Ecological Research Associates, Inc.

Tab Q, No. 4(a)

Gulf of Mexico Fishery Management Council

GULF OF MEXICO FISHERY ECOSYSTEM PLAN

© Jesse Cancelmo

GULF OF MEXICO FISHERY ECOSYSTEM PLAN

Presented to:

Gulf of Mexico Fisheries Management Council

In partial fulfillment of NOAA Award No. NA15NMF4410011

Presented by:

LGL Ecological Research Associates, Inc.

4 April 2022

ACKNOWLEDGEMENTS

- Gulf of Mexico Fishery Management Council (Gulf Council)
- Ecosystem Technical Committee of the Gulf of Mexico Fishery Management Council
- Carrie Simmons, Natasha Mendez-Ferrer and John Froeschke of the Gulf Council Staff
- Mandy Karnauskas, NOAA Southeast Fisheries Science Center
- We also recognize the helpful conversations and contributions of many individuals that we consulted, including: Amber Von Harten, Andrew Jones, Arnaud Grüss, Ava Lasseter, Brandon Muffley, Brendan Turley, Buddy Guindon, Casey Streeter, Chad Hanson, Chip Collier, Chris Kelble, Chris Malinowski, Danny Harper, David Chagaris, David Ortiz, David Yoskowitz, Dax Ruiz, Dylan Hubbard, Emily Ashford, Emily Muehlstein, Eric Brazer, Gary Graham, Jason DeLaCruz, Jason Link, Jay Mullins, John Carmichael, Joshua Kilborn, Julia Byrd, Kate Haapala, Laura Picariello, Mark Mehefka, Matt McPherson, Michelle Duval, Mike Jepson, Nick Farmer, Orian Tzadik, Rick Bellavance, Ryan Rindone, Skyler Sagarese, Tracy Sutton, and many others. Apologies for omissions.

ECOSYSTEM-BASED FISHERIES MANAGEMENT (NMFS 2018)

"a **systematic** approach to fisheries management in a geographically **specified area** that contributes to the **resilience and sustainability of the ecosystem**, recognizes the **physical, biological, economic, and social interactions** among the affected fishery-related components of the ecosystem, **including humans**; and seeks to **optimize benefits among a diverse set of societal goals**"

National Marine Fisheries Service (NMFS). 2018. Ecosystem-Based Fisheries Management Policy 01-120. 9 p.

ECOSYSTEM-BASED FISHERIES MANAGEMENT IN THE UNITED STATES

Some Key References

Essington, T., P. Levin, L. Anderson, A. Bundy, C. Carothers, F. Coleman, L. Gerber, J. Grabowski, E. Houde, O. Jensen, C. Möllmann, K. Rose, J. Sanchirico, and A. Smith. 2016. Building Effective Fishery Ecosystem Plans. A report from the Lenfest Fishery Ecosystem Task Force Report. Lenfest Ocean Program. 64 p.

Heyman, W.D., P. Mudrak, T. Beyea, N. Putman, B. Gallaway, and S. Stewart. 2021. Case Studies and Lessons Learned from Fishery Ecosystem Planning. LGL Ecological Research Associates, Inc. Submitted to: Gulf of Mexico Fishery Management Council, in partial fulfillment of contract Award No. NA15NMF4410011.

