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# Update on the Dolphinfish Management Strategy Evaluation

SAFMC Meeting June 2023





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# Acknowledgements

## **Stakeholder Workshops:**

SEFSC: Mandy Karnauskas, Matt McPherson, Suzana Blake, Cassidy Peterson

SAFMC: Julia Byrd, John Hadley

## **MSE Modeling Technical Team:**

SEFSC: Matt Damiano, Kyle Shertzer, John Walter, Cassidy Peterson

NCSU: Jie Cao

OSU: Bryan Minihan

## **Subject matter expert:**

Beyond Our Shores Foundation: Wess Merten

## **Stakeholder participants**

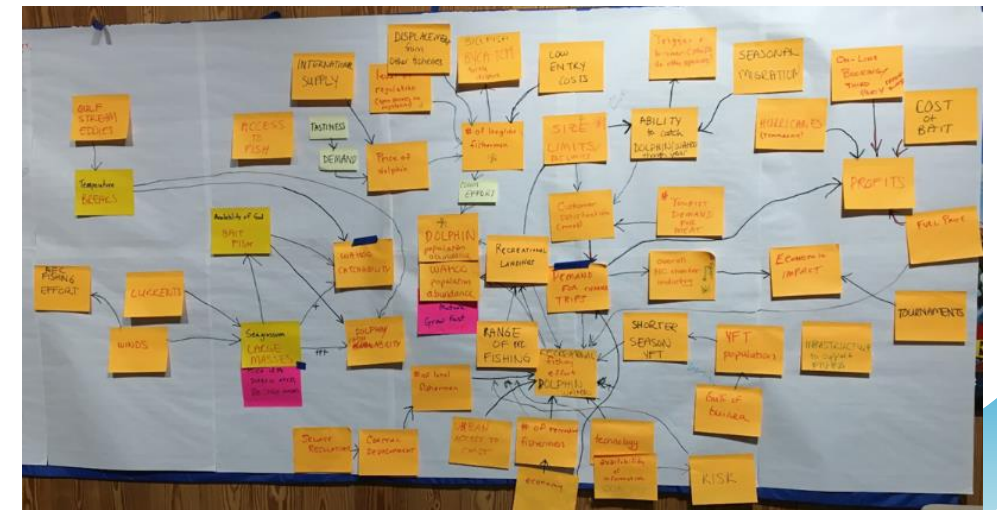


# Background

## 2020 Dolphin / Wahoo Stakeholder Participatory Workshops

- Built stakeholder-driven conceptual models detailing local abundance of dolphin
- Clear regional differences in use, reliance, and value of fisheries
- Perceived increased utilization on the resource; accompanied by increased user conflicts

*Can we design a new management approach that reduces conflicts, maximizes achievement of stakeholder-defined management objectives, and is appropriate for the life history strategy of dolphin?*



<https://safmc.net/citizen-science/dolphin-wahoo-participatory-workshops/> | <https://safmc.net/documents/2022/05/dolphin-wahoo-participatory-workshops-final-report.pdf/>



# Motivation

- Dolphin stock and fishery
  - Internationally exploited
    - Data-limited, precluding full stock assessment
    - Limited management capacity
  - Static catch limit
    - Environmentally-driven productivity
- Proposing a more adaptive approach
  - Empirical (non-model based / indicator-based) management procedure for dolphin in the South Atlantic
- Full Stakeholder process



# Stakeholder Workshops

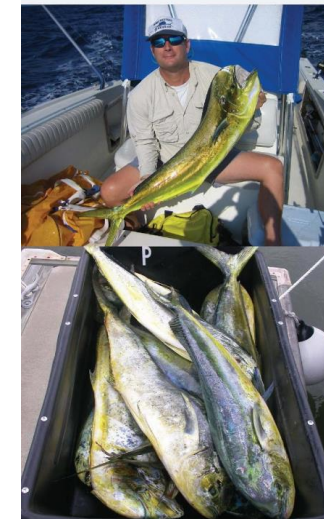
## Workshops designed to:

