

ECOSYSTEM BASED TECHNICAL ADVISORY PANEL
(EBFM TAP)

INTRODUCTION

Caribbean Fishery Management Council
(CFMC)

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

Meeting

August 1-5, 2024

Sennai Habtes

EBFM TAP Chair

Bureau Chief, Fisheries

VI DPNR – Division of Fish & Wildlife

EBFM TAP MEETING RULES



1. Please have camera on when in discussions, making comments, or asking questions
2. Please wait to be recognized by the chair or presenter before speaking.
 - a) Use the hand raised icon on Zoom, Raise your hand, or post a comment in the chat to be recognized to speak.
3. The meeting schedule will be fluid and can be adjusted to fit the needs of the group
4. Motions will need to be proposed, seconded, and approved by majority voice vote
5. We have a lot to get done on this project, so:
 - a. Please be Present, Attentive, and Courteous.

Thanks

Management

APPROVAL OF PREVIOUS MINUTES

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CARIBBEAN FISHERY MANAGEMENT COUNCIL ECOSYSTEM-BASED FISHERY MANAGEMENT TECHNICAL ADVISORY PANEL HYBRID MEETING COURTYARD MARRIOTT ISLA VERDE, PUERTO RICO

March 16-17, 2022

The CFMC Ecosystem-Based Fishery Management Technical Advisory Panel convened on Wednesday morning, March 16, 2022, and was called to order at 9:14 a.m. by Chairman Marcos Hanke.

GRACIELA GARCÍA-MOLINER: Hey. Anyone who's listening please will be starting the meeting very soon. We are still waiting for Cristina to set it up. So, Sennai will give you all the housekeeping items, but make sure that we use the microphone they are very important.

Call to Order

SENNAI HABTES: Good morning, everybody. Welcome to the Ecosystem-Based Fisheries Management Technical Advisory Panel meeting for the Caribbean Fishery Management Council it is 09:14AM on March 16, 2022. We're going to go ahead and call this meeting to order.

I will begin by just going over some basic housekeeping rules for all of us. For those of us in a room, because we are in person, although the mask mandates and rules have changed for Puerto Rico, as part of the CFMC meeting, when you are in this room, we will ask you to keep your masks on. Also, just be conscious of the fact that we're using this new owl system and it does pick up a lot of sounds.

So, 2 things to remember. If you are going to be speaking, please use the microphones. Otherwise, it will be difficult for the members that are online to hear you. And second, if you're going to be carrying on any secondary conversations, I do ask you take that outside because the microphone for the owl system is very sensitive. So please do try to keep outside noise moving around, clinking of glasses, things of that nature, if possible, to a minimum, or do you take those outside.

In addition, we will be having both the sessions recorded on Zoom, as well as transcripts will be taken from that recording and those will be presented back to us at the end of this meeting after transcription has been completed.

AGENDA

August 1st, 2024

- **9:00 a.m.–10:00 a.m.**
- —Roll Call
- —Approval of Verbatim Transcripts May 2023
- — Meeting Overview — Sennai Habtes, EBFM TAP Chair
- Meeting Rules & Etiquette
- Approval of the Agenda
- Meeting Tasks & Deliverables
- **10:00 a.m.–11:00 a.m.**
- —Potential FEP Data, Management, & Coordination Synergies
 - —Synergies
 - — CFMC Portal — Martha Prada
 - — SERO Ecosystem efforts –María López Mercer
- **11:00 a.m.–11:10 a.m.**—Break
- **11:10 a.m.–12:30 p.m.**
- Working Groups Reports and Discussions
 - — Conceptual Models Melding — Tarsila Seara
 - Risk Assessment — Tauna Rankin
- **12:30 p.m.–1:30 p.m.**
- Risk Assessment Current Work — Leigh Fletcher
- —**1:30 p.m.–2:35 p.m.**—Lunch Break

August 1st, 2024

- 2:35 p.m. – 3:40 pm
- Working Groups Reports and Discussions
- US Caribbean Ecosystem Status Report – Mandy Karnauskas
- Potential FEP Data, Management, & Coordination Synergies (Continued)
 - — NOAA Marine Spatial Planning Data – Joe Seraphy (SEFSC) & Jennifer Wright (NCCOS)
- **3:40 p.m.–3:50 p.m.**—Break
- **3:50 p.m. –5 p.m.**
 - — Continued Discussion Risk Assessment & Conceptual Models WG

August 2nd, 2024

9:00 a.m.–10:30 a.m.

