

Council Member Ongoing Development Workshop  
November 15-16 2022



# CFMC Fishery Ecosystem Plan Advisory Panels and SSC Ecosystem Conceptual Models

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# Background

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Council requests District Advisory Panels develop Ecosystem Conceptual Models (ECMs)

- ECM DAP-St. Thomas/St. John, US Virgin Islands
- ECM DAP-St. Croix, US Virgin Islands
- ECM DAP-Puerto Rico

Council requests SSC work on Risk Assessment (postponed)

Council requests SSC develop Island-specific ECM

SSC Develops Generic ECM

Council coordinates with others to expand the base of stakeholders contributing to ECMs

Lenfest grantees, SEFSC ESR, others

# PURPOSE

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Develop ECMs as a first step in the process of developing a FEP

- Each District Advisory Panel represents a cross section of marine resource users but not all
- SSC represents a cross section of scientists

Provide the ECMs developed by the Council to others working on facilitating input to the FEP

Evaluate the outcome in relation to what the Council can pursue

# How was this done?

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Meetings, meetings and more meetings District Advisory Panels and SSC (trial and error; other issues)

Begun in 2017 ... then came hurricanes **Irma and Maria!**

Resume meetings in 2018-2019 with each DAP individually (**many other issues on their agendas**)

Resume meetings with the SSC

Council establishes the EBFM-Technical Advisory Panel (EBFM TAP) ...then came the earthquakes!

Almost finished with the DAPS ECMs but then came the **COVID-19 pandemic!**

Resume final meetings in 2020-2021 – ... it did take a while to get use to **virtual meetings**

ECMs finalized in 2021 – presented to the Council and to the EBFM-Technical Advisory Panel

All data shared with others working on melding these CMs

# How was this done?

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DAPs and SSC met with the following objectives:

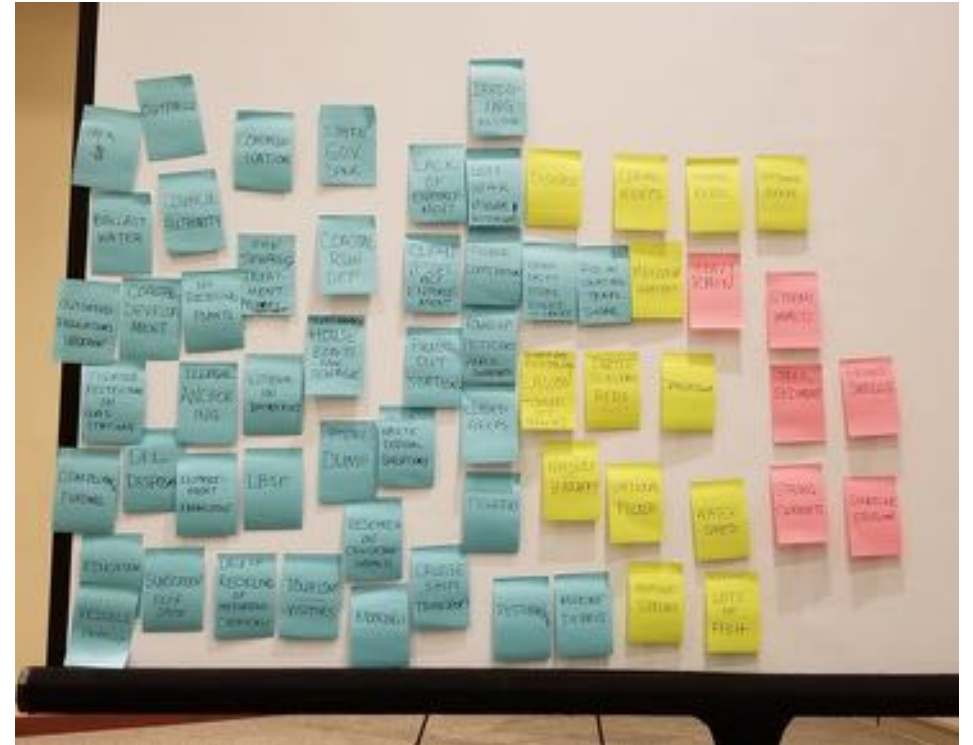
- **Identify the main ecological and socioeconomic factors affecting the ecosystem and respective fisheries**
- **Train participants to express their observations in mechanistic terms**
- **Identify most influential ecosystem components**
- **Identify where major risks or leverage points in the system lie**
- **Identify cross-disciplinary linkages (e.g., between social and biological subsystems)**



