

Outreach and Education Advisory Panel
Hybrid Meeting
November 22 2022

Fishery Ecosystem Plan Update

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GRACIELA GARCÍA-MOLINER

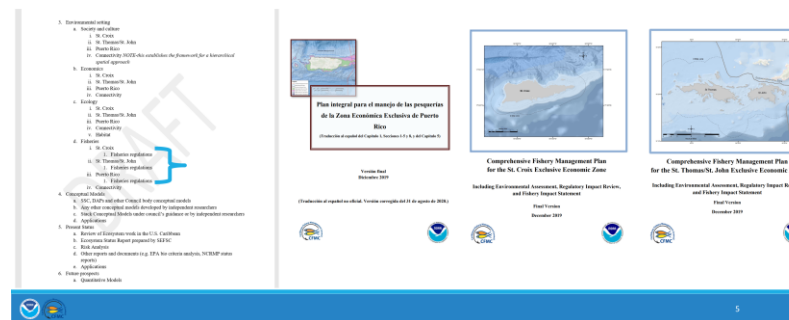
CARIBBEAN FISHERY MANAGEMENT COUNCIL



Previous report

- EBFM TAP
 - Reports
 - Briefing of FEP outline and G&O development
 - Conceptual models preliminary results
 - Other connections- collaborations

Outline: Development by integration



(Very) Preliminary Analysis and Examples

PR & USVI EXPERTS & MANAGERS

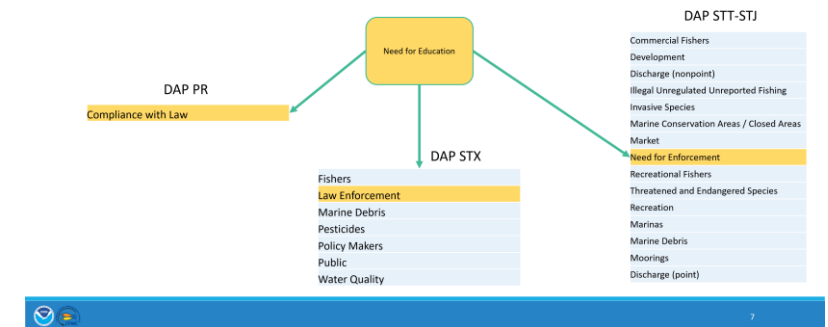
Examples of top Drivers:
 Management [MSP, Regulations, Plans]
 Gentrification
 Education
 Compliance
 Water Quality/Pollution
 Climate Change
 Hurricanes
 Ciguatera
 Mangroves
 Marine Diseases (coral)
 Restoration
 Marine Protected Areas
 Habitat Quality
 Tourism
 Sargassum

PR FISHERS

Examples of top Drivers:
 Pollution/Water Quality
 Coastal/Marine Development
 Sargassum
 Invasive Species
 Weather/Climate/Water Temperature/Climate Change
 Recreational Fishers
 Hurricanes
 Management/Government
 Fishery Closures
 Education

Source: Lenfest report to SSC April 2022

DAPs agrees E&O will impact...