- Introduce the management procedures and management strategy evaluation
- To develop conceptual management objectives
- Understand uncertainties that the management procedure should be robust to
- Identify key participants for continued involvement in the process

## Workshop Dates:

- South Florida (Oct 2022)
  - West Palm Beach
  - Fort Lauderdale
  - Islamorada
- North Mid-Atlantic (Nov 2022)
  - Montauk
  - Narragansett
- Greater Carolinas (Jan 2023)
  - Charleston, SC
  - Wilmington, NC
  - Wanchese / Outer Banks, NC
  - Virginia Beach, VA
- Virtual (May, 30 2023)

## Dolphin Stakeholder Workshops



**CALLING ALL COMMERCIAL, FOR-HIRE & RECREATIONAL DOLPHIN FISHERMEN AND INTERESTED COMMUNITY MEMBERS!**

**We need your input to understand what is most important to you about this fishery:**

- What are your top priorities for managing dolphin?
- What do you most value in the fishery?
- What concerns do you have about the fishery?

These workshops will focus on gathering more specific information on preferences, priorities, and concerns with the dolphin fishery, in order to evaluate future management strategies.

**Virtual Meeting will be held May 30 at 5:30pm!**

In-person workshops were held in South Florida in October 2022 and in the Carolinas and Virginia in January 2023.

A virtual workshop will be held  
**Tuesday, May 30 from 5:30 - 8:30 pm**  
to gather input from anyone who was not able to attend the in-person workshops. Interested parties can join the webinar using the meeting link below.

**Webinar Meeting Link:**  
<https://meet.google.com/viu-ajte-yux>

**Please RSVP to:**  
Cassidy Peterson, NOAA Fisheries  
910-708-2686, [cassidy.peterson@noaa.gov](mailto:cassidy.peterson@noaa.gov)  
Or online at: <https://safmc.wufoo.com/forms/gjm3edc06ws1n7/>



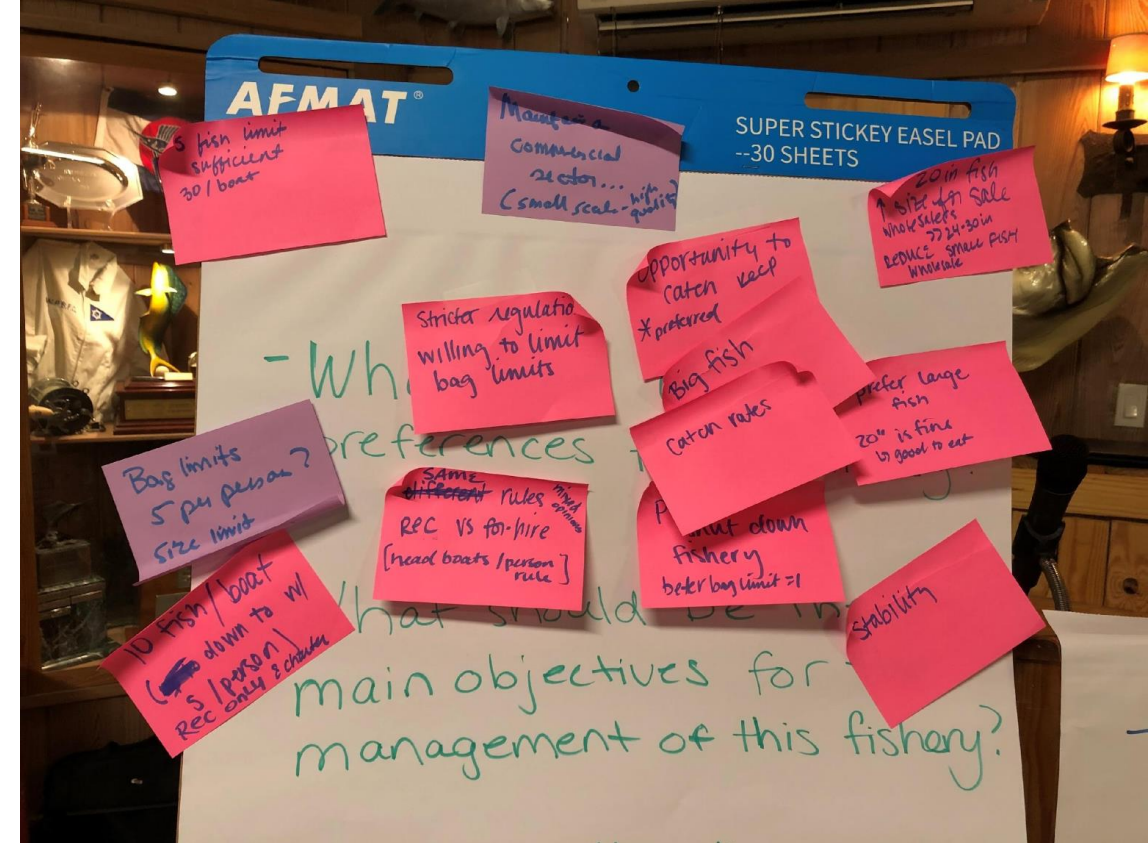
Photo credits: C. Rhodes, T. Frady, K. Iverson



