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Analysis of Tie Downs on Gillnet CPUE, Selectivity and Bycatch Composition

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Fishery Resource Grant Program Final Report 2010

Project Title: Analysis of Tie Downs on Gillnet CPUE, Selectivity and Bycatch Composition

Name of PI: George Earl Trice IV

Give a brief summary of the project.

The striped bass fishery is of great economic importance to Virginia's commercial finfishermen and anchored gill nets are the predominant gear used in both coastal and estuarine waters. Unfortunately, these nets have the highest rate of Atlantic Sturgeon bycatch (85%) compared to other Virginia gear types (NMFS) and the second largest bycatch recorded by NMFS Northeast Observer Network coastally. High Atlantic Sturgeon interaction rates could result in seriously restrictive regulations being imposed on the fishery or even complete closure, one Atlantic Sturgeon are listed under the Endangered Species Act as has been proposed. Such regulations have been made in order to reduce the bycatch of Harbor Porpoise. This particular regulation requires that nets being set outside of the Chesapeake Bay Bridge Tunnel be tied down to no more than 48" high. In this study we tested the effects of these tied down nets on the Striped Bass catch and Sturgeon Bycatch.

What work did you intend to do, and how did you plan to accomplish it?

We intended to conduct a survey in the James River in Burwells Bay in March – late May using control gear that duplicates efforts by the FRG from 2005-2009 with the addition of tying down half of the nets fished. We fished 38 days using nets with mesh sizes ranges from 5.5 to 12". We tied down a net of each mesh size and left a net of each mesh size untied. We intended to record the effects of both net variations on the catch of Striped Bass as well as Atlantic Sturgeon. We also intended to t-tag and pit tag all living Sturgeon. As well as remove DNA from and record the status of all Sturgeon caught.

What was accomplished?

The objectives we accomplished were;

1) We observed and recorded the catch for 272 net sets. 36 of these sets were dependent nets and 236 were fisheries independent nets. Of the 236 independent nets, 118 were tied down every 15' reducing them to a height of 45". In this study we found, that the Striped Bass catch was greater in the nets that had not been tied down. The 5.5" nets caught 142 untied and 115 tied, the 6" nets caught 117 untied

and 80 tied, the 7" caught 38 untied and 28 tied, the 8" caught 23 untied and 9 tied. Sturgeon catch was also recorded and compared. There was a total of 46 Sturgeon caught during this study, 27 of which were caught in tie down nets and 10 were caught in untied nets . The remaining sturgeon were caught in dependent nets.

2)Net composition was recorded and species identified, counted, and total length measured.

3) All Sturgeon were measured and DNA was removed from each. All alive Sturgeon were tagged using T bar tags and PIT tags.

4)38 Days of fishing were accomplished. Samples were collected from 3/23/2010-5/25/2010 in the Burwell Bay Area.

5)All data was entered into a preexisting access program in format used for 2005-2008 data .

6)DNA samples were turned over to Albert Spells of FWS. All Sturgeon Mortalities were given to Eric Hilton of VIMS and Albert Spells of FWS for further examination.

Conclusion

In this study we found that the effects on the tied down nets varied by species. The tied down nets caught fewer striped bass but more Sturgeon. The tied down nets also had an effect on the mortality rate of Sturgeon raising it slightly more than the nets that were not tied. I feel it would be beneficial to do further studies on the effects of these nets on Striped Bass fisheries.

Signature: _____ Date _____

George Trice