- SEFSC –Kevin McCarthy
- Lenfest EBFM (JJ Motta)
 - Regional Roadmap Update discussion
- —**10:30 a.m.–10:45 a.m.**—Break

10:45 a.m. -12:15p.m.

- —Working Groups Reports (Continued)
 - —Data repository — Sennai Habtes
 - — Drafting FEP — Sennai Habtes
- Other Themes for Discussion
- NOAA EBFM Roadmap Implementation Plan Updates - (SERO rep)
 - CFMC EBFM TAP Synergies discussion
 - **12:15 p.m.–1:15 p.m.**—Lunch

August 2nd, 2024

1:15 p.m.–2:15 p.m.

- —Other Themes for Discussion (Continued)
 - —Synergies
 - — SEAMAP-C (Data Repository).
 - — National SCS8 –Tarsila Seara

2:15 p.m.–3:15 p.m.

- Draft FEP Planning – Orian Tzadik

- Outcomes, Products, Deliverables and Deadlines
- FEP Outline/Draft Review & Edit Planning

3:15 p.m. –3:30 p.m.—Break

3:30 p.m.–5:00 p.m.

- Draft FEP Planning (Continued)– Orian Tzadik

- Strategic Objectives Review & Edits

- Future Planning and Coordination of Tasks :

- Meeting Schedule, Writing & Revisions Schedule, TAP Review
- Coordination of Working Group Leads and Independent Meeting Capacity and Infrastructure

- --Other Business

- —Adjourn

A large light blue circle with a white border, containing the text "EBFM TAP History Background" in white. The circle is positioned on the left side of the slide, overlapping a dark grey vertical bar.

EBFM TAP History Background

October 23, 2019: CFMC establishes EBFM Technical Advisory Panel

December 10-11, 2019: EBFM TAP Members Appointed

The EBFM TAP Charter - Elements

- Council established the EBFM TAP to assist in the development, collection, evaluation, and peer review of such statistical, biological, economic, social, and other scientific information relevant to the Council's development of the FEP and amendments.
- The EBFM TAP is composed of individuals engaged in ecosystem research or knowledgeable and interested in the conservation and management of the ecosystems of *managed* fisheries. The EBFM TAP shall reflect the expertise and interest from the standpoint of the scientific need for advice of the Council within the Council's geographical area of concern.
- The EBFM TAP provides expert scientific and technical advice to the Council on the development of, on the preparation of fishery ecosystem plan, and on the effectiveness of such plan once in operation. The TAP aids the Council in identifying scientific resources available for the development of plans, in establishing the objectives of plans, in establishing criteria for judging plan effectiveness and in the review of plans



EBFM TAP History Background

The EBFM TAP Charter - Objectives

- 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

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).

• **Draft FEP Outline – 6/2022**

1. Introduction/Background

- a. Purpose and need
- b. Goals and Objectives
- c. Explain the approach of EBFM
- d. Describing the organization (council panel group management boundaries)

2. Defining the Interface Between Fishery and Ecosystem Management

- a. Jurisdictions
- b. Magnuson-Stevens Act
- c. Other federal law and guidance
 - i. NOAA obligations
 - ii. Other federal agencies (e.g. Dept of Agr., USFWS, EPA, Coast Guard, USCE)
- a. Local regulations
- b. FEP development process and reassessment
- c. Local interface between fisheries, fishery communities and ecosystem management

3. Environmental setting

- a. Society and culture
 - i-iii. Each District.
 - iv. Connectivity *NOTE-this establishes the framework for a hierarchical spatial approach*

- a. Economics
 - i. St. Croix
 - ii. St. Thomas/St. John
 - iii. Puerto Rico
 - iv. Connectivity
- b. Ecology
 - i. St. Croix
 - ii. St. Thomas/St. John
 - iii. Puerto Rico
 - iv. Connectivity
 - v. Habitat
- c. Fisheries
 - i. St. Croix
 - I. Fisheries regulations
 - ii. St. Thomas/St. John
 - I. Fisheries regulations
 - iii. Puerto Rico
 - I. Fisheries regulations
 - iv. Connectivity

