally inaccessible to more conventionally powered motor boats. MTB trips provide unique opportunities to water-recreationists and serve as substantial attractions to visitors from within and outside of Oregon. Most MTB trips are completed within all or part of a day. Hence, where MTBs are concerned, "passenger counts" are essentially synonymous with boating days. In general, patrons may choose from a variety of trip types, some of which may include full meal service at stops along the route. In Oregon, stretches of two rivers are extensively utilized by commercial MTB operators. These include the Hells Canyon stretch of the Snake River, which forms Oregon's border with Idaho in the northeastern corner of the state, and portions of the Rogue River in southwestern Oregon.

This study relied primarily upon data gathered from interviews with MTB operators and agencies involved in the management of commercial MTB use of the Snake and Rogue Rivers. No primary data on MTB patron trip expenditure patterns were gathered for this portion of the study, nor did the study rely upon the use of I-O modeling for estimations of economic impact attributable to commercial MTB operations. However, available information has been used to present an accurate portrait of industry trends, including use levels and revenue generation. Since MTB operations generate revenue from ticket sales, revenue figures provided some indication of the magnitude of patron trip expenditures. These revenues exceeded $7.24 million in 1995

4.1.2a Commercial MTB Patron Demographics

In a 1992 user study of the federally designated Wild and Scenic Rogue River, Shindler and Shelby conducted an extensive survey of private and commercial MTB patrons. Of the boaters surveyed, 86 percent were commercial patrons and of this proportion, over half (69 percent) lived more than 200 miles from the study site, suggesting that a commercial MTB excursion trip is one activity in a longer vacation schedule (Shindler and Shelby 1992). This observation was supported by interviews and correspondence with the two longtime commercial MTB operators located in Gold Beach. They estimated that between 70 to 90 percent of their patrons are residents of other states or countries (pers. comm. with Kammer and McNair 1996). Hence, commercial MTB operations, at least on the Wild and Scenic stretch of the Rogue River, represent a significant export of recreational services. MTB operations in other parts of the state are likely characterized by similar patron demographics.

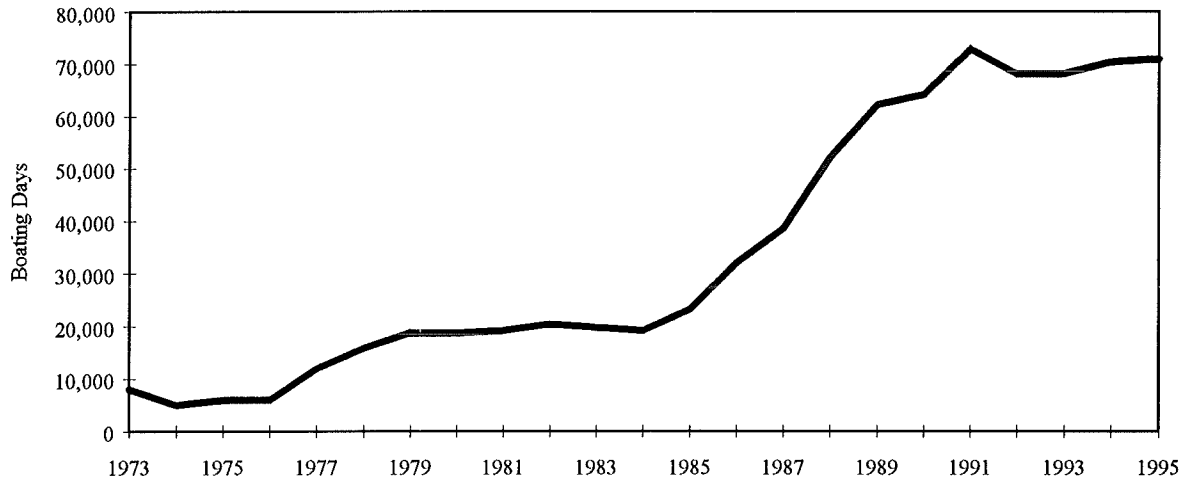
4.1.2b Rogue River Commercial MTB Use Levels

The Rogue River, located in southwestern Oregon, is one of the state's most highly utilized recreational rivers. With headwaters near Crater Lake in the southern Oregon Cascade Mountains, the Rogue flows westward through the cities of Rogue River and Grants Pass and on to the Pacific Ocean at Gold Beach. Commercial MTB operations have been established in all three of these communities. The smallest and most recently established of these businesses is located in the City of Rogue River, where it operates on stretches of the Rogue above the Savage Rapids Dam.

The bulk of Rogue River commercial MTB market share goes to businesses located in Grants Pass and Gold Beach. These operators primarily utilize an 84-mile segment of river designated as Wild and Scenic under the federal Wild and Scenic Rivers Act of 1968. Under the Act, sections of the Wild and Scenic Rogue are classified as "Recreational," "Wild," and "Scenic." The designated segment extends from the Rogue's confluence with the Applegate River downstream to Lobster Creek. The 47-mile stretch above Marial is managed by the Medford District of the Bureau of Land Management (BLM) and includes the heavily used Hellgate Recreation Area section, and a portion of the Wild section. The 37 miles below Marial are administered by the Siskiyou National Forest of the U. S. Forest Service (USFS), and include portions of the Wild section and a section classified as Scenic (BLM/USFS). All MTB activity on the Wild and Scenic Rogue River is regulated under federal permits.

According to the BLM, there are two commercial permits for MTBs to operate on the Rogue in the Hellgate Recreation Area. Both permits are retained by one owner. These Grants Pass-based MTBs run as far downstream as Grave Creek, covering a total round-trip distance of 75 miles. The MTB permittee offers scenic, whitewater, dinner, and brunch trips. Since the first commercial MTB trip, motorized tour boating days on the Recreation section have increased from approximately 700 in 1961 to more than 72,800 in 1991 (see Chart 4.1). Since 1991, use has leveled off for reasons which likely include additional trip limits, two drought years, and other factors (Austermuehle 1995).

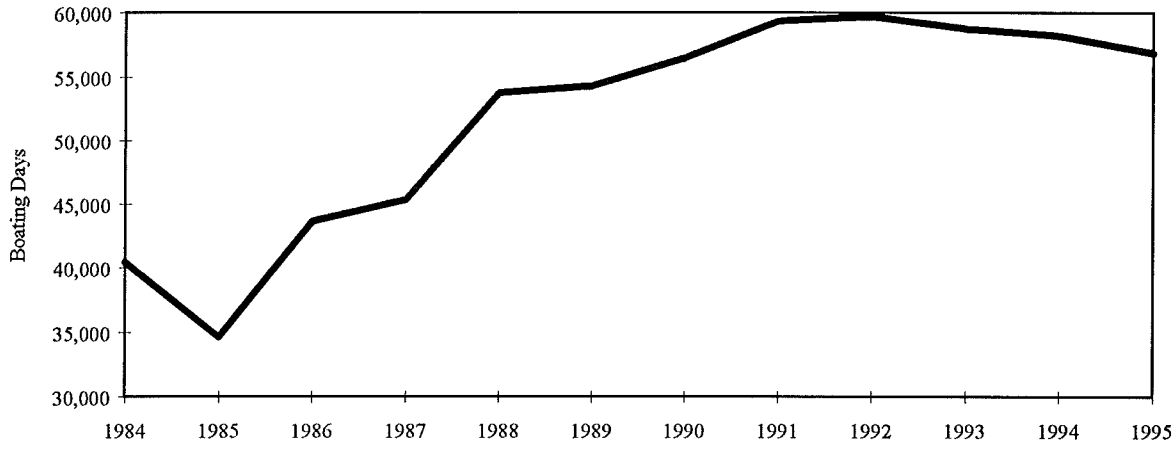
Chart 4.1: Rogue MTB Boating Days, Hellgate Recreation Area



Source: Austermuehle 1995, 1996.

The remaining Rogue River commercial MTB operations run from the Port of Gold Beach on the Pacific coast upriver as far as Blossom Bar Rapids, passing through U. S. Forest Service administered sections of the Rogue. Essentially two separate operations, the Gold Beach firms account for a significant proportion of annual commercial MTB boating days. Since 1985, annual passenger counts increased from 34,641 to a 1992 high of 59,700 (see Chart 4.2). Annual boating days for these firms have remained relatively stable since the early 1990s, showing only a slight decline in numbers (pers. comm. with D. Johnson 1996).

Chart 4.2: Rogue MTB Boating Days, Gold Beach

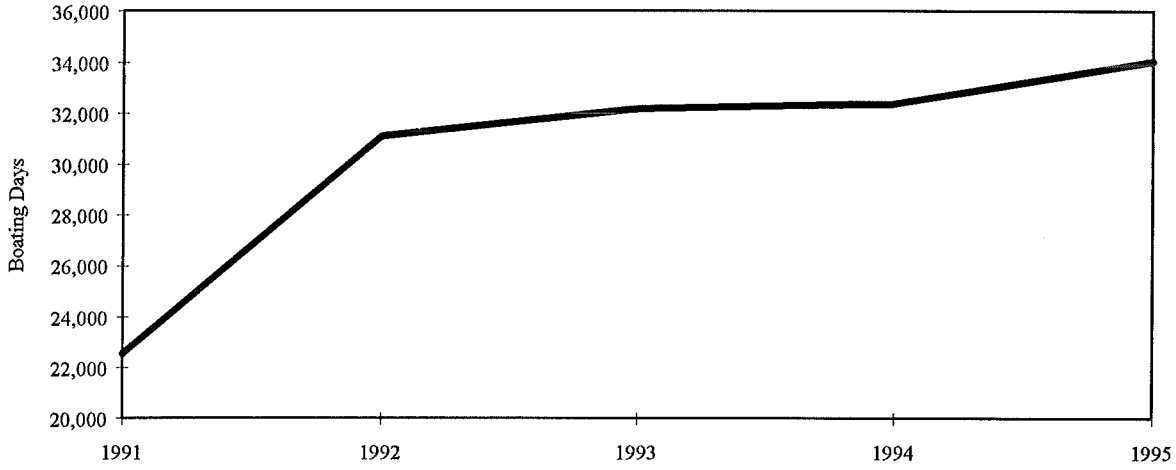


Source: Johnson 1996.

4.1.2c Snake River MTB Use Levels

Commercial MTB use of the Snake River occurs along a 71.5-mile stretch of federally designated Wild and Scenic River located within the Hells Canyon National Recreation Area. This stretch, managed by the U. S. Forest Service, extends from Hells Canyon Dam downstream to Cache Creek, near the junction of the Oregon, Idaho, and Washington borders. All commercial users are required by the U. S. Forest Service to have a valid special use permit to

Chart 4.3: MTB Boating Days, Snake River



Source: Cole et al. 1996.

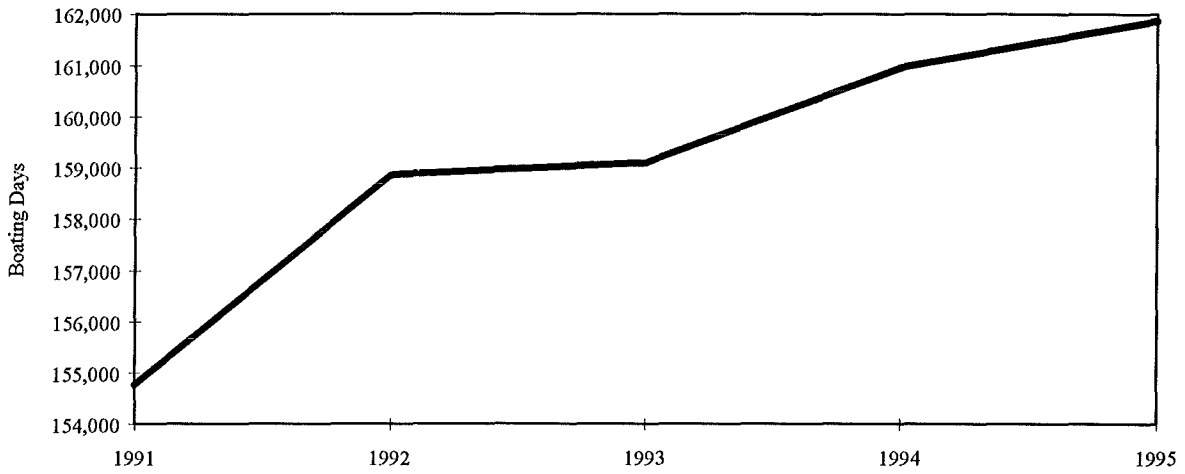
conduct a business enterprise on the Wild and Scenic Snake River. Pursuant to the conditions of the special use permit, MTB operators provide the U. S. Forest Service with annual passenger

counts. Snake River MTB passenger counts from 1991 to 1995 were provided by U. S. Forest Service personnel (see Chart 4.3) (Cole et al. 1996).

4.1.2d Statewide MTB Use Levels

Historically, virtually all MTB use in Oregon has occurred on the Rogue and Snake rivers, and the same can be said today. Statewide, MTB boating days have shown net increases, approaching 162,000 in 1995. Hence, indications are that the industry has continued to experience net growth, although rates of growth have slowed in recent years (see Chart 4.4).

Chart 4.4: MTB Boating Days, Statewide



Source: Austermuehle 1995, 1996; Cole et al. 1996; Johnson 1996.