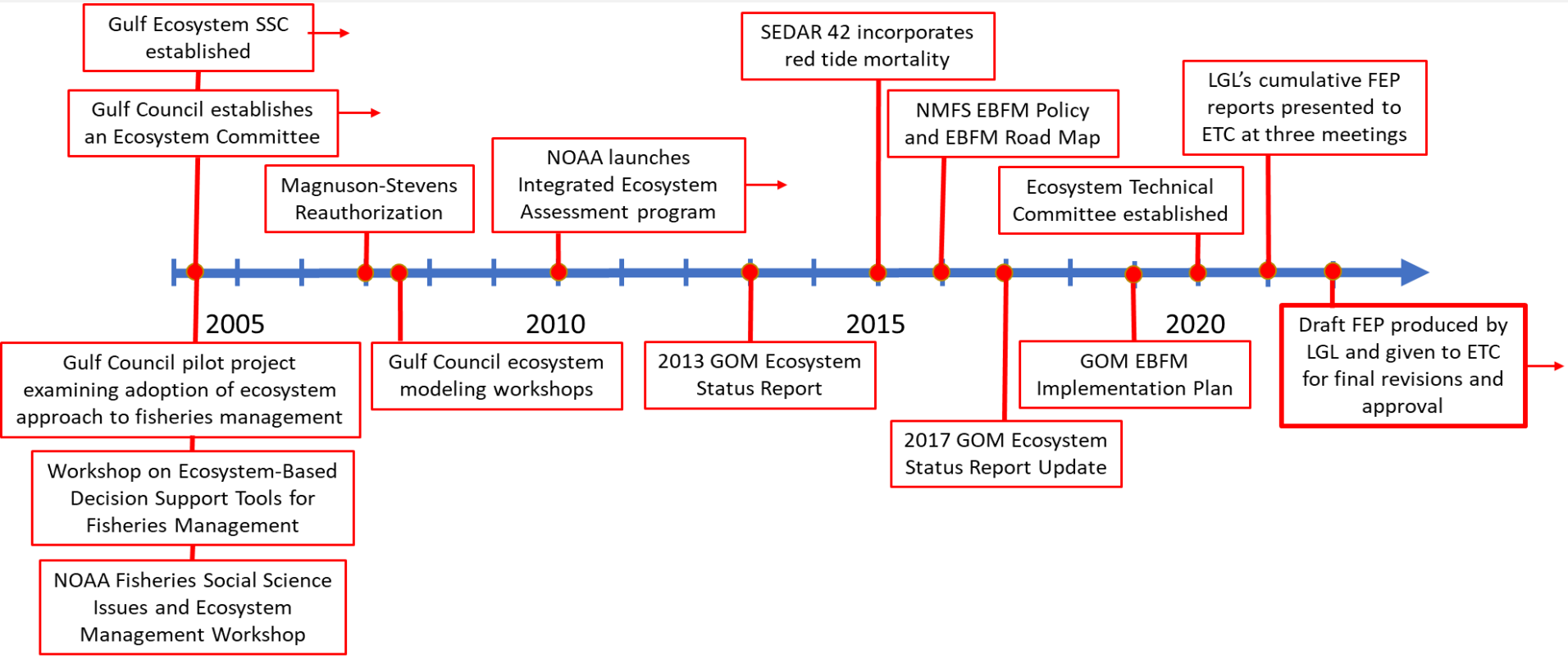
Link, J.S. and A.R. Marshak. 2019. Characterizing and comparing marine fisheries ecosystems in the United States: determinants of success in moving toward ecosystem-based fisheries management. Reviews in Fish Biology and Fisheries, 29:23-70.

Marshall, K.N., P.S. Levin, T.E. Essington, L.E. Koehn, L.G. Anderson, A. Bundy, C. Carothers, F. Coleman, L.R. Gerber, J.H. Grabowski, E. Houde, O.P. Jensen, C. Möllmann, K. Rose, J.N. Sanchirico, and A.D.M. Smith. 2018a. Ecosystem-Based Fisheries Management for Social-Ecological Systems: Renewing the Focus in the United States with Next Generation Fishery Ecosystem Plans. Conservation Letters 11(1). doi: 10.1111/conl.12367.

National Marine Fisheries Service (NMFS). 2016a, renewed 2018. Ecosystem-Based Fisheries Management Policy of the National Marine Fisheries Service National Oceanic and Atmospheric Administration. Department of Commerce. NMFS Policy 01-120. 9 p.

National Marine Fisheries Service (NMFS). 2016b. NOAA Fisheries Ecosystem-Based Fisheries Management Road Map. National Marine Fisheries Service Procedure 01-120-01. 50 p.

GULF OF MEXICO FEP DEVELOPMENT



GULF OF MEXICO FISHERY ECOSYSTEM PLAN PROPOSED MISSION STATEMENT

"To provide a framework for integrating ecosystem science into the Council's decision making for long term ecological and socioeconomic sustainability of Gulf of Mexico resources".

Proposed by the Ecosystem Technical Committee (ETC), March 2020

The FEP must be actionable

INTERIM CONTRACT DELIVERABLES

Heyman, W.D., P. Mudrak, T. Beyea, N. Putman, B. Gallaway, and S. Stewart. 2021. Case Studies and Lessons Learned from Fishery Ecosystem Planning. LGL Ecological Research Associates, Inc. Submitted to: Gulf of Mexico Fishery Management Council, in partial fulfillment of contract Award No. NA15NMF4410011.

LGL Ecological Research Associates, Inc. (LGL). 2021. Indicator Development for Fishery Ecosystem Planning: Summary Report. Submitted to the Gulf of Mexico Fishery Management Council.