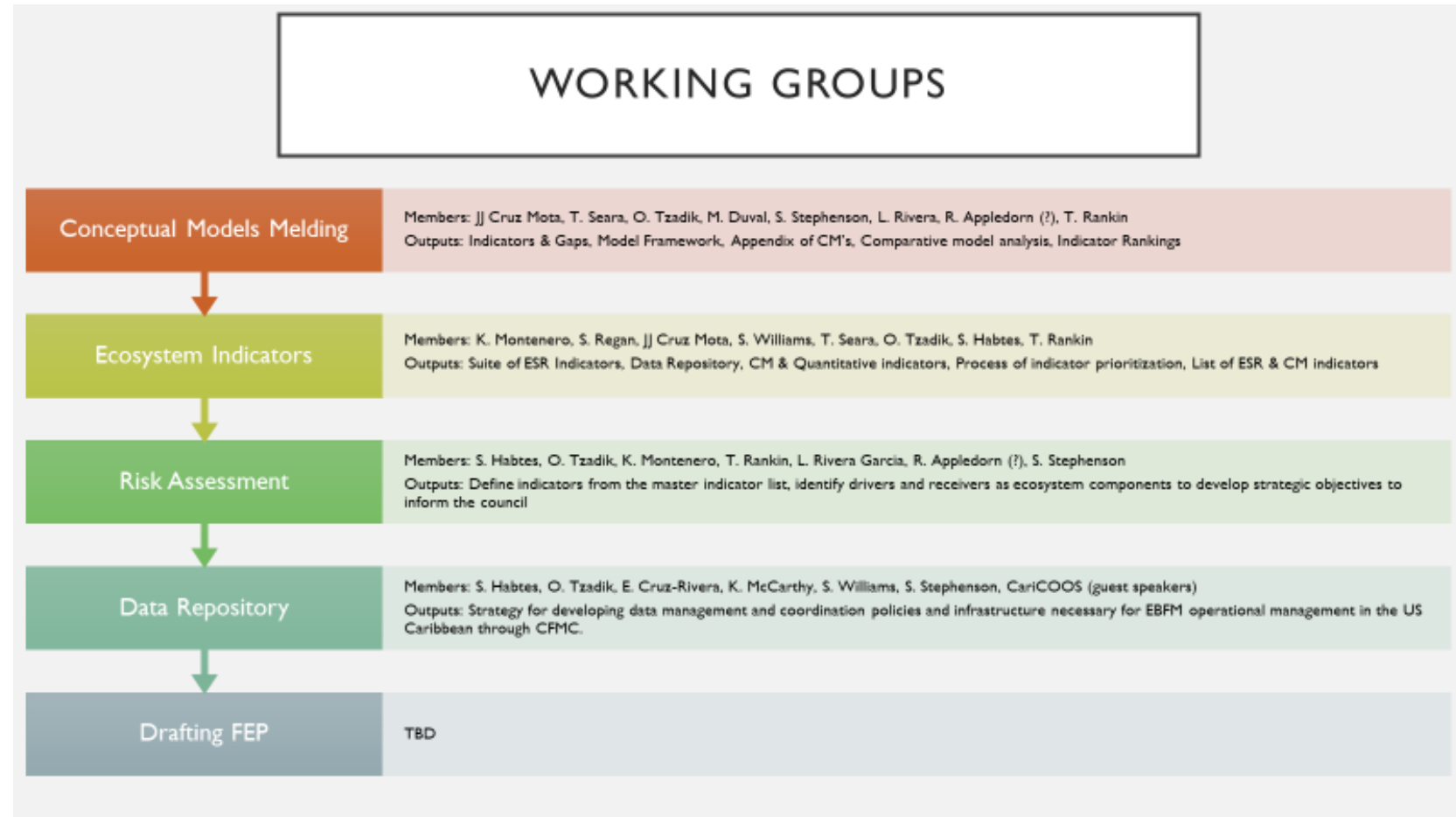
Source: FEP report to OEAP July 2022

Updates

- Conceptual Models
- Latest reports
 - NSSC | Aug 15-17
 - **Case Study 8:** *Multivariate approaches for EBFM implementation in the U.S. Caribbean*
 - GCFI 75th conference | Nov 6-12
 - *Progress on an Ecosystem Status Report for the U.S. Caribbean*
 - Suite of indicators
 - *Putting EBFM into Action for the U.S. Caribbean EEZ*
 - CMOD | Nov 14-18
 - Regional EBFM efforts report

