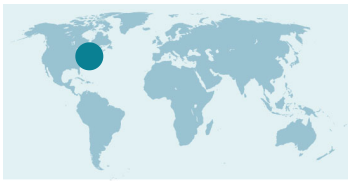


9 | Active Harvest Strategy

Atlantic Herring



Management Authority:

United States Domestic Fisheries

Adoption Year:

2019

Management Objectives:

- $SSB/SSB_{MSY} = 100\%$, with an acceptable level as low as 85%;
- Variation in annual yield is $<10\%$, with an acceptable level as high as 25%;
- Probability of overfished 0%, with an acceptable level as high as 25%;
- Probability of herring fishery closure between 0-10%.

Reference Points:

Upper biomass parameter (overfished threshold): $50\%SSB_{MSY}$

Lower biomass parameter (closes fishery): $10\%SSB_{MSY}$

Maximum fishing mortality: $80\%F_{MSY}$

Harvest Strategy:

Measure includes only a harvest control rule as opposed to a full harvest strategy.

Specifications:

- **Type:** Model-based
- **Management cycle:** 3 years, but quota may be different each year
- **Data Inputs:** Recruitment estimates derived from 1995 VPA, mean weights at age, surplus production model
- **Management output:** Quota
- **Harvest control rule:** When biomass is greater than 50% of SSB/SSB_{MSY} , the maximum fishing mortality allowed is 80% of F_{MSY} , so 20% of F_{MSY} is left for herring predators. As biomass declines further, fishing mortality declines linearly, and if biomass falls below 10% of SSB/SSB_{MSY} , the fishery closes.

Outcome:

The MSE-tested HCR was implemented for the first time in 2019. Following accounting of the 2020 catches, catch limits decreased for 2022 due to overages in 2020.

Link to relevant policy document or update:

[Atlantic Herring Fishery Management Plan: Management Strategy Evaluation Debrief Final Report \(https://s3.amazonaws.com/nefmc.org/3_Herring-MSE-debrief-final-report.pdf\)](https://s3.amazonaws.com/nefmc.org/3_Herring-MSE-debrief-final-report.pdf)