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Economic Impacts from Spending by Community Dock Owners at Pomme de Terre Lake

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Abstract: This report documents the local economic impacts of users of community-owned docks at Pomme de Terre Lake, located in south-central Missouri. This economic assessment is based on the results of a 1999 survey of a sample of Pomme de Terre Lake community dock owners. Spending estimates are adjusted to 2004 dollars. The economic impacts estimated for Pomme de Terre Lake are useful for accountability purposes, lake support, and explaining the role of the lake in the region's economy. This report demonstrates how the survey results can be used to evaluate management alternatives and strategies and to conduct sensitivity analyses.

Contents

Figures and Tables

Figures

Tables

Summary

This report documents the local economic impacts of owners and guests of community-owned docks at Pomme de Terre Lake, located in south-central Missouri and situated within the U.S. Army Corps of Engineers District, Kansas City. This economic assessment is based on the results of a 1999 survey of a sample of Pomme de Terre Lake dock owners. Results are adjusted to 2004 dollars.

Known as the "Gem of the Ozarks," Pomme de Terre Lake was built for flood control along the Missouri River Basin. At summer pool, Pomme de Terre Lake encompasses 7,800 surface acres and has 113 miles of shoreline. The project itself includes 10 campgrounds (six managed by the U.S. Army Corps of Engineers (USACE)), four marinas, and two state parks, providing recreation opportunities such as fishing, camping, hunting, and boating. Total tourism activity in the four-county region surrounding Pomme de Terre Lake is $47 million, or 3 percent of all economic activity in that region.

Access to large bodies of water and their related resources, including scenic views, makes Corps of Engineers lakes desirable for private residential areas and their associated community-owned docks. The Corps of Engineers permitted 220 community-owned docks at Pomme de Terre Lake in 1999. The estimated 19,442 party trips taken by community dock owners/users in 1999 accounted for 3.4 percent of total recreation usage at the lake.

In 1999, owners/users of community-owned docks spent significant amounts of money in the local area, including $2.9 million on trip-related items (gasoline, meals, lodging, etc.) and $300,000 on new boats, dock maintenance, insurance, and other annual services. Together, this $3.2 million in spending in the four-county region surrounding Pomme de Terre Lake provides the economic base for $1.7 million in direct sales, $590,000 in direct personal income (wages and salaries) for local residents, and 45 jobs in area tourism-related businesses. The $1.7 million in direct sales is about 3.7 percent of the total of all tourism activity ($47 million) (sales have been price-inflated for this computation). In 2004 dollars, these figures become $3.5 million in trip-related

expenditures and $0.4 million in new boats and annual expenses. The added economic effects—in 2004 dollars—are $2.1 million in direct sales and $0.71 million in direct personal income.

The figures above are direct effects only of the $3.2 million in dock owner/user spending in 1999. Another $700,000 in sales ($840,000 in sales in 2004 dollars) is generated through secondary effects, as dock owner/user spending circulates through the local economy. While the direct effects accrue primarily to the retail trade sector, restaurants, manufacturing (mainly because of the purchases of new boats locally), and services, secondary effects benefit a wide range of local businesses. The tourism sales multiplier for the region is 1.40, indicating $0.40 in secondary sales for every dollar of direct sales.

Visitor segmentation is useful for planning purposes. This report provides results for the full sample of community dock owners/users and for dock owner segments that are useful for planning purposes: day use versus overnight stay dock owners, and dock owners in two boat size classes. Day users comprised 38 percent of the sample of community dock users, while 62 percent spent at least one night in the area on their last trip. In terms of total spending in the local region, day users of community docks contributed 36 percent and overnight stay dock users, 64 percent. Nearly 81 percent of the sample had small-sized boats (20 ft and smaller), while 19 percent were medium (21 to 30 ft). Dock users with small length boats contributed 76 percent of total spending locally, and those with larger boats contributed 24 percent.

The economic impacts estimated for Pomme de Terre Lake are useful for accountability purposes, lake support, and explaining the role of the lake in the region's economy. This report demonstrates how the survey results can also be used to evaluate management alternatives and strategies and to conduct sensitivity analyses.

Preface

The work reported herein was undertaken for the "Measuring the Economic Effects of Boat Dock Permit and Marina Slip Holders" work unit of the Recreation Management Support Program (RMSP). The RMSP is funded by the Operations and Maintenance (O&M) General Appropriation and encompasses activities previously conducted through the Recreation Research Program and the Natural Resources Technical Support Program. The U.S. Army Engineer Research and Development Center (ERDC) provides program management support for execution of approved RMSP activities. The RMSP is managed at ERDC by Scott Jackson, Environmental Laboratory (EL). Kathleen Perales has served as Principal Investigator of the work unit since its creation in 1995.

This report documents a joint effort between ERDC and Michigan State University under contract with the United States Department of Agriculture to conduct lake level investigations on the economic spending patterns of visitors to communities, private boat docks, and marinas on Corps of Engineers water resources projects.

A Recreation Leadership Advisory Team (RLAT) provides oversight for the RMSP. The team has representatives from each Major Subordinate Command/Regional Office within the Corps of Engineers. In addition, four district offices and four project offices are represented. Donald Dunwoody, RLAT representative from the Northwestern Division, served as proponent for this work unit.

This report was prepared by Benoni Amsden and Dr. Dennis Propst of Michigan State University under USDA contract. Dr. Wen-Huei Chang, ERDC, conducted all economic impact analyses. Dr. LiChu Lee, ERDC, served to verify all data elements. Richard Kasul, ERDC, and Kathleen Perales, ERDC, were responsible for the design, instrumentation, sampling frame, and contract oversight. This work was conducted under the general supervision of Scott Jackson, Acting Chief, Ecological Resources Branch (ERB); Dr. David Tazik, Chief, Ecosystem Evaluation and Engineering Division (EEED); and Dr. Beth Fleming, Director, EL.

Peer Reviewers of this report were Bradley Myers, Supervisory Operations Project Manager, Pomme de Terre Lake, USACE, and Dennis Wallace, Natural Resource Management Specialist, Pomme de Terre Lake, USACE.

COL Richard B. Jenkins was Commander and Executive Director of ERDC. Dr. James R. Houston was Director.

Foreword

This report represents one of nine market segmentation studies conducted at Corps of Engineer (Corps) water resources projects (lakes). The economic impact studies were conducted in 1999 and the information has been converted to 2004 dollars. It should be noted that no single study provides a complete portrait of any lake's boating market. The studies were limited to three market segments, marina slip renters, private dock, and community dock owners. These three groups do not reflect the spectrum of boating usage or market segments at any one of the lakes studied. The primary purpose of the studies was to obtain an understanding of these three market segments.

In addition to recreation usage, each of these segments is handled under different real estate instruments or shoreline use permit instruments. Marina slips (one boat per slip) are handled by the Corps through a lease agreement with the marina operator. Individual marina operators (lease holders) were involved in the development of contact lists for individual slip renters. Private dock owners (one dock permit, one household, potentially multiple boats) have a direct shoreline-use permit with the Corps and pay a fee. Community docks (one dock permit, multiple households, one boat per slip, a single household may hold multiple slips) are not tied to a single household but to a group of homes within a community. This permit type has a single point of contact (e.g. homeowner association). Typically the fee for a private or community dock permit is between $30 and $35 for 5 years. Additional administrative fees may also be collected to recover the actual cost of administration inspections and processing of permits. This cost is variable.

The lakes and market segments studied were:

- Table Rock Lake, community dock
- Rough River Lake, community dock
- Pomme de Terre Lake, community dock
- Harry S. Truman Dam and Reservoir, marina
- Raystown Lake, marina
- Hartwell Lake, private dock

- Lake Barkley, private dock
- Lake Sidney Lanier, private dock and marina

Each of the lakes studied has a variety of boating and water usage issues that were not a part of this economic impact evaluation. This economic impact assessed recreation visitor trip spending and annual durable goods-related expenditures. In order to provide managers with a tool to assess the effects of management, this report outlined the spending categories of boat owners and visitors associated with the recreational trip under study. Examples are provided illustrating changes in the number of boat trips and the changes that could be seen in economic impacts. These are provided as illustrations. The same illustration can be used by managers to help assess low water conditions and boating trips lost, to get a sense of the change in economic impacts. This study did not include the impacts of additional boats over time to determine changes in use, water quality, social or environmental impacts or the like. This study did not include the changes in use based on the increases in gasoline prices or technological changes in boating products. These are elements outside the study parameters and would serve as useful points of departure for further research. These reports should be evaluated in part with the larger boating usage that occurs at the individual lake and the changes that have occurred over time (including expenditure changes such as the increasing cost of gasoline). They serve in part to document a baseline, which in part justifies publication at this late date.

For example, at a single lake, boating utilization should be evaluated within a larger context of the multipurpose mission of each of the lakes. To get an understanding of historical use and issues at Corps of Engineers facilities, the following documents have been recommended for further study: national and state regulations, project master-planning documents, shoreline management plans, environmental assessments, and other local studies. Consult the local project manager for an assessment of other documents that should be considered in addition to the ones provided.

1 Introduction

This report documents the local economic impacts of users of community-owned docks[1] at Pomme de Terre Lake, located in south-central Missouri. These estimates are then adjusted to 2004 dollars. Economic impacts are measured as direct and secondary sales, income, and jobs in the local area resulting from spending by those who use community-owned docks. The economic estimates are produced using the Recreation Economic Assessment System (REAS) (Chang et al. 2001). Three major inputs to the model are:

- Number of visits broken down into day use/overnight segments and two boat size segments
- Spending averages for each segment
- Economic multipliers for the local region

Inputs are derived from results contained in this report, the Natural Resource Management System (NRMS) database (U.S. Army Corps of Engineers (USACE) 2006c), and IMPLAN input-output modeling software (Minnesota IMPLAN Group 1996). The REAS model (USACE 2006a) provides a spreadsheet template that combines dock user visitation data, spending, and regional multipliers to compute changes in sales, personal income, jobs, and value added in the region.

Pomme de Terre Lake

Known as the "Gem of the Ozarks," Pomme de Terre Lake was built at a cost of nearly $15 million between 1957 and 1961 as part of a flood control plan for the Missouri River Basin (Figure 1). At summer pool, Pomme de Terre Lake encompasses 7,800 surface acres and has 113 miles of shoreline (USACE 2006b). The dam is 7,240 ft long and stands 155 ft above the

[1] Community Docks: Community docks are privately owned, multi-slip facilities shared and used by several groups of people. These docks should be permitted under the authority of ER 1130-2-406 (USACE 1999). Do not include commercial docks or marinas.
Private Docks: A private dock is one that serves only one property owner. These docks should be permitted under the authority of ER 1130-2-406 (USACE 1999). Do not include commercial docks or marinas. (USACE 2006c).

streambed. The project itself includes 10 campgrounds (six managed by USACE), four marinas, and two state parks, providing recreation opportunities such as fishing, camping, hunting, and boating.

