THE ECONOMICS AND SPATIAL FLEXIBILITY
OF FISHERIES AND RECREATIONAL WATER OPS.
IN BISCAYNE BAY, FL

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SUMMARY

NOAA Habitat Blueprint
Biscayne Bay Habitat Focus Area

• Water quality in Biscayne Bay
• Economic Assessment
• Spatial Analysis
• Interviews and surveys
INTRODUCTION

Biscayne Bay

• Geography and Ecology
  • Boundaries
    • N: Oleta River State Park
    • S: S. edge of Barnes Sound at US-1 Bridge
    • E: Barrier islands
    • W: Miami
  • Diverse systems
    • North
    • Central
    • South
  • Ecology
INTRODUCTION

Biscayne Bay

• History
  • Formation 2,000-5,000 years ago
  • Tequesta Indian settlement
  • European colonization
  • Formation of Miami Beach
  • Dredging of Port Miami
  • Protected areas
    • Biscayne National Park
    • Biscayne Bay Aquatic Preserves
    • State Parks
INTRODUCTION

Economic Sectors

- Commercial Fishing
- Recreational Fishing
  - Charter Fishing
  - Flats Fishing
- Seafood Wholesale
- Recreational Water Operators
INTRODUCTION

Water Quality

• Northern Bay
  • Urban development
  • High turbidity, phytoplankton biomass, high total P, low D.O.

• Central Bay
  • Lack of barrier islands
  • High rates of exchange and circulation, low residence times

• Southern Bay
  • Agricultural activity
  • Landfill and sewage treatment
  • Turkey Point Nuclear Power Plant
To ensure industries dependent on Biscayne Bay are adequately protected, it is necessary to understand and identify:

1. The economic risks associated with water quality degradation,
2. The specific locations where water quality is affecting local businesses, and
3. Industry ability to adapt to degrading water quality.

STATEMENT OF PROBLEM
Objectives
1. Determine the current economic value of the aforementioned sectors.
2. Describe current water quality conditions in Biscayne Bay and how they compare to historical conditions.
3. Identify water quality degradation hotspots and potential polluting factors.
4. Relate spatial use of the Bay by economic sector to water quality degradation hot spots.
5. Calculate spatial flexibility in Biscayne Bay fisheries and water operations.
(a) Quantifying the problem: displacement

\[
DI = \frac{R \cap F}{F}
\]

Chollett et al., 2015
Interviews and Surveys

TOPICS

1. Demographics
2. Trends and Patterns
3. Economics
4. Spatial Data
5. Water Quality
METHODS

- Online Surveys
- Qualtrics demo
METHODS

- In-Person Interviews
  - Qualtrics
  - SeaSketch
1 Overview

Stay tuned for aggregate results regarding economic investments in Biscayne Bay, perceptions of water quality, and spatial use by economic sector!

2 Economic Investments

3 Water Quality Perceptions

4 Spatial Use
This information can be used by *industry participants* and *policymakers* alike to push for local, state, and federal government action in the form of new legislation and/or enforcement of existing regulations.

Policymakers specifically may use this data to determine how to allocate resources in order to *maximize economic return* and to *protect the most vulnerable industries and/or areas*. 
Questions?