

Massachusetts Center for Agriculture

University of Massachusetts Amherst

Fecundity & Egg Size Variation of Atlantic Cod on Georges Bank & in the Gulf of Maine

Issue

Atlantic cod stocks off the New England coast have been heavily exploited for the last 40 years and have recently shown huge declines in abundance. Before this study, no published fecundity estimates existed for any of the southern cod stocks other than an outdated estimate for the Gulf of Maine cod.

Impact

Our results will be useful for future stock assessments and to compare with estimates derived from northern Canadian and North Sea stocks. We have also shown that Georges Bank and the Gulf of Maine stocks (GBGOM) also exhibit differences in fecundity which parallel their differences in growth, feeding and condition, and age at maturity, indicating a trade-off between

growth and fecundity among stocks. Current population sizes of GBGOM cod are low, making the collection of our fecundity and egg size variation data particularly critical. These data will serve as a baseline for later comparisons when stocks rebound and as a way to test for the strength of density-dependent effects. Most importantly, our results will be used to refine age-structured estimates of spawning potential for the Georges Bank cod stock. We have also evaluated the size distributions of cod eggs as a function of female age and length. These results suggest that older sexually-mature cod produce larger, more viable eggs than younger first-time spawners. Our project also developed a modern methodology which will allow collection of fecundity and egg size data for a variety of key resource

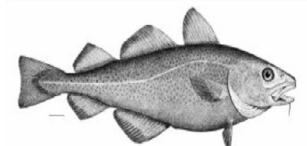
species (including haddock) in a simpler and more cost-effective way than has been possible before.

Primary impact area(s)

- Research
- Education
- Extension

Funding sources

- Hatch



Topics

- Atlantic Cod
- Fecundity
- Egg Size Variation

Contacts

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