

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

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Division of Economics  
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This paper establishes the economic contribution baseline for recreational visitation at Sheldon 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, Sheldon 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**

Located in a remote area of northwestern Nevada, the Sheldon National Wildlife Refuge encompasses 575,000 acres of sagebrush-steppe habitat within the Great Basin. Originally established in 1931 for the conservation and protection of the once-imperiled American pronghorn, the Refuge now conserves habitat for a number of native, rare, and imperiled species of fish, wildlife, and plants that depend upon the sagebrush-steppe ecosystem. Featured species include pronghorn, Greater sage grouse, California bighorn sheep, mule deer and cutthroat trout. Along with its refuge complex companion, Hart Mountain National Antelope Refuge, Sheldon NWR is one of the most expansive wildlife habitats in the arid west free of domestic livestock and feral horses.

Blanketing high basalt tablelands and mountains, which average 6,000 feet in elevation, the vast expanses of sagebrush habitats are dotted with springs, pockets of aspen, and isolated stands of mountain mahogany. Only at its edges does the refuge vary noticeably, with the pale rhyolite of Virgin Valley on the eastern edge, which holds highly prized black opal, and the high escarpment on the western edge where western juniper dominates.

With the exception of a two-lane paved highway, a few scattered buildings, abandoned water troughs, and some primitive dirt roads, Sheldon NWR appears today much as it has for the past 12,000 years or more that people have lived in this region. This long history of habitation is apparent throughout the Refuge from the prehistoric stone tools, petroglyphs, and ancient campsites that remain. Today people continue to hunt, hike, and camp within Sheldon NWR, but for recreation rather than subsistence.

## Activity Levels

Table 1 shows the recreation visits for the Refuge. The Refuge had about 37,000 recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for about 34,600 visits with residents comprising 64 percent of Refuge visitation. Other recreation activities include rock collecting which is an authorized public use within the Refuge.

**Table 1. Sheldon NWR: 2017 Recreation Visits**

Activity	Residents	Non-Residents	Total
<b>Non-Consumptive:</b>			
Pedestrian	3,000	2,000	5,000
Auto Tour	7,200	4,800	12,000
Boat Trail/Launch	-	-	-
Bicycle	-	-	-
Photography	180	120	300
Interpretation	120	80	200
Other Recreation	11,900	5,100	17,000
Visitor Center	60	40	100
<b>Hunting:</b>			
Big Game	800	1,200	2,000
Small Game	225	25	250
Migratory Birds	3	-	3
<b>Fishing:</b>	112	28	140
<b>Total Visitation</b>	<b>23,600</b>	<b>13,393</b>	<b>36,993</b>

Source: Refuge Annual Performance Plan 2017 and Refuge Staff

## Regional Economic Analysis

The economic area for the Refuge is the three-county area of Humboldt and Washoe Counties in Nevada and Lake County, Oregon. It is assumed that visitor expenditures occur primarily within these counties. Visitor recreation expenditures for 2017 are shown in Table 2. Total expenditures were \$2.7 million with non-residents accounting for \$2.1 million or 77 percent of total expenditures. Expenditures on non-consumptive activities accounted for 88 percent of all expenditures.

Spending in the local area generates and supports economic activity within the three county area (Table 3). The contribution of recreational spending in local communities was associated with about 32 jobs, \$1.3 million in employment income, \$336,100 in total tax revenue, and \$4.2 million in economic output.

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

<b>Activity</b>	<b>Residents</b>	<b>Non-Residents</b>	<b>Total</b>
Non-Consumptive	\$562.1	\$1,784.3	\$2,346.4
Hunting	\$40.0	\$271.9	\$311.9
Fishing	\$4.6	\$2.7	\$7.3
<b>Total Expenditures</b>	<b>\$606.6</b>	<b>\$2,059.0</b>	<b>\$2,665.6</b>

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

	<b>Residents</b>	<b>Non-Residents</b>	<b>Total</b>
Economic Output	\$984.3	\$3,260.4	\$4,244.7
Jobs	8	24	32
Job Income	\$326.4	\$995.7	\$1,322.2
State and Local Tax Revenue	\$71.1	\$265.0	\$336.1

## 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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