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Final Report of Fishery Resource Grant Project 2012

Conducted by George Trice

Project Title: Testing Raised Footlines in Virginia's Striped Bass Fishery: A Gear Based Method of Reducing Sturgeon Interactions in Anchored Gill Nets.

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Brief Summary

This project was conducted over a period of 39 days using two different net configurations and fishery locations in order to test methodologies to reduce the bycatch of Atlantic sturgeon while not affecting the striped bass fishery. Nets were hung using conventional methods allowing the net to rest on the bottom of the waters. Experimental nets were hung with a 3' bottom panel with no mesh allowing bottom dwelling fishes to swim under the "floated" net mesh. Nets were hung using mesh sizes ranging from 5.5" to 8". All catch was recorded and compared to determine the effects of the different hanging methods and fishing locations.

Methods

In this project nets were hung using mesh sizes of 5.5", 6", 7" and 8". Nets were hung in 300' sections. Standard nets were hung using conventional gill net methods that allow the net to sink completely. An identical net of each mesh size was also hung using an experimental method of raised footlines, thereby creating a "float net". Nets having the raised footlines were floated 3' from the bottom. Each net configuration was duplicated in both fishing locations (i.e. traditional Atlantic sturgeon area and striped bass area).

All nets were set over a 24 hour period. Gear location (i.e. traditional striped bass area vs. Atlantic sturgeon aggregation area), water temperature and other effecting conditions such as severe weather and tides were recorded. All catch was identified, measured and counted. When permitted, all Atlantic sturgeon caught were measured and DNA was collected. All released sturgeon were given a T-tag and PIT-tag when permitted. When permitted Atlantic sturgeon mortalities were given a T-tag and taken to VIMS for further research purposes. All data were recorded and analyzed to determine the efficiency of the compared nets and gear location with Atlantic sturgeon.

Analysis

A total of 686 striped bass were caught with 433 (63%) caught in conventional nets versus 253 (37%) caught in the experimental nets. The Atlantic sturgeon bycatch, however, was greatly affected by the different hanging methods. Standard net configurations caught over 2X as many Atlantic sturgeon compared to experimental configurations. A total of 31 Atlantic sturgeon were caught using the two listed methods with 22 (72%) caught in standard net configurations and only 9 (28%) in the experimental "float" configuration. There was a total of three (10%) Atlantic sturgeon mortalities during the study, two in standard configuration and one in experimental configuration.

Traditional striped bass fishing areas caught 108 (16%) more striped bass compared to the Burwells Bay "Atlantic sturgeon" area. However, over 5X as many Atlantic sturgeon were caught in the Burwells Bay area (n = 22) compared to conventional striped bass fishing areas (n = 5).

In addition, 3100 invasive blue catfish were caught during the study period with catches being equal in both net types.

Conclusions

Upon completion of this project it appears that use of the experimental raised footline nets will aid in lowering the Atlantic sturgeon bycatch, while not greatly affecting the striped bass fishery. Dragging of experimental nets was a factor during the previous year, however, by increasing lead line weight from 75lb per 600' to 100lb per 600' net dragging in conventional striped bass fishery areas was greatly reduced. It is recommended that a heavier lead line be used on the experimental net configuration to keep nets from dragging.

It is important to note that areas traditional fished for Atlantic sturgeon projects during previous years accounted for 84% of Atlantic sturgeon collections during this year's study, an area rarely (if ever) fished using gill nets by other commercial fishers. This is the first year that Atlantic sturgeon bycatch was recorded where traditional striped bass fisheries are conducted. Another important note is that Atlantic sturgeon were not encountered during typical striped bass fishery harvest times. Over 80% of Atlantic sturgeon in this study were encountered after most commercial fishers have filled their quotas. Taking into account following typical striped bass fishery techniques (fishing time of year and location) only one Atlantic sturgeon would have been encountered. These new data imply that previous approximations of high Atlantic sturgeon bycatch in the striped bass fishery are over estimated. Future work monitoring traditional striped bass fishery areas and time frames are required to generate a more accurate bycatch depiction for management.

Final Summary

Importantly, for the 9th year in a row, this FRG sturgeon project documents Atlantic sturgeon inhabiting the James River. However, during previous years all efforts were towards targeting collections of Atlantic sturgeon while this is the first year that the actual striped bass fishery was at least marginally mimicked. To that point, it should also be noted that of the Atlantic sturgeon collections that did occur,

most are not attributable to the temporal, spatial and physical characteristics of a normally prosecuted striped bass fishery.

Signature Davey J. Smith Date 7-13-12