***NATIONAL MARINE FISHERIES SERVICE POLICY 01-120***
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Fisheries Management

Ecosystem-Based Fisheries Management Policy

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***SUMMARY OF REVISIONS:***

Revised October 2023. This initial directive was put into effect on May 23, 2016, and renewed on September 2018. The Policy has been updated to:

- Clarify the links between EBFM and other NOAA Fisheries policies, guidance documents, efforts, programs and initiatives, including efforts that address the need for climate-ready fisheries;
- Better articulate the management aspect of EBFM and the need to approach EBFM as an adaptive process where science and management will always need to be updated, improved, iterated, etc. for better integration of its science and management programs;
- Better integrate socio-economic, habitat, climate change, ecological, ocean-use, and ocean condition information and needs throughout all EBFM Guidelines, particularly clarifying the need for climate-ready fisheries.

# Ecosystem-Based Fisheries Management Policy of the National Marine Fisheries Service National Oceanic and Atmospheric Administration

## POLICY STATEMENT

NOAA's National Marine Fisheries Service (NOAA Fisheries) strongly supports implementation of Ecosystem-Based Fisheries Management (EBFM) to engage, inform, and enable better decisions with and for our partners on the trade-offs among and between fisheries (commercial, recreational, and subsistence), aquaculture, protected species, biodiversity, habitats, and other ecosystem components, including the human communities that depend upon them and their associated ecosystem services. In the face of accelerating climate change, recognizing the interconnectedness of these ecosystem components is essential to maintain resilient and

productive ecosystems and associated human communities, activities, and well-being, even as these ecosystems and communities respond to climate, habitat, ecological, other environmental changes, and other ocean-uses.

## PURPOSE

NOAA Fisheries asserts that EBFM is the preferred way for the agency to meet its mandates to sustainably manage the nation's trust living marine resources (LMR)[1], providing an overarching set of guidelines to execute its mission. Coordinated implementation of EBFM across mandates will lead to greater efficiency and will enable NOAA Fisheries to consider trade-offs among and between fisheries, trust species, other species, habitats, humans, and processes that affect, or are affected by, fisheries. NOAA Fisheries endorses EBFM as the holistic approach to address climate and ecosystem impacts on the LMRs that it manages.

The purpose of this policy is to:

- Define EBFM;
- Describe the benefits of EBFM;
- Discuss how EBFM relates to existing LMR management legal authorities and requirements;
- Establish guidelines to enhance and accelerate the implementation of EBFM within NOAA Fisheries, and in cooperation with NOAA Fisheries partners, when EBFM would further improve fisheries decision-making, provide social or economic benefits, and/or provide desired ecological outcomes, which builds on the agency's (and its partners') past progress;
- Recognize and clarify the interconnectedness of NOAA Fisheries initiatives, efforts and programs as supportive of EBFM, particularly as these items pertain to climate-ready fisheries;
- Encourage continued reinforcement of the agency's commitment to integrating its science and management programs for LMR and their habitats under changing climate, ecological, multiple ocean-uses, and ocean conditions.

## CONTEXT OF ECOSYSTEM-BASED FISHERIES MANAGEMENT POLICY

NOAA Fisheries established an original EBFM Policy Statement in 2016, which this current Statement updates and supersedes. NOAA Fisheries and its partners (such as the Regional Fishery Management Councils, Interstate Fishery Commissions, Tribes, and others) are making progress in implementing EBFM via execution of the associated EBFM Road Map (2016) as adopted regionally via the Regional EBFM Implementation Plans (2019). Within NOAA Fisheries, managers and scientists frequently describe EBFM as one level along a continuum of

[1] **Trust resources** are the living and nonliving natural resources managed by the United States, any State, an Indian tribe, or a local government.

ecosystem approaches to management: 1) ecosystem approach to fisheries management (EAFM), 2) EBFM, and 3) ecosystem-based management (EBM); each level has been variously and differentially enacted based on the LMR needs (and priorities) in each region. Further details can be found in the associated and updated EBFM Road Map.

