

Caribbean Fishery Management Council (CFMC) – Scientific and Statistical Committee (SSC) Hybrid Meeting

April 12-13, 2022

Ecosystem Based Fishery Management (EBFM) Technical Advisory Panel (TAP) Update

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VI DPNR – Division of Fish & Wildlife

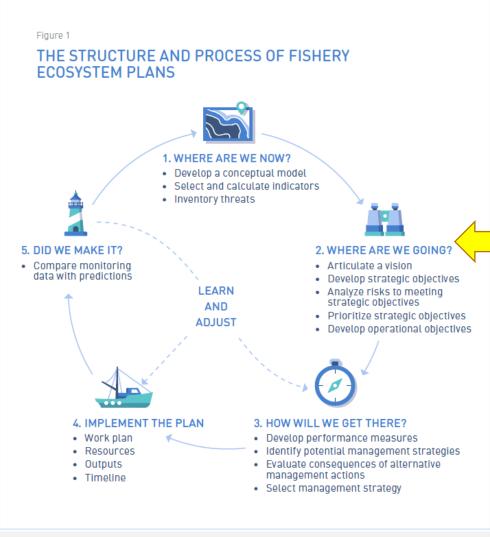
NOAA/NMFS EBFM POLICY STATEMENT

- NOAA's National Marine Fisheries Service (NOAA Fisheries) strongly supports implementation of Ecosystem-Based Fisheries Management (EBFM) to
 - Better inform and enable decisions regarding tradeoffs among and between fisheries (commercial, recreational, and subsistence), aquaculture, protected species, biodiversity, and habitats.
- Recognizing the interconnectedness of these ecosystem components will help maintain resilient and productive ecosystems (including the human communities on which they depend), even as they respond to climate, habitat, ecological, and other environmental changes.
- Background:
 - "NOAA strives to adopt an ecosystem-based approach throughout its broad ocean and coastal stewardship, science, and service programs."
 - In 2018, NOAA published an Ecosystem Based Fisheries Management Policy that includes roadmaps for EBFM implementation around the country
 - Development of Fishery Ecosystem Plans (FEP) at the council level



The EBFM TAP shall provide the Council ongoing scientific advice on ecosystem-based fishery management for fishery management decisions, including recommendations for habitat status, social and economic impacts of management measures, and ecosystem-based impacts (stressors) on sustainability of fishing practices

LENFEST LOOP TOWRDS FEP DEVELOPMENT



Articulate a vision – Discussion & previous efforts

Strategic Objectives - How to develop

Assessment of Risk

Prioritize strategic objectives – Develop strategy

Operational objectives – Develop a plan to present options to council

Figure: The Lenfest FEP loop (Essington et al., 2016)

MISSION

The overarching *goal* of the Fishery Ecosystem Plan (FEP) is to promote ecosystem-based approaches to ensure healthy, resilient and productive marine ecosystems and the fisheries resources dependent upon those ecosystems, within the context of the unique biological, ecological, economic, social and cultural characteristics of those fishery resources and the communities dependent on them.

Framework that promotes the following goals:

- Increase human community resilience within the context of changing ecosystems;
- Promote ecosystem resilience within the context of changing ecosystems;
- Define present ecosystem status/functionality;
- Understand dynamics of fisheries and ecosystem services;
- Describe key ecosystem linkages;
- Identify research priorities;
- Identify additional ecosystem-essential species in need of conservation and management;
- Understand the risks to the fishery ecosystem and tradeoffs from different management strategies;
- Improve the data and information needed to support marine ecosystem management;
- Prevent overfishing and/or ecosystem overfishing;
- Achieve optimum yield;
- Incorporate ecosystem considerations into stock assessments;
- Bring ecosystem considerations into the decision making process;
- Promote adaptive management policies (Revising MSA, National SSC, CCC).

UPDATES FROM PROJECT PARTNERS & POTENTIAL COLLABORATORS

- Lenfest JJ Williams (UPR-M), T. Seara (U. New Haven)
- 1) conceptual and quantitative model for US Caribbean within a fisheries context based on stakeholder perceptions and data collected;
- 2) To select and estimate indicators
- 3) identify the main indicators and threats potentially affecting the fisheries systems.
- Ecosystem Indicators SEFSC M. Karnuskas, K. Montenero
- Identify, acquire, compile, and conduct spatial and temporal analyses of pertinent data needed for development of an ecosystem status report for the U.S. Caribbean region

- Other Potential Data Integration Partner Presentations:
- S. Kotikot & S. Canty Smithsonian Institute US Caribbean Mangrove Mapping
- SEFSC Strategic Plan, inventory update K. McCarthy & R. Eckley (SEFSC)
- Net Gains Alliance K. Latanich (NGA)
- EBFM Workshop Ecosystem Status Report Applications
 T. Rankin (NMFS OHC)
- OEAP Outreach & Education for EBFM A. Ortiz
- US Caribbean Sargassum Mapping W. Hernandez (UPRM)
- CARICOOS Research J. Morel & A. Rodriguez

WHERE ARE WE NOW?

Conceptual Models (SSC, DAPs, eNGOs, Coastal businesses, academics, managers, other fishers)

- Melivora Consulting
- ISER Caribe
- 25/32 CM's completed
- In the process of merging terminology across Models
- Model workshops to complete: 7 in PR, 2 in USVI

Indicators (from the conceptual models and quantitative data)

- Develop largest scale conceptual model using Similarity Analysis
- Components of melded model will be for ecosystem indicators that can be compared to indicators from Ecosystem Status Report and other available quantitative datasets

WHERE ARE WE NOW?

Lenfest Data Procurement & Assimilation

- Data compiled from existing quantitative fisheries independent and environmental data (SEAMAP Gold Copy, NCCOS, PRCRMP, TCRMP)
- Multivariate Ordination Approach to derive indicators from CM's in development
- Structural equation Modelling to test CM derived indicators against quantitative datasets in development
- Identify data gaps between stakeholder and data derived view of the system.

Inventory of EBFM necessary data within US Caribbean Will require operational infrastructure for use in management decisions not currently available

- Identify operational system for use of EBFM data, models, indicators

WORKING GROUPS





\	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
	Complete all conceptual models	June 2022
	Meld conceptual models to create island-specific conceptual models	December 2022
	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



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