4.1.2e The Economic Impact of MTBs

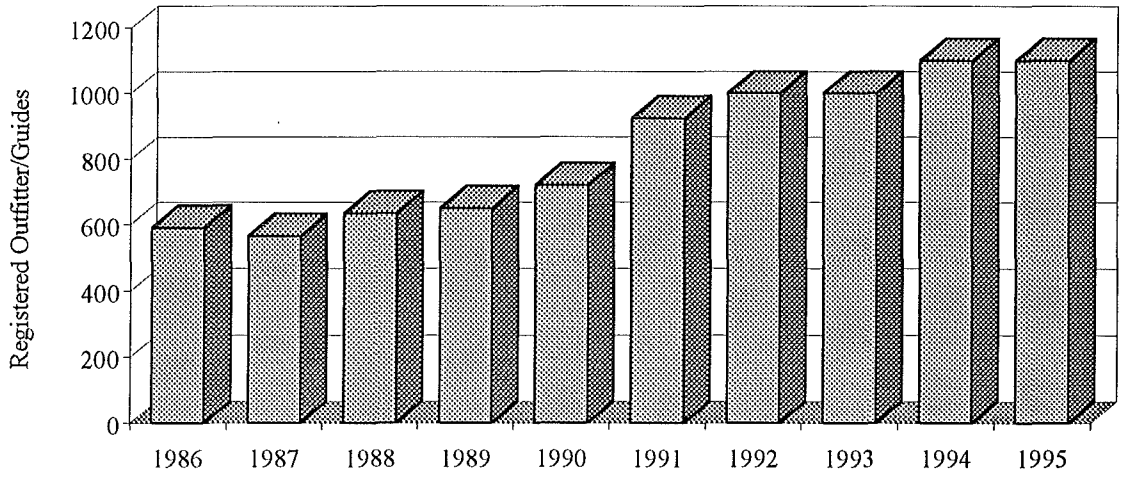
Revenues generated by MTBs operating on Oregon rivers provide perhaps the best available indicator of the direct economic impact of motorized tour boating. The purchase of a ticket for an MTB excursion represents a trip expenditure for MTB patrons. On designated Wild and Scenic Rivers, water-based commercial operators are required to report revenues from ticket sales to permitting administrators for purposes of fee assessment. These figures are generally available to the public upon request, although protocols vary between and even within agencies. Revenue figures for the Grants Pass permittee were provided by the Medford District of the BLM. These figures indicate that reported revenues from ticket sales for motorized boat tours of the Hellgate Recreation Area rose from a 1985 total of slightly more than $274,000 to just over $2 million in 1995 (Austermuehle 1995, 1996). Gold Beach operators reported aggregate 1995 income totals of approximately $3.2 million (pers. comm. with Kammer and McNair 1996). Snake River special use permittees reported revenue from 1995 ticket sales of more than $1.9 million, up from a 1985 reported total of $539,000. Total revenues from ticket sales for MTB excursions on Oregon rivers exceeded $7.24 million in 1995. Approximately 20 firms operated on Oregon rivers in 1995, providing employment for an unknown number of Oregon and non-Oregon residents.

4.2 Inland Guided Fishing Trips

The Oregon State Marine Board (OSMB) is the state agency responsible for the registration of "outfitter/guides," a dispersed group of businesses and individuals providing a variety of outdoor guided recreation activities. Guides providing commercial services such as whitewater river trips, fishing and hunting trips, backcountry, and other services must be registered with OSMB (Fosdick 1996).

Many registered guides utilize watercraft, both motorized and non-motorized, to facilitate their clients' pursuit of water-based recreation and/or angling. Furthermore, OSMB outfitter/guide registrations suggest that the number of registered guides in Oregon has steadily increased since the mid-1980s (see Chart 4.5). However, due to the opportunistic nature of guides and the variety of overlapping services they provide, little data or information exists to provide an indication of the economic impact this important constituency has on Commercial Motorized Recreational Boating (CMRB) in Oregon.

Chart 4.5: OSMB Registered Outfitter Guides



Source: Fosdick 1996.

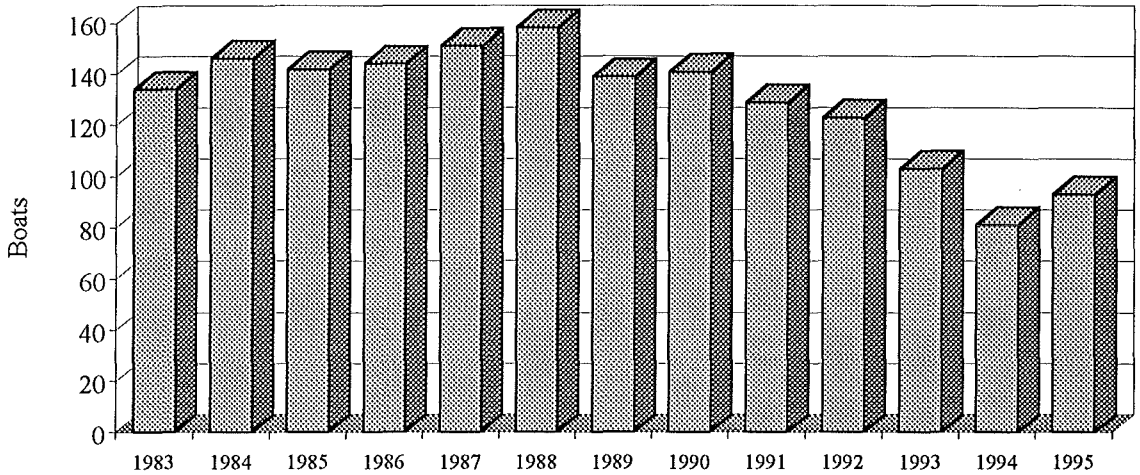
4.3 Ocean Charter Fishing

Ocean charterboat fishing has long been an important component of many coastal communities in Oregon. Charter fishing attracts coastal residents and visitors from other regions of Oregon, as well as visitors from out-of-state. Charterboat patron expenditures for goods and services such as food and beverages, overnight accommodations, and charter fishing trips constitute an economic impact in communities where charter fleets operate. Furthermore, out-of-region and out-of-state charter fishing patrons accrue travel costs when traveling to Oregon ports to participate in ocean fishing. These travel expenditures impact the destination community and other communities en route.

From the 1950s to the 1970s, the charter fleet focused effort almost entirely on salmon

(McNair 1994). However, beginning in the mid-1970s, factors related to over-harvest, Native American rights, forest practices, and *El Niño* contributed to abrupt declines in salmon harvests (Manfredo et al. 1988). Subsequently, salmon harvest by Oregon charterboats has experienced net declines since the late 1970s. This decline has impaired the Oregon coastal charter industry's ability to attract patrons who were once drawn to Oregon for its well-known abundance of Coho and Chinook salmon. The net impact on the ocean charter fishing industry has been declines in annual numbers of actively fishing charterboats, charterboat trips, and angler trips (Schindler et al. 1996).

Chart 4.6: Active Oregon Ocean Charterboats

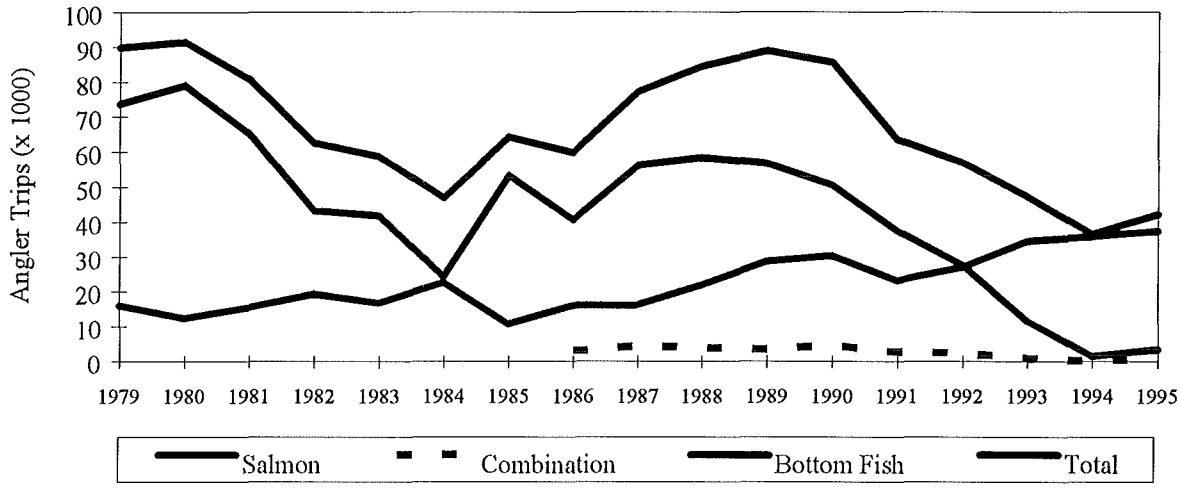


Source: Schindler et al. 1996, pers. comm. with Schindler 1996.

According to Oregon Department of Fish and Wildlife (ODFW) statistics, the total number of charterboats actively fishing decreased from 158 boats in 1988 to 93 in 1995 (see Chart 4.6). Subsequently, annual numbers of boat trips for the sum of all charter fishing modes have experienced a net decrease from 14,181 in 1979 to 4,727 in 1995. Likewise, total annual angler trips have experienced a net decrease since 1979. However, the decline in ocean charterboat fishing patronage has been partially offset by the development of near-shore bottom-fishing. Charterboat angling days for bottom-fish have increased steadily for the last 15 years, rising from slightly more than 16,000 in 1979 to a record level of 37,500 in 1995. This increased focus on bottom-fishing has helped the Oregon charter fleet to offset net declines in revenue associated with substantially decreased recreational harvest of salmon stocks (see Chart 4.7) (Schindler et al 1996).

days x bag limits = pressure

Chart 4.7: Charter Angler Trips by Species



Source: Schindler et al. 1996.

Estimating the Economic Impact and Trends of Ocean Charter Fishing in Oregon

To estimate the economic impact of ocean charter fishing, this study used 1990 expenditure patterns provided by Davis and Radtke of The Research Group. The 1990 dollar amounts have been adjusted to 1995 values using the historical Consumer Price Index for all Urban Consumers (CPI-U). Two separate expenditure patterns, one for salmon angling and one for marine or bottom-fish angling, were combined with information from ODFW to calculate total 1995 Oregon trip expenditures for charter angling. Although ODFW estimates of annual angling trips include a category for "combination" trips, no such expenditure pattern was available. Hence, it was assumed that combination trips included bottom-fishing, and these numbers were added to ODFW figures for bottom-fishing angler trips. In addition, IMPLAN-derived industry output coefficients were used to calculate total 1995 personal income impacts attributable to trip expenditures of charterboat patrons.

Trip expenditures for salmon charter anglers estimated "at home", "en route" and "destination" area expenses for nine categories. According to Davis and Radtke, 29 percent of salmon charter anglers are residents of the coastal region and the remainder are visitors from other, non-coastal regions (The Research Group 1991). This suggests that salmon charter fishing constitutes a significant economic export for charter fleet home ports. The average per angler per trip 1995 expenditure for an ocean charterboat salmon trip was $108.00 (see Table 4.1). Of this amount, 5 percent was spent in the area in which the angler lived, 4 percent was spent en route to the destination, and 91 percent was spent in the coastal destination community. There were approximately 3,500 charterboat angler trips for salmon fishing in 1995, bringing the total trip expenditures related to ocean salmon charter fishing to $378,000 (The Research Group 1991, Schindler et al. 1996).

Table 4.1: Trip Expenditures for Ocean Charter Salmon Anglers ($)

Category	At home	En Route	Destination	Total (per angler)	Total (all anglers)
Transportation, gas, etc.	2.58	2.06	5.25	9.89	34,615
Lodging	0	0	6.98	6.98	24,430
Retail food/drinks at stores	2.41	0.29	4.16	6.86	24,010
Restaurants	0	1.50	12.42	13.92	48,720
Charter fees	0	0	46.87	46.87	164,045
Boat gas	0	0	0	0	0
Equipment rental	0	0	19.48	19.48	68,180
Supplies and misc.	0	0	1.82	1.82	6,370
Other	0.63	0	1.55	2.18	7,630
Total Expenditures	5.62	3.85	98.53	108.00	378,000

Source: The Research Group 1991, Schindler et al. 1996.

Using IMPLAN-derived coefficients, personal income impacts resulting from salmon charter angler trip expenditures were calculated. Average per angler impact on personal income was approximately $86. Hence, the 3,500 salmon charter trips in 1995 were associated with approximately $301,000 in personal income (see Table 4.2) (The Research Group 1991, Schindler et al. 1996).

mixing a1 & a6 data

Table 4.2: Personal Income Impacts from 1995 Ocean Charter Salmon Angler Trip Expenditures ($)

Category	IMPLAN Coefficients	At Home	En Route	Destination	Total (per angler)	Total (all anglers)
Transportation, gas, etc.	0.5851	1.509558	1.205306	3.071775	5.786639	20,253.237
Lodging	0.8667	0	0	6.049566	6.049566	21,173.481
Retail food/drinks at stores	0.4438	1.069558	0.128702	1.846208	3.044468	10,655.638
Restaurants	0.7139	0	1.07085	8.866638	9.937488	34,781.208
Charter fees	0.8734	0	0	40.936258	40.936258	143,276.9
Boat gas	0.3682	0	0	0	0	0
Equipment rental	0.8734	0	0	17.013832	17.013832	59,548.412
Supplies and misc.	0.5985	0	0	1.08927	1.08927	3,812.445
Other	1.0648	0.670824	0	1.65044	2.321264	8,124.424
Total Impacts		3.24994	2.404858	80.523987	86.178785	301,625.75

Source: The Research Group 1991, Schindler et al. 1996.

Per angler trip expenditures for ocean bottom-fish charters were estimated in the same way as those for salmon trips (see Table 4.3). As with salmon anglers, significant numbers (77 percent) of bottom-fish anglers are non-coastal area residents, implying that charter fishing for bottom-fish species also represents a net service export for coastal ports. On average, 1995 expenditures per trip for bottom-fish charter anglers was $98.49. Of this, 1 percent was spent at home, 6 percent was spent en route, and 93 percent was spent in the coastal destination community. In 1995, ODFW counted approximately 37,500 bottom-fish angler trips and 1,100 combination angler trips, bringing the adjusted total for bottom-fish angler trips to 38,600. Total trip expenditures for 1995 charterboat bottom-fishing were approximately $3.8 million (The

Research Group 1991, Schindler et al. 1996).

Table 4.3: Trip Expenditures for Ocean Charter Bottom-Fish Anglers ($)

Category	At home	En Route	Destination	Total (per trip)	Total (all anglers)
Transportation, gas, etc.	1.13	3.19	2.12	6.44	248,584
Lodging	0	0.27	8.37	8.64	333,504
Retail food/drinks at stores	0	0.21	5.04	5.25	202,650
Restaurants	0	1.81	11.61	13.42	518,012
Charter fees	0	0	54.88	54.88	2,118,368
Boat gas	0	0.53	0	0.53	20,458
Equipment rental	0	0	5.28	5.28	203,808
Supplies and misc.	0	0	0	0	0
Other	0	0.05	4	4.05	156,330
Total Expenditures	1.13	6.06	91.3	98.49	3,801,714

Source: The Research Group 1991, Schindler et al. 1996.

Personal income impacts associated with bottom-fish charter angling were calculated in the same way as those for salmon fishing (see Table 4.4). On average, each 1995 bottom-fish charter angler trip generated approximately $80 in personal income. The total impact of the 38,600 bottom-fish charter angler trips in 1995 was the generation of approximately $3 million in personal income (The Research Group 1991, Schindler et al. 1996).

