

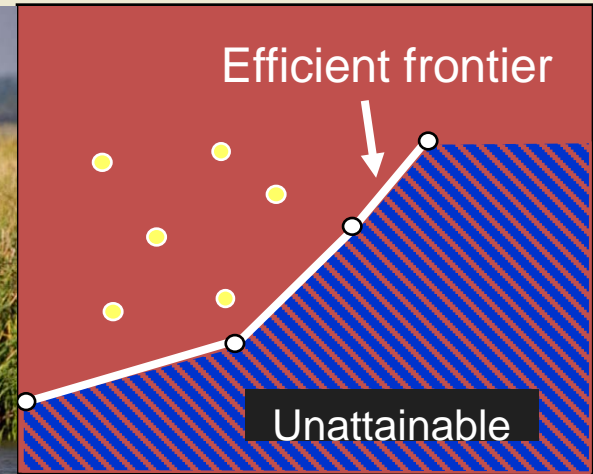
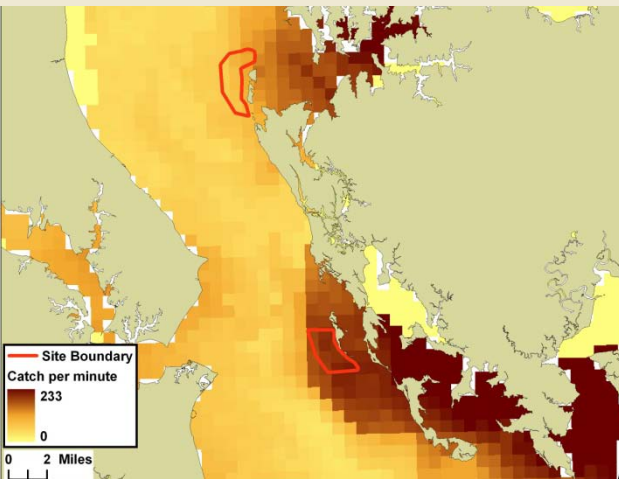
# Applying economics & decision science to restoration strategies

*Lisa A. Wainger, PhD*

*University of Maryland Center for Environmental Science*

*March 10, 2011*

*STAC Workshop, Annapolis, MD*



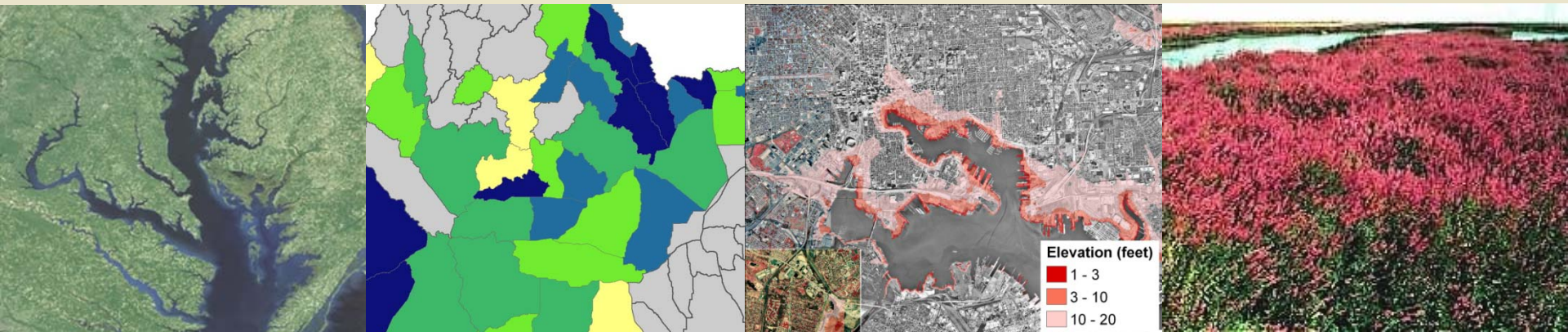
# What is the question?

