

The Economic Contributions of Recreational Visitation at Big Lake National Wildlife Refuge

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This paper establishes the economic contribution baseline for recreational visitation at Big Lake National Wildlife Refuge (Refuge). The paper addresses the levels of Refuge recreational activities and the economic effects of Refuge recreational activities. The analysis is followed by a glossary of terms. For more information regarding the methodology, please refer to “Banking on Nature – The Economic Contributions to Local Communities of National Wildlife Refuge Visitation” at <https://www.fws.gov/economics/divisionpublications/divisionpublications.asp>.

From an economic perspective, Big Lake National Wildlife Refuge provides a variety of environmental and natural resource goods and services used by people either directly or indirectly. The use of these goods and services may result in economic effects to both local and state economies. The various services the Refuge provides can be grouped into five broad categories: (1) maintenance and conservation of environmental resources, services and ecological processes; (2) protection of natural resources such as fish, wildlife, and plants; (3) protection of cultural and historical sites and objects; (4) provision of educational and research opportunities; and (5) outdoor and wildlife-related recreation. A comprehensive economic profile of the Refuge would address all applicable economic effects associated with the use of refuge-produced goods and services. However, some of the major contributions of the Refuge to the natural environment, such as watershed protection, maintenance and stabilization of ecological processes, and the enhancement of biodiversity are beyond the scope of this paper. Therefore, this paper focuses on economic effects associated with recreational visitation. As a result, benefits represent conservative estimates and do not represent the Refuge’s total social impacts.

Refuge Description

Big Lake National Wildlife Refuge is located near the town of Manila in Mississippi County, Arkansas. The Refuge was established in August of 1915 by Executive Order of President Woodrow Wilson to serve as an inviolate sanctuary, reserve, and breeding ground for native and migratory birds. It is one of nation’s oldest refuges and is 11,038 acres in size. Once a free-flowing river system, the New Madrid earthquakes of 1811- 1812 changed the river into the lake and swamp environment that exist today. Due to the Refuge’s location, significant bottomland forest habitat, and abundance of bird life, it was recognized as a Globally Important Bird Area by the American Bird Conservancy in March of 2001.

The Refuge also contains 5,000 acres that is recognized as a National Natural Landmark and 2,144 acres that are part of the National Wilderness Preservation System. The Refuge annually winters several species of waterfowl. Peak numbers in January and February can exceed 200,000. Wood ducks are year-round residents and annually raise approximately 2,500 young on the refuge. There have been over 225 bird species have been observed on the refuge. Other wildlife to look for are beavers, otters, raccoons, wild turkeys, white-tailed deer, bobcat and the occasional armadillo.

The Refuge allows hunting of deer with bow following the state allowed hunting season. Rifles with rimfire cartridges and shotguns with non-toxic shot may be used to hunt squirrel, rabbit, raccoon, and opossum during open season. The Refuge consists of Big Lake which is a 2,600 acre lake that is great fishing for largemouth bass, crappie, and catfish. Most people fish by boat but there are numerous opportunities to fish from the bank or from our covered fishing pier at Bright’s Landing. We have two boat ramps, one at Timm’s Point and the other at Bright’s Landing. There is also a nice fishing hole right

by the visitor’s center that has benches you can sit at while fishing. The best areas to view wildlife, other than from a boat, include Timm’s Point, Bright’s Landing, and Mud Island. Timm’s Point has a nice area that overlooks the lake with a monocular scope that helps see the wildlife that may be too far to see with the naked eye. Bright’s Landing has an excellent covered fishing pier that provides opportunities to see marsh birds in the summer and deer and waterfowl in the winter. It also has stationary binocular scope to help view distant wildlife. Mud Island has a viewing platform that is great for viewing waterfowl during the winter months, and you might even see a mother wood duck with her brood in the summer here. The refuge works with Arkansas Northeastern College to bring education classes to young people in the area to teach them about different wildlife, wildlife habitat, and conservation. The Refuge also works with the Arkansas Game and Fish Commission to offer hunter education and boater education classes.

