Update on the Dolphin Management Strategy Evaluation

Dolphin Wahoo AP
April 2025

Acknowledgements

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Stakeholder participants

Management Strategy Evaluation (MSE)

Management Strategy Evaluation (MSE) – process designed to develop management procedures (MPs) that are robust to uncertainty

1. Identify fishery-specific, stakeholder-defined management objectives
2. Identify relevant uncertainties over which management procedure should be robust
3. Develop operating models, 'true' states of nature, and condition operating models
4. Identify management procedures that are responsive to stock dynamics (feedback loop)
5. Simulation exercise; summarize and present resulting performance statistics

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Dolphin MSE

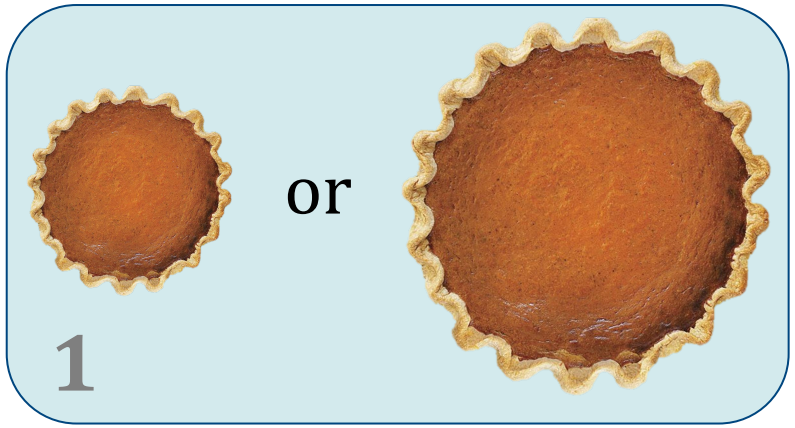
Purpose: to develop an *empirical management procedure* for dolphin in the US Atlantic that is:

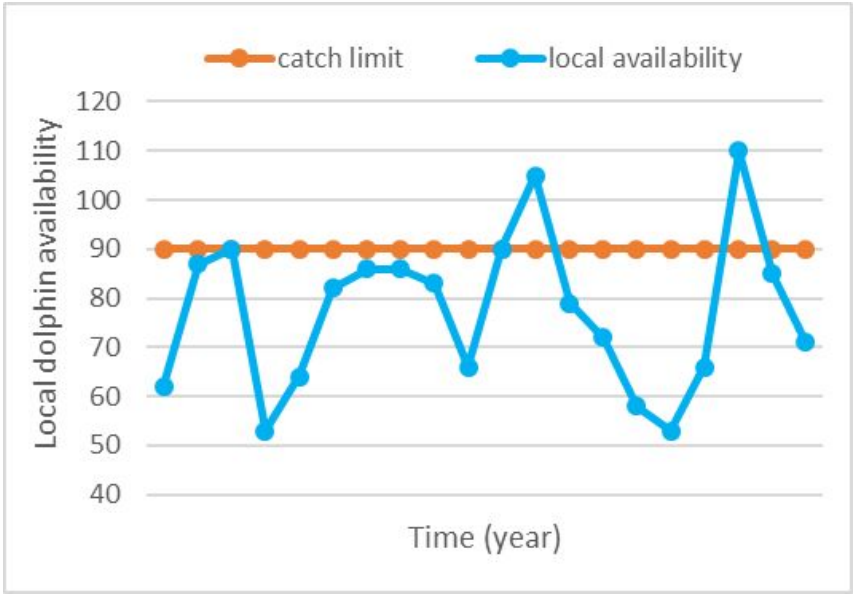
- Fully-specified 'recipe' for setting OFL/ABC/ACL along with additional management actions
- Simulation tested to be robust to uncertainty
- Meets stakeholder-defined management objectives