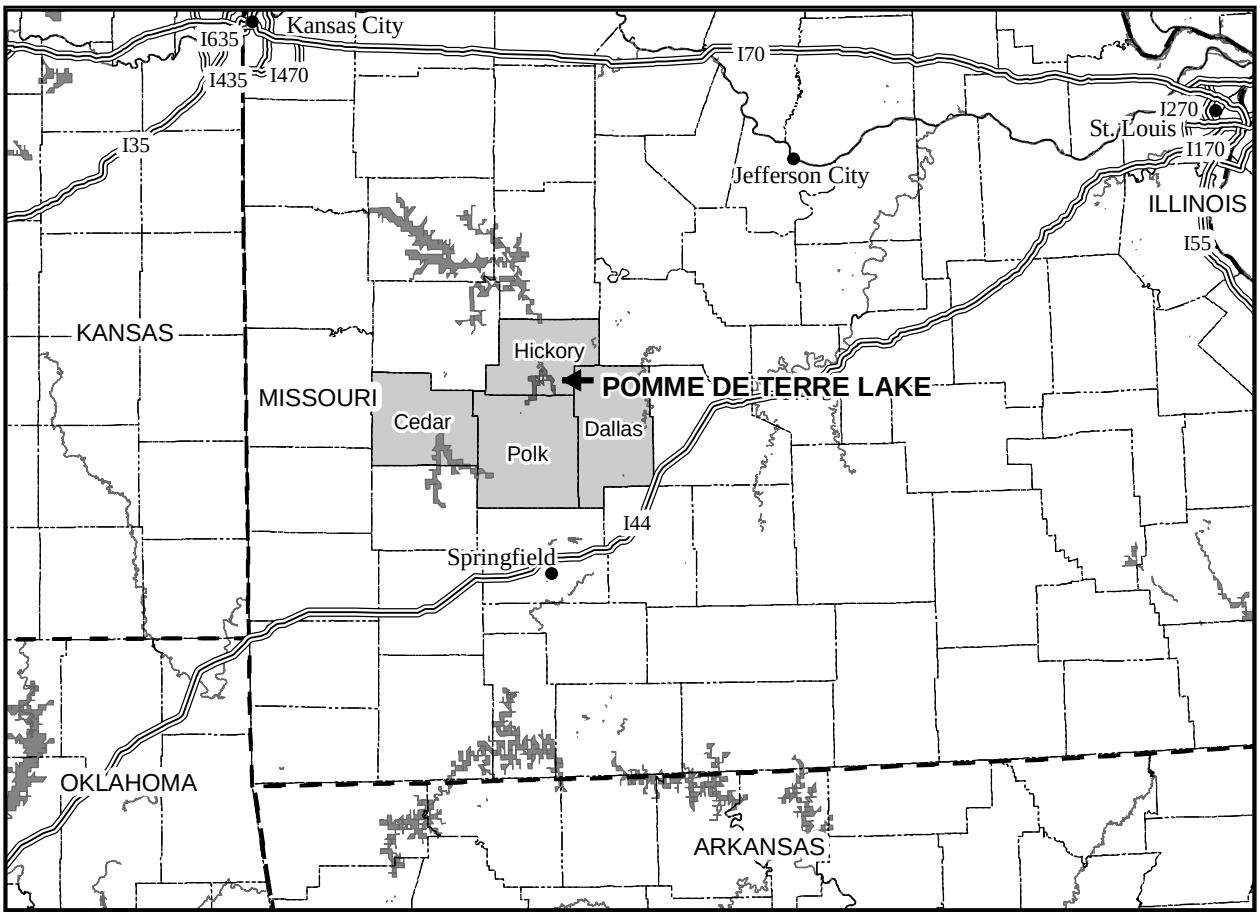

Figure 1. Pomme de Terre Lake and the surrounding region.

Pomme de Terre Lake hosted just over 1.7 million recreation visits in 1999, 95 percent of which were by day users (Table 1, top row). Non-boaters accounted for nearly 900,000 day use visits, and boaters another 728,000. Since visitor spending and economic impacts in this report are based on party-days or nights, these figures are shown on the bottom row of Table 1. In 1999, there were roughly 676,000 party-days of recreation use.

Table 1. Summary of recreation visits to Pomme de Terre Lake, 1999

Parameter	Camper[1]		Day User[2]		Other Overnight[3]		Total
	Boat	Non-Boat	Boat	Non-Boat	Boat	Non-Boat	
Visits (Person-Trips, 1,000s)	15.3	18.7	728.0	889.8	21.8	26.7	1700.2
Average Length of Stay (Days)	4.2	3.8	-	-	2.4	3.0	—
Average Party Size	3.5	2.8	2.8	2.8	3.3	2.5	—
Visits (Party-Days, 1,000s)	18.4	25.8	261.5	321.6	16.2	32.4	675.7

[1] Number of campers in *party days* was derived from the 1998 Natural Resource Management System (NRMS) (USACE 2006c), CUR_FEE database (the last year that camper revenue data is available) by dividing total camping revenue by an average of $8.00 per party day camping fee and expanding by the number of non-Corps managed campsites. The number of camper party-days was then adjusted to 1999 by multiplying the ratio of 1999 visits to 1998 visits from the PR_USE database. Then, party-days were converted to person-trips by the following formula: Number of campers in *person-trips* = number of party-days times average party size / average length of stay. Percent of boaters was obtained from the NRMS, PR_USE database. Party size and length of stay figures are based on the results of a national survey (Chang et al. 2003).

[2] Number of day users in *person-trips* was derived from the 1999 NRMS (USACE 2006c), PR_USE database by subtracting camper visits from total visits. Then, number of day users in *party-days* = number of person-trips times average length of stay / average party size. Percent of boaters was obtained from NRMS, PR_USE database.

[3] Assumes that 3 percent of day users stayed overnight in lodging accommodations outside of project boundaries.

The local region

Four counties in Missouri (Cedar, Dallas, Hickory and Polk) comprise the local economic impact study region for Pomme de Terre Lake. According to the U.S. Census Bureau (2006), the population of this area is 65,326 (2000) or 67,709 (2004 estimate). The average median household income of these counties is $27,261 (1999), compared to the statewide median of $37,934 (1999).

The Construction, Other Services, and F.I.R.E. (finance, insurance, and real estate) sectors are the principal economic base of the area, combining to account for 42 percent of sales, 34 percent of jobs, and 34 percent of employee wages in the four-county region (Table 2). Note, however, that the economic base of the region is quite diverse with sizable contributions made by the Agriculture, Forestry, and Fisheries sector as well as the Food Processing, Transportation, Retail, and Government sectors. Total tourism sales in the local region are estimated at $47 million (Table 2: 100 percent

of hotel/motel + 100 percent of amusement & recreation + 25 percent of restaurant + 25 percent of retail sales. Thus, tourism accounts for 2-3 percent of sales in the region and 5-6 percent of jobs.[1] In 2000, hotel sales in the area were $7 million, supporting 212 jobs in the hotels and lodging sector (Minnesota IMPLAN Group 2000).

Table 2. Economic activity in the Pomme de Terre Lake region, 2000

Industry	Output ($ millions)	Employment	Employee Compensation ($ millions)	Value Added ($ millions)	% Output
Agriculture, Forestry, Fish	168.82	5,110.07	12.75	48.29	10.0%
Mining	23.71	78.60	0.95	3.17	1.4%
Construction	204.13	2,159.13	35.56	58.28	12.1%
Food Processing	132.61	394.35	12.39	30.66	7.9%
Apparel	36.16	369.78	5.64	6.75	2.2%
Manufacturing	99.46	913.78	21.43	32.17	5.9%
Sporting Goods	0.65	5.70	0.13	0.26	0.0%
Auto Parts and Access	1.92	9.20	0.28	0.39	0.1%
Transportation and Communication	102.96	1,014.10	21.62	41.57	6.1%
Other Services	257.15	5,933.47	95.96	151.51	15.3%
Wholesale Trade	63.58	950.90	24.09	43.03	3.8%
Retail	116.82	3,216.09	49.29	94.06	6.9%
Eating & Drinking	34.96	1,231.40	10.45	15.61	2.1%
Finance, Insurance & Real Estate	249.84	1,407.80	19.55	176.95	14.9%
Hotels and Lodging Places	7.22	212.10	2.00	3.86	0.4%
Auto Services	22.70	364.50	5.10	11.53	1.3%
Other Amusements	6.50	185.91	1.44	2.25	0.4%
Amusement and Rec Services	1.92	97.40	0.51	1.11	0.1%
Gov't and Other	150.90	4,237.20	119.13	137.67	9.0%
Total	**1,682.02**	**27,891.47**	**438.28**	**859.09**	**100.0%**

Source: IMPLAN, 2000 county data files for the four-county region.

[1] An independent estimate of jobs attributable to tourism in this region is 10 percent in 2000. (MU – Tourism Economics Research Initiative "Missouri Division of Tourism Report, appendix" Missouri Economic Research and Information Center, *http://missourieconomy.org/pdfs/eify03.pdf* (Accessed March 30, 2006).

2 Community Dock Owner Survey, 1998-99

The Ecological Resources Branch (ERB) of the U.S. Army Engineer Research and Development Center (ERDC) surveyed community dock owners at Table Rock Lake (Missouri/Arkansas), Rough River Lake (Kentucky), and Pomme de Terre Lake (Missouri). The ERB staff designed the survey, constructed the instrument, and provided the frame (a list of community dock owners) to the Institution for Public Policy and Social Research (IPPSR) at Michigan State University (MSU) for sampling. IPPSR obtained additional approval through MSU's Human Subjects Office. The Office of Management and Budget authorized this study (Institute for Water Resources (IWR) 2006).

Working with the project managers, the ERB obtained lists of community dock owners. Once the contact information was received, MSU IPPSR staff sent a pre-contact mailer to the dock owners in the sample. This information packet included a description of the study and a FAQ sheet for the dock owner. In addition, the dock owners received a worksheet outlining the spending categories and other information regarding the upcoming telephone interview. Calls were made to dock owners in the randomly ordered sequence until a quota of interviews was completed. In this manner, 371 randomly selected community dock owners were interviewed at Pomme de Terre Lake.

Spending and trip information were obtained through a Computer Assisted Telephone Interview (CATI) survey conducted by MSU IPPSR staff. Dock owners were asked to document the number of boating trips on the lake that originated from their dock and to report trip spending associated with their most recent trip. Spending information was collected only for the most recent trip to reduce recall bias and avoid selective recall in which they may report spending on the most expensive trips. The telephone interview lasted an average of 15 minutes. Other information needed to estimate parameters for this population was also acquired during the interview.

3 Results

Results are provided in four parts: respondent profiles (including socio-economic characteristics); recreation trip characteristics (amount of boat use, recreation activities and boat type); per-trip and annual spending; and the economic impacts of community dock owners'/users' spending on the local region surrounding Pomme de Terre Lake.

