

THE ECONOMIC IMPORTANCE
of
BOATING RECREATION
in
OREGON

An Analysis and Recommendation
for
The Oregon State Marine Board

by: David Palazzi
Marine Resource Management Program
Oregon State University
Corvallis, Oregon

December, 1986

TABLE OF CONTENTS	<u>page</u> 1
LIST OF TABLES	2
ABSTRACT	3
SUMMARY	3
Area of Study	
Research Methods	
DEFINITIONS	7
LITERATURE REVIEW	8
THE MARINE RECREATION INDUSTRY	11
Introduction	
Research Methods	
Sector 1: Boat Building & Trailer Manufacturing	
Sector 2: Other Marine Manufacturing	
Sector 3: Marinas, Moorage and Other Marine Transportation Services	
Sector 4: Marine Wholesale & Retail	
Sector 5: Miscellaneous Marine Recreation Services	
Summary	
Conclusion	
ECONOMIC IMPACT AND USE OF RECREATIONAL BOATING ON OREGON'S RIVERS	18
Intoduction	
Backround	
Research Methods	
The Economic Impact of Recreational Boating on the Rogue River	
Use	
Expenditures	
Summary	
Recreational Boating Use of Other Oregon Rivers	
Conclusion	
USE AND EXPENDITURE PATTERNS OF OREGON'S CHARTERBOAT CUSTOMERS	28
Introduction	
Research methods	
Use & Expenditures	
Conclusion	

OREGON REGISTERED RECREATIONAL BOATERS	<u>page</u> 32
Introduction	
Research methods	
Boat Characteristics	
Boat Use	
Expenditures	
CONCLUSION	41
APPENDIX A Input-Output model description	42
APPENDIX B Cover letter and boater survey	44
REFERENCES	49

TABLES

Table 1: Economical and physical comparisons of Oregon's and Washington's marine recreation industry and water resources	13
Table 2: Oregon total income coefficients and average expenses incurred during travel to the Rogue river for non-commercial white water recreation	24
Table 3: Use data for the Owhyee, Snake, Deschutes, and the Rogue Rivers in Oregon	27
Table 4: Yearly charterboat trips and destination expenses of years 1979-1985	29
Table 5: 1985 destination expenditures of Oregon Ocean charterboat customers	30
Table 6: Yearly breakdown of total income generated per charterboat trip per year	30
Table 7: Mean owner-operator expenses and total income generated in Oregon per boat for the 1985-86 study year	37
Table 8: Mean travel cost expenditures and total income generated in Oregon per trip for the 1985-86 study year	38
Table 9: Percentage of annual participation of various recreation boating activities in the U.S.(22), percent of participation in Oregon (7) and total number of trips per activity for 1985-86	39
Table 10: Expenditures and total income for each boating activity per year for overnight (2-3 days) trips during 1985-86	39
Table 11: Expenditures and total income for each boating activity per year for single day outings during 1985-86	40

ABSTRACT

This study was done for the Oregon State Marine Board and completed during the 6 month period of June through December of 1986. The purpose of this project is to provide information through reliable secondary data that will show the importance of boating recreation to the Oregon economy. The study also exposes a need for more research on this subject.

This study defines and evaluates economic activities for the marine recreation industry in Oregon and also evaluates the economic values of recreational boating on rivers, Oregon registered boating use and the charterboat industry. Economic values are determined through total income generated from travel costs of the recreational activity and owner/operator expenses of registered boaters. An input/output model developed by the U.S Forest Service is used to calculate total income from travel cost and owner/operator cost data.

Secondary data are the main source of information in this study. Primary information is used through a survey done to evaluate travel costs and owner/operator expenses of Oregon's registered boaters.

SUMMARY

A recent estimate of marine recreation revealed that there are over 366 businesses in Oregon that provide goods and services for recreational boating activities. This information, combined with trip expenditure data of people participating in boating recreation shows that boating business and recreation activities provide significant inputs into the Oregon economy by generating

total income in the form of employment, taxes, and payrolls.

There are no previous state encompassing studies that evaluate the economic importance of boat recreation in Oregon, however, there is a need and usefulness for this economic information. If properly utilized, this information can assist decision makers in the distribution of federal and state funding for boating recreation projects and related development in Oregon. This study can also be used to implement future studies.

Area of Study

The recreational boating industry covers a broad and diverse area. This study defines the industry as those Oregon businesses that manufacture and supply goods and services for recreational activities.

Cumulative economic activity for the first four of the five sectors representing the marine recreation industry in this study provide a perspective of the economic impact of the marine recreation industry in Oregon. Using a comparative study done in Washington (16), the following are estimates of yearly economic activity of the marine recreation industry in Oregon:

* number of establishments	366
* employment	4099
* payrolls (\$millions)	48.8
* total sales (\$millions)	244.3

The marine recreation industry provides goods and services for boating recreationalists. In order for the boaters to utilize these goods and services they must travel to an area where they can recreate. Expenses, in the form of travel costs, are incurred by the user.

This study evaluates the following travel costs of people

participating in river boating, charterboat fishing and registered boat recreation:

- * transportation costs
- * eating and drinking
- * groceries
- * lodging
- * miscellaneous

The total income generated by travel cost expenditures provides an important input into the Oregon economy. Total income is defined as total personal income which is all salaries, wages and profits. Travel cost expenditures (based on data from table 2) applied to the estimated 1 million(2) annual non-registered boat user-days results in \$7.12 million in expenditures and generates \$9.6 million in total income in Oregon per year.

Charterboat customers, in 1985 incurred \$2,960,886 in travel costs, generating over \$4 million in total income in Oregon.

Registered boat owners incurred \$227 million in travel costs expenses during the one year period of the 1985-86 boating season which generated \$269 million in total income. Also, in this same time period, owner/operator expenses, defined as the following, were \$67 million, generating \$60 million in total income.

- * fuel and oil
- * repairs and maintenance
- * new equipment
- * rental equipment
- * miscellaneous services
- * insurance

Total income generated by registered boaters in Oregon during the boating year of 1985-86 was \$329 million.

Research Methods

The evaluation of the economic impact of the marine recreation industry in Oregon estimates the number of establishments, employment, payrolls and total sales of the industry and is based on data from a study entitled ECONOMICS OF MARINE RECREATION IN WASHINGTON 1977. These are rough estimates, and should be used to provide a perspective of the economic activity the marine recreation industry may have in Oregon.

Travel costs for river boaters and charterboat customers are determined using secondary data to calculate expenditures incurred resulting from travel required to participate in the recreational activity.

Primary data for travel costs and owner/operator expenses is collected from a survey of registered boat owners in Oregon. A weighted sample of boaters owning boats 12 feet and over is taken from each county in Oregon to determine average owner/operator and travel cost expense patterns along with other use information.

An Input/output model developed by the U.S Forest is applied to travel cost data to determine the total income generated in Oregon for river boating and charterboat customers and travel costs and owner/operator expenses for registered boat owners.

DEFINITIONS

Boating related recreation: recreation in which the activity is based around boating use. ie. drifting, fishing, whitewater boating, water-skiing, leisure, and cruising.

Boating related business: profit oriented businesses that are in the market of providing goods and services such as, boats, trailers, accessories, fuel, food, snacks, beverages, lodging, etc. to people engaged in boating recreation and desired by those people to engage in boating activities.

Generated Income: The chain reaction or trickle down effect of money from the customer's purchase of goods and services, to the retailer, to the wholesaler, to the people who prepare the goods, to the producer of the material that make up the goods and services.

Expenditures: how and where people spend their money, along with the amount spent in a region.