Implementing EBFM supports NOAA's broader goals for EBM across multiple sectors and mandates to wisely manage multiple ecosystem goods and services and, with other agencies, to maintain productive and resilient ecosystems. Though the core guidelines and underlying philosophy remain, the primary updates in the current Policy Statement emphasize the strong connection of EBFM to incorporating climate change considerations into fisheries management, provide clarification as to the overarching nature of EBFM relative to NOAA Fisheries programs and initiatives, and make minor clarifications to terminology in the EBFM Guidelines.

## DEFINITION OF ECOSYSTEM-BASED FISHERIES MANAGEMENT

NOAA Fisheries defines EBFM as *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.*

For the purposes of this policy: EBFM includes considerations of interactions among and between fisheries (commercial, recreational, and subsistence), protected species, biodiversity, aquaculture, habitats, and other ecosystem components, including the human communities that depend upon them and associated ecosystem services. EBFM examines not only the broader suite of factors that affect fisheries, such as climate-driven changes, alterations to habitats, or other human uses, but also considers the potential impacts of fisheries and fished stocks on other components of the ecosystem (e.g., such as other, non-targeted species or protected species like marine mammals and other threatened/endangered species). Societal goals include any relevant economic, social, and ecological priorities related to fisheries and fishery resources. EBFM is cognizant of human and ecological considerations for the near- and long-term benefit of the nation. EBFM is an overarching framework that encompasses the myriad NOAA Fisheries science and LMR management challenges of today, including the need for adaptation to climate change.

## BENEFITS

Implementing EBFM enables NOAA Fisheries and its partners to optimize benefits among a diverse set of societal goals. These benefits are realized across its multiple federal mandates by considering salient environmental and ecological factors that affect trust resources and by identifying trade-offs among trust resources, including fisheries, protected species, and their habitats. Through EBFM, NOAA Fisheries and its partners can have a better understanding of the cumulative impact of a management action beyond just a single species. Additionally, EBFM enables NOAA Fisheries to communicate risks, uncertainties, and implications of management

decisions across fisheries and a range of affected species and habitats. Better understanding, articulation, and consideration of the risks, benefits and effectiveness of management alternatives, as well as the interconnectedness and trade-offs between and among management objectives, will ensure more transparent decision processes, outcomes, and more efficient resource use by NOAA Fisheries and its partners.

Management advice from EBFM is more comprehensive, is highly robust, and better conveys and helps account for uncertainty by taking into consideration interacting elements in the ecosystem. Implementing EBFM can assist in the maintenance of ecosystem function and fishery sustainability, which support economic and social stability and fishing community well-being, as well as resilience to climate change. EBFM enables NOAA Fisheries to bring all aspects of available scientific information to improve decision-making. EBFM can also use forecasts of future ecosystem conditions and services, incorporating natural variability, anthropogenic forcing, and change in climate and ocean conditions to predict and evaluate outcomes from a range of alternative management strategies. EBFM enables NOAA Fisheries and its partners to engage more effectively with agencies that have additional authorities affecting coastal and marine ecosystems. EBFM should ensure more stable and efficient outcomes for business and regulatory planning.

## CONNECTION TO OTHER NOAA FISHERIES STRATEGIC EFFORTS

This EBFM Policy encompasses other NOAA Fisheries policies, guidance documents, efforts, programs, and initiatives aimed at improving and modernizing fisheries management. For example, efforts that address the need for climate-ready fisheries, habitats, and communities are considered an important part of EBFM and are aligned with it. Efforts to protect important forage species also support and align with this Policy. For example, the EBFM Policy aligns with other NOAA Fisheries efforts including: NOAA's Integrated Ecosystem Assessment Program, the NOAA Fisheries' Climate Science Strategy and the associated Regional Action Plans, NOAA's Climate, Ecosystem and Fisheries Initiative, NOAA Fisheries' Stock Assessment Improvement Plan, NOAA Fisheries' Human Integrated EBFM Research Strategy, NOAA Fisheries' Habitat Assessment Improvement Plan, NOAA Fisheries' National Seafood Strategy, Annual Guidance Memoranda, and the NOAA and NOAA Fisheries' Strategic Plans, among others.