Respondent profiles

The general characteristics of community dock owners as individuals and by households at Pomme de Terre Lake are shown in Figures 2 to 11. Among the respondents, 69 percent were male and 80 percent were aged 46 and above (Figures 2 and 3). The average age was 57 (range = 25 to 83 years old). The most frequent age (mode) was 52. Fifty-three percent of community dock owners had at least some college education and 26 percent had college degrees or more. Six percent of Pomme de Terre's community dock owners held graduate degrees (Figure 4). Almost all of the owners interviewed were white (Figure 5). However, 5 percent were American Indian, a significantly higher percentage than at other Corps projects that were part of the survey. All community dock slips have registered boats; surveys may or may not have been conducted with the registered boat owner. Ninety-six percent of the respondents were also the registered boat owner at the time of the interview (Figure 6).

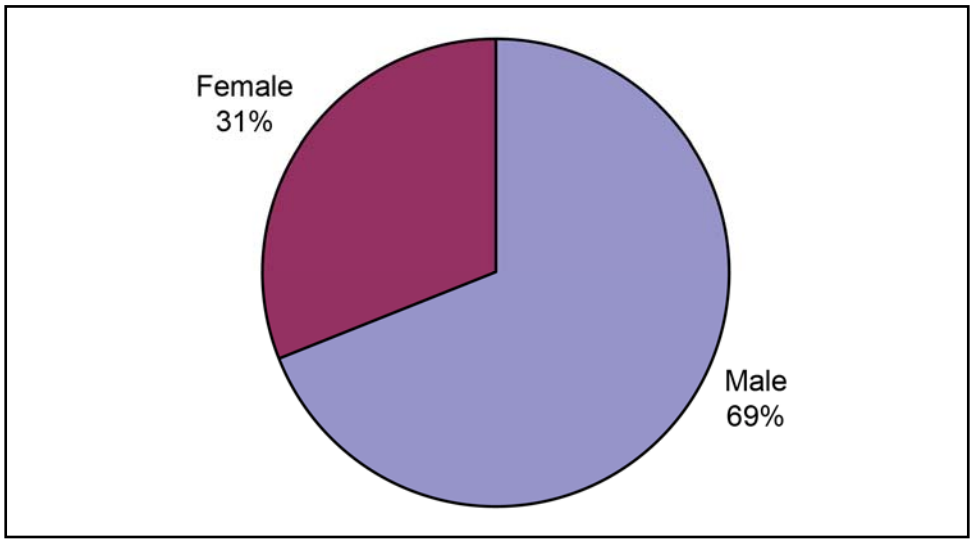

Figure 2. Gender of community dock owners at Pomme de Terre Lake, 1999 (N=371).

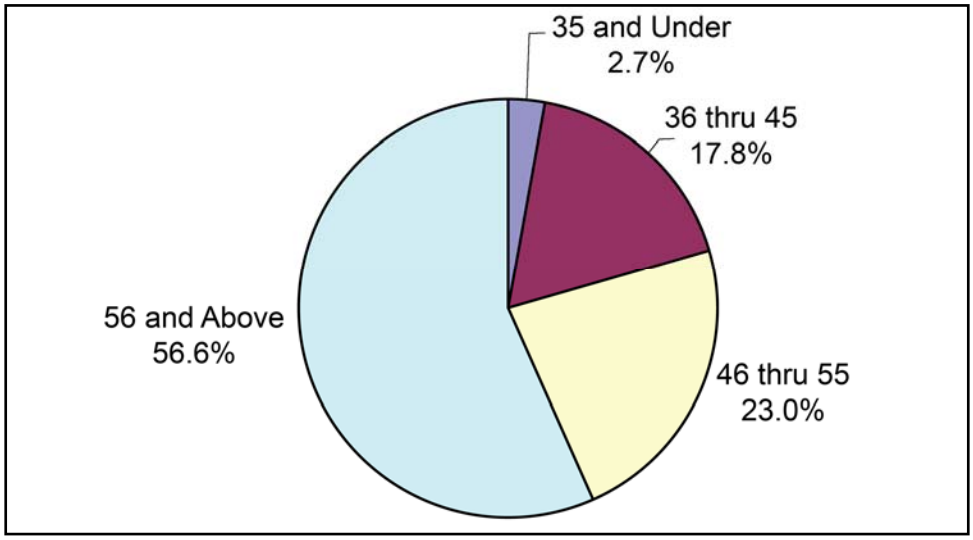

Figure 3. Age of community dock owners at Pomme de Terre Lake, 1999 (N=366).

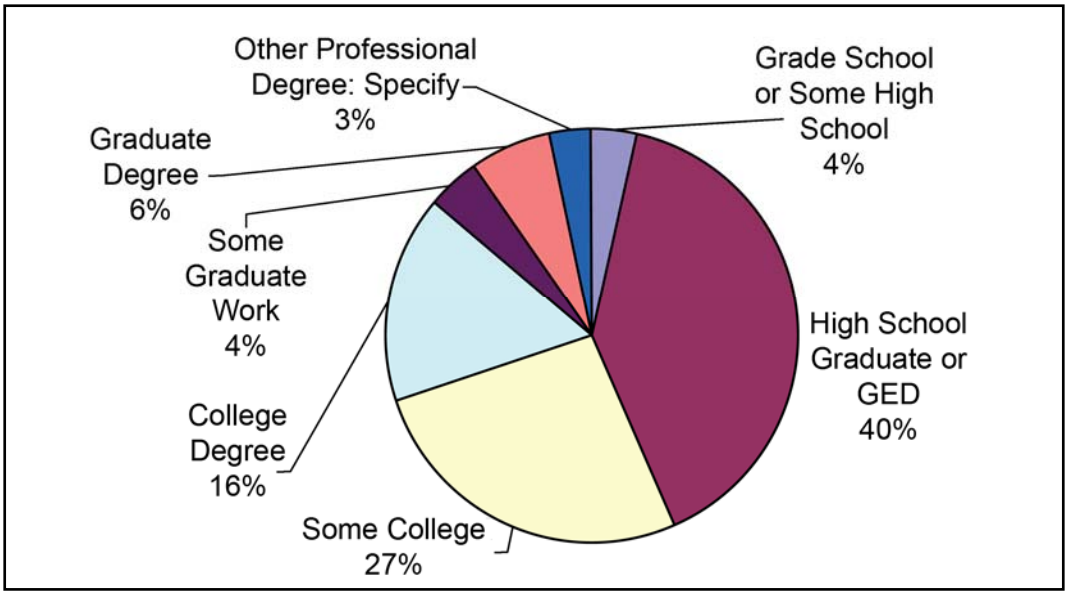

Figure 4. Education of community dock owners at Pomme de Terre Lake, 1999 (N=361).

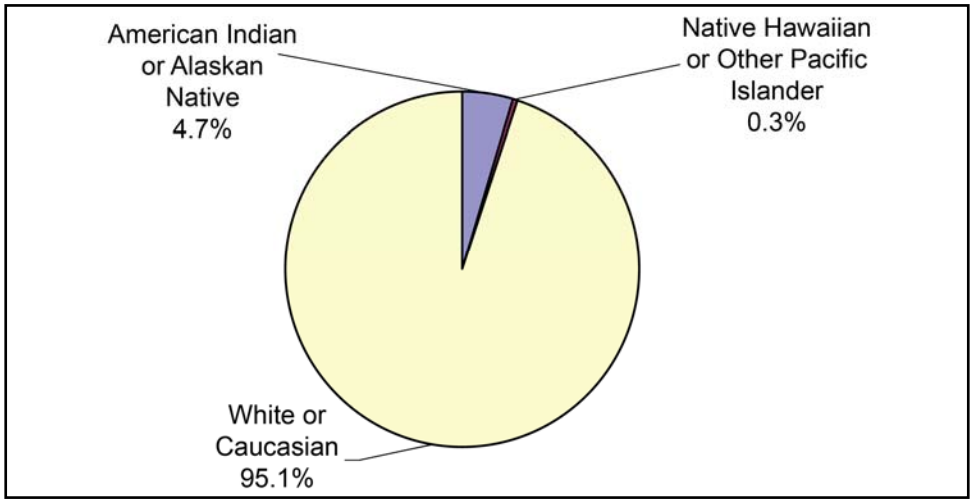

Figure 5. Race of community dock owners at Pomme de Terre Lake, 1999 (N=364) (about 1 percent were Hispanic or Latino origin).

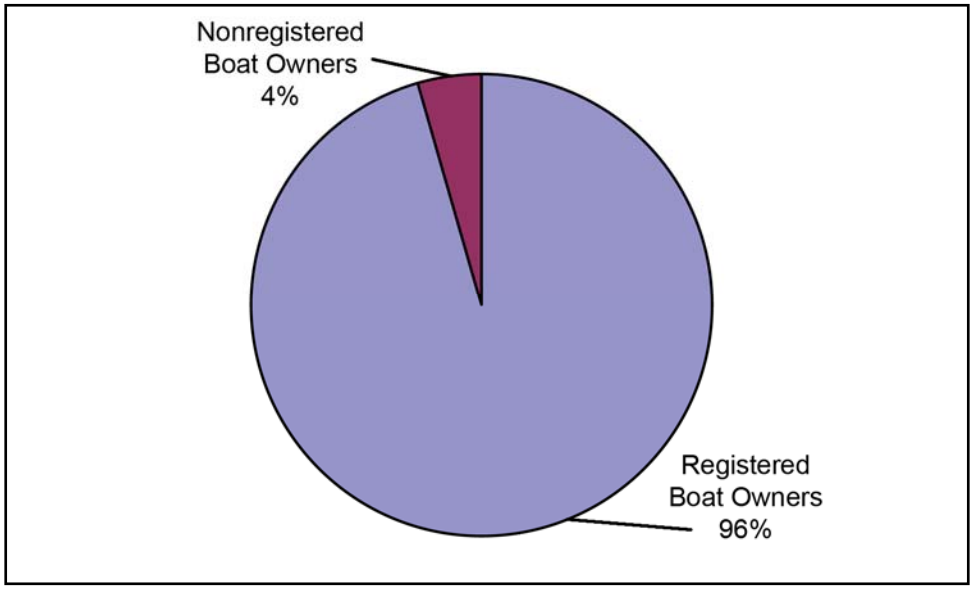

Figure 6. Surveys conducted with registered boat owners at Pomme de Terre Lake community docks, 1999 (N=370).

Unlike other Corps projects in the survey, there were a larger proportion of lower household incomes. Thirty-seven percent of the community dock owners had annual household incomes of less than $40,000. Twenty-five percent of the owners had annual household incomes between $40,000 and $60,000, and only 38 percent reported incomes of over $60,000 (Figure 7). More than half of the owners lived in a household with two or less people and 75 percent did not have any children under age 18 in their households (Figures 8 and 9). The average number of individuals per household was 2.7. The most frequent household size (mode) was 2.

