

Alternative Approaches:  
Why Do We Need Them?  
What Should They Look Like?

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Resources for the Future

# A Critique

- Of BT's building blocks
  - monetary ecological benefit assessment
- Also, discussion of an alternative
- Complementary approaches, not substitutes
  - Benefit transfer is a deal with the devil
  - I will describe a different deal with the devil

# The Critique in a Nutshell

- Dollar-based ecological benefit studies are
  - Important to the science
  - But can be suspect as input to public decision-making
- Benefit transfer specifically
  - Biophysical interactions site-dependent, complex
  - Likewise, WTP for services conditional on landscape context
  - *Does BT help with this?*

# Dollar-Based Valuation

## Three Problems

- The models problem
  - The dollars problem
  - The preferences problem
- 
- Problems because they inhibit economic analysis as a *form of argument*

# The Models Problem:

- **Bad Simplicity**
  - Narrowness
- **Bad Complexity**
  - Incomprehensibility

# Bad Simplicity

- Simplicity is achieved by narrowing the scope of ecological benefits captured in a given study

# (Part of )The Spectrum of Services

Existence

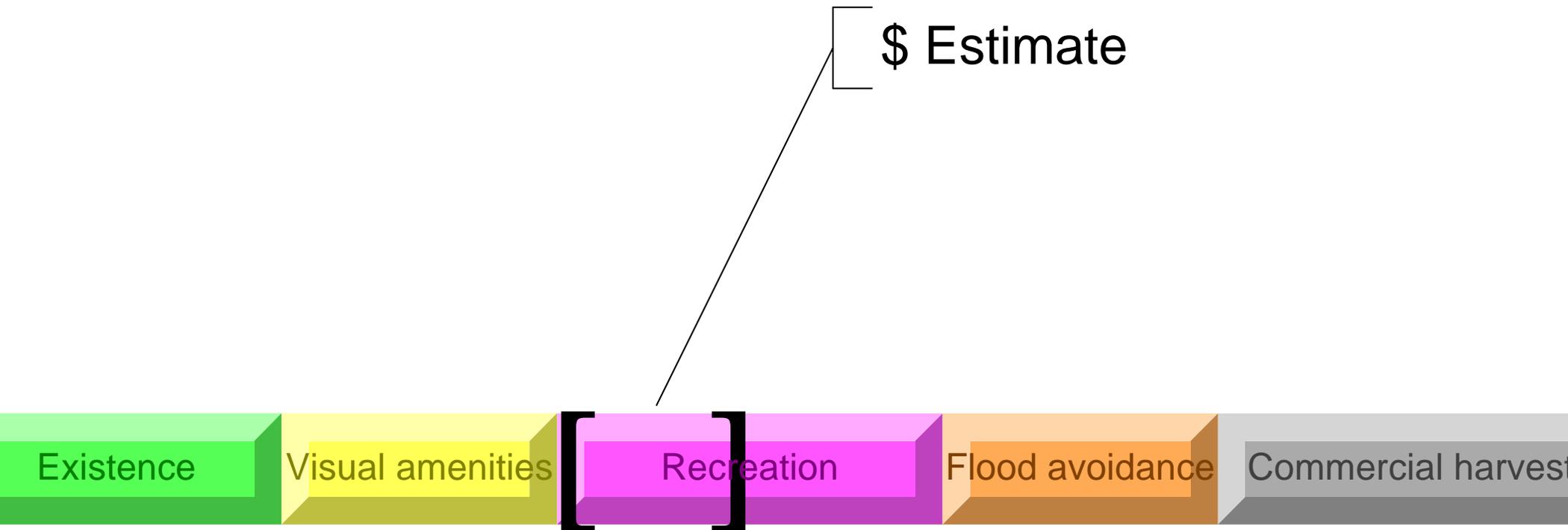
Visual amenities

Recreation

Flood avoidance

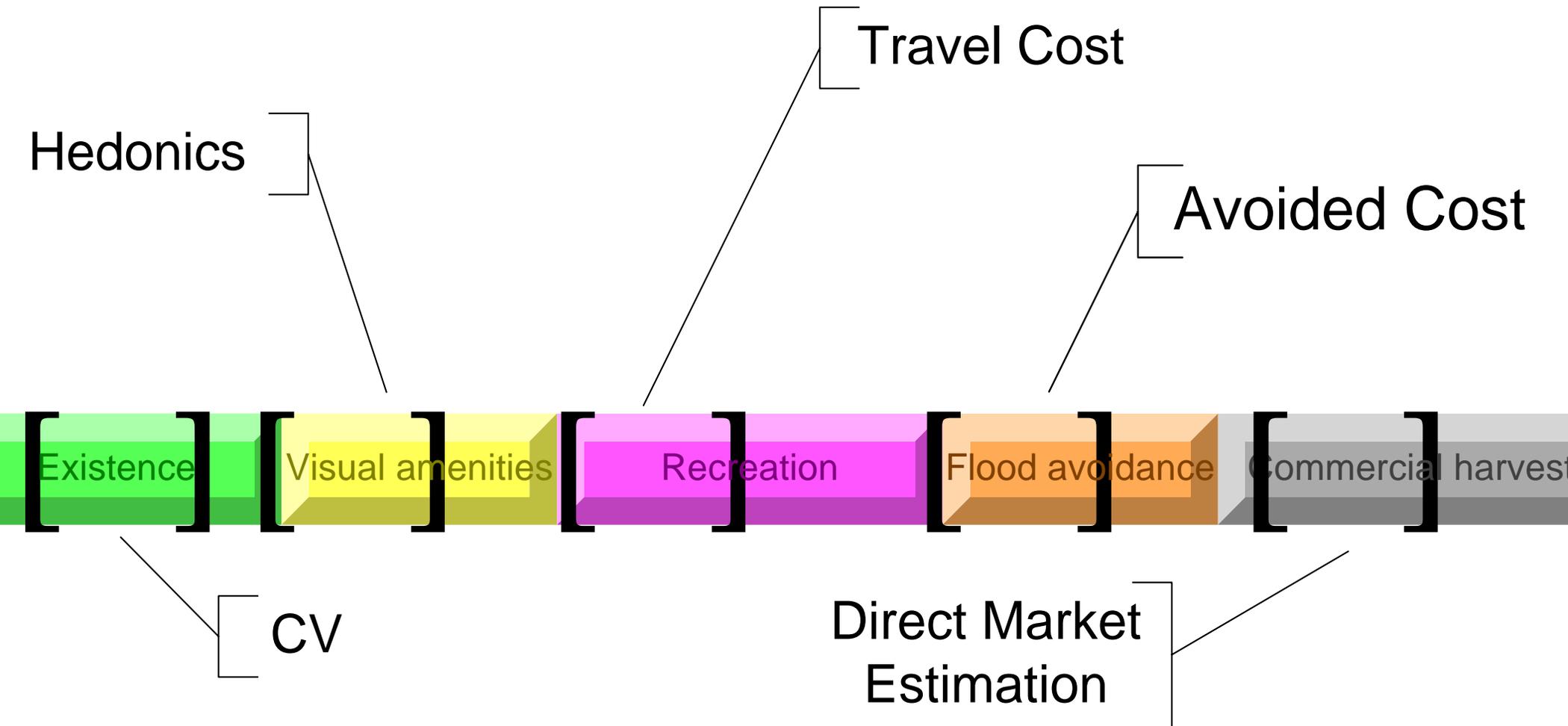
Commercial harvest

# The Spectrum of Services



# The Spectrum of Services

Different methods, different experts, different data



# Narrowness

- An unfair criticism to level at environmental economics as science
