

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

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This paper establishes the economic contribution baseline for recreational visitation at Big Stone 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 Stone 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

Straddling the headwaters of the Minnesota River, Big Stone National Wildlife Refuge serves as a prairie oasis representing the heart of Minnesota’s historic tallgrass prairie. Established in 1975, the Refuge and its nearly 12,000 acres are located in extreme West-Central Minnesota near South Dakota. The Refuge offers a mosaic of native grasses and wildflowers, prairie wetlands, granite outcrops and wooded river bottoms where wildlife abounds and visitors experience a true appreciation of their natural heritage.

A six-mile auto tour route traverses throughout the Refuge’s upland and wetland habitats offering visitors an easy opportunity for numerous recreational opportunities. It also winds through one of the more unique and sought after features, the lichen-covered granite outcrops, for which the Refuge was named. Beyond providing optimum nesting cover for waterfowl and other grassland nesting birds, the refuge promotes interpretive hiking, hunting, fishing, environmental education, photography, and wildlife observation.

During spring and fall migration, up to 17 species of waterfowl and more than 23 species of shorebirds can be seen. Visitors also have the chance to see birds of prey like bald eagles, red-tailed hawk, and kestrel. During the spring and summer months, birds such as the bobolink, meadowlark, marsh wren, and Virginia rail breed and nest on the refuge. Other wildlife to look for year round include beaver, mink, white-tailed deer, and river otters while spring and summer offer chances to see thirteen-lined ground squirrel, snapping turtles, frogs, and salamanders.

Activity Levels

Table 1 shows the recreation visits for the Refuge. The Refuge had about 21,000 recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for about 18,000 visits with residents comprising 70 percent of Refuge visitation.

Table 1. Big Stone NWR: 2017 Recreation Visits

Activity	Residents	Non-Residents	Total
Non-Consumptive:			
Pedestrian	800	200	1,000
Auto Tour	10,150	4,350	14,500
Boat Trail/Launch	45	5	50
Bicycle	750	250	1,000
Photography	270	30	300
Interpretation	108	72	180
Other Recreation	120	80	200
Visitor Center	500	500	1,000
Hunting:			
Big Game	225	75	300
Small Game	1,155	495	1,650
Migratory Birds	-	-	-
Fishing:	413	138	550
Total Visitation	14,536	6,195	20,730

Source: Refuge Annual Performance Plan 2017 and Refuge Staff

Regional Economic Analysis

The economic area for the Refuge is the two-county area of Big Stone and La Qui Parle Counties in Minnesota. It is assumed that visitor expenditures occur primarily within these counties. Visitor recreation expenditures for 2017 are shown in Table 2. Total expenditures were \$153,000 with non-residents accounting for \$77,000 or 51 percent of total expenditures. Expenditures on non-consumptive activities accounted for 72 percent of all expenditures.

Spending in the local area generates and supports economic activity within the two county area (Table 3). The contribution of recreational spending in local communities was associated with about 2 jobs, \$41,000 in employment income, \$17,000 in total tax revenue, and \$175,000 in economic output.

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

Activity	Residents	Non-Residents	Total
Non-Consumptive	\$54.6	\$55.3	\$109.9
Hunting	\$15.1	\$17.3	\$32.4
Fishing	\$5.6	\$4.7	\$10.3
Total Expenditures	\$75.4	\$77.3	\$152.7

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

	Residents	Non-Residents	Total
Economic Output	\$89.6	\$85.6	\$175.2
Jobs	1	1	2
Job Income	\$21.5	\$19.9	\$41.4
State and Local Tax Revenue	\$8.3	\$8.6	\$16.9

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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