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The Economics of Great Lakes Protection & Restoration

MICHIGAN OFFICE OF THE GREAT LAKES

Definitions

Economic Impact Analysis

Cost Benefit Analysis

Hedonic Analysis

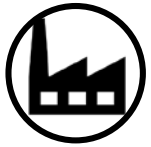
Ecosystem Services Valuation

Intermediate Ecosystem Services


Habitat Provision


Pest control


Maintenance of Genetic Diversity


Wastewater Treatment


Local Climate Regulation

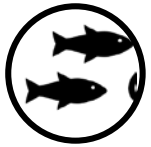

Pollination


Carbon Storage

Final Ecosystem Services


Raw materials


Fresh water


Food


Medicinal Resources


Tourism


Health and Recreation


Moderation of extreme events


Spiritual/sense of place


Aesthetics/ inspiration for art


Erosion Prevention

GLRI Economic Impact Study

Photos: Detroit Riverfront Conservancy

Great Lakes Restoration Initiative

- 2004: Great Lakes Regional Collaboration formed
- 2010: GLRI established
- $1.4 billion invested from 2010-2016

Environmental Outcomes	
Pounds of phosphorus prevented from entering the Great Lakes	402,000
Acres of invasive species control implemented	115,000
Miles of shoreline protected	642
Acres of coastal wetland protected	17,500
Acres of habitat protected	180,000

Project Background

- Funders include: Charles Stewart Mott, Fred A. and Barbara M. Erb, Joyce, and Wege Foundations
- Project Leads: the Council of Great Lakes Industries and the Great Lakes Commission
- Research led by University of Michigan's Seminar in Quantitative Economics
- Case study narratives developed by Issue Media Group
- Purpose:
  - Estimate the economic impact of the GLRI
  - Support continuation of GLRI

