



**NOAA
FISHERIES**

Ecosystem Status Report Update: Indicators to support management

Integrated Ecosystem Assessment Team
Southeast Fisheries Science Center

Ecosystem Technical Committee Meeting
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Shifting to “Objective-focused” Ecosystem Status Reports

2025 STATE OF THE ECOSYSTEM | Mid-Atlantic

Performance Relative to Fishery Management Objectives

Trends and status of indicators related to broad ecosystem-level fishery management objectives, with implications for the Mid-Atlantic Fishery Management Council (MAFMC)

OBJECTIVE (Indicator)	TREND	CURRENT STATUS	IMPLICATIONS
Seafood production (Total and MAFMC managed landings)	 Decline	 Below long-term average	Commercial landings were at a historic low in 2023, driven by menhaden fishery consolidation. MAFMC landings have declined since the mid-2000s. This is driven by surfclam and ocean quahog, and possibly by market conditions. Port landings combined across Mid-Atlantic states have moderate to high total climate vulnerability. Recreational harvest is declining due to multiple drivers.
Commercial profits (Total and managed revenue)	 No trend	 Below long-term average	Total revenue reached an all time low in 2022–2023, driven by both declining price and volume. Recent declining revenue is driven in part by managed clam species volume. Even when adjusting for inflation, falling prices are almost universal and due to market dynamics. Combined Mid-Atlantic port revenue has had high to very high total climate vulnerability for most of the period since 2000.
Recreational opportunities	 EFFORT	 +	Recreational effort shows an increasing long-term trend and is above average, but fleet diversity is decreasing because of a shift away

<https://repository.library.noaa.gov/view/noaa/70290>

<https://gulf-iaa.github.io/Caribbean-ESR-2/>

Caribbean Ecosystem Status Report

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Matching indicators to management objectives

No overarching ecosystem objectives – but individual FMPs contain many objectives with an ecosystem “flavor”

Process: Compile most recent stated management objectives from FMPs

Challenges:

- Widely varying degrees of specificity → no 1:1 indicator-objective match
- Many objectives from original FMPs created decades ago

Solution:

- Group objectives into high-level thematic management goals, objectives matched with suites of indicators

Groupings: high-level management goals



**Support food
production**



**Maintain
socioeconomic
health**



**Avoid waste
and bycatch**



**Promote good
governance**



**Protect habitat
and ecosystem
function**

Goal: Support food production

Management objectives	Potential indicators
Achieve and maintain optimum yield	Quota usage (ACLs vs landings) Biomass trends from stock assessments
Protect yields over the long term	Reef fish abundances from fishery-independent surveys Commercial landings
Prevent overfishing, rebuild overfished stocks	Overfishing status of managed species

Goal: Maintain socioeconomic health

Management objectives	Potential indicators
Avoid the "derby" type fishing season	Distribution of commercial catch or revenue across the year Recreational season lengths Recreational distribution of catch throughout year
Minimize conflict between user groups	Human population density Number of lawsuits
Promote stability by allowing for enhanced fisher flexibility	Year-to-year changes in ACLs Year-to-year changes in season length Metrics based on carryover provisions Year-to-year changes in IFQ program metrics (quotas, trips)
Increasing fishing opportunities to the extent practicable	Total recreational ACLs Number of recreational angler trips Number of days at sea by user group Index of catch opportunities (# species open to harvest at a time)
Maximize social and economic benefits of the fisheries	Commercial revenues Marine economy, employment and wages Trip-level economics by fleet

Goal: Avoid waste and bycatch

Management objectives	Potential indicators
Reduce dead discards, minimize waste and bycatch	Landings: discard ratio Rate of depredation
Minimize the incidental capture of finfish by shrimpers	Shrimp: fish ratio from observer database Adoption of new gear types
Promote consistency with the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA)	Bycatch and mortality estimates

Goal: Promote good governance

Management objectives	Potential indicators
Maintain accountability in the reef fish fishery	Number of annual catch limit overages Observer coverage by fishery Electronic reporting rates
Establish effective fishery reporting and data collection systems to monitor fisheries and reduce management uncertainty	Reporting compliance rates Number of amendments or FRN management actions Difference between OFL and TAC
Create a management system that minimizes regulatory delay while still adapting to changes and having public input	Number of scoping meetings Number of comments on FRN
Cost-effective and enforceable management of the fishery	Value of species outside FMPs relative to overall value of Gulf fisheries Ratio of budgets to value of fisheries

Goal: Protect habitat and ecosystem function

Management objectives	Potential indicators
Minimize adverse effects of obstructions to shrimp trawling	Number of artificial structures
Encourage habitat protection measures to avoid loss of shrimp habitat	Availability of vegetated marsh edge
Minimize adverse human impacts on coral and live bottom habitat	Coral cover Coral richness
Conserve and protect reef fish habitat	?
Increase public awareness of the importance of coral	Google trends

Risk indicators

Sea surface temperature

Atlantic Multidecadal Oscillation

Hypoxia

Zooplankton biomass

Human population

Overfishing indices

Red tide severity

At-sea storminess

Contaminants and oil spills

El Niño Southern Oscillation

Sea level rise

Primary productivity

Forage abundance

Position of the Loop Current

Hurricane activity

Fuel prices