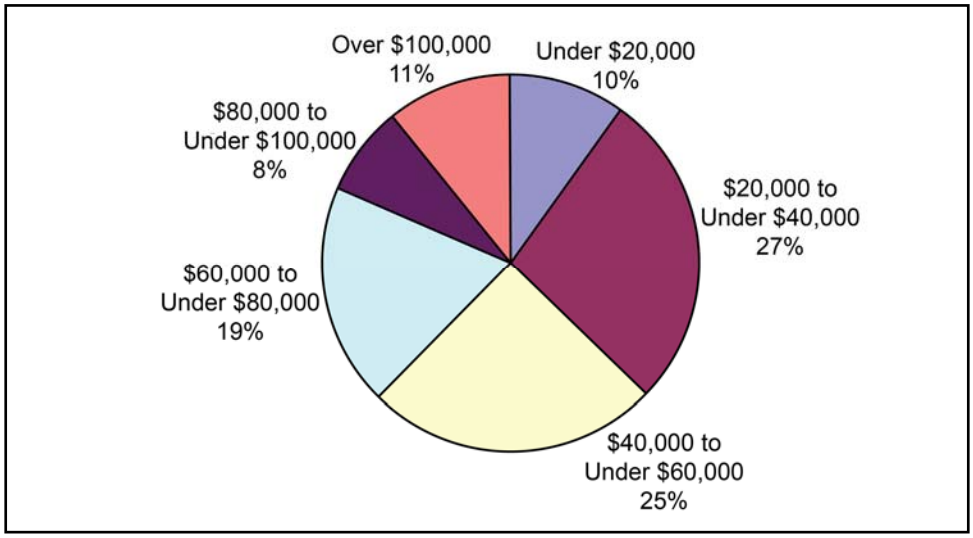

Figure 7. Household income of community dock owners at Pomme de Terre Lake, 1999 (N=320).

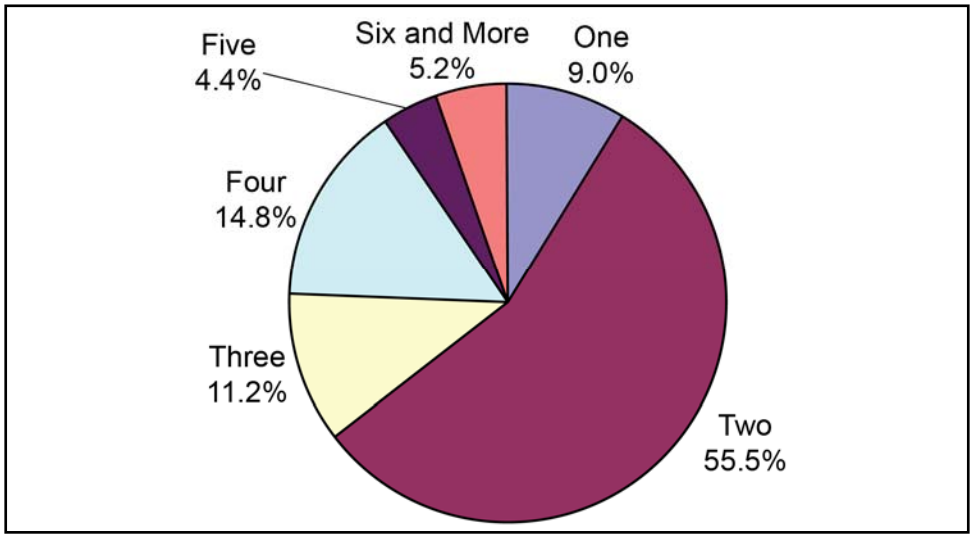

Figure 8. Household size of community dock owners at Pomme de Terre Lake, 1999 (N=366).

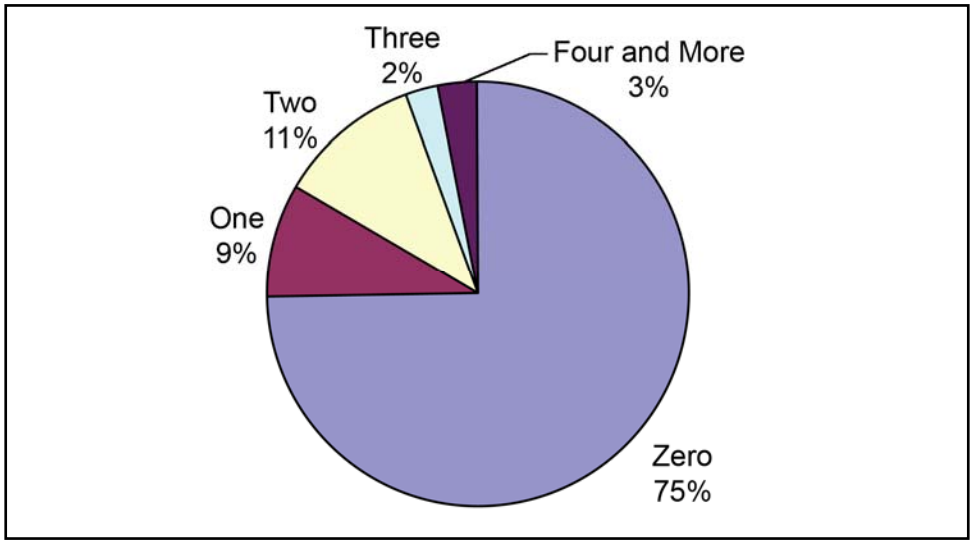

Figure 9. Number of people under 18 in households of community dock owners at Pomme de Terre Lake, 1999 (N=368).

The permanent residences of 52 percent of the community dock owners were within 30 miles of the community dock (Figure 10). The average distance from the dock owner's permanent home to the community dock was 71 miles. Sixty-three percent of the dock owners owned a seasonal home within 30 miles of the dock (Figure 11).

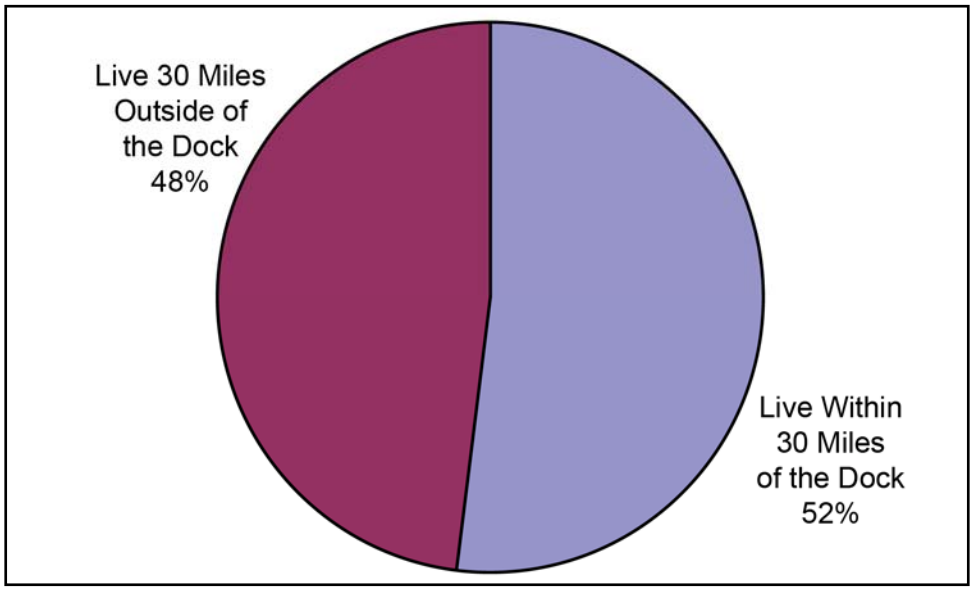

Figure 10. Permanent residence of community dock owners at Pomme de Terre Lake, 1999 (N=369).

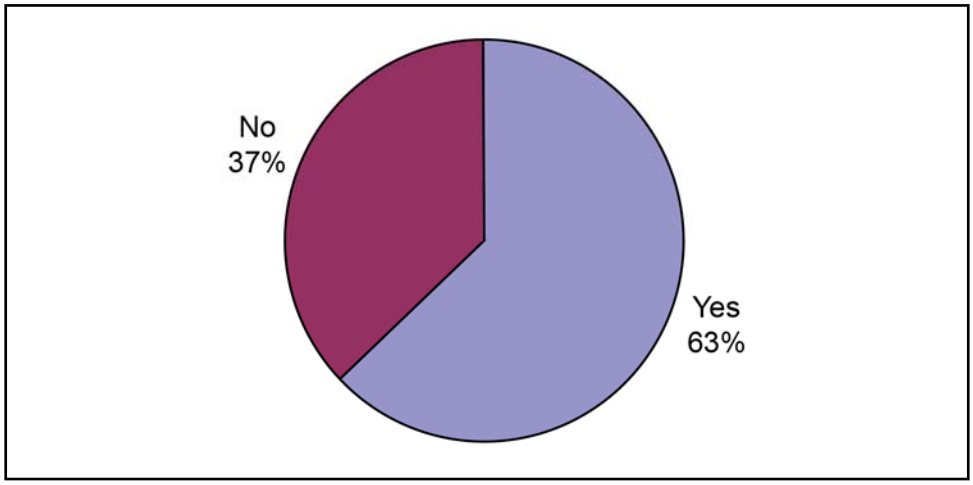

Figure 11. Seasonal home ownership of community dock owners at Pomme de Terre Lake, 1999 (N=368).

Boating characteristics

Respondents had been boating on Pomme de Terre Lake for an average of 18 years (range = 52 years). On average, they and their guests (owners/users) took 46.7 boating trips the previous year from September 1, 1998 to August 31, 1999[1]. Half of them made 20 or fewer trips and 25 percent made 41.5 or more trips in the same period (Table 3). The majority of trips were taken in the summer (19 trips), followed by spring (12 trips). On average, the fewest number of trips were made in the winter (about four trips per dock owner). When asked to compare the number of boating trips made last year to the previous three years, 64 percent of the dock owners felt that they had made about the same number of boating trips. Twelve percent said they had taken more trips last year than in the previous three years, and 24 percent said they had taken fewer trips (Figure 12).

[1] Fifty-two percent of the sampled dock users had permanent residences within 30 miles of the community dock. Therefore, a large proportion of trips are local in origin.

Table 3. Number of trips to Pomme de Terre Lake community boat docks the previous year (09/01/1998 to 08/31/1999).

