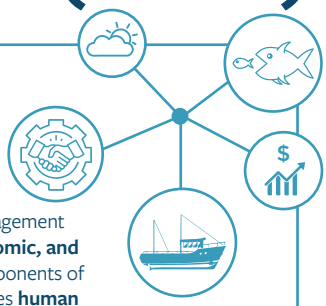
New England Fishery Management Council

Ecosystem-Based Fisheries Management (EBFM)

What is Ecosystem-Based Fisheries Management (EBFM)?



EBFM is a **holistic approach** to fisheries management that considers the **physical, biological, economic, and social interactions** between the various components of the ecosystem related to fisheries. This includes **human** interactions. EBFM seeks to provide ecosystem resilience and sustainability while **maximizing fishery benefits** for all stakeholders.

Why EBFM?

The current **single species management** approach manages each fishery individually with limited broader ecosystem considerations. Managing each fishery independently can lead to **instability** across all them. NEFMC's goal with EBFM is to create a management system that provides fishermen with greater flexibility to choose when to fish, how to fish, and what to fish for while incentivizing behaviors that will help achieve balanced and sustainable fisheries

An Ecosystem Framework

The proposed ecosystem based fisheries management approach considers multiple ecosystem variables (V) when making catch advise (CA) determinations. By considering the relationship of fish species to the ecosystem and vice versa, more realistic catch advice determinations can be made.

(V) Ecosystem Variable

(CA) Catch Advice

(V) **Climate:** The influence of year-to-year changes in weather as well as long term effects of climate change will inform decisions about catch advice.

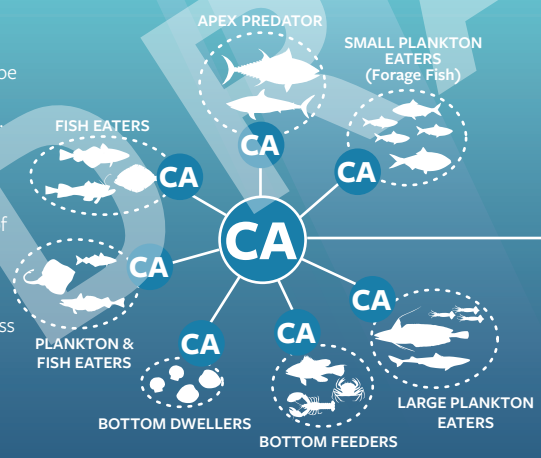
(V) **Collaborative Research:** Scientists will work with fishermen to collect ecosystem health information that will inform the models used to make management decisions.

(V) **Fleet & Technical Interactions:** Information about fleet size and gear types will inform management decisions about catch advice.

Species Complexes: Species will be grouped into complexes based on similar life histories and habitat use. These species tend to be caught together in specific gear types.

Catch advice will be made for each complex based on an assessment of ecosystem condition informed by ecosystem variables. (V)

Catch advice will also be made for each species to ensure their biomass does not drop below critical levels.

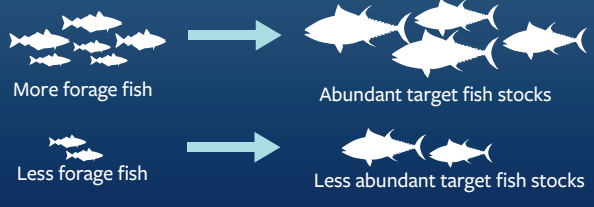


Primary Production:

(V) Phytoplankton make up the base of the marine food web. More phytoplankton means more food for filter-feeding fish and small crustaceans (zooplankton) that are also important fish food. Estimated ecosystem primary production will inform managers as to the total number of fish that can be caught.

(CA) The total annual catch limit for the ecosystem will be based on 22% of the estimated annual primary production.

(V) **Predator/Prey Relationships:** Ecosystem predator/prey relationships will be evaluated to assess the amount of available forage fish. This will inform decisions about catch advice.



(V) **Habitat:** Habitat condition throughout the ecosystem will impact the health of various fish species and this will inform decisions about catch advice.