Methods

- Hedonic Analysis
- Economic Impact Assessment
  - REMI
- Case studies

Photo Credit: Great Lakes Commission

Economic Impact Assessment Results

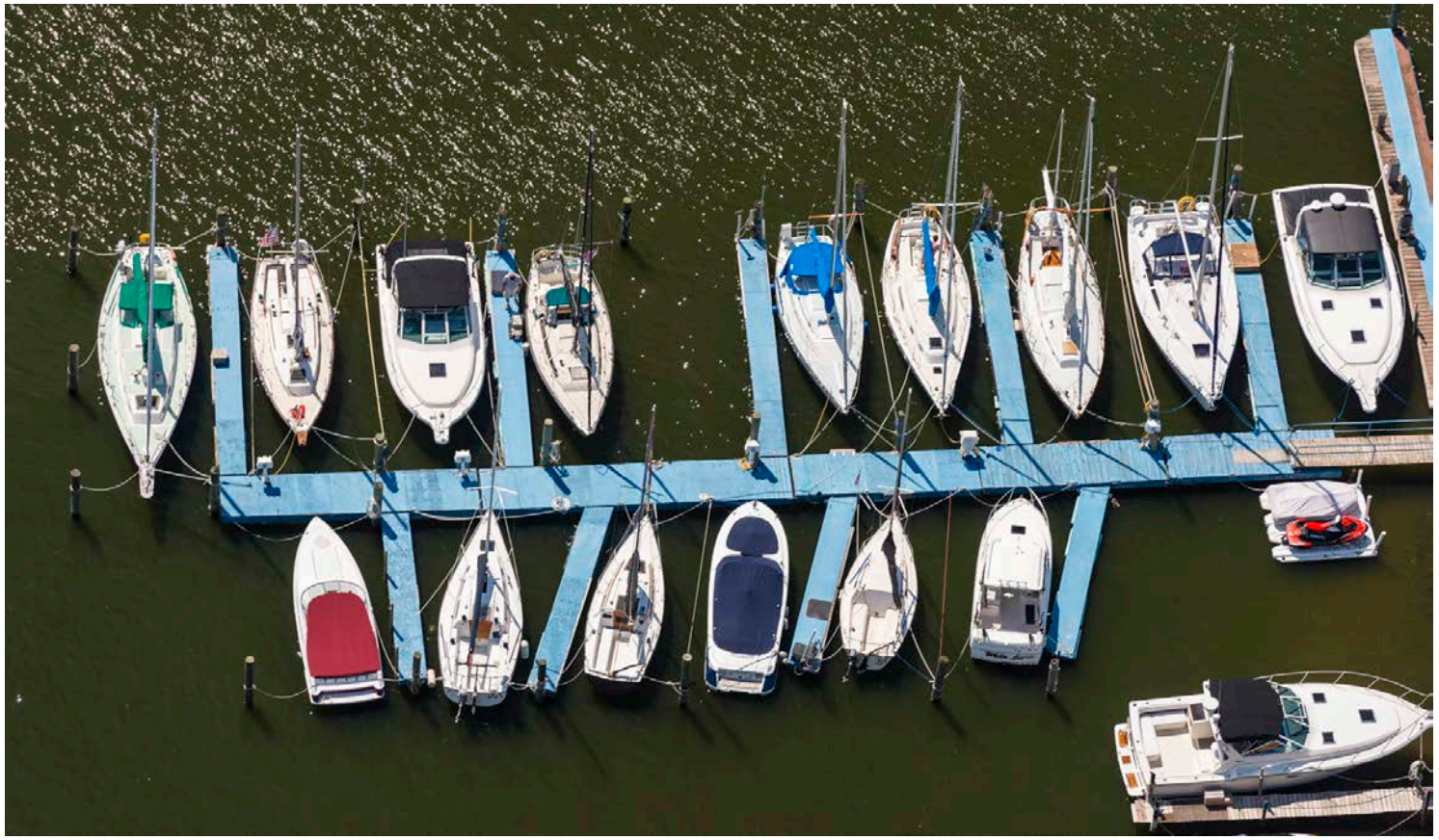
- $3.35 of economic activity for every $1 of GLRI spending
  - $4.29/$1 in Detroit, MI and $4.09/$1 in Buffalo, NY
  - $1.62/$1 in tourism industries
- $900 million increase in home values in coastal communities
  - Quality of life improvements worth $1.08 for every $1 spent
- Thousands of jobs created
  - Approximately the same number created per dollar as would be created by a federal stimulus program

Case Study Results

GLRI investments resulted in all of the following:

- Significant new development, especially in waterfront areas
- Resurgence of traditional water-based recreation
- Emergence of new types of recreation (kitesurfing, paddle-boarding)
- Improved quality of life
- Attraction and retention of young people

Other Examples



Muskegon Lake Socio-Economic Impact Assessment

Dr. Paul Isely, Grand Valley State University

Methods

- Travel Cost
- Hedonic Valuation

Results

- Additional $3,285,130 per year from recreation
- $11.9 million additional property value
- Overall, 6:1 return on investment

#HowYouDune Socioeconomic Study

Tom Zimnicki, Michigan Environmental Council

Dr. Robert Richardson, Michigan State University

Methods

- Travel Cost
- Qualitative value ranking

Results

- Average $391.75 per trip
- Highest value placed on:
  - Scenic beauty
  - Protection for future generations
  - Outdoor recreation

Why we do it

Decision-making tool

- Internalize externalities

Communication of benefits

Justification of action

Calculate spill/pollution damages

Ongoing Challenges

Data

- Changing types of recreation

Scale

- Time
- Geographic

Integration into decision-making

Referenced Studies

- GLRI Economic Impact Report: https://www.glc.org/work/blue-economy/GLRI-economic-impact
- Muskegon Lake AOC: https://www.glc.org/wp-content/uploads/Habitat-Muskegon-Lake-economics-GVSU-Jan-2018.pdf
- How You Dune Study: https://www.environmentalcouncil.org/valuing_michigans_coastal_dunes

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