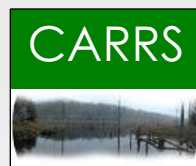


Demand and Economic Values for Great Lakes Wetland Restoration and Preservation Programs

- Frank Lupi, Michael D. Kaplowitz, John P. Hoehn

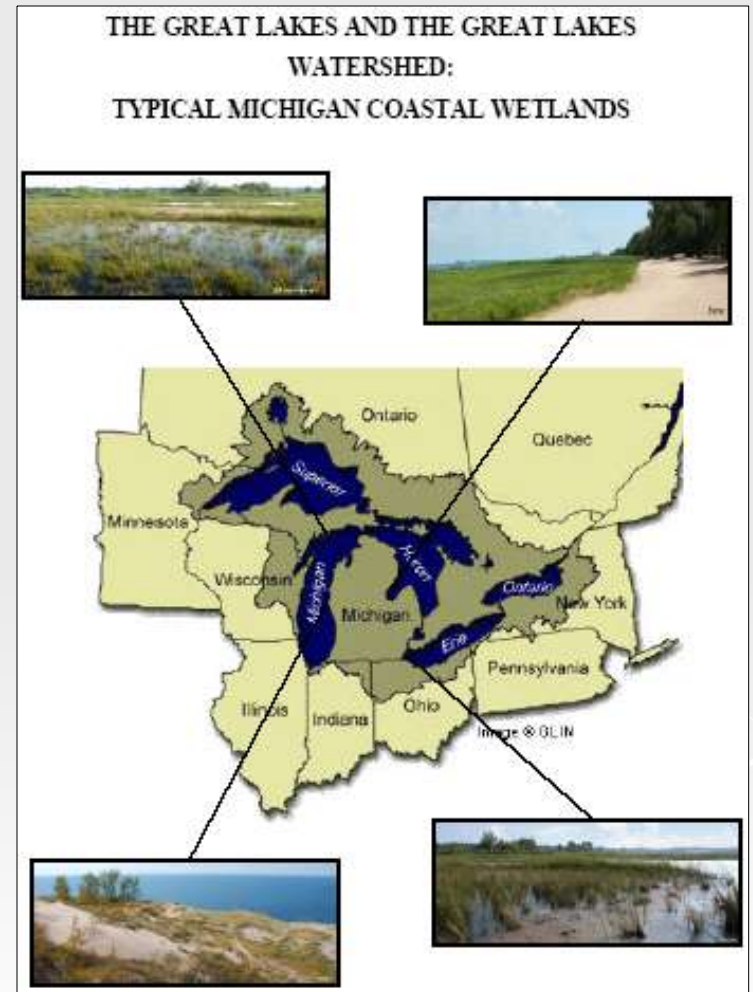


IAGLR May 26, 2005



Rationale

- Great Lakes Wetlands
 - Services not necessarily protected
- Great Lakes Wetland Policy
 - Legislation & policy interest in “restoration”
- Lack Information on Public Preferences



The Mail Survey

Random Sample

- 1650 Michigan adults

➤ Dillman Method

- 5 contact mail survey
- Color booklet
- 44% response rate



Michigan Great Lakes Wetlands: Citizens' Survey Questionnaire



This is an opportunity to provide your opinion and feedback on natural resource policy and management in Michigan. Your input will help decision makers make more informed choices on how to restore and preserve Michigan's coastal wetlands.

This booklet begins by explaining about Great Lakes coastal wetlands and what they do. It then focuses on how programs can preserve high quality coastal wetlands and restore poorly functioning coastal wetlands. You are then asked about a proposed wetland protection program.

Your answers will help ensure that state level decisions reflect the views of the citizens of Michigan. Thank you for your participation. This booklet's several sections of brief questions should take about 15 minutes to complete.

Please return your completed questionnaire in the enclosed envelope to:
**GL Wetland Study, Dept. of Resource Development, 323 Natural Resources
Building, Michigan State University, East Lansing, MI 48824-1222**

Main Parts of Questionnaire

➤ Wetland information and questions

- ⑩ Uses of wetlands
- ⑩ Perceived threats
- ⑩ Familiarity with wetland programs
- ⑩ Importance of wetlands