Scyphers, S. S. Swinea, S. Gibbs and W. Heyman. 2021. Stakeholder Assessment & Concept Mapping in support of Fishery Ecosystem Planning for the Gulf of Mexico: Summary Project Report. LGL Ecological Research Associates, Inc. Submitted to: Gulf of Mexico Fishery Management Council, in partial fulfillment of contract Award No. NA15NMF4410011. 24pp.

RECOMMENDATIONS BASED ON CASE STUDIES AND LESSONS LEARNED

Based on **Best Practices and Lessons Learned from Fishery Ecosystem Planning** LGL recommends that the Gulf FEP should be implemented through five priority actions:

1. Develop a **Common Vision** of EBFM in the Gulf
2. **Engage stakeholders** fully and effectively
3. Use **Fishery Ecosystem Issues** to address specific priorities
4. Expand **Cooperative Research** and Citizen Science
5. Address **Extra Jurisdictional** Issues

Heyman, W.D., P. Mudrak, T. Beyea, N. Putman, B. Gallaway, and S. Stewart. 2021. Case Studies and Lessons Learned from Fishery Ecosystem Planning. LGL Ecological Research Associates, Inc. Submitted to: Gulf of Mexico Fishery Management Council, in partial fulfillment of contract Award No. NA15NMF4410011.

JOINT VISIONING APPROACH

Step 1: Gulf Council staff (or contractors) conduct a series of "visioning workshops" throughout the Gulf region to gather broad stakeholder input on an EBFM vision

Step 2: Gulf Council staff drafts a vision statement for Council consideration incorporating input gathered during Step 1

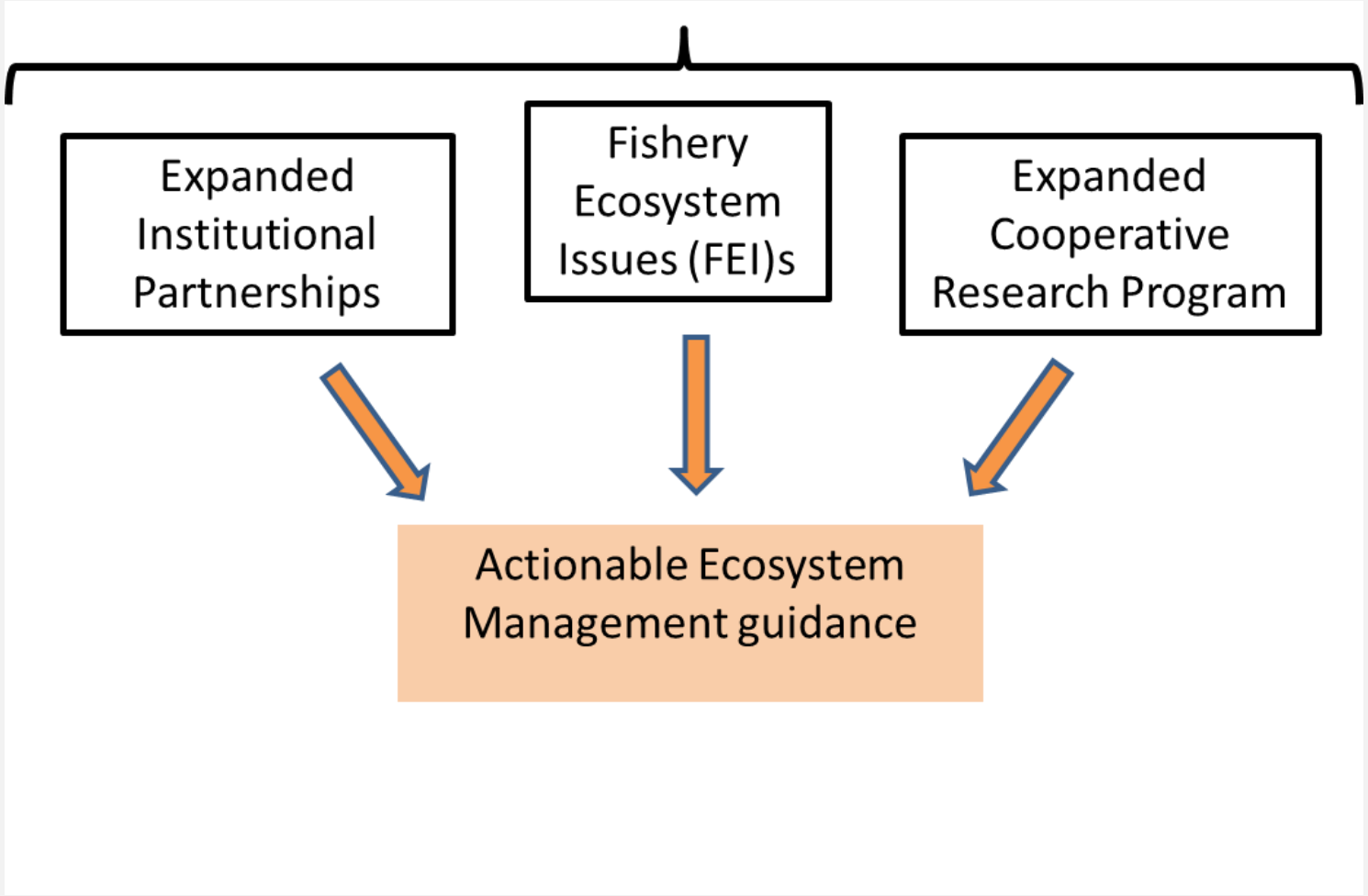
Step 3: Gulf Council adjusts and adopts the draft statement and allows for broad public comment