Commercial boating use: boating activity where someone makes a profit, receives payment or a stipend or receives payment for any services provided from customers for the recreation activity they provide.

Private boating use: non-commercial trips in which expenses are equally shared between all the participants and there are no fees or compensations collected by any-one individual.

Income coefficients: local personnel income that is directly and indirectly generated from an increase in sales

Total income: total personal income which is all salaries, wages and profits

Registered boat owners: people in Oregon who own boats that are required to be registered with the Oregon State Marine Board.

Standard Industrial Code(SIC): classification of data by industry which takes into account the technological and structural variations in the industry

User days: one person spending one day on the water, or a person spending two days on the water would equal two user days

Marine Recreation Industry: manufacturing and service industries providing goods and services for those people engaging in water related recreation which is required by those people to participate in such activities

Boating day-the use of a boat for any part of the day

LITERATURE REVIEW

The State of Washington receives significant economic contributions from a large and diverse marine recreation industry which provides goods and services for marine recreational activities.

Marine recreation industry economic data from Washington state shows that the industry provides 14,300 jobs, \$554,700,000 in goods and services sold, pays \$92,700,000 in wages and salaries, and over \$100 million in state taxes(16). Over 140,000 boats were registered with the Oregon State Marine Board in 1986. A 1976 national recreational boating survey estimated that in addition to the registered boats, there are 23.9 percent

of boats nationwide that are non-motorized and non-registered (19). Therefore, in Oregon, there are an estimated 28,000 non-registered boats, resulting in a total of at least 168,000 boats in Oregon.

Partial non-registered float-boat use estimates show that there were 39,907 people involved in this form of boating recreation and over 149,777 user days in 1985 on four popular rivers (table 3), and an estimated 1 million total user-days of non-registered boat use in Oregon yearly (2). In 1985 there were 143,373 pleasure boats registered with the Oregon State Marine Board generating over 2.7 million boat days of use for an average of 20 days per boat. Fishing was the most popular activity (59.2 % of reg. boats) for boating recreation, water-skiing (15.2% of people) was the second most popular activity for people, but cruising (13.4% of boats) was the second highest for boat use days(7).

Travel cost method (TCM) is used to evaluate the economic benefit in an indirect approach to determine the value of recreational sites. Travel costs are used along with expenses related to the trip and the implied expense of the recreation activity. TCM are used to evaluate the economic impact of non-commercial white water recreation on the wild section of the Rogue River in this study (1).

Travel cost studies often use distance as the primary indicator of cost to the recreationalist. Total expenses are related to miles traveled showing a correlation of .74. However, when transportation expenses are not included, other direct

prices of trip expense include costs of food, beverages, lodging and equipment rental (non-transportation expenses) showing a .44 correlation. This does not show a strong relationship between distance traveled and non-transportation expenses (1).

Interests in economic worth of an activity or business is expressed through evaluating changes or contributions of an industry to "local" economies. The "local" economies may be county, city or state levels. Economic input/output (I/O) models are often used to estimate the change or contribution (20).

An I/O model approximates the "local" economies by expressing economic relationships among various sectors. The economic relationships are measured through dollar values of purchases among economic sectors. An economic sector is a grouping of interrelated businesses, organizations, or industries.

I/O models can be helpful in evaluating economic contributions or to evaluate the impact of an industry to a "local" economy (20).

The Overlay Method may be used when time or funding does not allow for direct economic impact measurements. Economic impacts for the "local" economy may be measured using data from a similar "local" economy or economic sector where the economy has been studied. The overlay method can evaluate data through the comparison of a variety of economic sectors, and the size of the two "local" economies (20).

THE MARINE RECREATION INDUSTRY

Introduction

Due to time constraints and lack of accessibility of secondary information, this section of the report will use a similar study done in Washington state to give a perspective of the marine recreation industry in Oregon.

A survey of marine recreation related businesses could not be conducted effectively in the time allotted for this project. The Oregon Department of Revenue (ODR) was asked to supplement what information we had for the study, but due to the confidentiality of corporate tax and other economic data, and the ODR research section only being funded to provide information for the analysis of tax programs, this information could not be made available. Using a study done in Washington entitled ECONOMICS OF MARINE RECREATION IN WASHINGTON STATE-1977 (16), this study provides comparative analysis of economic data for the marine recreation industry (MRI) in Oregon.

Research Methods

The economic activity of the MRI in Oregon is assessed through the following:

- * number of establishments
- * employment
- * payrolls
- * total sales

Five sectors of the marine recreation industry were studied in the Washington study and are used to evaluate by comparison, the following five sectors of Oregon's marine recreation industry:

- * boat building and repair
- * other marine manufacturing
- * marine recreational services
- * marine wholesale & retail
- * miscellaneous marine recreational services

Standard Industrial Classifications (SIC) are used to categorize businesses into each sector. Collective economic activity for each sector will be evaluated. Oregon businesses identified for this study and their corresponding SIC codes came from a listing of business accounts purchased from Pacific Northwest Bell (PNWB). The listing provides all Oregon businesses listed under the heading of "BOAT". This heading appeared to deal with the businesses associated with recreational boating goods and services. The U.S. Coast Guard Office of Boating and Public and Consumer Affairs provided a listing of boat manufacturing businesses in Oregon. A 1986 phone survey done in Oregon provided information and verification for the businesses in sector 3 which provide marine recreational services. The phone survey was sponsored by the National Marine Manufacturers of America and Sea Grant and was part of a national study organized by Neil Ross of the Marine Advisory Service at the University of Rhode Island. Firms were categorized into SIC codes using the OREGON COVERED EMPLOYMENT & PAYROLLS FOR 1984 from the Oregon Employment Division.

To estimate the economic activity of the MRI in Oregon, comparisons were made by evaluating the number of businesses per sector in Oregon as a percentage of the number of business per sector from the Washington Study. The percentage is multiplied times the four areas of economic activity of each sector in the

Washington study to determine the economic activity of the corresponding sectors of the marine recreation industry in Oregon. There are determined to be more businesses per sector in Washington than there are determined to be in Oregon except sector 3, marinas and moorage. Table 1 shows various economical and physical factors that contribute to the differences between Oregon's and Washington's marine recreation market and resources.

In Oregon, 1 out every 18 people have a boat registered with the Oregon State Marine Board. In Washington 1 out of every 16 people have a boat registered with the state.

Table 1: Economical and physical comparisons of Oregon's and Washington's marine recreation industry and water resources 1983(17)

	<u>% ratios of</u> <u>OR. vs Wash.</u>	<u>Oregon</u>	<u>Washington</u>
registered boats	55%	140,003	253,980
annual boat, motor trailer & access. purchases	80%	\$60,069,000	\$74,273,000
miles of coast line	13%	353 mi	1136 mi* (19)
man-made reservoirs and lakes	76%	314,000 mi ²	410,000 mi ²
state owned or man- aged access develop- ments	88%	346	391
population	63%	2,600,000	4,154,000

*Of the 1136 miles of coast line only about 175 miles are actually on the Pacific Ocean itself, the majority consists of The Strait of Juan de Fuca and the Puget Sound.

Sector 1: Boat Building & Trailer Manufacturing

The information for firms identified in this sector come from the U.S coast Guard Office of Boating, Public & Consumer Affairs and PNWB listings. The sector includes SIC 3732 covering boat building & repair - manufacturing for retail (MFR) and SIC 3799 covering manufacture of trailers - MFR. The following are estimates of economic activity in this sector:

number of establishments	107
employment	2,511
payroll (\$millions)	29.9
total sales (\$millions)	119.0

Manufacturing and repair of recreational aluminum fiberglass and wood boats represents 93 of the firms (87%) in this sector and boat trailer manufacturing represents 14 firms (13%) that exist in Oregon.

