

# **The Economic Contributions of Recreational Visitation at Ruby Lake National Wildlife Refuge**

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This paper establishes the economic contribution baseline for recreational visitation at Ruby Lake 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, Ruby Lake 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**

Ruby Lake National Wildlife Refuge lies in the Great Basin of eastern Nevada at an elevation of 6,000 feet. It is one of the most remote refuges in the lower 48 states and was established for migratory birds in 1938. The Refuge is nearly 40,000 acres in size with about 17,000 acres of wetlands. The wetlands attract a host of waterfowl, wading birds, shorebirds, and numerous other species. The Refuge is home to greater sage grouse, pronghorn, and other resident species as well. Recreational activities include wildlife observation and photography, hunting for waterfowl, fishing for bass and trophy trout, and boating.

Even with extremes in weather wildlife are present year-round. During spring and summer, the refuge explodes with color and calls of numerous birds from striking cinnamon teal and canvasback ducks to yellow-headed blackbirds and western kingbirds. Sandhill cranes raise their young and pronghorns are often seen with their fawns. In fall, migrating waterfowl set the stage, and in winter when almost all the wetlands are frozen trumpeter swans and a few hardy waterfowl remain to keep us company.

Fishing in the Collection Ditch, various spring ponds, and larger wetlands is a popular activity through most of the year. During June, July, and August, bass fishing on the South Marsh is at its peak. Many anglers use boats for fishing the expansive South Marsh, but bring your GPS to find your way out of this maze-like wetland with its many islands and channels. The remainder of the year fishing for trophy size trout is popular in the Collection Ditch, a 6-mile long waterway used to distribute fresh spring water throughout the wetlands.

## Activity Levels

Table 1 shows the recreation visits for the Refuge. The Refuge had about 39,000 recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for about 26,000 visits with residents comprising 32 percent of Refuge visitation.

**Table 1. Ruby Lake NWR: 2017 Recreation Visits**

Activity	Residents	Non-Residents	Total
<b>Non-Consumptive:</b>			
Pedestrian	40	360	400
Auto Tour	1,514	6,058	7,572
Boat Trail/Launch	4,493	1,926	6,419
Bicycle	15	136	151
Photography	776	6,985	7,761
Interpretation	208	1,874	2,082
Other Recreation	43	383	425
Visitor Center	324	972	1,296
<b>Hunting:</b>			
Big Game	-	-	-
Small Game	-	-	-
Migratory Birds	627	627	1,253
<b>Fishing:</b>	4,467	6,701	11,168
<b>Total Visitation</b>	<b>12,507</b>	<b>26,020</b>	<b>38,527</b>

Source: Refuge Annual Performance Plan 2017 and Refuge Staff

## Regional Economic Analysis

The economic area for the Refuge is the two-county area of Elko and White Pine Counties in Nevada. It is assumed that visitor expenditures occur primarily within these counties. Visitor recreation expenditures for 2017 are shown in Table 2. Total expenditures were \$1.8 million with non-residents accounting for \$1.4 million or 78 percent of total expenditures. Expenditures on fishing activities accounted for 58 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 30 jobs, \$991,000 in employment income, \$244,000 in total tax revenue, and \$2.5 million in economic output.

**Table 2. Ruby Lake NWR: Visitor Recreation Expenditures (2017 \$,000)**

<b>Activity</b>	<b>Residents</b>	<b>Non-Residents</b>	<b>Total</b>
Non-Consumptive	\$154.6	\$538.7	\$693.3
Hunting	\$19.7	\$53.3	\$73.0
Fishing	\$236.0	\$822.3	\$1,058.3
<b>Total Expenditures</b>	<b>\$410.3</b>	<b>\$1,414.3</b>	<b>\$1,824.6</b>

**Table 3. Ruby Lake NWR: Local Economic Contributions Associated with Recreation Visits (2017 \$,000)**

	<b>Residents</b>	<b>Non-Residents</b>	<b>Total</b>
Economic Output	564.3	\$1,966.3	\$2,503.7
Jobs	7	23	30
Job Income	\$220.9	\$770.0	\$990.9
State and Local Tax Revenue	\$54.3	\$189.4	\$243.7

## 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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