

The Economic Contributions of Recreational Visitation at Wichita Mountains National Wildlife Refuge

May 2019
Division of Economics
U.S. Fish & Wildlife Service

This paper establishes the economic contribution baseline for recreational visitation at Wichita Mountains 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, Wichita Mountains 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

The 59,020 acre Wichita Mountains Wildlife Refuge in Southwest Oklahoma hosts a rare piece of the past, including the largest remaining tract of mixed grass prairie in the United States. The Refuge plays critical roles in the conservation of many wildlife resources. Its native grasslands and woodlands support approximately 750 free-ranging American Bison, along with elk, white-tailed deer, wild turkeys, prairie dogs, and a diverse array of other wildlife that includes 57 species of mammals, 292 species of birds, 19 species of amphibians, 55 species of reptiles and 33 species of fish. The Refuge also manages a herd of longhorn cattle, to preserve this historically and culturally significant breed of cattle.

This iconic refuge attracts visitors who come to enjoy the Refuge’s diverse wildlife resources, outstanding scenic qualities and outdoor recreational opportunities. The Refuge also manages 8,750 acres of designated wilderness, a 22,000 square foot visitor center, and several scenic lakes that were created by dams constructed by the CCC and WPA in the 1930’s. In 2015, the Refuge was named the Best National Wildlife Refuge by a USA Today Reader’s Choice poll, and in 2016 it was ranked the top place to see wildlife in the country. Hikers, rock-climbers, cyclists, photographers, bird-watchers, anglers, and wildlife aficionados are among the many repeat visitors to the Refuge.

Activity Levels

Table 1 shows the recreation visits for the Refuge. The Refuge had about 4.1 million recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for nearly all visits with residents comprising 42 percent of Refuge visitation.

Table 1. Wichita Mountains NWR: 2017 Recreation Visits

Activity	Residents	Non-Residents	Total
Non-Consumptive:			
Pedestrian	86,000	129,000	215,000
Auto Tour	688,000	1,462,000	2,150,000
Boat Trail/Launch	8,385	4,515	12,900
Bicycle	7,310	3,440	10,750
Photography	827,750	677,250	1,505,000
Interpretation	13,858	3,042	16,900
Other Recreation	27,594	18,396	45,990
Visitor Center	68,800	103,200	172,000
Hunting:			
Big Game	126	502	628
Small Game	-	-	-
Migratory Birds	-	-	-
Fishing:	8,385	4,515	12,900
Total Visitation	1,736,208	2,405,860	4,142,068

Source: Refuge Annual Performance Plan 2017 and Refuge Staff

Regional Economic Analysis

The economic area for the Refuge is Comanche County, Oklahoma. It is assumed that visitor expenditures occur primarily within this county. Visitor recreation expenditures for 2017 are shown in Table 2. Total expenditures were \$73.6 million with non-residents accounting for \$58.0 million or 79 percent of total expenditures. Expenditures on non-consumptive activities accounted for 99 percent of all expenditures.

Spending in the local area generates and supports economic activity within Comanche County (Table 3). The contribution of recreational spending in local communities was associated with about 923 jobs, \$26.6 million in employment income, \$8.0 million in total tax revenue, and \$98.2 million in economic output.

Table 2. Wichita Mountains NWR: Visitor Recreation Expenditures (2017 \$,000)

Activity	Residents	Non-Residents	Total
Non-Consumptive	\$15,472.7	\$57,739.1	\$73,211.8
Hunting	\$5.6	\$94.9	\$100.5
Fishing	\$167.6	\$146.1	\$313.7
Total Expenditures	\$15,645.9	\$57,980.1	\$73,625.9

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

	Residents	Non-Residents	Total
Economic Output	\$20,874.1	\$77,324.6	\$98,198.7
Jobs	221	703	923
Job Income	\$6,098.7	\$20,490.7	\$26,589.4
State and Local Tax Revenue	\$1,864.7	\$6,096.1	\$7,960.8

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

Minnesota IMPLAN Group, Inc. *IMPLAN System (2015 data and software)*.

U. S. Department of the Interior, U.S. Fish and Wildlife Service, Division of Federal Aid. 2013. *2011 National Survey of Fishing, Hunting, and Wildlife Associated Recreation*. Washington, D.C.

U.S. Department of the Interior, U.S. Fish and Wildlife Service, National Wildlife Refuge System. *Refuge Annual Performance Plan 2017*. Washington, D.C. Unpublished.

Varian, Hal R. 2010. *Intermediate Microeconomics: A Modern Approach*. 8th ed. New York: W.W. Norton & Company.