Non-Market Economic Value of Recreation Use on the Outer Coast of Washington State and Olympic Coast National Marine Sanctuary

Photo: Kate Thompson

The Usefulness of Scenarios

The natural resources valued in this study were carefully selected based upon existing literature and research, natural science teams and focus groups. One of the primary considerations of this work was identifying realistic improvements given additional management or policy interventions.

Since the improvements to the resources are expected to be attainable with additional management and policy intervention, the monetary benefits of targeted management actions can be evaluated. This means that if management decides to engage volunteers in additional beach clean-up days to remove marine debris, the monetary value that Washington residents who use the sanctuary have can be estimated. This benefit can then be compared to the cost of coordinating volunteer efforts and any associated outreach material.

Management has many tools at their disposal to attain the medium and high conditions of the resources. Knowing the value and costs to implement a strategy or policy can help to ensure that there are net positive benefits to the public.

Background

In 2014-15, Point97 and the Surfrider Foundation conducted an Internet survey using a Knowledge Networks (KN) Panel, which included a random sample of all State of Washington households. The survey addressed visitation to the Outer Coast of Washington with emphasis on outdoor recreation activities.

NOAA's objectives included obtaining information on people's preferences for different marine animals (e.g. seabirds and marine mammals), development of an environmental index for predicting people's non-market economic values, estimation of the non-market economic values, and estimation of how those values change with changes in natural resource attributes and user characteristics.

Non-Market Value

The environment and ecosystems provide many benefits to humans. The ways in which humans benefit from ecosystems have come to be known as ecosystem goods and services. Examples include; recreation and food supply. Recreation depends on water quality, quality of the viewscapes, tide pool quality, abundance and diversity of marine mammals and seabirds, etc. Many goods and services are not traded in markets, meaning a person cannot go to the store and buy a unit of tide pool quality. Further, many people may never use the resource or directly benefit from the resource. This, however, does not mean that people do not have a monetary value for the resource. It simply means that market transactions, such as purchases for a tide pool do not exist and alternative methods must be used to estimate the monetary value.

The value of the ecosystem and the stream of benefits that it creates to humans can be estimated using non-market valuation. The research discussed in this factsheet uses non-market valuation to estimate the monetary value of several different resources.

What is measured?

By surveying Washington residents that use Washington's Outer Coast and OCNMS the monetary value of improvements to natural resources was estimated. The non-market values of marine mammals, seabirds, large predators, number of tidal pool organisms, tidal pool access, water quality, shoreline quality measured by both marine debris and number of beach closures, unobstructed views and crowdedness were estimated.

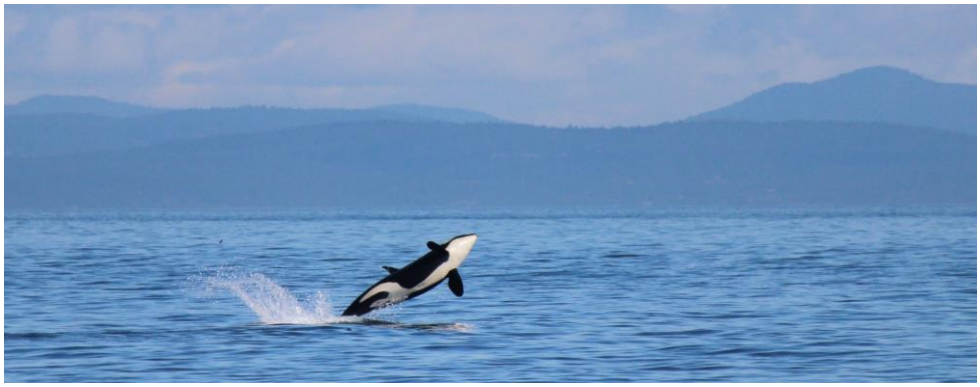

Photo: OCNMS

An orca breaches the surface off the Olympic Coast of Washington.