## DAP-St. Croix

Blue: human component  
Pink: Physical component  
Yellow Biological component

## DAP-St. Thomas/St. John

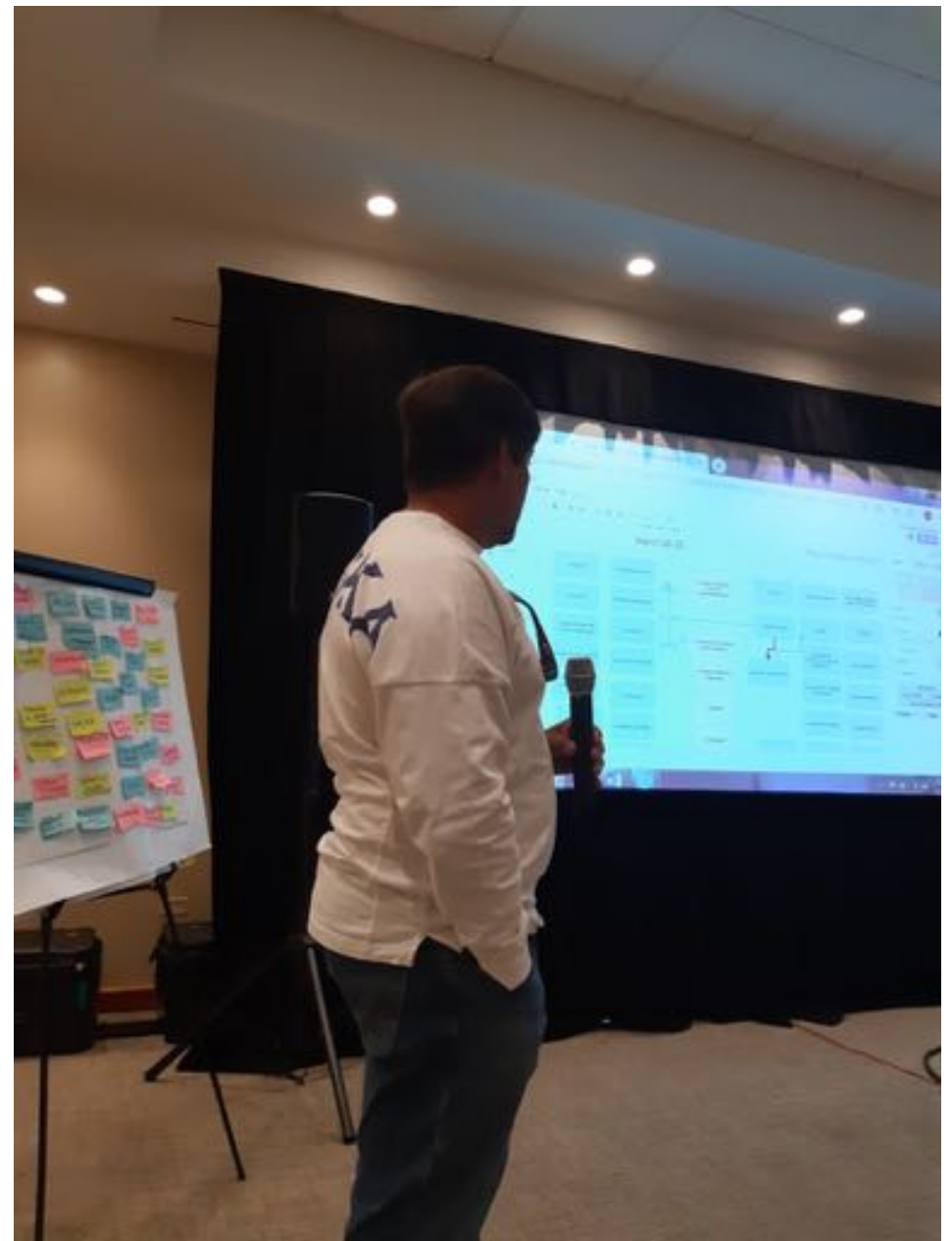


Blue: human component  
Pink: Physical component  
