

The Economic Contributions of Recreational Visitation at Eastern Neck National Wildlife Refuge

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This paper establishes the economic contribution baseline for recreational visitation at Eastern Neck 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, Eastern Neck 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

Eastern Neck National Wildlife Refuge is a 2,285 acre island providing habitat for thousands of wintering waterfowl including the tundra swan. Swans feed off of grasses in the river and narrows as do the thousands of waterfowl. Eastern Neck NWR supports a wide variety of habitats including brackish marsh, natural ponds, upland forest, and grasslands. The Refuge holds the designation of Important Bird Areas by the Audubon Society. Over 240 bird species visit the Refuge along with small mammals and many other wildlife species.

The Refuge offers wonderful wildlife viewing and expansive views of the Chester River and Chesapeake Bay along 7 different trails. The Visitor Contact Station is staffed daily by volunteers. The wall of historic photographs is a priceless view into the Refuge’s amazing history as a port for boats to drop off goods for the local area. Fishing is permitted at Tundra Swan Boardwalk, Ingleside Recreation area, and Bogles Wharf. Hunters enjoy fall deer hunting and a spring youth turkey hunt.

Activity Levels

Table 1 shows the recreation visits for the Refuge. The Refuge had about 82,000 recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for about 24,000 visits with residents comprising 70 percent of Refuge visitation. Interpretation activities includes monthly bird walks by the Refuge’s Friends group.

Table 1. Eastern Neck NWR: 2017 Recreation Visits

Activity	Residents	Non-Residents	Total
Non-Consumptive:			
Pedestrian	22,500	2,500	25,000
Auto Tour	24,000	16,000	40,000
Boat Trail/Launch	855	95	950
Bicycle	90	30	120
Photography	440	660	1,100
Interpretation	68	8	75
Other Recreation	-	-	-
Visitor Center	2,800	4,200	7,000
Hunting:			
Big Game	280	70	350
Small Game	-	-	-
Migratory Birds	-	-	-
Fishing:	6,750	750	7,500
Total Visitation	57,783	24,313	82,095

Source: Refuge Annual Performance Plan 2017 and Refuge Staff

Regional Economic Analysis

The economic area for the Refuge is Kent County, Maryland. It is assumed that visitor expenditures occur primarily within this county. Visitor recreation expenditures for 2017 are shown in Table 2. Total expenditures were \$709,000 with non-residents accounting for \$417,000 or 59 percent of total expenditures. Expenditures on non-consumptive activities accounted for 79 percent of all expenditures.

Spending in the local area generates and supports economic activity within Kent County (Table 3). The contribution of recreational spending in local communities was associated with about 9 jobs, \$250,000 in employment income, \$72,000 in total tax revenue, and \$823,000 in economic output.

Table 2. Eastern Neck NWR: Visitor Recreation Expenditures (2017 \$,000)

Activity	Residents	Non-Residents	Total
Non-Consumptive	\$178.3	\$384.8	\$563.1
Hunting	\$6.7	\$4.2	\$10.9
Fishing	\$106.9	\$27.9	\$134.9
Total Expenditures	\$292.0	\$416.9	\$708.8

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

	Residents	Non-Residents	Total
Economic Output	\$348.2	\$474.4	\$822.6
Jobs	4	5	9
Job Income	\$105.2	\$145.1	\$250.3
State and Local Tax Revenue	\$29.5	\$42.1	\$71.6

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.