

The Economic Contributions of Recreational Visitation at Archie Carr National Wildlife Refuge

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Division of Economics
U.S. Fish & Wildlife Service

This paper establishes the economic contribution baseline for recreational visitation at Archie Carr 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, Archie Carr 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 Archie Carr National Wildlife Refuge stretches across 20.5 miles between Melbourne Beach and Wabasso Beach along Florida's east coast in Brevard and Indian River Counties. The Refuge was established in 1991 and was named after the late Dr. Archie Carr, Jr., in honor of his extraordinary contribution to sea turtle conservation. The Refuge is a direct result of Dr. Carr bringing attention to the world's declining turtle populations due to over-exploitation and loss of safe habitat.

The Refuge was designated to protect habitat for what is the most significant area for loggerhead sea turtle nesting in the world, and the most significant area for green turtle nesting in North America. This represents 20-35% of all loggerhead and green sea turtle nests in the United States. It also serves as a minor nesting area for the leatherback sea turtle, which is one of the world's largest and rarest sea turtles. The long stretches of quiet, undisturbed sandy beaches, with little or no artificial light, are essential to the reproductive success and survival of the 15,000 to 30,000 sea turtles nests we receive annually.

The 258-acre refuge is also unique for its placement within a patchwork of protected lands and among properties that have already been developed. To help preserve this globally important nesting ground the Service has established a partnership with state and county governments and private conservation groups to acquire and manage this dune habitat. The primary management thrust is to provide long term protection of this habitat for sea turtles and other listed species as well as providing compatible public

use. Collaboratively, this partnership, known as the Archie Carr Working Group has protected over 2,600 acres and continues to educate thousands of residents and visitors about the unique characteristics of the barrier island ecosystem.

Activity Levels

The conservation lands of the Service and the partners in this area are colloquially referred to as The Carr Refuge or the Archie Carr Refuge Partnership. The larger partnership includes Brevard and Indian River County beach parks, Environmentally Endangered Lands Program trail heads, state parks and properties, the Service's properties, and the Barrier Island Center. Archie Carr National Wildlife Refuge has a lead role in the partnership and includes all these lands, except for the State Parks, in their visitation numbers. Thus, visitation at Archie Carr NWR includes the county-owned and managed beach access and visitor center because visitors often utilize the Archie Carr NWR beach areas, and we share similar management and interpretation goals. Table 1 shows the recreation visits for the Refuge. The Refuge had about 292,000 recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for about 288,000 visits with residents comprising 40 percent of Refuge visitation.

Table 1. Archie Carr NWR: 2017 Recreation Visits

Activity	Residents	Non-Residents	Total
Non-Consumptive:			
Pedestrian	74,000	126,000	200,000
Auto Tour	-	-	-
Boat Trail/Launch	-	-	-
Bicycle	-	-	-
Photography	36,000	44,000	80,000
Interpretation	1,850	3,150	5,000
Other Recreation	-	-	-
Visitor Center	500	2,000	2,500
Hunting:			
Big Game	-	-	-
Small Game	-	-	-
Migratory Birds	-	-	-
Fishing:	3,500	1,500	5,000
Total Visitation	115,850	176,650	292,500

Source: Refuge Annual Performance Plan 2017 and Refuge Staff

Regional Economic Analysis

The economic area for the Refuge is the two-county area of Indian River and Brevard Counties in Florida. It is assumed that visitor expenditures occur primarily within these counties. Visitor recreation expenditures for 2017 are shown in Table 2. Total expenditures were \$10.3 million with non-residents accounting for \$9.3 million or 90 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 the two county area (Table 3). The contribution of recreational spending in local communities was associated with about 131 jobs, \$4.4 million in employment income, \$1.1 million in total tax revenue, and \$14.7 million in economic output.

Table 2. Archie Carr NWR: Visitor Recreation Expenditures (2017 \$,000)

Activity	Residents	Non-Residents	Total
Non-Consumptive	\$912.0	\$9,282.2	\$10,194.2
Hunting	\$0.0	\$0.0	\$0.0
Fishing	\$79.7	\$44.9	\$124.6
Total Expenditures	\$991.7	\$9,327.1	\$10,318.8

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

	Residents	Non-Residents	Total
Economic Output	\$1,443.6	\$13,244.4	\$14,688.1
Jobs	13	118	131
Job Income	\$437.6	\$3,934.0	\$4,371.6
State and Local Tax Revenue	\$98.8	\$973.7	\$1,072.5

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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