

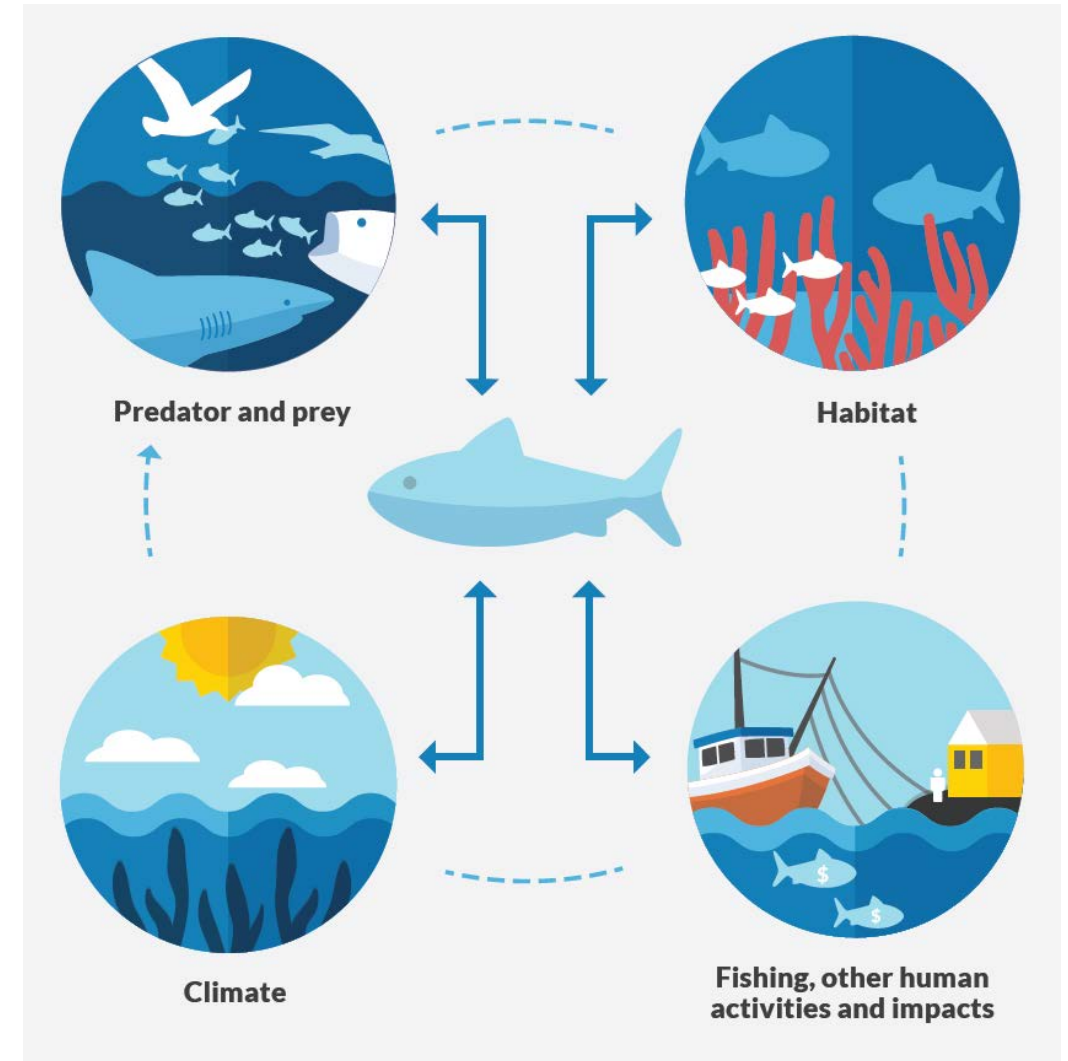
Ecological Objectives in Fisheries Management

A rapid review by The Pew Charitable Trusts

What is EBFM?