Sector 2: Other Marine Manufacturing

There is little direct information available to identify the number of businesses in this sector. Most firms are classified under several SIC sectors and are primarily smaller sized establishments.

The Washington study identified the businesses as being both suppliers to the boat manufacturing industry or making sales directly to public consumers and being involved in activities such as sailmaking, marine publishing, marine electrical and communication and manufacturing marine sporting goods. There is no secondary information regarding the type or number of firms in Oregon that are classified in this sector.

This study will assume there to be some relationship between the number of "other marine manufacturing businesses" and

those marine manufacturing firms in sector 1. Sector 2 supplies goods for boat building and repair discussed in sector 1 and also provides goods for people to partake in activities that use the products manufactured by businesses in sector 1. On the basis of this relationship, and in order to estimate the economic activity in sector 2, the percentage ratio of 57% used to evaluate the economic activity in sector 1 is used to evaluate the economic activity in sector 2. Multiplying the four elements of economic activity in sector 2 in the Washington study by 57% results in the following economic activity of the four corresponding elements of sector 2 in Oregon:

number of establishments	36
employment	452
payroll (\$millions)	4.7
total sales (\$millions)	18.8

Sector 3: Marinas, Moorage and Other Marine Transportation Services

This sector includes privately owned businesses that provide marine transportation services, SIC 4469. The specific services offered are dock space, fuel, oil, launching, boat storage, rental of moorage space, equipment rental and retail sales of food, beverages, groceries and recreational accessories. Public ports are also included in this sector, but do not provide the same extent of services as the private businesses. The following are estimates of economic activity in this sector:

number of establishments	112
employment	454
payroll (\$millions)	4.9
total sales (\$millions)	14.9

All of the 112 establishments were verified by a phone

survey during the spring of 1986.

Sector 4: Marine Wholesale & Retail

This sector includes marine wholesale trade which is part of SIC 5088 and marine retail sales which covers SIC 5551. PNWB listing showed 16 wholesale dealers and 95 retail dealers in Oregon's marine recreation industry. This sector ranks third in number of establishments behind sectors 1 and 3 but shows the second highest total sales and payroll behind sector 1. The following information represents sector 4 economic activity:

	<u>Marine Wholesale</u>	<u>Marine Retail</u>	<u>Total Marine Trade</u>
number of establishments	16	95	111
employment	152	530	682
payroll (\$millions)	2.6	6.7	9.3
total sales(\$millions)	47.1	44.5	91.6

Total sales in marine retail of boats, motors, and trailers in Oregon in 1983 was \$60,069,000 (Table 1). Sector 4 figures above show marine retail sales to be \$44.5 million. The \$15.6 million increase over the marine retail total in sector 4 may be attributed to the margin of error in evaluating the economic activity of Oregon's marine recreation industry in this study, or it may represent a 26% increase in marine retail sales from 1977 to 1983, or the difference may be a combination of both factors.

Sector 5: Miscellaneous Marine Recreation Services

This sector includes other marine services not included in the four previous sectors. These include, marine insurance, marine financing, marine photographers, surveyors, and sightseeing tours along with many other businesses. Most of the

businesses in this sector are small firms or parts of larger firms such as insurance companies and lending institutions making it very difficult to evaluate the economic effect they have in terms of the marine recreation industry. This sector's economic activity will not be evaluated at present, but should be considered when evaluating the economic impact of the marine recreation industry.

Summary

Estimates of Oregon's marine recreation industry which are represented in the first four sectors shows the following cumulative economic activity:

number of establishments	366
number of employees	4099
payroll (\$millions)	48.8
total sales (\$millions)	244.3

These figures show some of the economic impacts the marine recreation industry has for Oregon.

Conclusion

No previous studies have been done to evaluate the true economic impact of the marine recreation industry in Oregon. The information from this study provides a perspective of the industry's economic capabilities and natural resource utilization. Marine recreation appears to be a stable and growing industry.

ECONOMIC IMPACT AND USE OF RECREATIONAL BOATING ON OREGON'S RIVERS

Introduction

Boating use of Oregon's rivers is a widely exercised means of resource recreation. Both commercial and private non-commercial boating use of Oregon's Rogue, Snake, Owyhee, and Deschutes rivers have been studied as to the recreational opportunities they provide to many people. Boating use includes rafting, kayaking, driftboats, inflatable kayaks, and powerboat use on sections of these Oregon rivers. Estimates of yearly use on all four rivers show that there are 39,907 people involved in recreational boating, resulting in 149,777 user days. Total non-registered river boat use in Oregon is estimated at 1 million user-days each year (2).

A benefit that arises from river use is the economic input into the state by the recreational boaters. This study bases economic impact estimations through recreational boating of these four popular recreational rivers. The recreationalists spends money on goods and services such as food, lodging, and transportation when traveling to participating in river boating activities. Some expenses occur in the region of the site, but most are incurred enroute to the site.

Background

This section of the study is designed to measure the economic impact in Oregon of recreational boating use on the Rogue, Snake, Owyhee and Deschutes rivers.

The majority of expenses are the result of transportation to

the river recreation site by the boater which occur in the following areas:

- * Direct travel (gas, oil, etc. for auto)
- * Shuttle costs (transportation downstream of auto)
- * Food and beverage costs
- * Lodging
- * Other miscellaneous expenses

In a study entitled, ECONOMIC VALUES AND PRODUCT SHIFT ON THE ROGUE RIVER: A STUDY OF NON-COMMERCIAL WHITEWATER RECREATION (EVRR) (1), travel expenses were calculated using the travel cost method (TCM) to estimate the economic value of Rogue River recreation. Since direct travel costs comprise the weight of expenditures incurred by recreational boaters, they can be seen as the primary economic impact of the recreational activity.

The EVRR study grouped into catagories the average expenses incurred by non-commercial white water recreationalists (ncww) (from responses to a questionnaire) based on distance traveled to the Rogue River.

The data shows a direct correlation between distance traveled and direct travel expenses such gas and oil, but the relationship between distance traveled and the four non-direct transportation expenses; shuttle costs, food and beverage costs, lodging and miscellaneous expenses is not directly correlated(1).

Research Methods

An economic input/output model (I/O) developed by the U.S. Forest Service is used for economic assessment of travel cost expenditures. The I/O model will estimate the contributions of the Rogue River ncww recreationalists to the Oregon Economy (see appendix A for I/O model explanation).

Response coefficients developed in the I/O model measure the importance of any economic activity within the Oregon economy. An example of this is as follows; For every dollar spent in the area of recreational transportation .9218 dollars of total income is generated in Oregon. For every dollar spent in the area of hotels and lodging 1.6206 dollars of total income is generated in Oregon. Table I shows the total income coefficient determined by the Forest Service I/O model and then related to each area of expense incurred by ncww boaters traveling to the Rogue River.

To determine economic impacts, the amount of boating use is used in conjunction with travel costs. Use is based on data for user days, launches, average group size and number of boaters. Most use information is available for the five rivers in this study. However, economic (expenditure) information is only available for ncww use on the Rogue River and should be utilized to determine the general impact of overall economic impact. Though the activities in the river use study are similar for all rivers, travel cost, the primary expenditure of the river users may not be. Travel costs for boaters traveling to rivers other than the Rogue and expenses incurred due to travel to participate in commercial and non-commercial river recreation may therefore vary from the EVRR data.

