

The Economic Contributions of Recreational Visitation at Great Swamp National Wildlife Refuge

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

This paper establishes the economic contribution baseline for recreational visitation at Great Swamp 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, Great Swamp 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 Great Swamp National Wildlife Refuge is one of more than 560 refuges in the National Wildlife Refuge System that is administered by the Department of the Interior's U.S. Fish and Wildlife Service. Great Swamp is here to conserve its natural resources for the America public while protecting threatened and endangered species for future generations. The National Wildlife Refuge System is a network of lands and waters managed specifically for the protection of wildlife and its habitat. It represents the most comprehensive wildlife management program in the world.

The Great Swamp NWR is located in Morris County, New Jersey, about 26 miles west of Manhattan's Times Square. The Refuge was established by an act of Congress on November 3, 1960. Today the Refuge consists of 7,768 acres of varied habitats, and the Refuge has become an important resting and feeding area for more than 244 species of birds. Fox, deer, muskrat, turtles, fish, frogs and a wide variety of wildflowers and plants can be found on the Refuge.

In 1966, the National Park Service designated Great Swamp NWR a registered National Natural Landmark under the provisions of the Historic Sites Act of 1935. The Refuge was chosen for the registry as an “exceptional example of the natural history of the United States.”

In 1967, 746 acres in the eastern portion of the present Wilderness Area were declared a Research Natural Area by the Director of the U.S. Fish and Wildlife Service. This area contains natural shrub swamp habitat and many small upland islands.

This eastern portion of the Refuge, comprising 3,660 acres is managed to maintain a Wilderness character while providing habitat for wildlife. The Great Swamp Wilderness Act of 1968 established the first wilderness area designated within the Department of the Interior.

Activity Levels

Table 1 shows the recreation visits for the Refuge. The Refuge had about 209,000 recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for many visits with residents comprising 49 percent of Refuge visitation.

Table 1. Great Swamp NWR: 2017 Recreation Visits

Activity	Residents	Non-Residents	Total
Non-Consumptive:			
Pedestrian	68,000	68,000	136,000
Auto Tour	13,250	13,250	26,500
Boat Trail/Launch	-	-	-
Bicycle	4,200	1,400	5,600
Photography	10,125	3,375	13,500
Interpretation	1,388	463	1,850
Other Recreation	41	14	55
Visitor Center	6,250	18,750	25,000
Hunting:			
Big Game	29	261	290
Small Game	-	-	-
Migratory Birds	-	-	-
Fishing:	-	-	-
Total Visitation	103,283	105,512	208,795

Source: Refuge Annual Performance Plan 2017 and Refuge Staff

Regional Economic Analysis

The economic area for the Refuge is Morris County, New Jersey. It is assumed that visitor expenditures occur primarily within this county. Visitor recreation expenditures for 2017 are shown in Table 2. Total expenditures were \$2.9 million with non-residents accounting for \$2.5 million or 85 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 Morris County (Table 3). The contribution of recreational spending in local communities was associated with about 26 jobs, \$1.7 million in employment income, \$251,000 in total tax revenue, and \$4.3 million in economic output.

Table 2. Great Swamp NWR: Visitor Recreation Expenditures (2017 \$,000)

Activity	Residents	Non-Residents	Total
Non-Consumptive	\$438.7	\$2,491.6	\$2,930.3
Hunting	\$0.7	\$15.6	\$16.3
Fishing	\$0.0	\$0.0	\$0.0
Total Expenditures	\$439.4	\$2,507.1	\$2,946.5

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

	Residents	Non-Residents	Total
Economic Output	\$649.8	\$3,674.7	\$4,324.5
Jobs	5	21	26
Job Income	\$246.1	\$1,435.7	\$1,681.8
State and Local Tax Revenue	\$37.8	\$213.1	\$250.8

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.