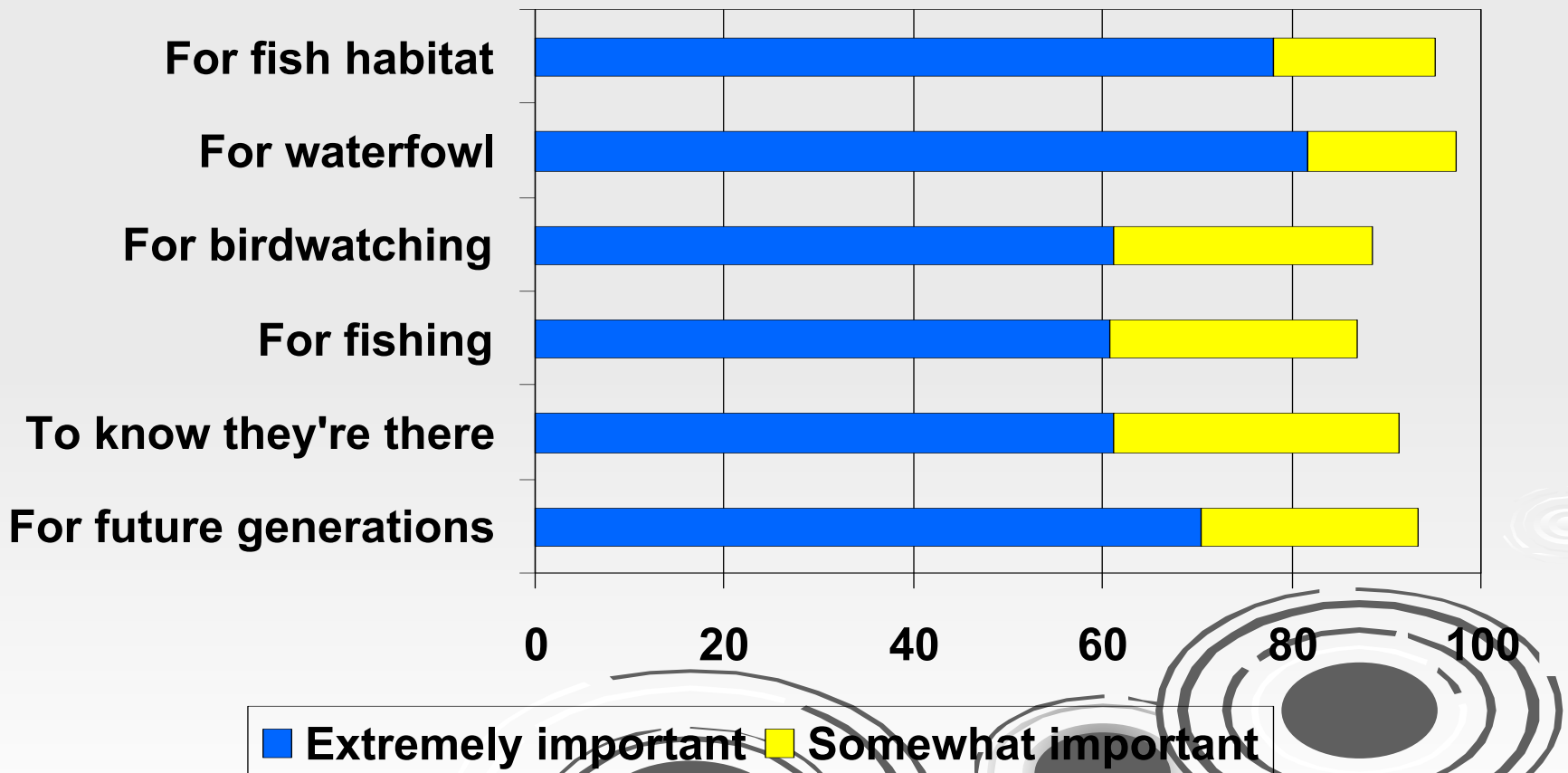
➤ Choice and valuation questions

- ⑩ Preferences for types of wetland programs
- ⑩ Willingness to pay to finance programs



What is Important?

How important are Great Lake wetlands for ... ?



WHICH PROGRAM WOULD YOU PREFER?

The two programs described below take different approaches to coastal wetland protection. Please compare the two programs before answering Question 8.

	PROGRAM A	PROGRAM B
<p>Of the many features coastal wetlands provide, which is the program's highest priority?</p> <p>Primary Focus {</p>	<p>Water Quality and Flood Control</p>	<p>Non-Game Species</p>
<p>How the program effort and resources are divided</p> <p>Preservation of high quality coastal wetlands {</p> <p>Restoration of coastal wetlands in poor condition {</p>	<p>40% Preservation</p> <p>60% Restoration</p>	<p>60% Preservation</p> <p>40% Restoration</p>
<p>How the program gets coastal wetland sites from volunteers</p> <p>Pays for purchase, permanent easement, or ten-year contract {</p>	<p>Purchase Property</p>	<p>Permanent Easements</p>



Program's Primary Focus Variable

Six possible priorities offered as program's primary focus

Water quality & flood control

Biodiversity

Waterfowl Habitat

Fish Habitat

Non-Game Species

Open Space Near Cities

WHAT COASTAL WETLANDS DO



Water Quality & Flood Control

Wetlands absorb nutrients and chemicals as well as filter sediments. They control flood damage by intercepting and storing storm water.