- A legitimate criticism of environmental economics as decision support

# Models: Bad Complexity

- Mathematical & statistical discipline is necessary to the scientific mission
- But models alienate non-practitioners
  - Un-democratic, intimidating, suspicious
- Models can obscure the principles at their core

# The Dollars Problem

- Practical issue
  - Monetary endpoints offend many for philosophical, spiritual reasons
  - Thus, dollar endpoints pose a marketing problem for economists
- Substantive issue
  - Dollars are highly aggregated end-results of “black box” models

# The Preferences Problem

- Preference stability is necessary for most conventional economic analysis
- But preference instability is an important reality
  - Particularly for ecological services
- An economic argument
  - The Austrians: markets are *necessary* to preference formation

# Benefit Transfer

- Pros
  - Can help address the “narrowness” issue
- Cons
  - Every drawback to building blocks, is drawback for BT
  - BT, if done right, is still expensive, time-consuming, dependent on small professional community

# The Alternative Method

- What if economists
  - Avoided dollar endpoints
  - Minimized use of mathematical models?
- Would there be any economics left?
- Reminder
  - This is often a substitute for doing *no* economics

# What if We

- Made a different “simplicity tradeoff”?
  - Simplify by
    - Avoiding formal theoretical & statistical models
  - Complicate by
    - Transparently depicting ecological/economic complexity
    - Capturing wider span of benefits