Choice of economic technique depends on goals

<b>Economic Method</b>	<b>Main Purpose</b>
Cost-Benefit Analysis	Demonstrate net social benefits (e.g., of regulation)
Cost-Effectiveness Analysis	Achieve / Demonstrate best program performance
Impact Assessment	Gain support from decision makers
Behavioral Modeling	Formulate effective policy

# If sprawl is so costly, why don't counties control it?

(a type of CBA)



# Categories of Revenues and Expenditures used in the Fiscal Impact Analysis

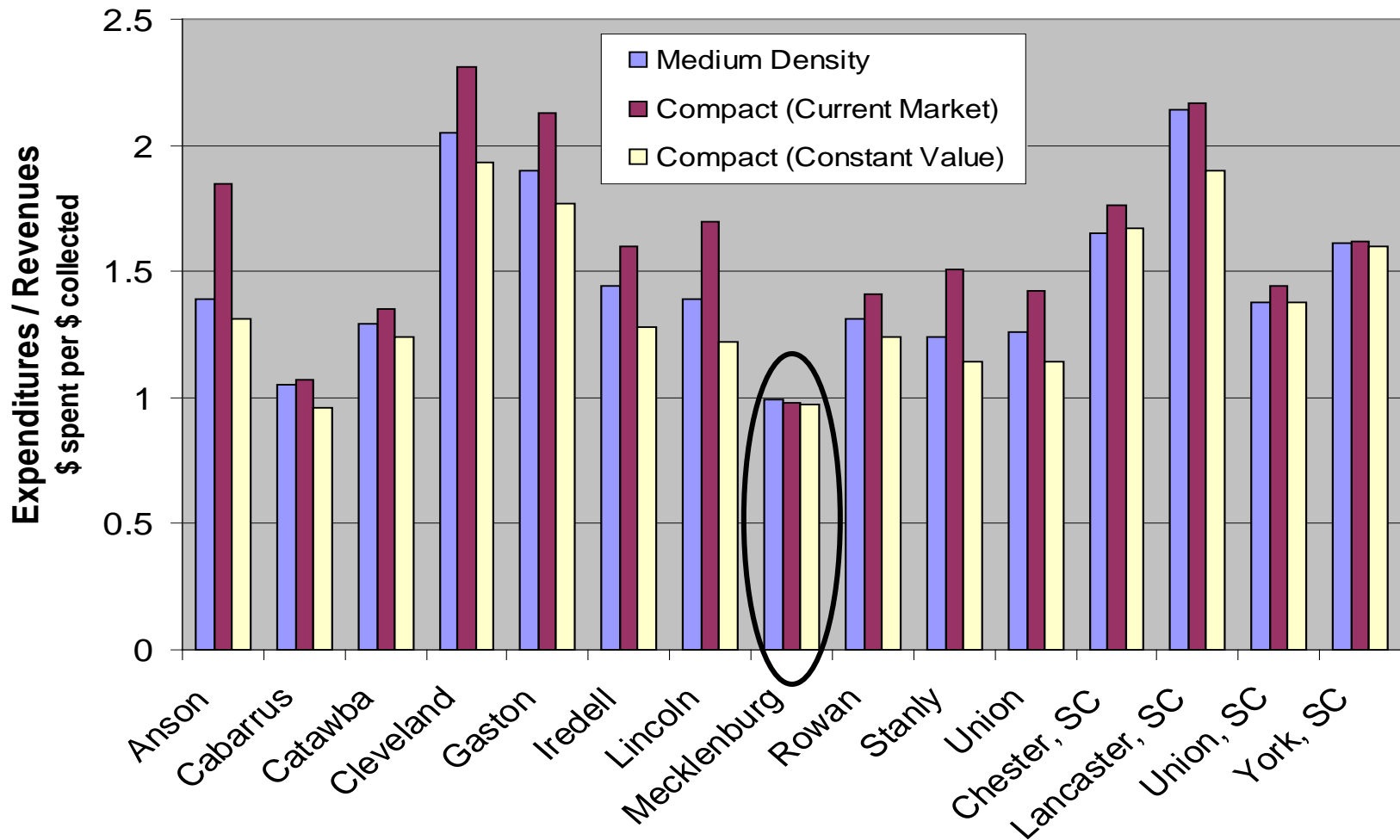
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<b>Revenues</b>	<b>Expenditures</b>
Residential Property Tax	Education
Business Property Tax	Health Care
Sales Tax	Public Safety
Licenses and Fees	Recreation
Intergovernmental Transfers	Utilities
	Commercial Infrastructure