Yellow Biological component



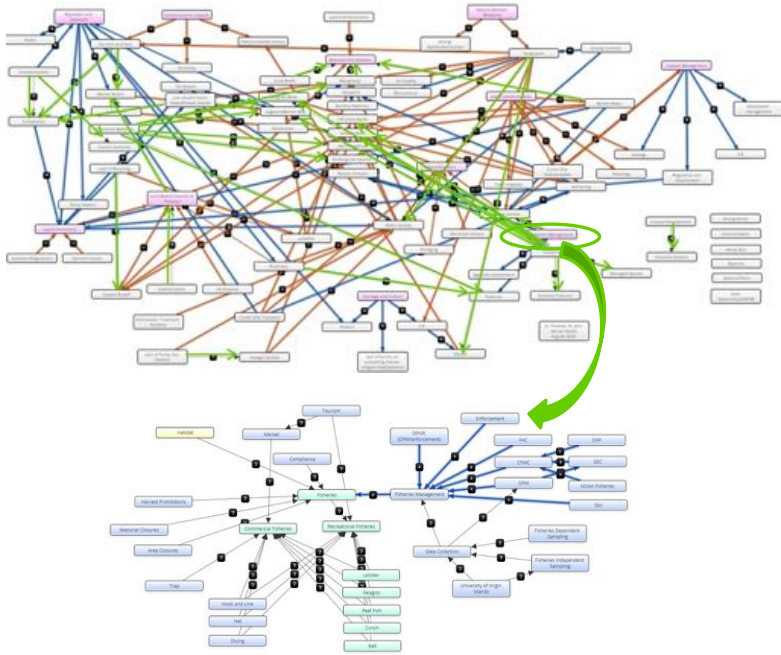
DAP-Puerto Rico

Blue: human component  
Pink: Physical component  
Yellow Biological component

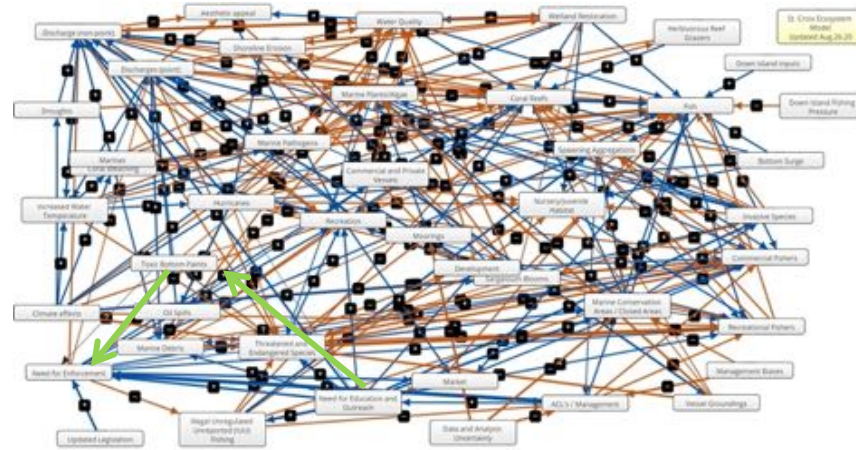




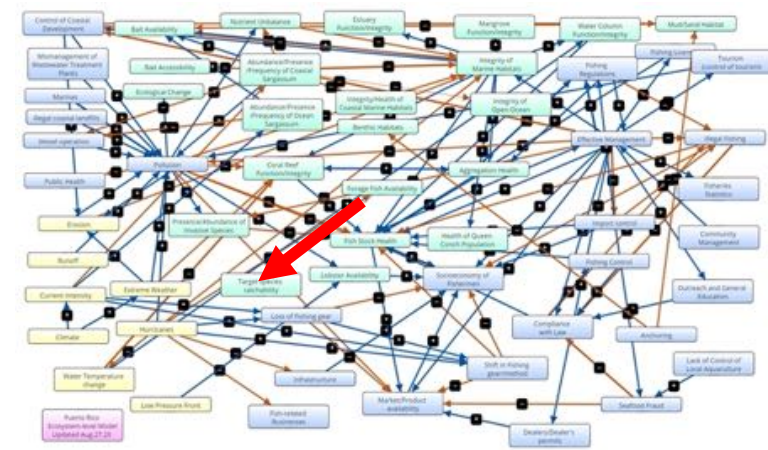