Step 4: Comments incorporated and EBFM Vision statement is adopted by the Gulf Council

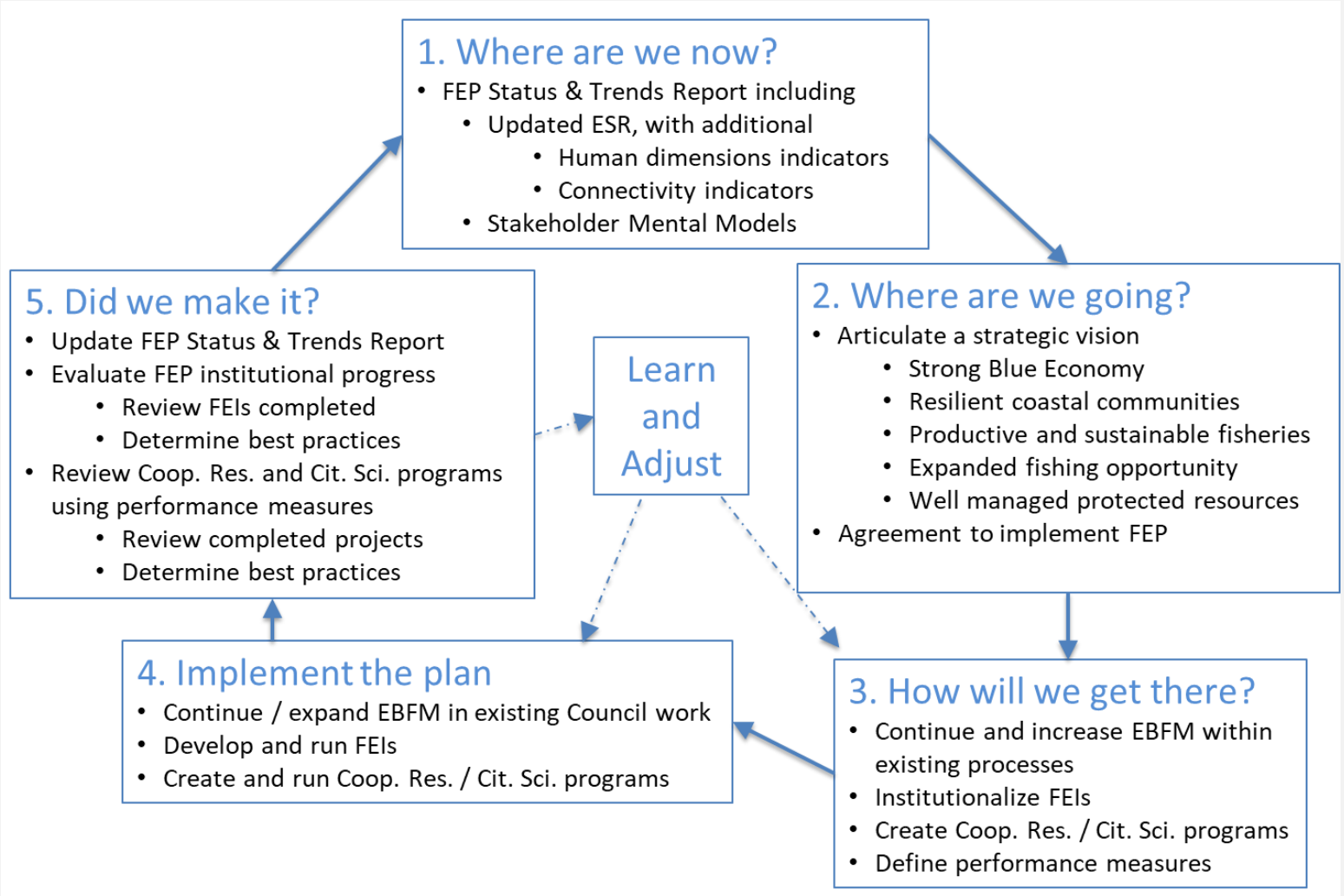
FEP STAKEHOLDER ENGAGEMENT

ENGAGEMENT FOR FMP AMENDMENTS	FEP ENGAGEMENT ADDITIONS
Public Meetings Comments submitted during public meetings are recorded and written comments are displayed in full on the Council website. All comments are also summarized and presented to the Council before fishery management decisions are made. **Scoping** During the scoping process, the Council gathers suggestions and ideas from stakeholders and others about how to solve a fishery problem or address a need. The goal of scoping is to identify issues, potential impacts, and reasonable alternatives associated with the issues at hand so that reasonable management actions can be developed. **Public Hearings** The Council holds public hearings after identifying management options that can potentially solve a fishery issue. The purpose of public hearings is to gather feedback on potential impacts of the proposed alternatives and to suggest other possible alternatives as appropriate. **Final Action** After the public has had an opportunity to comment on proposed management actions, the Council takes final action by choosing an appropriate management strategy. Final action occurs publicly, during a Council meeting, after one last opportunity for public input. The Council then votes to forward the fishery management plan or amendment to the Secretary of Commerce for final approval and implementation. **Rule Making** When the Council takes final action on a fishery management plan or amendment, it sends it to the Secretary of Commerce. The secretary opens a 15- – 60-day public comment period before deciding whether to approve, partially approve, or disapprove the proposed measure. **Implementation** After a fishery management plan or amendment is approved by the Secretary of Commerce, a final rule is published in the Federal Register implementing the management actions.	**Joint Visioning** Interviews, mental modeling, conceptual hypotheses and, surveys, can be used to maximize inclusion of stakeholder opinion and input in visioning. **Fishery Ecosystem Issues (FEIs)** A structured planning process that includes stakeholders to develop and formalize FEIs with scientists and managers is outlined. Stakeholders can also participate in FEI Task Forces. **Expanded Cooperative Research Program (CRP)** The existing CRP program can be expanded to include a 'study fleet' and mechanisms to fast-track sampling for emerging ecosystem issues. This will increase and formalize stakeholder involvement in various aspects of research to support management. **Research Institutional Partnerships** Increasing engagement of academic institutions, state and federal agencies, NGOs, and industry can be formalized through collaborative partnerships for long-term ecosystem monitoring and specific research projects to support FEIs **Extra Jurisdictional Partnerships** To address issues outside of Gulf Council jurisdiction, stakeholders can participate in formal partnerships with outside regulatory agencies, NGOs, or industries.