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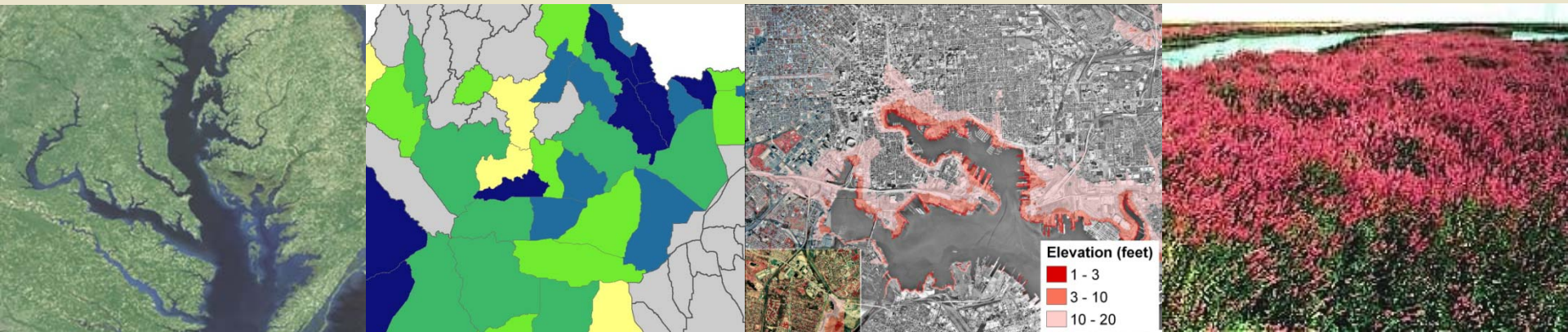
(Capital and operating costs)

