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*Agricultural Economics*

# Valuing Coastal Restoration in the Barataria-Terrebonne Estuary: A Nationwide Survey

Dan Petrolia, Matt Interis,  
& Mike Hidrue

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# NGI Project 09-MSU-06: **Toward an Understanding of Gulf Coast Resident Preferences and Perceptions on Risk and Restoration**

## **□ Individual Tasks:**

- Valuing Coastal Restoration in the BTNE: A Nationwide Survey (presented here)
- Risk preferences, perceptions, ambiguity, and flood insurance demand (tomorrow, Concurrent Session 11)
- *Also: Improving value estimates for restoration of Mississippi's Barrier Islands (07-MSU-01 – Concurrent Session 11)*



# On Measuring Economic Values for Nature\*

- The economic value of an ecosystem service relates to the contribution it makes to human welfare
  - human welfare is measured in terms of each individual's *own assessment of well-being*.
- This is not the *only* possible concept of value, nor is it always the most relevant.
  - But for purposes of benefit-cost analysis in assessing policy options and for determining liability for natural resource damages, this concept has considerable precedence and legal standing.

\*Bockstael et al. 2000. *Environmental Science & Technology*



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# How do Economists value things?

- The economic value of a policy change is defined by the amount of compensation (+ or -) that a person would require to be *as well off* (by his own reckoning) as he would be without the change.
- So an economic value estimate is an answer to a carefully defined question in which two alternatives are compared.



# How do Economists value things?

- ❑ Compensation measures cannot be defined in isolation.
  - ❑ They are entirely dependent on the context and may change as there is a change in one or more elements of that context.
- ❑ Because compensation is a measure of people's tradeoffs, it can be measured in terms of any set of common units one desires.
  - ❑ It is usually measured in money.



# Some details on methods

- ❑ A broad class of methods is called “Stated Preference” methods
- ❑ The most common of these is the Choice Experiment (CE), and a special type of CE is Contingent Valuation (CV)
- ❑ Interestingly, it was the Exxon Valdez oil spill and NOAA that put CV on the map.



# LA Coastal Wetland Loss: Local or National Problem?



\*Petrolia, Moore, & Kim. 2011. *Wetlands*

\*Petrolia & Kim. 2011. *J. Env. Management*



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# A National Survey

❑ Louisiana is America's Wetland!

- So America should be interested!

- But is it? This is a testable hypothesis.

❑ If the rest of the U.S. values LA's wetlands, *even the ones that don't visit, don't have family/friends there, etc.*

- Then their value derives from **non-use value**.

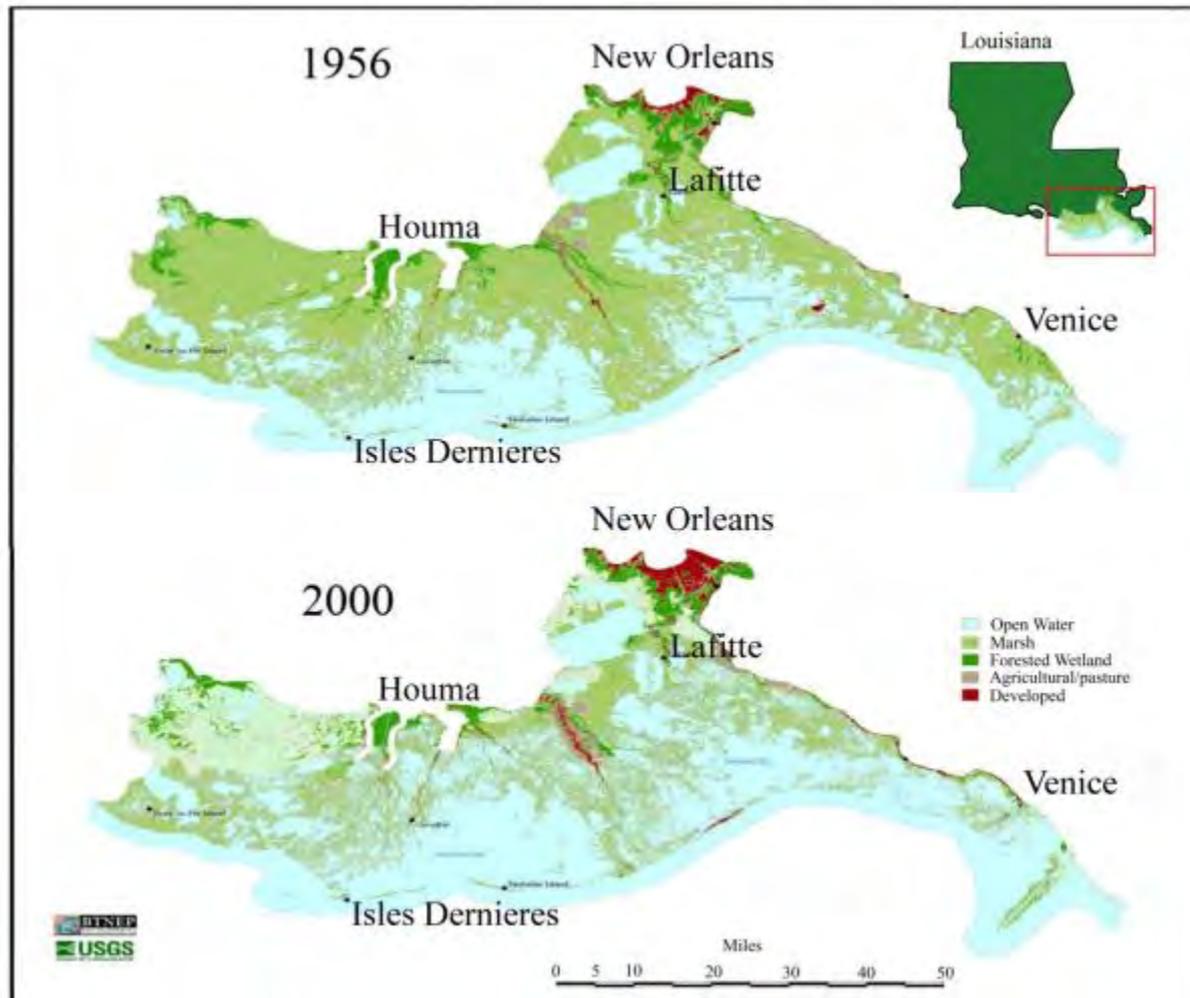
- Is non-use value a major part of the value of LA's wetlands?



