

Research Priorities and Recommendations to Support Interjurisdictional Fisheries Management

BLACK SEA BASS

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Fishery-Dependent Priorities

High

- Increase sampling of commercial landings.
- Increase sample size of at sea observers and dockside validation for headboats. Increase recreational fisheries sampling.
- Determine depth, temperature, and season specific discard mortality rates. Assess and incorporate the impact of circle hook fishing regulations on discard mortality. Obtain more depth specific information from the private recreational fleet, MRIP At-Sea observer program, and Headboat Survey in the range of the southern stock.

Moderate

- Collect better spatial information in black sea bass fisheries to determine potential localized depletion effects.

Low

- Determine the impact/landings of the historical foreign fleet in the South Atlantic.

Additional Fishery-Dependent Priorities

- Develop hard part sampling coordinated with intercept surveys.
- Expand electronic reporting of headboat logbook for full implementation.

Fishery-Independent Priorities

High

- Conduct a pot survey throughout the range of the northern management unit and consider for an index of abundance.¹
- Expand fishery-independent surveys to sample all sizes and age classes to develop more reliable catch-at-age and CPUE.
- Expand sampling to cover the entire range of the southern stock over a longer time period.

Additional Fishery-Independent Priorities

- Conduct at sea sex sampling to determine trend of sex change timing and assess the potential influence of population size on sex switching.²

¹ A pilot project is ongoing and proposals are being considered for funding to expand the program.

² The NEFSC and UMass-Dartmouth are working on trends in sex change timing for the northern stock and UNC-Wilmington is working on the same for the southern stock.

Modeling / Quantitative Priorities

High

- Investigate the effect of sex transition rates, sex ratio, and differential M by sex on the calculations of SSB per recruit and eggs per recruit.

Moderate

- Explore alternative assessment models, including non-age based alternatives.

Additional Modeling / Quantitative Priorities

- Continue development of a standardized method for calculating incomplete weight data.
- Further develop the tagging model described by Rudershausen et al. (2010) to address the assumptions of the model.

Life History, Biological, and Habitat Priorities

High

- Analyze size or age specific spawning frequency and seasonality.
- Investigate the movement and migrations of black sea bass using otolith microchemistry, genetic studies, and expanding tagging studies.
- Conduct meta-analysis of patterns of M in protogynous fishes, specifically black sea bass. Determine sex specific mortality rates and growth rates.
- Determine the implications of removing large males on population dynamics through field studies or large scale mesocosm experiments.
- Conduct studies on the efficacy of recompression techniques such as venting to reduce discard mortality.
- Study the movement and mixing of larval and juvenile black sea bass in the southern stock.

Moderate

- Further delineate essential fish habitat (EFH), particularly in nursery areas. Further investigate possible gear impacts on EFH.
- Identify transport mechanisms or behaviors that transport early juvenile black sea bass into estuaries.
- Evaluate overwintering habitat of all black sea bass life stages.
- Evaluate feeding of black sea bass larvae and overwintering adults.
- Develop mariculture techniques.

Low

- Conduct studies determining the value of artificial reefs for increased production of black sea bass to improve potential yield estimates.

Additional Life History, Biological, and Habitat Priorities

- Continue ageing studies to provide a foundation for an age based assessment. Compare scale to otolith age estimates.
- Conduct ageing validation studies to examine the implications of sex change, as well as temperature and salinity changes associated with movement onshore and offshore, on ageing reliability.
- Continue genetics work to determine potential stock delineation in the northern range.

Management, Law Enforcement, and Socioeconomic Priorities

- Evaluate the potential influence of non-compliance on high assumed M.

- Analyze logbook programs to determine current compliance and develop recommendations for improving compliance (i.e., increased education on the effect of not reporting accurately).
- Continue evaluation of methodology for mandatory reporting in the For-hire sector (e.g., Gulf MRIP Pilot).