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# Feedback: Objectives

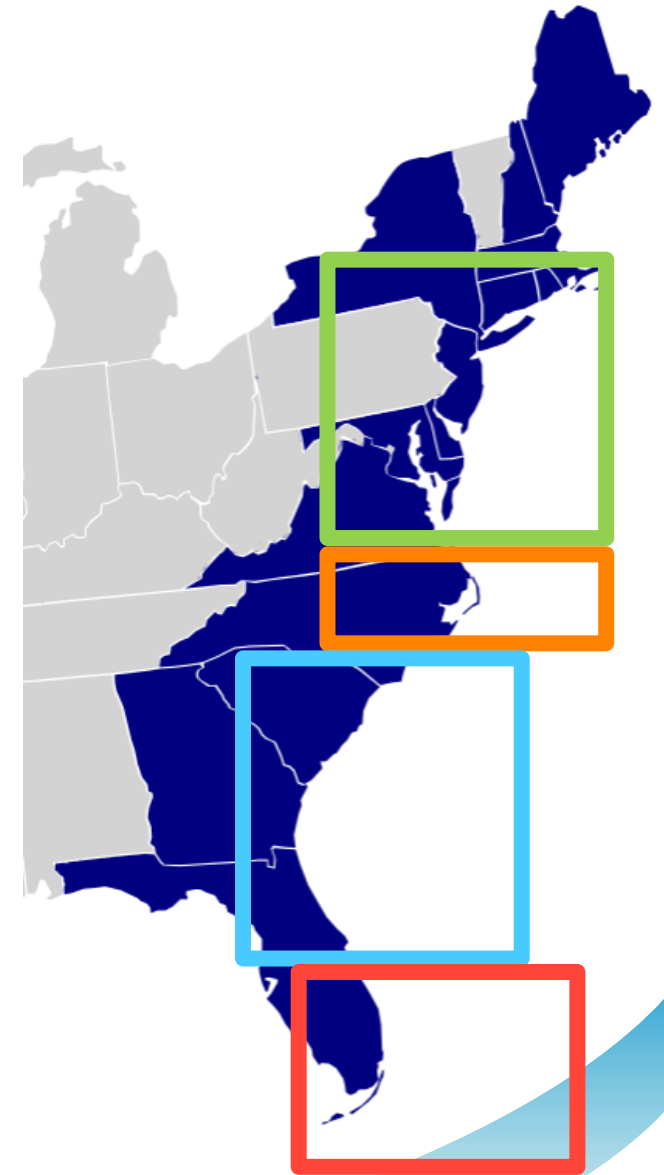
- Conceptual management objectives:
  - Ensure opportunity / access to fishery
  - Prevent fishery closures
  - Large sizes preferred
  - Stability in regulations preferred\*
    - \*Except Wilmington, NC
  - Regional & sector differences in fishery goals and objectives