FISHERY ECOSYSTEM PLAN COMPONENTS



GULF OF MEXICO FEP LOOP

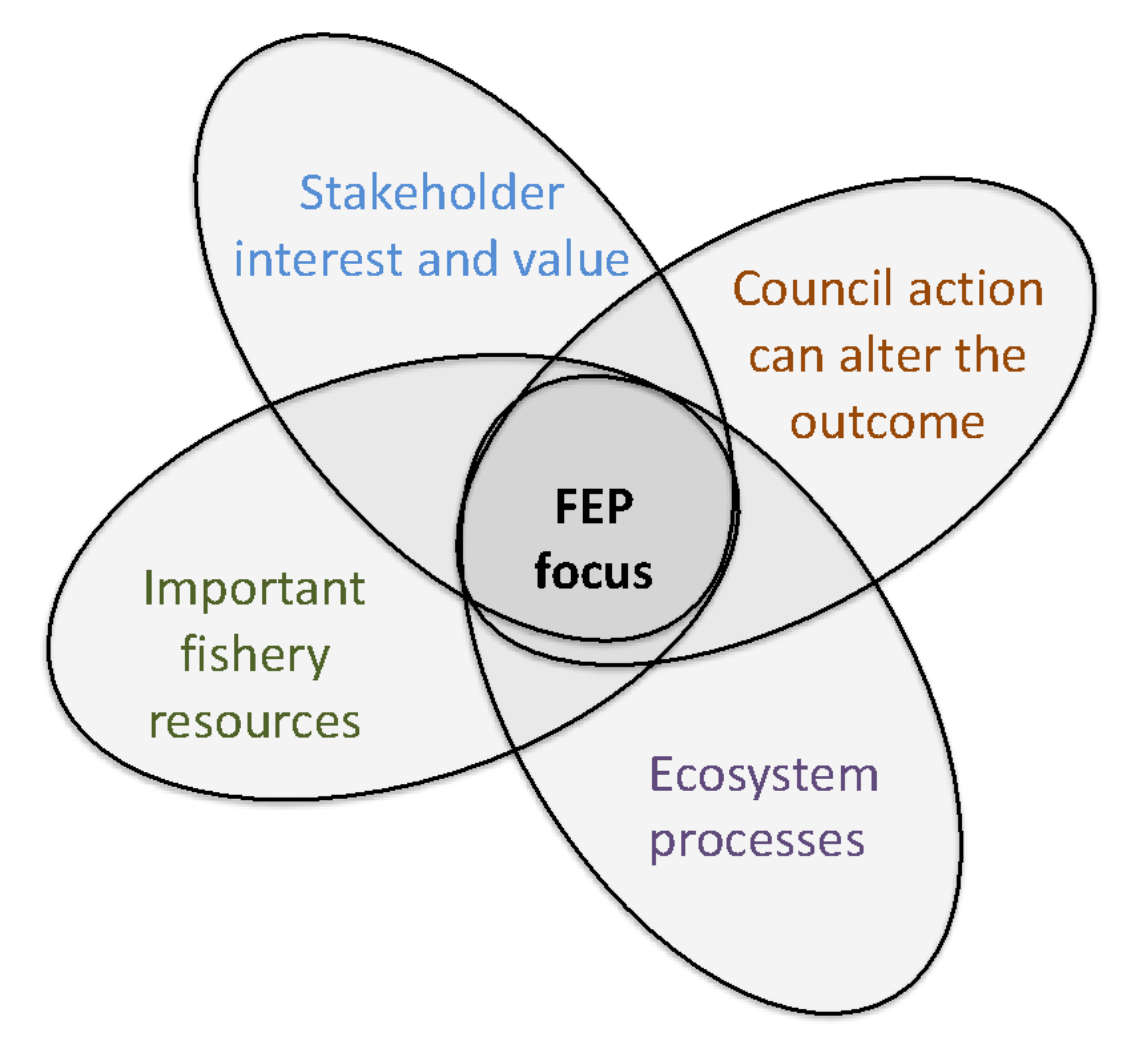


Based on "Next Gen FEP Loop" Essington, et al.. 2016. Building Effective Fishery Ecosystem Plans. Lenfest Ocean Program. 64 p.