2. Conceptual Models
- a. SSC, DAPs and other Council body conceptual models
 - b. Any other conceptual models developed by independent researchers
 - c. Stack Conceptual Models under council’s guidance or by independent researchers
 - d. Applications

3. 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

- 1. Future prospects
 - a. Quantitative Models
 - b. Restoration/Mitigation
- 2. Assessing Fishery and Ecosystem Conditions
 - a. Data availability, needs, strategies
 - b. Assessment within an Ecosystem Context
 - c. Developing group (e.g., biomass based) Assessment Approaches
 - d. Assessing EFH
 - e. Understanding the uncertainties/ variability of environmental changes and human activities on ecosystems and fisheries resources
- 3. Coordination of ecosystem approaches to fisheries management in the US Caribbean
 - a. Considerations for Management
 - i. MSA Revisions
 - ii. FMP Amendments
 - iii. CFMC policy statements
 - b. Process for bringing the EBFM to the Council *(Convey the notion that the TAP is still in discussion on this. EBFM might inform management decision made by the Council)*
 - c. Identify potential management strategies
 - d. Integrated Ecosystem Assessment *NOTE-we may not have one for a while, but this outline includes not just what we have but what we need*

4. Research needs

5. Performance evaluation
- a. Performance measure
 - b. Management strategy evaluation
 - c. Review and revision schedule

1. Introduction

- a. Purpose, need, and limits of the FEP
- b. Goals and objectives
- c. Approach of EBFM
 - i. Within EBFM context:
 - 1. US Caribbean jurisdictions
 - 2. MSA
 - 3. Other federal law, federal agencies, and obligations
 - 4. Local regulations

2. Ecosystems and ecosystem services

- a. Local interface between fisheries, fishery communities, and ecosystem management
- b. Basic description, compare/contrast, and describe connectivity among the three island platforms with regards to:
 - i. Society and Culture
 - ii. Economics
 - iii. Ecology
 - iv. Fisheries

3. Ecosystem indicators

- a. ESR
- b. Conceptual Models
- c. Other available products for reference

4. Use of Indicators in Management

- d. Tools for Council Use:
 - i. Risk Assessment
 - ii. Quantitative Models
 - iii. Restoration/Mitigation
- e. Other ecosystem approaches
 - i. MSA Revision
 - ii. FMP amendments
 - iii. CFMC policy statements
 - iv. Integrated Ecosystem Assessment

5. Plan Moving Forward

- f. Research needs
- g. Strategic objectives
- h. Operational objectives
 - i. Performance measures
 - j. Management strategy Evaluation
- k. Review and revision schedule

LENFEST LOOP TOWARDS FEP DEVELOPMENT

Figure 1

THE STRUCTURE AND PROCESS OF FISHERY ECOSYSTEM PLANS



Articulate a vision

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)

WORKING GROUPS

Conceptual Models Melding

Members: JJ Cruz Mota, T. Seara, O. Tzadik, 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: M. Karnauskas, 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, M. Karnauskas, T. Rankin, L. Rivera Garcia, K. McCarthy, 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

STRATEGIC AND OPERATIONAL OBJECTIVES

- Next steps towards FEP development
- Finalize FEP Outline
 - Identify vision & strategy/Framework
 - Create actions to address strategy
 - Operational Objectives
 - Writing

Figure 1

THE STRUCTURE AND PROCESS OF FISHERY ECOSYSTEM PLANS



CONCEPTUAL MODELS/FEP FRAMEWORK

- Members
 - JJ Cruz Mota
 - Stacey Williams
 - Tarsila Seara
 - Orian Tzadik
 - Sarah Stephenson
 - Liajay Rivera
 - Tauna Rankin
- Tasks:
 - 1: Come up with common terms between models before melding & crosswalk.
 - 2: Build CM for e/stakeholder (7 stakeholders)
 - 2a: See spatial variability between each model
 - 3 Validate step #2 with the stakeholders
 - 4: Compare across groups of stakeholders
 - 4a: Test all models (SSC TBD) against the DAPs
 - 5: Combine melded model
 - 5a: Meld if similarity is high (high is not defined)
 - 5b: Test different models with data if similarity is low (low is not defined)
- Outputs
 - Indicators and gaps
 - Model framework
 - Appendix with all CMs
 - Comparative analysis within and among model types
 - Indicator rankings