## EBFM GUIDELINES

Implementation of EBFM is a series of ongoing and cumulative actions leading to comprehensive management of LMRs. EBFM should reflect the following six connected key EBFM guidelines. These guidelines flow from the foundation of identifying management objectives, through strategic planning, prioritization of science and trade-off analyses, and into management advice, all with the ultimate aim of maintaining productive and resilient ecosystems (Figure 1).

To successfully implement the EBFM policy, NOAA Fisheries will, to the extent practical:

**1) Implement ecosystem-level planning**

NOAA Fisheries shall promote ecosystem-level EBFM planning in cooperation with local, regional, tribal, and/or national partners. NOAA Fisheries asserts that it is essential to identify ecosystem-oriented goals and objectives to maintain productive and resilient ecosystems, fisheries, and communities, in particular given anticipated impacts of climate change. NOAA Fisheries acknowledges differing approaches to EBFM are appropriate across different management bodies and recognizes that EBFM initiatives originating from priorities or needs of LMR managers, in collaboration with stakeholders, have a higher likelihood of resulting in positive management changes. These efforts include but are not limited to:

- Support and provide guidance or assistance in the development and execution of Fishery Ecosystem Plans (FEPs), or other umbrella strategic planning documents, to describe and integrate ecosystem goals, objectives, and priorities for fisheries and ecosystem research (including climate-related), conservation, and management across multiple fisheries within an ecosystem.
- Incorporate EBFM goals and objectives, including anticipated climate impacts, into NOAA Fisheries operational and strategic planning and prioritization at all agency levels.
- Facilitate EBFM coordination across all elements of NOAA Fisheries and its partners.

**2) Advance our understanding of ecosystem processes**

NOAA Fisheries shall work to better understand the broader suite of ecosystem processes, drivers, threats, status, and trends of the nation's marine ecosystems to inform all levels of management advice, including, but not limited to:

- Conduct science under a diverse suite of disciplines to understand ecosystem processes, drivers, and threats, including anticipated work from the Climate, Ecosystem, Fisheries Initiative and other, ongoing and anticipated science innovations.
- Provide and update regular ecosystem status reports and similar reports to ensure they inform regional decision-making processes.
- Prioritize science in alignment with priority ecological, economic and social objectives identified in Guideline 1 above so that a deeper understanding can better inform management advice.

**3) Prioritize vulnerabilities and risks to ecosystems and their components**

NOAA Fisheries shall evaluate and address the individual and cumulative drivers for the physical, chemical, biological, social, and economic components of marine ecosystems that take into account previously articulated goals and objectives. This evaluation should take into account the comprehensive and systematic risk, vulnerability, and susceptibility of LMRs, ecosystems, fisheries, and fishing communities, and the uncertainties thereof, including, but not limited to:

- Identify the ecosystem-level, cumulative risk (across living marine resources, habitats, ecosystem functions and associated fisheries communities) in each region and the relative vulnerability to changing conditions, including from biophysical and human pressures.
- Identify the individual, cumulative, nonlinear, and nonstationary pressures and potential "black swan"[2] events that pose the most risk to those vulnerable resources and dependent communities.
- Prioritize management options for mitigating risk, enhancing resilience, and improving adaptive capacity within existing decision-making processes.