Another way of evaluating the value of the economic activity generated by river use in this study is to look at the amount of goods and services sold to out-of-state recreationalists, or export dollars brought into Oregon. Out-of-state boaters using the Wild Section of the Rogue amount to twenty percent of

the total users (3). The recreational activities the out-of-state boaters participate in brings money in from outside the state which stimulates the Oregon economy by providing export dollars.

Economic impact information is limited to a very small section of total recreational river boat use in Oregon. Total use in the state, from an economic standpoint, may be analyzed using the economic data in this study in conjunction with the individual and total river use information included.

The Economic Impact of Recreational Boating on the Rogue River

The Rogue River is one of the most popular recreational rivers in Oregon. Opportunities include whitewater boating, fishing, and jet boat trips on the bottom 54 miles of the river.

Use

Both commercial and private boaters use the Wild Section of the Rogue, accumulating over 22,452 user-days in 1985. The total number of non-commercial users who purchase permits during 1985 was 6171 of which 5613 were actually used. The permit season for 1985 was June 1 through September 1. This accounts for the purchase of 875 launch (trip) permits for ncww trips. Eighty percent of the 1985 ncww users were from Oregon, eleven percent from California, six percent from Washington, and three percent from other states(3). Seventy-five percent of the Oregon users were from the western half of Oregon. The number of commercial float customers in 1985 was 4328(3). There are also daily jet boat trips available from the mouth of the Rogue to 54 miles up stream. These Rogue River tour boats hauled a total of 44,028

passengers in 1985 (8). There were another 1,658 people who hired commercial fishing guides on the Scenic Section of the Rogue in 1985(8).

Expenditures

Expenses incurred by ncww users on the Rogue were based on the expense of travel cost to the river from the boater's place of origin. The expenses identified in the EVRR study are; reported travel expenses, shuttle cost, food and beverage cost, lodging cost and other miscellaneous expenses. Coefficients from the U.S. Forest Service I/O model are correlated with the travel expenses identified in the EVRR study and evaluate the impact of these expenses on the Oregon economy in the form of total income generated. For example, the average expenditure per trip for recreational transportation is \$52.73, therefore \$48.61 of income is generated in the Oregon economy per trip by ncww users of the Wild Section of the Rogue River based on the related I/O model coefficient.

Table 2 shows the total income generated per trip in Oregon for 1985 due to travel costs to the Rogue River as \$246.80. The number of non-commercial white water trips to the Wild Section of the Rogue River in 1985 based on launch permits sold for the regulated season was 875. Total income generated was multiplied times the total number of launch permits issued in 1985 resulting in a product of \$215,950 in total income generated by 22,452 user-days of ncww recreational boating on the Wild Section of the Rogue River in 1985.

Summary

Non-commercial recreational use of the Rogue River during the 1985 permit season was 875 trips and used by a total of 5613 people. The number of people represents only 14% of the total number of river boat recreationalists accounted for in this study. The 5613 people who used the Rogue River in 1985 incurred \$159,941 in travel cost expenditures which generated \$215,950 of total income in Oregon. This use data includes only those who used the river during the three month permit season, and little economic information is available to evaluate impact of an entire years use. A much broader study must be done to get a clearer perspective of the economic impact boating recreation use in the Rogue River Wild and Scenic Section has on the Oregon economy.

Table 2. Oregon total income coefficients and average expenses incurred during travel to the Rogue River for non-commercial whitewater recreation

<u>Various Expense sectors</u>	<u>Total Income Coefficients from IMPLAN</u>	<u>Average per trip Expenditure</u>	<u>Oregon Income Generated</u>
Recreational Transportation	.9218	\$52.73	\$48.61
1/2 Recr. Transp 1/2 Individual Income	1.5001	\$21.56	\$32.34
Recreational Foods	1.4282	\$42.43	\$60.60
Hotels and Lodging	1.6206	\$30.39	\$49.25
Miscellaneous	1.5691	\$35.68	\$56.00
Total		\$182.79	\$246.80

Oregon income generated per trip in 1985: \$246.80

Number of non-commercial permit trips in 1985: 875

Total Oregon income generated in 1985: \$215,950

Total Income= total personal income which is all salaries, wages and prof

Travel cost per user-day= \$7.12

Total income generated per user-day= \$9.60

Recreational Boating Use of Other Oregon Rivers

The Snake River flows along the Oregon, Idaho border and crosses the Washington, Oregon border to the north. Both floatboats and powerboats are used for commercial and non-commercial recreation on the 67.6 mile segment of the Hells Canyon National Recreation Wild and Scenic River Area of the Snake.

The Salmon River flowing from Idaho and the Grande Ronde River flowing from Oregon are tributaries of the Snake and support a large number of recreational boaters. Commercial outfitters on the three rivers hauled over 11,000 people totaling

over 17,000 user days during the 1985 regulated season of May 24 through September 15. Total launches of commercial and private boats, not including commercial powerboats amounted to 791 during the 1985 regulated season(4).

The main stem of the Owyhee River flows for 120 miles through southeastern Oregon. Private and commercial launches totaled 197, carrying 1493 people amounting to over 6805 user days during 1980(5).

Winter snow pack variations limit most boating to a six week period from May 1 to June 15(5).

A national river recreation study in 1980 found that sixty percent of the boaters on the Owyhee River are from Oregon, fourteen percent are from Idaho, twelve percent from Washington, seven percent from California and the remaining seven percent are from other states (5) providing export impact potential from fourty percent of Owyhee River users.

Of the four rivers in this study, the Deschutes River located in central Oregon, is the most widely used recreational boating river in the state. Factors contributing to it's use are it's being geographically located near the more densely populated urban areas of Oregon, it's easy access, and a pass system of management as opposed to a limited use permit system.

Fifty-four percent of boating use on the Deschutes occurs between April and November (6). There were 2944 commercial recreational boaters and 9494 private recreational boaters accumulating over 89,000 user days on the Deschutes in 1982 (6). Fifty-six percent of boaters sampled in 1982 were from counties

within the Portland metropolitan area. Twelve percent reside in the Willamette Valley and three percent reside in areas in the vicinity of the Deschutes. Out of state use comprises seventeen percent of Deschutes boaters. Thirteen percent of this out of state use is by Washington recreationalists(6).

Table 3 provides a summary of river use data.

Conclusion

The information presented in this study provides a basis for estimating the influx of economic activity resulting from recreational boating use on the four major recreation rivers in Oregon.

Although this study contains data from recreational use of only four rivers in the state, it provides a perspective of the extent of use of the rivers as a recreational resource.

The economic data from the EVRR study used to evaluate expenditure impacts by ncww boaters represents only fourteen percent of the total boaters, fourteen percent of total user days, and forty-six percent of the limited total launch information which is available for use in this study.

Projecting the expenditures and total income generated per user day data developed from table 2 to the estimated 1 million (1) total non-registered user-days of boating in Oregon shows there to be \$7.12 million in expenditures generating \$9.6 million of total income per year throughout the state as a result of this type of boating recreation.

The study does show the potential impact that recreational river boating has on the Oregon economy, but a more in-depth

study is needed to fully realize the impact these activities have on the states economy.

Table 3. Use data for the Owyhee, Snake, Deschutes, and the Rogue Rivers in Oregon.

