Atlantic States Marine Fisheries Commission

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# MEMORANDUM

**TO:** **Shad and River Herring Management Board**

**FROM:** **Shad and River Herring Technical Committee**

**DATE:** **April 26, 2021**

**SUBJECT:** **Recommendations on American Shad Habitat Plan Updates**

Amendment 3 to the Shad and River Herring FMP requires all states and jurisdictions to submit a habitat plan for American shad. A majority of the habitat plans were approved by the Shad and River Herring Management Board (Board) in February 2014, and it was anticipated that they would be updated every five years. The states began the process of reviewing their American shad habitat plans and making updates in 2020, however, many states encountered delays due to COVID-19. At the February 2021 Board meeting, the following habitat plan updates were approved: ME, NH, MD, NC, Savannah River, and GA.

For the May 2021 Board meeting, six additional habitat plan updates have been submitted for Board consideration: MA, RI, CT, Delaware River, SC, and FL. The updates that were made to each plan are summarized in the sections below. The TC reviewed these plans via email in April 2021, and recommends Board approval of all six plans.

**Massachusetts Coastal Rivers Shad Habitat Plan**
The updated plan is a major overhaul to the first MA habitat plan, including lots of editing in each section to try to bring the plan more in line with what ASMFC is looking for. Rivers have been added that have known shad runs but were not included in the first plan, in addition to changes in existing sections. Changes include the following:

- New sections on shad runs in the Jones, North, South, and Neponset rivers.
- New summary Table 1 on all known MA coastal rivers with shad runs.
- New reporting on shad electrofishing monitoring in the South River and Indian Head River.
- New maps from GIS Diadromous Fish data layer showing shad run locations with impediments.

**Rhode Island Shad Habitat Plan**
The updated plan includes information on projects completed since the original plan was approved, including:

Pawcatuck River Projects

- White Rock Dam Removal
- Potter Hill Fishway Improvements (although a final removal/partial removal has not been completed)

- Bradford Rock Ramp
- Lower Shannock Falls Dam Removal
- Horseshoe Falls Fishway
- Kenyon Mill Rock Ramp Fishway

Pawtuxet River Projects

- Partial Dam Removal at Pawtuxet Falls

**Connecticut Shad Habitat Plan**

The 2021 CT Shad Habitat Plan is a collaborative update, gathering information from all CT DEEP diadromous fisheries staff. Since 2013, the State of CT and subsequent groups have developed several plans and reports to identify threats and develop strategies to protect natural resources. New and updated information in this plan is summarized below.

Habitat Assessment

- Table 2. Assessment of historic and current spawning and rearing habitat was updated to reflect increases to access since the 2013 plan

Threats assessment

- Dam Inventory- Added a section to describe role of USACE in flood risk management of dams; CT DEEP WPLR Dam Inventory
- Discussion of historic runs in small systems
- Discussion of injury or mortality to shad due to passage
- Discussion of Repeat Spawners
- Inventory of altered water quality
    - Included additional information on history of poor water quality in CT
    - Included information history of low DO levels in LIS
    - Discussion of initiation of Shad studies to determine effects of CT River Nuclear Power Plant
    - Discussion of pollutants
- Water withdrawals- Discussion of CT DEEP Water Diversion Program
- Toxic and thermal discharge- 2015 report from Long Island Sound Study Comprehensive Conservation and Management Plan
    - CT DEEP Healthy Water's Initiative
- Channelization and dredging
    - Army Corps of Engineers- Included description of New Haven Harbor (Quinnipiac River)
- Land use inventory and assessment- Discussion of UCONN Center for Land Use Education and Research Changing Landscape Project- riparian, forest cover, land cover; Land use regulations
- Atmospheric deposition assessment- Western Long Island Sound Nitrogen, Housatonic River PCBs
- Climate change- Long Island sound Trawl Survey fish assemblage shifts due to warming water temperatures
- Competition and predation-Discussion of how past CT River research demonstrated that predators can have substantial predation impacts on adult alosines

Habitat Restoration

- Water quality improvement-Description of CT's water permit programs and monitoring
- Impingement/Entrainment at dams-Addressed through regulated hydro projects via FERC licensing process
- CT DEEP Fisheries Division Habitat Conservation and Enhancement Program- Updated description
- Climate Change planning -Updated to describe CT Governor's Council on Climate Change (GC3) Plan to develop and implement adaptation strategies to assess and prepare for the impacts of climate change in areas such as natural resources
- Shad transplantation program- Added additional details to description
- Table 3- Update to dams, current fish passage and future fish passage
- Table 4- Update to restoration and connectivity to spawning and rearing habitat since 2013
- Figure 1- Updated map

**Delaware River Shad Habitat Plan**

The 2020 Shad Habitat Plan from the Delaware River Basin was a significant re-write of the previous plan. The major changes to the updated plan are summarized below by section.