# Feedback: Regional Trends

- VA – northern Mid-Atlantic
  - Virginia Beach, Montauk, Providence
- ★ • Northern NC
  - Wanchese
- SC – southern NC
  - Charleston, Wilmington
- ★ • South FL
  - Islamorada, Ft. Lauderdale, West Palm Beach



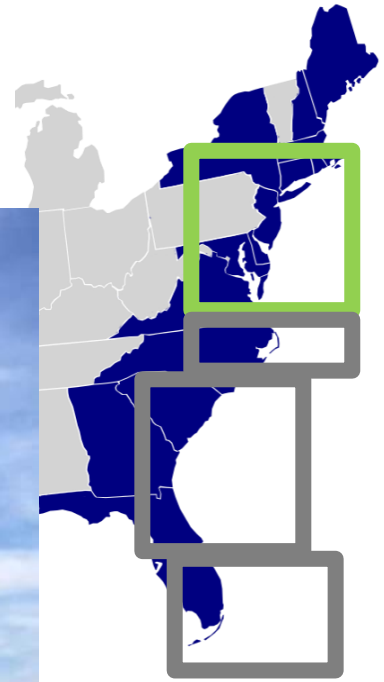
# Feedback: Regional Trends

## VA – northern Mid-Atlantic (VA Beach, Montauk, Providence)

- Opportunistic bycatch fishery
  - Meat fishery
  - Necessary to supplement tuna / swordfish charters
  - **Underexploited**
- Lower quality fish
- Sporadic availability
  - No overall trend
  - Shifting seasonal availability
- Smaller market

## Fishery Management Objectives:

- Sentiment that **fish aren't really accessible to manage**
- More consistent / reliable fishery
- Maintain current regulations
- Maintain fishery access
- Area-based management





# Feedback: Regional Trends

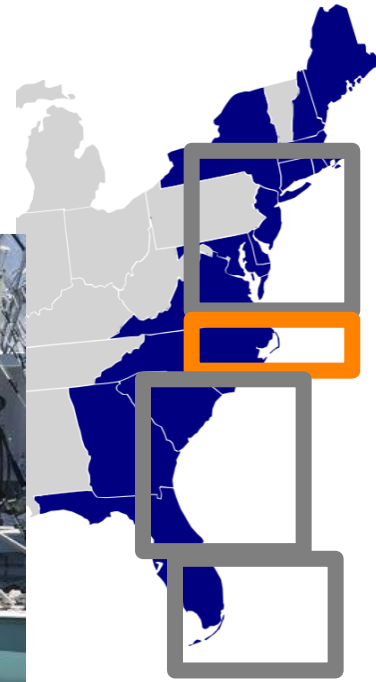


## Northern NC (Wanchese\*)

- Meat fishery
- Highly important fishery
- Mixed reports of abundance trend
  - Smaller fish
  - Sporadic availability – no abundance pattern
  - Changes in seasonal availability
- Increased private rec effort & constant charter effort
- Depredation

### Fishery Management Objectives:

- **Reduce regulations: “The ocean regulates us”**
  - High bag/trip limits – needed to sell trips
  - No size limit
  - Lack of enforcement