<u>River</u>	<u>User Days</u>
Owyhee(1984)	
comm.	2,891
nc.	3,914
Snake(1985)	
power boats	
comm.	11,568
nc.	4,241
float boats	
comm.	5,725
nc.	9,541
Deschutes(1982)	
comm.	
(all)	17,594
nc.	71,851
(all)	
Rogue(1985)	
float-boat only	
comm.	N/A
nc.	22,452

comm.=commercial use

nc.=non-commercial use

user days=total number of days people are on the river. One day
equal one user day.

launches=one trip permit

USE AND EXPENDITURE PATTERNS
OF
OREGON CHARTERBOAT CUSTOMERS

Introduction

The charterboat industry provides significant economic input to Oregon's coastal communities by providing a popular recreational activity that is unique to the coastal region.

The industry promotes jobs through the sales of goods and services required by charterboat vessels owners for fixed and variable expenses of operation and maintenance. The expense of the charterboat service to the customer brings in money through export dollars from outside the coastal region. About ninety percent of in-state customers come from outside coastal counties, and about thirty percent of the customers come from outside Oregon (10).

The primary interest in this study are the destination expenditures (travel costs) because they are the most significant economical inputs of this recreational activity to the state's economy. These are the average trip expense per angler day for charterboat customers who gave fishing as the main reason for their trip to the coast. The expenses do not include the cost of the charterboat trip, which averages \$31.26 (11), but entail the following destination expense categories (15):

- * Restaurants
- * Groceries
- * Camping, etc.
- * Lodging
- * Miscellaneous

Research Methods

Information on the estimated number of fishing trips per year for a seven year period of 1979 through 1985 for charterboat customers, per trip destination expenses, and yearly destination expenditures for bottom fishing (9) and salmon fishing (12) are shown in Table 4.

Table 4. Yearly charterboat trips and destination expenses.

<u>Year</u>	<u>Bottom(9)</u>	<u>Salmon(12)</u>	<u>Per- Trip¹ Destination Expenses</u>	<u>Total Destination Expenses</u>
1979	14,000	73,718	\$20.51	\$1,799,096
1980	22,000	79,055	\$23.28	\$2,352,560
1981	271,000*	65,411	\$25.70	\$8,645,762
1982	179,000*	43,308	\$27.27	\$6,062,339
1983	87,000	41,916	\$28.15	\$3,628,664
1984	33,000	24,331	\$29.35	\$1,682,664
1985	44,000	53,492	\$30.39	\$2,960,867

1/ Based on Critchfiel and Schelle (1979). Data is adjusted to 84 dollars using GNP price deflator. Years 79-83 and 85 are adjusted using the Consumer Price Index.

Per-trip destination expenses does not include the price of the charter

* These figures seem high, references to data source should be made for any additional explanation

Destination expenditure data and I/O model income coefficients categories are used to determine the total income generated by charterboat fishing customers in Oregon.

Table 5 shows the breakdown for the 1985 total income generated calculations. Categories of destination expenses as a percentage of the total destination expense are paired with corresponding I/O categories and coefficients. I/O coefficients are multiplied times each categories expense per trip to determine total income generated per category.

Table 5. 1985 Destination Expenditures of Oregon Ocean Charterboat customers

<u>Destination Expenses</u>	<u>I/O coefficient category</u>	<u>coefficients</u>	<u>Expense per trip</u>	<u>Total Oregon income generated</u>
Restaurants (37.0)	eating & drinking	1.6206	\$11.23	\$18.20
Groceries (17.9)	retail	1.2701	\$5.45	\$6.92
Camping etc. (10.3)	recr. services	1.5522	\$3.14	\$4.87
Lodging (20.2)	hotels & motels	1.6206	\$6.15	\$9.97
Miscellaneous (14.6)	miscellaneous	1.5691	\$4.45	\$6.98
Total			\$30.39	\$46.94

Table 6 shows income generated in Oregon by charterboat trips for each year from 1979 to 1985.

Income generated is expressed both on a per-trip basis and on an annual basis. The income generated by salmon fishing trips and bottom fishing trips can be compared on a yearly basis.

Table 6. Yearly breakdown of total income generated per charterboat trip and per year.

<u>Year</u>	<u>Total Oregon Income generated per charterboat trip</u>	<u>Yearly total income based on type of trip</u>		<u>Yearly Total Income Generated</u>
		<u>Salmon</u>	<u>Bottom</u>	
1979	\$31.68	\$2,335,386	\$443,520	\$2,778,906
1980	\$35.96	\$2,842,817	\$791,120	\$3,633,937
1981	\$39.70	\$2,596,816	\$10,758,700	\$13,355,516
1982	\$42.12	\$1,824,133	\$7,539,480	\$9,363,613
1983	\$43.48	\$1,822,507	\$3,782,760	\$5,605,267
1984	\$45.33	\$1,102,924	\$1,495,890	\$2,598,814
1985	\$46.94	\$2,510,914	\$2,065,360	\$4,576,274

Use & Expenditures

The charterboat industry has about 200 permit holders of which about 70 are consistently doing business(13). The decline of the salmon fishery has resulted in declining charterboat customers, but the industry is presently making efforts to develop the bottom fishing business to supplement the customer

decline(13).

Survey results reveal that sixty-eight percent of charterboat customers are from Oregon, of which ninety percent come from outside Oregon's coastal counties. Fifty-five percent of the out-of-state anglers are from Oregon's three adjacent states; California, Washington and Idaho(10). Thirty-one percent of charter anglers fish once per year, another thirty-one percent are charter fishing for the first time. Over fifteen percent fish more than once per year but less than once per month(10).

Table 4 shows that the number of trips vary greatly from year to year, but there is no clear relationship between the number of bottom trips and the number of salmon trips.

Conclusion

The economic impact of the charterboat industry appears to be the greatest on the local economy of the coastal regions. Charterboat fishing itself draws over 97,000 people to the Oregon coast per year, seventy-five percent of whom visit the coastal area solely for the charterboat fishing trip(14). Close to forty percent spend at least one night in the coastal community area, and over sixty percent eat at least one meal out(14).

Not all charterboat customer destination expenses occur in the coastal region, but the majority do, implying that the charterboat industry is important for the coastal communities of Oregon. Though the economic impact is more regional, it does play a part of the total income generated in Oregon.

OREGON REGISTERED RECREATIONAL BOATERS

Introduction

Oregon has a rich water resource consisting of 353 miles of coast line and over 6,000 (21) standing fresh water environments. Oregon's lakes, reservoirs, bays and coast are used extensively for boating recreation.

This section of the study presents the results of a 1986 statewide boating survey conducted to provide information regarding the characteristics, use and expenditures of registered boat owners in Oregon for the one year period of September 1st 1985 through August 31st 1986.

Water based recreation is important to regional economies throughout Oregon. The Implan model used throughout the entire study is applied to expenditure data to determine the total income generated by registered boat owner-operator expenses.

Research Methods

The Survey Research Center at Oregon State University determined that a weighted sample of 140 registered boat owners in Oregon would be an adequate representation for the study. A post card followed the first survey mailing by 2 weeks and a follow-up survey was sent out 4 weeks after the original survey mailing. This approach seemed to help the response rate. A total of 105 completed usable questionnaires were returned reflecting 75% completion of the total sample. The sample represents 127,565 people owning registered boats 12 feet in length and greater. These boats represent the majority of the 143,000 boats registered in the state. The sample was designed

by pulling the first four boats of 12 feet or more in length from each county from the State Marine Board's registration file. This provided a more diverse representation of all boat owners in the state. The data from each county was weighted according to the number of boats and completed surveys per county, and processed using a S.P.S.S. (Statistical Package for the Social Sciences) program at the Computer Center of Oregon State University.

The Implan model was applied to expenditure data to project total income generated in Oregon resulting from owner-operator expenses.