Open Space near Shore

Wetlands provide areas of open, undeveloped natural areas. They may provide opportunities for public enjoyment and education.



Waterfowl Habitat

Wetlands provide food and breeding habitat that benefits waterfowl. Wetlands support waterfowl such as ducks and geese.



Fish Habitat

Coastal wetlands provide shallow water areas with vegetative cover that serve as spawning grounds, nursery areas, and adult fish habitat.



Non Game Species

Wetlands provide habitat for animals not fished or hunted. Such species include shorebirds, amphibians, and wading birds.



Biodiversity

Wetlands' complex ecosystems support diverse and unique plants and animals. Such biodiversity is important for ecosystem health.

4. In your opinion, how important are Great Lakes coastal wetlands for providing and maintaining the following services?

(Mark one response for each function)

Importance of Great Lakes wetlands for providing and maintaining ...		Extremely Important	Some what Important	Not Very Important	Not at all Important	Don't Know
a.	Water quality & Flood control?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Open space?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Waterfowl habitat?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Fish habitat?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Non-game species?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Biodiversity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Restoration/Preservation Effort Variable

Split of program effort between preservation and restoration

Preservation / Restoration

10% 90%

25% 75%

40% 60%

50% 50%

60% 40%

75% 25%

90% 10%



HOW TO PRESERVE AND RESTORE WETLANDS

State and federal laws try to prevent loss of wetland acreage by placing conditions on wetland permits to avoid, minimize, and mitigate wetland loss. However, existing laws do not always protect wetland quality.

Wetland protection programs can preserve high quality wetlands already in the Great Lakes ecosystem. Wetland protection programs can also restore damaged or impaired wetlands to improve Great Lakes ecosystem health.

- Preservation of High Quality Wetlands**
 Wetland programs can protect wetlands that are high quality, ecologically rich, and hydrologically sound. Wetland preservation is accomplished by agreements with landowners that legally and physically protect wetlands and their surrounding uplands from adverse changes.
- Restoration of Wetlands and Wetland Functions**
 Wetland programs can improve wetland ecosystems and wetland functions by restoring wetlands that have been degraded. The restored wetlands would then be preserved. Coastal wetlands that are impaired may be restored by improving water flows, planting native species, and removing invasive species.

6. How familiar are you with the following approaches used in wetland protection programs? (Mark one response for each activity)

Familiarity with ...		Very Familiar	Somewhat Familiar	Not Very Familiar	Not at all Familiar	Don't Know
a.	Wetland preservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Restoration of wetlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Land Acquisition Method Variable

Approaches for acquiring wetland acreage

Purchase Property

Permanent Easements

Ten Year Contracts

GETTING WETLANDS TO PRESERVE AND RESTORE

When a wetland program is **voluntary**, the wetland program needs to negotiate details of wetland access, restoration efforts, and protection plans with interested **property owners who receive compensation**.

Written agreements restrict and **prevent incompatible land uses and activities** around wetlands being preserved and restored. Here are three ways for voluntary programs to get wetlands for preservation and restoration:

- **Purchase Property from Willing Sellers**
Wetland programs may buy Great Lakes coastal properties that contain wetlands and that may be well suited for restoration or preservation. Purchases are made from property owners who are willing to sell.
- **Voluntary Permanent Easements**
Programs may pay coastal property owners to place permanent restrictions, called easements, on their wetland property. Permanent wetland easements are voluntary and cost less than the purchase price of the land. Property owners retain their land but are required to permanently protect the wetlands and allow any negotiated restoration efforts to occur.
- **Short-term Contracts (10 Years)**
Programs may contract with owners to pay them to protect wetlands on their property. Contracts cost less than easements and land purchases. When the contract ends, owners have no obligation to continue protecting the wetlands.

