

The Lake Winnebago System is a significant natural resource in northeast Wisconsin. At 166,000 acres, it contains 17% of the state's surface waters. **It sustains a recreational fishery that annually contributes \$234 million to the local economy.** Anything we do personally that impacts the System positively or negatively can affect this economic engine. Likewise, policies, budgets and practices that impact water quality or habitat may also affect the economic contribution of the Lake Winnebago System fishery resource.

More information on this study can be found online at: <http://basineducation.uwex.edu/foxwolf/>
Choose "economics" from the choices on the left side of the page.

This study would not have been possible without the contributions and financial support of the following organizations: Butte des Morts Conservation Club, Critter's Wolf River Sports, Fox River Bait and Tackle, ITBEC (International Trade, Business, and Economic Development Council), Lake Poygan Sportsman's Club, Lighthouse Anglers, Mercury Marine, Otter Street Fishing Club, Shadows on the Wolf, Sturgeon for Tomorrow, Tew's Two Sporting Goods, Walleyes for Tomorrow, Winnebagoland Conservation Alliance, Winnebagoland Musky Club, Wolf River House.

Special thanks are extended to the partners, cooperators and advisors of this project: DNR, UW-Green Bay, UW-Oshkosh, UW-Madison, East Central Wisconsin Regional Planning Commission, and the City of Oshkosh. We would also like to extend our gratitude and recognition to Dr. John Stoll for his leadership and coordination on the survey and Koyel Mandal, graduate student at UW-Green Bay who, with this study, completed his graduate thesis and moved on to gainful employment with the Ocean Conservancy in Austin, Texas.

WINNEGABO COUNTY UW EXTENSION
625 E. COUNTY RD. Y, SUITE 600
OSHKOSH, WI 54901

University of Wisconsin, U.S. Department of Agriculture and Wisconsin Counties cooperating. An EEO Affirmative Action Employer, University of Wisconsin-Extension provides equal opportunities in employment and programming including Title IX and ADA requirements.

NON-PROFIT
U.S. POSTAGE PAID
PERMIT NO. 527
OSHKOSH, WI 54901

The Economic Impact of Angling on the Lake Winnebago System

Summary

In early 2006, a survey was sent to 2,000 licensed anglers. The survey asked questions about anglers' fishing behavior, preferences, trip patterns, spending patterns, and demographic information. Approximately 1,200 surveys were returned. Expenditure information was input into a regional economic impact model called IMPLAN. An "economic region" was defined as the counties of Winnebago, Fond du Lac, Calumet, Outagamie, and Waushara.

IMPLAN results indicate that angling contributes \$155.5 million of direct spending annually to the economic region. Almost 3,500 jobs are attributed to this direct spending. An additional indirect and induced impact of \$78.5 million and 800 jobs is also felt in the region, **resulting in a total economic impact of \$234 million and 4,300 jobs.**

Developed by:
CHAD COOK, UW-EXTENSION BASIN
EDUCATOR FOR NATURAL RESOURCES
CATHERINE NEISWENDER, UW-
EXTENSION COMMUNITY DEVELOPMENT
EDUCATOR FOR WINNEBAGO COUNTY

Study Rationale

The Lake Winnebago System is a unique resource for residents and thousands of annual visitors alike. Opportunities and services provided by the Lake Winnebago System include:

- Fish and wildlife habitat
- Drinking water
- Aesthetic beauty
- Downtown revitalization
- Local businesses
- Tourism
- Recreation

All of these contribute to the economic health of the region but quantifying the value of natural resource features and services can be a complex task. These economic values are needed to provide sound information for decision-making that may affect the health of the System. Unfortunately, these economic values are generally lacking for the Lake Winnebago System. This study focused on establishing a value for the fishery by determining what anglers contribute to the regional economy.

Methodology

A 10-page mail survey was sent to approximately 2,000 Wisconsin fishing license holders, both residents and non-residents. The survey, conducted by UW-Green Bay, asked questions regarding anglers' fishing behaviors, preferences, trip patterns, spending patterns and demographic information. Multiple-wave survey methodology was used to garner a 60% return rate, ensuring high statistical validity of the data. In order to produce conservative estimates and adjust for outlier data, median data was used to generate the results found in this report.

Trip and initial expenditure data, called the "direct impact", from the surveys was then input into a regional economic impact model called IMPLAN. IMPLAN is an input-output model that describes the level of interaction of economic actors in a local economy. Five counties (Winnebago, Outagamie, Calumet, Fond du Lac, Waushara) were identified as the "economic region" (see map on back page). IMPLAN output included an estimate of the jobs generated by angling-related spending and an estimate of the additional dollars generated as the money spent by anglers ripples through the regional economy.