Activity Levels

Table 1 shows the recreation visits for the Refuge. The Refuge had about 85,000 recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for about 71,000 visits with residents comprising 87 percent of Refuge visitation.

Table 1. Big Lake NWR: 2017 Recreation Visits

Activity	Residents	Non-Residents	Total
Non-Consumptive:			
Pedestrian	540	60	600
Auto Tour	36,000	4,000	40,000
Boat Trail/Launch	5,400	600	6,000
Bicycle	-	-	-
Photography	3,600	400	4,000
Interpretation	100	-	100
Other Recreation	-	-	-
Visitor Center	17,000	3,000	20,000
Hunting:			
Big Game	3,200	800	4,000
Small Game	-	-	-
Migratory Birds	-	-	-
Fishing:	8,400	2,100	10,500
Total Visitation	74,240	10,960	85,200

Source: Refuge Annual Performance Plan 2017 and Refuge Staff

Regional Economic Analysis

The economic area for the Refuge is Mississippi County, Arkansas. It is assumed that visitor expenditures occur primarily within this county. Visitor recreation expenditures for 2017 are shown in Table 2. Total expenditures were \$1.8 million with non-residents accounting for \$681,000 or 38 percent of total expenditures. Expenditures on non-consumptive activities accounted for 62 percent of all expenditures.

Spending in the local area generates and supports economic activity within Mississippi County (Table 3). The contribution of recreational spending in local communities was associated with about 23 jobs, \$652,000 in employment income, \$172,000 in total tax revenue, and \$1.9 million in economic output.

Table 2. Big Lake NWR: Visitor Recreation Expenditures (2017 \$,000)

Activity	Residents	Non-Residents	Total
Non-Consumptive	\$645.3	\$479.5	\$1,124.8
Hunting	\$94.1	\$76.0	\$170.1
Fishing	\$382.6	\$125.6	\$508.2
Total Expenditures	\$1,122.0	\$681.0	\$1,803.0

Table 3. Big Lake NWR: Local Economic Contributions Associated with Recreation Visits (2017 \$,000)

	Residents	Non-Residents	Total
Economic Output	\$1,218.4	\$723.7	\$1,942.1
Jobs	15	8	23
Job Income	\$418.3	\$233.8	\$652.1
State and Local Tax Revenue	\$107.5	\$64.7	\$172.2

Glossary

Economic Contribution: The economic activity generated in a region by residents and non-resident recreation spending.

Expenditures: The spending by recreational visitors when visiting refuges. Expenditure categories include food, lodging, transportation, and other. Expenditure information is based on the 2011 National Survey of Fishing, Hunting and Wildlife Associated Recreation (NSFHWR).

Economic Output: The total spending by final consumers on all goods. The amount reported in this study is the change in spending by final consumers in the region attributable to refuge visitation. Economic output includes spending by people who earn income from refuge visitors' activities as well as spending by refuge visitors themselves.

Impact: The new economic activity generated in a region as a refuge attracts non-residents to the area. This figure represents economic activity that would be lost if the refuge were not there.

IMPLAN: An economic modeling software package that applies input-output analysis techniques to regional economies.

Jobs: Full and part time jobs.

Job Income: Income to households from labor including wages and salaries.

Resident/Non-Resident: People living more than 50 miles from the refuges are considered non-residents for this study.

Tax Revenue: Local, county and state taxes: sales tax, property tax, and income tax

Visitors: A visitor is someone who comes to the refuge and participates in one or more of the activities available at the refuge.

Visits (visitation): A visit is not the same as a visitor. One visitor could be responsible for several visits on a refuge. For example, if a family of four went fishing in the morning and hiked a short nature trail in the afternoon, they would have contributed eight activity visits to the refuge; yet, they are only four visitors.

References

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