7. How familiar are you with the idea of programs or agencies protecting natural resources in the following ways? (Mark one response for each)

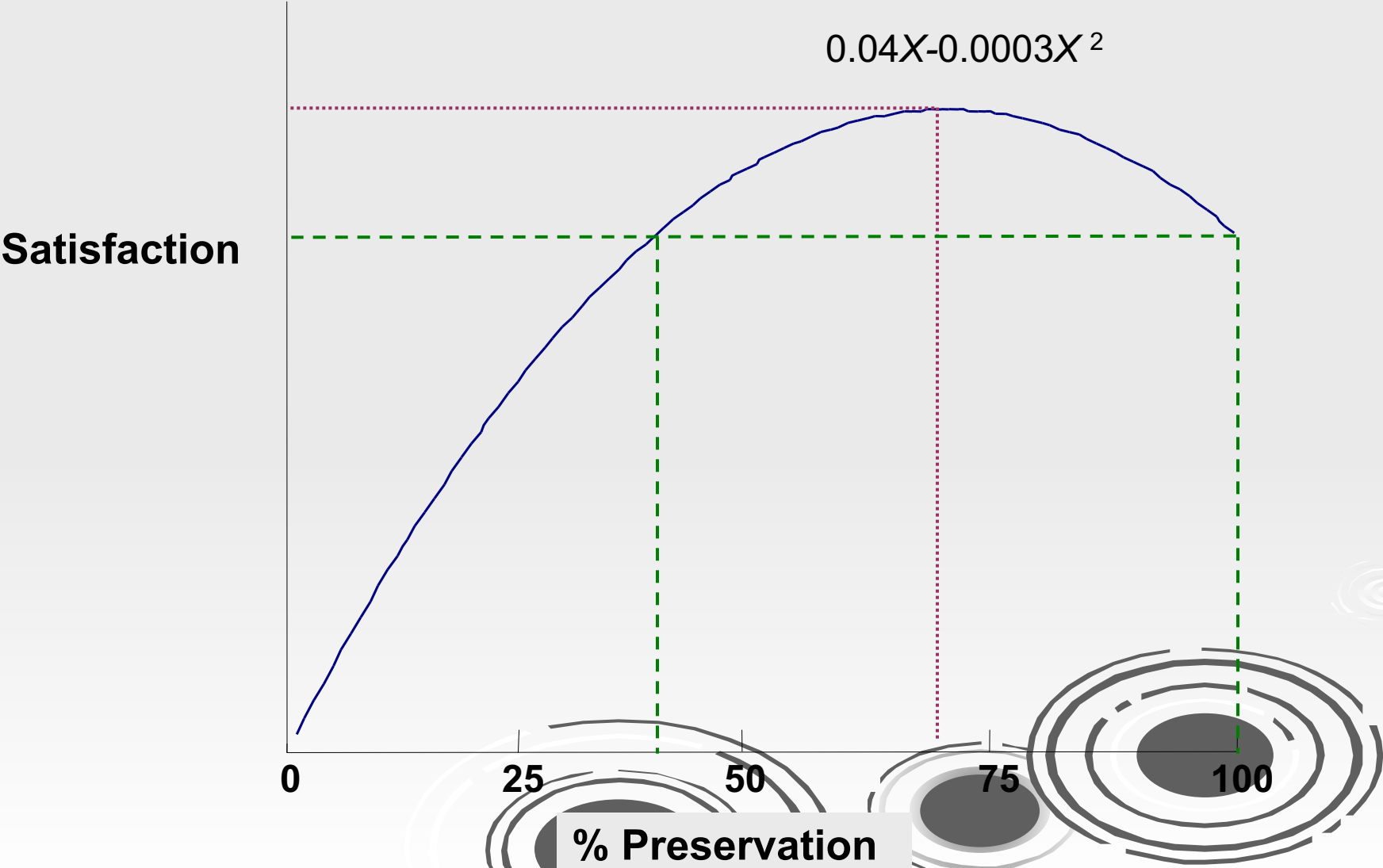
Familiarity with protecting natural resources through ...		Very Familiar	Somewhat Familiar	Not Very Familiar	Not at all Familiar	Don't Know
a.	Purchasing property from volunteers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Voluntary permanent easements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Short-term contracts (10-years)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Stated Choice Results

Variable	Parameter
<i>Purchase Property</i>	0.68 **
<i>Permanent Easement</i>	0.35 *
<i>Ten Year Contracts</i>	- -
<i>Water Quality/Flood Control</i>	0.90 **
<i>Biodiversity</i>	0.83 **
<i>Waterfowl Habitat</i>	0.50 *
<i>Fish Habitat</i>	0.24
<i>Non Game Species</i>	0.18
<i>Open Space Near Cities</i>	- -
<i>Percent Preservation</i>	0.04 **
<i>Percent Preservation2</i>	-0.0003 **

** Significant at 1%. * Significant at 5%.

Mix of Preservation / Restoration



Willingness to Pay for Program

HOW WOULD YOU VOTE?