# Mission Accomplished!



DAP STT/STJ



DAP STX

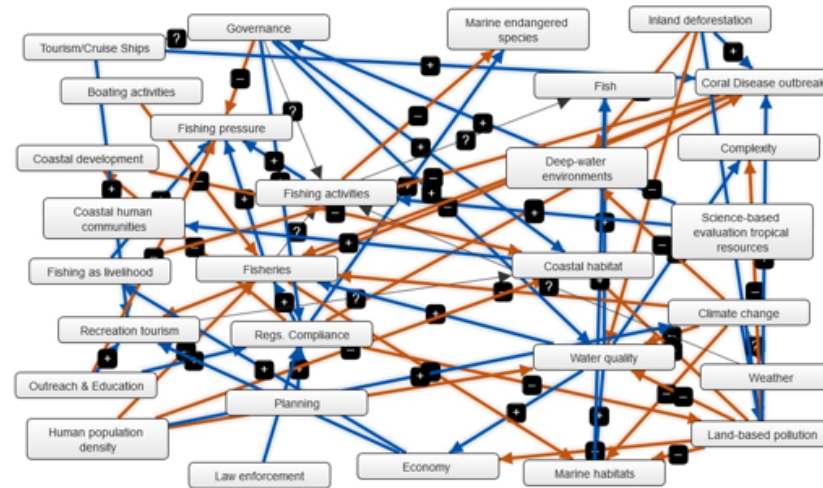


DAP PR



Dra. Alida Ortiz  
 Chair Outreach and Education Advisory Panel  
 CFMC

?????????  
 “Spaghetti Salad”