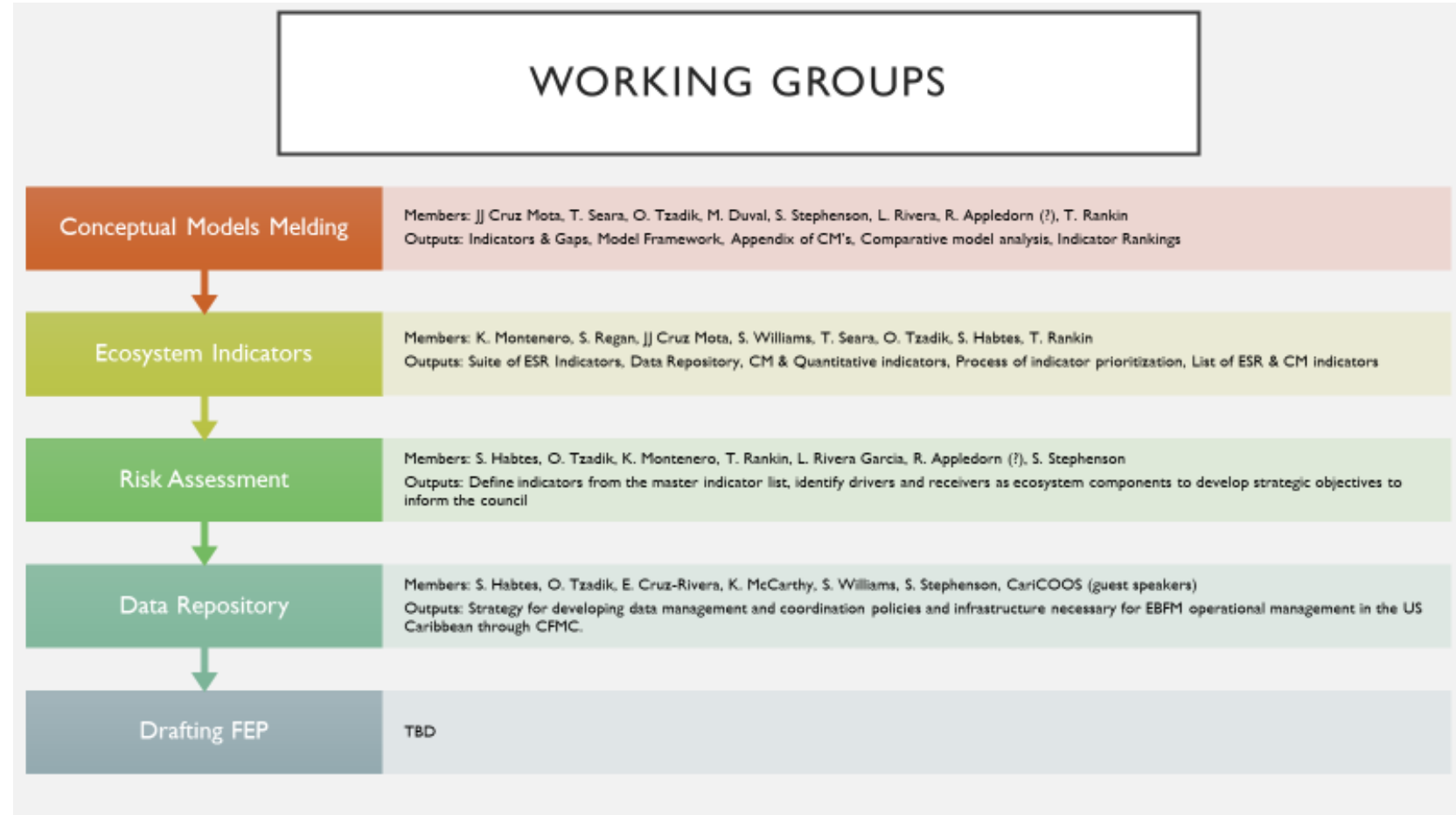
Conceptual Models: done

- Pending total number of models
- Now merging all CMs
- NSSC | Aug 15-17
 - **Case Study 8: Multivariate approaches for EBFM implementation in the U.S. Caribbean**
- Report will be given at next SSC meeting: **Nov 30**



