Research Priorities and Recommendations to Support Interjurisdictional Fisheries Management

SPOT

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Fishery-Dependent Priorities
High
- Conduct state monitoring and reporting on the extent of unutilized bycatch and fishing mortality on fish less than age 1 in fisheries that take significant numbers of spot.
- Improve spot catch and effort statistics from the commercial and recreational fisheries, along with size and age structure of the catch, in order to develop production models.
- Determine the onshore versus offshore components of the spot fishery.
- Evaluate the effects of mandated BRDs on spot catch in those states with significant commercial harvests.¹

Fishery-Independent Priorities
High
- Begin collection of otoliths from the NMFS and SEAMAP surveys and continue collection of otoliths from the NEAMAP survey.²
- Develop cooperative coastwide spot juvenile indices to clarify stock status.
- Continue monitoring long-term changes in spot abundance, growth rates, and age structure.
- Continue monitoring juvenile spot populations in major nursery areas.

Modeling / Quantitative Priorities
High
- Develop fishery-dependent and fishery-independent size and sex specific relative abundance estimates.³
- Develop catch-at-age matrices for recreational and commercial fisheries.
- Develop stock assessment analyses appropriate to current data.
- Cooperatively develop a YPR analysis.

¹ North Carolina began a statewide characterization study of the commercial shrimp trawl fishery in August 2012 that will be conducted through June 2014, including discard mortality data collection.
² Personnel to process and age these collected otoliths should be identified.
³ Some recent data from South Carolina is available for this work.
Life History, Biological, and Habitat Priorities

High
- Add the North Carolina commercial and fishery-independent (gill net survey) data that were unavailable at the data workshop to the life history analyses.\(^4\)
- Process and read the backlog of otoliths collected from the Maryland and North Carolina commercial fisheries and the NEAMAP Survey.\(^5\)
- Continue evaluation of size and age at maturity.\(^6\)
- Define reproductive output based on fecundity and spawning periodicity.\(^7\)
- Conduct age validation studies.\(^8\)
- Organize an otolith exchange between the major spot ageing labs (ODU/SCDNR/NCDMF). If there are differences in age assignments, hold a spot ageing workshop to establish a coastwide ageing protocol.
- Determine the effect that anthropogenic perturbations may be having on growth, survival, and recruitment.
- Develop stock identification methods and investigate the degree of mixing between state stocks during the annual fall migration (genetic and tagging studies).\(^9\)

Moderate
- Evaluate natural mortality by age once confident that otoliths have been aged consistently between labs.
- Conduct discard mortality studies for gears used in the recreational and commercial fisheries.\(^76\)

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\(^4\) See Kevin Brown (NC DMF) for the available data.
\(^5\) North Carolina backlog through 2011 is processed and aged.
\(^6\) Age, growth, and reproduction work done in South Carolina thesis project.
\(^7\) Some maturity schedule data available from South Carolina.
\(^8\) South Carolina age validation study completed in 2012.
\(^9\) Archived genetic samples available in South Carolina.