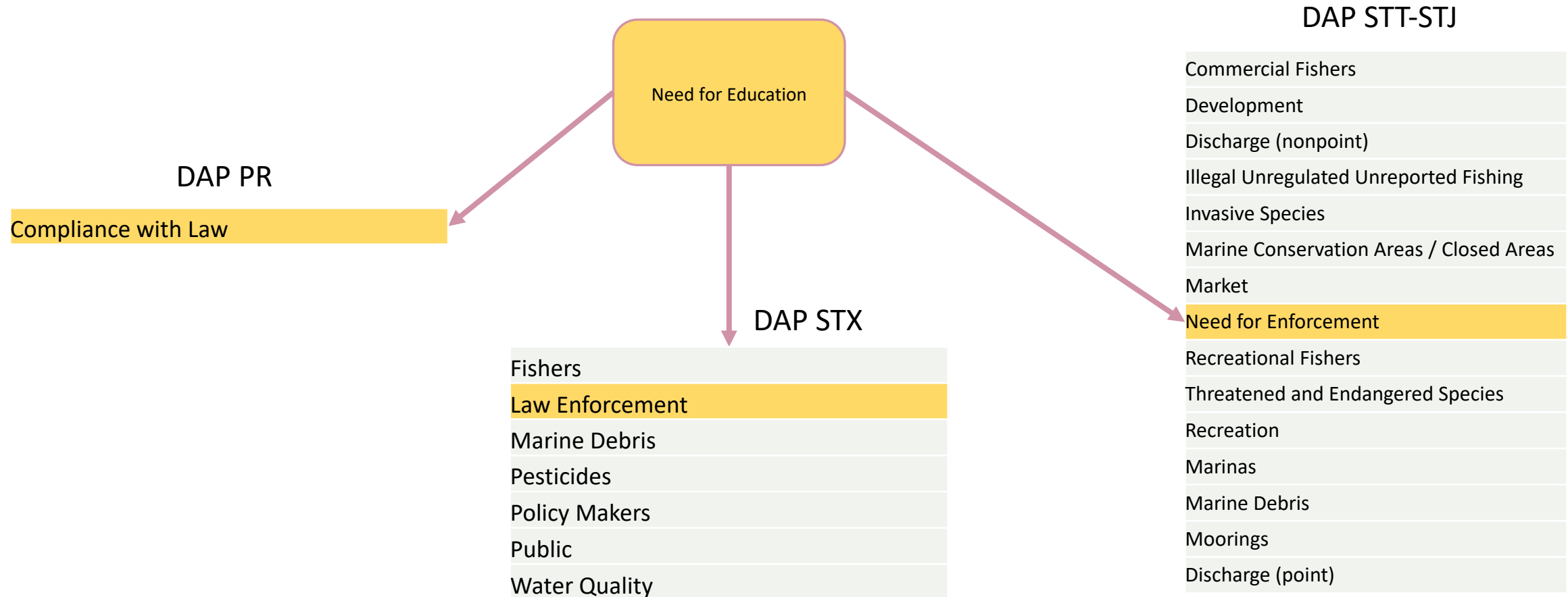


The screenshot shows the MentalModeler software interface. The main window displays a matrix of model variables. The columns represent different variables, and the rows represent the relationships between them. The matrix is mostly empty, with some cells containing numerical values (e.g., -1, 1, 2, 3) and others containing symbols (e.g., +, -). The interface includes a sidebar on the left with a 'Model' tab and a 'Scenarios' tab. The top of the window shows the 'MentalModeler' logo and various menu options.