Angler Characteristics

Based on the survey results of anglers that reported fishing in the Lake Winnebago System in 2005, the typical angler:

- is white (97.9%)
- is male (87%)
- is 46 years old
- has 14 years of education
- has a mean household income \$66,600*
- owns an average of 10 rod/reel combos
- owns a boat (75%)
- does not belong to an angling organization (86%)
- has been fishing on the Lake Winnebago System for 20 or more years (52%)
- has over \$10,000 of angling-related equipment and spends \$250 per year on maintenance and replacement (Figure 1)

*Out-of-state anglers have a mean household income of \$76,667

Angler Behaviors

Other survey findings include:

- 10% of anglers that fish the Lake Winnebago System own or live on waterfront property. Of those, 61% say angling was a factor in their purchase.
- 38% of anglers that fish the Lake Winnebago System say they target a specific fish species. When asked to rank their preferred species to catch, walleye was the overwhelming favorite followed by yellow perch, bluegill/panfish, and crappie.
- Anglers were given a list of reasons why people fish and asked to rank the importance of each statement. The reasons ranked highest were “To be outdoors”, “For relaxation”, and “For the fun of catching fish”. The lowest level of importance was with the statements “To obtain a trophy fish” and “To win a trophy or prize”.
- 5% of respondents say they have called or written to a legislator or local official regarding a fishing matter. Only 28% have ever attended a public hearing or meeting on a fishing matter.
- A majority (81%) are at least “moderately satisfied” with the quality of angling in the Lake Winnebago System (Figure 2).

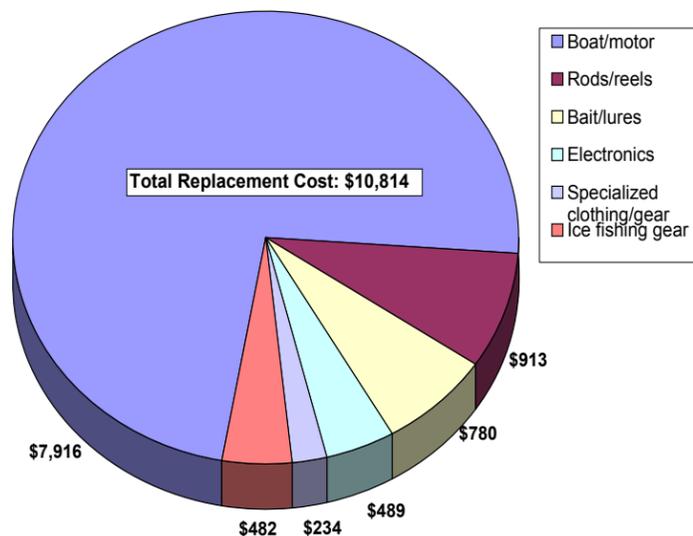


Figure 1: Replacement costs for a typical angler's equipment.

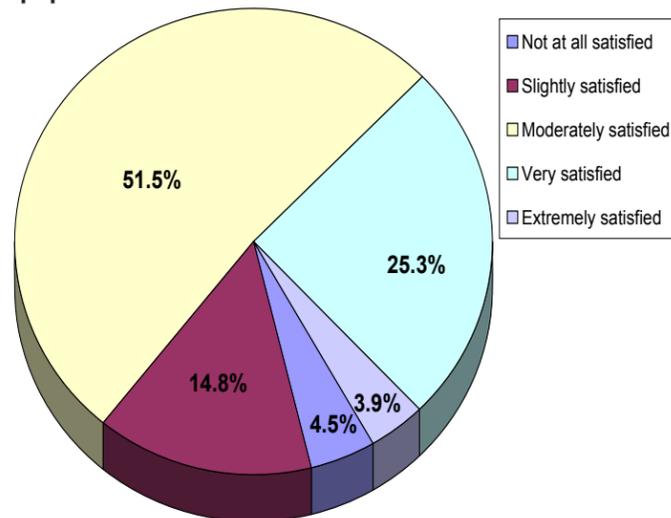


Figure 2: Angler satisfaction with the Lake Winnebago System.

Out-of-State Anglers

Survey responses for out-of-state anglers did differ for some questions.

- Average motor size for anglers in the economic region was 161 horsepower and 76 horsepower for out-of-state anglers.
- Median household income for Wisconsin anglers was \$66,600 and \$76,667 for out-of-state anglers.
- After walleye, Wisconsin anglers reported a preference for perch and then bluegill/panfish while out-of-state anglers favored largemouth bass and northern pike.
- The top-ranked reasons Wisconsin anglers gave for fishing include, “to be outdoors”, “for relaxation”, and “for the fun of catching fish”. Top out-of-state angler reasons included, “to experience natural surroundings”, “to be outdoors”, and “to get away from the regular routine”.

