



Economic Value of Beach Reengineering on Lake Michigan Beaches

- Poor beach water quality causes:
 - Health problems for beach users
 - Loss in consumer value from lower beach use
- Solution: beach reengineering
 - Redesign beach
 - Stormwater treatment
 - Re-naturalizing shoreline to promote sand retention and wave action
 - Lower beach advisories and improve water quality
 - Increase in beach usage after redesign




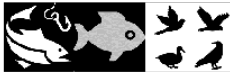




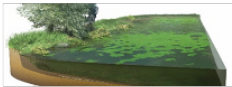






Determining Economic Value of Beaches

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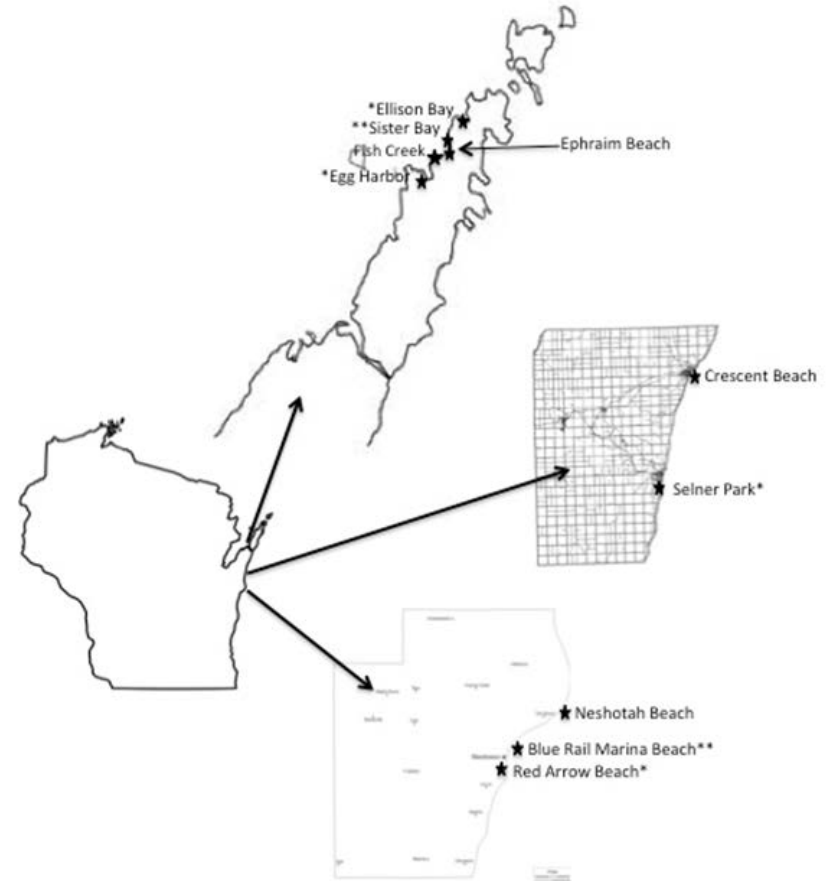
12) If you had to choose between visiting one of the following beaches, which would you choose?

Scenario-20

- Survey with 6 attributes
 - Aesthetics
 - Distance
 - Temperature
 - Density of people
 - Water quality
 - Payment
- Will people pay more for clean, “usable” beaches?

Beach Features	Beach A	Beach B	Status Quo
Aesthetics	Vegetated 	Non-vegetated 	Non-vegetated 
Biodiversity	Abundant 	Sparse 	Minimal 
Water Clarity	Clear 	Murky 	Very Murky 
Water Quality	0 days bacteria exceedance 	7 days bacteria exceedance 	12 days bacteria exceedance 
Congestion	No one 	Moderate 	Heavy 
Cost	\$28	\$45	\$0
I would choose	Beach A:	Beach B:	Status Quo:

- Beach economics study – UW Oshkosh and UW Whitewater
- Survey questions for 2019
 - Characteristics of the beach
 - Impact of beach closures had on their decision to visit
 - What other beaches in the Great Lakes they use
 - Amount of money spent during their visit
 - Use of beach influenced by characteristics resulting from remediation? (or non-remediation)



Determining Economic Value of Beaches

- Average willingness to pay (2016 survey):
 - Aesthetics: \$55
 - Water Quality: \$159
 - Temperature: \$21
- Money spent in community:
 - Food/drink/lodging
 - Travel
 - Park passes
 - Fishing
 - Souvenirs

Determining Economic Value of Beaches

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23) For this visit to this beach today, how much money do expect to spend on yourself and anyone you are with? Include all expenses for this beach visit, no matter where the purchase was made.

<u>ITEM</u>	<u>TOTAL EXPENSES</u>
Food, drinks, refreshments	\$ _____
Roundtrip cost of transportation (Fuel & other costs like tollway fees)	\$ _____
Single-day licenses/fees for fishing/park pass, etc.	\$ _____
Parking meter fees/Boat launch fees, etc.	\$ _____
Fishing gear purchased specifically for this visit (Bait, lures and flies, guide fees, equipment rental)	\$ _____
Beach gear purchased specifically for this visit (toys, chairs, towels, coolers, sunglasses, sunscreen)	\$ _____
Souvenirs or other products from local businesses	\$ _____
Lodging at motels, cabins, lodges, campgrounds etc.	\$ _____
Other trip-related expenses not listed above	\$ _____

- Egg Harbor, WI beach
- Average 20-30 daily beach users prior to redesign
- Average ~400 daily beach users after redesign



- Before: Low, flat beach with large swash zone
- Rock jetties reduce water movement



Door County Success Story

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- Beach is nourished to minimize swash zone and improve infiltration
- Native plantings are used to hold sand in place and discourage waterfowl
- Stormwater runoff is treated through infiltration and bio-infiltration prior to entering the sandy beach area

Door County Success Story

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Door County Success Story



- Value for beach goers:
 - \$45-60/person/day
 - 150 visitors x 30 beaches x 90 beach days x \$50 each = over \$20 million
- Community Value:
 - Increased property values
 - Recruitment of business
 - Increased visitors for restaurants, hotels, small businesses, etc

Door County Success Story



- Egg Harbor was recently selected to be “Best Small Town” in Wisconsin in a survey by Wisconsin Trails magazine.
- “A new beach and marina optimize the sparkling waters of Green Bay.” – Jeff Larson, Green Bay
- “Right on the lake, beautiful scenery, and easy access to all of Door County’s offerings, including theater, wineries, shopping, galleries. It’s a great vacation destination and the people are friendly.” – Sue Johnston, Jackson

- The Brookings Institution, September 2007
http://www.healthylakes.org/site_upload/upload/GrtLakesCostBenefit.pdf
- Investing \$26 billion in the Great Lakes will result in \$80 billion in short and long-term economic benefits