\* Primarily charter fishers

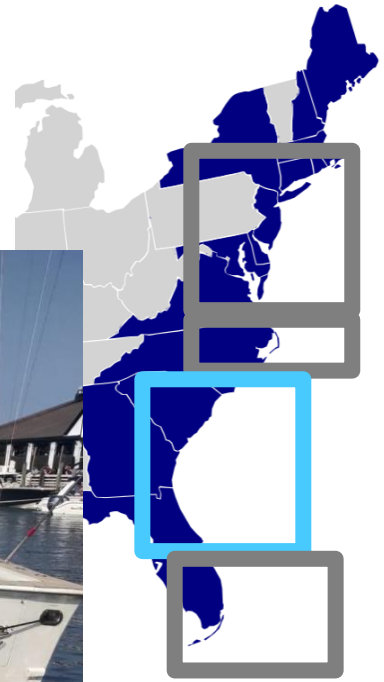
# Feedback: Regional Trends

## SC – southern NC (Charleston, Wilmington)

- Opportunistic fishery
- Meat fishery
- **Losing accessibility**
  - Fish further offshore
- Fewer rec v. commercial conflicts

### Fishery Management Objectives:

- Conservation-minded
  - Open to reducing trip/bag limits
  - Pro (or mixed) size limits
  - **Cost-benefit analysis to explore what is viable for the charter fishery**
- Area- and sector-specific management
- Maintain accessibility / consistency
- Stability & Maximize catches



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# Feedback: Regional Trends

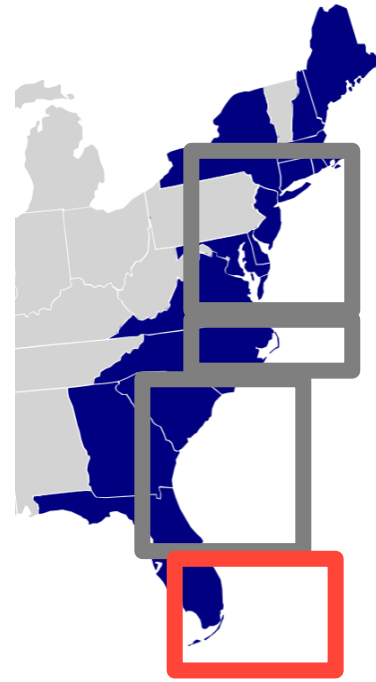


## South FL (Islamorada, Ft. Lauderdale, West Palm Beach)

- Easy access to fishing grounds
- Sport / recreation
- Reduced availability
- Increased effort

### Fishery Management Objectives:

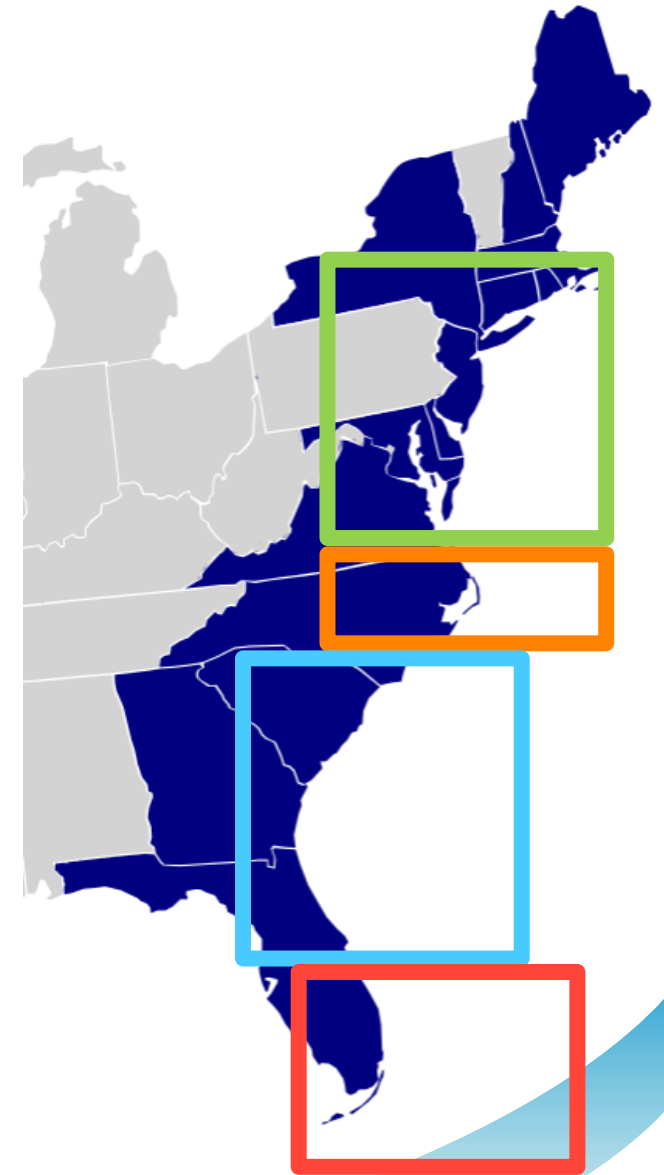
- **Conservation**
  - Reduce trip/bag limits
  - Mixed size limit
- Stability
- Maintain opportunity
- **Reduce commercial LL**