- An Introduction section was added to describe the purpose of the document formation, information about the Delaware River Basin Fish and Wildlife Management Cooperative, and information on a new funding program for the basin that may support future habitat restoration for shad and herring. Some of this information was included in the Overview section of the previous version.
- The Background section (previously called the Overview), details were refined (river distance, drainage area, etc.) and more information was included related to the salt front location as well as primary spawning grounds used historically in the main stem (much of this was pulled from the previous Main Stem section). The section also includes a more detailed description about the impacts to habitat and water quality that ultimately restricted historic shad habitat access and availability in the basin.
- The Main Stem Habitat Assessment section has updated and includes more detailed information on current habitat availability in the main stem.
- The Tributary Habitat Assessment section was updated to provide a table with specific information on each tributary to the Delaware River, including the current extent of available habitat and historic extent of habitat in each tributary. More detail was added to the state descriptions in this section that are supported by the information provided in the table. A map was also included to delineate the extent of current shad runs in the Delaware River and tributaries.
- Nursery Habitat section was updated with additional and historic and current records of juvenile shad distribution in the river and describes the Co-op's young-of-year sampling locations.
- In the Threat Assessment section, a table was added to include names and details from all identified barriers known to occur in the range of historic shad habitat in the Delaware River Basin. A map of the barrier locations was also included. The

Restoration/Mitigation portion of this section was moved to its own section in the updated plan and more details and updated information were included there about prioritizing barriers for removal/passage. Some updates were provided to the Climate Change section. Invasive species (including blue catfish, flathead catfish, and northern snakehead) were added under the trophic structure heading as another concern. The flow alteration portion was expanded to describe recent improvements in water management and continued areas of concern. Details were added to the impingement/entrainment portion to better describe the potential impacts of cooling water intake structures on migratory fish, including shad and herring. The threats text for natural gas development, dissolved oxygen, emerging contaminants, American eel weirs, and dredging were removed.

**South Carolina Shad Habitat Plan**

The 2020 Shad Habitat Plan from South Carolina was an update to the previous plan. Changes to the updated plan are summarized below.

- Acknowledgement that a joint Shad Habitat Plan for the Savannah River SC/GA was submitted and approved by the TC and Management Board.
- Updated information regarding the Yadkin/Pee Dee River FERC license (P-2206) which was issued to Duke Energy.
- For all river systems: access links for new regulatory online tools that include updated information for point source discharge, dredging permits, and any mining activities.
- Updated information regarding the Santee Cooper FERC license (P-199), not yet issued.
- Additional Fish Passage Considerations

**Florida Shad Habitat Plan**

The 2020 Florida Shad Habitat Plan includes updates to three systems, summarized below.

<u>St. Johns River</u>

- City of Deltona has received a permit for a raw water intake in Lake Monroe. This is located in the littoral zone and the Army Corps of Engineers determined no adverse impact on critical fish habitat or federally managed species. The footprint of intake is <1 acre and littoral zone is far from the run of the river where American Shad eggs and larvae have been located. The project is intended to offset groundwater over-pumping that is harming spring flow at a spring ~15km downstream of lake.
- Florida Department of Environmental Protection updated the Basin Management Action Plan (BMAP) for Lake Jesup, a lake that discharges by the spawning grounds
- Florida Department of Environmental Protection established BMAPs for three first magnitude springs that discharge to the middle St. Johns River
- Added reference to the annual “State of the River Report”

<u>Econlockhatchee River</u>

- Updated to include mention of historic reference of shad spawning in the <u>Econlockhatchee</u> and recent findings from monitoring that demonstrate continued use of the <u>Econlockhatchee</u> by spawning shad

- Added a reference about hydrologic changes over time

Ocklawaha

- The St. Johns River Water Management District updated its review of the impacts of removing the dam on nutrient dynamics downstream. Reference added.