Table 4.4: Personal Income Impacts from 1995 Ocean Charter Bottom-Fish Angler Trip Expenditures ($)

Category	IMPLAN Coefficients	At home	En Route	Destination	Total (per angler)	Total (all trips)
Transportation, gas, etc.	0.5851	0.661163	1.866469	1.240412	3.768044	145,446.5
Lodging	0.8667	0	0.234009	7.254279	7.488288	289,047.92
Retail food/drinks at stores	0.4438	0	0.093198	2.236752	2.32995	89,936.07
Restaurants	0.7139	0	1.292159	8.288379	9.580538	369,808.77
Charter fees	0.8734	0	0	47.932192	47.932192	1,850,182.6
Boat gas	0.3682	0	0.195146	0	0.195146	7,532.6356
Equipment rental	0.8734	0	0	4.611552	4.611552	178,005.91
Supplies and misc.	0.5985	0	0	0	0	0
Other	1.0648	0	0.05324	4.2592	4.31244	166,460.18
Total Impacts		0.661163	3.734221	75.822766	80.21815	3,096,420.6

Source: The Research Group 1991, Schindler et al. 1996.

To calculate total trip expenditures and personal income impacts resulting from Oregon charterboat fishing, totals for salmon and bottom fishing trips were summed (see Table 4.5). The results indicate that total patron trip expenditures for 1995 Oregon ocean charterboat fishing were approximately $4.1 million and the total personal income associated with this spending was approximately $3.4 million (The Research Group 1991, Schindler et al. 1996).

Table 4.5: Total 1995 Trip Expenditures and Personal Income Generated by Oregon Ocean Charterboat Angling ($)

	Trip Expenditures			Personal Income Generated		
Category	Salmon	Bottom	Total	Salmon	Bottom	Total
Transportation, gas, etc.	34,615	248,584	283,199	20,253.2365	14,5446.5	165,699.73
Lodging	24,430	333,504	357,934	21,173.481	289,047.92	310,221.4
Retail food/drinks at stores	24,010	202,650	226,660	10,655.638	89,936.07	100,591.71
Restaurants	48,720	518,012	566,732	34,781.208	369,808.77	404,589.97
Charter fees	164,045	2,118,368	2,282,413	143,276.903	1,850,182.6	1,993,459.5
Boat gas	0	20,458	20,458	0	7,532.6356	7,532.6356
Equipment rental	68,180	203,808	271,988	59,548.412	178,005.91	237,554.32
Supplies and misc.	6,370	0	6,370	3,812.445	0	3,812.445
Other	7,630	156,330	163,960	8,124.424	166,460.18	174,584.61
Total Expenditures	378,000	3,801,714	4,179,714	301,625.7475	3,096,420.6	3,398,046.3

Source: The Research Group 1991, Schindler et al. 1996.

As indicated by patron expenditure patterns, most charter anglers come to the coast from outside the coastal region. In addition, most patron expenditures occur in the destination community, implying that Oregon charterboat fishing represents a significant regional economic export that brings new dollars to the state's coastal region. These new dollars have a statewide economic multiplier effect, resulting in economic benefits for coastal communities and Oregon. Hence, although it is probable that customer expenditures and related economic impacts associated with the charterboat industry have realized a net decrease since at least 1979, the industry still constitutes an important component of CMRB in Oregon.

4.4 Coastal Aquatic Nature-Based Tourism

As a form of recreation, "eco-" or "nature-based" tourism has continued to experience growth along the Oregon coast. Primarily driven by the annual migrations of California Gray Whales, Aquatic Nature-Based Tourism (ANBT) has provided opportunities for the expansion of CMRB. To date, at least one enterprise operating a vessel along the Oregon coast specializes in providing coastal visitors and residents with educational estuarine or ocean "eco-cruises." Others, such as ocean fishing charter boats, offer whale-watching cruises depending on demand and fishing conditions.

In a 1988 study, a telephone survey of charterboat operators indicated that, out of the 7,800 trips reported in the survey, 1.8 percent were for whale-watching (Manfredo et al. 1988). To assess present day levels of participation by Oregon charterboat operators in whale-watching, operators were interviewed personally in June 1996. The objective of these interviews was to determine, among other things, the extent of the charter fishing fleets' involvement in ANBT.

In 1995, according to ODFW records, there were 93 actively fishing charterboats on the Oregon coast (pers. comm. with Schindler 1996). The 1996 interviews, which gathered information pertaining to the 1995 business activities of 65 charter fishing vessels, revealed that at least 51 of these vessels had been used to some extent for whale-watching activity. In Newport and Depoe Bay, virtually all boats or firms carried patrons on whale-watching cruises during 1995. More than half of these ports' charter vessels were used for whale-watching at least part of

the time. Additionally, operators were asked to estimate what percentage of their 1995 operating revenues were generated from whale-watching cruises. Responses ranged from 0 to 20 percent. In general, across-the-board percentages were higher for operators in Depoe Bay and Newport, suggesting that charter operators in these ports have come to rely on ANBT as a partial substitute for lost salmon-fishing revenues.

Undoubtedly, ANBT accounts for a significant portion of the economic impact associated with coastal CMRB. Furthermore, it is likely that additional declines in ocean fisheries allocations will compel some members of the ocean charter fishing fleet to shift their efforts to ANBT. In general, however, ANBT as a component of coastal recreational boating is a relatively new phenomenon. Hence, little is known of its present or projected impact on the economies of coastal communities.

4.5 Conclusion

Summary?

Commercial Motorized Recreational Boating in Oregon is loosely composed of a variety of components. These include excursion outing enterprises offering day and overnight river cruises and motorized tour boat trips; guided inland fishing trips; coastal Aquatic Nature-Based Tourism, or eco-cruises; and ocean charterboat fishing trips. While little is known of the economic impacts associated with guided inland fishing trips and coastal ANBT, it can be assumed that the impacts of these components are significant. From the remainder of CMRB, sufficient information was available to make a conservative estimate of 1995 trip expenditures for day river excursions, MTB trips, and ocean charter fishing trips (see Table 4.6). Minimum trip expenditures in the case of day river excursions and MTB trips included ticket fees. Charterboat expenditures included purchases described in the patron expenditure survey categories. Altogether, known CMRB trip expenditures in 1995 totaled nearly $17 million.

based on?

Table 4.6: Estimated Minimum 1995 Trip Expenditures for CMRB

CMRB Sub-component	Estimated Minimum Expenditures ($)
Day River Excursion	5,500,000
Motorized Tour Boat Trips	7,240,000
Ocean Charterboat Trips	4,179,714
Total	16,919,714

V. Non-Registered Recreational Boating

Today, as in the past, a substantial amount of recreational boating activity takes place in non-motorized, non-registered craft such as inflatable rafts and kayaks, hard-shelled kayaks, canoes, and driftboats. Oregon provides literally thousands of miles of rivers suitable for use by recreational floating craft. Rivers such as the McKenzie, the North Umpqua, the Rogue and the Deschutes are well-known by whitewater enthusiasts, anglers, and paddlers of all ages. Many other rivers provide opportunities for more casual non-motorized boating experiences. Another important form of Non-Registered Recreational Boating (NRRB) in Oregon is windsurfing. From the late 1980s to the early 1990s this sport experienced rapid growth in the Columbia River Gorge, where conditions are typically ideal for sail boarding. Be it rafting or windsurfing, NRRB enthusiasts make significant contributions to Oregon's economy through travel expenditures and equipment purchases.

5.1 The Economic Impact of Windsurfing in the Columbia Gorge

In the mid 1970s, several pioneering board sailors recognized the ideal windsurfing conditions that existed in the Columbia Gorge. Sharp west to east temperature and pressure gradients consistently produce 15- to 35-knot winds. During the 1980s, media coverage of "high-wind" Gorge sailing attracted increasing numbers of windsurfers to the area which, in turn, attracted board, sail and windsurf accessory designers to Gorge communities such as Hood River. In fact, between 1985 and 1990, an estimated 20 windsurf manufacturers selected the Gorge as the testing ground for their new equipment lines (Povey 1990).

In 1987, a study was conducted by the University of Oregon's Community Planning Workshop to determine the magnitude and patterns of windsurfer expenditures in the Gorge. The study estimated that in one 90-day period approximately 6,700 windsurfers spent $7.3 million. Additionally, 1990 expenditures of $14 to $25 million were projected. In 1990, a follow-up study was conducted to assess expenditures and project future rates of growth for the sport (Povey 1990). The following summarizes the methodology and results of the 1990 study.

Research Methodology and Results

From mid-June to mid-September 1990, a 10 percent sample survey of Gorge windsurfers was conducted by the University of Oregon. To select this sample and conduct the survey, the research team visited 20 sailboard launch sites on both sides of the river between Cascade Locks and Maryhill. Each site was visited on no less than four occasions, including weekdays and weekend days, under sailing conditions characterized as moderate and good. Surveys were distributed to 10 percent of the windsurfers present at each site on each day of surveying. The survey sought information on windsurfer characteristics and expenditures. Over 1,100 surveys were completed and, after correcting for sampling error, the total 1990 Gorge windsurfing population was estimated to be 9,650 (Povey 1990).

Survey results indicated that the typical 1990 Gorge windsurfer was a 32-year-old male with 4.5 years of windsurfing experience who averaged 24.6 days per year of Gorge sailing. Only 37 percent of 1990 Gorge sailors were residents of Oregon and Washington. The remaining 63 percent came from 37 different states and seven different countries, suggesting that a large

portion of Gorge windsurf-related spending represents an economic export of goods and services for Gorge communities (Povey 1990).

The survey also asked windsurfers to estimate the spending associated with their Gorge windsurfing activities (see Table 5.1). Respondents were asked to estimate their expenditures in each of nine separate categories. Results show that the total average daily expenditure for a 1990 Columbia River Gorge windsurfer was $69.90 per windsurfer per day of windsurfing. Hence, the estimated 1990 direct economic impacts of expenditures by Gorge windsurfers from June 15 to September 15 was over $16.5 million in 1990 dollars (see Table 5.2) (Povey 1990).

Table 5.1: Average Daily Expenditures for Windsurfers in the Columbia River Gorge in 1990

Category	Expenditures ($)
Meals/Food	14.95
Beverages	4.92
Lodging	9.64
Entertainment	2.83
Fuel Costs	5.82
Sailboard Equipment	25.24
Sailboard Lessons	2.37
Clothing	3.48
Other	.65
Total	69.90

Source: Povey 1990.

Table 5.2: Economic Impact of Windsurfing in the Gorge in 1990

Sample Size	Total Windsurfers	Average # of Days	Total Windsurf Days	Average $ Per Day	Estimated Impact ($)
965	**9,650**	**24.6**	**237,390**	**69.90**	**16,593,561**

Source: Povey 1990.

In 1990, it was projected that Gorge windsurfing visits and associated visitor expenditures would continue to increase through at least 1995. Original projections estimated that the 1995 Gorge windsurf population would exceed 15,000 board sailors with expenditures of $34.2 million (Povey 1990). In retrospect, these figures likely overestimated the growth of the sport. According to Povey and others, the growth of Gorge windsurfing leveled off in 1992 and has remained stable since that time. Hence, the 1995 direct economic impact of the sport is estimated to have been $21 million (in 1990 dollars) (Povey 1990, pers. comm. with Povey 1996).

5.2 The Economic Impact and Trends of Non-Registered River Boating

Non-registered river boating is typically characterized as "whitewater recreation," although not all non-registered boating occurs on rivers known for whitewater experiences, nor is non-registered river boating pursued exclusively as an activity in and of itself. Many anglers, for example, utilize floating craft such as drift boats as a means to access otherwise difficult to reach cold-water fish habitats. Additionally, many water recreationists may prefer non-motorized boating activities that are less demanding than whitewater experiences. Hence, they may choose one of Oregon's many relatively quiet stretches of river for boating use. Typically, these recreationists, be they anglers, whitewater enthusiasts or casual drifters, utilize non-registered craft such as inflatable rafts and kayaks, hard-shelled kayaks, canoes, and driftboats. Many if not most of these craft are non-motorized. Non-motorized craft are not required to be registered with OSMB.

There are literally thousands of miles of rivers and streams in Oregon that are suitable for recreational floating. So many, in fact, that it would be beyond the scope or ability of this report to list them. However, most recreational float use likely occurs on systems with some degree of scenic and/or wilderness value that enhances the boating or angling experience. Such systems are typically characterized by free-flowing streams and significant topographic variation that creates what river recreationists refer to as "whitewater" (Shelby et al. 1990).

Oregon has an abundance of streams that receive significant whitewater boating use. Of these, there are perhaps 35 which offer at least ten miles of runnable whitewater and are rated at class 2 or above on the American Whitewater Affiliation's international scale of whitewater difficulty (see Table 5.3) (Shelby et al. 1990).

A majority of these whitewater streams have their origins in the Cascades, although six originate in the Coast Range (Nehalem, Nestucca, Wilson, Coquille, Yamhill, Siletz), seven in the mountains of southern and eastern Oregon (Crooked, Illinois, John Day, North Fork John Day, Upper Klamath, Grande Ronde, Owyhee) and one in the Rocky Mountains (Snake) (Shelby et al. 1990).

Each year, hundreds of thousands of non-registered boating days occur on these and other Oregon river systems. Visitors from other states travel to Oregon to experience its beautiful rivers or drift fish for any number of fish species. Oregonians travel extensively within the state, often drawn to other regions by the attraction of a whitewater rafting trip on the Rogue River or a guided fishing trip on the Deschutes River. These and other shorter trips typically involve expenditures on items such as food and beverages, lodging, and outfitter/guide fees. This spending helps Oregonians by providing jobs and personal income, both directly and through the multiplier effect. The following will discuss the methods that were used to assess the scope and impacts of recreational floating in Oregon. In addition, the results of the assessment will be presented.

However, it is important to note that not enough is known about statewide float user demographics and spending patterns to suggest that all jobs associated with recreational floating are also dependent on recreational floater expenditures. If recreational float use were to experience dramatic declines, certainly many jobs would disappear. Nonetheless, some recreational floaters would continue to spend money on other forms of outdoor recreation which would offset to a degree any losses associated with declines in float use levels.