Trips	Average	Std. Error	Minimum	Maximum	Percentiles			N
					25 percent	50 percent	75 percent	
Total Number of Trips	**46.66**	**3.93**	**0**	**365**	**10**	**20**	**41.5**	**332**
Trips made in fall	9.85	0.94	0	100	2	4	10	318
Trips made in winter	4.45	0.71	0	120	0	1	4	319
Trips made in spring	12.40	1.21	0	120	2	5	12	317
Trips made in summer	18.95	1.67	0	180	4	10	18	317

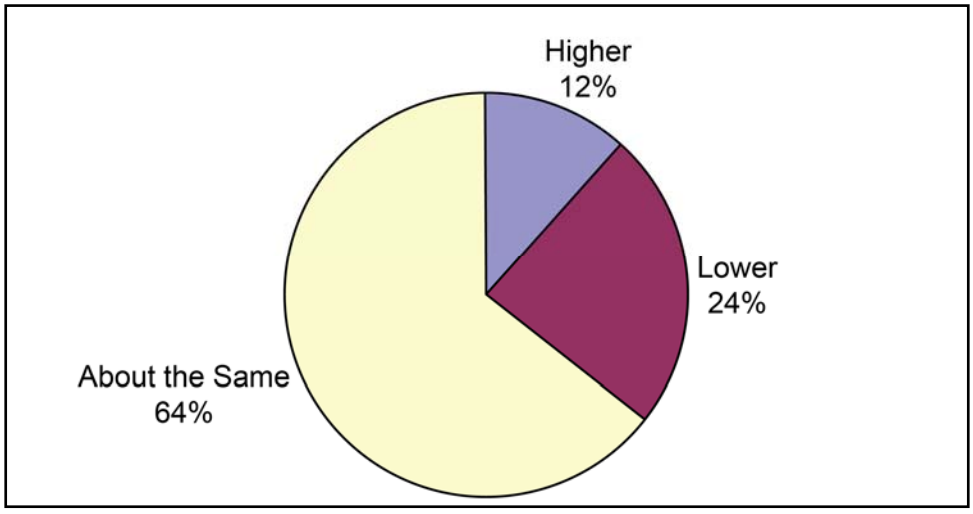

Figure 12. Number of boating trips made by community dock owners last year compared to previous three-year average at Pomme de Terre Lake, 1999 (N=338).

Activities while boating

During their boating trips the previous year, community dock owners/users fished from their boat during 55.5 percent of their trips for an average of 26 times across the year (Table 4). Other activities they participated in included swimming (on 38.4 percent of their boating trips), fishing from the shore (19.5 percent), and water skiing (15.6 percent). The participation rates for scuba diving and camping were both less than 2 percent of the total boating trips. Thirty-four percent of the owners/users of community docks reported participating in other activities that were not mentioned during the telephone interviews (Figure 13). On average, dock owners/users participated in other activities five times during 11 percent of their boating trips the previous year (Table 4). The most frequent other activities were tubing or wave running

(7 percent of respondents), sightseeing (5 percent), and pleasure cruising and socializing (4 percent each) (Figure 13).

Table 4. Recreation activity participation during previous year's trips to Pomme de Terre Lake community boat docks (09/01/1998 to 08/31/1999).

Activity	Mean[1]	Percent of total trips[2]	Std. Eror of mean	Minimum	Maximum	N
Boating	34.53	74.01%	3.32	0	365	319
Swimming	17.93	38.43%	1.80	0	365	331
Picnicking	5.98	12.81%	1.01	0	240	335
Fishing from boat	25.90	55.50%	2.83	0	365	325
Water skiing	7.29	15.62%	0.85	0	150	335
Camping	0.58	1.23%	0.16	0	30	339
Hiking	4.96	10.64%	1.06	0	230	340
Fishing from shore	9.08	19.47%	1.46	0	300	332
Scuba diving	0.06	0.13%	0.02	0	5	340
Hunting	1.09	2.33%	0.42	0	100	337
Other activities	5.14	11.02%	0.79	0	118	331

[1] Times participated in listed activity during previous year's boating trips

[2] Times participated in the listed activity divided by total number of boating trips made the previous year

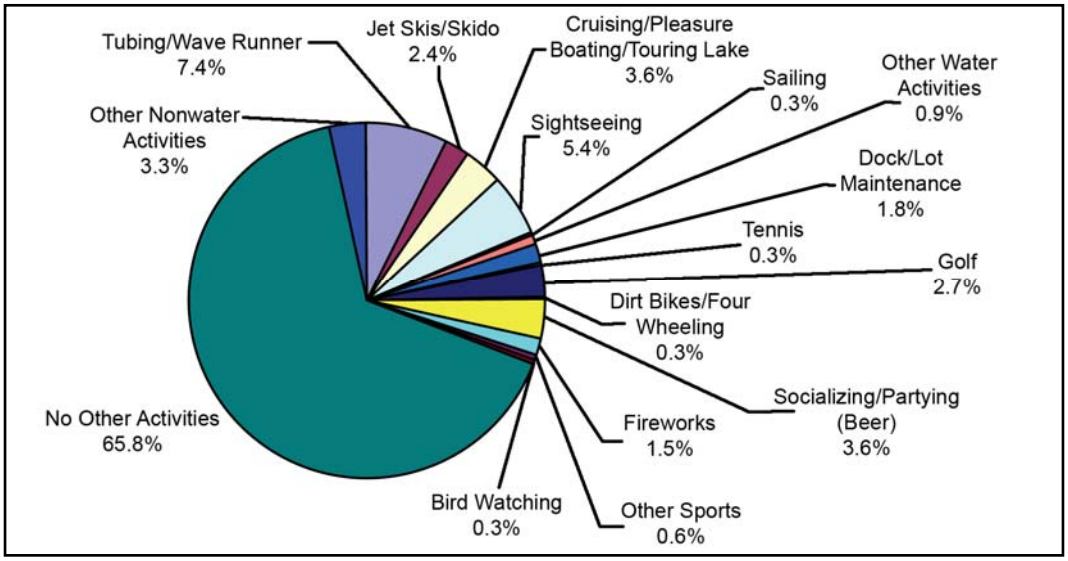

Figure 13. "What other activities did you or others participate in during your boating trips last year that I have not already mentioned?" (from Pomme de Terre Lake Community Docks, 1999, N=336).

Type of boat and motor

Eighty-one percent of the boats surveyed at Pomme de Terre Lake community-owned docks were 20 ft and under, with a minimum of 6 ft (Table 5). Nineteen percent were 21 to 30 ft long. Boats longer than 30 ft were few in number and were therefore excluded from these findings. This high proportion of small boats makes Pomme de Terre unique compared to other Corps projects in the survey. Open boats, cabin cruisers, and personal watercraft (pwc) were mostly 20 ft and smaller.

Table 5. Boat type and length cross tabulation, Pomme de Terre Lake community dock owner survey, 1999 (N = 327)

Boat Length	Boat Type					Total
	Open	Cabin	Sailboat	Pontoon	PWC	
20' and smaller	68.50%	0.31%	0.31%	10.09%	1.53%	80.73%
21' to 30'	4.59%	0.00%	0.31%	14.37%	0.00%	19.27%
Total	**73.09%**	**0.31%**	**0.61%**	**24.46%**	**1.53%**	**100.00%**

Eighty-one percent of the boats used at the community-owned docks, across all type categories, had outboard motors (Table 6). In general, the smaller boats (20 ft and below) had more outboard motors than longer boats (Table 7).

Table 6. Boat type and motor cross-tabulation, Pomme de Terre Lake community dock owner survey, 1999 (N = 319).

Inboard Motor	Boat Type					Total
	Open	Cabin	Sailboat	Pontoon	PWC	
With	16.30%	0.00%	0.00%	1.88%	0.31%	18.50%
Without	56.43%	0.63%	0.63%	22.26%	1.57%	81.50%
Total	**72.73%**	**0.63%**	**0.63%**	**24.14%**	**1.88%**	**100.00%**

Table 7. Boat length and motor cross tabulation, Pomme de Terre Lake community dock owner survey, 1999 (N = 313).

Inboard Motor	Boat Length		Total
	20' and Smaller	21' to 30'	
With	14.70%	3.83%	18.53%
Without	66.45%	15.02%	81.47%
Total	**81.15%**	**18.85%**	**100.00%**

Dock user segments and spending

Spending averages were estimated for all of Pomme de Terre Lake's community-owned dock users (Table 8) and for two different segments based on length of stay (Table 9) and boat length (Table 10). Dividing visitors into segments helps explain differences in spending across distinct user groups. It gives managers the opportunity to apply these distinct spending profiles to project level use data. The two types of segments that fulfilled these purposes were: day user versus overnight stay segments and segments based on length of the boat.

Average spending for full sample of community dock owners

Users of community-owned docks averaged $193 in trip expenses associated with their last boating trip (for a party of 4.1 people). Dock users stayed away from home an average of 2.6 nights and used their boat 2.4 days during their last trip (Table 8). Seventy-seven percent ($150) of spending occurred within 30 miles of their boat dock. Of the expenditures made within 30 miles of the community dock, users spent the most on groceries ($34 per party trip), followed by restaurant meals ($30), gas and oil for the boat ($24), and other supplies ($16). A refined average of 47 boating trips were made from each slip in a community-owned dock during the previous year.

Table 8. Summary of Pomme de Terre Lake community dock owners'/users' spending and use profiles, 09/1998 to 08/1999 (spending per party trip).

Spending Categories	Mean	Std. Error	Pct. Error[1]	N	Minimum	Maximum	Pct. zeroes	Mean exc. zero
Spending Information for Last Trip								
Gas/oil auto	$15.36	$1.08	7%	363	$0	$150	44%	$27.47
Other expenses auto	$2.05	$0.65	32%	361	$0	$150	95%	$38.95
Gas/oil boat	$24.28	$1.82	7%	355	$0	$300	12%	$27.63
Other expenses boat	$7.62	$2.19	29%	352	$0	$450	86%	$52.59
Food/drink restaurants	$29.59	$2.46	8%	366	$0	$350	47%	$56.11
Groceries	$33.84	$2.52	7%	358	$0	$300	33%	$50.47
Campground fees	$0.24	$0.10	43%	366	$0	$25	98%	$12.71
Lodging	$0.54	$0.54	100%	367	$0	$200	100%	$200.00
Recreation fees	$9.51	$2.13	22%	365	$0	$450	87%	$75.43
Sporting goods	$10.42	$2.17	21%	365	$0	$600	80%	$52.11
Other supplies	$16.21	$2.91	18%	362	$0	$500	56%	$36.45
Total within 30 miles	**$149.67**							
Expenses for 30+ miles[2]	$43.66	$4.28	10%	355	$0.00	$600.00	50%	
Total trip spending	**$193.33**							
Pct. of local spending (within 30 miles)	77.42%							
Use Information for Last Trip								
Nights away from home	2.55	0.19	7%	364	0	30		
Days used boat	2.41	0.12	5%	324	1	14		
Number of people on boat	4.05	0.15	4%	327	1	25		
Annual Spending for Last Year (09/01/98 - 08/31/99)								
Storage fees	$74.61	$8.48	11%	313	$0	$800		
Insurance payments	$168.83	$7.54	4%	240	$0	$500		
Boat repair/maintenance	$159.88	$22.20	14%	305	$0	$3,800		
Dock maintenance/repair	$275.52	$39.13	14%	332	$0	$10,000		
Use Information for Last Year (09/01/98 - 08/31/99)								
Number of trips using boat	46.71	3.95	8%	331	0	365		
Cost of the boat (in 1999 dollars)	$9,965.02	$459.54	5%	269	$500.00	$57,887.76		

[1] Pct. Error = Std. Error / Mean. Two standard errors yield a 95% confidence interval.
[2] Expenses outside 30 miles of the community dock on last trip.

