

The Economic Contributions of Recreational Visitation at Edwin B. Forsythe National Wildlife Refuge

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This paper establishes the economic contribution baseline for recreational visitation at Edwin B. Forsythe 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, Edwin B. Forsythe 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 Edwin B. Forsythe National Wildlife Refuge protects more than 47,000 acres of southern New Jersey coastal habitats which is actively managed for migratory birds. The Refuge’s location in one of the Atlantic Flyway’s most active flight paths makes it an important link in seasonal bird migration. Its value for the protection of water birds and their habitat continues to increase as people develop the New Jersey shore for our own use.

The Refuge is one of more than 555 refuges in the National Wildlife Refuge System administered by the U.S. Fish and Wildlife Service. The National Wildlife Refuge System is a network of lands and waters managed specifically for the protection of wildlife and wildlife habitat and represents the most comprehensive wildlife resource management program in the world. Units of the system stretch across the United States from northern Alaska to the Florida Keys, and include small islands in the Caribbean and South Pacific. The character of the refuges is as diverse as the nation itself.

Activity Levels

Table 1 shows the recreation visits for the Refuge. The Refuge had about 307,000 recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for about 98,000 visits with residents comprising 68 percent of Refuge visitation. The Refuge implemented a roving interpretation program where interns and volunteers speak with visitors at specific locations throughout. Other recreation activities include a robust archery program, monthly evening presentations, and well-attended Friday bird walks.

Table 1. Edwin B. Forsythe NWR: 2017 Recreation Visits

Activity	Residents	Non-Residents	Total
Non-Consumptive:			
Pedestrian	52,200	5,800	58,000
Auto Tour	36,420	24,280	60,700
Boat Trail/Launch	2,700	300	3,000
Bicycle	150	0	150
Photography	2,175	725	2,900
Interpretation	7,000	7,000	14,000
Other Recreation	73,110	48,740	121,850
Visitor Center	10,020	6,680	16,700
Hunting:			
Big Game	1,120	280	1,400
Small Game	-	-	-
Migratory Birds	880	220	1,100
Fishing:	23,010	4,061	27,070
Total Visitation	208,785	98,086	306,870

Source: Refuge Annual Performance Plan 2017 and Refuge Staff

Regional Economic Analysis

The economic area for the Refuge is the two-county area of Atlantic and Ocean Counties in New Jersey. It is assumed that visitor expenditures occur primarily within these counties. Visitor recreation expenditures for 2017 are shown in Table 2. Total expenditures were \$4.1 million with non-residents accounting for \$2.6 million or 64 percent of total expenditures. Expenditures on non-consumptive activities accounted for 78 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 50 jobs, \$2.4 million in employment income, \$464,000 in total tax revenue, and \$6.0 million in economic output.

Table 2. Edwin B. Forsythe NWR: Visitor Recreation Expenditures (2017 \$,000)

Activity	Residents	Non-Residents	Total
Non-Consumptive	\$828.8	\$2,359.5	\$3,188.3
Hunting	\$38.5	\$19.6	\$58.1
Fishing	\$607.6	\$252.1	\$859.6
Total Expenditures	\$1,474.9	\$2,631.1	\$4,106.0

Table 3. Edwin B. Forsythe NWR: Local Economic Contributions Associated with Recreation Visits (2017 \$,000)

	Residents	Non-Residents	Total
Economic Output	\$2,139.2	\$3,868.8	\$6,008.0
Jobs	19	31	50
Job Income	\$878.7	\$1,474.4	\$2,353.1
State and Local Tax Revenue	\$167.9	\$296.2	\$464.0

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.