**4) Explore and address trade-offs within an ecosystem**

NOAA Fisheries supports efforts to account for and address ecological, economic, and social tradeoffs among fisheries when evaluating potential cumulative effects, adaptation, and inter-related consequences of management actions. In addition, when addressing tradeoffs, NOAA Fisheries will work to be equitable across stakeholder groups and communities. These efforts should include, but not be limited to:

- Include climate considerations explicitly in the evaluation of the dynamics and tradeoffs of LMR management in a regional ecosystem.
- Analyze trade-offs with respect to optimizing benefits from all fisheries within each ecosystem or jurisdiction, including protected species and habitat considerations, acknowledging all objectives may not be achievable simultaneously, by accounting for all ecosystem-specific policy goals and objectives.
- Conduct management strategy evaluations that include ecosystem-level analyses which provide ecosystem-wide management advice and that inform harvest control rule and other management decisions, consistent with statutory requirements.

**5) Implement ecosystem considerations into management**

NOAA Fisheries recognizes the need to account for ecosystem and climate change within trust species management decisions. It is important to acknowledge that incorporation of ecosystem considerations does not always result in more or less conservative management and lower catch limits, but categorically does improve the information used in those decisions. LMR management should consider best available ecosystem science in decision-making processes (within our legal and policy frameworks). In close cooperation with management bodies and other partners, NOAA Fisheries will implement relevant science, adaptation, and management actions, including, but not limited to:

- Develop and monitor ecosystem-level reference points.
- Incorporate ecosystem considerations, climate uncertainties, and an understanding of consequences and trade-offs into appropriate LMR management decisions. Explore and test regulatory options to incorporate climate change, ecosystem considerations, and other related features into management decisions, advice, and options.

[2] A **black swan** event is a surprising event that is difficult to predict but can have large consequences.

- Provide integrated advice across multiple habitats and species (both targeted and protected) within an ecosystem.

**6) Support ecosystem resilience via monitoring and adjusting of management actions**

NOAA Fisheries acknowledges that fisheries management is an adaptive process. It is important to monitor and track the impacts of management on biological, ecological and social systems and determine when modifications are needed. NOAA Fisheries' mandates are intended to sustain resilient and productive LMR populations and habitats, to maintain overall ecosystem structure and function, and to support the contributions that fisheries make to human well-being and the resilience of coastal human communities. EBFM needs to collectively ensure management actions are supporting the resilience of ecosystems. Actions in support of these mandates include, but are not limited to:

- Evaluate ecosystem-level measures of resilience to maintain core ecosystem structure, biodiversity, production, energy flow, and functioning.
- Evaluate coastal fishing community well-being.
- Identify and track NOAA Fisheries-wide performance and success metrics for tracking progress toward meeting EBFM goals and objectives.