# Results of Fiscal Impact Analysis Centralina, North & South Carolina

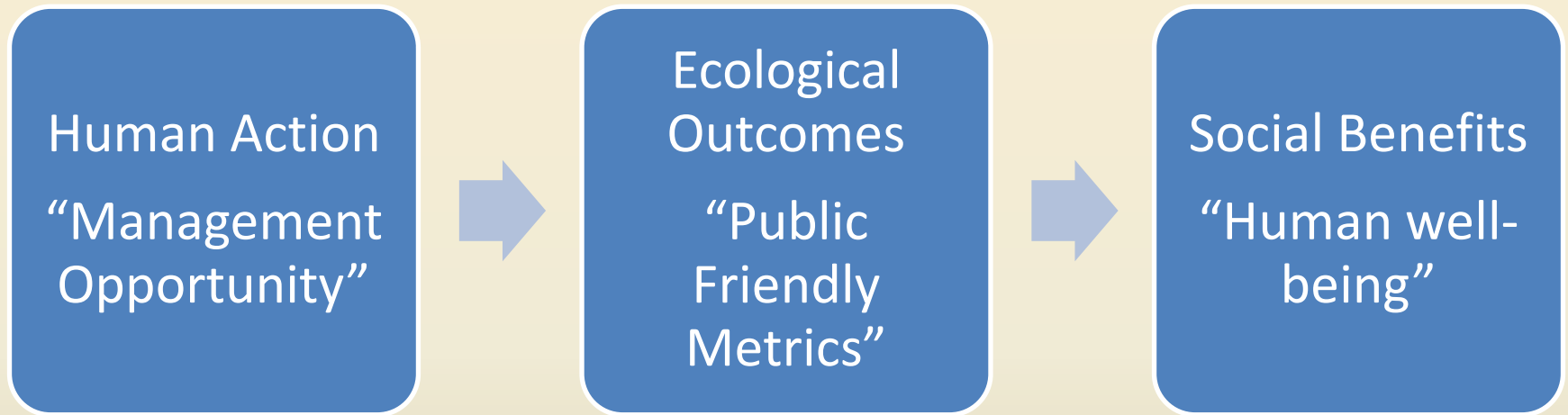


# How do we measure social benefits of ecological restoration?

(CEA)

