



South Atlantic Dolphin-Wahoo Participatory Workshops

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Background

- SAFMC manages dolphin & wahoo along the entire U.S. Atlantic coast; highly migratory but no international governance
- Different perceptions on the state of the fishery regionally
- Species support very important fisheries but limited data available (no stock assessment)
- Council at a nexus on management decisions
- Recreational allocation is 93% (dolphin); 97.55% (wahoo)



PC: Chris Page

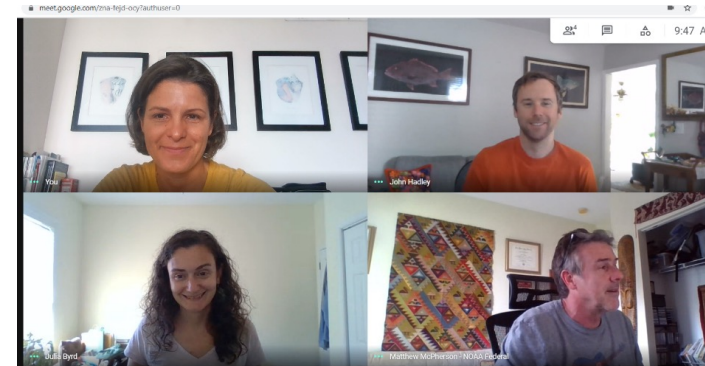


Participatory system dynamics workshops

Three workshops with fishing communities in NC and VA

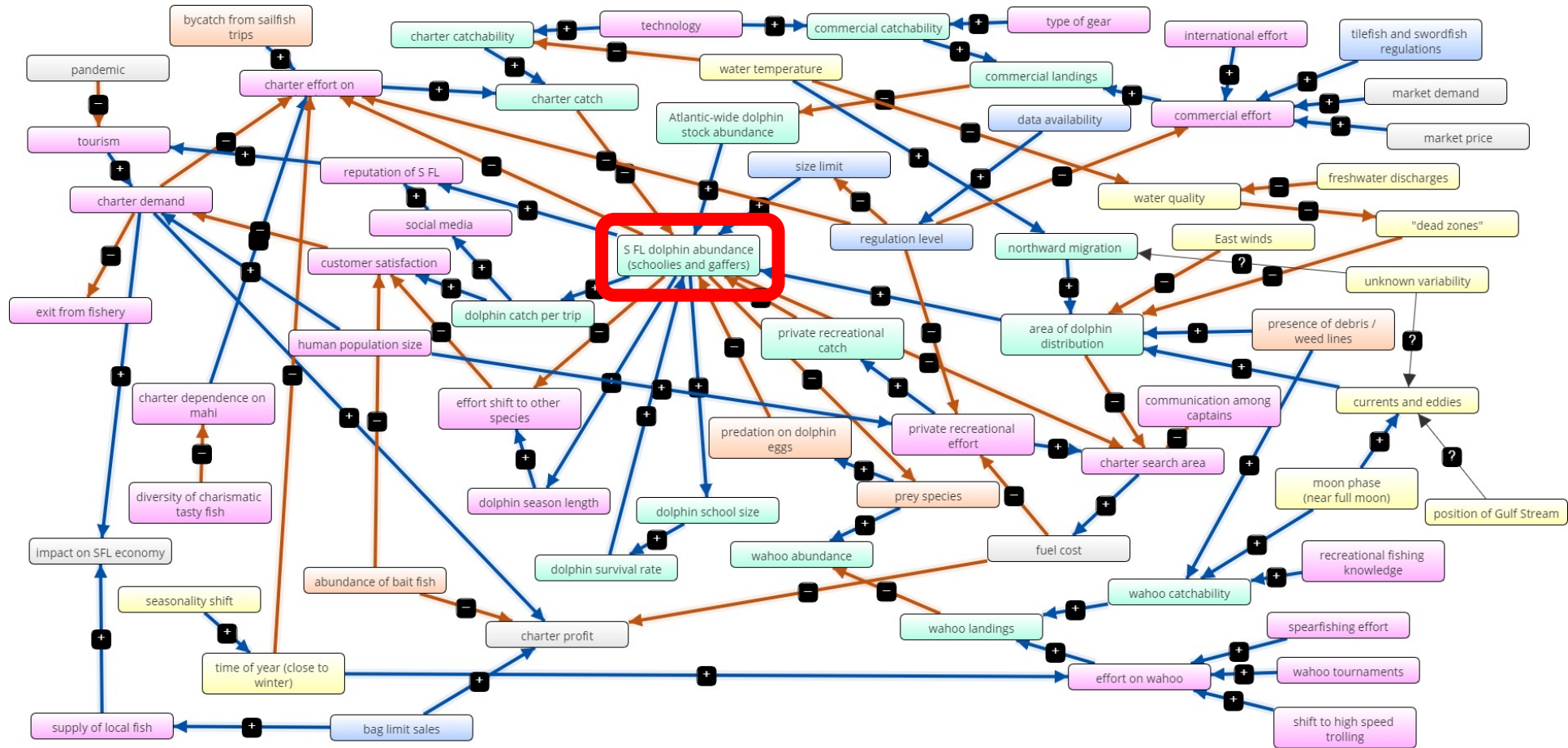


