Total Net Economic Value of Oregonian's Participation in Outdoor Recreation





Oregon State University
College of Forestry

2019-2023 Oregon SCORP

2019 Sustainable Tourism and Recreation Conference

October 8-11, 2019

Total Net Economic Value from Residents' Outdoor Recreation Participation in Oregon

Oregon Outdoor Recreation Metrics: Health, Physical Activity, and Value

2019-2023 Oregon Statewide Comprehensive Outdoor Recreation Plan
Supporting Documentation

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What is SCORP?

- Qualifies state for LWCF funding
- Updated every 5 years
- Provides guidance for other OPRD-administered grant programs
- Provides guidance & information for federal, state, & local units of government & the private sector
- Accepted by the NPS on April 23, 2019

Important Demographic & Social Changes Addressed

- An aging population
- An increasingly diverse population
- Lack of youth engagement in outdoor recreation
- An underserved low-income population
- **Health, physical activity, value**

Total Net Economic Value

- Total value net of the costs of participation
  - Net Economic Value = Net Benefits = Net Willingness to Pay = Consumer Surplus

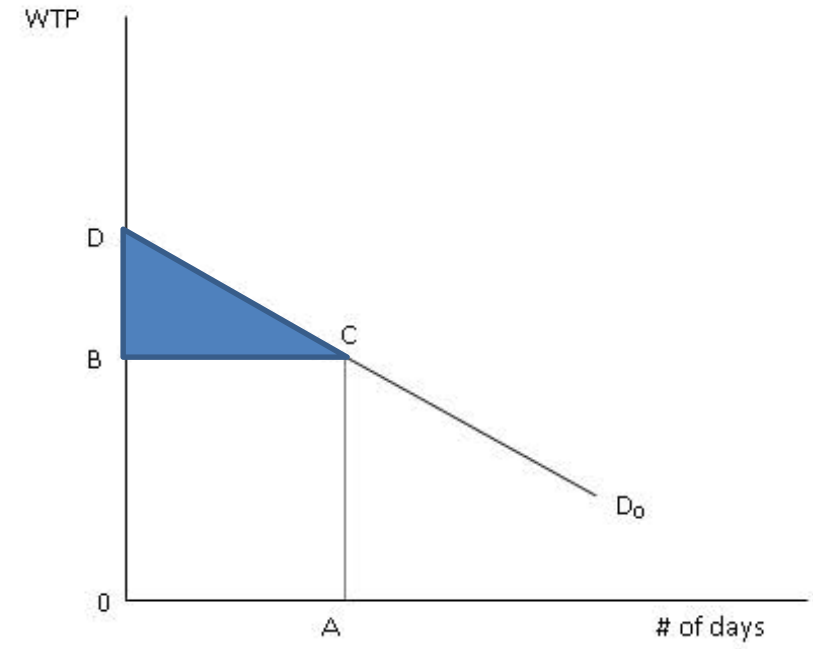


Figure 1: Consumer surplus in demand

Benefits v. Expenditures

- Economic value = monetary measure of benefits received by an individual who participates in recreation
  - Net economic value = max WTP – costs to participate
- Economic impact = how spending by recreationists affects a economies (jobs, income, tax revenue, sales)
- Costs to participate ≠ total spending

Valuation Method

Total Net Economic Value = $/person/activity day * #user occasions

- $/person/activity day
  - Meta-regression analysis benefit transfer function
  - Developed using Recreation Use Values Database
  - Predicts $/person/activity day for PNW region
- User occasions
  - 2017 SCORP Statewide Survey

Meta-Regression Models

Primary Research Study *a*

$$Y_a = \alpha_a + \sum_j \beta_{aj} x_{aj} + \varepsilon_a$$

Behavioral Measure (e.g., trips)

$$WTP_{ak} = \beta_{ak} / \beta_{a5r}$$

Multiple studies | **Policy, site, population** | **Methods**

MRM

$$\begin{bmatrix} WTP_{1k} \\ WTP_{2k} \\ \dots \\ WTP_{Ak} \end{bmatrix} = \delta_k + \sum_m \gamma_{mk} \begin{bmatrix} z_{1mk} \\ z_{2mk} \\ \dots \\ z_{Amk} \end{bmatrix} + \sum_s \mu_{sk} \begin{bmatrix} w_{1sk} \\ w_{2sk} \\ \dots \\ w_{Ask} \end{bmatrix} + \varepsilon_k$$