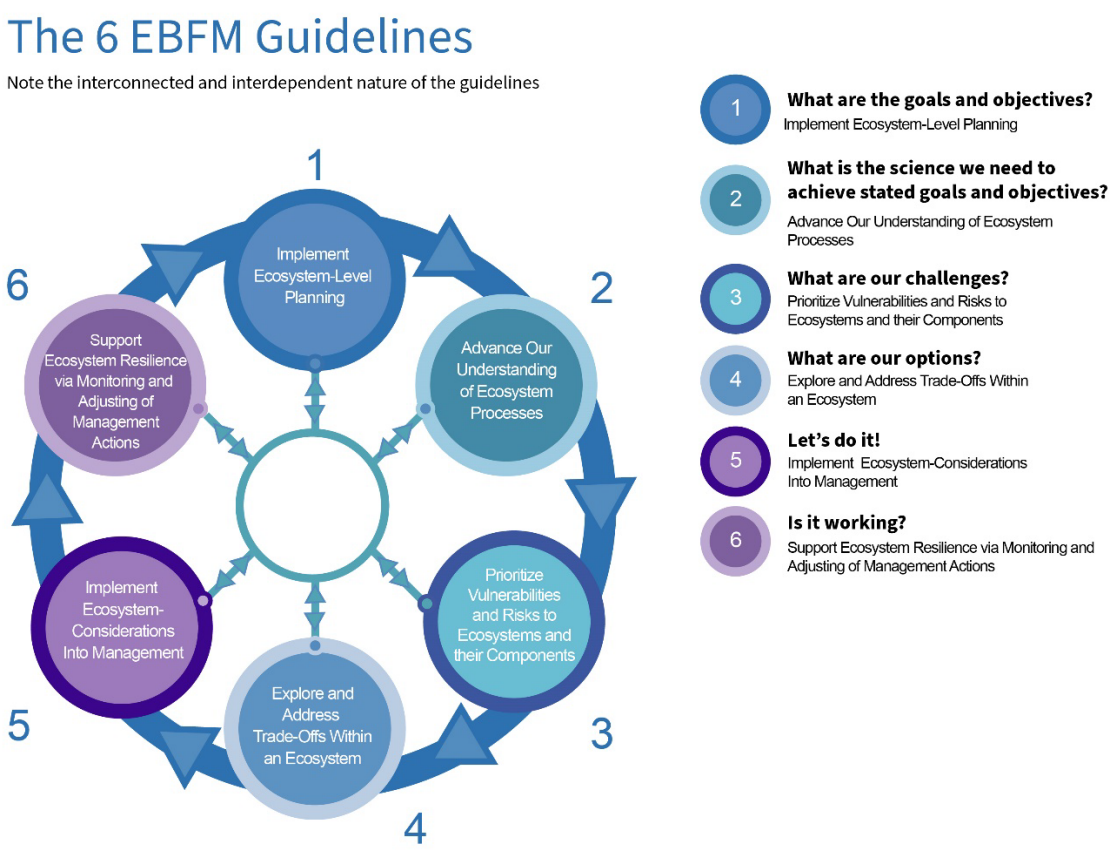


Figure 1. The six EBFM Guidelines. Depending on the situation, guidelines can be followed in order, or implemented as needed.

## LEGAL AUTHORITIES AND MANDATES

Multiple laws, executive orders, and policies authorize NOAA Fisheries to implement EBFM. This policy summarizes a subset of the authorities used by NOAA Fisheries and our partners to take actions that directly affect fisheries-associated ecosystems' structure and function. This policy also recognizes other responsibilities of NOAA Fisheries, Regional Fishery Management Councils, and other advisory bodies, and authorities and responsibilities of other federal natural resource management agencies, interstate marine fisheries commissions, states, and tribes. A systematic and coordinated approach must be taken to fully execute our authorities within and across all authorities to effectively implement EBFM.

The **Magnuson-Stevens Fishery Conservation and Management Act** (MSA; 16 U.S.C. §§ 1801 *et seq.*) authorizes federal fishery management generally from the seaward boundary of each coastal state to the outer boundary of the U.S. exclusive economic zone. NOAA Fisheries, acting under authority delegated from the Secretary of Commerce, is responsible for managing fisheries pursuant to the MSA. Eight Regional Fishery Management Councils (Councils) assist in the fishery management process. The MSA provides for: 1) integrating ecosystem considerations

into fishery conservation and management actions, 2) minimizing the impacts of fishing on ecosystem components, and 3) conserving important ecosystem components from non-fishing threats. The MSA also authorizes NOAA Fisheries to provide technical advice and assistance to the Councils to develop and design regional EBFM programs (16 U.S.C. § 1882). The Act requires rebuilding of overfished fish stocks (16 U.S.C. § 1854) and, as noted below, requires that fishery management plans be consistent with the National Standards. The MSA also stipulates that fishery management plans must identify and describe Essential Fish Habitat (EFH), minimize to the extent practicable adverse effects from fishing on EFH and its ability to support fishery ecosystems, and identify other actions to encourage conservation and enhancement of EFH (16 U.S.C. § 1853(a)(7)). In addition, fishery managers may include measures to protect deep sea corals and to conserve target and non-target species and habitats (16 U.S.C. § 1853(b)(2), (12)). The MSA's National Standards (16 U.S.C. § 1851) provide overarching requirements for conservation and management measures, including EBFM-supporting measures: preventing overfishing, while achieving on a continuing basis optimum yield[3] using the best scientific information available; to the extent practicable, managing interrelated stocks as a unit or in close coordination; taking into account and allowing for variations among, and contingencies in, fisheries, fishery resources, and catches; taking into account the importance of fishery resources to fishing communities and, to the extent practicable, minimizing adverse economic impacts on such communities; and to the extent practicable, minimizing bycatch and bycatch mortality.