# Feedback: Patterns

- Conservation-minded in southern NC & South; exploitation-minded in OBX & North
- Correlation between fishing expense and desire to take home meat
- Reduction in local abundance in SFL – SC; less clear patterns where fisheries are more sporadic
- Under-exploitation where fish are less accessible (in Wilmington and northern mid-Atlantic)
- Increased effort in recreational sector
- Increased fishing cost
- Opportunistic / bycatch dolphin fisheries more likely to highlight ecosystem role



# Feedback: Uncertainties

- Removals
  - Recreational catch uncertainty
  - International exploitation
- Post-release mortality & Depredation
- Enforcement challenges
- Economic drivers of fishery
- Alternate movement patterns
- Changing availability & catchability
  - Temperature relationship
  - Shift in Gulf Stream
  - Sargassum health and availability
- Anthropogenic impacts:
  - lobster pot buoys; ropeless technology?
  - offshore wind
- Unique, area-based fishery dynamics



# Feedback: Management Recommendations

Some of what we heard – not consensus:

- Expand minimum size limit
- Area-specific management
- Sector- or Gear-specific management
  - Private recreational versus for-hire
- Collaborate across Gulf, Caribbean, and New England Councils
- Regulate importing





# Feedback: Noteworthy

- Link between weather in South America & Puerto Rico and availability of fish in SFL
- Loose regulations sell charter trips
- Provide carrots – focus on what management can give back to fishers