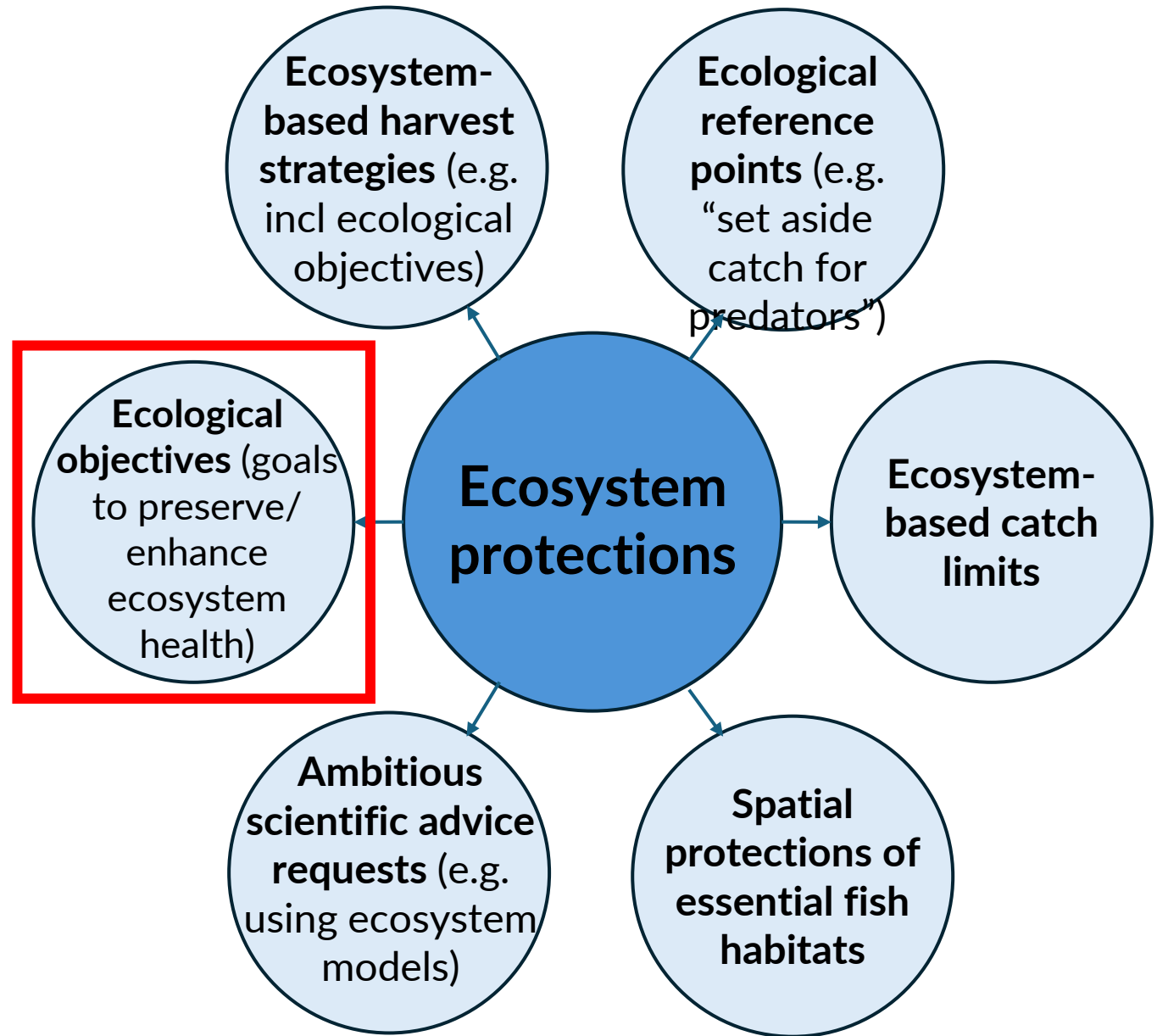
Various definitions exist (incl. FAO, CBD, IUCN etc.), but generally understood to address:

- Incorporating **ecosystem considerations** in fisheries management
- Safeguarding **ecosystem functioning** especially as concerns small pelagic/forage fish
- Moving **beyond single species yield maximisation**, including assessing trade-offs
- **Being adaptive** in order to tackle risks (e.g. climate change)



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**What EBFM
measures/ecosystem
protections is Pew
calling for?**



Do operational ecological objectives exist in fisheries policies?