Total travel cost expenditures and total income for the year were estimated using data from table 9 to calculate the number of trips based on the 2.7 million total boat days in Oregon during 1985-86.

The total number of boat days for each type of boating activity is determined using the following equation.

$$\text{equ.1: } 2.7 \text{ million boat days} \times \% \text{ of occurrence of each activity} = \text{BD} \\ (\text{total number of boat days per activity})$$

Total number of trips per activity are calculated by using the following equation and percentage of annual participation data from table 9.

$$\text{equ.2a: } T_{sd}(\text{total single day trips}) = \text{BD} \times \% \text{ of single day trips}$$

$$\text{equ.2b: } T_{on}(\text{total overnight trips, 2-3 days}) = \text{BD} \times \% \text{ 2-3 day trips} / 2.5$$

$$\text{equ.3: } T(\text{total trips}) = T_{sd} + T_{on}$$

Total trips per boating activity are calculated, and then

multiplied by expenditures and total income from travel cost data (table 8) to estimate total income generated from total trips from each activity and total trips for all boating activities during 1985-86 (see tables 9-11).

Expenses relevant to single day trips only include categories a, b & e from table 8, and not those relating to overnight accommodations. Expenses therefore vary between single day and overnight trips. The following equations represent the variance, and show how total expenses and total income in tables 10 and 11 are calculated from the number of trips per activity.

equ. 4: $E_{sd} = f(a+b+e)$ = expenses of single day outings

equ. 5: $E_{on} = f(a+b+c+d+e+f)$ = expenses of 2-3 day trips

equ. 6: $TE = E_{sd} \times T_{sd} + E_{on} \times T_{on}$ = total expenditures

equ. 7: $TI = TI_{sd} \times T_{sd} + TI_{on} \times T_{on}$ = total income generated

Boat Characteristics

Of all registered boats in the sample, 74% were 13-16 foot in length. Boats in the 17-20 foot range comprised 10.9% of the sample. Combining this information reveals that about 85% of registered boats in the sample are 20 feet in length or less. State Marine Board registration data shows almost 90% of the state's registered boats being 20 feet or less in length (7). Outboard motors constituted 80% of propulsion systems while 19.7% of Oregon boats are powered by inboard motors. State Marine Board data shows 75.2% and 20.6% respectively for propulsion systems (7). Nearly all fuel used to power Oregon's pleasure boats is gasoline (96%) (7).

Boat Use

The majority of Oregon's boats are used in freshwater (78.2%), and 18.5% of boats were used in both of fresh and saltwater.

Fishing is by far the most popular boating activity, constituting 73.8% of boat use. Water skiing was the second most popular activity, preferred 13.8% of the time, while day cruising occurred for 12% of boating use.

During the study year 22.9% of respondents stated they used their boat 7 to 13 times per year, 18.1% used their boat more than 55 days per year, 17.5% used their boat fewer than 7 days and 17% were boating 21 to 27 days per year. There were a total of 2.7 million boat use days in Oregon during 1985 according to the State Marine Board, translating to 8 million user days for 1985 (7). Average annual use is 20 days per boat per year (7).

Expenditures

Respondents to the survey were asked to estimate the total amount of money spent for the boating year starting on September 1st 1985 and ending on August 31st 1986, and to relate direct expenses regarding owning and operating their boat.

Expense categories are estimated for both yearly and per trip expenditures. Expenditure information is also used to determine the total income generated in Oregon due to owner-operator expenses. A mean expenditure for all boats in the survey is determined to evaluate the various expenditures categories.

The mean yearly owner-operator expenses in table 7 represent

127,565 registered boat owners. Data from table 7 shows total owner-operator expense of over \$60 million per year generating over \$53 million in total income in Oregon. Projecting this data to all boats registered in the state (143,373) results in total yearly expenses of \$67 million generating \$60 million in total income.

Expenses incurred for new equipment, repairs and maintenance, and fuel and oil result in the total income being less than the expenditures. Based on the Implan Model, this suggests that expenditures in these 3 areas does not support the inter-industry relationships that create total income in Oregon to the extent that the other 4 mean expense categories do. (see Appendix A regarding I/O model).

Table 7: Mean owner-operator expenses and total income generated in Oregon per boat for the 1985-86 study year.

<u>Categories</u>	<u>Mean Expenses(\$)</u>	<u>Std. Dev.(\$)</u>	<u>Implan Coeff.</u>	<u>Total Income* Generated(\$)</u>
new equipment	63.51	144.52	.7876	50.02
repairs and maintenance	121.95	175.03	.7876	96.05
out of season storage	16.76	77.93	1.2337	20.68
insurance	81.23	101.29	1.1313	91.90
fuel and oil	117.99	136.50	.9021	106.44
fees for docking, moorage, access, launching, etc.	36.49	81.29	1.5522	56.64
rental of equip. needed for the boating activity	<u>.80</u>	6.71	1.9644	<u>1.58</u>
Total	473.93			423.31

*Total income= mean expense x implan coefficient

The second area of study looks at data of registered boater's expenses associated with travel to the recreation area, otherwise known as travel costs. Respondents were asked to estimate travel costs on a per-trip (user day) basis.

The largest expenses are in the areas of retail purchases and transportation, ie.(gasoline, parking, tolls, etc) incurred due to the boating trip. All expenditure data are shown in table 8 along with total income generated from expenditure data. Mean travel costs are \$124.81 per trip for overnight trips and \$95.29 per trip for single day outings. Total income generated from travel cost expenses is \$152.26 and \$110.58 per trip respectively (see equ. 4-7).

Table 8: Mean travel cost expenditures and total income generated in Oregon per trip for the 1985-86 study year.

<u>Categories</u>	<u>Mean Expense per Trip(\$)</u>	<u>Std. Dev.(\$)</u>	<u>Implan Coeff.</u>	<u>Total Income Generated(\$)</u>
a. retail trade (grocery, hard- ware, ice, etc)	51.69	95.23	1.2701	65.65
b. restaurants & taverns	6.78	17.16	1.6206	10.99
c. hotels & motels	12.19	35.22	1.6206	19.76
d. other lodging ie. private campgrounds	7.05	20.17	1.5522	10.94
e. travel expenses ie. gas for auto, tolls, parking, fees, etc.	36.82	62.75	.9218	33.94
f. state, fed. or local agencies, licenses, fees, permits, other forest service campgrounds	<u>10.28</u>	16.38	1.0682	<u>10.98</u>
total per trip _{on}	124.81			152.26
total per trip _{sd}	95.29			110.58

Total Income= mean X implan coefficient

There were 2.7 million boat days in Oregon during the 1985-86 year. Table 9 converts boat days into number of annual trips taken for each type of boating activity, and total number of trips per year. This information is more directly related to travel costs.

Tables 10 and 11 show total travel cost expenditures of both single outing and overnight trips taken during the study period to be \$227,350,000 and generating \$269,110,000 in total income.

Table 9: Percentage of annual participation of various recreational boating activities in the U.S.(22), percentage of participation in Oregon(7), and total number of trips per activity for 1985-86

<u>Activity</u>	<u>*Overnight Trips</u>	<u>@Single Day Outings</u>	<u>% of Total particip. in Oregon</u>	<u>#Trips per Activity</u>
Fishing	32%	68%	59.2%	1,291,507
Sailing	38%	62%	6.2%	129,233
Waterskiing	30%	70%	15.2%	336,528
Other boating	36%	64%	19.3%	<u>408,542</u>
total				2,165,810

* overnight trips which usually occur within 100-200 miles and on vacation trips, 500-1,000 miles or more from home.