The **Marine Mammal Protection Act** (MMPA; 16 U.S.C. §§ 1361 *et seq.*) protects all marine mammals. NOAA Fisheries manages cetaceans (whales, porpoises, and dolphins) and pinnipeds (seals and sea lions) under the Act, while the U.S. Fish and Wildlife Service (USFWS) manages walruses, polar bears, manatees, sea otters, and dugongs, with support from NOAA Fisheries. The primary objective of the MMPA specifies that marine mammals should not be allowed to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part (16 U.S.C. § 1361). The MMPA further notes that marine mammals are resources of great international esthetic, recreational, and economic significance. As such, the primary objective of their management should be to maintain the health and stability of the marine ecosystem and, when consistent with that primary objective, to obtain an optimum sustainable population, commensurate with the carrying capacity of the habitat. In furtherance of this objective, the MMPA prohibits the "taking" or importing of marine mammals except in certain limited circumstances (16 U.S.C. § 1371). Among other provisions, the MMPA requires NOAA Fisheries to prepare assessments of marine mammal populations (16 U.S.C. § 1386) and includes a framework for reducing the incidental mortality and serious injury of marine mammals during the course of commercial fishing operations (16 U.S.C. § 1387). The MMPA allows for intentional lethal taking of individually identifiable pinnipeds that are having a significant negative impact on the decline or recovery of salmonid fishery stocks, including those listed as threatened or endangered under the Endangered Species Act (16 U.S.C. § 1389).

[3] Optimum yield from a fishery "means the amount of fish which — (A) will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems; (B) is prescribed on the basis of the maximum sustainable yield from the fishery, as reduced by any relevant social, economic, or ecological factor; and (C) in the case of an overfished fishery, provides for rebuilding to a level consistent with producing the maximum sustainable yield in such fishery." 16 U.S.C. § 1802(33) (emphasis added).

Where appropriate, EBFM considers the fishery and fished stock impacts on protected species, including marine mammals, and can help support the MMPA primary objective.

The **Endangered Species Act** (ESA; 16 U.S.C. §§ 1531–1543) provides for the conservation of threatened and endangered species and their ecosystems. The listing of a species as endangered makes it illegal to "take" (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to do these things) that species. Similar prohibitions may be extended to threatened species. It is meant to provide "a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved" and directs NOAA Fisheries and the USFWS to designate critical habitat for listed species. Federal agencies are directed under ESA section 7 to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Federal agencies must consult with NOAA Fisheries on federal actions that may affect a listed species (e.g., federal commercial fisheries) to ensure those activities are not likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Similar to the MMPA, EBFM considers the fishery and stock impacts on protected species, which can help support the ESA goal of providing conservation of threatened and endangered species.