INDICATORS

- Members

- Kelly Montenero
- Seann Regan
- JJ Cruz-Mota
- Stacey Williams
- Tarsila Seara
- Orian Tzadik
- Sennai Habtes
- (Tauna Rankin)
- Liajay Rivera

- Tasks:

1. ESR Indicators –suite of indicators tentatively completed – NOAA SEFSC??
2. Repository of data
3. CM and quantitative indicators
 1. Qualitative indicators related to the CM
 2. Indicators extracted from the quantitative models
4. Process to prioritize combined indicators identified
5. Combine list of ESR and CM indicators to create a master list of indicators

ECOSYSTEM INDICATORS

- Members:

- M. Karnauskas
- JJ Cruz-Mota
- Stacey Williams
- Tarsila Seara
- Orian Tzadik
- Sennai Habtes
- (Tauna Rankin)

- Tasks:

1. ESR Indicators –suite of indicators tentatively completed – NOAA SEFSC??
2. Repository of data
3. CM and quantitative indicators
 1. Qualitative indicators related to the CM
 2. Indicators extracted from the quantitative models
4. Process to prioritize combined indicators identified
5. Combine list of ESR and CM indicators to create a master list of indicators

RISK ASSESSMENT

- Members:

- Tauna Rankin
- Richard Appledorn
- Orian Tzadik
- Sennai Habtes
- Leigh Fletcher
- T. Seara
- JJ Cruz-Mota
- K. McCarthy
- Liajay Rivera

- Tasks:

- Goal: Define indicators from the master indicator list into drivers and receivers (Gaichas et al., 2018) as component to develop strategic objectives via risk assessment process to inform the DSS for the Council.

- Steps:

- Form working group –Aug 2022
 - Adopt approach –Dec 2022
 - Define measurable and quantifiable indicators to be used as drivers –Apr 2023
 - Identify thresholds –June 2023
 - Draft results –Aug-Sep 2023
 - Assess/evaluate the strategic objective –Dec 2023

DATA REPOSITORY NEEDS

- Members:

- Edwin Cruz-Rivera
- Kevin McCarthy
- Orian Tzadik
- Sennai Habtes
- (CARICOOS)
 - Julio Morrell
 - Patricia Chardón-Maldonado

- Goal: Draft a strategy for developing data management and coordination policies and infrastructure necessary for EBFM operational management in the US Caribbean through the CFMC.
- Regular working group meetings
- Justification of need to Council
- Identify similar system in region

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 - 2. MSA
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 - iv. Fisheries

3. Ecosystem indicators

- a. ESR
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4. Use of Indicators in Management

- d. Tools for Council Use:
 - i. Risk Assessment
 - ii. Quantitative Models
 - iii. Restoration/Mitigation
- e. Other ecosystem approaches
 - i. MSA Revision
 - ii. FMP amendments
 - iii. CFMC policy statements
 - iv. Integrated Ecosystem Assessment

5. Plan Moving Forward

- f. Research needs
- g. Strategic objectives
- h. Operational objectives
 - i. Performance measures
 - j. Management strategy Evaluation
- k. Review and revision schedule

NEXT STEPS

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 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 2023

NEXT STEPS

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.	Aug 2023
Develop operational objectives with concrete action items to be presented in the FEP, for consideration by the CFMC.	Aug 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.	Aug 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	Dec 2023
Submit FEP for council approval	Mar 2023



EBFM TAP MEETING ACTION ITEMS

- Working Group & Synergistic Project Updates & Discussion
 - Define Needs in Draft FEP and Develop Plan to accomplish
 - Writing & Draft Development Schedule/Assignments
- Flesh out FEP Draft – Plan Out Development!
 - Finalize Indicator List
 - Approve Risk Assessment Framework
 - Develop Framework for FEP implementation & use by CFMC
 - Infrastructure and Data Management Plan