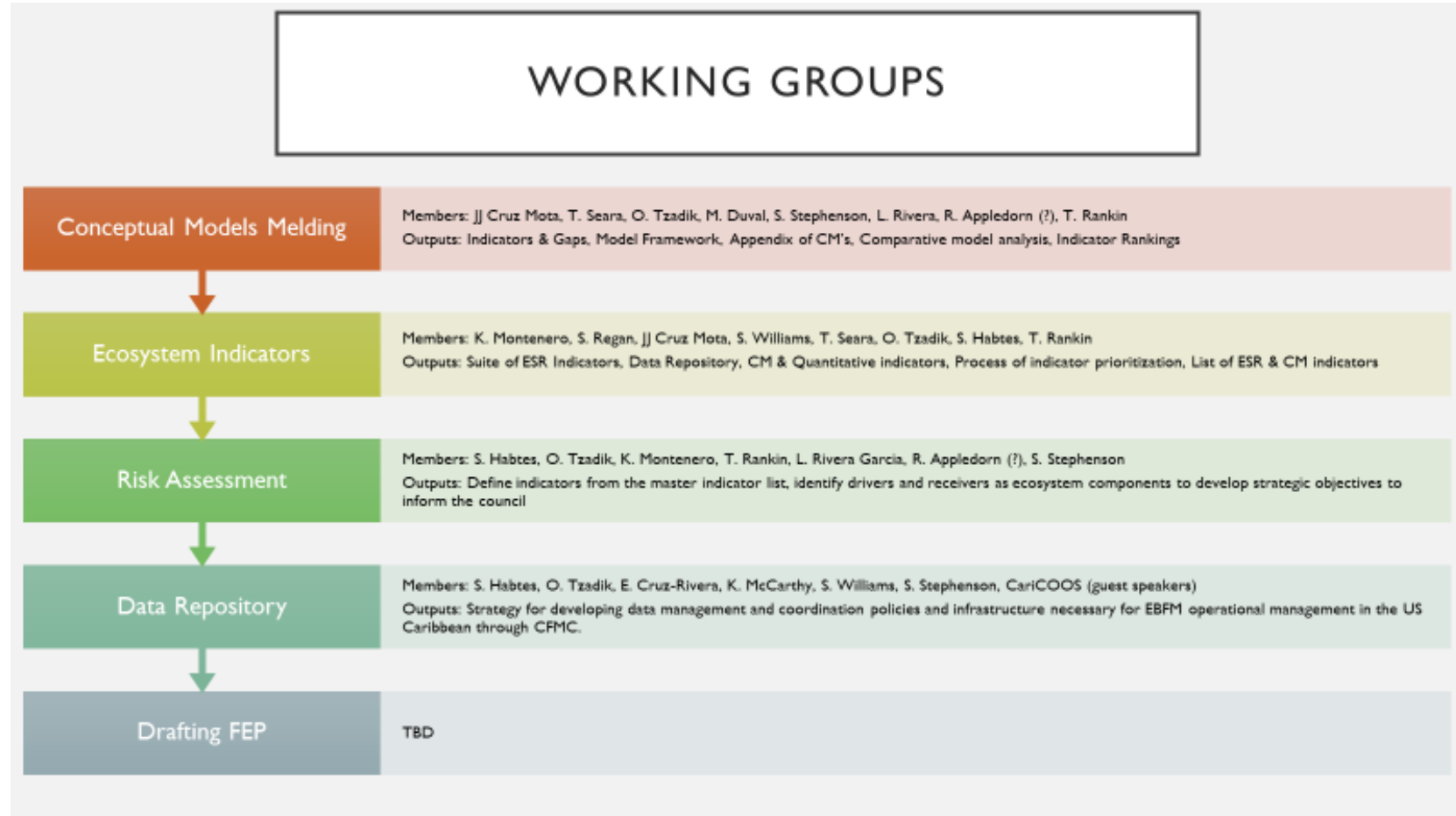
Ecosystem Indicators: capture status & trends

- GCFI 75th conference | Nov 6-12
- *Progress on an Ecosystem Status Report for the U.S. Caribbean*
- Suite of indicators
- *Putting EBFM into Action for the U.S. Caribbean EEZ*



Risk Assessment

- Next steps
- Use of main drivers from CMs as risk factors



Drafting FEP: adding by sections

3. Environmental setting
 - a. Society and culture
 - i. St. Croix
 - ii. St. Thomas/St. John
 - iii. Puerto Rico
 - iv. Connectivity *NOTE-this establishes the framework for a hierarchical spatial approach*
 - b. Economics
 - i. St. Croix
 - ii. St. Thomas/St. John
 - iii. Puerto Rico
 - iv. Connectivity
 - c. Ecology
 - i. St. Croix
 - ii. St. Thomas/St. John
 - iii. Puerto Rico
 - iv. Connectivity
 - v. Habitat
 - d. Fisheries
 - i. St. Croix
 1. Fisheries regulations
 - ii. St. Thomas/St. John
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 - iii. Puerto Rico
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 - iv. Connectivity
4. Conceptual Models
 - a. SSC, DAPs and other Council body conceptual models
 - b. Any other conceptual models developed by independent researchers
 - c. Stock Conceptual Models under council's guidance or by independent researchers
 - d. Applications
5. Present Status
 - a. Review of Ecosystem work in the U.S. Caribbean
 - b. Ecosystem Status Report prepared by SEFSC
 - c. Risk Analysis
 - d. Other reports and documents (e.g. EPA bio criteria analysis, NCRMP status reports)
 - e. Applications
6. Future prospects
 - a. Quantitative Models

WORKING GROUPS

Conceptual Models Melding

Members: JJ Cruz Mota, T. Seara, O. Tzadik, M. Duval, S. Stephenson, L. Rivera, R. Appledorn (?), T. Rankin
Outputs: Indicators & Gaps, Model Framework, Appendix of CM's, Comparative model analysis, Indicator Rankings

Ecosystem Indicators

Members: K. Montenero, S. Regan, JJ Cruz Mota, S. Williams, T. Seara, O. Tzadik, S. Habtes, T. Rankin
Outputs: Suite of ESR Indicators, Data Repository, CM & Quantitative indicators, Process of indicator prioritization, List of ESR & CM indicators