Table 5.3: Whitewater Recreation Resources in Oregon

River	Miles	Class[a]	Guide Service	Primary Ownership
Little North Santiam	10	2	no	federal/private
Willamette, Middle Fork	10	2+	no	federal
Siletz	13	2-4	no	private
Hood	14	3-4	no	private
Nehalem	14	3	yes[b]	state/private
Thomas Creek	14	2-3	no	private
Willamette	14	2	yes	greenway
Yamhill, S. Fork	14	2	no	private
Crabtree Creek	15	2-4	no	private
Quartzville Creek	16	4-5	no	federal
Coquille, S. Fork	17	2-4	yes[b]	federal/private
Calapooia	18	2-3	no	private
Fall Creek	18	2-3	no	private/federal
Middle Santiam	18	3-4	no	federal
Molalla	21	2-5	no	private
Nestucca	22	2-3	yes[b]	private/federal
Upper Klamath	23	3-4+	yes	federal/private
Wilson	23	2-4	yes[b]	state
Crooked	27	3-4	no	private/federal
Metolius	28	2-3+	yes[b]	federal
South Santiam	28	2-4	no	federal/private
White	29	2-3+	no	federal
Illinois	34	4+	yes	federal
North Santiam	35	2-4	yes	private/federal
Sandy	35	2-4+	yes[b]	private/federal
Rogue	38	3-4	yes	federal
John Day, N. Fork	40	2+	no	federal/private
Clackamas	49	2-4	yes	federal/private
McKenzie	59	2-3	yes	private/federal
North Umpqua	67	2-4	yes	federal
Snake	78	3	yes	federal
Grande Ronde	90	2-3	yes	private/federal
Owyhee	98	4-5	yes	federal/private
Deschutes	107	3-4	yes	federal/private
John Day	114	2	yes	federal/private
Total	1,250			

[a]Ratings on the American Whitewater Affiliation international scale of difficulty. Some rapids of higher difficulty.
[b]Guides specialize in fishing, mainly using drift boats.

Source: Shelby et al. 1990.

Research Methodology and Results

To assess the economic impact of non-registered river boating, two fundamental pieces of information were needed: the number of boating days annually attributable to non-registered boating use and the spending patterns of the participants.

Table 5.4: 1995 Non-Registered Boating User Days

River	User Days		
	Commercial	Non-commercial	Total[a]
Clackamas[1]	N/A	3,019	3,019
Deschutes (lower)[2]	42,598	85,514	128,112[b]
Deschutes (upper)[3]	42,258	N/A	42,258
Grande Ronde[4]	1,917	5,597	7,514
Illinois[5]	N/A	367	367
Klamath (upper)[6]	5,763	602	6,365
McKenzie[7]	2,950	N/A	2,950
Metolius[8]	N/A	500	500
North Umpqua[9]	1,703	3,285	4,988
Owyhee[10]	1,759	9,274	11,033
Rogue[11, 12, 13, 14]	25,583	47,292	72,875
Snake[15]	7,887	16,982	24,869
Total	132,418	172,432	304,850

[a]Totals represent total known commercial and non-commercial 1995 user days. Shoulder season use may be omitted for some rivers. If the nature of the use was unknown it was assumed to have been non-commercial.
[b]Commercial use figures are based on BLM Commercial use statistics. Total user days for floaters on the lower Deschutes are derived from Oregon Parks and Recreation (OPRD) use data for all boating activity on this section of the river. OPRD estimates that approximately 10 percent of use is composed of motorized boating days (pers. comm. with Brutscher August 1996). Figures have been adjusted accordingly.

Source: [1]Rolloff et al. 1995, [2]Brutscher 1996, [3]Chaudet 1996, [4]Bloom 1996, [5]Cruz 1996, [6]Senter 1996, [7]Raab 1996, [8]Bonacker 1996, [9]Ward 1996, [10]Wilbanks 1996, [11, 12]Austermuehle 1995, 1996, [13]Vines 1996, [14]Walker 1996, [15]Cole et al. 1996.

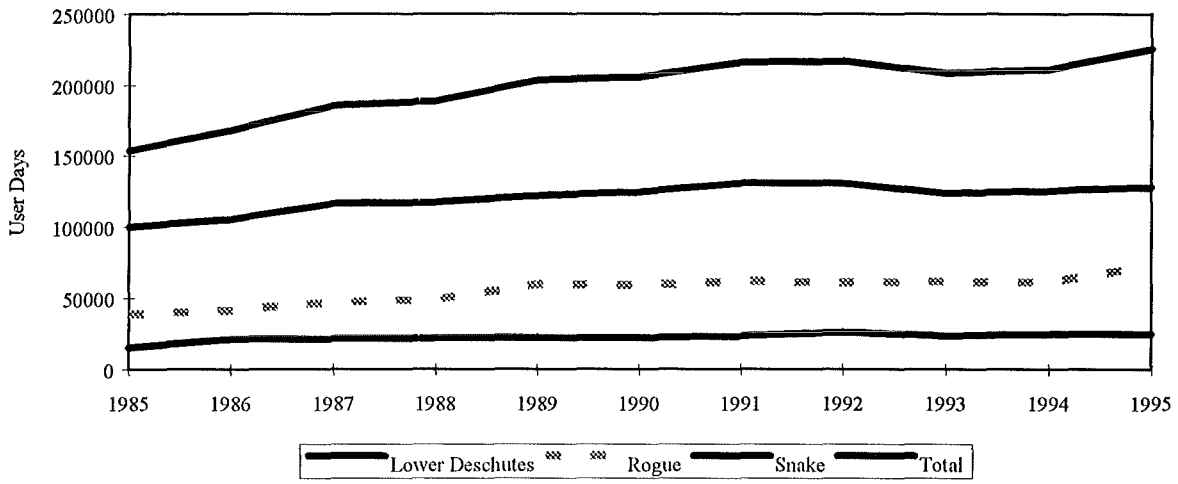
To determine float use levels, use data for eleven rivers were obtained from various federal and state managing agencies, including the U. S. Forest Service, the BLM, and the Oregon Parks and Recreation Department (OPRD) (see Table 5.4). When available, data for commercial vs. non-commercial use and data for historical use patterns were obtained. This was done to establish total statewide recreational floating trends and use levels that could be used to estimate economic impacts. It is important to note that the accuracy of data from one agency to another or from one river to another varies. For some rivers, detailed use information was available for all or most monitored years. For others, only seasonal information or information on commercial use for limited stretches of water were available. Some information is based on agency estimates, while other sources of data were based on recorded actual use. Information sources are cited. Use levels reflect "user" or "visitor" days. A user day is typically defined as all or part of one day spent by a single participant in pursuit of the activity of note. Hence, a rafter who took a two and

one-half day trip on the Rogue River accounted for three user days.

These sources indicate that there were 132,418 commercial user days and 172,432 non-commercial user days recorded for non-registered boating in 1995, for a total verified use of nearly 305,000 user days on the eleven rivers for which data were obtained.

Historical trend data from the lower Deschutes River, the Wild and Scenic Rogue River, and the Wild and Scenic Snake River indicate that total non-registered boating use on these rivers has increased by more than 70,000 user days, or 47 percent, since 1985 (see Chart 5.1). Similar trends have been documented on other Oregon rivers, including the Grande Ronde, the upper Klamath, and the North Umpqua (Bloom 1996, Senter 1996, Ward 1996). Furthermore, few whitewater recreation rivers show any declines in use over the last 10 or 20 years. Cumulatively, these data suggest that the whitewater recreation or "floating" segment of NRRB has experienced steady growth since at least 1985.

Chart 5.1: Non-Registered Boating Use Trends



Source: Austermuehle 1995, 1996, Brutscher 1996, Cole et al. 1996, Vines 1996.

To assess the economic impact of recreational floating, trip expenditure patterns for whitewater recreationists were coupled with use data for the eleven rivers listed above. Expenditure patterns were obtained from a 1988 survey of Clackamas whitewater recreationists. The study sample was composed of 401 boaters who had previously consented to complete a mailed questionnaire. Responses were received from 309 people and 32 other surveys were undeliverable or unclaimed, for a response rate of 84 percent (Shelby et al. 1990).

The survey sought information on boater use patterns, social impacts and standards, and economic impacts and values. Survey results indicated that most Clackamas visits are single-day trips made on weekends, with boating usually serving as the sole purpose of the trip.

Respondents were asked to provide trip expenditure information for six expenditure categories and to indicate how much was spent in each category *in* Oregon as well as *outside of* Oregon (Shelby et al. 1990). For this study, expenditures patterns for purchases made in Oregon were chosen for application to 1995 use level data. Dollar amounts for 1988 were adjusted to 1995 values using the Consumer Price Index for all Urban Consumers (CPI-U). Categories and related expenditures are summarized below (see Table 5.5). The original survey included an

expenditure category called "miscellaneous." For this study, the assumption has been made that miscellaneous expenditures fall into the retail category. Hence, only five expenditure categories are used here.

Table 5.5: 1995 Adjusted Expenditures for Clackamas Boaters

Category of Expenditure	Dollars ($)
Gasoline and oil	12.37
Restaurants and taverns	9.56
Lodging and camping	3.63
Raft and equipment rental	2.45
Retail (groceries, etc.)	12.74
Total	40.75

Source: Shelby et al. 1990.

To estimate the economic impact of commercially guided trips, 1995 commercial float use data for eight rivers were aggregated to calculate an average statewide guide fee of $79.97 ($10,311,244/128,934 user days = $79.97/user day) (see Table 5.6).

Table 5.6: 1995 Estimated Commercial Guide Fee

River	User Days	Commercial Revenue ($)
Deschutes (upper)[1]	42,258	1,479,030
Deschutes (lower)[1]	42,598	3,490,432
Grande Ronde[2]	1,917	223,144
Klamath (upper)[3]	5,763	478,666
McKenzie[4]	2,950	155,374
Owyhee (entire system)[5]	2,251	77,128
Rogue (Wild section)[6]	23,310	3,241,349
Snake[7]	7,887	1,166,121
Total	128,934	10,311,244

Source: [1]Chaudet 1996, [2]Bloom 1996, [3]Senter 1996, [4]McKenzie 1996, [5]Wilbanks 1996, [6]Austermuehle 1996, [7]Cole et al. 1996.

To calculate estimated expenditures and economic impacts, the six categories (five Clackamas expenditure categories and guide fee) above were allocated proportionately to relevant IMPLAN sectors for water-based recreation. Per trip expenditures were allocated for commercial and non-commercial trips, thus constructing two different allocation patterns for the I-O model. The only difference in these patterns was the inclusion of a $79.97 guide fee under IMPLAN sector 488 (Amusement and Recreation Services) for guided trips. Allocations for non-commercial user days did not include this amount. Hence, user expenditures per trip per day were approximately $40.75 for non-commercial, unguided trips and $120.72 for commercially guided trips.

Each of these two allocation patterns were subsequently used to calculate total statewide expenditures associated with verified user days. Statewide expenditure amounts for each

IMPLAN sector were then run by IMPLAN software to generate estimates of economic impacts, including personal income and employment associated with boater expenditures (see Table 5.7).

Total statewide expenditures for known user days, commercial and non-commercial, were estimated at $23 million in 1995. According to I-O model results, this spending was associated with an estimated $14.7 million in personal income and 688 jobs in 1995.

Table 5.7: Estimated 1995 Economic Impact of Recreational Floating for Known User Days

Use Type	Expenses per User Day ($)	# of User Days (Known)	Total Expenditures ($) (Statewide)	Estimated Economic Impact	
				Personal Income Generated	Employment (jobs)
Commercial	120.72	132,418	15.99 million	10.21 million	478
Non Commercial	40.75	172,432	7.03 million	4.49 million	210
	Total	304,850	23.02 million	14.70 million	688

These estimates, while significant, are admittedly conservative for several reasons. For example, Clackamas expenditure patterns were based primarily on one-day trips. Hence, spending for lodging and other overnight accommodations is not representative of trip expenditure patterns for many other Oregon rivers where recreationists often spend more than one night at area accommodations. Furthermore, these estimates are based on a known total of 304,850 user days accrued on eleven Oregon river systems in 1995. These use figures often do not account for off-season use levels on the eleven rivers, nor do they account for the use that occurred on other rivers and streams in 1995. In addition, while I-O model output showed that 1995 trip expenditures were associated with 688 jobs, OSMB records indicate that there were some 1,100 registered outfitter/guides in Oregon in 1995 (Fosdick 1996).

Therefore, to compensate for these conservative estimations of total float trip-related expenditures and economic impacts, several assumptions were made based on available information. These are outlined below.

In his 1986 study of Oregon boating recreation, Palazzi estimated that 1985 recreational floating activity accounted for approximately 1 million user days. To estimate 1995 use levels, it was assumed that cumulative ten-year use trends for three primary Oregon whitewater rivers are representative of statewide recreational float use growth trends for the same period. These trends, outlined in Chart 5.1, show that recreational float user days for the Deschutes, Rogue, and Snake rivers increased by 47 percent from 1985 to 1995. Based on this assumption, total 1995 recreational float use was estimated at 147 million user days. These assumed user days were subsequently delineated as commercial or non-commercial based on the ratio of known commercial to known non-commercial 1995 user days.

In 1995, 132,418 known commercial user days accounted for 43 percent of total known float user days. Similarly, 172,432 1995 non-commercial user days accounted for 57 percent of total known float user days. Total commercial and non-commercial user days for 1995 recreational floating were estimated using these ratios. Hence, there were 632,100 commercial

user days and 837,900 non-commercial user days attributed to recreational floating in 1995.

Total recreational float use in 1995 is subsequently shown to have accounted for over $110 million in direct expenditures (see Appendices E and F for IMPLAN sector expenditures). Furthermore, I-O model results estimated that spending for recreational floating NRRB trips was associated with approximately $70.56 million in total personal income and approximately 3,302 jobs (see Table 5.8).

Table 5.8: 1995 Economic Impact of Recreational Floating for Estimated User Days

Use Type	Expenses per User Day ($)	# of User Days (Approximate)	Total Expenditures ($) (Statewide)	Estimated Economic Impact	
				Personal Income Generated ($)	Employment (jobs)
Commercial	120.72	632,100	76.31 million	48.75 million	2,280
Non Commercial	40.75	837,900	34.14 million	21.81 million	1,022
	Total	1,470,000	110.45 million	70.56 million	3,302

Recreational float use of Oregon rivers is shown to play a major role in terms of the economic impacts generated from direct expenditures and those generated from the multiplier effect on direct expenditures. Once again, however, it should be noted that I-O model limitations imply that employment positions shown to be associated with recreational floating are not necessarily dependent on recreational floater expenditures. Therefore, declines in float activity spending and related economic impacts might be offset by spending on other outdoor recreation activities.

