

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

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This paper establishes the economic contribution baseline for recreational visitation at Tualatin River 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, Tualatin River 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**

Our Environmental Education program offers extensive activities to school aged children in our local community and beyond. Refuge volunteers lead our curriculum-based field trips to local students from first grade through college aged. Topics vary from forests to birds, incorporating state education standards. We also offer non-curriculum programs for special groups such as senior groups, scout groups, and activity groups. Puddle Stompers is a special program we offer for children 0 to 5 years old. This program offers multiple sensory activities, promoting the exploration of nature. This past year we extended our Alternative Outdoor School Program to include more schools and facilitated a visit to local parks and the Oregon Zoo. This gave students who stayed back from Outdoor School the opportunity to have a meaningful education experience in nature like their fellow students who were able to participate.

The Interpretive Program spans both on and off the Refuge. On the Refuge, we have Trail Rover Volunteers, walking the trails, answering questions, and providing interpretation to visitors. Throughout the year, Interpretive Volunteers offer a variety of walks including but not limited to Owl Prowls, Guided Nature Walks, Bat Walks, and Family Exploration Hikes. Special Interpretive events include Earth Day and Creatures of the Night. This past year we developed the Nature Ambassador Program where volunteers go offsite to provide nature interpretation to connect the community to the Refuge. Nature Ambassadors participated in several community events and regularly provided programs at the Oregon Zoo, Sherwood Library, Newberg Library, and the Summer Feeding Program in Tigard and Tualatin.

## Activity Levels

Table 1 shows the recreation visits for the Refuge. The Refuge had about 157,000 recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for nearly all visits with residents comprising 79 percent of Refuge visitation.

**Table 1. Tualatin River NWR: 2017 Recreation Visits**

Activity	Residents	Non-Residents	Total
<b>Non-Consumptive:</b>			
Pedestrian	100,800	25,200	126,000
Auto Tour	-	-	-
Boat Trail/Launch	-	-	-
Bicycle	-	-	-
Photography	2,800	1,200	4,000
Interpretation	4,360	484	4,844
Other Recreation	-	-	-
Visitor Center	15,750	6,750	22,500
<b>Hunting:</b>			
Big Game	-	-	-
Small Game	-	-	-
Migratory Birds	23	3	26
<b>Fishing:</b>	-	-	-
<b>Total Visitation</b>	<b>123,733</b>	<b>33,637</b>	<b>157,370</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 Washington and Yamhill Counties in 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 \$2.2 million with non-residents accounting for \$1.4 million or 62 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 62 jobs, \$2.0 million in employment income, \$187,000 in total tax revenue, and \$5.8 million in economic output.

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

<b>Activity</b>	<b>Residents</b>	<b>Non-Residents</b>	<b>Total</b>
Non-Consumptive	\$840.3	\$1,377.3	\$2,217.6
Hunting	\$1.1	\$0.3	\$1.4
Fishing	-	-	-
<b>Total Expenditures</b>	<b>\$841.4</b>	<b>\$1,377.6</b>	<b>\$2,219.0</b>

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

	<b>Residents</b>	<b>Non-Residents</b>	<b>Total</b>
Economic Output	\$2,636.7	\$3,121.9	\$5,758.6
Jobs	31	31	62
Job Income	\$964.9	\$1,083.6	\$2,048.5
State and Local Tax Revenue	\$72.9	\$114.0	\$186.9

## 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

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*. 8<sup>th</sup> ed. New York: W.W. Norton & Company.