A Community dock is permitted under a shoreline use permit. The applicant is charged a $30 fee for a five-year permit which includes $10 administration charge and a $5 annual inspection fee. Other storage fees that are identified in annual spending do not include the permit fee but related to additional spending that may be paid by the end user, for example, in off-site storage when the craft is not in the water.

Community dock owners spent an average of $75 on storage fees, $169 on insurance, $160 on boat repair and maintenance, and $276 on their share of dock repair and maintenance (Table 8). The average cost of the boat was $9,965 (1999 dollars). The lowest boat cost was $500 and the highest was $57,888.

When asked to compare the amount spent on their most recent trip to prior similar trips, 75 percent of the dock owners felt that they had made about the same expenditures. Fourteen percent said they had spent more on the most recent trip than on similar trips in the past 12 months, and 11 percent said they had spent less (Figure 14).

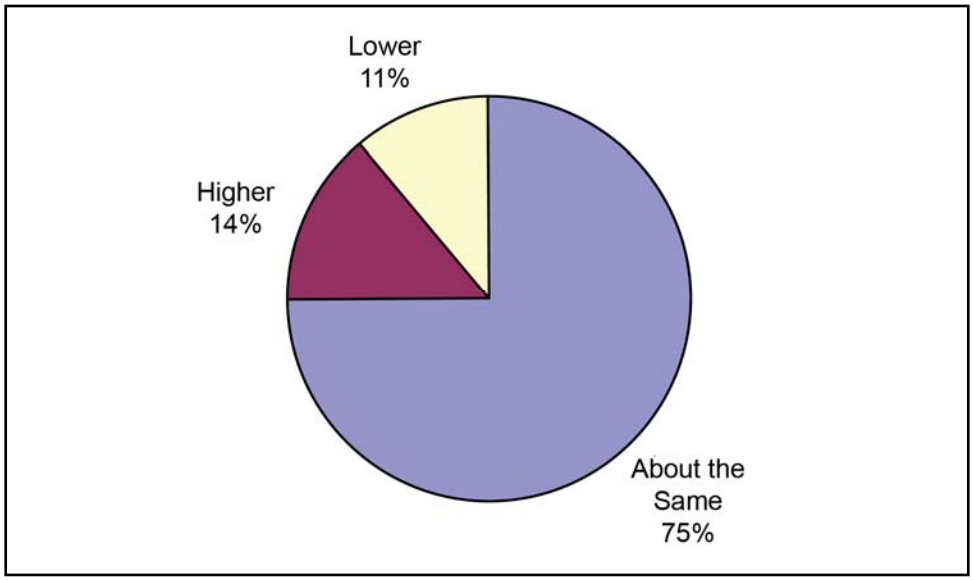

Figure 14. Expenditures by community dock owners/users on most recent trip compared to similar trips in the last 12 months at Pomme de Terre Lake, 1999 (N=346).

Many of the respondents reported no spending on their last trip in many of the spending categories listed. Categories in which a large percentage (more than 80 percent) of users did not spend money on their last trip were: lodging (100 percent), campground fees (98 percent) other expenses on auto (95 percent), recreation fees (87 percent), other boat expenses

(86 percent), and sporting goods ($80). Although the estimates of average trip expenditures in this report are based on the full sample, it is worthwhile to recognize the difference between the average spending of all community dock users and the average spending of just the spenders. The average spending of those who spent something on an item is generally much higher than the average computed from all visitors. For instance, while the average across all community dock users was $2.05 on other auto expenses per party trip, the dock parties who did spend money on other auto expenses spent an average of $39 per party trip (Table 8). For estimating total spending of all Pomme de Terre Lake community dock users, it is appropriate to apply the means that include zeros. The means without zeros should not be used to expand the data to population totals, as they represent spending for specific segments only (i.e., dock users who spent money on other auto expenses spent an average of $39 per trip).

Average spending by segment: Day use vs. overnight

Pomme de Terre community dock owners were grouped into two segments based on whether or not they stayed overnight away from their permanent home during their last trip. The dock owners/users who did not stay away from home (i.e., day users) spent an average of $101 for that trip, 74 percent of which ($75) was spent within 30 miles of the dock (Table 9). The average party size was 3.7 people per trip. The dock owners/users who stayed overnight spent an average of 4.1 nights away from home and used the boat for 3.2 days with a party size of 4.2 people per trip. They spent an average of $250 for the entire trip, 78 percent of which ($196) was spent within 30 miles of the boat dock. Day users made an average of 77 boating trips in the previous year, whereas overnighters made 31 trips.

Table 9. Spending and use by length of stay segments, Pomme de Terre Lake community dock owner survey, 09/1998 to 08/1999 (spending per party trip).

Spending Categories	Day Users				Overnight Users			
	Mean	Std. Error	Pct. Error[1]	N	Mean	Std. Error	Pct. Error[1]	N
Per Party Trip Spending								
Gas/oil auto	$3.13	$0.93	30%	135	$23.00	$1.45	6%	223
Other expenses auto	$1.19	$1.12	94%	134	$2.60	$0.81	31%	223
Gas/oil boat	$16.64	$2.88	17%	128	$28.81	$2.33	8%	223
Other expenses boat	$4.84	$3.54	73%	128	$9.42	$2.86	30%	219
Restaurants	$12.11	$2.38	20%	136	$40.05	$3.54	9%	225
Groceries	$13.45	$2.58	19%	131	$46.12	$3.48	8%	224
Campground fees	$0.00	—	—	136	$0.40	$0.17	42%	225
Lodging	$0.00	—	—	136	$0.88	$0.88	100%	226
Recreation fees	$8.45	$3.97	47%	135	$10.31	$2.49	24%	226
Sporting goods	$4.44	$1.63	37%	135	$14.24	$3.36	24%	225
Other supplies	$10.23	$4.01	39%	132	$20.01	$4.03	20%	225
Total within 30 miles	**$74.50**				**$195.83**			
Expenses 30+ miles[2]	$26.11	$7.43	28%	130	$54.33	$5.17	10%	221
Total trip spending	**$100.60**				**$250.16**			
Pct. of local spending (within 30 miles)	74%				78%			
Annual Spending								
Storage fees	$37.89	$9.88	26%	114	$97.61	$12.04	12%	195
Insurance payments	$130.51	$12.14	9%	78	$187.99	$9.30	5%	160
Boat repair/maintenance	$88.71	$15.65	18%	110	$202.09	$33.59	17%	193
Dock maintenance/repair	$305.93	$53.80	18%	124	$258.46	$53.89	21%	207
Cost of the boat (in 1999 dollars)	$8731.51	$699.25	8%	94	$10711.86	$597.41	6%	173
Visitor Characteristics								
Total trips using boat (last year)	76.75	9.37	12%	117	30.59	2.81	9%	210
Nights away from home (last trip)	0.00	—	—	137	4.08	0.25	6%	227
Days used boat (last trip)	1.00	—	—	120	3.24	0.18	5%	201
People on boat (last trip)	3.71	0.27	7%	119	4.24	0.18	4%	203

[1] Pct. Error = Std. Error / Mean. Two Standard errors yield a 95% confidence interval.

[2] Expenses outside 30 miles of the community dock on last trip.

Community dock owners in the overnight segment owned more expensive boats than day users ($10,712 vs. $8,732, respectively). The overnight segment of dock owners also paid more annually for insurance, boat repair, and storage than day users. However, day users spent slightly more on dock maintenance.

Day users comprised 38 percent of the sample of community dock users, while 62 percent spent at least one night in the area on their last trip. In terms of total spending in the local region, day users of community docks contributed 36 percent and overnight stay dock users, 64 percent.

Average spending by boat length segments

Based on the length of the boat, community dock owners were grouped into two segments: boats that were 20 ft and shorter, or between 21 and 30 ft. The amount of expenditures increased across both length segments. The 20-ft and smaller segment spent an average of $186 per party on the last trip during which about 78 percent ($146) was spent within 30 miles of the boat dock (Table 10). They stayed an average of 2.7 nights away from home and used their boat for 2.4 days with a party size of 3.8 people per trip. Dock owners/users in this segment made an average of 52 boating trips the previous year.

The 21- to 30-ft boat segment spent an average of $260 per party on the last trip ($198 within 30 miles of the boat dock). They stayed an average of 2.4 nights away from home, used their boat for 2.5 days, with a party size of 5 people per trip. They made an average of 49 boating trips the previous year.

In general, the larger the boat, the higher the annual expenses for community dock owners. Dock maintenance and repair ranged from $246 for boats 20 ft and shorter to $482 for boats 21 to 30 ft in length. The cost of the boat ranged from $9,418 for the 20-ft and shorter segment to $12,541 for the 21- to 30-ft segment, while insurance payments ranged from $166 to $193. Boat repair and maintenance costs similarly grew from $125 to $334 per year as boat size increased (Table 10).

Nearly 81 percent of the sample had small-sized boats (20 ft and smaller), while 19 percent were medium (21 to 30 ft). Dock users with small length boats contributed 76 percent of total spending locally, and those with larger boats contributed 24 percent.

Table 10. Spending and use by boat length segments, Pomme de Terre Lake community dock owner survey, 09/1998 to 08/1999 (spending per party trip).

Spending Categories	20' and Smaller				21' to 30'			
	Mean	Std. Error	Pct. Error[1]	N	Mean	Std. Error	Pct. Error[1]	N
Per Party Trip Spending								
Gas/oil auto	$15.28	$1.26	8%	262	$14.93	$2.50	17%	59
Other expenses auto	$1.87	$0.81	43%	259	$3.42	$1.57	46%	60
Gas/oil boat	$23.87	$2.05	9%	255	$32.81	$5.05	15%	58
Other expenses boat	$6.98	$2.13	31%	251	$14.07	$9.25	66%	60
Restaurants	$27.26	$2.62	10%	262	$49.80	$8.72	18%	61
Groceries	$32.34	$2.80	9%	256	$43.59	$8.05	18%	59
Campground fees	$0.20	$0.12	59%	261	$0.11	$0.11	100%	61
Lodging	$0.76	$0.76	100%	262	$0.00	$0.00	0%	61
Recreation fees	$9.59	$2.82	29%	261	$11.44	$3.28	29%	61
Sporting goods	$11.55	$2.83	25%	262	$12.57	$4.46	35%	61
Other supplies	$16.11	$3.49	22%	259	$15.39	$3.49	23%	61
Total within 30 miles	**$145.80**				**$198.15**			
Expenses 30+ miles[2]	$40.24	$4.75	12%	254	$61.60	$13.35	22%	60
Total trip spending	**$186.04**				**$259.75**			
Pct. of local spending (within 30 miles)	78%				76%			
Annual Spending								
Storage fees	$71.78	$9.50	13%	251	$89.62	$20.64	23%	55
Insurance payments	$166.02	$8.21	5%	195	$192.73	$19.65	10%	41
Boat repair/maintenance	$124.91	$15.28	12%	245	$333.52	$101.84	31%	54
Dock maintenance/repair	$246.48	$30.44	12%	243	$481.95	$190.43	40%	55
Cost of the Boat (in 1999 dollars)	$9,417.91	$453.29	5%	219	$12,541.48	$1,491.88	12%	48
Visitor Characteristics								
Total trips using boat (last year)	51.98	4.98	10%	234	49.35	9.41	19%	57
Nights away from home (last trip)	2.66	0.23	9%	261	2.43	0.42	17%	60
Days used boat (last trip)	2.39	0.14	6%	254	2.48	0.28	11%	61
People on boat (last trip)	3.78	0.17	4%	257	4.95	0.34	7%	61

[1] Pct. Error = Std. Error / Mean. Two standard errors yield a 95% confidence interval.
[2] Expenses outside 30 miles of the community dock on last trip.