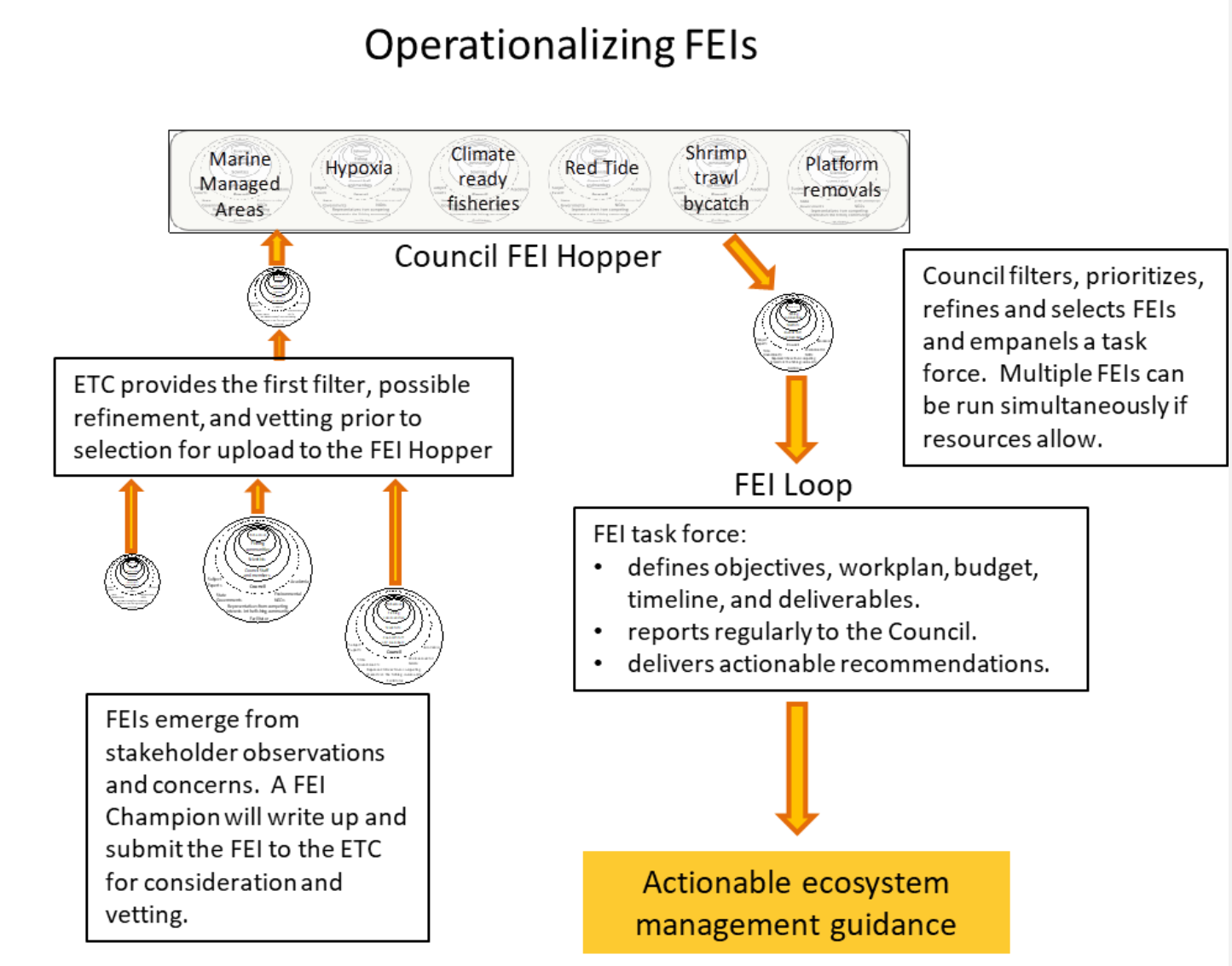
FISHERY ECOSYSTEM ISSUES (FEI)

1. Serve as the operational unit or focal scale for Fishery Ecosystem Planning
2. Are bounded in space and time with a conceptual model of a fishery ecosystem.
3. Are often conceived of by experienced and active fishermen based on their own observations but evolve into a conceptual model with increasing input from scientists, managers and other stakeholders.
4. Designed to address, mitigate or resolve issues by generating actionable management guidance.