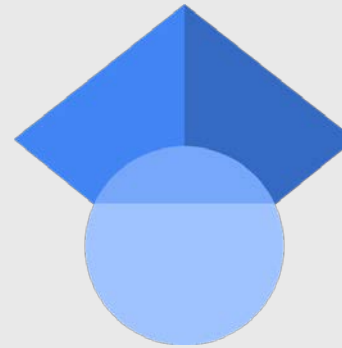
Internal Pew study, commissioned by International Fisheries team, delivered by Conservation Science and Research Quality and Support teams.

- Rapid review of **mostly grey policy literature** (e.g. management plans, national fisheries policies, RFMO CMMs)
- **Case study examples of operational objectives** and other means by which governing bodies around the world are advancing ecosystem approaches to fisheries
- **Non-exhaustive and time-constrained** review, but more work planned
- **Intentionally broad** i.e. not exclusively international/RFMO-oriented in focus – “**EAFM**”

Approach – Database screening and search terms



Grey lit/policy docs: FAOLEX database



Peer-review: Google Scholar, EBSCO

- Limited exploration of national domestic policy repositories (EU, UK, Canada, Australia) in addition to above DBs.
- Screened for broad range of terms; all variants of EAFM/EBFM/EAF/EBM + “ecological objectives” + “ecosystem indicators”. **794 grey lit results** and **307 peer-reviewed results**
- Reviewed for evidence of 1. Objectives, 2. Operational components of objectives. Discarded entirely theoretical, unimplemented examples. Selected **17 grey lit case studies** and **3 peer-reviewed**

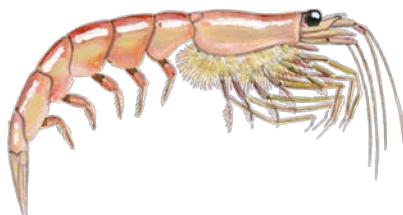
Results – EAFM was common, operational objectives were not

- Very limited # of case studies (*1101 results into 20 case studies*) explained by time, but also lack of examples with **operational** objectives
- Found **many plans with EAFM/EBM language** (e.g., ecosystem-based or ecosystem approaches) across geography and governance scope
- EAFM language present in **varied types of plan**, from fisheries management plans to climate plans
- BUT invoking EBM/EAFM and its related acronyms directly does not mean the plan is ecosystem-based **in operation**
- Many examples explicitly reference EBM in one form or another as a foundational principle or objective, but then offered little or no actions or operational objectives to make that actionable

Results – Plans with operational objectives were diverse

EAFM is actionable in a **diversity of ways**, from direct inputs into stock assessment/management to objectives + components that improve stakeholder inputs.

Plan type	Examples
1. Direct ecological/social data input that alters stock assessment/management	US regional FMPs/Strategic Plans; Australia Risk Assessment
2. Plans with other environmental indicators (Habitat/bycatch/spatial-temporal)	SPRFMO/NEAFC VME CMMs; WCPFC bycatch CMMs
3. Holistic strategies with underpinning tactical actions	CCAMLR Convention + related CMMs



Krill (and its predators), Antarctic:

Objective: “Harvesting shall... [maintain] ecological relationships”

Operational component: Trigger biomass limit + catch distributed across spatial units

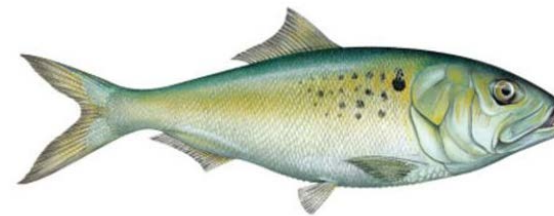


Tuna/seabirds, Western Central Pacific:

Objective: “Implement the IPOA Reducing Incidental Catches of Seabirds in LL Fisheries”

Operational component: Gear modifications in line with bycatch-focused CMM

Case study examples



Menhaden (and its predators), US

Objective: “Maintain...stock at levels which... support predators”

Operational component: Interlinked F thresholds for prey and predator (striped bass)



Benthic habitats, South Pacific

Objective: “Apply EAFM...(&) prevent significant adverse impacts on VMEs”

Operational component: Min 70% protection of suitable habitat for each indicator taxa

Conclusions

- The message that EAFM/EBM and its principles are important **has been received** by those tasked with managing and protecting the oceans but implementation is **highly diverse**
- EAFM/EBM oriented plans largely acknowledge these principles **without providing clear operational means to achieve**/manage according to them
- Conversely, operational measures to tackle biodiversity impacts are often **outside a single action-oriented EAFM policy** or framework
- Comprehensive EAFM/EBM policy frameworks with actionable, operational objectives will **incorporate ecosystem considerations directly into stock management** (and assessment)
- This was only a time-constrained rapid review. **More systematic work** needed.