@ trips which occur during a few available hrs. during the day, within 1-5 miles from home, and single day outings within 50 miles from home.

Table 10: Expenditures and total income for each boating activity per year for overnight (2-3day) trips during 1985-86

<u>Activity</u>	<u>% of Overnight Trips</u>	<u>Total Expenditures per Activity(\$)</u>	<u>Total Income Generated per Activity(\$)</u>
Fishing	413,282	51,581,726	62,926,317
Sailing	49,109	6,129,294	7,477,336
Waterskiing	100,958	12,600,568	15,371,865
other boating	<u>147,075</u>	<u>18,356,431</u>	<u>22,393,640</u>
total	710,424	88,668,019	108,170,000

total expenditures_{on} = E_{on} X T_{on} = \$124.81 per trip

total income_{on} = \$152.26 per trip

Table 11: Expenditures and total income for each boating activity per year for single day outings during 1985-86

<u>Activity</u>	<u># of Single day Outings</u>	<u>Total expenditures per Activity(\$)</u>	<u>Total Income Generated per Activity(\$)</u>
Fishing	878,225	83,686,060	97,114,121
Sailing	80,124	7,635,016	8,860,112
Waterskiing	235,570	22,447,465	26,049,331
other boating	<u>261,467</u>	<u>24,915,190</u>	<u>28,913,021</u>
total	1,455,386	138,680,000	160,940,000

total expenditures= $E_{sd} \times T_{sd}$ = \$95,29 per trip

total income= \$110.58 per trip

Conclusions regarding total expense figures and total income resulting from travel costs should be drawn with caution. Variables such as personal income, preferences, age, etc. are not included in travel cost calculations.

Conclusion

Recreational boating in Oregon resulted in over \$294 million in expenses during the 1985-86 study period, but more significant is the impact on the state economy of the \$329 million in total income generated from these expenses. Another value which is difficult to measure, but very significant, is the recreational value provided by boating in Oregon.

A factor of economic importance, not considered in this discussion due to lack of data, is out-of-state boat use in Oregon.

CONCLUSION

The marine recreation industry in Oregon provides for approximately 366 business establishments, 4099 jobs and issues over \$48 million dollars in payroll annually. Though these figures are projections based on a comparative study done in Washington state, they do provide a perspective of the industry's economic potential.

Survey data representing Oregon's registered boat owners shows yearly owner-operator expenses to be \$67 million and generating \$60 million in total income. Travel cost expenditures from the survey amount to over \$227 million for the 1985-86 boating year and generate over \$269 million in total income in the state.

The economic impact of non-registered boat use, based on an estimated 1 million annual non-registered boat user days(2), is calculated to be \$7.12 million in expenses resulting in \$9.6 million in total income in Oregon. For the study year of 1985-86, all recreational boating resulting in expenditures total \$301.12 million and generated \$338.6 million in total income.

The charterboat industry provides an important source of economic activity to Oregon, and particularly to the coastal regions. In 1985, destination (travel cost) expenses of charterboat customers totaled \$2.9 and generated \$4.5 million in total income.

Total expenditures data collected from 1985 and 1986 for the three recreational boating activities in this study totaled \$304.02 million and generated \$343.1 million in total income for the state in the form of salaries, wages and profits.

APPENDIX A

Input/Output Model

The following is a description of the input/output model used in this study and its application. The description is provided by Hans Ratke and Chris Carter of the Oregon Department of Fish and Wildlife:

Economic input/output models are used to estimate the impact of resource changes or to calculate the contributions of an industry to the local or regional economy. The basic premise of the input/output framework is that each purchases goods and services from other industries and primary factors of production. Therefore, the economic performance of each industry can be determined by changes in both final demand and the specific inter-industry relationships.

Input/output (I/O) models can be constructed using surveys of a regional economy. The disadvantages of the survey model approach are its complexity and high cost. Construction of a survey data I/O model involves obtaining data on the sectoral distribution of local purchases and sales to final demand of every sector of the economy, and on the imports purchased and exports sold by each sector.

Another approach uses secondary data to construct estimates of local economic activity. The model used for this report utilizes one of the best known secondary input/output models available. The U.S. Forest Service has developed a computer program called IMPLAN³ which can be used to construct county or multi-county I/O models for any region in the U.S. The regional

I/O models used by the Forest Service are derived from technical outputs by sectors. The computer program (IMPLAN) adjusts the national level data to fit the economic composition and estimated trade balance of a chosen region. Details are presented in the Forest Service IMPLAN users guide(18).

"New Money"

The extent to which money spent by local boating recreationalists is "new money" and not simply a diversion of money destined for other local purchases is not known and cannot be determined within the the scope of this study. It can be argued that if the recreational boaters did not have the opportunity for boating one would spend that portion of ones's income on other local goods or services. On the other hand, it can be also be argued that the boater recreationalist who does not have the opportunity to go boating in eastern Oregon will travel to other regions to enjoy this activity. The local area would therefore lose those expenditures. For this analysis we acknowledge the possible validity of both of these arguments. The impacts estimated from expenditure data should therefore be used with caution(18).



APPENDIX B

SURVEY COVER LETTER
AND
SURVEY FORM

State Marine Board
ADMINISTRATIVE OFFICE

3000 MARKET ST. N.E., No. 505, SALEM, OREGON 97310-0650 PHONE 378-8587

Dear Oregon Boater,

Recreational boaters create an important economic resource for Oregon by owning and operating a boat. Oregon studies have not focused upon the economic importance of the recreational boater in the state. There is however, a need for this information.

I am involved in a study with the State Marine Board and The Oregon State University Extension/Sea Grant program to evaluate the economic importance of marine recreation in Oregon. The proper use of this information will help improve allocation of scarce Sea Grant resources in implementing a new Marine Recreation sub-program. The State Marine Board will also use this study to allocate state funds for capital projects and in seeking additional funds for future projects.

Since you are an Oregon boater, we ask that you participate in the following survey regarding your boating activities. With the information you and other boaters in the state can provide we will be able to estimate the economic impact generated by recreational boaters. Each of your answers is important and will be held CONFIDENTIAL. The questionnaire is numbered only so we will not bother you again after you return it. When you have answered, your name will be erased from the mailing list and will never appear on the questionnaire.

The Survey Research Center at Oregon State University is helping collect your response. Please complete the enclosed questionnaire and return it to them in the enclosed postage-paid envelope.

Thank-you for your cooperation

Sincerely,

David Palazzi
Research Assistant, State Marine Board

OREGON RECREATIONAL BOATERS SURVEY

1. What type of boat do you own? If you own more than one boat just consider the boat you use the most.
(Please circle one number)

- 1 NO MOTOR OR SAIL
- 2 SAIL WITH NO MOTOR
- 3 SAIL WITH INBOARD MOTOR
- 4 SAIL WITH OUTBOARD MOTOR
- 5 MOTORIZED INBOARD
- 6 MOTORIZED OUTBOARD

- 1a. Please indicate the type of fuel that powers this boat. (Please circle one number)

- 1 DIESEL
- 2 GASOLINE
- 3 ELECTRIC

2. What is the length of your boat in feet?
(Please circle one number)

- 1 LESS THAN 12 FEET
- 2 13-16 FEET
- 3 17-20 FEET
- 4 21-25 FEET
- 5 26-30 FEET
- 6 31-60 FEET
- 7 GREATER THAN 60 FEET

3. Is your boat used most often in fresh water, saltwater or a combination of fresh and salt water? (Please circle one number)