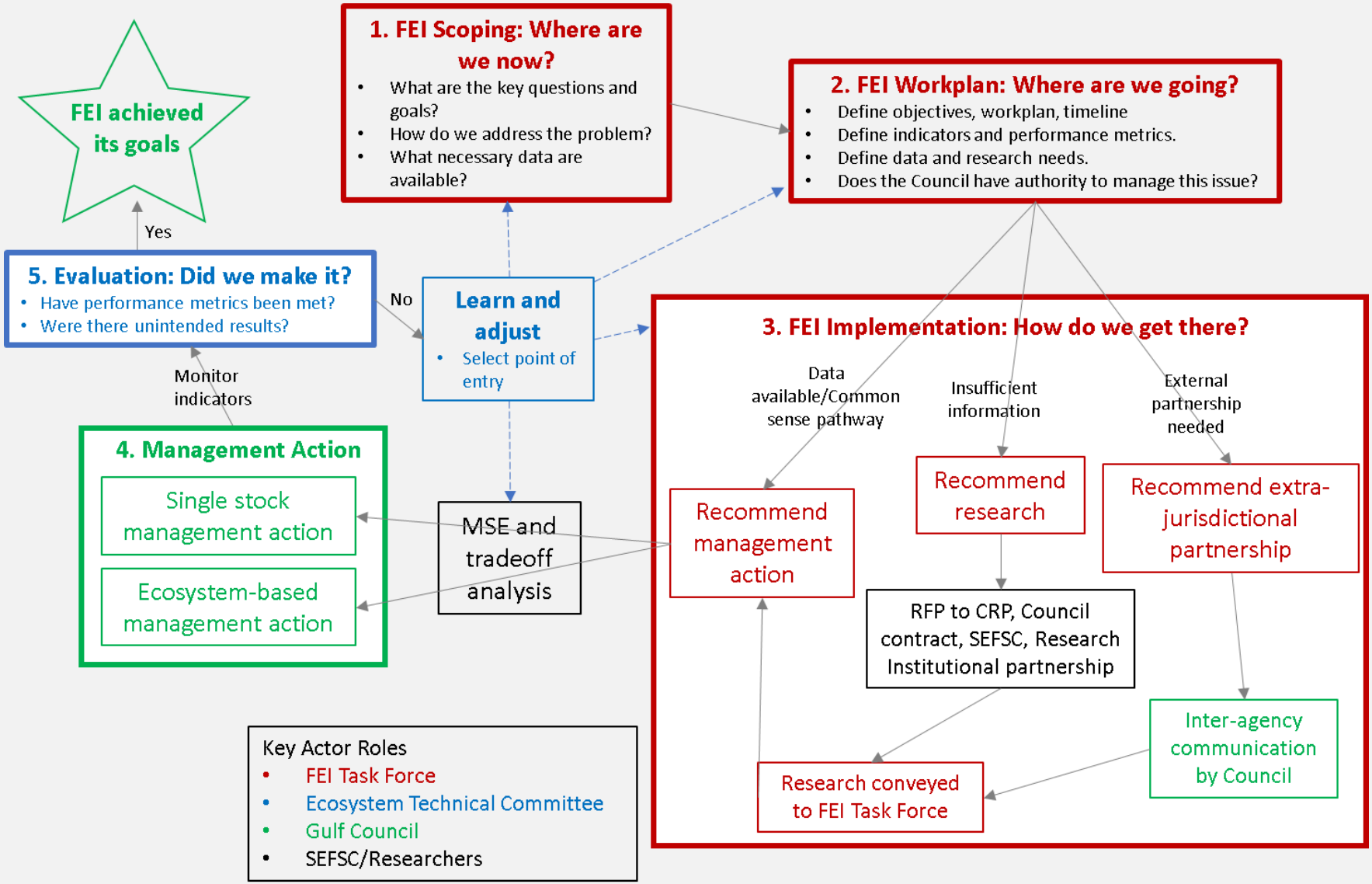
SELECTING FEIS



OPERATIONALIZING FEIS



FISHERY ECOSYSTEM ISSUE (FEI) LOOP



EXPANDING COOPERATIVE RESEARCH

Table 1. How public participants interact with scientists through public participation in scientific research (PPSR)

Public action in each PPSR model	Members of the public...
Contract	... ask scientists to conduct a scientific investigation and report on results
Contribute	... are asked by scientists to collect and contribute data and/or samples
Collaborate	... assist scientists in developing a study and collecting and analyzing data for shared research goals
Co-create	... develop a study and work with input from scientists to address a question of interest or an issue of concern
Colleagues	... independently conduct research that advances knowledge in a scientific discipline

Shirk et al. 2012

EXPANDED COOPERATIVE RESEARCH PROGRAM

Modelled after New England Fisheries Science Center's CRP

EXPANDED COOPERATIVE RESEARCH PROGRAM

EXISTING CRP

- Supports some FEP science needs
- Requests for Proposals based on Council Priorities
- Competitive Grant Cycle
- One-year studies

EXPANDED CRP

- Responsive to FEP and FEI needs
- Study Fleet trained and standing by
- Sampling for unexpected or acute ecosystem impacts (e.g., red tide, oil spill)
- Could support long-term, integrated ecosystem monitoring program
- Mechanism to facilitate cooperation between fishers and scientists (like a dating app)

ADDRESSING EXTRA JURISDICTIONAL ISSUES

- There are many issues and processes affecting Gulf fishery resources that are generated from outside the federal waters of the Gulf and are beyond the jurisdiction of the Gulf Council, e.g., coastal water quality

- The Gulf Council can develop institutional partnerships with federal or state regulatory agencies, NGOs, agricultural interests, or others to address impacts on Gulf fishery ecosystems.

- Institutional Partnerships must be developed on a case-by-case basis.

SUMMARY

The Gulf of Mexico Fishery Ecosystem Plan (v. 1.0)

- is designed to be actionable
- provides a structured planning process and decision support tools to implement EBFM in the Gulf
- includes a Next Generation FEP Loop
- uses Fishery Ecosystem Issues (FEI)s and an “FEI Loop” as the operational scale to implement the FEP
- includes mechanisms to increase stakeholder participation e.g.,
  - Expanded Cooperative Research Program
  - Research Institutional Partnerships
  - Extra-Jurisdictional Partnerships
- offers a beta FEP Visualization Dashboard

QUESTIONS AND DISCUSSION