

Ocean Quahogs and Risk Policy

Discussion Topic #3

Joint Meeting of the
Scientific and Statistical Committee and
Mid-Atlantic Fishery Management Council
October 6, 2020

“Natura nihil agit frustra.”

Nature does nothing in vain.

Thomas Browne, 1643



- Life histories of all species are shaped by their environments.
- Maximum age of ~500 years suggests adaptations for the long run
- Period of human’s study for this species is a fraction of its lifespan
- Ocean Quahog: lifespan is more than 10x longer than other species that Council manages

Concerns about Council Risk Policy

- Under current risk policy, the stock may be fished at level that has a 49% risk of overfishing because $B/B_{msy} > 1.5$
- Current fishing mortality is low, but scientist's estimates of overfishing threshold are uncertain. (It's only been studied for about 5% of the maximum lifespan)
- Elimination of the "atypical" species from the Council's Risk Policy treats Butterfish and Ocean Quahog with the same risk of overfishing.

The Dilemma—

Council Risk Policy vs SSC OFL-CV

- ABC has a 49% probability of overfishing.
 - If estimates of stock size or Fmsy proxies are too high, overfishing could occur
- Increase OFL-CV?
 - Process of assigning appropriate CV based on 9 factors
 - Can't arbitrarily change without violating the integrity of the science
 - AND when P^* is 0.49, the ABC/OFL ratio is insensitive to OFL CV. Even a CV of 500% reduces ABC by only 3%
- Reduce OFL?
 - Revises results of peer review process to fit a desired outcome \neq Science

The Good News

- We have time to work on this since the assessment suggests almost no chance of overfishing or becoming overfished in the next 5 years.
- Survey has been improved and model appears to be stable with respect to scale.
- Aging of samples continues and suggests broad range of recruiting age classes.
- Selectivity to fishery occurs after age and size at first maturity
- Current harvest levels are below ABC.

What's next?

- Ongoing work on aging of Ocean Quahogs to help establish patterns of recruitment and growth.
- Highlight the interaction between risk and uncertainty and need to fine tune policy.
- Review harvest strategy for Ocean Quahogs