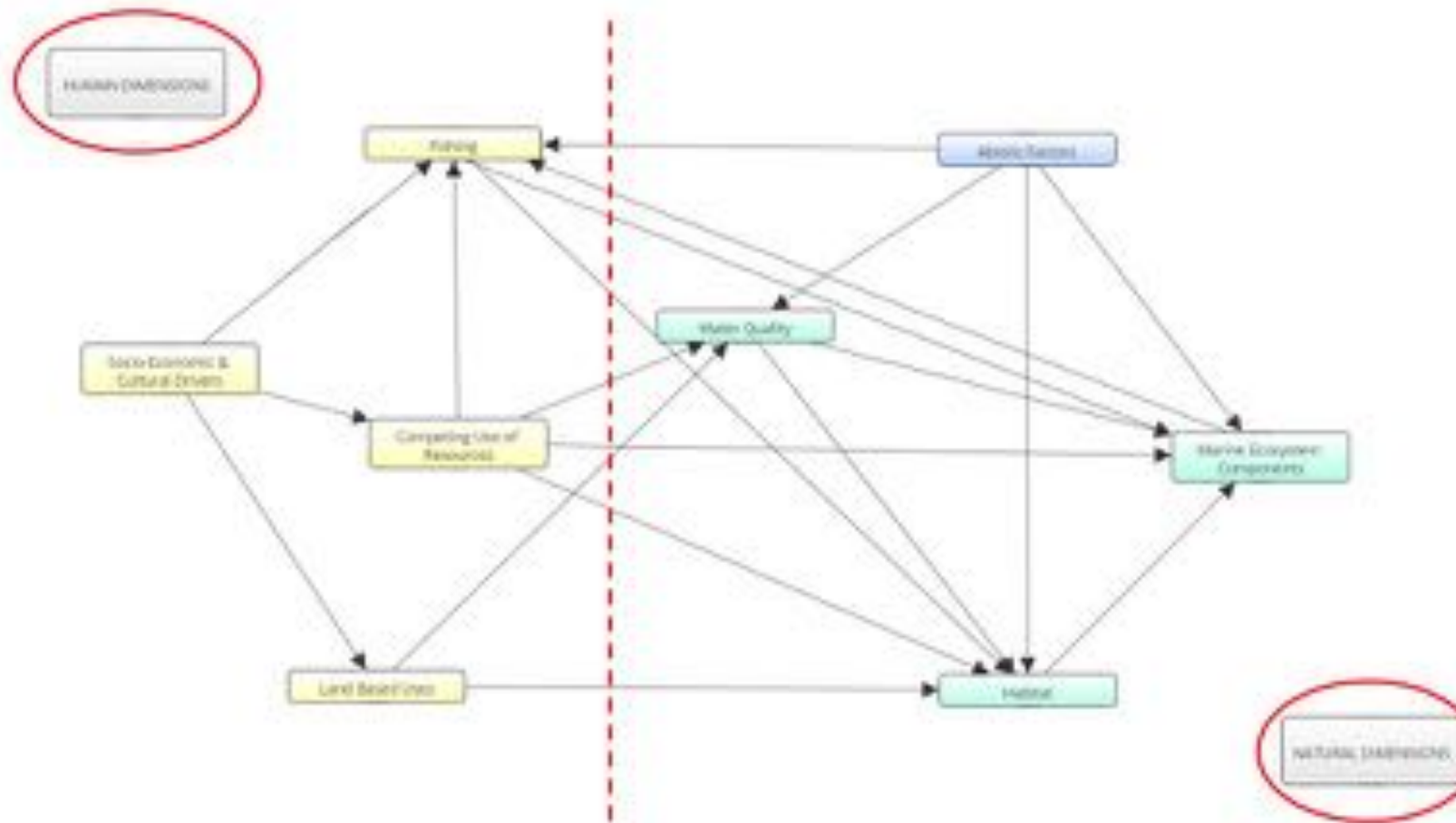
Variable	General Factors	Environmental/Sociological variables	WPA	WPAI	WPAII	WPAIII	WPAIV	WPAV	WPAVI	WPAVII	WPAVIII	WPAIX	WPAX	WPAXI	WPA XII	WPA XIII	WPA XIV	WPA XV	WPA XVI	WPA XVII	WPA XVIII	WPA XIX	WPA XX
General Factors																							
Environmental/Sociological variables																							
WPA																							
Fishing gear fleet																							
Boats																							
Water quality																							
Coastal development																							
Land-based pollution																							
Human population density																							
WPAI																							
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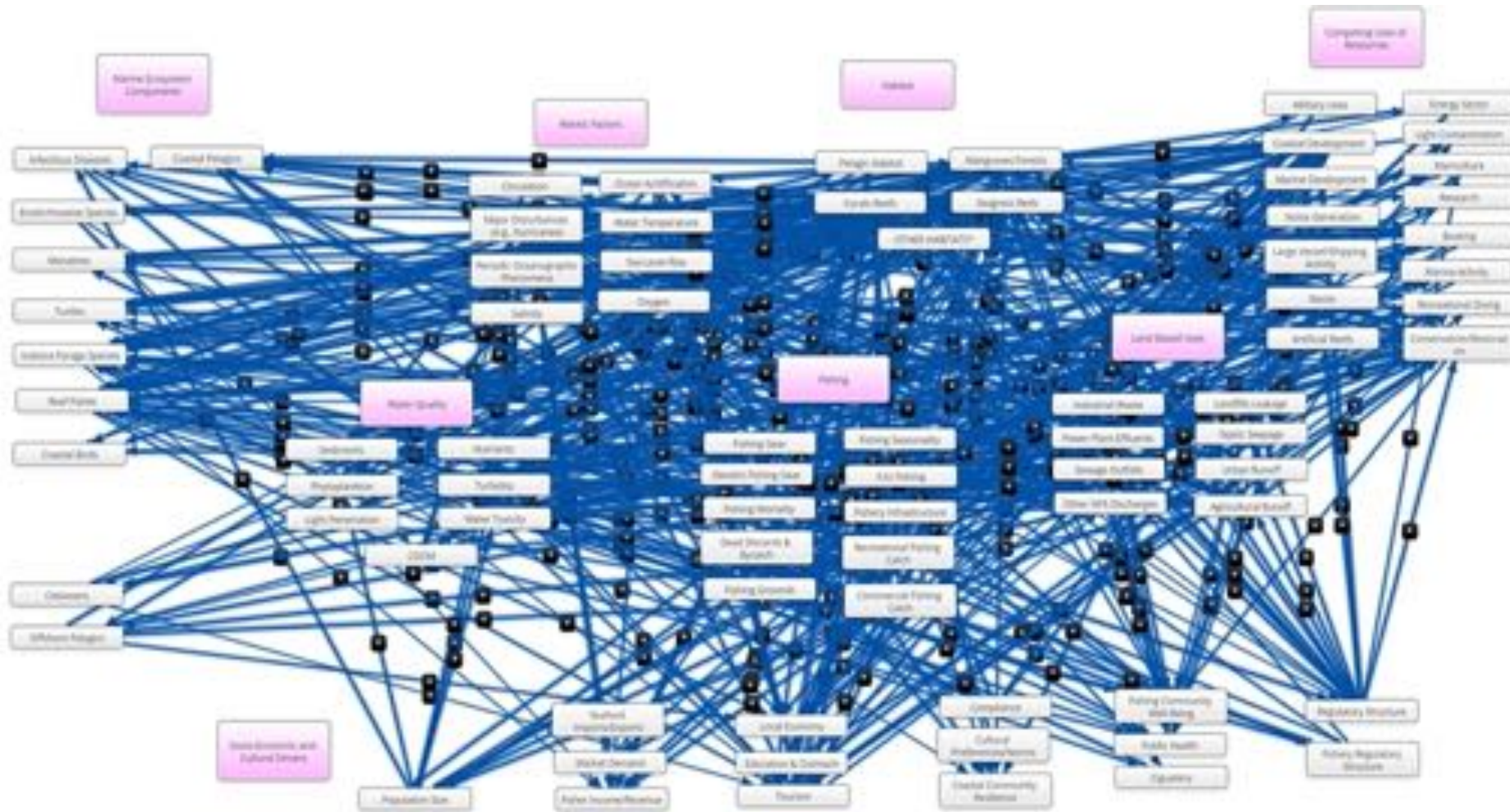
# DAPs agrees E&O will impact...



# SSC ECM

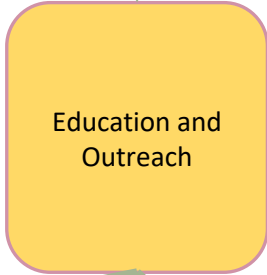


# SSC ECM





SSC ECM



- Compliance
- Cultural Preferences/Norms
- Coastal Community Resilience
- Fishing Community Well-Being
- Ciguatera
- Public Health
- Regulatory Structure
- Fishery Regulatory Structure

...among others!



DAP STT-STJ

DAP STX

DAP PR

Compliance with Law

- Commercial Fishers
- Development
- Discharge (nonpoint)
- Illegal Unregulated Unreported Fishing
- Invasive Species
- Marine Conservation Areas / Closed Areas
- Market
- Need for Enforcement
- Recreational Fishers
- Threatened and Endangered Species
- Recreation
- Marinas
- Marine Debris
- Moorings
- Discharge (point)
- Fishers
- Law Enforcement
- Marine Debris
- Pesticides
- Policy Makers
- Public
- Water Quality

