

# **The Economic Contributions of Recreational Visitation at Lower Rio Grande Valley National Wildlife Refuge**

May 2019  
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This paper establishes the economic contribution baseline for recreational visitation at Lower Rio Grande Valley 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, Lower Rio Grande Valley 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**

Designated in 1979 and considered one of the most biologically diverse in the entire National Wildlife Refuge system consisting of 11 unique biotic communities in the Lower Rio Grande Valley. In its 96,077 acres there are 776 plant species, 50 mammal species, 29 freshwater fish species, and 65 reptile and amphibian species found on the Refuge. It is located at the intersection of the Central and Mississippi migratory flyways; the refuge provides nesting, feeding and resting areas for millions of migratory and resident songbirds, shorebirds, waterfowl species and water birds. The Refuge manages habitats for 19 federally threatened and endangered species, and 57 state protected species. The Refuge provides habitat for two federally listed endangered cat species, the ocelot and Jaguarundi. The Kemp’s Ridley sea turtles, the most endangered sea turtle species in the world, nests on beaches of the Boca Chica Tract each year.

## **Activity Levels**

Table 1 shows the recreation visits for the Refuge. The Refuge had about 70,000 recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for about 58,000 visits with residents comprising 90 percent of Refuge visitation. Cultural and historical interpretation include presentations by staff and volunteers while other recreational activities include swimming, bird watching, and picnicking.

**Table 1. Lower Rio Grande Valley NWR: 2017 Recreation Visits**

<b>Activity</b>	<b>Residents</b>	<b>Non-Residents</b>	<b>Total</b>
<b>Non-Consumptive:</b>			
Pedestrian	27,900	3,100	31,000
Auto Tour	360	40	400
Boat Trail/Launch	-	-	-
Bicycle	18	2	20
Photography	855	95	950
Interpretation	1,125	125	1,250
Other Recreation	19,800	2,200	22,000
Visitor Center	2,568	285	2,853
<b>Hunting:</b>			
Big Game	347	39	385
Small Game	-	-	-
Migratory Birds	-	-	-
<b>Fishing:</b>	9,900	1,100	11,000
<b>Total Visitation</b>	<b>62,872</b>	<b>6,986</b>	<b>69,858</b>

Source: Refuge Annual Performance Plan 2017 and Refuge Staff

### **Regional Economic Analysis**

The economic area for the Refuge is the four-county area of Cameron, Hidalgo, Starr, and Willacy Counties in Texas. It is assumed that visitor expenditures occur primarily within these counties. Visitor recreation expenditures for 2017 are shown in Table 2. Total expenditures were \$640,000 with non-residents accounting for \$258,000 or 20 percent of total expenditures. Expenditures on non-consumptive activities accounted for 50 percent of all expenditures.

Spending in the local area generates and supports economic activity within the four county area (Table 3). The contribution of recreational spending in local communities was associated with about 18 jobs, \$596,000 in employment income, \$184,000 in total tax revenue, and \$2.0 million in economic output.

**Table 2. Lower Rio Grande Valley NWR: Visitor Recreation Expenditures (2017 \$,000)**

<b>Activity</b>	<b>Residents</b>	<b>Non-Residents</b>	<b>Total</b>
Non-Consumptive	\$483.7	\$156.2	\$639.9
Hunting	\$15.5	\$7.3	\$22.8
Fishing	\$527.7	\$94.9	\$622.6
<b>Total Expenditures</b>	<b>\$1,026.9</b>	<b>\$258.4</b>	<b>\$1,285.3</b>

**Table 3. Lower Rio Grande Valley NWR: Local Economic Contributions Associated with Recreation Visits (2017 \$,000)**

	<b>Residents</b>	<b>Non-Residents</b>	<b>Total</b>
Economic Output	\$1,586.8	\$402.0	\$1,988.8
Jobs	15	3	18
Job Income	\$482.2	\$114.2	\$596.4
State and Local Tax Revenue	\$148.5	\$35.9	\$184.4

## 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 8 activity visits to the refuge; yet, they are only four visitors.

## References

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