9. Think of yourself in the voting booth. There are many things that the State can spend money on. Program A is one specific program. Suppose Program A is on the ballot. If it passes, Program A will be implemented and you pay the one-time, payment. If it does not pass, the program is not implemented and you do not pay for it.

With the information you have now, how would you cast your vote on Program A with a one-time cost to you of \$40? (Mark one response)

	Definitely vote FOR it	Probably vote FOR it	Could vote either way	Probably vote AGAINST it	Definitely vote AGAINST it
For Program A I would...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Influence of Variables on WTP

➤ Negative effects

Cost **

Rural residents *

➤ Positive effects

Biodiversity **

Water quality/flood control **

Waterfowl *

More preservation/less restoration *

Environmental group members **

Visited wetlands *

** Significant at 1%. * Significant at 5%.



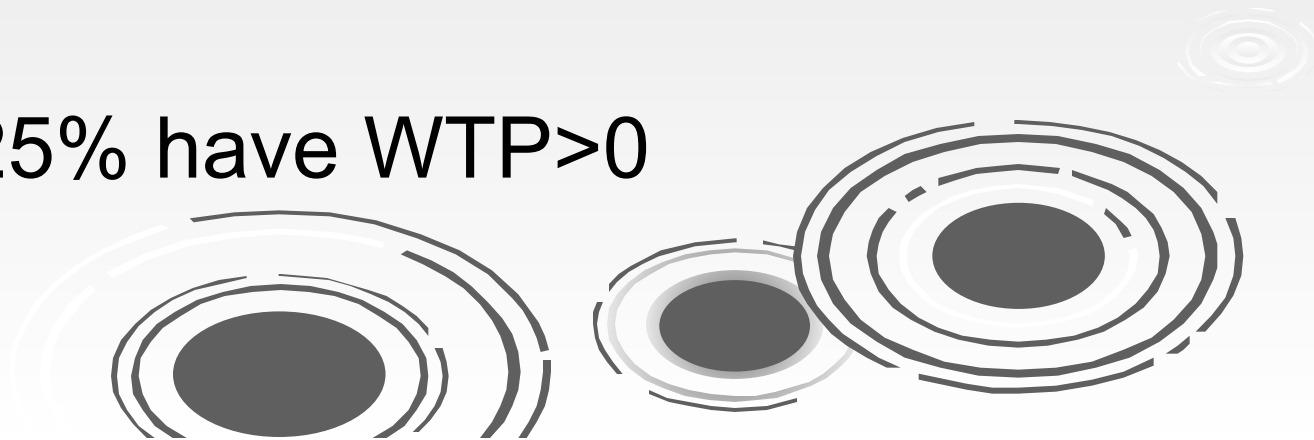
Statewide WTP Estimate

➤ Estimated WTP for Programs

- Mean value = \$163
- C.I. = (\$116, \$209)

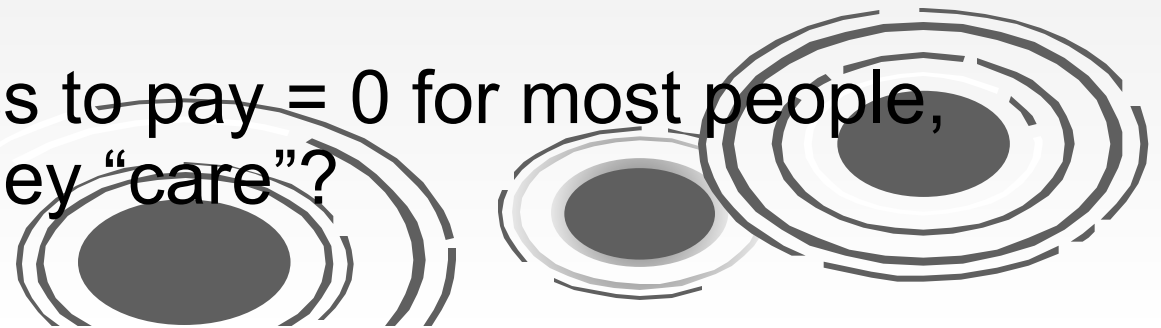
➤ Value per acre = \$20,500

➤ But, only 25% have $WTP > 0$



What does it all mean?

- Attitudes indicated wetlands are very important; people cared.
- Program preferences based on trade-offs suggest
 - Preservation “effect”
 - Biodiversity; flood control and water quality
 - Preference for more secure property acquisition
- Why willingness to pay = 0 for most people, even though they “care”?



Acknowledgements

➤ Research Support

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Land Policy Program

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➤ Project Team:

- Frank Lupi, Michael Kaplowitz, and John Hoehn
- Students: Oscar Arreola and Melissa Gibson