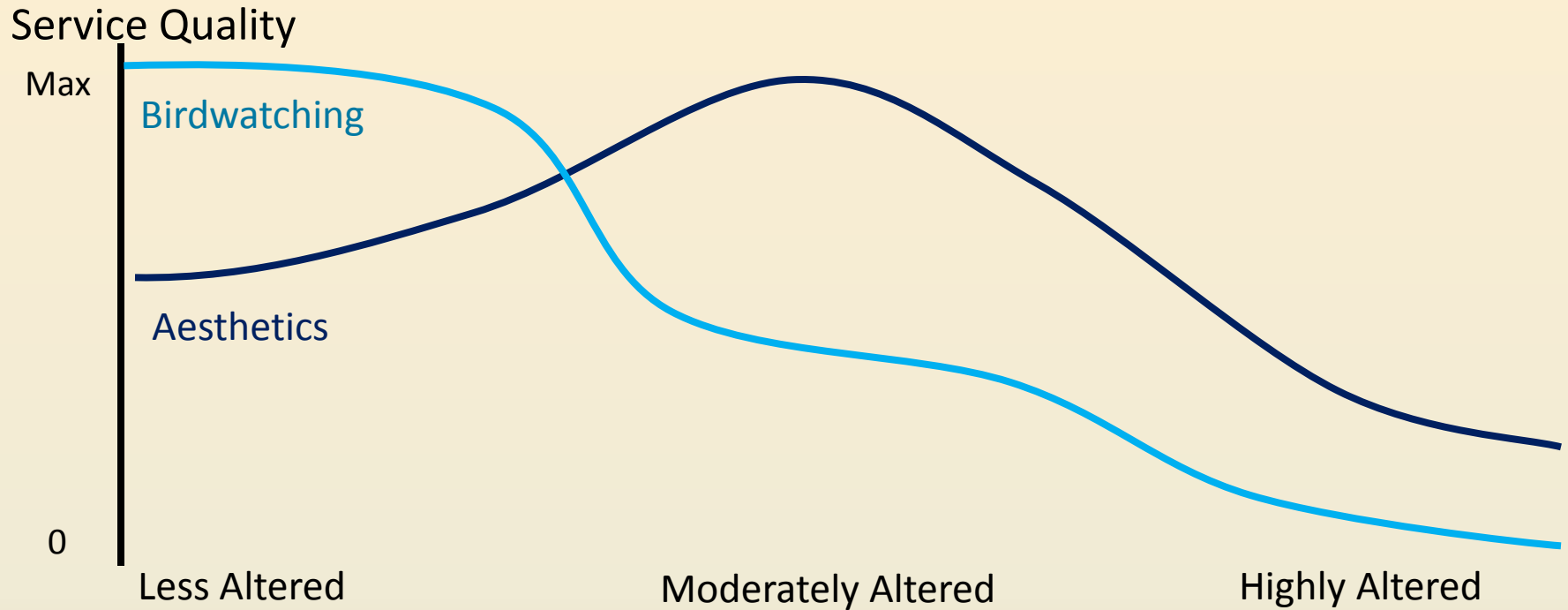


# Linking actions to social benefits



# Restoration-Recovery Functions

## Understanding the social value of change

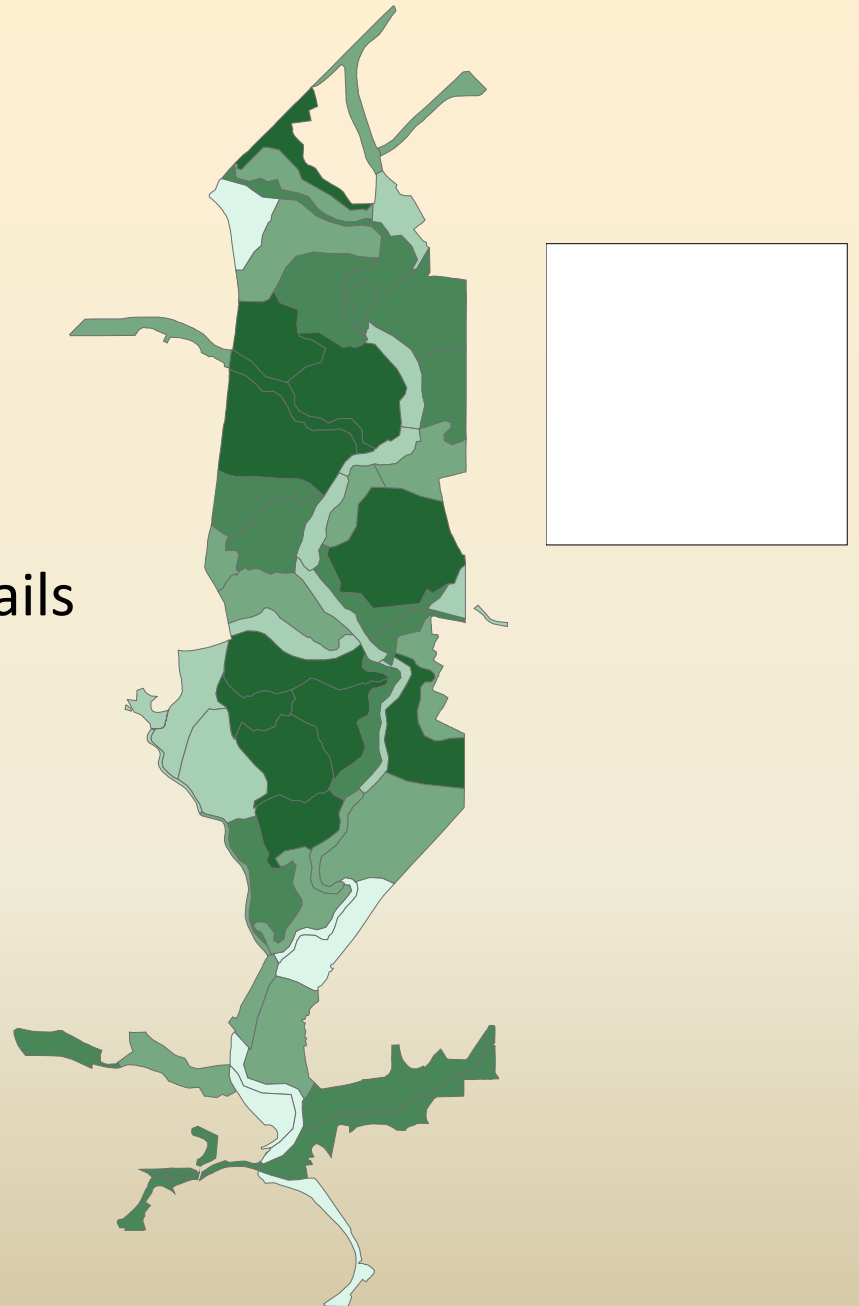


# What determines ecosystem service benefits?

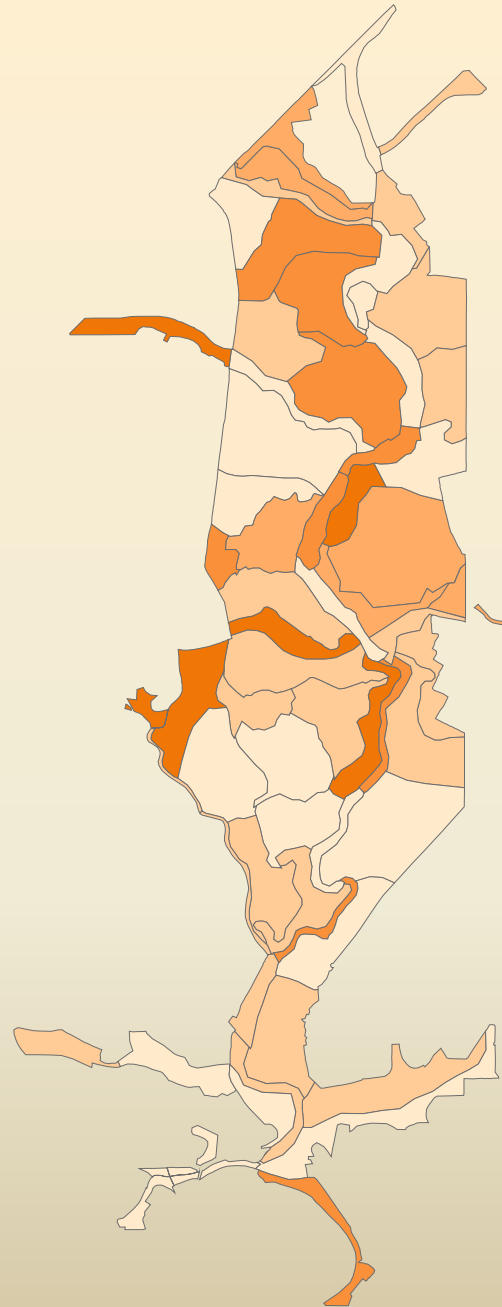
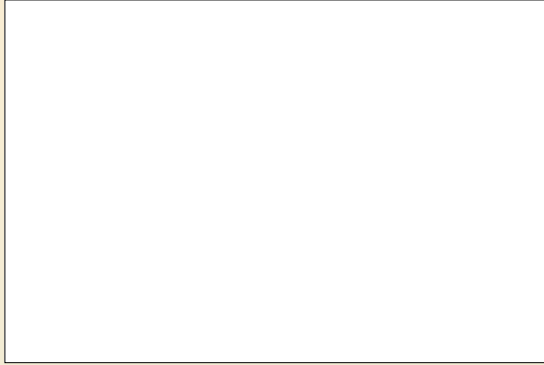
- Quantity
  - Quality
  - Reliability
- Ecological Conditions
- Complementary Inputs
  - Scarcity = Supply vs demand
    - Substitutability
    - Irreplaceability
- “Market” Conditions

# Wildlife Viewing Relative Benefit Metric

- Ecological rarity
- Water elements adjacent to trails
- Vegetation diversity
- Connected to hub or corridor