Ecological Objective development

The Pew Charitable Trusts policy recommendations

North Pacific Fisheries Commission 10th Scientific Committee meeting, 17th December 2025

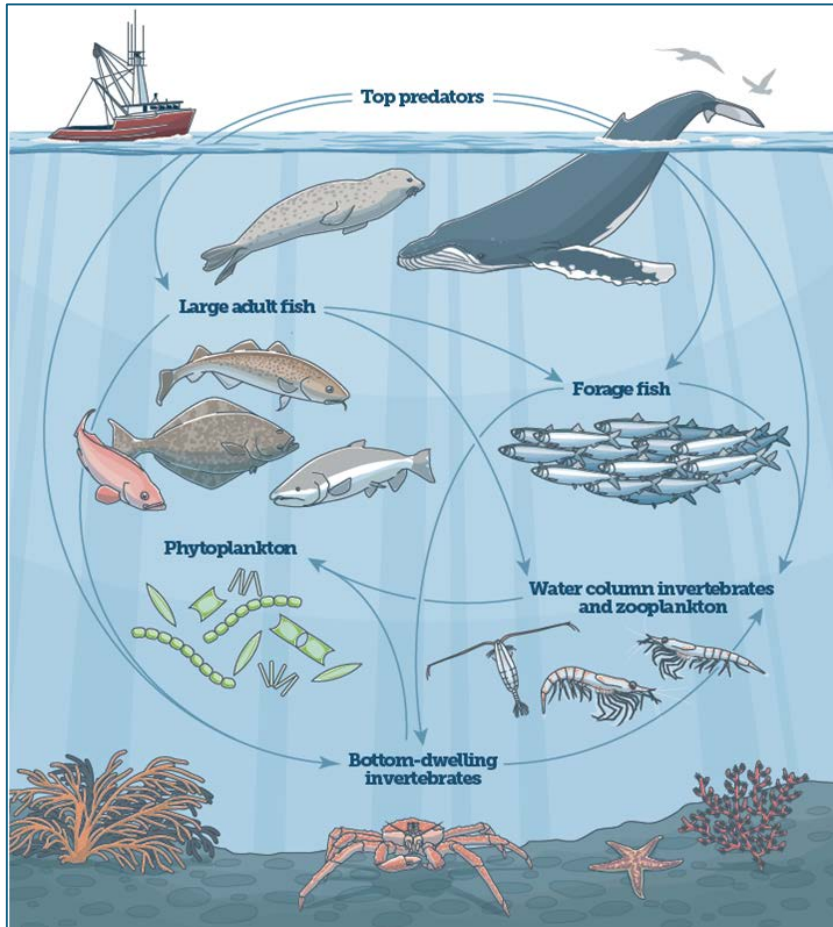
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Pew recommendations on ecological objectives



- Ecological objectives should **prioritize ecosystem health** rather than yield maximization
- Yield-based and biodiversity-based objectives should both be agreed, acknowledging **likelihood of trade-offs**
- Identify **optimal governance changes** i.e. convention revision, “soft law” roadmap, interlinked CMMs, new committees etc.
- Objective wording must be **intentional, targeted** and driven by scientific advice
- Objectives must be **operational** i.e. associated indicators, rules, actions, measure, not just empty words

Pew recommendations on ecological objectives to NPFC



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1. **Governance analysis:** Review existing CMMs and align with FAO EAFM monitoring tool; gaps should be targets for new CMMs
2. **Governance arrangements:** Consider how a process of ecological objective setting could be developed, including roles and responsibilities of (existing or possible future) subsidiary bodies
3. **Objective wording:** Focus on small pelagic target species, ETP species (especially seabirds, sharks) and ecosystem structure/function (food webs)
4. **Operationalising objectives:** Explore direct inputs (e.g. guild-level ref points), MSE to incorporate ecological objectives into harvest strategies, and/or ensure ecosystem dynamics and or other pressures (e.g. climate change) are accounted for by management.