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Operationalizing Cultural Ecosystem Services for Political Decision-Making

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Operationalizing Cultural Ecosystem Services for Political Decision-Making

Testing Value Maps on the Northern Olympic Peninsula

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Cultural Ecosystem Services for political decision-making
Outline

1. CES for decision making
2. Value mapping demo
3. Question
4. Methods
5. Results
6. Implications for management
Cultural Ecosystem Services

“...non-material benefits people obtain from ecosystems...that demonstrate a significant relationship between ecosystem structures and functions specified in the biophysical domain and the satisfaction of human needs and wants specified in the medical/psychological/social domain.”

- Daniel et al 2012 as adapted from Millennium Ecosystem Assessment
Value Maps
Diverse Stakeholders

- Logger
- Female
- Long time resident
- Native American
- Young

Stakeholder Values

Density Distribution of Values

Management plan or Policy Decision

Decision-Makers

Density Distribution of Values

Distribution of Meaningful Places on the Olympic Peninsula

Original data collected by the USDA Forest Service Pacific Northwest station during workshops on the Olympic Peninsula in May & June. Data analysis conducted in collaboration with Portland State University and the Institute for Culture and Design.
WHERE ARE CULTURAL ECOSYSTEM SERVICES IN POLITICAL DECISION-MAKING, AND CAN VALUE MAPS INCREASE THE CONSIDERATION OF CULTURAL ECOSYSTEM SERVICES?
Methods

- Site: Northern Olympic Peninsula
- Sample: ~85% of politicians for the region
  - Puget Sound Partnership Leadership Council
  - County Commissioners
  - Mayors
  - Forest Service Manager
- Case Example Decision: Shoreline Master Program (SMP)
- Conceptual Content Cognitive Mapping (Kearny and Kaplan)
- Pre/Post with visualization
Results

Full Mental Model

- Number of Items: 26.5
- Change in size of sorts after exposure: +2.18
  \( p < 2.2 \times 10^{-16} \)

Cultural Ecosystem Services: 6%
Stakeholder: 13%
Other: 81%

Budgetary concerns, personal legacy, Politics, tangible ecosystem services partnership with peer organizations
Cultural Ecosystem Services

In Considerations:
“beauty”, “recreation”, “spiritual”, “for future generations”

In Conversation:
“I think people share the same value, which has to do with the beauty of, what the protection of this place that...see if they can be in front of their house, in front of their town.”

“This should be a place for people to live and enjoy.”

“Nowadays, it’s much more peaceful in the Quinault Valley, so how do I weigh that?”
RESULTS

Cultural Ecosystem Services

Before/After Change in Presence:

**Before:** mean = 0.048

**After:** mean = 0.059

**Difference:** mean difference = 0.0108, Relative difference = +1.01%, p-value = 0.045

Before/After Change in Prioritization:

**Difference:** relative difference = 0%, p-value = 0.012
RESULTS

Stakeholders

People as proxy?

In Conversation:

“The purpose of the SMP is to “…preserve water uses and water dependent uses for all the state’s citizens… water belongs to the citizens of the state and all of them have an equal right to use it and enjoy it.”

In Considerations:

“public reaction”, “Shoreline property owners”, “Developers”, “tribes”, “All citizens of the state”, “timber industry considerations”
Before/ After Change in Presence:

**Before:** mean = 0.1048387

**After:** mean = 0.1263441

**Difference:** M difference = 0.0215, Relative difference = 1.5%, p-value = 0.0045

Before/ After Change in Prioritization:

**Before:** mean = 0.438

**After:** mean = 0.548

**Difference:** Relative difference = 1.5%, p-value = 0.01356

Written Decision Changes:

Half of the politicians include considerations of stakeholders in their decision after the exercise
Do MAPS AND VALUES make CULTURAL ECOSYSTEM SERVICES more ACTIONABLE AND VISIBLE TO POLITICIANS?
Discussion

Do maps and values make Cultural Ecosystem Services more actionable and visible?

- Gap in CES academia mirrored in political decision-making
- Cultural Ecosystem Services are recognized, but are not large part of decision-making process
- Maps have a significant but minimal effect
- People as proxy?
- Future research
  - Experiments with longer exposure, a control, bigger sample size and
Acknowledgements

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Questions?

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Visualization:
http://bit.ly/1gb8t8P
Behind the Map- PGIS

LANDSCAPE VALUES

AESTHETIC – I value this place for the scenery, sights, smells or sounds.

ECONOMIC – I value this place because it provides income and employment opportunities through industries such as forest products, mining, tourism, agriculture, shellfish, or other commercial activity. [On your worksheet, please describe the kinds of economic services this place provides.]

ENVIRONMENTAL QUALITY – I value this place because it helps produce, preserve, and renew air, soil and water or it contributes to healthy habitats for plants and animals.

FUTURE – I value this place because it allows future generations to know and experience it as it is now.

HEALTH – I value this place because it provides a place where I or others can feel better physically and/or mentally.

HERITAGE – I value this place because it has natural and human history that matters to me and it allows me to pass down the wisdom, knowledge, traditions, or way of life of my ancestors.

HOME – I value this place because it is my home and/or I live here.

INTRINSIC – I value this place just because it exists, no matter what I or others think about it or how it is used.

LEARNING – I value this place because it provides a place to learn about the natural environment.

RECREATION – I value this place because it provides outdoor recreation opportunities or a place for my favorite recreation activities. [On your worksheet, please describe the kinds of recreation you do in this place and whether you value it because it has recreational amenities – campgrounds or other services – or, alternatively, because it does not have amenities – primitive.]

SOCIAL – I value this place because it provides opportunities for getting together with my friends and family or is part of my family’s traditional activities. [On your worksheet, please describe the kinds of activities that you or your family do in this place.]

SPIRITUAL – I value this place because it is sacred, religious, or spiritually special to me.

SUBSISTENCE – I value this place because it provides food and other products to sustain my life and that of my family. [On your worksheet, please describe the kinds of subsistence services this place provides.]

WILDERNESS – I value this place because it is wild.
Value Maps

Are these just pretty maps?
Cog. Map Broken Down

“Salmon”

“My reputation”; “Do we have the money for this?”

“Real-estate and Development Community”

“How will the next generation experience this place”
Analysis

- Daniels et al. 2012 definition
- Qualitative, content Analysis of items and
- Quantitative analysis

Compare pre and post test
References

- Daniels et al. (2012) Contributions of Cultural Services to the Ecosystem Services Agenda. PNAS. 109 (23).