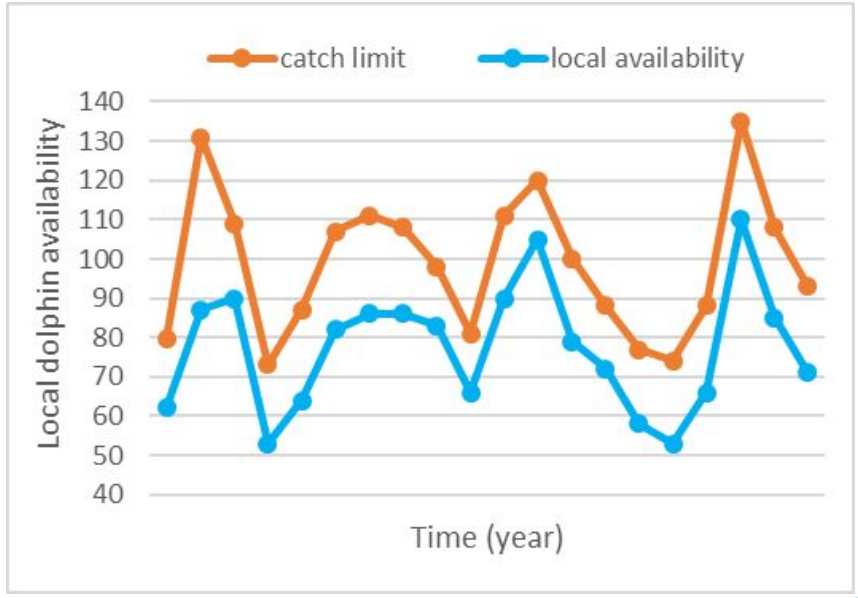
Management Procedure

With our management procedures, we want to:

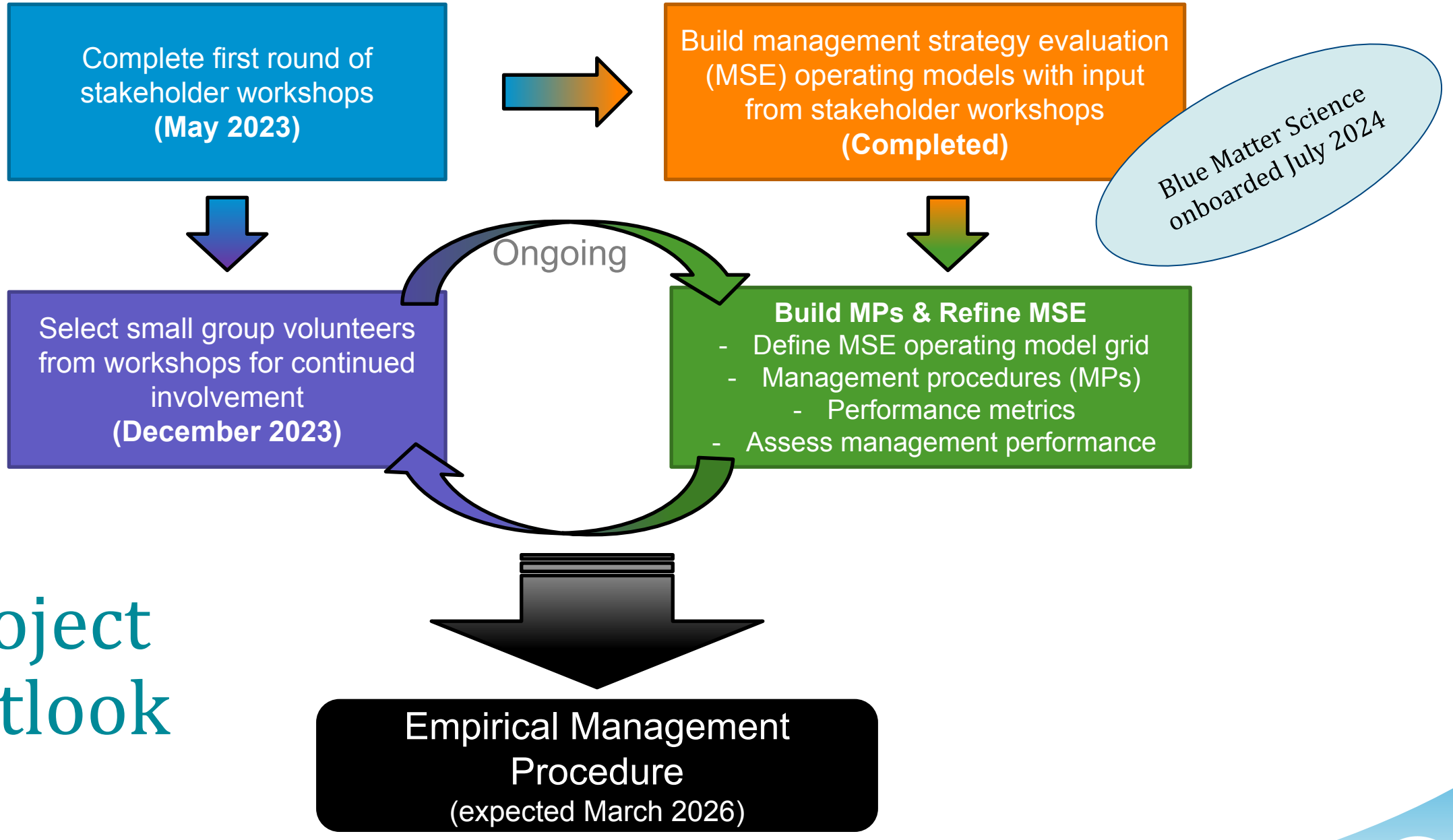
1. predict the amount of dolphin the SAFMC will have each year
2. maximize the usage of those fish across sectors and region