Due to COVID, shift to virtual method for Florida

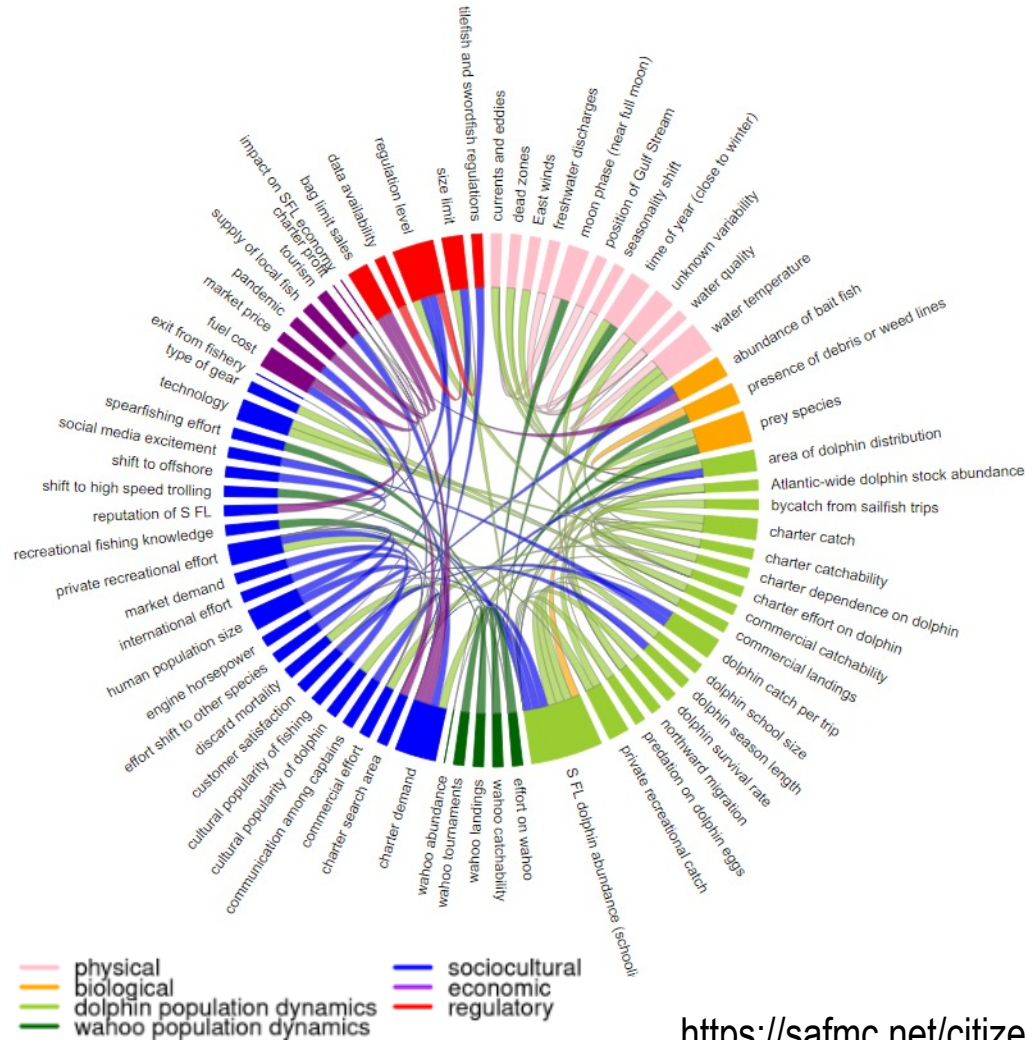


- Map system of key factors that affect the fishery
- Identify major concerns, values and preferred objectives
- Develop hypotheses on how changes in system affect fishery, businesses and communities
- Identify key questions, information gaps

Full conceptual model (South Florida)



Interactive conceptual models



Model details

This table contains the details behind the model component connections. Enter a term in the 'Search' box to see more details about the related linkages. For example, if you are interested in perceptions of how tuna species are related to the dolphin-wahoo fishery, type "tuna" in the box.

Search:

