Shrimp Review Panel Report

South Atlantic Fishery Management Council

March 2011

South Atlantic Fishery Management Council

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Background

The Shrimp Review Panel (SRP) met via conference call on March 2, 2011, to address the potential closure of EEZ waters adjacent to South Carolina and Georgia to protect overwintering penaeid shrimp. The Shrimp FMP allows for a concurrent closure of the EEZ adjacent to those South Atlantic states that have closed their waters to the harvest of penaeid shrimp to protect overwintering stocks when they have been depleted by cold weather.

South Carolina closed state waters to the 3-mile beach radar line on December 31, 2010, and closed remaining state waters between the 3-mile line and the "Scalloped Line" on January 10, 2011. South Carolina intends to request that the Council recommend concurrent closure of the EEZ. Georgia closed state waters on January 11, 2011, and will most likely not request a concurrent EEZ closure.

White Shrimp (*Litopenaeus setiferus*)

South Carolina. An extended period of cold water temperatures began in mid-December 2010, with temperatures near or below the critical level (8.3°C) (**Figure 1**); more than a week of 8.3°C increases shrimp mortality. Reports from the public and South Carolina Department of Natural Resources (SCDNR) staff observations indicate an increase in dead shrimp in the water and onshore.

Trawl sampling by the SCDNR during the cold-water event showed decreasing abundance of shrimp in four samples from mid-December to mid-February, with no shrimp occurring in the samples since January 19 **(Appendix A, Table A-1)**. Compared to 2001 (**Appendix A, Table A-2**), the catch rates from SCDNR trawl samples are lower in the 2010-11 surveys.

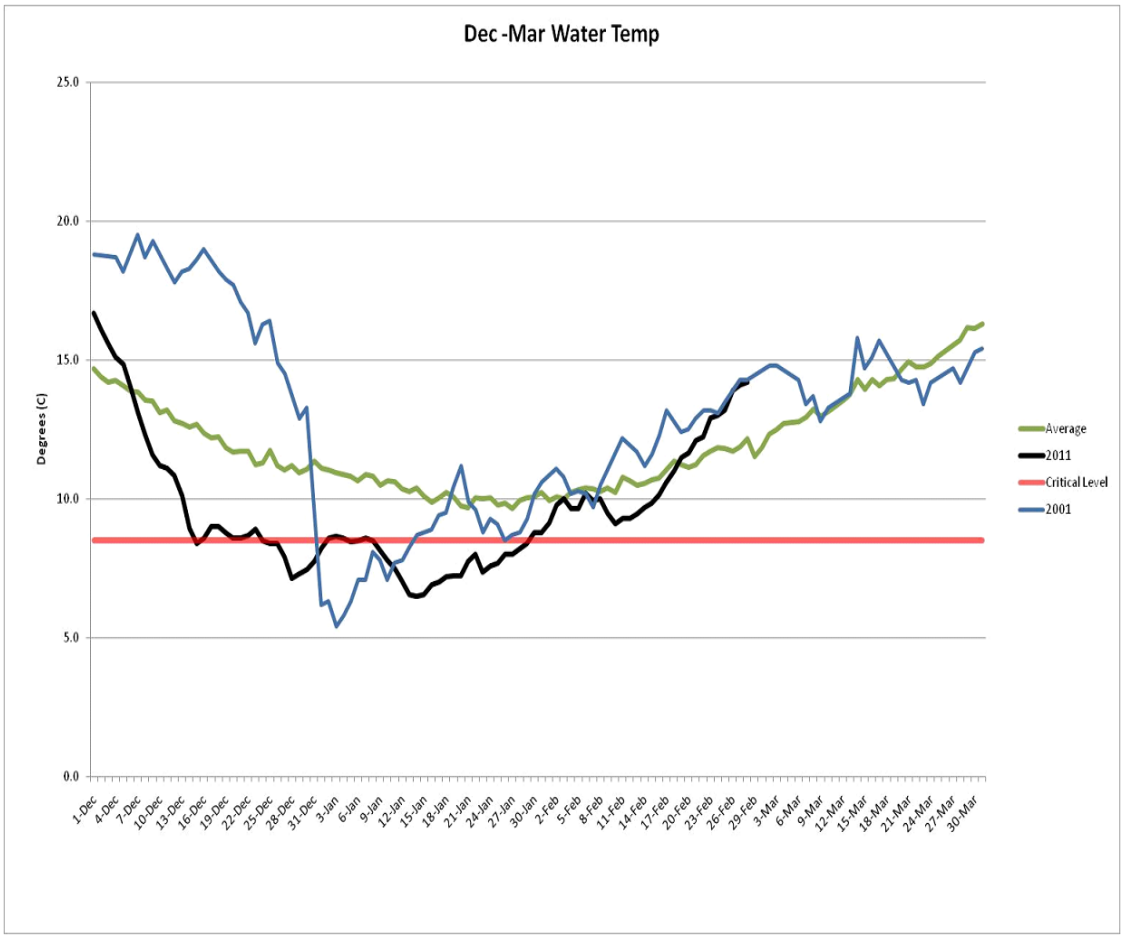

Figure 1. Water temperature in Charleston Harbor, 1950-present average, 2000-01, and 2010-11.