Benefit Transfer Meta-Regression Models

Benefit Function

$$\hat{WTP}_k = \hat{\delta}_k + \sum_m \hat{\gamma}_{mk} z_{mk} + \sum_s \hat{\mu}_{sk} \overline{w}_{sk}$$

Policy Site Data

z

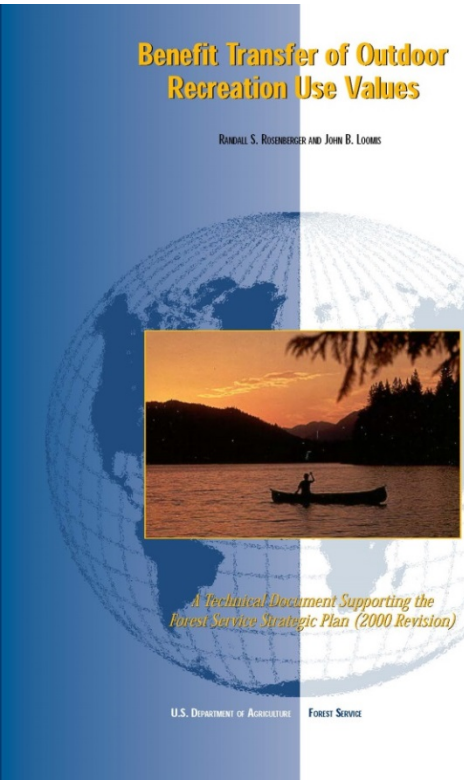
Means or Selected Values

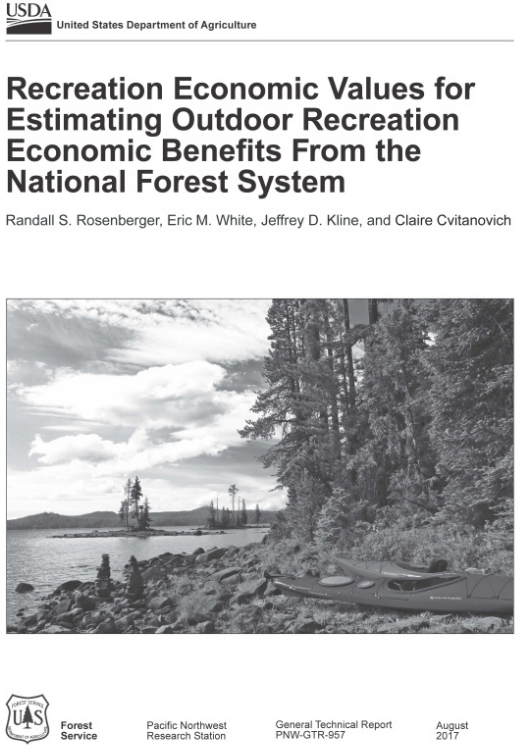
Predicted Welfare (Value) Estimate

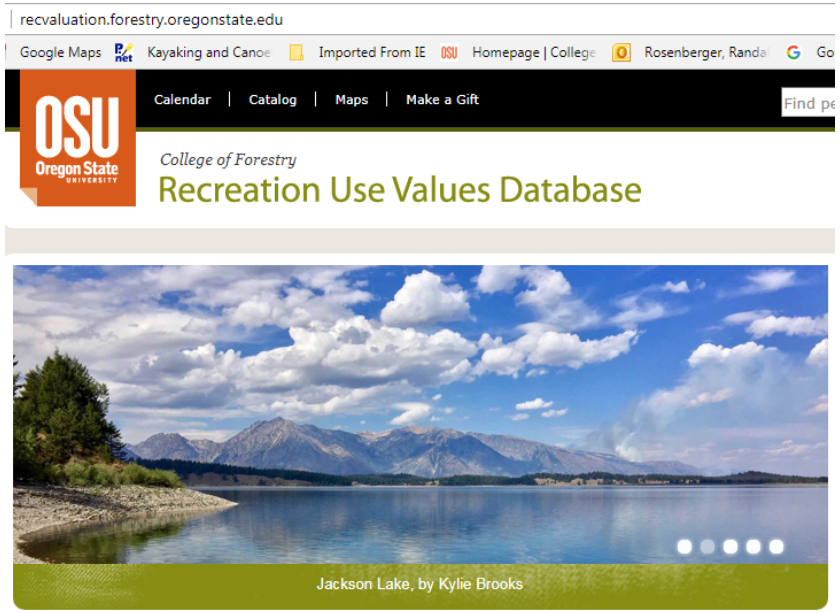
Recreation Use Values Database

- U.S. and Canada
- 1958-2015
- 421 documents

- 3,192 estimates of value
- 132 fields coded
- 42 recreation activity categories



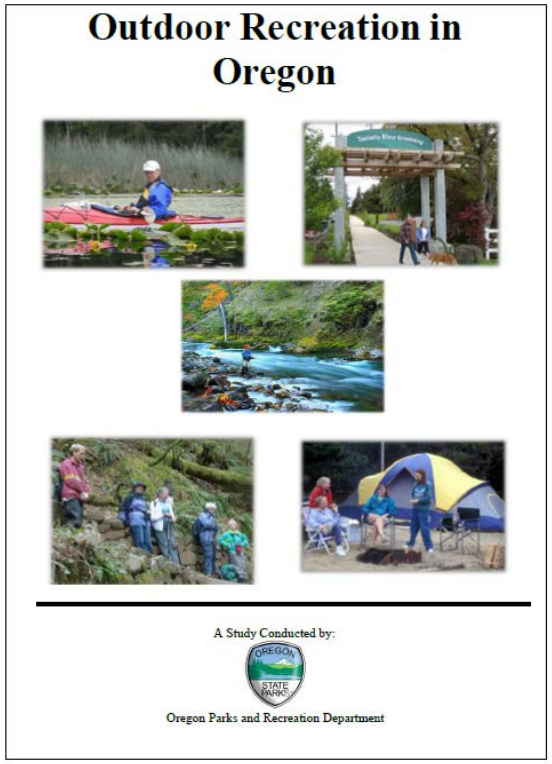




Statewide Resident Outdoor Recreation Survey

An Oregon population survey: (Conducted by OPRD with technical assistance from Kreg Lindberg - OSU)

- 3,069 completed surveys (20% response rate)
- 74% online survey / 26% paper survey
- Supplemented with 481 Qualtrics online sample
- 94% participants / 6% non-participants
- 56 individual outdoor recreation activities



Total Net Economic Value

SCORP Activity	Total Net Economic Value
Non-motorized Trail Activities	$20.2 billion
Outdoor Leisure / Sporting Activities	$11.8 billion
Nature Study Activities	$10.8 billion
Non-motorized Water-based and Beach Activities	$3.8 billion
Hunting and Fishing Activities	$3.5 billion
Vehicle-based Camping Activities	$1.8 billion
Motorized Activities	$1.4 billion
Non-motorized Snow Activities	$0.9 billion