Project outlook



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Tactical management exploration

Proposed action plan for Amendment 3* scoping:

Use MSE framework to explore static management actions:

- expanded / revised size limits
- recreational bag limits
- recreational vessel limits

* https://safmc.net/documents/dw_a2_regam-3decisiondocument_202412-pdf-2/

Project Update

MSE Modeling Dynamics

Blue Matter Science onboarded July 2024

Modeling Dynamics

- openMSE-based framework (openMSE.com)
- Quarterly time-step; statistical catch-at-length operating model; spatial dynamics
- Technical details in preparation

Stakeholder Small Group Meetings

1. MSE 101
2. Management objectives
3. State of dolphin science
4. International dolphin fisheries
5. Operating models
6. Movement and distribution
7. Management approaches
8. Fishing valuation survey

Stakeholder Identified Uncertainties

- Removals (US recreational; International)
- Alternate movement patterns
- Enforcement challenges
- Changing availability & catchability
  - Biophysical (temp, Gulf Stream positioning, Sargassum)
  - Anthropogenic (ropeless lobster pots, offshore wind)
- Economic fishery drivers
- Post-release mortality & depredation

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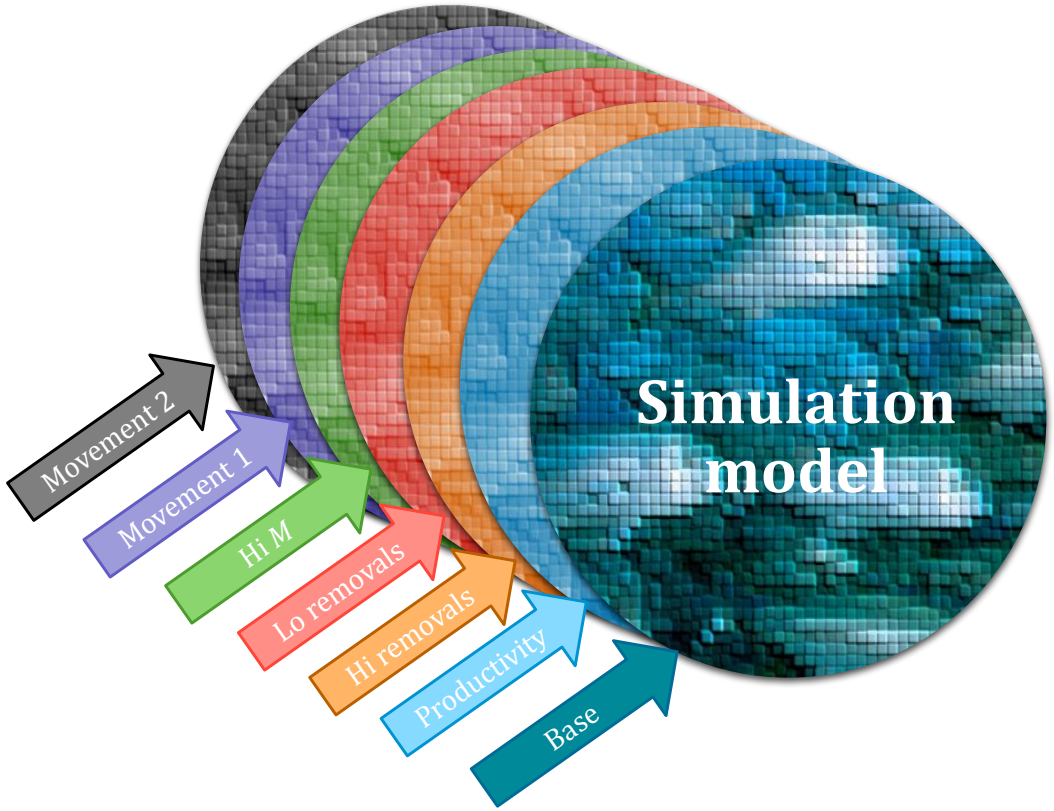
Proposed Scientific Uncertainties