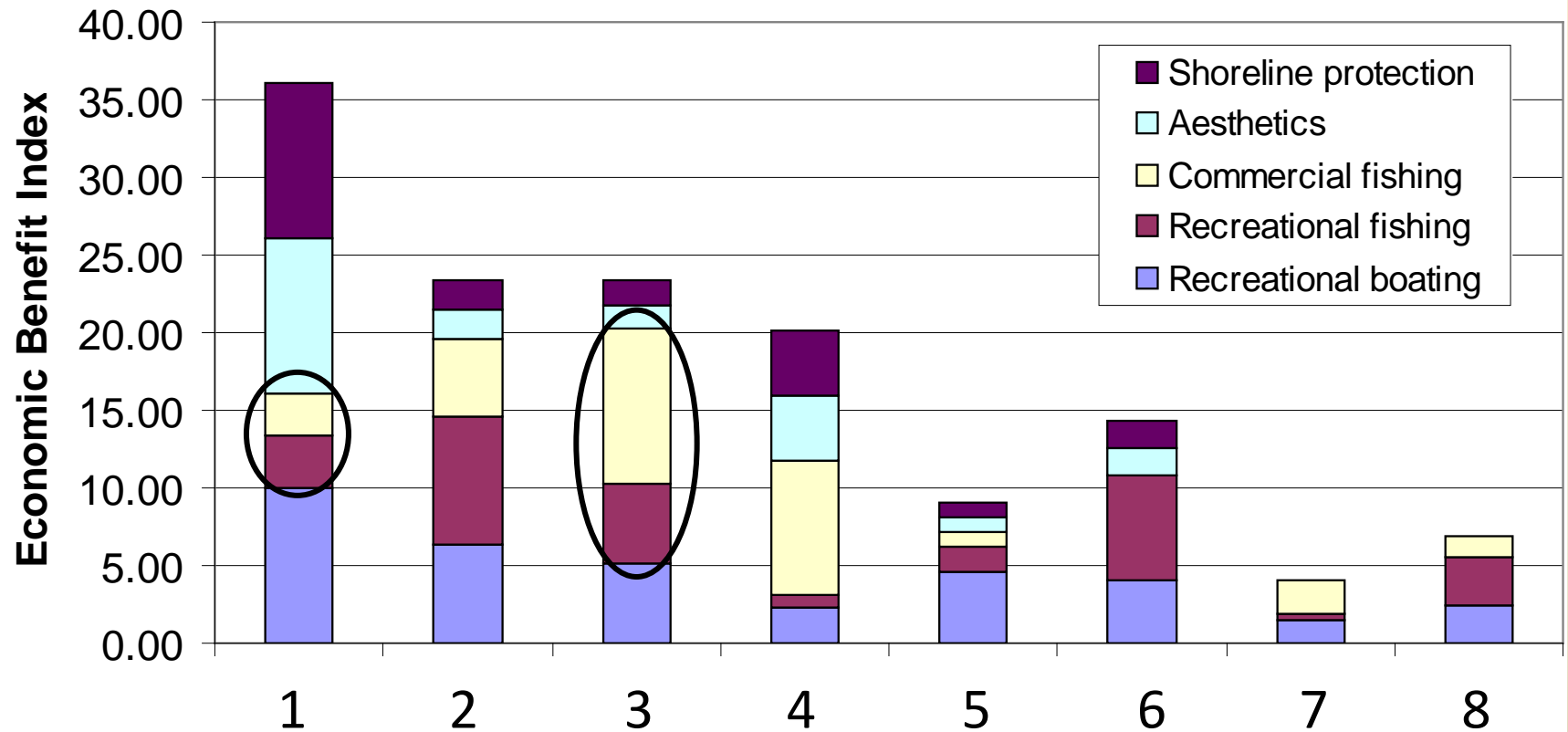


# Wildlife Viewing (\$)



# Comparing Stacked Ecosystem Services

Different Decisions from Service Benefit Index  
vs. Monetized Benefits



# Some opportunities for applying economics

1. One size does not fit all – policies can be adapted to local market conditions to enhance adoption or compliance
2. Non-monetary metrics can capture a broad range of social benefits, if they capture “democratic” concerns
3. Social benefits are maximized by targeting effort where net payoffs are highest (not necessarily where ecological conditions are best /worst)
4. Behavioral modeling can suggest ways to overcome barriers to change – e.g., managing risk

# Tips for talking to economists

How much is this ecosystem (or service) worth?

# Tips for talking to economists

~~How much is this ecosystem (or service) worth?~~

How do we motivate socially desirable behavior?

or

How do we best address market failures?