

Mid-Atlantic EAFM risk assessment summary

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The purpose of this document is to define Risk Elements considered Mid-Atlantic Council's Ecosystem Approach to Fisheries Management (EAFM) initial risk assessment.

A **Risk Element** is an aspect that may threaten achieving the biological, economic, or social objectives that the Council desires from a fishery. By that definition, some risk elements may move up or down in priority as conditions change or new information becomes available. Thus, it is important to note that EAFM Risk Assessment will be a dynamic and evolving process that will need to be revisited and updated in future years.

The Council selected a range of risk elements to be evaluated at either the managed species level (most), the fleet level (some), or the ecosystem level (few). An overview of the risk elements with definitions and associated indicators as discussed by the Council's Ecosystem and Ocean Planning (EOP) Committee and Advisors is presented below.

Risk Element	Definition: Risk to what?	Indicators used
<i>Ecological</i>		
F status	Risk of not achieving OY due to overfishing	Current F relative to reference F from assessment
B status	Risk of not achieving OY due to depleted stock	Current B relative to reference B from assessment
Assessment performance	Risk of not achieving OY due to analytical limitations	Current assessment method/data quality
Food web (1)	Risk of not achieving OY due to MAFMC managed species interactions	Food web model outputs, management measures
Food web (2)	Risk of not achieving protected species objectives due to species interactions	Food web model outputs, management measures
Ecosystem productivity	Risk of not achieving OY due to changing system productivity	Four indicators, see text
Climate	Risk of not achieving OY due to climate vulnerability	Northeast Climate Vulnerability Assessment
Distribution shifts	Risk of not achieving OY due to climate-driven distribution shifts	Northeast Climate Vulnerability Assessment + 2 indicators
Estuarine habitat	Risk of not achieving OY due to threats to estuarine/nursery habitat	Enumerated threats + estuarine dependence
Offshore habitat	Risk of not achieving OY due to threats to offshore habitat	Integrated habitat model index
<i>Economic</i>		
Commercial Profits	Risk of not maximizing fishery value	Revenue by fleet
Recreational Value	Risk of not maximizing fishery value	Revenue by fleet, Numbers of anglers and trips in aggregate
Fishery Resilience (1)	Risk of reduced fishery business resilience	Species diversity of revenue

Risk Element	Definition: Risk to what?	Indicators used
Fishery Resilience (4)	Risk of reduced fishery business resilience due to shoreside support infrastructure	Number of shoreside support businesses
Commercial Employment	Risk of not optimizing employment opportunities	Fisheries of US employment in aggregate
Recreational Employment	Risk of not optimizing employment opportunities	Fisheries of US employment in aggregate
<i>Social</i>		
Social-Cultural	Risk of reduced community resilience	Community vulnerability, fishery engagement and reliance
<i>Food Production</i>		
Commercial	Risk of not optimizing seafood production	Seafood landings in aggregate
Recreational	Risk of not maintaining personal food production	Recreational landings in aggregate
<i>Management</i>		
Control	Risk of not achieving OY due to inadequate control	Catch compared to allocation
Interactions	Risk of not achieving OY due to interactions with species managed by other entities	Number and type of interactions with protected or non-MAFMC managed species, co-management
Other ocean uses	Risk of not achieving OY due to other human uses	Fishery overlap with energy/mining areas
Regulatory complexity	Risk of not achieving compliance due to complexity	Number of regulations by species
Discards	Risk of not minimizing bycatch to extent practicable	Standardized Bycatch Reporting
Allocation	Risk of not achieving OY due to spatial mismatch of stocks and management	Distribution shifts + number of interests
<i>Put Aside</i>		
Population diversity	Risk of not achieving OY due to reduced diversity	Size composition, sex ratio, genetic diversity
Ecological diveristy	Risk of not achieving OY due to reduced diversity	Fishery independent species diversity
Fishery Resilience (2)	Risk of reduced fishery business resilience due to access to capital	No current indicator available
Fishery Resilience (3)	Risk of reduced fishery business resilience due to insurance availability	No current indicator available
Fishery Resilience (5)	Risk of reduced fishery business resilience due to access to emerging markets/opportunities	Needs clarification
Seafood safety	Risk of not maintaining market access, human health	Number of public advisories by species