Economic Impact

The economic impact of angling in the Winnebago System can be determined from the money spent on angling by residents of the economic region and anglers visiting the region. Direct expenditures per trip reported by anglers from outside the economic region were extrapolated out to a total amount spent within the economic region. Direct expenditures totaled approximately \$155.5 million dollars. These direct expenditures create 3,500 jobs. Once these new expenditures enter the local economy, they stimulate additional spending by local businesses and employees, which is known as the “multiplier effect”. Through the multiplier effect, IMPLAN calculated that an additional \$78.5 million dollars of impact and 800 jobs are generated. **The total impact to the local economy is then \$234 million annually, which includes 4,300 jobs** (Table 1). These numbers reflect new money and jobs coming into the economic region.

Due to the multiplier for different employment sectors in the local economy, most of the jobs are created are in the categories of human resources, consultants, guides; miscellaneous store retailers; gas stations; food service and drinking places; and hotels/motels.

Local anglers also spend money within the economic region. Money spent by anglers residing within the economic region totaled almost \$72 million dollars. Because local dollars are already circulating in the local economy, it is not appropriate to use IMPLAN to generate a multiplier effect of local dollars.

Angler Trip Expenditures

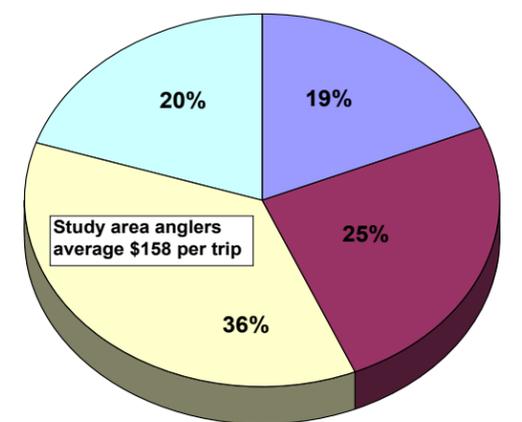
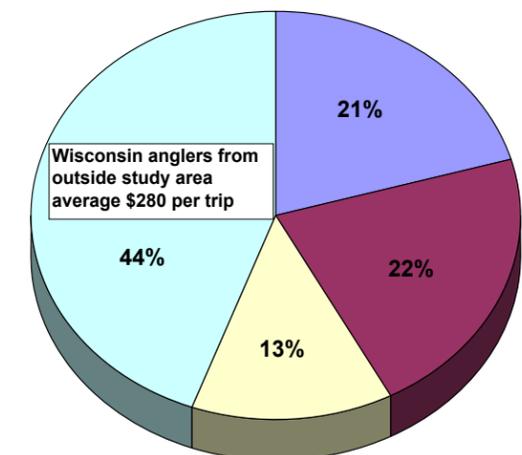
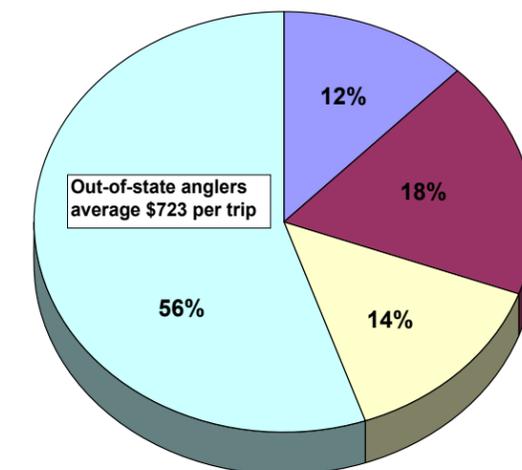
Anglers were asked to report how much money they spent on a typical fishing trip to the Lake Winnebago System (Figure 3). Expenditures were broken into five broad categories (Transportation, Boat, Licenses and Gear, Lodging and Meals, Other) which were subdivided into specific expenditures categories, such as parking fees, restaurant meals and boat operation.

Expenditures were averaged for anglers, indicating that some spent more per trip and others spent less. Out-of-state anglers that came to the Lake Winnebago System to fish spent \$723 per trip. Not surprisingly, the largest expenses were for lodging and meals. Local anglers (within the 5 counties) spent an average of \$158 per trip, mostly on boat expenses and gear.

Table 1: Summary of Direct and Multiplier Effect of the economic impact of angling in the Lake Winnebago System.

	Income (dollars)	Employment (jobs)
Direct Expenditures	\$155,498,909	3,489
Multiplier Effect (indirect & induced)	\$78,469,551	826
Total Impact	\$233,968,465	4,315

*All figures are expressed in 2005 dollars.



Legend: Transportation (blue), Boat (maroon), Licenses & gear (yellow), Lodging & meals (cyan)

Figure 3: Breakdown of expenditures for an average angling trip to the Lake Winnebago System.