# Ecological Benefit Indicators

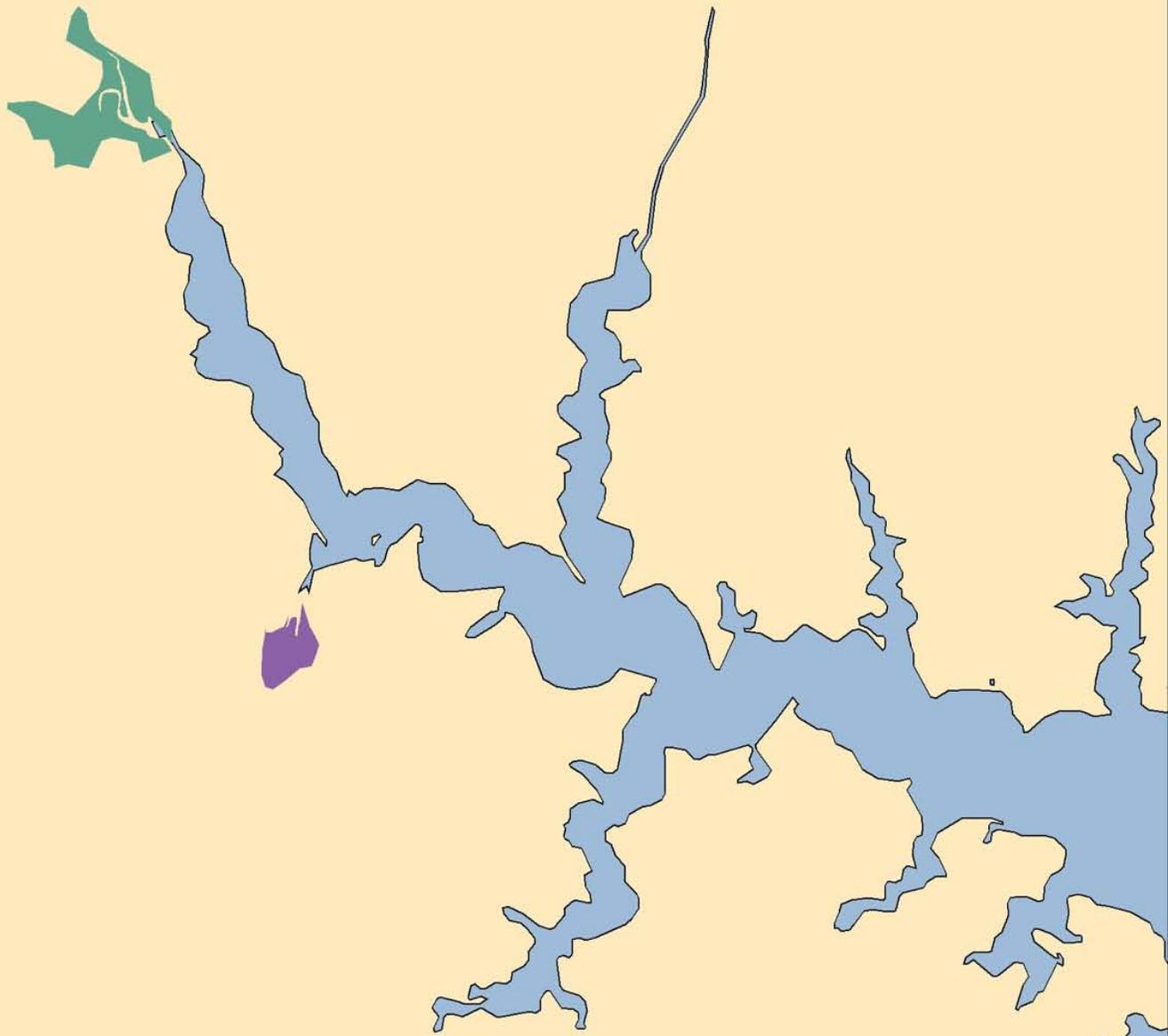
- Joint work with Lisa Wainger (UMCES)
- Quantitative
- Economic
- An analogue to “ecological indicators”
  - Integrated biophysical and socioeconomic data
  - Used to depict WTP for specific services

# Indicators

- Organized by ecological service
  - “Flow units,” units of service
  - “Stock units,” assets necessary for services
  - Willingness to pay indicators
- WTP indicators
  - Demand baseline
  - Scarcity, substitutes
  - Complements