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# Lower Barataria-Terrebonne Estuary



# What's Your Opinion?

- We constructed a proposed restoration project that involves restoring roughly 50% of the wetlands and barrier islands lost in the Lower Barataria-Terrebonne Estuary since 1956.
- We'd like to ask your opinion on one of these proposed projects which, if adopted, would be financed with federal tax dollars. We will ask you to evaluate the wetland-management project being considered and to tell us whether you would support it.*
- The results of this survey are advisory. In other words, they will be used to inform policymakers on the opinions and preferences of taxpayers to help them decide if and what projects should be funded in Louisiana's Lower Barataria-Terrebonne Estuary.*



# Survey Administration

- ❑ Contracted with Knowledge Networks to administer to panelists on their Knowledge Panel®
  - KN has only online research panel representative of US population
  - Panel members randomly recruited by probability-based sampling; covers both online & offline populations
  
- ❑ Instrument designed with consultation of BTNEP staff, 2 focus groups, a 25-person pre-test and 100-person pilot survey of Knowledge Networks panelists
  
- ❑ N = 2500
- ❑ Split sample receiving CE and CV instruments
  - CE captures which ecosystem services drive people's preferences
    - But has some theoretical incentive compatibility issues; respondents tend to be less sensitive to cost
  - CV is the method recommended by NOAA panel, simplest and most straightforward approach (similar to referendum voting)
    - But statistically inefficient way of collecting data



## AN EXAMPLE CE CHOICE SET

The table below shows the expected outcomes for project options, labeled “Project A” and “Project B”, as well as the expected outcomes of not taking any action (No Action). Both Project A and Project B would be completed in 5 years and the benefits are expected to last for 50 years. Please compare these options carefully.

	<b>Project A:</b> 50% of lost land restored	<b>Project B:</b> 50% of lost land restored	<b>No Action:</b> Land loss expected to continue at 4,500 to 7,100 acres per year
<b>Wildlife habitat</b>	<u>50%</u> of restored land suitable as habitat	<u>80%</u> of restored land suitable as habitat	<u>No improvement</u> and current habitat expected to decline
<b>Storm surge protection</b>	Improved protection for <u>50%</u> of residents	Improved protection for <u>10%</u> of residents	<u>No improvement</u> and current protection expected to decline
<b>Commercial fish harvest</b>	Maintains <u>current</u> harvest levels	<u>30% higher</u> harvest levels	<u>No improvement</u> and current harvest levels expected to decline
<b>Share of total cost to your household</b>	\$25	\$75	\$0
<b>I prefer:</b>	↓	↓	↓

# Progress

- Consultation with BTNEP staff complete.
- Focus groups complete.
- Instrument design complete.
- Pre-test complete.
- Pilot survey complete (last week).
- Full survey to be fielded *next week*.
  
- Data analysis to begin June 2011.*
- First manuscript drafted late summer 2011.*



# Thanks!

❑ Questions or comments?

❑ Contact me at [petrolia@agecon.msstate.edu](mailto:petrolia@agecon.msstate.edu)



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