

# Arctic Ecosystem Services Measurement and Modeling Project

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Environmentally Friendly Drilling Program Quarterly Meeting:  
Best Management Practices – What? How? and Why?

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# Project Objectives

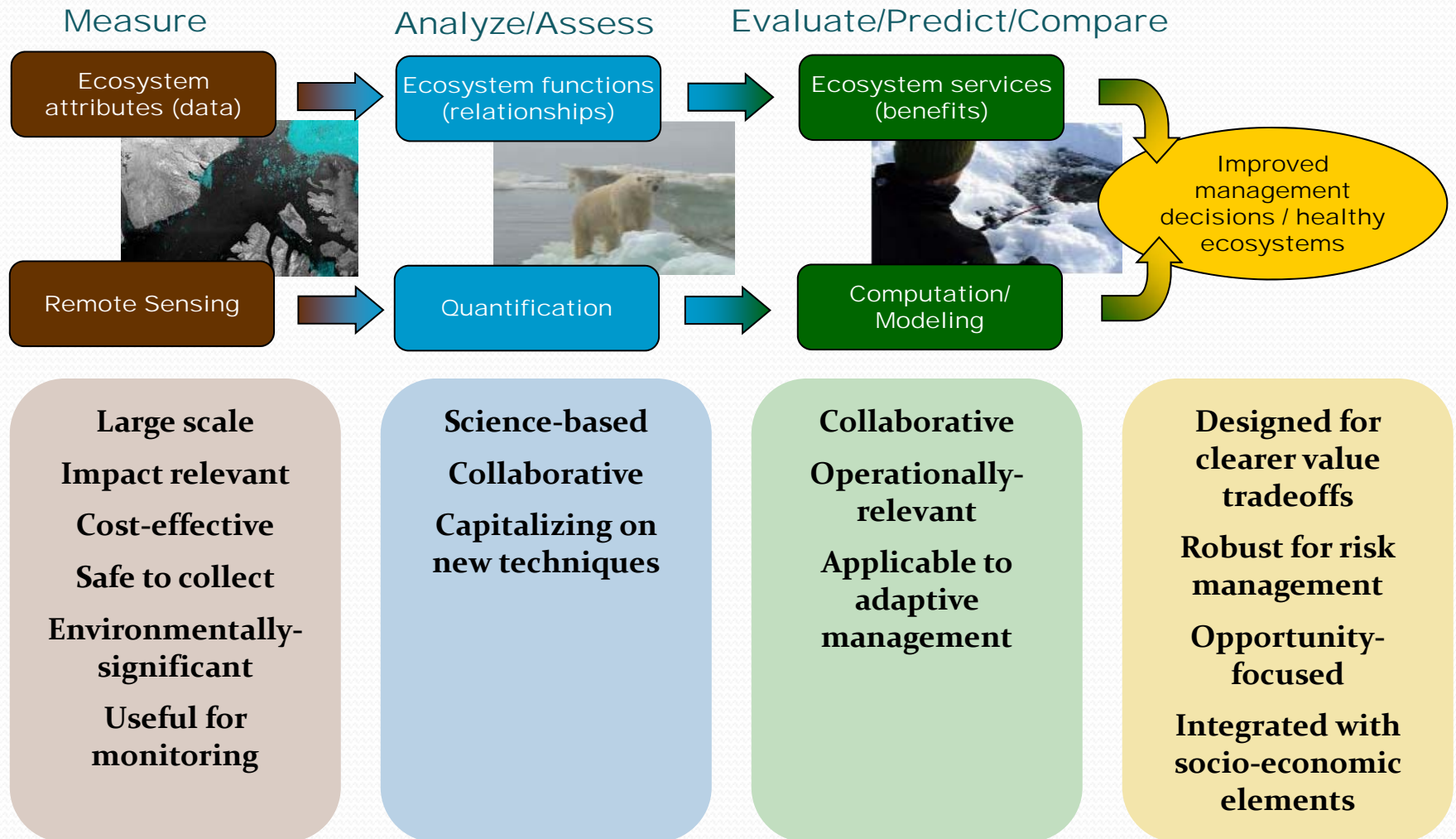
- To assess and promote ecosystem management tools and metrics that may be used in Arctic marine ecosystems
- To establish a network of researchers for collaboration.

# Why?

Business-relevant ecosystem services assessment tools to:

- Understand our dependencies and impacts with respect to ecosystem services in our operating areas
- Model and evaluate effects of alternative scenarios on ecosystem services.
- Consider our potential impacts in context of other ecosystem stressors (e.g., climate change, other commercial activities)

# Research Approach



# Application to the Arctic

- The Arctic represents the intersection of
  - Sensitive environments
  - Strongly coupled socio-ecological systems
  - Rapid change (social, economic, environmental)
- Presents challenges for observing and characterizing the environment
  - High cost and risk of field work
  - Large natural variability and complex feedbacks
  - Vast areas with limited avenues of access
- Range of stakeholders, including communities, have a history of taking active role in environmental management and development issues

# Research Approach: Valuation

- Valuation and Scenario Assessment
  - Objective: proof-of-concept for how non-monetary valuation data can be collected, assimilated, and represented in ecosystem service scenario assessments.
  - Requires participation from stakeholders
    - Use participatory modeling approach to develop relative values and priorities (non-monetary valuation) among stakeholder groups related to shoreline stability and primary productivity
    - Relative values elucidated through joint stakeholder scenario development and trade-off analysis
  - Outcomes:
    - Assess effectiveness of methodologies
    - Valuation (input) data for building on methods

# Next steps

- Consulting with stakeholders
  - Native population
  - Scientists
  - Local government
  - Federal government
  - NGOs
- Incorporate stakeholder input into research approach and future activities
- Case studies to test approach, tools and models

# Thank you!

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