Total spending

The figures in Table 11 were derived from secondary data sources, the Natural Resource Management System (NRMS) (USACE, 2006c), and from survey data for Pomme de Terre (e.g., average number of trips per household last year). Applying these figures, Pomme de Terre community dock users took 19,442 boating party trips in 1999 (3.4 percent of total recreation use[1]), and purchased 14 new boats.

Table 11. Total annual use figures for community dock owner survey at Pomme de Terre Lake (1999)

Category	Total Use	Computation Procedures
Number of docks	220	From NRMS (1999)
Number of boats	600	From NRMS (1999)
Average number of boats per household	1.44	From this survey
Number of households	417	Total number of boats divided by average number of boats per household
Number of party trips	19,442	Total party trips (from Table 3) times total number of households (Reference Foreword)
Percent of new boats purchased last year	3.33%	Computed from survey results, using the three-year average (1997 to 1999)
Number of new boats purchased last year	14	Total households times percent of new boats purchased last year

Local and total trip-related spending (Tables 12 and 13) is calculated by multiplying the number of party-trips in Table 11 (19,442) by the trip spending averages in Table 8. Total spending on boats and fixed, annual goods and services (Table 14) is estimated by multiplying the number of households in Table 11 (417) by the annual expenditures on boats, dock maintenance, and storage in Table 8. Total spending on insurance is estimated by multiplying the number of boats (600) by the proportion of local boat dock owners who purchased boat insurance and their average insurance payment. Total spending on purchasing new boats is estimated by multiplying the number of new boats purchased last year (14) by the proportion of local dock owners who bought new boats and the average local new boat cost for three years: 1997-1999.

[1] 1.7 million recreation visits in 1999 from Table 1 divided by an average party size of 3.0 from Propst et al. (1998) equals 567,000 total party trips; 19,442 is 3.4 percent of 567,000 party trips.

A recreation visit, as reported in the NRMS database, is one person entering a Corps project or lake boundary. Spending depends on how long people stay in the local region rather than how many times they enter the project or how much time they spend in recreation activities while there. Recreation visits are therefore converted to party trips[1] in the region before applying spending averages. This procedure avoids double-counting the spending of community dock users who may enter the project multiple times on the same day and also takes into account additional days a dock user may spend in the area outside the lake boundaries.

The estimated trip spending for all Pomme de Terre community dock users in 1999 was $2.91 million spent within the local region (Table 12). If trip spending outside 30 miles is included, the total rises to $3.76 million (Table 13). Only trip spending within 30 miles of the boat dock ($2.91 million) should be included when conducting economic impact analysis at the project level (multi-county region).

Table 12. Total trip spending in local area[1] by Pomme de Terre Lake community dock owners/users (1999).

Spending Category	Spending ($MM)
Gas/oil auto	$0.30
Other expenses auto	$0.04
Gas/oil boat	$0.47
Other expenses boat	$0.15
Food/drink restaurants	$0.58
Groceries	$0.66
Campground fees	$0.00
Lodging	$0.01
Recreation fees	$0.18
Sporting goods	$0.20
Other supplies	$0.32
Total trip spending	**$2.91**
[1] Local trip spending equals spending within 30 miles of the dock.	

[1] See Table 11 for the conversion steps. A party is a travel group staying in the area (within 30 miles of the dock). The travel group is usually all individuals in the same vehicle or on the same boat or staying in the same room or campsite. During the interviews, community dock users were asked to report expenditures for their entire party for the last trip. Thus, the units for expenditures are party trips. Converting visits to party trips assures that the units are the same in the multiplication steps that lead to estimates of total expenditures (visits in party trips times expenditures in party trips).

Table 13. Total trip spending[1] by Pomme de Terre Lake community dock owners/users (1999).

Spending Category	Spending ($MM)[2]
Gas/oil auto	$0.41
Other expenses auto	$0.05
Gas/oil boat	$0.47
Other expenses boat	$0.15
Food/drink restaurants	$0.79
Groceries	$0.90
Campground fees	$0.01
Lodging	$0.01
Recreation fees	$0.25
Sporting goods	$0.28
Other supplies	$0.43
Total trip spending	**$3.76**

[1] Total trip spending equals spending within and outside 30 miles of the dock.

[2] Dock owners were asked to report trip spending outside 30 miles of the community dock as one total amount, not broken down by item as this table shows. This aggregate spending figure was then proportionally distributed into all but two categories based on the spending proportions within 30 miles. Proportional allocations were not made to the "gas/oil boat" and "other expenses boat" categories. It was assumed that, for these two categories, there were no boating expenditures outside 30 miles of the community dock.

Fixed, annual goods and services related to boating activities in this study were new boats, dock repairs and maintenance, storage fees, insurance, and boat repairs and maintenance. Pomme de Terre's community dock owners spent $300,000 (1999 dollars) on boating-related annual goods and services (Table 14). Thirty-seven percent of the money was spent on dock repair and maintenance ($110,000), followed by boat maintenance and repair ($70,000), purchases of new boats ($50,000), insurance payments ($40,000), and storage fees ($30,000).

Table 14. Total spending on fixed, annual goods and services by community dock owners at Pomme de Terre Lake (1999).

Spending Category	Spending ($MM)
Storage fees	$0.03
Insurance payments (include only payments from boat dock owners who lived within 30 miles of the community dock)	$0.04
Boat repair/maintenance	$0.07
Dock maintenance/repair	$0.11
Purchases of new boats (within 30 miles)	$0.05
Total durable goods spending	**$0.30**

Economic impacts of community dock user spending

1999 impacts

The $2.91 million in trip-related spending from Table 12 had a direct economic impact on the region of $1.5 million in direct sales, $600,000 in personal income (wages and salaries), and supported 43 jobs in the region (Table 15). The eating and drinking (restaurants and bars) sector received the largest amount of direct sales ($600,000) followed by the retail sector ($400,000).

Direct effects are less than total spending, as only the retail and wholesale margins on visitor purchases of goods accrue to the local economy. The local region surrounding Pomme de Terre Lake captures 52 percent of dock user spending. Forty-eight percent leaks out of the local economy to cover the costs of imported goods bought by visitors.[1]

[1] For example, if a visitor buys $50 worth of clothing that is not manufactured in the local region, only the local margins (retail and locally operated wholesale and transportation), say, $30, will be captured by the local economy as direct sales. The remaining $20 will leak immediately outside the local economy to cover the producer price (or price of good at the factory), and non-local margins (wholesale and transportation).

Table 15. Regional economic impacts of Pomme de Terre Lake community dock owners'/users' trip spending (1999, for trip spending within 30 miles only).

SUMMARY RESULTS TABLE IMPACTS ON LOCAL ECONOMY				
Economic Measure		**DIRECT**	**Multiplier**	**TOTAL**
Output/Sales ($MM)		$1.52	1.40	$2.14
Total Income ($MM)		$0.55	0.49	$0.75
Total Value added ($MM)		$0.84	0.78	$1.19
Jobs		42.87	34.62	52.79
	Total Visitor Spending ($MM)		2.91	
	Capture rate		52%	
	Effective spending multiplier		0.73	
Direct Effects				
Sector	**Sales ($MM)**	**Income ($MM)**	**Value Added ($MM)**	**Jobs**
Lodging	$0.02	$0.01	$0.01	0.41
Eat & drink	$0.58	$0.18	$0.26	20.97
Amusement and recreation	$0.08	$0.03	$0.04	4.44
Retail	$0.43	$0.21	$0.35	11.57
Wholesale	$0.14	$0.06	$0.09	2.07
Other services	$0.10	$0.03	$0.04	1.55
Groceries	$0.04	$0.00	$0.01	0.10
Sporting goods	$0.00	$0.00	$0.00	0.00
Other manufacturing	$0.14	$0.03	$0.04	1.65
Government	$0.01	$0.00	$0.00	0.10
Total	**$1.52**	**$0.55**	**$0.84**	**42.87**
Total Effects				
Sector	**Sales ($MM)**	**Income ($MM)**	**Value Added ($MM)**	**Jobs**
Lodging	$0.02	$0.01	$0.01	0.62
Eat & drink	$0.60	$0.19	$0.27	21.69
Amusement and recreation	$0.09	$0.03	$0.05	4.65
Retail	$0.49	$0.24	$0.39	13.12
Wholesale	$0.18	$0.08	$0.12	2.79
Other services	$0.46	$0.13	$0.25	6.40
Groceries	$0.07	$0.01	$0.01	0.31
Sporting goods	$0.00	$0.00	$0.00	0.00
Other manufacturing	$0.21	$0.06	$0.07	2.89
Government	$0.03	$0.01	$0.01	0.31
Total	**$2.14**	**$0.75**	**$1.19**	**52.79**

The sales multiplier[1] for the region is 1.40, meaning that an additional $0.40 in sales is generated through secondary effects for every dollar of direct sales. Secondary effects generate an additional 10 jobs, for a total of 53 direct and secondary jobs (Table 15). Likewise, secondary effects generate an additional $200,000 in personal income and $400,000 in value added (personal income + proprietor's income + indirect business tax). Roughly 15 direct jobs are supported by each million dollars in total dock user spending. Including multiplier effects, each million dollars in total dock user spending supports about 18 jobs.

The $300,000 in spending on new boats, storage fees, insurance, and repairs/maintenance from Table 14 had a direct economic impact on the region of $200,000 in direct sales, $40,000 in personal income (wages and salaries), and supported two direct jobs in the region (Table 16). The other services sector received the largest amount of direct sales ($150,000), followed by other manufacturing ($50,000).

Direct effects only accrue to the industries where dock owner spending is directly received. For example, since no money is spent in the Eat & Drink sector from dock owner annual or durable goods spending, that cell is blank in the top sector of Table 16 (direct effects). However, other companies receiving direct payments, e.g., insurance companies, may hire employees who live in the region and spend money in the local Eat & Drink sector. Since insurance employee spending is a multiplier (secondary) effect, some amount of sales appears in the Eat & Drink cell in the total effects section of Table 16.

The local region surrounding Pomme de Terre Lake captures 75 percent of dock owner spending on new boats and annual services. Twenty-five percent leaks out of the local economy to cover the costs of imported boats and services bought by visitors.

