

The Economic Contributions of Recreational Visitation at Don Edwards San Francisco Bay National Wildlife Refuge

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This paper establishes the economic contribution baseline for recreational visitation at Don Edwards San Francisco Bay 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, Don Edwards San Francisco Bay 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

Don Edwards San Francisco Bay National Wildlife Refuge is located along southern half of the San Francisco Bay and spans nearly 30,000 of acres of uplands, salt marshes, current and former salt ponds, mudflats and vernal pools, providing vital habitat for migratory birds such as shorebirds and waterfowl, and endangered species. The Refuge is vital to millions of shorebirds and waterfowl that winter here each year. Two endangered species that live exclusively in the salt marshes of the San Francisco Bay personify this refuge - the California Ridgway’s rail and the salt marsh harvest mouse.

As an urban refuge, Don Edwards is also a hub of outdoor recreation for surrounding communities. Visitors may enjoy this refuge through the visitor center, environmental education center, trails, and its large public use programs. Every year the Refuge provides environmental education opportunities for thousands of local school children. The Refuge also as an active hunting and fishing program. Hundreds of thousand visit the refuge each year to see birds, walk the trails, and participate in interpretive programs.

Activity Levels

Table 1 shows the recreation visits for the Refuge. The Refuge had about 973,000 recreational visits in 2017 which contributed to the economic effect of the Refuge. Non-consumptive recreation accounted for about 953,000 visits with residents comprising 94 percent of Refuge visitation.

Table 1. Don Edwards San Francisco Bay NWR: 2017 Recreation Visits

Activity	Residents	Non-Residents	Total
Non-Consumptive:			
Pedestrian	655,500	34,500	690,000
Auto Tour	-	-	-
Boat Trail/Launch	53	53	105
Bicycle	85,500	4,500	90,000
Photography	152,000	8,000	160,000
Interpretation	3,040	160	3,200
Other Recreation	-	-	-
Visitor Center	7,125	2,375	9,500
Hunting:			
Big Game	-	-	-
Small Game	-	-	-
Migratory Birds	6,650	6,650	13,300
Fishing:	6,935	365	7,300
Total Visitation	916,803	56,603	973,405

Source: Refuge Annual Performance Plan 2017 and Refuge Staff

Regional Economic Analysis

The economic area for the Refuge is the three-county area of Alameda, Santa Clara, and San Mateo Counties in California. It is assumed that visitor expenditures occur primarily within these counties. Visitor recreation expenditures for 2017 are shown in Table 2. Total expenditures were \$17.9 million with non-residents accounting for \$2.4 million or 13 percent of total expenditures. Expenditures on non-consumptive activities accounted for 95 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 181 jobs, \$9.6 million in employment income, \$1.9 million in total tax revenue, and \$27.1 million in economic output.

Table 2. Don Edwards San Francisco Bay NWR: Visitor Recreation Expenditures (2017 \$,000)

Activity	Residents	Non-Residents	Total
Non-Consumptive	\$15,078.8	\$1,933.7	\$17,012.5
Hunting	\$148.8	\$405.5	\$554.3
Fishing	\$271.2	\$33.1	\$304.4
Total Expenditures	\$15,498.9	\$2,372.4	\$17,871.2

Table 3. Don Edwards San Francisco Bay NWR: Local Economic Contributions Associated with Recreation Visits (2017 \$,000)

	Residents	Non-Residents	Total
Economic Output	\$23,472.9	\$3,618.4	\$27,091.3
Jobs	160	22	181
Job Income	\$8,335.2	\$1,228.3	\$9,563.5
State and Local Tax Revenue	\$1,607.1	\$252.5	\$1,859.6

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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