Risk Assessment

Members: S. Habtes, O. Tzadik, K. Montenero, T. Rankin, L. Rivera Garcia, R. Appledorn (?), S. Stephenson
Outputs: Define indicators from the master indicator list, identify drivers and receivers as ecosystem components to develop strategic objectives to inform the council

Data Repository

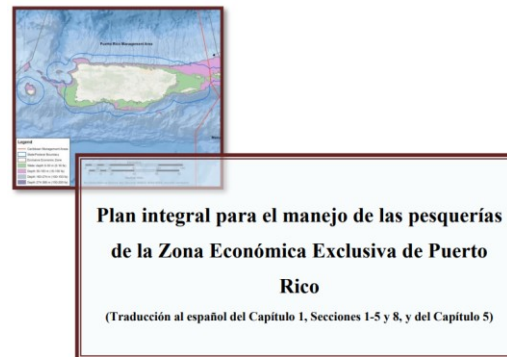
Members: S. Habtes, O. Tzadik, E. Cruz-Rivera, K. McCarthy, S. Williams, S. Stephenson, CariCOOS (guest speakers)
Outputs: Strategy for developing data management and coordination policies and infrastructure necessary for EBFM operational management in the US Caribbean through CFMC.

Drafting FEP

TBD

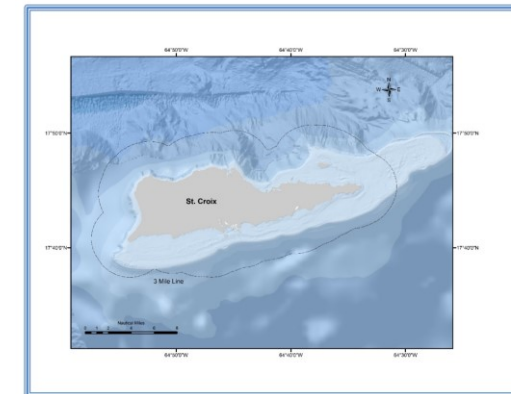
Drafting FEP: development by integration

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Versión final
Diciembre 2019

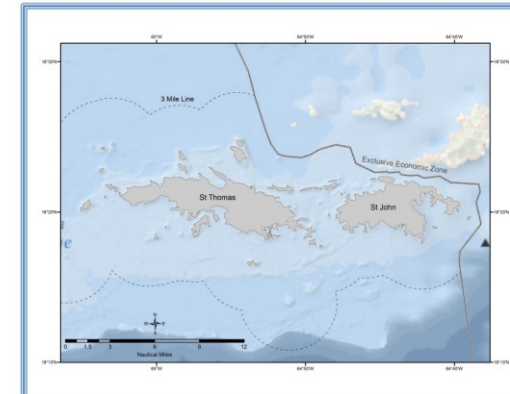
(Traducción al español no oficial. Versión corregida del 31 de agosto de 2020.)



