Assessing Cultural Ecosystem Services using GIS-Based Landscape Values Mapping

Case Study: Olympic Peninsula Human Ecology Mapping Project

Diane Besser¹, Rebecca McLain¹, Lee Cerveny², David Banis³

¹ PSU, Institute for Sustainable Solutions
² PNW Research Station, USDA-Forest Service
³ PSU, Geography Department

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Millennium Ecosystem Assessment Framework

- **Supporting**
  - Nutrient cycling
  - Soil formation
  - Primary production
  - Etc.

- **Provisioning**
  - Food
  - Fresh water
  - Wood and fiber
  - Fuel
  - Etc.

- **Regulating**
  - Climate
  - Flood
  - Disease
  - Etc.

- **Cultural**
  - Aesthetic
  - Spiritual
  - Educational
  - Recreational
  - Etc.
USFS Forest Planning Rule
(Assess needs, develop plan components with scientific and public input, submit for comment and approval)

**SUSTAINABILITY (§219.8)**
- Social, cultural, economic conditions
- Sustainable recreation
- Multiple uses & sustainable economics
- Cultural/historic resources and uses
- Opportunities to connect people with nature

**MULTIPLE USE (§219.10)**
- Integrated Resource Management for Multiple Use
  - Aesthetic values, cultural/heritage
  - Renewable/nonrenewable resources
  - Infrastructure
  - Landscape coordination
  - Habitat conditions
  - Land ownership patterns
  - Ecological/social/economic sustainability
  - Connect people with nature
Olympic Peninsula Mapping Project Objectives

• Develop and test a method for mapping sociocultural values at a bioregional scale.

• Test techniques for analyzing spatialized sociocultural values data.

• Explore ways to integrate spatialized sociocultural values into forest management planning.
Landscape Values Mapping Approach

**Landscape Values**
- Aesthetic
- Economic
- Environ. Quality
- Future
- Health
- Heritage
- Home
- Intrinsic
- Learning
- Recreation
- Social
- Spiritual
- Subsistence
- Wilderness

- 8 Community Workshops (2010-11)
- 2 Mapping Activities (Values & Uses)
- Points, Lines or Polygons
Activities Density

Data Analysis: Uses vs. Values

Values Density

Legend:
- 1 - 7
- 8 - 16
- 17 - 25
- 26 - 39
- 40 - 74
- 1 - 6
- 7 - 13
- 14 - 23
- 24 - 37
- 38 - 66
Data Analysis: Spatial Patterns of Different Values

Economic

Value Density
- 0 - 1
- 2 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- 21 - 26

Home

Value Density
- 1
- 2 - 5
- 6 - 10
- 11 - 15
- 16 - 20

Recreation

Value Density
- 0 - 1
- 2 - 5
- 6 - 10
- 11 - 15

Aesthetic

Value Density
- 1
- 2 - 5
- 6 - 10
Data Analysis: Community-Specific Landscape Values
Next Steps: Challenges and Opportunities

• Challenge: What are the obstacles to integrating cultural services data into land management plans?
  • Qualitative vs. quantitative data.
  • Political nature of cultural services – it’s about values.
  • Lack of expertise and agency capacity.

• Opportunity: This is really about starting a conversation about what people value on the landscape to make more informed decisions.
  • Integrate data collection into a public engagement process.
  • Enhance public understanding of cultural ecosystem services.
Download the Olympic Peninsula HEM Atlas: http://www.pdx.edu/geography/human-ecology-mapping

PSU Social Sustainability Colloquium
Friday Nov. 8th 2-4pm, Rec Center Bldg., Rm. 660
“The politics of cultural values mapping: Struggles over natural resources on the Olympic Peninsula”