Sampling in South Carolina showed an overall decline of 100% in catch per unit effort (CPUE) from December 2010 to February 2011 **(Table 1**). In comparison, a decline of 99% in CPUE was observed in 2000-2001 when a concurrent closure of the EEZ off South Carolina took place. Further sampling is planned for March but an improvement is not expected, based on past events.

Table 1. Summary of catch rates from 20-foot trawl samples collected from South Carolina for the current season and the most recent season that the EEZ was closed.

Year	Average Number of White Shrimp collected in December	Average Number of White Shrimp collected in February	Percent Reduction (Dec. cpue-Feb. cpue)/Dec. cpue
2010-2011	975.0 (n=23 tows)	0 (n= 24 tows)	100%
2000-2001	147.6 (n= 21 tows) *	1.1 (n=21 tows) *	99%

* 2 nets

Reports from the public in January indicate dead shrimp in cast nets, crab pots, and on the bottom. SCDNR staff also observed dead shrimp on beaches, and seagulls feeding on stunned shrimp. The conditions are similar or worse than 2001 (the last concurrent EEZ closure for South Carolina).

Georgia. White shrimp catch data show that abundance has declined since December 2010, and by February all sectors (creek, sounds, and beach strata) were significantly below the February long-term monthly average (**Appendix B, Table B-1**). Shrimp have been average or larger than the long-term average for each month, with count sizes lower than the historical average (**Appendix B, Table B-2**). Georgia has experienced 12 days with water temperatures below 8.5 ^{o}C so far, and although temperatures are below average, February temperatures were only 5% lower than normal (**Appendix B, Table B-3**). Preliminary data for March (6 of 42 sampling sites) revealed water temperatures 2°C above average for the month). Additionally, salinity data show that creeks and sounds were slightly above average for February, while beaches are just 2% below average (**Appendix B, Table B-4**).

The Georgia Department of Natural Resources (GADNR) conducts a monthly trawl survey at 42 sites using a 40-foot net with 1 7/8" mesh, and towing for 15 minutes (**Appendix B, Table B-5)**. There has been a 97% drop in CPUE (kg/trawl) between December 2010 and February 2011 (**Table 2**). Most of the December sampling occurred prior to the cold snap in that month.

Table 2. Summary of CPUE from 40-foot trawl samples, stratified by area, from current season in Georgia.

Year	CPUE (kg/15-minute tow) in December	CPUE (kg/15-minute tow) in February	Percent Reduction (Dec. cpue-Feb. cpue)/Dec. cpue
2010-2011	5.32	0.14	97%

The cold temperatures and rain during December may have pushed shrimp offshore and south, as North Florida has reported an abundant harvest this winter. Evidence for this are the December offshore CPUE 227% above average (**Appendix B, Table B-1)**, with both sound and creek sectors significantly below average. The spring spawn of white shrimp is not always indicative of fall recruitment, and as such GADNR does not think the Fall shrimp crop will be affected by a bad overwintering spawning stock. The winter freeze kill of 2001 produced nine consecutive months of significantly below-average CPUEs (Nov 2000- July 2001). However, CPUEs for Fall 2001 were at or above average. At this time, GADNR believes an extended closure of state waters (late June) will be sufficient to protect the stock. The State will most likely not request a concurrent EEZ closure.

Conclusions

1. After reviewing the data, the Panel concludes that both South Carolina and Georgia meet the criteria to request a concurrent closure of the EEZ. The State of South Carolina has closed state waters, and the Panel recommends that the Council support a concurrent closure should the State request one. The State of Georgia has also closed state waters and the CPUE has dropped to below the 80% threshold, but at this time will most likely not request a concurrent closure of the EEZ.

2. The Shrimp Review Panel discussed the possibility of concurrent EEZ closures without a Council meeting, and developing a mechanism to allow this. This follows with the Panel's 2010 recommendation to the SAFMC for a mechanism to allow state managers to request an *immediate* closure of adjacent EEZ waters under certain circumstances. The Panel recommends this issue be addressed in the near future.

3. The Panel also recommends the issue of redefining overfishing for pink shrimp be addressed in the near future.

References

SAFMC (South Atlantic Fishery Management Council). 2004. Amendment 6 to the Fishery Management Plan for the Shrimp Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 256 pp. + appendices.

Attendees:

Shrimp Review Panel: Larry DeLancey, Patrick Geer, Rick Hart, Aaron Podey for Bill Teehan, and Gregg Waugh.

Others: Pierce Webster, SEAMAP
Julie Califf – GA
Jim Page – GA
Jason Edwards, GA
Kari MacLauchlin, SAFMC Fisheries Social Scientist