1. Natural Mortality
2. Recruitment
3. Productivity / steepness
4. Spatial distribution
5. Movement
6. Uncertainty in removals
   a. MRIP & International
7. Future nonstationary
   a. Future recruitment
   b. Distribution shifts
   c. Changes in availability / catchability
   d. Changes in life history parameters



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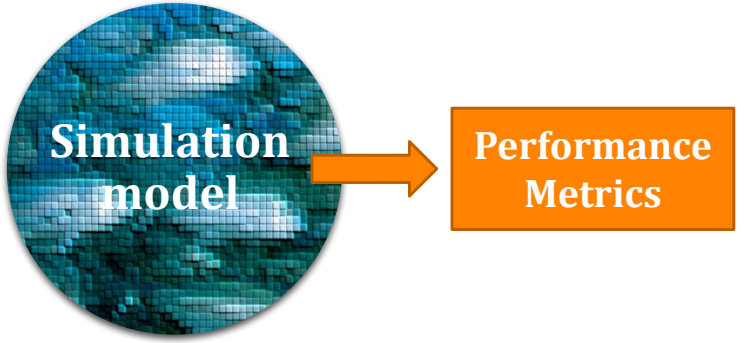
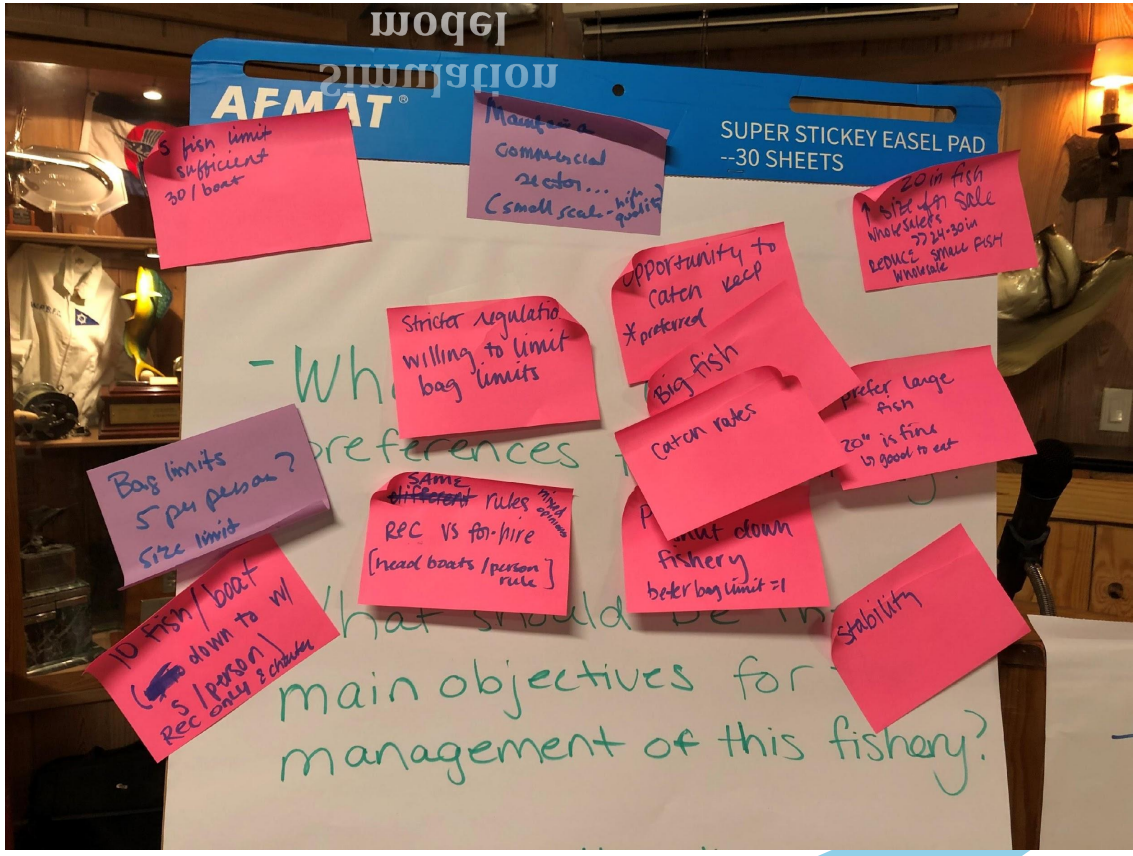
Stakeholder-defined objectives