Figure 3. SCORP activity categories by total net economic value

$54.2 billion

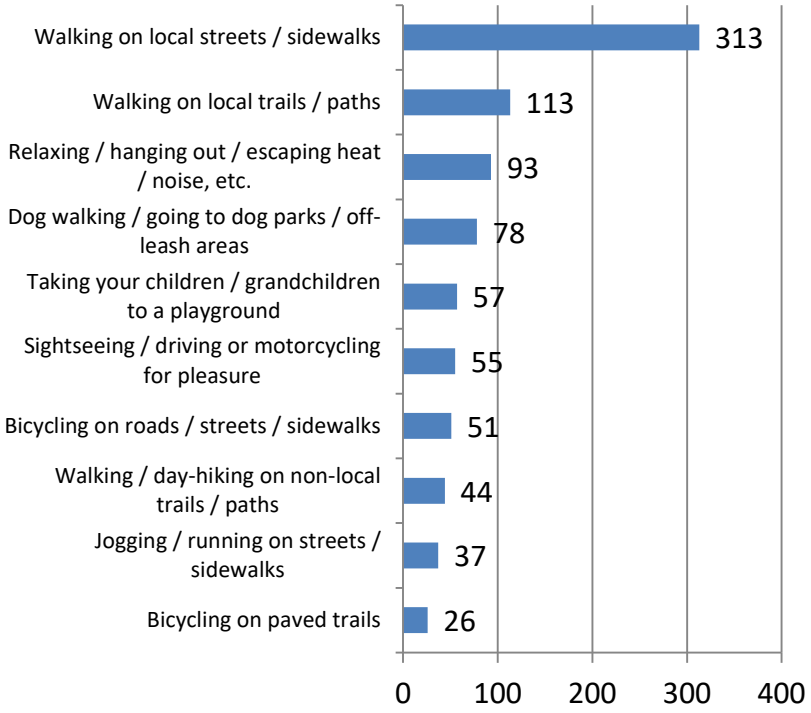
Direct economic impacts from outdoor recreation spending in Oregon:
$12 billion - $16 billion

SCORP Activity	Total Net Economic Value
Walking on local streets / sidewalks	$4.5 billion
Walking / day hiking on non-local trails / paths	$3.9 billion
Other nature / wildlife / forest / wildflower observation	$3.5 billion
Sightseeing / driving or motorcycling for pleasure	$3.1 billion
Relaxing / hanging out / escaping heat / noise, etc.	$3.0 billion
Bicycling on roads / streets / sidewalks	$3.0 billion
Jogging / running on streets / sidewalks	$2.6 billion
Bird watching	$2.4 billion
Fishing	$2.2 billion
Beach activities - ocean	$2.0 billion

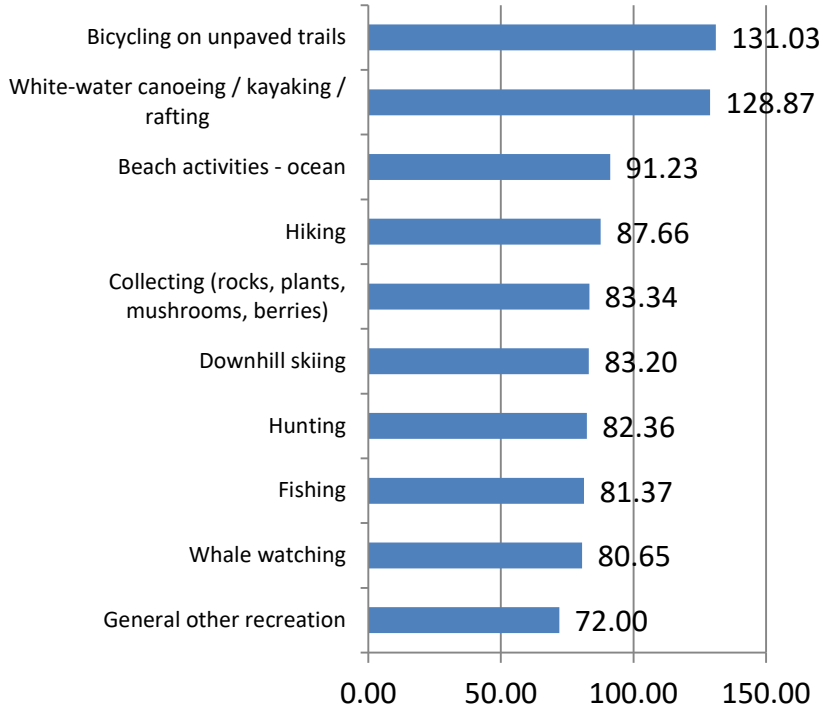
Figure 2. Top ten SCORP activities by total net economic value

Top Ten Results

Annual User Occasions



Value per Person



Questions





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