# Service: Visual Amenity

Site A  
Site B



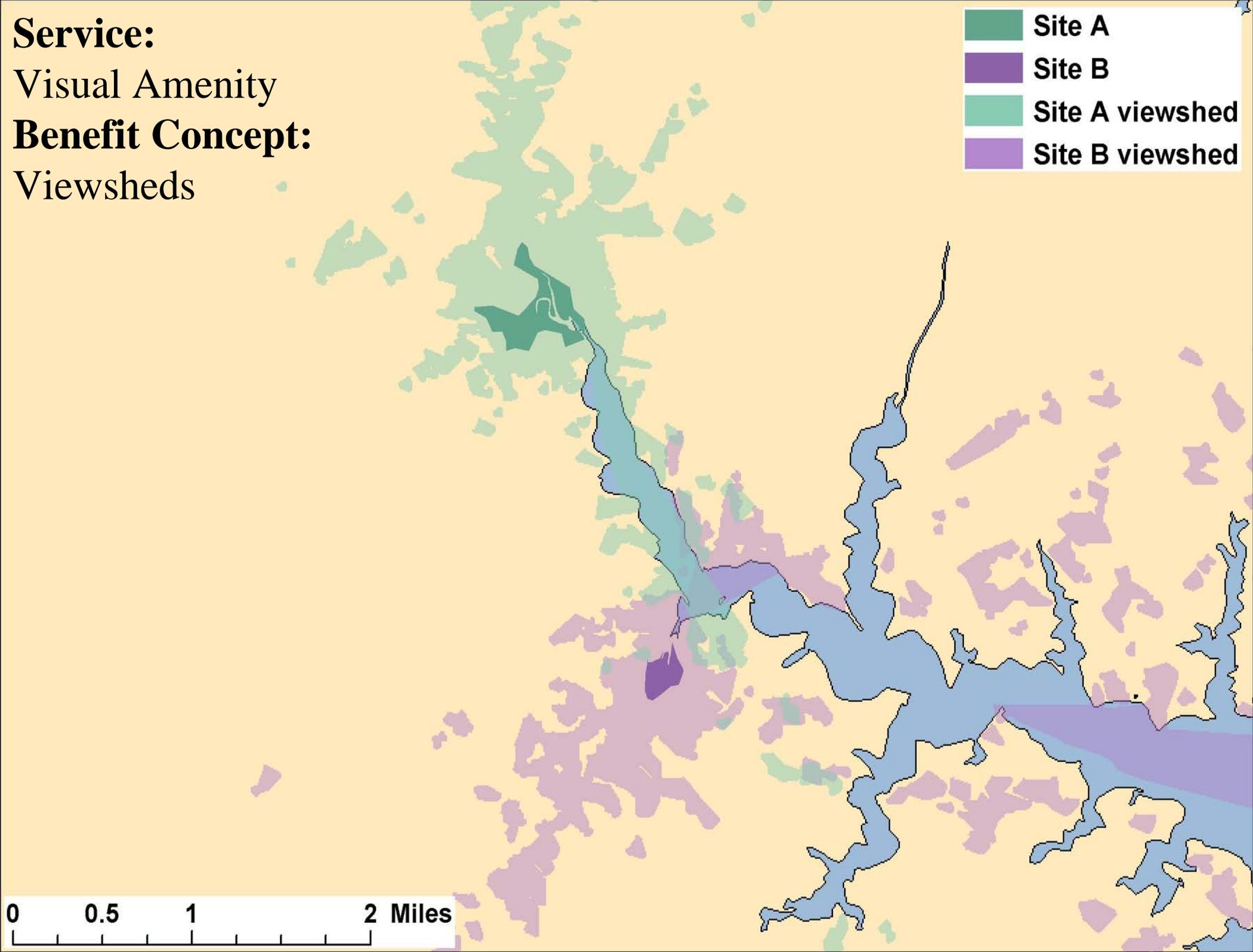
0 0.5 1 2 Miles

**Service:**

Visual Amenity

**Benefit Concept:**

Viewsheds

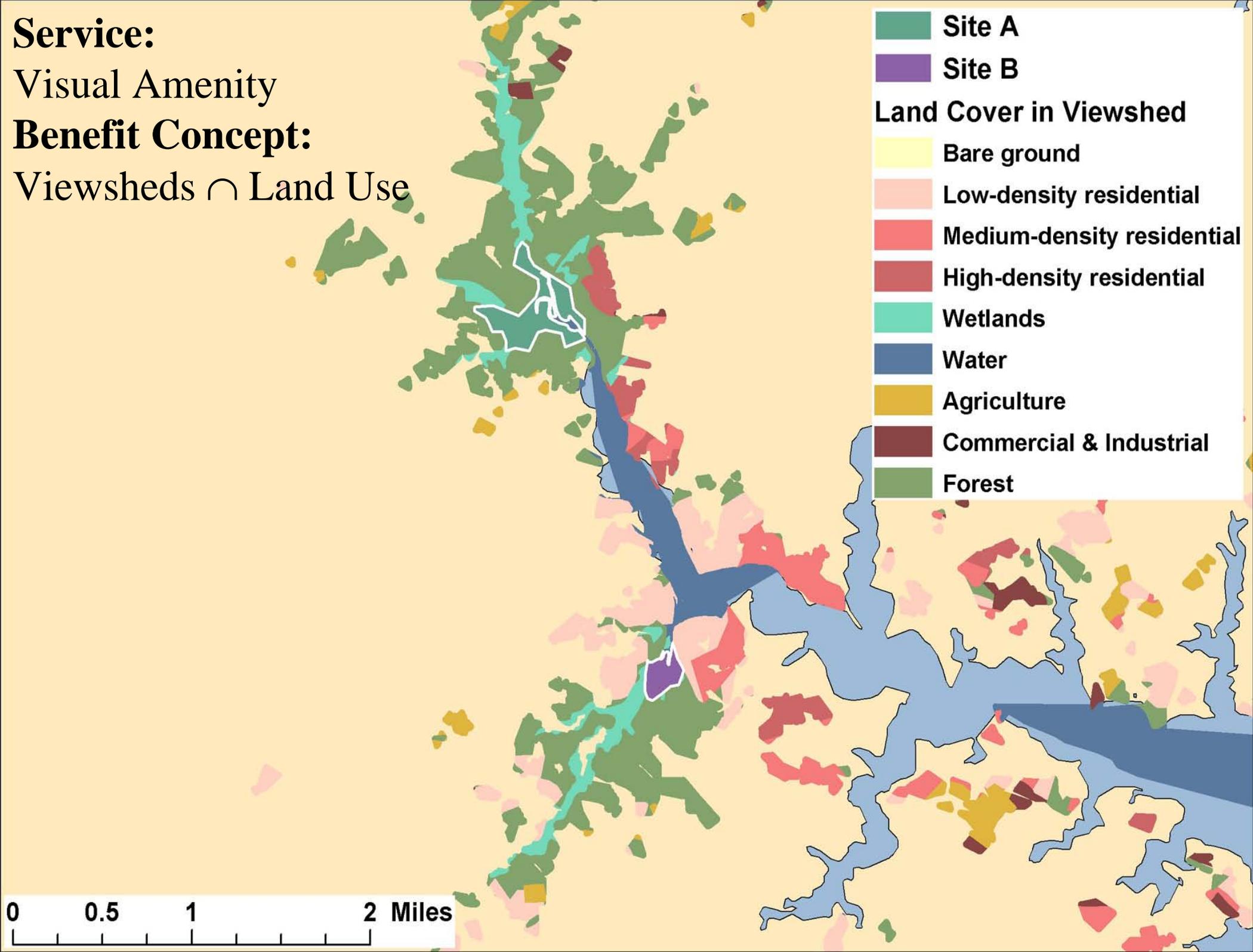


# Service:

Visual Amenity

# Benefit Concept:

Viewsheds  $\cap$  Land Use



# Visual Amenity: Sample Indicators

- Demand: Land area in viewshed with land uses complementary to visual enjoyment
  - A: 712 acres B: 327 acres
- Housing density-weighted land areas

# Other Indicators

- To convey the relevance of substitutes & scarcity:
  - Acres of natural land area in viewsheds of households
  - Percent natural land area in viewsheds of households