Under the **National Aquaculture Act of 1980** (NAA; 16 U.S.C. §§ 2801–2810), Congress declared that "aquaculture has the potential for reducing the United States trade deficit in fisheries products, for augmenting existing commercial and recreational fisheries, and for producing other renewable resources… [i]t is, therefore, in the national interest, and it is the national policy, to encourage the development of aquaculture in the United States." To this end, NOAA is directed by the NAA to encourage aquaculture activities and programs in both the public and private sectors of the economy that result in increased aquaculture production, the coordination of domestic aquaculture efforts, the conservation and enhancement of aquatic resources, the creation of new industries and job opportunities, and other national benefits. Aquaculture can both be impacted by–and also impact–environmental changes, including impacts from a changing climate, and trust species management. Further, under the **Magnuson-Stevens Fishery Conservation and Management Act** (MSA), fisheries management issues raised by aquaculture in federal waters are under evaluation by NOAA. NOAA asserts that aquaculture is "fishing" under the MSA (except in the Gulf of Mexico) or that aquaculture proposals for federally managed species, including proposals for research and exempted fishing permits (EFPs), would be considered in accordance with NOAA Fisheries authorizations, obligations, and allowances under the MSA.

The **Fish and Wildlife Coordination Act** (FWCA; 16 U.S.C. §§ 661–667e) authorizes the Secretaries of Agriculture and Commerce to provide assistance to and cooperate with Federal and State agencies to protect, rear, stock, and increase the supply of game animals. Under the FWCA, NOAA Fisheries evaluates impacts of proposed activities to ecosystem components such as fish species and their habitats that fall outside the scope of the MSA (including many forage species that serve as prey for federally managed fisheries), and provides comments to other federal agencies to reduce environmental impacts.

Under the **Coral Reef Conservation Act** (CRCA; 16 U.S.C. §§ 6401 *et seq.*), NOAA Fisheries maps, monitors, assesses, restores, and conducts scientific research to benefit the

understanding, sustainable use, and long-term conservation of coral reef ecosystems and cooperatively conserves and manages coral reef ecosystems with local, regional, and international programs and partners. This legislation enables the collection of additional ecosystem information that informs EBFM in regions with coral reef ecosystems.

Under the **Federal Power Act** (FPA; 16 U.S.C § 811), NOAA Fisheries has the authority to prescribe safe, timely, and effective fish passage at federal hydropower projects to ensure access to upstream and downstream spawning grounds and other habitats. Several sections of the FPA address ecosystem issues, sections 10(j) (that covers protection, mitigation and enhancement), 18 (mandating fish passage improvements), and 30 (concerning plant licensing) of the FPA (16 U.S.C. §§ 803(j), 811, 823a).

The **National Environmental Policy Act** (NEPA) of 1969 (42 U.S.C. §§ 4321 *et seq*.) is a procedural statute that seeks to "encourage productive and enjoyable harmony between man and his environment, promote efforts to prevent or eliminate damage to the environment, and enrich understanding of ecological systems and natural resources important to the Nation" (42 U.S.C. § 4321). Pursuant to NEPA and its implementing regulations (40 C.F.R. §§ 1501 *et seq.*), NOAA Fisheries prepares environmental impact statements (EIS) for major federal actions significantly affecting the quality of the human environment (42 U.S.C. § 4332), and in other instances, prepares environmental assessments (EA). Through an EIS or EA, NOAA Fisheries analyzes the ecological, economic, and social effects of proposed actions and reasonable alternatives to the proposed actions, and emphasizes cumulative, direct, and indirect impacts of actions on LMRs and their habitats, connections, and ecosystems. NOAA Fisheries also evaluates the environmental effects of federal actions on fishery resources through the MSA, ESA, and FWCA.

## NOAA FISHERIES RESPONSIBILITIES

NOAA Fisheries' Leadership Council, which includes the Assistant Administrator for Fisheries, the Deputy Assistant Administrators for Regulatory, Operations, and Scientific Programs, the Regional Administrators and Science Directors, HQ Office Directors, and the Agency Senior Scientists (STs), is responsible for agency-wide implementation of this policy. NOAA Fisheries will work with its stakeholders and partners, including the Regional Fishery Management Councils, to achieve effective implementation of the EBFM policy.

This policy is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents or any other person.

Signed  02/12/24

Janet Coit — Date
Assistant Administrator for Fisheries