ASMFC Alternative Management Plan for Shad and River Herring in Florida

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Submitted to ASMFC TC for Review

March 16, 2020

Final Revisions: May 7, 2020

On Behalf of

Florida Fish and Wildlife Conservation Commission

Fish and Wildlife Research Institute and Division of Marine Fisheries Management

Approved August 4, 2020

This alternative management plan for American Shad and Blueback Herring in Florida addresses American Shad management outside of the St. Johns River System and Blueback Herring in all state waters.

System Descriptions

The St. Johns River in Florida drains 22,900 km^2 along east central Florida from Vero Beach to Jacksonville. The primary spawning runs of American Shad *Alosa sapidissima* and Blueback Herring *Alosa aestivalis* in Florida historically were and currently are in the St. Johns River. Spawning of *Alosa spp*. occurs from late December to early May in most years, with peak activity from mid-January to mid-March for American Shad and Blueback Herring (Walburg 1960, Williams and Bruger 1972, Williams et al. 1975, McBride and Holder 2008, McBride et al. 2010). The spawning grounds of American Shad have been documented from rkm 230 to rkm 433 near the headwaters (Williams and Bruger 1972, Williams et al. 1975). Of that distance 160km can be classified as river and 43 km as lake. Primary spawning grounds of American Shad were in river habitats between rkm 275 and rkm 360 (Williams and Bruger 1972). Contemporary egg collection (Miller et al. 2012b) and telemetry (Dutterer et al. 2011) confirm that American Shad spawning grounds still exist between rkm 230 and a weir at rkm 415. Blueback Herring spawning area overlap American Shad and may extend further downstream but the specific habitats have not been identified (Williams et al. 1975). The mainstem run of the St. Johns River supported significant commercial fisheries of shad and river herring in the 19th and 20th centuries and continues to support a small recreational fishery for American Shad but not Blueback Herring.

Other Atlantic Coast Systems North of Cape Canaveral

The Nassau River is a small river restricted to the coastal plain between the St. Marys River and the St. Johns River. It has a drainage area of ~1,000 square miles (ACOE 1999). There is a passing reference to "a few fish" being taken from the Nassau River in Walburg and Nichols 1967 and no contemporary records of shads being taken in the Nassau River. Most of the stream is under tidal influence. There are no contemporary records of *Alosa* in the Nassau River.

Pelicer Creek and the Tomoka River are small coastal streams with drainages areas of 412 and 385 km^2 respectively and stream lengths of <16 km. There are considered part of the "Northern Coastal Basin" that drain into a shared lagoon (SJRWMD 2003, Brown and Orel 1995). Neither received mention of having *Alosa* fisheries in the mid-20th century federal studies e.g. Walburg and Nichols 1967 and Williams and Grey 1975. Rulifson et al. 1982 extended the probable range of *Alosa* as far south as the Tomoka River. That finding was based on questionaires of then Florida Game and Freshwater Fish Commission biologists and verbal records mentioned in Williams and Grey 1975. No specimens were recorded or vouchered and no quantity of fish or confirmation of spawning of *Alosa* in these small systems south of the St. Johns River have been documented. A faunal survey in the 1990s that recorded 59 species of fish in the Tomoka River did not record any *Alosa* species.

American Shad and Blueback Herring appear to be functionally absent from the Nassau River, Pelicer Creek, and the Tomoka river. Pelicer Creek and Tomoka River are likely outide the natural range of American Shad and Blueback Herring.

Florida Blueback Herring Fisheries

There has not been a fishery for Blueback Herring *Alosa aestevalis* in Florida for more than 30 years. Blueback Herring were likely an important commercial fishery in Florida in the 19th and early 20th centuries but catch data are unreliable. Landings of 'alewife' were reported up to a peak around 1 million pounds in the early 20th Century. However, 'alewife' were often the combined landings of Blueback Herring, Hickory Shad (*Alosa mediocris*), and Menhaden (*Brevoortia* spp.). It is unclear what proportion of the the landings was herring though herring were harvested and salted for market at the time. By the mid-20th Century, herring harvest was limited to bycatch in other fisheries that was sold as crab and catfish bait (Williams et al., 1975). Those bycatch fisheries were ultimately closed by various gear restrictions in Florida. Blueback Herring in Florida are not harvested by either commercial or recreational anglers and no harvest has been recorded since the 1960s. Almost all landings that did occur were in the St. Johns River.