# MSE Modeling Dynamics

## Modeling Dynamics

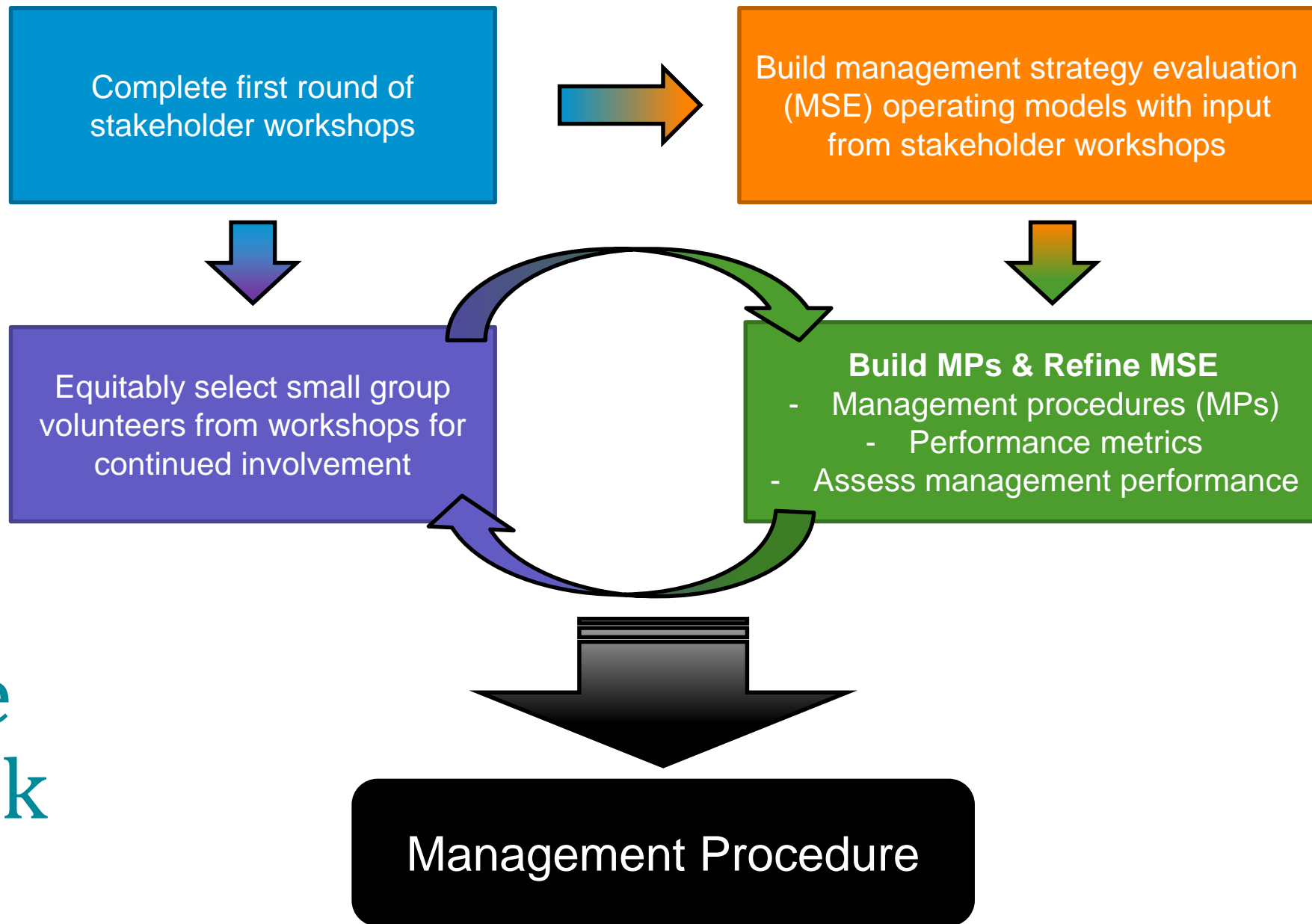
- Spatial, seasonal, length-based OM
  - Cao et al. (2020; Fish & Fish, 21) VAST + population dynamics model
- Empirical management procedure

## Progress to date

- Conduct and refine VAST models
- Exploring indices for predictive ability
- Shiny app developer



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## Future outlook



# Tentative timeline



- *Winter - Spring 2023* – 1st round of stakeholder workshops
- *Summer 2023* - Operating model development
- *Fall 2023* - Initial management procedure development
- *Winter - Spring 2024* - Iterative stakeholder engagement
  - Operationalize management objectives
  - Refine management procedure design
  - Analyze trade-offs and explore performance
- *Mid-late 2024* - Report out on results

# Then what?



	Stakeholders	Modeling team	SSC	Council
<b>Operating models</b>	Advise on OM structure and key uncertainties	Construct	Adopt	Advise
<b>Management objectives</b>	Advise	Quantify	Advise	Adopt
<b>Management Procedures</b>	Advise	Test and refine	Advise on biological 'must-pays' e.g. not overfishing and rebuilding	Adopt and implement management procedure based on performance



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<https://www.fisheries.noaa.gov/event/workshops-discuss-dolphinfish-mahi-mahi-management-strategy>

<https://www.fisheries.noaa.gov/feature-story/scientists-consider-more-adaptive-approaches-atlantic-dolphinfish-management>



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