# Benefit Hotspots

**Service:**

Visual Amenity

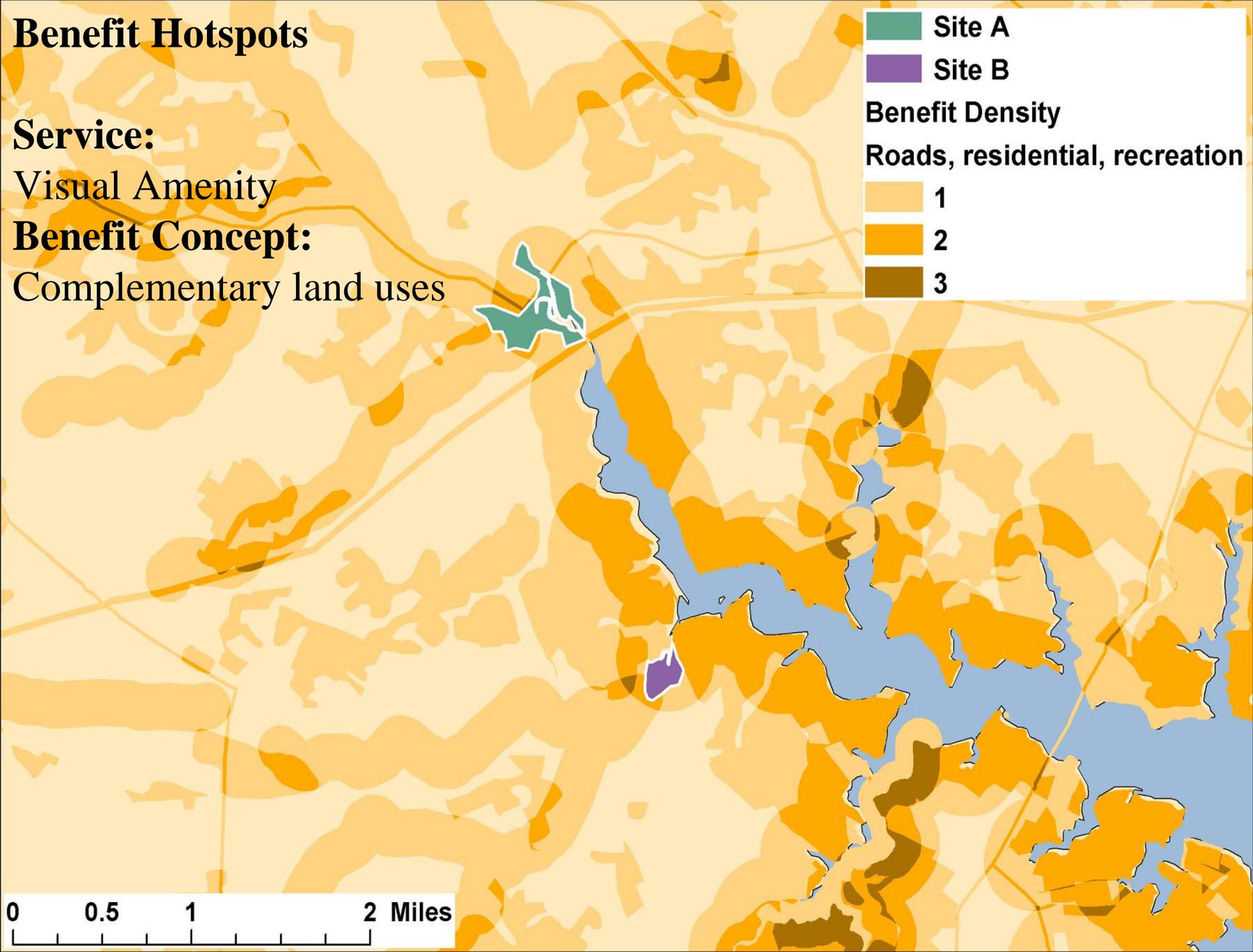
**Benefit Concept:**

Complementary land uses

Site A  
Site B

**Benefit Density**  
Roads, residential, recreation

1
2
3



# Communicate

- Services
  - Factors affecting benefits
- Interdependence between biophysical characteristics and services
  - An architecture for ecologists and economists to communicate
- Transparently depicts complexity, uncertainty
  - Lots of things matter

# But the Deal with the Devil...

- Where are the weights?
- Where is “the answer”?
- Not a substitute for econometric analysis

# Final pitch

- There is a middle ground between
  - Econometric, \$-based benefit analysis
  - Happy talk about benefits
- *See OMB- Circular A-4*
  - Monetize, *quantify*, discuss
- But you wouldn't know it to look at what comes out of
  - agencies
  - the academy

# Indicators and BT

- Indicators as variables in BT
  - For function transfer
- Indicators as inputs to stated preference
  - Scenario development
- Indicators to ground-truth transfers
  - What is different about the sites?

# Conclusion

- Think of BT as not just a scientific issue
  - Also a decision-making issue
  - Who is the audience?
- How big are the errors associated with BT?
  - Don't just address issue econometrically
  - Use other tools
  - Where are the ecologists?