Report of the Science and Research Synthesis of Invasive Catfish Working Group Spring 2022 meeting

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The Science and Research Synthesis subcommittee (SRS) of the Invasive Catfish Working Group (ICW) is composed of 15 members, and 11 members (highlighted) attended the meeting.

Proposed agenda:
1. Discuss VMRC biological and catch sampling design and sample size.
2. Update of the invasive catfish new projects, ongoing progress, research needs, and funding sources (potential collaboration).
3. Discuss a short document on recent progress on invasive catfish in the Bay that may be shared with the ICW committee.

The spring 2022 committee meeting met on March 9 afternoon. The meeting followed the proposed agenda items. Below please find the committee discussion summary for each item.

1. Discuss VMRC biological and catch sampling design and sample size.

According to Alexa Galvan, VMRC plans to collect the biological sampling of blue catfish and catch subsampling on the catch size structure. Ethan Simpson is in charge of sampling blue catfish, including sampling design at VMRC. Yan Jiao did a simulation study based on the growth data collected by VDWR to illustrate how uncertainty may change when sampling size changes. Such a simulation is to help recommend an appropriate sampling intensity given effort available and precision expectation. Similar simulations can be done for catch size or age structure subsampling also. Prior knowledge of the type of fishery, the harvest of each type, the number of fishers, and their fishing effort distribution across seasons and rivers should help a meaningful simulation that mimics the blue catfish fisheries in the Virginia tidal rivers.

Ethan Simpson, who is in charge of sampling blue catfish, indicated that the needed blue catfish ageing effort is likely higher than what the current staff at VMRC can handle. Margi Whitemore

from DWR said that DWR has a long history of sampling age and length of blue catfish from late July to August and can coordinate with VMRC on the biological sampling program in the future. Ethan also indicated that VMRC has planned catch age/size structure subsampling based on gears and tributaries.

The biological sampling will include age, length, weight, sex, and maturity of the fish. The committee discussed whether fecundity should also be analyzed in the biological sampling. Overall the committee felt that the maturity and fecundity variation across space (spawning ground or not) and time (spawning season or not) can be a problem, and sampling fecundity is not of high priority. The work done by Nepal and Fabrizio (2021) may be used in the future when fecundity information is needed. Mary and Vaskar also suggested that extra larger fish samples (>60-70cm) during spawning season will further benefit their existing study on blue catfish maturity and fecundity. Representatives from VMRC and DWR discussed the strategies to collect larger fish during the spawning season.

During the discussion, there were suggestions for future study or questions to be answered. David Secor and several others discussed the potential to compare the differences in the blue catfish biological characteristics on the Maryland side. Christine Densmore and Corbin indicated the ongoing work that they knew or got involved. There are ongoing works that will be updated in the near future.

2. Update of the invasive catfish new projects, ongoing progress, research needs, and funding sources (potential collaboration).

No further update on new projects and ongoing progress after December 2021 (see the committee report in Dec 2021).

As to the potential funding sources, Christine Densmore talked about a social-economic analysis of blue catfish fishery. Shelby White and Andrew Scheld at VIMS are conducting a socio-economic survey on the value of blue catfish fishery in the Chesapeake Bay region. However, not enough social or economic science scientists were in the meeting, so not further elaborated.

David Secor suggested a collaborative proposal with Delaware and Maryland to explore the blue catfish threat to sturgeon in the mid-Atlantic region. David also suggested using side-scan sonar to estimate the abundance of blue catfish.

3. Discuss a short document on recent progress on invasive catfish in the Bay that may be shared with the ICW committee.

Mary Fabrizio, Vaskar Nepal, and Corbin Hilling prepared a short document to describe the recent progress on invasive catfishes in the Bay. The document couldn’t be shared with the committee before the meeting.

References:

Nepal, V., and M. C. Fabrizio. 2021. Reproductive Characteristics Differ in Two Invasive Populations of Blue Catfish. North American Journal of Fisheries Management 41(Special Issue 1):S180-S194.