There is no active management of Blueback Herring in Florida. Blueback herring are known to occur or to have occurred in the St. Johns and St. Marys rivers. Blueback Herring could possibly occur in other Atlantic Coast streams but there is none but old annecdotes of *Alosa spp.* small systems like the Nassau River, Pellicer Creek, and Tomoka River. Florida has not established a sustainable fishing plan for Blueback Herring because of the absence of any fisheries so herring fishing remains open by default. This plan is submitted as an alternative plan in fulfillment of Amendment 3 to the Interstate Fishery Management Plan for Shad and River Herring, River Herring Management.

Florida American Shad Fisheries

American Shad *Alosa sapidissima* fishery and management history is described in the American Shad Sustainable Fishing Plan for the St. Johns River System, Florida. Commercial and recreational fishing for American Shad in Florida has been restricted to the St. Johns River for several decades. There has not been any commercial landing of American Shad reported from anywhere in Florida since 2000.

Recreational Fisheries American Shad Outside of the St. Johns River

No directed recreational fishing for American Shad or incidental catch of American Shad has been documented in Florida waters other than in the middle/upper St. Johns River and adjacent Econlockhatchee River (Walburg and Nichols 1967, Walburg, 1960, and Williams and Bruger 1972). MRIP has not detected American Shad fishing or catch to occur in the coastal systems (Nassau, Pelicer, Tomoka). FWC has regular contact with recreational fishing clubs (e.g. First Coast Fly Fishing Club, Mosquito Lagoon Fly Fishing Club, Orlando Kayak Fishing Community) from Jacksonville to Orlando. None report fishing for American Shad outside the St. Johns River.

Regulations

Blueback herring are not specifically managed in Florida but several regulations affect the ability to harvest them should fishing occur.

New pound net licenses were no longer issued for the St. Johns River after 1982. Existing pound net licenses were non-transferable (FAC 68A-23.003) and no pound nets are operating on the St. Johns River, Florida.

The Florida Constitution was amended by voter referendum to prohibit entanglement nets larger than 500ft2 in state waters. This net ban became effective on July 1, 1995 (Art. X, Sec. 16).

As of January 1, 1997 hook and line is the only permissible gear for all *Alosa* in Florida (FAC 68B-52.001) and Blueback Herring are incorporated in the 10 fish daily bag limit for *Alosa* in aggregate (Chapter 46-52.001 [3], FAC). A saltwater fishing license is required of most anglers to fish for Alosa species in Florida.

Fishery Dependent Monitoring

A creel survey is conducted annually on the St. Johns River. The survey is focused on American Shad but occurs in an area that overlaps Blueback Herring spawning grounds. There is also a creel survey from Januarly through April that rotates between Lakes George, Monroe, and Crescent. These lakes are natural wide spots in the lower St. Johns River. No significant river herring catch, harvest, or directed effort has been recorded in these creels. There is one recent instance of Blueback Herring being reported in a creel survey. A few anglers fly fishing for American Shad in 2018 did catch Blueback Herring but they reported them as 'baby shad' that were promptly released. That was a year of high abundance (Figure 1). There is no Fishery Dependent Monitoring by FWC on the St. Marys River or the other coastal systems; Nassau River, Pellicer Creek, and Tomoka River. MRIP has not detected any Blueback Herring harvest in the small coastal systems, St. Marys, or St. Johns River. The FWC creels in the St. Johns and MRIP should continue indefinitely.

Fishery Independent Monitoring

FWC conducts spawning stock and juvenile sampling for American Shad in the St. Johns River. Both of these surveys encounter Blueback Herring. These surveys could produce a CPUE based abundance index for both life stages. The spawning stock survey is a standardized electrofishing survey from January through March and the time series is 2003 through the present. The juvenile survey is standard pushed trawl that runs bi-weekly from March through July. These data are reported in the annual compliance report to ASMFC (Figure 1). The pushnet is effective at capturing YOY Blueback Herring (Table 1). Georgia DNR conducts a standardized electrofishing survey on the St. Marys River that has not to date encountered Blueback Herring. There are no credible records of Blueback Herring runs in the Nassau River, Pellicer Creek, or Tomoka River so directed fishery independent sampling there is not planned.