- Ensure opportunity / access to fishery
- Prevent fishery closures
- Large sizes preferred
- Stability in regulations (though mixed)
- Regional & sector differences in fishery goals and objectives
  - Improve consistency and reliability of fishery
  - Area-based TACs or pay-back measures
  - Conserve stock vs. high landings
  - No size limits vs. open to size limits



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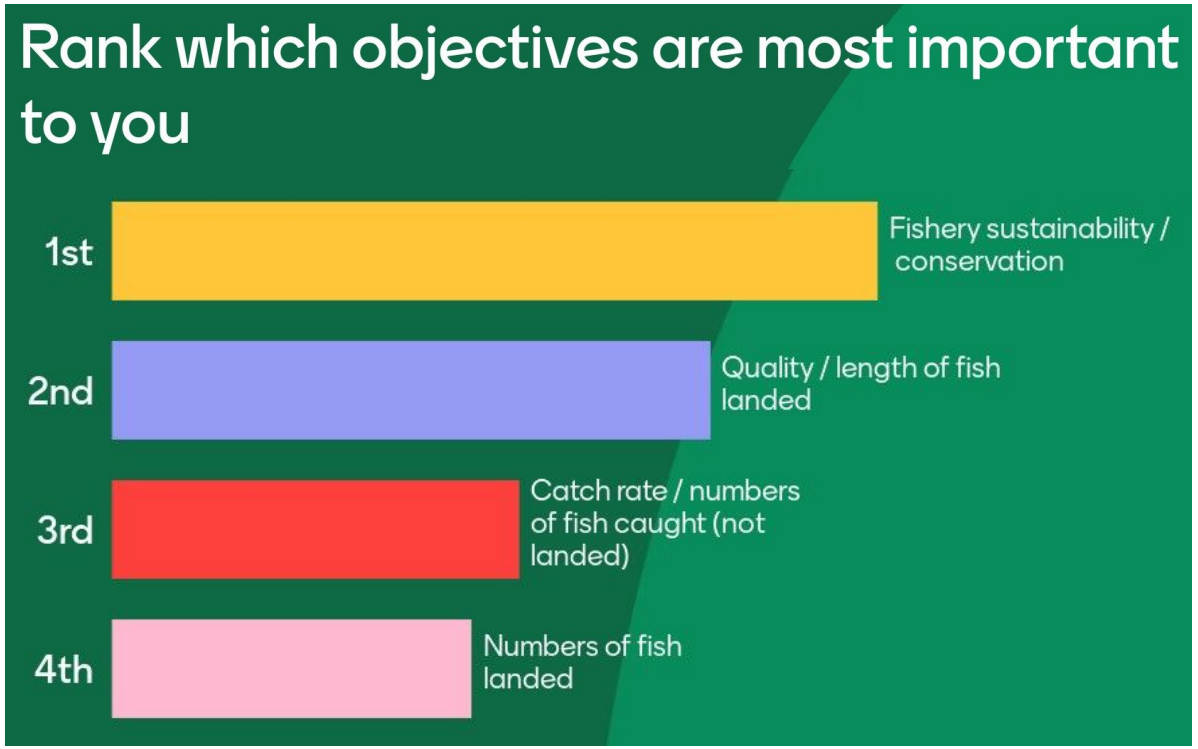
Proposed Conceptual Management Objectives

Generic*:

1. Status
2. Yield
3. Stability

Dolphin relevant*:

1. Catch rate
2. Fishing effort / opportunity
3. Size of fish caught



* Metrics calculated over short (2025-2034), medium (2035-2044), and long (2045-2055) time horizons

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Operating model design

Stakeholder feedback	Modeling decision
regional fishery and stock dynamics; regionally specific management objectives	spatial operating model
seasonal availability	seasonal time-step
different fishery dynamics among sectors	multiple fleets for each sector and region
size-based management objectives; currently length-based management	Age-based operating model
perceived changes to fish movement and availability over time	time-varying movement
management objective to increase catch rates	calculation of fleet CPUE