5.3 Conclusion

Non-Registered Recreational Boating in Oregon is known to include a variety of water craft as well as users. Expenditures by Columbia Gorge windsurfers in 1995 are estimated to have had a direct economic impact of $21 million in Gorge communities. Whitewater recreation, which constitutes the bulk of NRRB in Oregon, resulted in estimated expenditures of more than $110 million, bringing the total for 1995 NRRB-related expenditures to $131 million. In addition, whitewater recreation was associated with over $70.56 million in personal income and 3,302 employment positions.

VI. Implications for the Future

This section discusses future implications for Oregon boating recreation in general and, more specifically, for the various components of Oregon boating recreation. However, information obtained for several boating industry components examined in this study was insufficient to allow for accurate assessment of use levels, economic impacts, and future trends. Hence, future research opportunities will be discussed for the benefit of decision makers.

6.1 General

In general, recreational boating has experienced continuous growth in Oregon for decades. Continued state population growth combined with expected growth for recreation and tourism in Oregon suggest that user days and economic impacts associated with recreational boating activities will also continue to grow. The cumulative rate of growth for all boating activities is uncertain, as are the limits of this expected growth.

6.2 The Marine Trades

6.2.1 Implications for the Future

where's info?

shows what?

Based on current trend data for boating user days, the Marine Trades should be expected to experience growth proportionate to increased consumer demand for boating-related goods and services. The magnitude and extent of this growth and related impacts is uncertain.

6.2.2 Future Research

Decision makers should consider further, more intensive study of Marine Trades sectors to define and determine the magnitude of the economic value of this indispensable component of the Oregon boating recreation industry. Resources such as *The American Business Directory Guide to Oregon Businesses* database can be used to generate a complete list of the population of Oregon Marine Trades enterprises. Such a list could be used to conduct a scientific survey of Oregon Marine Trades enterprises.

6.3 Registered Recreational Boating

6.3.1 Implications for the Future

Recent surveys of Oregon registered boaters suggest that Registered Recreational Boating (RRB) and associated economic impacts have grown significantly. Furthermore, trend data indicate that future growth in the number of registered boats is expected. Undoubtedly, the economic impact of RRB to Oregon's economy will also continue to experience growth.

why not asked of trade estimate?

6.3.2 Electronic Communications Trends and Implications

The survey of registered boaters included a question designed to gauge boater access to information and technology (Question 13, Appendix C). This question asked respondents to indicate the various electronic communication tools present in their homes. A substantial number of boaters (60 percent) have a home computer, 20 percent have Internet access in the home, and even greater numbers (76 percent) have cable television. Hence, this audience is well-positioned technologically for anticipated Internet/World Wide Web (WWW) expansion via fiber optic cable television. This suggests that the Internet/WWW will likely become an increasingly viable alternative distribution method for boater information and education publications.

6.3.3 Future Research

Decision makers should continue to monitor the economic impacts of RRB in Oregon. At minimum, studies similar to those conducted by Palazzi (1986) and Neely et al. (1996) should be conducted at least once per decade.

6.4 Commercial Motorized Recreational Boating

6.4.1 General

Commercial Motorized Recreational Boating (CMRB) is composed of a variety of sub-industries which provide a diverse slate of recreational boating opportunities. These include river excursions, inland guided fishing trips, coastal Aquatic Nature-Based Tourism, and ocean charterboat fishing.

6.4.2 Implications for the Future

Rogue, Gold, Snake, Statewide, Outfitters charter

Based on trend data and information obtained for this study, CMRB components such as day and overnight river cruising and Motorized Tour Boat excursions are likely to experience no net declines in business. In some instances, growth may be likely. This could be particularly true for day and/or overnight river excursions on the Columbia and Willamette Rivers. Another CMRB component that may experience growth is coastal ANBT. Trend data for charterboat fishing, on the other hand, suggest that angling days may continue to decline. However, this decline may be somewhat offset by ANBT activities such as whale-watching. In general, however, CMRB will likely be characterized by net growth in coming years.

6.4.3 Future Research

Research opportunities abound where CMRB is concerned. Decision makers should consider future studies to determine:

- Economic scope, magnitude, impact, and growth projections for river excursion activities and;

- Economic scope, magnitude, impact, and growth projections for coastal ANBT, including the extent to which ocean charterboat fishing can be expected to rely upon this attraction to offset losses associated with declines in salmon fisheries.

6.5 Non-Registered Recreational Boating

6.5.1 Implications for the Future

where ?

Trend data for various forms of Non-Registered Recreational Boating (NRRB) indicate that both windsurfing and river float use have experienced growth in recent years. A study of the economic impact of windsurfing in the Columbia Gorge shows that user days and spending associated with this sport increased dramatically from the late 1980s to the early 1990s. More recent information suggest that growth has ceased, although there are no indications that the sport is experiencing a decline.

Since monitoring began, float use data for a number of Oregon rivers indicate that use has continuously increased on virtually all monitored rivers. Continued increases in use, along with associated increased economic impacts, are likely. However, growth may be limited as carrying capacities for various rivers are approached.

? how determined?

6.5.2 Future Research

Decision makers should focus future NRRB research efforts on river float use. Additionally, the use and associated economic impacts of NRRB activities such as sea kayaking, flatwater canoeing, and small (< 12 ft.) sailboating should be considered for investigation. Research should strive to verify total statewide use, as well as total use by type (e.g. commercial vs. non-commercial, angling vs. whitewater, etc.). Expenditure patterns for various NRRB activity types should be applied to appropriate use data to establish a more accurate and complete picture of the economic impact of float use.

VII. Conclusion

Recreational boating in Oregon encompasses a broad range of activities including Registered Recreational Boating (RRB), Commercial Motorized Recreational Boating (CMRB), and Non-Registered Recreational Boating (NRRB). Each year, millions of boating days occur on Oregon lakes, rivers, coastal bays, and the Pacific Ocean. In 1995, spending associated with these boating activities exceeded $1 billion. A portion of this spending was shown to have been associated with at least $611 million in personal income and more than 28,000 employment positions for (see Table 7.1). These figures constitute a significant contribution to the Oregon economy and serve to demonstrate the economic value of Oregon boating recreation.

Table 7.1: Estimated Annual Economic Impacts of Oregon Boating Recreation Activities

Activity Type	Total Expenditures ($)	Personal Income Generated ($)	Employment (jobs)	Total User Days
RRB	**858,518,544**[1]	**537,954,164**	**25,595**	**3,904,000**
CMRB	**16,919,714**	**3,398,046**	**NA**	**475,600**
River Cruises	5,500,000	NA	190	275,000
Motorized Tour Boats	7,240,000	NA	NA	162,000
Charterboats	4,179,714	3,398,046	NA	38,600
Guided Fishing	NA	NA	NA	NA
Coastal Eco-cruises	NA	NA	NA	NA
NRRB	**131,451,524**	**70,563,452**	**3,302**	**1,770,429**
Windsurfing	20,999,987	NA	NA	300,429
Whitewater/float	110,451,537	70,563,452	3,302	1,470,000
Total	**1,006,889,782**	**611,915,662**	**28,897**	**6,150,029**

[1]This figure represents total annual boater expenses resulting from boat expenses ($556,496,050) and trip expenses ($302,082,382). For further explanation, please see Section IV.

overall trends
overall implications
research priorities

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Appendices

Appendix A: Input-Output Analysis[1]

Input-output (I-O) is a tool used by many researchers for estimating economic linkages and impacts within a regional economy. Within the model, the economic relationships and linkages between economic players in the economy are represented. I-O analysis may also be used to demonstrate how a change in any given sector impacts sales, income, and employment of all sectors of a regional economy.

Economic Structure and Linkages

The businesses, or economic sectors of an economy are linked together through their pattern of purchases and sales. For example, a restaurant purchases inputs such as labor, fresh fish, and frozen meats. The meat packing plant then purchases inputs such as beef, which leads to more input purchases by the livestock industry. This chain reaction of input purchases throughout the economy is called a *backward linkage*. Whenever the restaurant produces (and sells) another meal, there are impacts that ripple through all of the businesses in the backward linkage.

There are also *forward linkages* from the restaurant to its customers. For example, the restaurant may sell meals to a local caterer who then sells them to convention visitors. If all the forward and backward linkages are traced, it becomes apparent that it is possible for every economic sector to be affected by every other economic sector. In most cases, however, the effect after the first couple of "rounds" of spending becomes quite small.

In each round of spending there are payments to both businesses and labor. Payments to businesses include return to capital (profits), and payments to labor include wages. Therefore, each round of spending represents an increase in the income of the affected parties. The more of these rounds that can be kept inside the regional economy, the greater the increase in regional income.

While most economic sectors are "linked" in theory, in any small economy, some sectors are likely to be missing. Therefore, while the restaurant will purchase frozen meats, they will probably be purchased from a business outside of the local area. Most likely this will result from the absence of a frozen foods processor in the local area. However, it could also result from unique product specifications, or even business customs, which lead to purchases from a non-local supplier. Regional economies that are relatively small and geographically isolated will have fewer economic linkages than a major metropolitan area. This means that some money generated by regional businesses ends up leaking out of the local economy very quickly.

Impacts and Multipliers

If a tourist from outside the regional economy buys a meal from a regional restaurant, this represents an influx of "new money" into the economy. The immediate impacts of the sale on the restaurant are called the *direct effects*. For example, the dollar value of the sale is called the direct sales (or output) effect. The number of employees needed to produce the sale is called the *employment effect*. The amount of proprietor's income and employee wages generated from that

sale is called the direct income effect.

Notice that impacts of the restaurant's sale do not stop after the direct effects on the restaurant and its employees. When the restaurant purchases the other inputs needed to meet the requirements of the sale (e.g. meats, fish), there are *indirect effects* on other businesses. In addition, the extra wages paid to labor will lead to more purchases of consumer goods (e.g. groceries, travel). The impact of these household purchases is called the *induced effect*.

A *multiplier* is a ratio measure of the total effect throughout the economy of an initial change in one sector. The *type I* or *sales multiplier* is:

$$M_I = (\text{Direct Effect} + \text{Indirect Effects})/\text{Direct Effect}$$

and the *type II* multiplier is:

$$M_{II} = (\text{Direct Effect} + \text{Indirect Effects} + \text{Induced Effects})/\text{Direct Effects}$$

Using the restaurant example again, if the initial sale was $10 and this generated $1.8 worth of indirect effects, the type I output multiplier for the restaurant would be 1.8. This means that for every dollar from the restaurant, $1.8 of sales are generated throughout the regional economy. Only indirect effects that occur *within* the economy can be counted in the multiplier. So if the economy linkages are weak in a region, and money leaks out to non-local businesses quickly, the multiplier will be lower. In general, larger economies that have more linkages will have higher multipliers than smaller economies. For example, we would expect the multipliers from the southeast region of Oregon to be smaller than the multipliers from the state of Oregon.

Using Input-Output Models to Describe an Economy

The economic linkages of an economy can be described through the *transactions table* of an I-O model. A hypothetical transaction table is shown in Table 1. The industries or sectors of

Table 1: Transaction Table

To: / From:	Agriculture	Services	Households	Other Final Demand	Gross Output
Agriculture	20	45	30	5	100
Services	40	15	30	65	150
Households	20	60	10	10	100
Other Value Added plus Imports	20	30	30		80
Gross Output	100	150	100	80	430

Source: Richardson 1972. ($) million

the economy are listed both across the top and down the side of the table. Reading down any column shows the amount of purchases by the column sector from any of the row sectors. For example, reading down the agriculture column shows that the agriculture sector makes $40 million worth of purchases from the services sector per year. Reading across any row shows the amount of sales from the row sector to any of the column sectors. So reading across the services

row shows that $40 million worth of services are sold to the agriculture sector per year. By detailing all of the transactions for all of the sectors, linkages within the economy can be clearly seen.

In addition to the inter-industry transactions, other economic information is included in the transactions table. The transactions table can be thought of as a full accounting of all the economic activity in the region. In addition to the transactions between businesses (found in the inter-industry transactions), there are also purchases by households and governments. These, combined with investments and net exports, make up the *final demand* components of the I-O table. Payments to labor, government, and owners of capital make up the *value-added* components of the table.

I-O Model Limitations and Assumptions

There are a number of limitations arising from the assumptions inherent in I-O models. For example, a fixed, linear production function is assumed within the I-O model. That is, if the production of good A doubles, then the demand for the inputs needed to produce that good will double and there will be no substitution for this input. In addition, the economic relationships captured within the I-O models are static and specific to the particular period when the data were collected. Use of a model in other periods implies that the technology is fixed, prices are stable, and that there are no structural changes in the economy. This assumption often limits I-O models to the analysis of short run relationships. The implication of these assumptions is that the estimates derived from I-O models are only accurate when these conditions hold. Therefore, the results derived from the I-O model should be analyzed in consideration of these limitations. When this is done, I-O models remain extremely useful as tools in the analytical process of determining the economic relationships within regional economies.

IMPLAN

In this study the IMPLAN I-O modeling system was used to construct a model that represents the Oregon economy. IMPLAN (IMpact Analysis for PLANing) is a software package developed by the U. S. Forest Service. The IMPLAN system can be used to construct an I-O model for any county or combination of counties in the U. S., based on a combination of national average production relationships and local employment information. Although IMPLAN was originally developed for forest management purposes, it has been used often for tourism, recreation, and natural resource based analysis at the regional and state level.

[1]This appendix included courtesy of Johnson et al. 1995.

Appendix B: 1996 Boater Expenditure Survey — Correspondence

Week 1

August 12, 1996

Hello,

I am writing today to invite your participation in a recreational boating study being conducted by Oregon State University and the Oregon State Marine Board. The purpose of this study is to document the economic importance of Oregon's boating industry and needs perceived by boaters such as yourself!

This information will be used by legislative decision makers and others seeking to improve our state's recreational boating resources. Please be assured that all information provided by you will be treated as CONFIDENTIAL. Hence, the report issued by OSU will present summaries of the total data gained from boaters, not individual responses.

In this regard, you will soon receive a short boating survey from graduate student Robert Neely. Rob is conducting this research project as part of his M.S. degree at OSU. A copy of the findings of this recreational boating study is being made available at no charge to those boaters completing this survey! If you would like to receive a copy of this report, simply check this box on your survey and return the form in the postage paid envelope provided for this purpose.

We would greatly appreciate your taking the few minutes necessary to complete and return your survey. Since only a small number of boaters from each Oregon county have been randomly invited to participate in this study, your information is vital to the success of the effort.

If you have questions about this boater survey, please feel free to contact me at OSU to discuss these: 541-737-1455. Thank you for helping us to enhance recreational boating in Oregon!