- 1 FRESH WATER
- 2 SALT WATER
- 3 COMBINATION OF FRESH AND SALT WATER

4. On the average, how many miles do you travel from your home, one way, to use your boat? (Please circle one number)

- 1 LESS THAN 10 MILES
- 2 10-20 MILES
- 3 21-40 MILES
- 4 41-70 MILES
- 5 71-100 MILES
- 6 101-150 MILES
- 7 151-200 MILES
- 8 201-300 MILES
- 9 MORE THAN 300 MILES

(PLEASE TURN THE PAGE)

5. For which one of the following, do you use your boat most often? (Please circle one number)

- 1 FISHING
- 2 WATERSKIING
- 3 DAY CRUISING OR SAILING
- 4 OVERNIGHT CRUISING
- 5 OTHER (please specify)

6. What is your best estimate of the total number of days you used your boat between September 1st, 1985 and August 31st, 1986? (Please circle one number)

- 1 LESS THAN 7 DAYS
- 2 7-13 DAYS
- 3 14-20 DAYS
- 4 21-27 DAYS
- 5 28-35 DAYS
- 6 36-42 DAYS
- 7 43-55 DAYS
- 8 MORE THAN 55 DAYS

7. What is your best estimate of the total amount you spent from September 1st, 1985 through August 31st, 1986 for each of the following expenses related directly to owning and operating a boat? (Please fill in the appropriate dollar amount in the space provided)

TOTAL
AMOUNT SPENT

- a. New expenses \$
- b. Repairs and maintenance \$
- c. Out of season storage \$
- d. Insurance \$
- e. Fuel and oil \$
- f. Fees for docking, moorage, launching,
access, etc. \$
- g. Rental of equipment needed for your
boating activity. \$

(PLEASE GO TO THE NEXT PAGE)

8. Now, for those expenses listed below, please estimate the average cost per trip.

AVERAGE
AMOUNT SPENT
PER TRIP

- a. Fuel and oil \$
- b. Fees for docking, moorage,
launching, access, etc. \$
- c. Rental of equipment needed
for your boating activity. \$

We'd also like to know your best estimate of other expenses associated with taking a boating trip. These expenses should be thought of as separate from the expenses of operating and owning a boat that were asked in question #7 and #8.

9. Please estimate how much you usually spend per trip for the following. Also indicate whether your expense is usually money spent in the area you live, or the area where you boat. (Please circle one number)

AVERAGE AMOUNT SPENT <u>PER TRIP</u>	Is this spent: IN AREA <u>YOU LIVE</u>	IN AREA <u>YOU BOAT</u>
--	--	----------------------------

- | | | |
|--|---|---|
| a. Retail trade ie.(grocery,
hardware, clothing, drug,
appliance, gifts, ice,
sundries, etc.). \$ | 1 | 2 |
| b. Restaurants & taverns \$ | 1 | 2 |
| c. Hotels & motels \$ | 1 | 2 |
| d. Other lodging ie
private campgrounds \$ | 1 | 2 |
| e. State, federal or local
agencies, liscenses,
fees, permits for state
park, other forest service
campgrounds. \$ | 1 | 2 |
| f. Travel expenses ie.(gas
for auto, tolls, parking
fees, etc.). \$ | 1 | 2 |

(PLEASE TURN THE PAGE)

10. What is the age of your boat in years? (Please circle one number)

- 1 LESS THAN 5 YEARS
- 2 5-10 YEARS
- 3 MORE THAN 10 YEARS

11. Do you expect to replace your boat: (Please circle one number)

- 1 WITHIN 3 YEARS
- 2 WITHIN 4-5 YEARS
- 3 WITHIN 6-10 YEARS
- 4 MORE THAN 10 YEARS

12. In what city, county, state do live in?

CITY:

COUNTY:

STATE:

13. Is there anything you would like to say about recreational boating in Oregon?

(THANK-YOU FOR COOPERATING)

REFERENCES

- 1/ ECONOMIC VALUES AND PRODUCT SHIFT ON THE ROGUE: A STUDY ON NON-COMMERCIAL WHITEWATER RECREATION, Johnson, Shelby, Bregenzer, U.S. Department of the Interior, 1986.
- 2/ Personal contact with Paul Donheffner, Director of the Oregon State Marine Board.
- 3/ River Information from contact with Ken Vines of the Siskiyou National Forest, Gold Beach Ranger District.
- 4/ Snake River Use Report 1985, Taylor and Cole, Wallowa-Whitman National Forest, Lewiston Office-Idaho.
- 5/ NATIONAL WILD RIVER MANAGEMENT PLAN-OWYHEE RIVER, U.S. Department of the Interior, Vale District- Oregon, 1986.
- 6/ DESCHUTES RIVER 1982 SCENIC WATERWAY BOATER SURVEY, Eixenberger, Oregon State Parks and Recreation Division.
- 7/ 1985 STATEWIDE BOATING SURVEY, Oregon State Marine Board.
- 8/ Personal contact with Siskiyou National Forest-Gold Beach Ranger District.
- 9/ Marine Recreational Fishery Statistics Survey, Pacific Coast, 1979-1985, U.S. Department of Commerce, NOAA, NMFS, Washington D.C.
- 10/ Characteristics and Expenditure Patterns of Oregon Charter Boat Anglers, Larson, Dept. of Agricultural and Resource Economics, Oregon State University, final report to the Pacific Fisheries Management Council, 1976.
- 11/ Progress Report on the Economic Aspects of the Recreational/Commercial Allocation of coho Salmon in the Ocean Fisheries, Oregon Dept. of Fish and Wildlife, 1985.
- 12/ THE OREGON OCEAN SALMON FISHERIES, McQueen, Osis, Lewis, Loomis, Scarnecchia, 1979-1985.
- 13/ Information from Rebecca Johnson, Dept. of Resource Recreation Management, Oregon State University.
- 14/ SURVEY OF CHARTER-BOAT CUSTOMERS, Barbara Katz, Graduate Assistant, Extension Oceanography, Oregon State University, 1976.
- 15/ AN ECONOMIC ANALYSIS OF WASHINGTON OCEAN RECREATIONAL SALMON FISHING WITH PARTICULAR EMPHASIS ON THE ROLE PLAYED BY THE CHARTER VESSEL INDUSTRY, Crutchfield and Schelle, 1979.
- 16/ ECONOMICS OF MARINE RECREATION IN WASHINGTON STATE-1977, Beyers, Ellis, Stokes, Brown, Coastal Resources Program,

17/ STATE FISHING AND BOATING STATISTICS, Sport Fish Restoration American Fisheries Society, 1986.

18/ SELECTED ECONOMIC ASPECTS OF COMMERCIAL/RECREATIONAL ALLOCATION OF WILLAMETTE RIVER SPRING CHINOOK, Preliminary Staff Report, Oregon Dept. of Fish and Wildlife, 1986.

19/ BOATING MEANS BUSINESS IN WASHINGTON, based on findings in the study entitled "Recreational Marine boating Industry 1984 Economic Impact Study" for the Northwest Marine Trade Association by the Gilmore Research Group, Sept. 1984.

20/ ECONOMIC ASSESSMENT MODELS: SPECIAL EMPHASIS ON THE FISHING INDUSTRY AND PACIFIC COAST COMMUNITIES, Ratke, 1986.

21/ ATLAS OF OREGON LAKES, Johnson, Petersen, Lyman, Seen, Newhaus, Portland State University.

22/ RECREATION ECONOMIC DECISIONS: Comparing Benefits and Costs, Walsh, R., Colorado St. University, Copyright 1986.