Management Alternative

Florida seeks to leave the current regulations in the Florida Administrative Code unchanged until either 1) there is evidence that harvest of Blueback Herring is occurring anywhere in the state; or 2) there is evidence that harvest of American Shad outside the monitored St. Johns River system is occurring.

No commercial gears that could result in incidental catch of shad or river herring, such as pound nets, gill nets, or haul seines, are operating in Florida waters. No recreational fisheries are known to be catching or harvesting Blueback Herring anywhere in Florida or American Shad outside of the monitored St. Johns River.

The ASMFC TC recommended that FWC consider implementing a catch and release fishery or request an Alternative Management Plan for Blueback Herring in the absence of a sustainable fishery management plan. Blueback Herring and American Shad are effectively absent from all drainages in Florida except the St. Johns River. It is not possible to develop useful metric of sustainability in these systems. Monitoring in the St. Johns River could yield index based bench marks for Blueback Herring similar to those for American Shad if needed. However, the absence of any harvest, directed catch, or significant incidental catch preclude there being any conservation benefit to changing Florida Administrative Code to prohibit the harvest of Blueback Herring or American Shad beyond the exising gear and bag restriction that currently covers all *Alosa* species.

FWC proposes to continue its existing fishery dependent and fishery independent monitoring that focus on the St. Johns River where there are known populations of American Shad and Blueback Herring and where there is a monitored recreational fishery for American Shad. FWC will rely on the American Shad creel survey and other angler creel surveys to monitor for the existence Blueback Herring catch or harvest in the St. Johns River. FWC will rely on MRIP and contact with recreational fishing organizations to detect *Alosa spp.* recreational catch in waters outside of the St. Johns River Basin. FWC will keep informed of GADNR monitoring of the St. Marys River for information about Blueback Herring or American Shad harvest and coordinate a response with Georgia DNR if data warrant. FWC will add reporting of data collected in accordance with this alternative management plan to its annual Shad and River Herring FMP compliance report.

If any source detects non-zero Blueback Herring harvest anywhere in Florida for three consecutive years or American Shad harvest outside the St. Johns River basin then Florida FWC will initiate a process to demonstrate sustainability for the river system where harvest has occurred. If sustainability cannot be demonstrated, Florida FWC will institute regulatory changes for these rivers systems up to harvest prohibition.

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Table 1. Example pushnet catch of Blueback Herring from the St. Johns River from the 2019 annal compliance report. It is the Geometric mean catch per standard sample of juvenile *Alosa sapidissima* (ASAP) and *Alosa aestivalis* (AAES) collected by pushnet during 2018 in the two index areas.

River Kilometer 210-249

Date	N Samples	ASAP	SD	AAES	SD
27-Mar	12	0.23	0.47	94.25	1.28
11-Apr	12	0.00	0.00	31.50	1.69
24-Apr	12	16.88	1.80	21.95	1.98
9-May	12	4.21	1.48	9.94	1.58
22-May	12	3.68	1.39	0.78	1.29
07-Jun	12	0.35	0.80	0.00	0.00

River Kilometer 125-164

Date	N Samples	ASAP	SD	AAES	SD
25-Apr	12	2.39	1.24	3.65	1.94
08-May	12	6.57	1.36	6.57	2.68
23-May	12	7.96	0.42	3.72	1.39
06-Jun	12	3.51	1.26	9.41	1.56
19-Jun	12	2.60	1.98	0.64	0.76
02-Jul	12	1.11	1.24	2.88	2.64
17-Jul	12	0.78	1.25	0.26	0.57

Figure 1. Annual geometric mean electrofishing catch per transect of Blueback Herring from the St. Johns River, Florida *Alosa* spawning stock survey. Each transect consisted of 10 minutes of electrofishing effort within a randomly selected 1km portion of the river. **As of 2010 the primary survey segment of the river is between river kilometer (rkm) 314 and 358 and sampling reach from rkm 278 to 298 was reduced to 20 peak-season transects.