Net Present Value of Benefits for OCNMS and its 2km Buffer			Time Period for Capitalization		
			20 Years	30 Years	Perpetuity
Scenario		Real Discount Rate	(Millions 2014 $)	(Millions 2014 $)	(Millions 2014 $)
Marine Debris	Status Quo to Medium Condition	2.0%	157	207	453
		3.0%	144	183	302
	Status Quo to High Condition	2.0%	262	345	755
		3.0%	240	305	503
Offshore Development	Status Quo to Medium Condition	2.0%	133	176	384
		3.0%	122	155	256
	Status Quo to High Condition	2.0%	402	530	1200
		3.0%	368	468	773

The Status Quo or Low Condition is not the current condition. Instead, it is the condition expected in 10 to 20 years under no constraints to offshore or onshore developments that affect the viewscape. The High Condition of no development is actually the current condition. So a movement from the Status Quo or Low Condition is calculated as the movement from the Low Condition to the High Condition minus the movement from the Status Quo or Low Condition to the Medium Condition where a few facilities are approved for development.

The Status Quo or Low Condition of marine debris is 3.25 lbs. of debris per 100 feet. The medium condition is 1.6 lbs. per 100 feet of shoreline. Improving from low to medium is a net change of a reduction of 1.65 lbs. per 100 feet of shoreline. The High condition is 0.5 lbs. per 100 feet of shoreline for a net change from low to high of a reduction of 2.75 lbs. per 100 feet of shoreline.

Policy/Management Scenarios

Here, four different scenarios are evaluated for OCNMS. Respondents were asked to evaluate the attributes for changes in status quo to either a medium or a high improvement from the status quo.

Status quo is defined as the condition the resources would be in 10-20 years if no changes in policy/management were made. Scientists then provided a range of resource conditions that were possible to achieve with changes in policy/management. A "medium" and "high" condition was defined for each of the resources in the table to the right. Therefore, what is estimated is the change in non-market value for direct recreation use on WA's Outer Coast and OCNMS for each natural resource attribute as conditions are improved.

Scenarios for marine debris and offshore development were chosen. The estimates of total annual benefits are then capitalized to estimate the net present value of the changes. This is done for three time periods: 1) 20 years, 2) 30 years and 3) Perpetuity or the indefinite future.

The capitalized value of net present value (NPV) is the value someone would pay today for the flow of annual returns over time. A good example is a house that delivers a flow of services over time, but, at any point in time, there is a price people are willing to pay for the house. The same concept can be applied to this research. To convert the future values to net present values, discount rates of 2.0% and 3.0% were selected.

Findings

For the two marine debris scenarios, the results show the benefits of shoreline clean-up efforts. One can compare the benefits versus the costs of the clean-up efforts. At a 2.0% discount rate over 20 years the net present value of moving from the status quo to medium level is $157 million.

For constraining the development of offshore or onshore developments that affect the viewscape, the results show the benefits of constraining future developments i.e. the benefits of denying permits for development or limiting approvals for development. Again at a 2.0% discount rate the net present value over 20 years of moving from the status quo level to medium is $133 million.

More Information

A complete copy of the report is available at:

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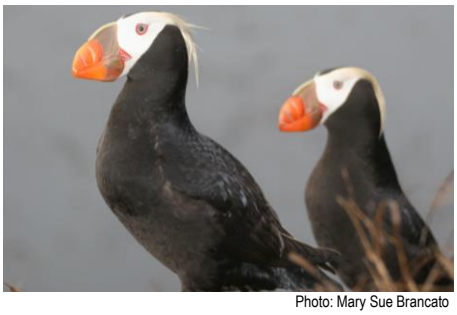

Photo: Mary Sue Brancato

Puffins in OCNMS

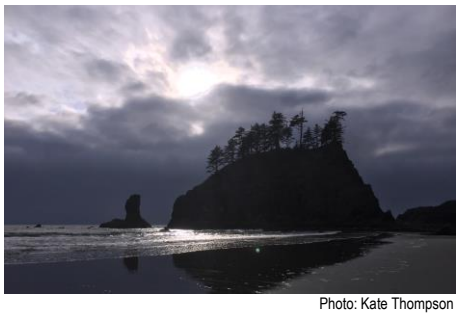

Photo: Kate Thompson

A view from OCNMS at sunset.