**Comprehensive Fishery Management Plan
for the St. Croix Exclusive Economic Zone**

**Including Environmental Assessment, Regulatory Impact Review,
and Fishery Impact Statement**

Final Version
December 2019



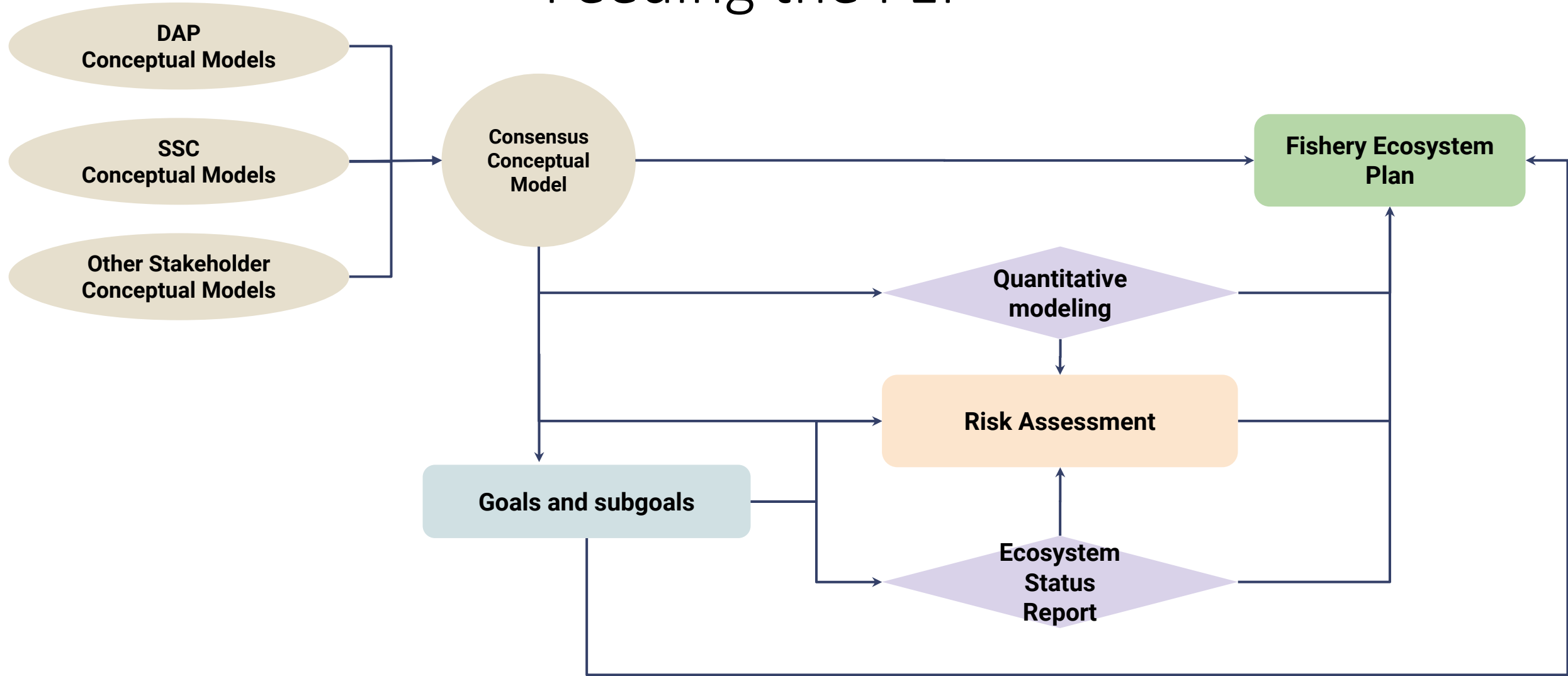
**Comprehensive Fishery Management Plan
for the St. Thomas/St. John Exclusive Economic Zone**

**Including Environmental Assessment, Regulatory Impact Review,
and Fishery Impact Statement**

Final Version
December 2019



Feeding the FEP



Timeline

Activity	Expected Date of Completion
Revise and draft EBFM TAP goals and objectives	December 2020
Draft FEP goals and objectives	April 2021
Continue to collect and analyze existing data sets from Lenfest, SeaMap, ESR, etc... Expected products = a centralized repository of data (e.g., MBON, Caricoos, etc.); summary analyses of pertinent datasets; potentially peer-reviewed publications	April - December 2021 (ongoing)
Complete all conceptual models	June 2022 ✓
Meld conceptual models to create island-specific conceptual models	December 2022 (need more time)
Use the conceptual models & additional products to create island-specific risk assessments for consideration by the SSC, that will be used to inform approaches that will be presented in the FEP.	December 2022 (now 2023)
Use the conceptual models and other products produced by the ESR, EBFM TAP, and by the Lenfest FEP project to identify ecosystem indicators that should be monitored. In addition to inclusion in the FEP, these indicators will be presented to the SSC and the CFMC for consideration to include in EBFM management practices.	December 2022 (1st presentation to SSC November 2022) (continue into 2023)

Timeline

Activity	Expected Date of Completion
Develop strategic objectives, prioritize the objectives, and outline a vision for the use of the FEP for consideration in the CFMC processes.	Mar 2023
Develop operational objectives with concrete action items to be presented in the FEP, for consideration by the CFMC.	May 2023
Develop performance measures and draft a management strategy that can be used situationally during CFMC decision making, to be presented in the FEP, for consideration by the CFMC.	July 2023
Develop a feedback mechanism for adaptive management to be presented in the FEP, for consideration by the CFMC.	July 2023
Develop a draft FEP document	August 2023
Submit FEP for council approval	December 2023

¡Gracias!

Thank you!

Potential O&E product

- Need for enforcement through education and outreach – What it is? How it is applied? How to enforce it?
 - Clean water act
 - ESA
- Pollution control
- Predator-prey knowledge.
- CMOD: Use stakeholder information to feed outreach and education outputs - go over the very similar inputs and the very significantly different ecosystem issues among Islands. Products for all, products specific to each Island (e.g., lithium batteries). Water temperature: how is it reflected from stakeholder? How long it takes what species are affected.