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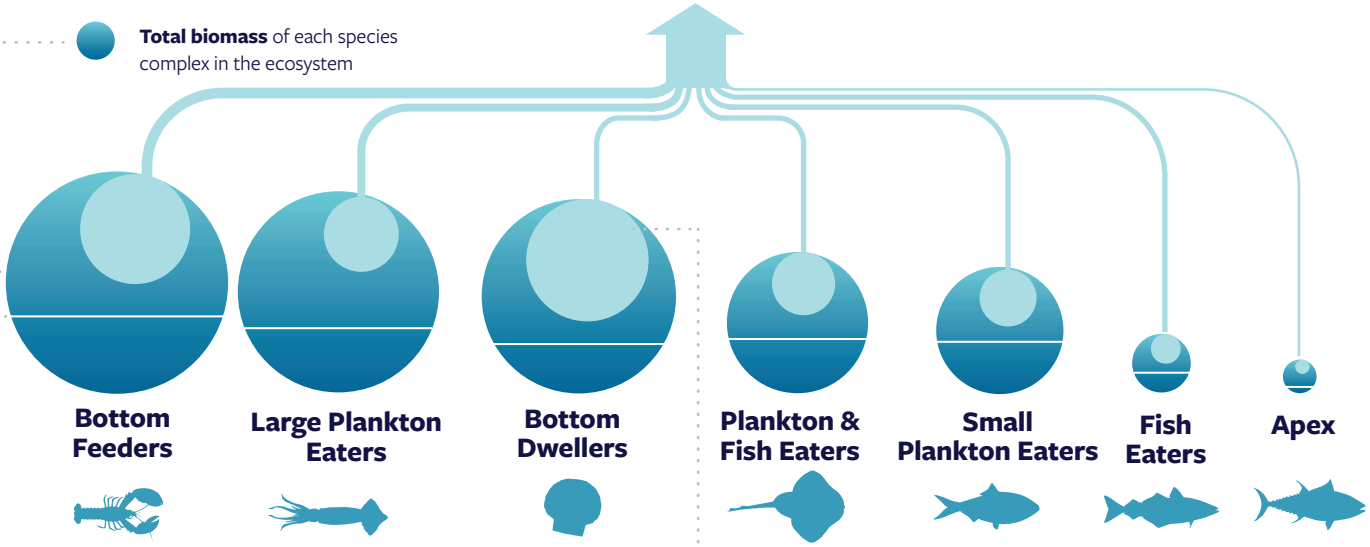
It's All About the Biomass!

In the EBFM framework being considered, there are **three different scales** by which catch limits are established: **Annual catch limits**, **Species Complex Biomass Floor**, & **EPU* Catch Ceiling**.

EPU Catch Ceiling:
The cummulative catch amount *cannot exceed 22%* of the annual ecosystem primary production. This ensures that the ecosystem can continue to function.

Total biomass of each species complex in the ecosystem



Species complex biomass floor: Biomass cannot decrease below this limit. It ensures sufficient population for species survival.

Annual catch limit of each species complex

Limits will vary annually based on predator/prey ratios in the ecosystem. Maintaining these ratios keep the ecosystem balanced.

***Ecological Production Unit; a geographic area that defines the boundaries of the ecosystem**

Process

NEXT STEPS

We started with an idea to manage fisheries in a way that is more holistic, better for the ecosystem, and gives fishermen more options.

We currently have a draft management framework.

Need to develop an example that demonstrates the process.

We will then get feedback and input at stakeholder workshops.

Based on feedback, we will refine the process.

The possible end product could be:

A modification of our current approach **OR** A Fisheries Ecosystem Plan for Georges Bank **OR** An EBFM strategy for the NEFMC region

Benefits

EBFM has the potential to **benefit** both the **ecosystem** and the **fishing industry** at the same time. Possible benefits include:

- Management by species complex can allow fishermen to **retain more** of what they catch.
- Factoring in overall ecosystem conditions will result in **more stable fisheries.**
- Consideration of a changing ecosystem will make the fisheries more **adaptable** and provide **long-term security** for the fishing industry.
- Potential to **resolve** current regulatory **inconsistencies**, reducing compliance and enforcement costs.

What Is Your Role?

Nothing about the proposed EBFM framework is set in stone, and the NEFMC is actively looking for input and guidance from fishermen, fish processors, seafood distributors, recreational fishermen, environmental groups, and other representatives of New England's coastal fishing communities.