[1] Multipliers for the 4-county region are from a 2000 input-output model estimated with the IMPLAN system.

Table 16. Regional economic impacts of Pomme de Terre Lake community dock owners' durable goods and annual spending (1999).

SUMMARY RESULTS TABLE IMPACTS ON LOCAL ECONOMY				
Economic Measure		**DIRECT**	**Multiplier**	**TOTAL**
Output/Sales ($MM)		$0.22	1.34	$0.30
Total Income ($MM)		$0.04	0.27	$0.06
Total Value added ($MM)		$0.05	0.40	$0.09
Jobs		1.76	13.86	3.10
	Total Visitor Spending ($MM)		0.30	
	Capture rate		75%	
	Effective spending multiplier		1.00	
Direct Effects				
Sector	**Sales ($MM)**	**Income ($MM)**	**Value Added ($MM)**	**Jobs**
Lodging	$-	$-	$-	-
Eat & drink	$-	$-	$-	-
Amusement and recreation	$-	$-	$-	-
Retail	$0.02	$0.01	$0.01	0.31
Wholesale	$0.00	$0.00	$0.00	0.00
Other services	$0.15	$0.01	$0.02	0.93
Groceries	$-	$-	$-	-
Sporting goods	$-	$-	$-	-
Other manufacturing	$0.05	$0.02	$0.02	0.52
Government	$0.00	$0.00	$0.00	0.00
Total	**$0.22**	**$0.04**	**$0.05**	**1.76**
Total Effects				
Sector	**Sales ($MM)**	**Income ($MM)**	**Value Added ($MM)**	**Jobs**
Lodging	$0.00	$0.00	$0.00	0.00
Eat & drink	$0.00	$0.00	$0.00	0.10
Amusement and recreation	$0.00	$0.00	$0.00	0.00
Retail	$0.02	$0.01	$0.02	0.52
Wholesale	$0.01	$0.00	$0.00	0.10
Other services	$0.21	$0.03	$0.05	1.76
Groceries	$0.00	$0.00	$0.00	0.00
Sporting goods	$0.00	$-	$-	0.00
Other manufacturing	$0.06	$0.02	$0.02	0.62
Government	$0.00	$0.00	$0.00	0.00
Total	**$0.30**	**$0.06**	**$0.09**	**3.10**

The sales multiplier for the region is 1.34, meaning that an additional $0.34 in sales is generated through secondary effects for every dollar of direct sales. Secondary effects generate an additional 1.3 jobs, for a total of 3.1 direct and secondary jobs (Table 16). Likewise, secondary effects generate an additional $20,000 in personal income and $40,000 in value added (personal income + proprietor's income + indirect business tax). Roughly 5.9 direct jobs are supported by each million dollars in total community dock owner spending for new boats and annual services. Including multiplier effects, each million dollars in total dock owner spending supports about 10.3 jobs.

Value of 1999 Impacts in 2004 Dollars: The 1999 economic impacts reported above were adjusted to 2004 impacts by multiplying 1999 figures by an average consumer price index of 1.21 (U.S. Department of Labor 2006). Results are presented in Table 17.

Table 17. Regional economic impacts of Pomme de Terre Lake community dock owners'/users' trip and owners' annual spending (in 2004 dollars, for spending within 30 miles only).

	Trip Spending (within 30 miles)		Durable Goods and other Annual Costs Spent Locally	
Total spending ($MM)	$3.52		$0.36	
	Direct Effects	Total Effects	Direct Effects	Total Effects
Output/sales ($MM)	$1.84	$2.59	$0.27	$0.36
Total income ($MM)	$0.67	$0.90	$0.04	$0.07
Total value added ($MM)	$1.01	$1.43	$0.06	$0.11
Note: Spending and economic effects in this table are in 2004 dollars, as opposed to the 1999 dollars reported elsewhere in this report.				

In 2004 dollars, total community dock user trip spending locally of $3.5 million resulted in $670,000 in the region in personal income and $1.0 million in value added (personal income + proprietor's income + indirect business tax). With secondary (multiplier) effects, total impacts locally were $900,000 in personal income and $1.4 million in value added. There is no change to the number of direct jobs (45) in going from Tables 15 and 16 to Table 17. This is because no new expenditures by dock users are being estimated in Table 17. Instead, expenditures from the 1999

survey are being inflated to 2004 dollars. Since there are no new expenditures, no additional jobs were created in 2004.

After converting annual goods and services to 2004 dollars, the results are $0.4 million in community dock owner spending on new boats, storage fees, insurance, and repairs/maintenance. The impacts of annual spending include $40,000 in personal income and $60,000 in value added. With secondary (multiplier) effects, total impacts locally were $70,000 in personal income and $110,000 in value added.

4 Study Limitations and Error

The accuracy of the estimates in this report rests on the three inputs: visits, spending averages, and multipliers. The number of trips reported by the sample of community dock owners and the number of boats at the docks are likely the largest potential sources of error.

The multipliers and economic ratios used to convert spending to jobs and income and to estimate secondary effects come from an IMPLAN model for the four-county region. Although it is difficult to estimate the levels of error, multipliers can vary by about 10 percent between different modeling systems. Multipliers largely influence estimates of secondary effects.

Depending on the direction and magnitude of errors in visits, spending, and multipliers, the different errors may compound or cancel each other. The most important potential errors are in the estimates of total trips. As the model is linear, doubling the amount of visitation will double spending and economic impacts.

In addition to these issues, there are also conceptual issues regarding how much and which spending may be claimed by the project. It is not simple to determine if users of community-owned docks would spend their money elsewhere if community docks were not available at Pomme de Terre Lake. Furthermore, local visitors are usually excluded in estimating economic impacts, but have been included here. Since they are not a distinct segment, their contribution to the total effects is not readily estimated. However, 52 percent of the dock owners interviewed stated that their permanent residences were within 30 miles of the project. Since approximately 77 percent of total trip spending occurred within 30 miles of the project, the impact of local spending cannot be ignored.

Only new boat purchases within 30 miles of the project are counted in this analysis. Further, it is assumed that dock maintenance fees and storage fees go primarily to local businesses. However, dock owners were not asked to identify the locations of their insurance companies or boat repair shops. Thus, the extent to which these expenditures accrue to the local economy is not known, but they have been counted as occurring locally (within the four-county region).

5 Summary and Discussion

Users of community-owned docks at Pomme de Terre Lake spent $2.9 ($3.5)[1] million in trip-related expenditures and $300,000 ($360,000) in purchases of new boats and annual services within 30 miles of the lake in 1999. Combining both trip-related and durable expenditures, the direct economic effects of dock user spending were $1.7 ($2.1) million in sales, $590,000 ($710,000) in personal income, and $900,000 ($1.1 million) in direct value added. With multiplier effects, created by the recirculation of the money spent by dock users, visitor spending generated a total (direct + secondary) of $2.4 ($3.0) million in local sales, an associated $800,000 ($1.0 million) in personal income, and $1.3 ($1.5) million in values added. Sectors receiving the greatest benefit from community dock users were food and retail trade, manufacturing, and other services. The $1.7 million in direct sales is about 3.7 percent of the total of all tourism activity ($47 million) (sales have been price-inflated for this computation).

Total economic impacts (Tables 15, 16, and 17) are useful for accountability purposes, lake support, and explaining the role of the lake in the region's economy. The REAS model results can also be used to evaluate management alternatives and strategies and to conduct sensitivity analyses. The marginal economic impacts of particular visitor segments are useful for evaluating particular actions. Table 18 shows the changes in sales, jobs, income, and valued added associated with an increase or decrease of 1,000 additional party-trips by each segment. Marginal impact analysis provides answers to the question: "What if?" (Reference Foreword.)

For example, to evaluate the regional economic impacts of adding 22 docks, first compute the change in party trips – 10 docks produce 467 party trips (average of 46.7 trips per dock per year from Table 3 times 10 docks). That means 22 new docks would produce about 1,000 extra party trips per year. Applying the average spending for the overnight segment in Table 9, the expansion generates an additional $196,000 in total trip spending ($196 per party trip from Table 9 times 1,000), $102,600 dollars in direct sales in the region, $37,200 in personal income, $56,300 in value

[1] Numbers in parentheses are in 2004 dollars (see Table 17).

added and 2.9 jobs in direct effects (computed from ratios in Table 15). In 2004 dollars, the extra 1,000 party trips per year by community dock users would result in $124,100 in direct sales in the region and $45,000 in direct personal income.[1] The impact of this alternative could be compared to others.

Table 18. Direct impacts of an additional 1,000 community dock owner party trips by segment, Pomme de Terre Lake.

Segments	Local Spending ($)	Direct Sales ($)	Personal Income ($)	Value Added ($)	Jobs
(Marginal impacts per 1,000 party-trips, in 1999 dollars)					
Day use	$74,496	$39,030	$14,141	$21,425	1.1
Overnight stay	$195,828	$102,598	$37,172	$56,320	2.9
Small boat	$145,804	$76,389	$27,676	$41,933	2.1
Medium boat	$198,147	$103,813	$37,612	$56,987	2.9
Large boat	N/A	N/A	N/A	N/A	N/A
(Marginal impacts per 1,000 party-trips, in 2004 dollars)					
Day use	$90,140	$47,226	$17,110	$25,924	1.1
Overnight stay	$236,952	$124,143	$44,978	$68,148	2.9
Small boat	$176,423	$92,431	$33,488	$50,739	2.1
Medium boat	$239,758	$125,614	$45,510	$68,955	2.9
Large boat	N/A	N/A	N/A	N/A	N/A

The economic impacts presented in this report document the economic significance of 19,442 community dock user trips at Pomme de Terre Lake in 1999. The impacts will vary from year to year with changes in prices, visitor volumes, the mix of visitors attracted, and other changes in the lake and surrounding communities. The REAS model has built-in procedures to price-adjust spending averages over time, so updated figures may be obtained fairly easily, as done in this report, if there are not significant changes in visitor use and spending patterns. In the absence of significant structural changes in the local economy, multipliers will be quite stable. The primary input for updating the estimates is visitation, which must take into account any changes in the mix of visitors or their length of stay in the area.

[1] The number of jobs, 2.9, remains the same in 2004 because Table 18 reflects the marginal impacts of 1,000 additional party trips; since the ratio between sales and jobs remains the same between 1999 and 2004, the number of jobs per 1,000 additional party trips does not change.

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14. ABSTRACT

This report documents the local economic impacts of users of community-owned docks at Pomme de Terre Lake, located in south-central Missouri. This economic assessment is based on the results of a 1999 survey of a sample of Pomme de Terre Lake community dock owners. Spending estimates are adjusted to 2004 dollars. The economic impacts estimated for Pomme de Terre Lake are useful for accountability purposes, lake support, and explaining the role of the lake in the region's economy. This report demonstrates how the survey results can be used to evaluate management alternatives and strategies and to conduct sensitivity analyses.

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