Sincerely,

Dr. Bruce DeYoung
Professor and Extension Specialist
OSU College of Business

Week 2

August 13, 1996

Dear Oregon Boater,

I am writing to you today as a graduate student at Oregon State University. As part of my studies, I am conducting a survey of recreational boaters to document the importance of this industry in Oregon. My research is being jointly conducted by the Oregon State Marine Board and the Oregon Sea Grant Program.

As an owner-operator of a recreational boat, your spending contributes to our state's economic health and vitality. In order to estimate the economic impact of recreational boating, I am requesting your help today in completing a short boater survey.

Your name is one of a small number drawn randomly from a list of all registered recreational boaters in Oregon. In order that the results of the study truly reflect the economic impact of recreational boating, it is important that each questionnaire be completed and returned in the provided postage-paid envelope. Therefore, we ask that you take a few minutes to think about your recent boating experiences and answer the enclosed questionnaire.

The survey form has been numbered only so that we will know to erase your name from the mailing list once it is returned to us in the postage paid envelope. Please understand that your answers are ***very important*** and will be kept ***confidential***. The information which you provide will be aggregated with that provided by other boaters and used to identify the overall importance of Oregon's boating industry.

I appreciate your willingness to participate in this survey. If you have any questions or concerns, please feel free to contact me at (541) 737-2354. Also, if you would like to receive a copy of the completed study, please indicate this in the space provided on the questionnaire.

Thank you very much for your assistance.

Sincerely,

Robert M. Neely
Graduate Research Assistant
Oregon State University

Week 3

Last week, a brief survey seeking information on your boating activities was mailed to you. Your name was drawn randomly from a list of all registered recreational boaters in Oregon.

If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. We are especially grateful for your help because your response will be very useful to decision makers seeking to improve Oregon's recreational boating resources.

If you did not receive a questionnaire, or if it was misplaced, please contact me at 541-737-2354 and I will get another one in the mail for you today.

Sincerely,

Robert M. Neely
Graduate Research Assistant
Oregon State University

Week 4

August 26, 1996

Hello!

Earlier this month, we wrote to you seeking information on your recent recreational boating activities. To date, we have not received your completed questionnaire. We realize that you may not have had time to complete it. However, we would genuinely appreciate hearing from you today.

The purpose of this study is to document the importance of the recreational boating industry for our State's economy. Once the study is completed, legislative decision makers and others will be able to use this information to enhance boating-related projects such as boating access ramps and other facilities. We are writing to you again because the study's usefulness depends on our receiving a questionnaire from each respondent. Your name was drawn through a scientific sampling process in which every registered boater in Oregon had a chance of being selected. In order for information from the study to be truly representative, it is important that each person in the sample return their questionnaire.

In the event that your questionnaire has been lost in the mail, a replacement has been enclosed. I would be happy to answer any questions that you have about the study. If you do have questions, please call me at 541-737-2354.

Sincerely,

Robert M. Neely
Graduate Research Assistant
Oregon State University

Appendix C: 1996 Boater Expenditure Survey — Instrument and Results

Questionnaires delivered = 208, returned = 147
Percentage Rate of Response = 70.67 %

1. What type of boat do you own? If you own more than one boat just consider the boat you use most. (n = 146)

		No. Responses	% Responses
1	NO MOTOR OR SAIL	2	1.37
2	SAIL WITH NO MOTOR	0	0.00
3	SAIL WITH INBOARD MOTOR	1	0.68
4	SAIL WITH OUTBOARD MOTOR	1	0.68
5	MOTORIZED INBOARD	48	32.88
6	MOTORIZED OUTBOARD	94	64.38
		146	100.00

1a. Please indicate the type of fuel that powers this boat. (n = 143)

	No. Responses	% Responses
DIESEL	4	2.80
GASOLINE	137	95.80
ELECTRIC	2	1.40
	143	100.00

2. What is the length of your boat in feet? (n = 144)

		No. Responses	% Responses
1	LESS THAN 12 FEET	1	0.69
2	12-16 FEET	67	46.53
3	17-20 FEET	54	37.50
4	21-25 FEET	16	11.11
5	26-30 FEET	2	1.39
6	31-60 FEET	4	2.78
7	GREATER THAN 60 FEET	0	0.00
		144	100.00

3. Is your boat used more often in freshwater, saltwater, or a combination of fresh and saltwater? (n = 147)

		No. Responses	% Responses
1	FRESH WATER	107	72.79
2	SALT WATER	6	4.08
3	COMBINATION OF FRESH AND SALT WATER	34	23.13
		147	100.00

4. On the average, how many miles do you travel from your home, one-way, to use your boat? (n = 147)

		No. Responses	% Responses
1	LESS THAN 10 MILES	34	23.13
2	10-20 MILES	20	13.61
3	21-40 MILES	26	17.69
4	41-70 MILES	26	17.69
5	71-100 MILES	20	13.61
6	101-150 MILES	15	10.20
7	151-200 MILES	3	2.03
8	201-300 MILES	2	1.36
9	MORE THAN 300 MILES	1	0.68
		147	100.00

5. For which one of the following activities do you use your boat most often? (n = 147)

		No. Responses	% Responses
1	FISHING	102	69.39
2	WATER SKIING	23	15.65
3	DAY CRUISING	13	8.84
4	OVERNIGHT CRUISING	6	4.08
5	OTHER (PLEASE SPECIFY):	3	2.04
		147	100.00

(Floating & fishing; scuba diving; tubing, knee boarding, swimming; oil spill response)

6. What is your best estimate of the total number of days you used your boat between September 1995 and August 1996? (n = 147)

		No. Responses	% Responses
1	LESS THAN 7 DAYS	42	28.57
2	7-13 DAYS	27	18.37
3	14-20 DAYS	25	17.01
4	21-27 DAYS	23	15.65
5	28-35 DAYS	13	8.84
6	36-42 DAYS	4	2.72
7	43-55 DAYS	3	2.04
8	MORE THAN 55 DAYS	10	6.80
		147	100.00

7. What is your best guess of the total dollar amount you spent from September 1995 through August 1996 for each of the following expenses related directly to owning and operating your boat?

N^{total} = 142	n	$1-99	$100-299	$300-749	$750-999	over $1,000	Aggregate sum
a. New expenses	56	12	19	9	1	15	$324,475
b. Repairs and maintenance	105	42	44	10	3	6	$ 28,913
c. Out of season storage	7	1	4	2	0	0	$ 1,755
d. Insurance	87	28	50	6	3	0	$ 13,775
e. Fuel and Oil	136	53	52	24	1	6	$ 31,903
f. Fees for docking & moorage	46	25	10	4	3	4	$ 18,675
g. Rental of equipment needed for your boating activity	3	2	0	0	1	0	$ 900

8. For the expenses listed below, please estimate the average cost per trip for trips taken between September 1995 and August 1996.

N^{total} = 142	n	$1-99	$100-299	$300-749	$750-999	over $1,000	Aggregate sum
a. Fuel and oil	132	127	5				$3,026
b. Fees for docking, moorage, launching, access, etc.	50	46	4				$1,152
c. Rental of equipment needed for your boating activity	3	3					$ 71

9. Please indicate how much you usually spend per trip for the following goods and services.

Also indicate whether your spending for these goods and services occurs in the area in which you live or the area in which you boat by completing the table below.

N^{total} = 140	n	Aggregate amount spent per trip	Spent in area in which you live		
			Live	Boat	Both
a, Retail trade (grocery, hardware, clothing, drug, appliance, gifts, sundries, ice, bait and tackle, etc.	124	$5,921.75	38	13	69
b. Restaurants and taverns	56	$1,608.00	7	26	29
c. Hotels and motels	10	$ 778.00	4	9	7
d. Other lodging such as private campgrounds	43	$1,625.00	5	36	5
e. State, federal, or local agency licenses, fees, and permits for state park, Bureau of Land Management, or Forest Service campgrounds	65	$1,559.00	15	30	17
f. Travel expenses (gas for auto, tolls, parking fees, etc.)	123	$4,625.85	42	11	55

10. What is the age of your boat in years? (n = 142)

		No. Responses	% Responses
1	LESS THAN FIVE YEARS	30	21.13
2	5-10 YEARS	40	28.17
3	MORE THAN 10 YEARS	72	50.70
		142	100.00

11. Do you expect to replace your boat: (n = 142)

		No. Responses	% Responses
1	WITHIN 3 YEARS	25	17.61
2	WITHIN 4-5 YEARS	11	7.75
3	WITHIN 6-10 YEARS	21	14.79
4	MORE THAN 10 YEARS	20	14.08
5	NEVER	65	44.77
		142	100.00

13. Increasingly, boaters are relying on a variety of communications technologies to obtain information related to boating activities. Please indicate whether or not your household has each of the following.

		Yes	%Yes	No	%No
a.	Cable television (n=123)	76	61.79	47	38.21
b.	Satellite dish for television (n= 102)	34	33.33	68	66.67
c.	Home computer (n = 108)	60	55.56	48	44.44
d.	Internet connection for home computer (n = 98)	20	20.41	78	79.59
e.	Other (n = 41)	16	39.02	25	60.98

(Radio (7), Newspaper & magazines (6), phone (2), fax (1), marine band radio (1), TV (1), CB (1), VHF (1), GPS (1), OSMB (1); VCR (1), ODFW (1))

14: Do you have any comments or concerns about recreational boating in the State Oregon?
(Responses available upon request).

Appendix D: IMPLAN Sector Allocations for Registered Boat 1995 Trip-related Expenditures

Water-Based Recreation

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Agency Fees	Travel	Amusement	Sample Population $	Statewide $
		retail goods	trans margin	whlsl mrg	retail mrg							
2	Poultry and Eggs	41.51	0	0	0	0	0	0	0	0	41.51	615,781.72
3	Ranch Fed Cattle	2.26	0	0	0	0	0	0	0	0	2.26	33,533.72
4	Range Fed Cattle	1.74	0	0	0	0	0	0	0	0	1.74	25,820.73
5	Cattle Feedlots	1.74	0	0	0	0	0	0	0	0	1.74	25,820.73
6	Sheep, Lambs And Goats	1.74	0	0	0	0	0	0	0	0	1.74	25,820.73
7	Hogs, Pigs And Swine	1.74	0	0	0	0	0	0	0	0	1.74	25,820.73
8	Other Meat Animal Products	1.74	0	0	0	0	0	0	0	0	1.74	25,820.73
9	Miscellaneous Livestock	1.74	0	0	0	0	0	0	0	0	1.74	25,820.73
11	Food Grains	0.93	0	0	0	0	0	0	0	0	0.93	13,804.77
12	Feed Grains	0	0	0	0	0	0	0	0	0	0	0
13	Hay And Pasture	0	0	0	0	0	0	0	0	0	0	0
14	Grass Seeds	0	0	0	0	0	0	0	0	0	0	0
16	Fruits	23.28	0	0	0	0	0	0	0	0	23.28	345,438.31
17	Tree Nuts	23.28	0	0	0	0	0	0	0	0	23.28	345,438.31
18	Vegetables	26.32	0	0	0	0	0	0	0	0	26.32	390,495.54
19	Sugar Crops	26.32	0	0	0	0	0	0	0	0	26.32	390,495.54
20	Miscellaneous Crops	26.32	0	0	0	0	0	0	0	0	26.32	390,495.54
22	Forest Products	2.14	0	0	0	0	0	0	0	0	2.14	31,827.97
23	Greenhouse And Nursery Products	0	0	0	0	0	0	0	0	0	0	0
24	Forestry Products	0	0	0	0	0	0	0	0	0	0	0
25	Commercial Fishing	15.19	0	0	0	0	0	0	0	0	15.19	225,286.18
26	Agricultural, Forestry, Fishery Services	0	0	0	0	0	0	0	0	0	0	0
27	Landscape And Horticultural Services	0	0	0	0	0	0	0	0	0	0	0
58	Meat Packing Plants	412.11	0	0	0	0	0	0	0	0	412.11	6,112,757
59	Sausages And Other Prepared Meats	229.85	0	0	0	0	0	0	0	0	229.85	3,409,325.9
60	Poultry Processing	83.03	0	0	0	0	0	0	0	0	83.03	1,231,563.4
61	Creamery Butter	10.13	0	0	0	0	0	0	0	0	10.13	150,191.28

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Agency Fees	Travel	Amusement	Sample Population $	Statewide $
62	Cheese, Natural And Processed	62.78	0	0	0	0	0	0	0	0	62.78	931,182.37
63	Condensed And Evaporated Milk	31.39	0	0	0	0	0	0	0	0	31.39	465,590.44
64	Ice Cream And Frozen Desserts	36.45	0	0	0	0	0	0	0	0	36.45	540,686.82
65	Fluid Milk	234.92	0	0	0	0	0	0	0	0	234.92	3,484,422.2
97	Canned And Cured Sea Foods	15.19	0	0	0	0	0	0	0	0	15.19	225,286.18
66	Canned Specialties	57.72	0	0	0	0	0	0	0	0	57.72	856,085.99
67	Canned Fruits And Vegetables	109.35	0	0	0	0	0	0	0	0	109.35	1,622,059
68	Dehydrated Food Products	10.12	0	0	0	0	0	0	0	0	10.12	150,191.28
69	Pickles, Sauces, And Salad Dressings	31.39	0	0	0	0	0	0	0	0	31.39	465,590.44
98	Prepared Fresh Or Frozen Fish Or Seafood	10.13	0	0	0	0	0	0	0	0	10.13	150,191.28
70	Frozen Fruits, Juices And Vegetables	51.64	0	0	0	0	0	0	0	0	51.64	765,971.51
71	Frozen Specialties	51.64	0	0	0	0	0	0	0	0	51.64	765,971.51
72	Flour And Other Grain Mill Products	15.19	0	0	0	0	0	0	0	0	15.19	225,286.18
73	Cereal Preparations	31.38	0	0	0	0	0	0	0	0	31.38	465,590.44
75	Blended And Prepared Flour	20.25	0	0	0	0	0	0	0	0	20.25	300,381.07
77	Dog, Cat, And Other Pet Food	51.64	0	0	0	0	0	0	0	0	51.64	765,971.51
79	Bread, Cake, And Related Products	193.39	0	0	0	0	0	0	0	0	193.39	2,868,640.5
80	Cookies And Crackers	57.71	0	0	0	0	0	0	0	0	57.71	856,085.99
81	Sugar	36.45	0	0	0	0	0	0	0	0	36.45	540,686.82
82	Confectionery Products	77.97	0	0	0	0	0	0	0	0	77.97	1,156,467.1
83	Chocolate And Cocoa Products	10.12	0	0	0	0	0	0	0	0	10.12	150,191.28
91	Malt Beverages	135.68	0	0	0	0	0	0	0	0	135.68	2,012,554.5
93	Wines, Brandy, And Brandy Spirits	36.45	0	0	0	0	0	0	0	0	36.45	540,686.82
94	Distilled Liquor, Except Brandy	130.62	0	0	0	0	0	0	0	0	130.62	1,937,458.1
95	Bottled And Canned Soft Drinks & Water	162.01	0	0	0	0	0	0	0	0	162.01	2,403,050.1
96	Flavoring Extracts And Syrups, N.E.C	5.06	0	0	0	0	0	0	0	0	5.06	75,094.898
99	Roasted Coffee	57.72	0	0	0	0	0	0	0	0	57.72	856,085.99
90	Shortening And Cooking Oils	41.51	0	0	0	0	0	0	0	0	41.51	615,781.72
102	Macaroni And Spaghetti	10.13	0	0	0	0	0	0	0	0	10.13	150,191.28
103	Food Preparations, N.E.C	104.29	0	0	0	0	0	0	0	0	104.29	1,546,962.6
210	Petroleum Refining	0	0	0	0	0	0	0	2,068.16	0	2,068.16	30,676,461
213	Lubricating Oils And Greases	0	0	0	0	0	0	0	2,068.16	0	20,,8.16	30,676,461