This factor has a	(+/-)	influence on this factor.	Details	Source*
abundance of bait fish	-	charter profit	when bait is scarce it needs to be purchased which is an additional expense	Keys, for-hire
abundance of bait fish	-	customer satisfaction	lack of bait leads to long search times which frustrates some customers	Keys, for-hire
area of dolphin distribution	-	charter search area	fewer areas in which dolphin are distributed causes charters to have to spend more time looking for them	Keys and South FL, for-hire
area of dolphin distribution	+	S FL dolphin abundance (schoolies and gaffers)	fewer (more) areas in which dolphin are distributed equates to overall reduced (increased) abundance locally	
Atlantic-wide dolphin stock abundance	+	S FL dolphin abundance (schoolies and gaffers)	total abundance of dolphin Atlantic-wide impacts the dolphin abundance available to South Florida	
bag limit sales	+	charter profit	commercial sale of fish from charter trips offers opportunity to increase charter profits	Keys and South FL, for-hire
bag limit sales	+	supply of local fish	bag limit sales from the charter fleet perceived by some to be important supply of local fish to restaurants, not all fishermen felt this was a concern	Keys and South FL, for-hire
bycatch from sailfish trips	+	charter effort on dolphin	fishermen targeting sailfish will often come across dolphin and catch their limit	South FL, private
charter catch	-	S FL dolphin abundance (schoolies and gaffers)	charter removals impact local abundance of large and small dolphin	
charter catch	-	Atlantic-wide dolphin stock abundance	some fishermen perceived that charter catch had an impact on the overall Atlantic-wide dolphin stock abundance	South FL, for-hire
charter catchability	+	charter catch	increase (decrease) in catchability will increase (decrease) catch for a given unit of effort	
charter demand	-	charter effort on dolphin	as demand for charters increases (decreases) the effort also increases (decreases)	
charter demand	+	charter profit	lower (higher) demand and fewer (more) trips leads to lower (higher) profit	Keys and South FL, for-hire
charter demand	-	exit from fishery	some charter captains said that the COVID related downturn in tourism led to reduced demand for charters and caused them to sell their boats	Keys and South FL, for-hire and private

<https://safmc.net/citizen-science/dolphin-wahoo-participatory-workshops/>

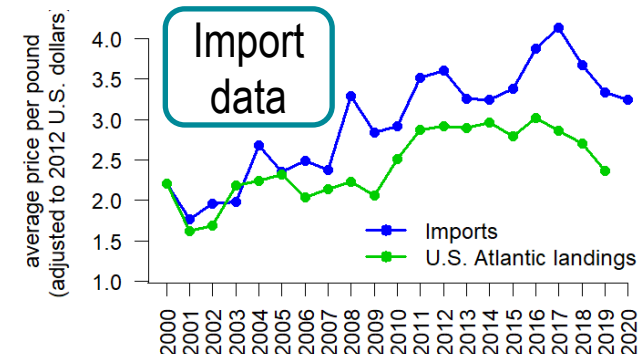
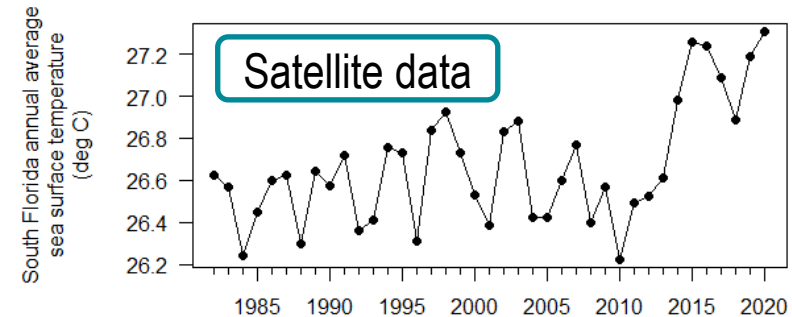
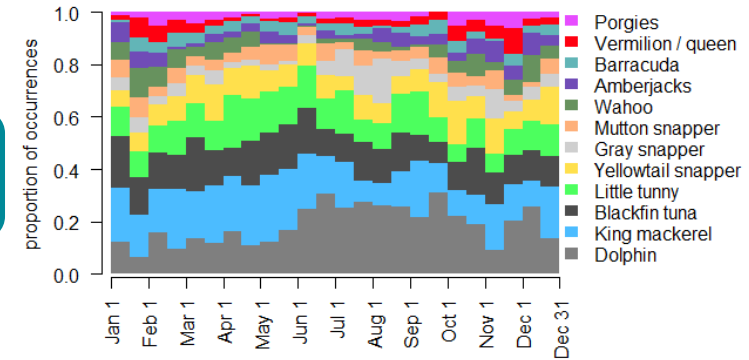
Main findings from participatory modeling

- Heavy emphasis on social and economic dimensions of the fishery; relatively little knowledge of biological stock drivers
- Dolphin and wahoo play different roles in the fisheries and were modeled separately
- Considerable variation among the sub-regions with regard to the role of the species, effort shifts, and preferences
- Imports and foreign catch levels important for driving prices and demand in the commercial fishery
- Perceived conflicts at local and regional levels
- Widespread concerns regarding private recreational effort and accountability

Major hypotheses emerging from workshops

- H1: Role of species in fisheries variable across region
- H2: Dolphin populations drastically changed in Florida in last 5 years → environmental shift?
- H3: Economic forces have caused an increase in commercial activity
- H4: Power and scope of private recreational fleet expanding rapidly

Social media



Management solution for dolphin?

Many factors driving local dolphin abundance are outside of domestic management control



Conflicts are related to local usage patterns

Management solution for dolphin?

1. predict the amount of dolphin the SAFMC will have each year

and

2. maximize the usage of those fish across sectors and region



or



????



Management procedure approach

Management strategy evaluation used to test management procedures that will best achieve desired outcomes



Participatory modeling informs uncertainties to be considered in the simulation and the conceptual management objectives

Acknowledgements

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