

Research Priorities and Recommendations to Support Interjurisdictional Fisheries Management

ATLANTIC CROAKER

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Fishery-Dependent Priorities

High

- Encourage fishery-dependent biological sampling, including extraction of ageing structures, to improve age-length keys. Age-length keys should be representative of all gear types in the fishery. Supplement underrepresented length bins with additional ageing samples to avoid the necessity of weighting length-at-age estimates by length frequencies.
- Obtain gear specific effort information and improve fishery-dependent catch and effort statistics and catch size and age structure.
- Recover detailed historical landings data from NOAA as indicated by historical summaries.

Moderate

- Develop and implement state-specific commercial scrap fisheries monitoring programs to evaluate relative importance of croaker in scrap landing.
- Conduct studies on discard mortality from varying gears in recreational and commercial fisheries.
- Assess and monitor the effects of bycatch reduction devices (BRD's) on croaker catch.
- Monitor fisheries with significant croaker bycatch and determine extent of unutilized bycatch and F on fish less than age 1.
- Determine the onshore versus offshore components of the croaker fishery.
- Increase observer coverage of commercial discards.

Fishery-Independent Priorities

Moderate

- Expand fishery-independent surveys and subsample for individual weights and ages, especially in the southern range.
- Continue monitoring juvenile croaker populations in major nursery areas.
- Develop coastwide juvenile croaker indices to clarify stock status.

Modeling / Quantitative Priorities

High

- Develop size, age, and sex specific relative abundance estimates from fishery-independent and fishery-dependent data.
- Identify and evaluate environmental covariates in stock assessment models.

Moderate

- Incorporate bycatch estimates into croaker assessment models.

- Analyze croaker YPR to establish a minimum size that maximizes YPR.

Life History, Biological, and Habitat Priorities

High

- Conduct studies on fecundity and reproductive dynamics and develop maturity schedules.¹
- Conduct studies on growth rates and age structure throughout species range.
- Conduct collaborative coastwide genetics and tagging studies to determine migratory patterns, stock identification, and stock mixing.

Moderate

- Identify essential habitat requirements.
- Re-examine historical ichthyoplankton studies of the Chesapeake Bay for an indication of the magnitude of estuarine spawning

Low

- Determine species interactions and predator-prey relationships between croaker (prey) and predator species targeted in more valued fisheries.
- Assess the impacts of any dredging activity (i.e., for beach re-nourishment) on all life history stages of croaker.

Management, Law Enforcement, and Socioeconomic Priorities

Moderate

- Determine the optimum utilization (economic and biological) of a long term fluctuating croaker population.
- Evaluate socioeconomic aspects of croaker fisheries.

¹ Work by Fabrizio and Tuckey examining the effects of hypoxia on reproduction of Chesapeake Bay croaker in progress.