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Agency Fees	Travel	Amusement	Sample Population $	Statewide $
433	Railroads And Related Services	0	57.72	0	0	0	0	0	0	0	57.72	856,185.81
435	Motor Freight Transport And Warehousing	0	187.34	0	0	0	0	0	0	0	187.34	2,778,847.9
436	Water Transportation	0	51.65	0	0	0	0	0	0	0	51.65	766,060.96
438	Pipe Lines, Except Natural Gas	0	0	0	0	0	0	0	132.25	0	132.25	1,961,549.4
441	Communications, Except Radio And Tv	790.81	0	0	0	0	0	0	0	0	790.81	11,729,884
447	Wholesale Trade	0	0	812.20	0	0	0	0	0	0	812.20	12,046,682
448	Building Materials & Gardening Supplies	0	0	0	240.00	0	0	0	0	0	240.00	3,559,929.5
449	General Merchandise Stores	0	0	0	240.00	0	0	0	0	0	240.00	3,559,929.5
450	Food Stores	0	0	0	240.00	0	0	0	0	0	240.00	3,559,929.5
451	Automotive Dealers & Service Stations	0	0	0	0	0	0	0	870.61	0	870.61	12,913,537
452	Apparel & Accessory Stores	0	0	0	240.00	0	0	0	0	0	240.00	3,559,929.5
453	Furniture & Home Furnishings Stores	0	0	0	0	0	0	0	0	0	0	0
454	Eating & Drinking Establishments	0	0	0	0	1,608.00	0	0	0	0	1,608.00	23,850,951
455	Miscellaneous Retail	0	0	0	240.00	0	0	0	0	0	240.00	3,559,929.5
463	Hotels And Lodging Places	0	0	0	0	0	2,403.00	0	0	0	2,403.00	35,642,933
464	Laundry, Cleaning And Shoe Repair	0	0	0	0	0	0	0	0	0	0	0
467	Funeral Service And Crematories	0	0	0	0	0	0	0	0	0	0	0
465	Portrait And Photographic Studios	0	0	0	0	0	0	0	0	0	0	0
480	Electrical Repair Services	0	0	0	0	0	0	0	0	0	0	0
481	Watch, Clock, Jewelry And Furniture Repair	0	0	0	0	0	0	0	0	0	0	0
482	Miscellaneous Repair Shops	0	0	0	0	0	0	0	0	0	0	0
472	Services To Buildings	0	0	0	0	0	0	0	0	0	0	0
474	Personnel Supply Services	0	0	0	0	0	0	0	0	0	0	0
475	Computer And Data Processing Services	0	0	0	0	0	0	0	0	0	0	0
508	Management And Consulting Services	0	0	0	0	0	0	0	0	0	0	0
476	Detective And Protective Services	0	0	0	0	0	0	0	0	0	0	0
473	Equipment Rental And Leasing	0	0	0	0	0	0	0	0	0	0	0
471	Photofinishing, Commercial Photography	8.10	0	0	0	0	0	0	0	0	8.10	120,152.13
470	Other Business Services	0	0	0	0	0	0	0	0	0	0	0
477	Automobile Rental And Leasing	0	0	0	0	0	0	0	0	0	0	0
479	Automobile Repair And Services	0	0	0	0	0	0	0	2,512.65	0	2,512.65	37,269,440
478	Automobile Parking And Car Wash	0	0	0	0	0	0	0	0	0	0	0

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Agency Fees	Travel	Amusement	Sample Population $	Statewide $
488	Amusement And Recreation Services, Nec	0	0	0	0	0	0	0	0	1,223.00	1,223.00	18,140,369
491	Nursing And Protective Care	0	0	0	0	0	0	0	0	0	0	0
493	Other Medical And Health Services	0	0	0	0	0	0	0	0	0	0	0
512	Other State And Local Govt Enterprises	0	0	0	0	0	0	1,559.00	0	0	1,559.00	23,124,150
	Per Category Totals ($)	**3,612.46**	**296.73**	**812.2**	**1,200.06**	**1,608.00**	**2,403.00**	**1,559.00**	**7,651.55**	**1,223.00**	**20,366.00**	**302,082,382**

Appendix E: IMPLAN Sector Allocations for 1995 Statewide Non-Commercial Float Use Expenditures

Water-Based Recreation

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Travel	Amusement	$ /IMPLAN Sector	Known $ (132,418 user days)	Estimated $ (632,100 user days)
		retail goods	trans margin	whlsl mrg	retail mrg							
2	Poultry and Eggs	0.0893	0	0	0	0	0	0	0	0.0893	15,398.17	74,824.47
3	Ranch Fed Cattle	0.0049	0	0	0	0	0	0	0	0.0049	844.91	4,105.71
4	Range Fed Cattle	0.0037	0	0	0	0	0	0	0	0.0037	637.99	3,100.23
5	Cattle Feedlots	0.0037	0	0	0	0	0	0	0	0.0037	637.99	3,100.23
6	Sheep, Lambs And Goats	0.0037	0	0	0	0	0	0	0	0.0037	637.99	3,100.23
7	Hogs, Pigs And Swine	0.0037	0	0	0	0	0	0	0	0.0037	637.9984	3,100.23
8	Other Meat Animal Products	0.0037	0	0	0	0	0	0	0	0.0037	637.9984	3,100.23
9	Miscellaneous Livestock	0.0037	0	0	0	0	0	0	0	0.0037	637.9984	3,100.23
11	Food Grains	0.0020	0	0	0	0	0	0	0	0.002	344.864	1,675.8
12	Feed Grains	0	0	0	0	0	0	0	0	0	0	0
13	Hay And Pasture	0	0	0	0	0	0	0	0	0	0	0
14	Grass Seeds	0	0	0	0	0	0	0	0	0	0	0
16	Fruits	0.0501	0	0	0	0	0	0	0	0.0501	8,638.8432	41,978.79
17	Tree Nuts	0.0501	0	0	0	0	0	0	0	0.0501	8,638.8432	41,978.79
18	Vegetables	0.0566	0	0	0	0	0	0	0	0.0566	9,759.6512	47,425.14
19	Sugar Crops	0.0566	0	0	0	0	0	0	0	0.0566	9,759.6512	47,425.14
20	Miscellaneous Crops	0.0566	0	0	0	0	0	0	0	0.0566	9,759.6512	47,425.14
22	Forest Products	0.0046	0	0	0	0	0	0	0	0.0046	793.1872	3,854.34
23	Greenhouse And Nursery Products	0	0	0	0	0	0	0	0	0	0	0
24	Forestry Products	0	0	0	0	0	0	0	0	0	0	0
25	Commercial Fishing	0.0327	0	0	0	0	0	0	0	0.0327	5,638.5264	27,399.33
26	Agricultural, Forestry, Fishery Services	0	0	0	0	0	0	0	0	0	0	0
27	Landscape And Horticultural Services	0	0	0	0	0	0	0	0	0	0	0
58	Meat Packing Plants	0.8866	0	0	0	0	0	0	0	0.8866	152,878.2112	742,882.14
59	Sausages And Other Prepared Meats	0.4945	0	0	0	0	0	0	0	0.4945	85,267.624	414,341.55
60	Poultry Processing	0.1786	0	0	0	0	0	0	0	0.1786	30,796.3552	149,648.94
61	Creamery Butter	0.0218	0	0	0	0	0	0	0	0.0218	3,759.0176	18,266.22

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Travel	Amusement	$ /IMPLAN Sector	Known $ (132,418 user days)	Estimated $ (632,100 user days)
62	Cheese, Natural And Processed	0.1351	0	0	0	0	0	0	0	0.1351	23,295.5632	113,200.29
63	Condensed And Evaporated Milk	0.0675	0	0	0	0	0	0	0	0.0675	11,639.16	56,558.25
64	Ice Cream And Frozen Desserts	0.0784	0	0	0	0	0	0	0	0.0784	13,518.6688	65,691.36
65	Fluid Milk	0.5054	0	0	0	0	0	0	0	0.5054	87,147.1328	423,474.66
97	Canned And Cured Sea Foods	0.0327	0	0	0	0	0	0	0	0.0327	5,638.5264	27,399.33
66	Canned Specialties	0.1242	0	0	0	0	0	0	0	0.1242	21,416.0544	104,067.18
67	Canned Fruits And Vegetables	0.2353	0	0	0	0	0	0	0	0.2353	40,573.2496	197,157.87
68	Dehydrated Food Products	0.0218	0	0	0	0	0	0	0	0.0218	3,759.0176	18,266.22
69	Pickles, Sauces, And Salad Dressings	0.0675	0	0	0	0	0	0	0	0.0675	11,639.16	56,558.25
98	Prepared Fresh Or Frozen Fish Or Seafood	0.0218	0	0	0	0	0	0	0	0.0218	3,759.0176	18,266.22
70	Frozen Fruits, Juices And Vegetables	0.1111	0	0	0	0	0	0	0	0.1111	19,157.1952	93,090.69
71	Frozen Specialties	0.1111	0	0	0	0	0	0	0	0.1111	19,157.1952	93,090.69
72	Flour And Other Grain Mill Products	0.0327	0	0	0	0	0	0	0	0.0327	5,638.5264	27,399.33
73	Cereal Preparations	0.0675	0	0	0	0	0	0	0	0.0675	11,639.16	56,558.25
75	Blended And Prepared Flour	0.0436	0	0	0	0	0	0	0	0.0436	7,518.0352	36,532.44
77	Dog, Cat, And Other Pet Food	0.1111	0	0	0	0	0	0	0	0.1111	19,157.1952	93,090.69
79	Bread, Cake, And Related Products	0.4161	0	0	0	0	0	0	0	0.4161	71,748.9552	348,650.19
80	Cookies And Crackers	0.1242	0	0	0	0	0	0	0	0.1242	21,416.0544	104,067.18
81	Sugar	0.0784	0	0	0	0	0	0	0	0.0784	13,518.6688	65,691.36
82	Confectionery Products	0.1677	0	0	0	0	0	0	0	0.1677	28,916.8464	140,515.83
83	Chocolate And Cocoa Products	0.0218	0	0	0	0	0	0	0	0.0218	3,759.0176	18,266.22
91	Malt Beverages	0.2919	0	0	0	0	0	0	0	0.2919	50,332.9008	244,583.01
93	Wines, Brandy, And Brandy Spirits	0.0784	0	0	0	0	0	0	0	0.0784	13,518.6688	65,691.36
94	Distilled Liquor, Except Brandy	0.2810	0	0	0	0	0	0	0	0.281	48,453.392	235,449.9
95	Bottled And Canned Soft Drinks & Water	0.3485	0	0	0	0	0	0	0	0.3485	60,092.552	292,008.15
96	Flavoring Extracts And Syrups, N.E.C	0.0109	0	0	0	0	0	0	0	0.0109	1,879.5088	9,133.11
99	Roasted Coffee	0.1242	0	0	0	0	0	0	0	0.1242	21,416.0544	104,067.18
90	Shortening And Cooking Oils	0.0893	0	0	0	0	0	0	0	0.0893	15,398.1776	74,824.47
102	Macaroni And Spaghetti	0.0218	0	0	0	0	0	0	0	0.0218	3,759.0176	18,266.22
103	Food Preparations, N.E.C	0.2244	0	0	0	0	0	0	0	0.2244	38,693.7408	188,024.76
210	Petroleum Refining	0	0	0	0	0	0	3.34	0	3.3434	576,509.1488	2,801,434.86
213	Lubricating Oils And Greases	0	0	0	0	0	0	3.34	0	3.3434	576,509.1488	2,801,434.86

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Travel	Amusement	$ /IMPLAN Sector	Known $ (152,418 user days)	Estimated $ (632,100 user days)
433	Railroads And Related Services	0	0.1241	0	0	0	0	0	0	0.1242	21,416.0544	104,067.18
435	Motor Freight Transport And Warehousing	0	0.4030	0	0	0	0	0	0	0.4031	69,507.3392	337,757.49
436	Water Transportation	0	0.1111	0	0	0	0	0	0	0.1111	19,157.1952	93,090.69
438	Pipe Lines, Except Natural Gas	0	0	0	0	0	0	0.22	0	0.2138	36,865.9616	179,143.02
441	Communications, Except Radio And Tv	1.7013	0	0	0	0	0	0	0	1.7013	293,358.5616	1,425,519.27
447	Wholesale Trade	0	0	1.75	0	0	0	0	0	1.7473	301,290.4336	1,464,062.67
448	Building Materials & Gardening Supplies	0	0	0	0.5163	0	0	0	0	0.5163	89,026.6416	432,607.77
449	General Merchandise Stores	0	0	0	0.5163	0	0	0	0	0.5163	89,026.6416	432,607.77
450	Food Stores	0	0	0	0.5163	0	0	0	0	0.5163	89,026.6416	432,607.77
451	Automotive Dealers & Service Stations	0	0	0	0	0	0	1.41	0	1.4074	242,680.7968	1,179,260.46
452	Apparel & Accessory Stores	0	0	0	0.5163	0	0	0	0	0.5163	89,026.6416	432,607.77
453	Furniture & Home Furnishings Stores	0	0	0	0	0	0	0	0	0	0	0
454	Eating & Drinking Establishments	0	0	0	0	0	0	0	0	9.56	1,648,449.92	8,010,324
455	Miscellaneous Retail	0	0	0	0.5163	0	0	0	0	0.5163	89,026.6416	432,607.77
463	Hotels And Lodging Places	0	0	0	0	0	3.63	0	0	3.63	625,928.16	3,041,577
464	Laundry, Cleaning And Shoe Repair	0	0	0	0	0	0	0	0	0	0	0
467	Funeral Service And Crematories	0	0	0	0	0	0	0	0	0	0	0
465	Portrait And Photographic Studios	0	0	0	0	0	0	0	0	0	0	0
480	Electrical Repair Services	0	0	0	0	0	0	0	0	0	0	0
481	Watch, Clock, Jewelry And Furniture Repair	0	0	0	0	0	0	0	0	0	0	0
482	Miscellaneous Repair Shops	0	0	0	0	0	0	0	0	0	0	0
472	Services To Buildings	0	0	0	0	0	0	0	0	0	0	0
474	Personnel Supply Services	0	0	0	0	0	0	0	0	0	0	0
475	Computer And Data Processing Services	0	0	0	0	0	0	0	0	0	0	0
508	Management And Consulting Services	0	0	0	0	0	0	0	0	0	0	0
476	Detective And Protective Services	0	0	0	0	0	0	0	0	0	0	0
473	Equipment Rental And Leasing	0	0	0	0	0	0	0	0	0	0	0
471	Photofinishing, Commercial Photography	0.0174	0	0	0	0	0	0	0	0.0174	3,000.3168	14,579.46
470	Other Business Services	0	0	0	0	0	0	0	0	0	0	0
477	Automobile Rental And Leasing	0	0	0	0	0	0	0	0	0	0	0
479	Automobile Repair And Services	0	0	0	0	0	0	4.06	0	4.062	700,418.784	3,403,549.8
478	Automobile Parking And Car Wash	0	0	0	0	0	0	0	0	0	0	0

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Travel	Amusement	$ /IMPLAN Sector	Known $ (132,418 user days)	Estimated $ (632,100 user days)
488	Amusement And Recreation Services, Nec	0	0	0	0	9.56	0	0	2.45	2.45	422,458.4	20,52855
491	Nursing And Protective Care	0	0	0	0	0	0	0	0	0	0	0
493	Other Medical And Health Services	0	0	0	0	0	0	0	0	0	0	0
512	Other State And Local Govt Enterprises	0	0	0	0	0	0	0	0	0	0	0
	Per Category Totals ($)	7.77	0.64	1.75	2.58	9.56	3.63	12.37	2.45	40.75	7,026,345.35	34,143,168.15

Appendix F: IMPLAN Sector Allocations for 1995 Statewide Commercial Float Use Expenditures

Water-Based Recreation

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Travel	Amusement	$ /IMPLAN Sector	Known $ (132,418 user days)	Estimated $ (632,100 user days)
		retail goods	trans margin	whlsl mrg	retail mrg							
2	Poultry and Eggs	0.0893	0	0	0	0	0	0	0	0.0893	11,824.9274	56,446.53
3	Ranch Fed Cattle	0.0049	0	0	0	0	0	0	0	0.0049	648.8482	3,097.29
4	Range Fed Cattle	0.0037	0	0	0	0	0	0	0	0.0037	489.9466	2,338.77
5	Cattle Feedlots	0.0037	0	0	0	0	0	0	0	0.0037	489.9466	2,338.77
6	Sheep, Lambs And Goats	0.0037	0	0	0	0	0	0	0	0.0037	489.9466	2,338.77
7	Hogs, Pigs And Swine	0.0037	0	0	0	0	0	0	0	0.0037	489.9466	2,338.77
8	Other Meat Animal Products	0.0037	0	0	0	0	0	0	0	0.0037	489.9466	2,338.77
9	Miscellaneous Livestock	0.0037	0	0	0	0	0	0	0	0.0037	489.9466	2,338.77
11	Food Grains	0.0020	0	0	0	0	0	0	0	0.002	264.836	1,264.2
12	Feed Grains	0	0	0	0	0	0	0	0	0	0	0
13	Hay And Pasture	0	0	0	0	0	0	0	0	0	0	0
14	Grass Seeds	0	0	0	0	0	0	0	0	0	0	0
16	Fruits	0.0501	0	0	0	0	0	0	0	0.0501	6,634.1418	31,668.21
17	Tree Nuts	0.0501	0	0	0	0	0	0	0	0.0501	6,634.1418	31,668.21
18	Vegetables	0.0566	0	0	0	0	0	0	0	0.0566	7,494.8588	35,776.86
19	Sugar Crops	0.0566	0	0	0	0	0	0	0	0.0566	7,494.8588	35,776.86
20	Miscellaneous Crops	0.0566	0	0	0	0	0	0	0	0.0566	7,494.8588	35,776.86
22	Forest Products	0.0046	0	0	0	0	0	0	0	0.0046	609.1228	2,907.66
23	Greenhouse And Nursery Products	0	0	0	0	0	0	0	0	0	0	0
24	Forestry Products	0	0	0	0	0	0	0	0	0	0	0
25	Commercial Fishing	0.0327	0	0	0	0	0	0	0	0.0327	4,330.0686	20,669.67
26	Agricultural, Forestry, Fishery Services	0	0	0	0	0	0	0	0	0	0	0
27	Landscape And Horticultural Services	0	0	0	0	0	0	0	0	0	0	0
58	Meat Packing Plants	0.8866	0	0	0	0	0	0	0	0.8866	117,401.7988	560,419.86
59	Sausages And Other Prepared Meats	0.4945	0	0	0	0	0	0	0	0.4945	65,480.701	312,573.45
60	Poultry Processing	0.1786	0	0	0	0	0	0	0	0.1786	23,649.8548	112,893.06
61	Creamery Butter	0.0218	0	0	0	0	0	0	0	0.0218	2,886.7124	13,779.78

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Travel	Amusement	$ /IMPLAN Sector	Known $ (132,418 user days)	Estimated $ (632,100 user days)
62	Cheese, Natural And Processed	0.1351	0	0	0	0	0	0	0	0.1351	17,889.6718	85,396.71
63	Condensed And Evaporated Milk	0.0675	0	0	0	0	0	0	0	0.0675	8,938.215	42,666.75
64	Ice Cream And Frozen Desserts	0.0784	0	0	0	0	0	0	0	0.0784	10,381.5712	49,556.64
65	Fluid Milk	0.5054	0	0	0	0	0	0	0	0.5054	66,924.0572	319,463.34
97	Canned And Cured Sea Foods	0.0327	0	0	0	0	0	0	0	0.0327	4,330.0686	20,669.67
66	Canned Specialties	0.1242	0	0	0	0	0	0	0	0.1242	16,446.3156	78,506.82
67	Canned Fruits And Vegetables	0.2353	0	0	0	0	0	0	0	0.2353	31,157.9554	148,733.13
68	Dehydrated Food Products	0.0218	0	0	0	0	0	0	0	0.0218	2,886.7124	13,779.78
69	Pickles, Sauces, And Salad Dressings	0.0675	0	0	0	0	0	0	0	0.0675	8,938.215	42,666.75
98	Prepared Fresh Or Frozen Fish Or Seafood	0.0218	0	0	0	0	0	0	0	0.0218	2,886.7124	13,779.78
70	Frozen Fruits, Juices And Vegetables	0.1111	0	0	0	0	0	0	0	0.1111	14,711.6398	70,226.31
71	Frozen Specialties	0.1111	0	0	0	0	0	0	0	0.1111	14,711.6398	70,226.31
72	Flour And Other Grain Mill Products	0.0327	0	0	0	0	0	0	0	0.0327	4,330.0686	20,669.67
73	Cereal Preparations	0.0675	0	0	0	0	0	0	0	0.0675	8,938.215	42,666.75
75	Blended And Prepared Flour	0.0436	0	0	0	0	0	0	0	0.0436	5,773.4248	27,559.56
77	Dog, Cat, And Other Pet Food	0.1111	0	0	0	0	0	0	0	0.1111	14,711.6398	70,226.31
79	Bread, Cake, And Related Products	0.4161	0	0	0	0	0	0	0	0.4161	55099.1298	263,016.81
80	Cookies And Crackers	0.1242	0	0	0	0	0	0	0	0.1242	16,446.3156	78,506.82
81	Sugar	0.0784	0	0	0	0	0	0	0	0.0784	10,381.5712	49,556.64
82	Confectionery Products	0.1677	0	0	0	0	0	0	0	0.1677	22,206.4986	106,003.17
83	Chocolate And Cocoa Products	0.0218	0	0	0	0	0	0	0	0.0218	2,886.7124	13,779.78
91	Malt Beverages	0.2919	0	0	0	0	0	0	0	0.2919	38,652.8142	184,509.99
93	Wines, Brandy, And Brandy Spirits	0.0784	0	0	0	0	0	0	0	0.0784	10,381.5712	49,556.64
94	Distilled Liquor, Except Brandy	0.2810	0	0	0	0	0	0	0	0.281	37,209.458	177,620.1
95	Bottled And Canned Soft Drinks & Water	0.3485	0	0	0	0	0	0	0	0.3485	46,147.673	220,286.85
96	Flavoring Extracts And Syrups, N.E.C	0.0109	0	0	0	0	0	0	0	0.0109	1,443.3562	6,889.89
99	Roasted Coffee	0.1242	0	0	0	0	0	0	0	0.1242	16,446.3156	78,506.82
90	Shortening And Cooking Oils	0.0893	0	0	0	0	0	0	0	0.0893	11,824.9274	56,446.53
102	Macaroni And Spaghetti	0.0218	0	0	0	0	0	0	0	0.0218	2,886.7124	13,779.78
103	Food Preparations, N.E.C	0.2244	0	0	0	0	0	0	0	0.2244	29,714.5992	141,843.24
210	Petroleum Refining	0	0	0	0	0	0	3.34	0	3.3434	442,726.3412	2,113,363.14
213	Lubricating Oils And Greases	0	0	0	0	0	0	3.34	0	3.3434	442,726.3412	2,113,363.14

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Travel	Amusement	$ /IMPLAN Sector	Known $ (132,418 user days)	Estimated $ (632,100 user days)
433	Railroads And Related Services	0	0.1241	0	0	0	0	0	0	0.1242	16,446.3156	78,506.82
435	Motor Freight Transport And Warehousing	0	0.4030	0	0	0	0	0	0	0.4031	53,377.6958	254,799.51
436	Water Transportation	0	0.1111	0	0	0	0	0	0	0.1111	14,711.6398	70,226.31
438	Pipe Lines, Except Natural Gas	0	0	0	0	0	0	0.22	0	0.2138	28,310.9684	135,142.98
441	Communications, Except Radio And Tv	1.7013	0	0	0	0	0	0	0	1.7013	225,282.7434	1,075,391.73
447	Wholesale Trade	0	0	1.75	0	0	0	0	0	1.7473	231,373.9714	1,104,468.33
448	Building Materials & Gardening Supplies	0	0	0	0.5163	0	0	0	0	0.5163	68,367.4134	326,353.23
449	General Merchandise Stores	0	0	0	0.5163	0	0	0	0	0.5163	68,367.4134	326,353.23
450	Food Stores	0	0	0	0.5163	0	0	0	0	0.5163	68,367.4134	326,353.23
451	Automotive Dealers & Service Stations	0	0	0	0	0	0	1.41	0	1.4074	186,365.0932	889,617.54
452	Apparel & Accessory Stores	0	0	0	0.5163	0	0	0	0	0.5163	68,367.4134	326,353.23
453	Furniture & Home Furnishings Stores	0	0	0	0	0	0	0	0	0	0	0
454	Eating & Drinking Establishments	0	0	0	0	0	0	0	0	9.56	1,265,916.08	6,042,876
455	Miscellaneous Retail	0	0	0	0.5163	0	0	0	0	0.5163	68,367.4134	326,353.23
463	Hotels And Lodging Places	0	0	0	0	0	3.63	0	0	3.63	480,677.34	2,294,523
464	Laundry, Cleaning And Shoe Repair	0	0	0	0	0	0	0	0	0	0	0
467	Funeral Service And Crematories	0	0	0	0	0	0	0	0	0	0	0
465	Portrait And Photographic Studios	0	0	0	0	0	0	0	0	0	0	0
480	Electrical Repair Services	0	0	0	0	0	0	0	0	0	0	0
481	Watch, Clock, Jewelry And Furniture Repair	0	0	0	0	0	0	0	0	0	0	0
482	Miscellaneous Repair Shops	0	0	0	0	0	0	0	0	0	0	0
472	Services To Buildings	0	0	0	0	0	0	0	0	0	0	0
474	Personnel Supply Services	0	0	0	0	0	0	0	0	0	0	0
475	Computer And Data Processing Services	0	0	0	0	0	0	0	0	0	0	0
508	Management And Consulting Services	0	0	0	0	0	0	0	0	0	0	0
476	Detective And Protective Services	0	0	0	0	0	0	0	0	0	0	0
473	Equipment Rental And Leasing	0	0	0	0	0	0	0	0	0	0	0
471	Photofinishing, Commercial Photography	0.0174	0	0	0	0	0	0	0	0.0174	2,304.0732	10,998.54
470	Other Business Services	0	0	0	0	0	0	0	0	0	0	0
477	Automobile Rental And Leasing	0	0	0	0	0	0	0	0	0	0	0
479	Automobile Repair And Services	0	0	0	0	0	0	4.06	0	4.062	537,881.916	2,567,590.2
478	Automobile Parking And Car Wash	0	0	0	0	0	0	0	0	0	0	0

	IMPLAN Code and Description	Trade				Restaurants	Lodging	Travel	Amusement	$ /IMPLAN Sector	Known $ (132,418 user days)	Estimated $ (632,100 user days)
488	Amusement And Recreation Services, Nec	0	0	0	0	9.56	0	0	82.42	82.42	10,913,891.56	52,097,682
491	Nursing And Protective Care	0	0	0	0	0	0	0	0	0	0	0
493	Other Medical And Health Services	0	0	0	0	0	0	0	0	0	0	0
512	Other State And Local Govt Enterprises	0	0	0	0	0	0	0	0	0	0	0
	Per Category Totals ($)	7.77	0.64	1.75	2.58	9.56	3.63	12.37	82.42	120.72	15,985,302.33	76,306,163.85