River Herring Alternative Management Plan for South Carolina

Submitted by

The South Carolina Department of Natural Resources

Wildlife and Freshwater Fisheries Division and the Office of Fisheries Management

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Introduction:

Historical fisheries for river herring (e.g. blueback herring) in the waters of the ACE Basin (Ashepoo, Combahee, Salkehatchie, and Edisto Rivers) and Savannah River (Savannah and Coosawhatchie Rivers) watersheds, South Carolina (SC) are negligible. No commercial fisheries occur in any of these rivers and opportunities for both recreational and commercial fishers to land river herring exist at other specific locations in the state where fish aggregate (e.g. Santee-Cooper dam tailraces). The South Carolina Department of Natural Resources (SCDNR) monitors these locations with daily creels, because it is where the majority of fishing occurs annually. River herring harvest is recorded to help enumerate approximate run size and escapement.

The purpose of SC's alternative management plan for river herring is to allow waters of the ACE Basin and Savannah River watersheds to remain open for recreation fishing purposes. This plan is submitted to fulfill requirements of Amendment 2 to the Interstate Fishery Management Plan for Shad and River Herring (River Herring Management).

Management of blueback herring in SC is shared between the Marine Resources and Wildlife and Freshwater Fisheries Divisions of SCDNR. Management units are defined by stock and the complex of river(s) utilized.

ACE Basin and Savannah River Watersheds (Figure 1)

Commercial River Herring Fishery

There are no recorded landings for river herring and no commercial fishing is allowed.

Recreational River Herring Fishery

SC's recreational fishery has a 1 bushel (22.7 kg) fish aggregate daily creel for blueback herring in all rivers throughout the state, however very few recreational anglers target blueback herring, and none have been observed outside of the Santee-Cooper system. Additionally, legislation to change the current daily limit to a more enforceable creel (e.g., a specific number of fish) has been developed and vetted through an internal working group and is awaiting introduction to the SC General Assembly.

SC monitors directed recreational fishing effort for river herring in the Santee-Cooper system, and landings data are provided in annual compliance reporting for the sustainable fishery management plan. SC is unaware of any directed recreational fishing for river herring outside of this system, and recreational creel surveys funded by the National Marine Fisheries Service (NMFS) (e.g. Marine Recreational Information Program [MRIP]) show no harvest or directed effort for river herring in any of the ACE Basin Rivers or Savannah River watersheds (Figure 2).

Fishery-Independent Monitoring

SCDNR conducts a fishery-independent effort utilizing electrofishing gear in the Savannah River and partners with USFWS at the Bears Bluff National Fish Hatchery on requisite sampling in the Edisto River. This has been done annually since 2010 to assess American shad recruitment in these rivers. Surveys are performed from August through November (24 weeks) and are designed to collect young-of-year (YOY) juvenile American shad, but any fish collected are enumerated and measured. Sampling events occur weekly at numerous predetermined nursery sites to establish the relative abundance of juvenile shad in SC watersheds. In addition, these data collection efforts assist with determining distribution, growth rates, feeding habits, and timing of out-migration. In the 16 years that this survey has been conducted, only 139 herring have been observed during electrofishing efforts. Similarly, an electrofishing survey conducted by Georgia Department of Natural Resources targeting adult American shad in the Savannah River at the first barrier (New Savannah Lock and Dam) yielded only 10 river herring for the same time series.

SCDNR also conducts telemetry studies on the ACE Basin and Savannah River watersheds to track Atlantic and shortnose sturgeon behavior. Beginning in 2010, an extensive array of ~300 ultrasonic receivers was deployed in SC's major river systems and throughout intercoastal waterways (Figure 3). In most cases, receivers are located a few kilometers apart from the mouth of rivers (river kilometer [rkm] 0) to potential spawning areas for sturgeon (rkm ~321). In order to ensure proper operation, collect movement data, and minimize loss, receivers are downloaded regularly.

From 2010 to present, ~113 receivers were downloaded regularly in the ACE Basin and Savannah River watersheds (Figures 4–6). Telemetry data were collected during all months to ensure all available sturgeon detections were recorded, with increased effort during spring months when both Atlantic and shortnose sturgeon spawn. This also coincides with shad and river herring adult migrations in these rivers. During download trips, most areas of rivers in the ACE Basin and Savannah River watersheds were traveled by boat. At no time did staff encounter any individuals targeting shad or river herring, most were traditional float fishers using bait targeting gamefish.

Management Recommendation

Amendment 2 to the shad and river herring FMP states, in the absence of a sustainable fishery management plan for river herring, the Management Board can approve an alternative management program proposed by a state or jurisdiction if the state or jurisdiction can show to the Management Board's satisfaction that the alternative proposal will have the same conservation value as the measure contained in this amendment or any addenda prepared under Adaptive Management.

SC currently has no fisheries for river herring (commercial or recreational) in the ACE Basin or Savannah River watersheds. Because river herring are considered functionally absent in these

areas, it is impossible to develop a sustainable fishing plan with any credible metrics. SCDNR plans to continue current fishery-dependent and fishery-independent monitoring for the foreseeable future. In the event that the MRIP survey reveals positive harvest of river herring for 3 consecutive years indicating exploitation by recreational fisheries is occurring, SCDNR will initiate a review process to demonstrate sustainability for these river systems. If sustainability cannot be demonstrated, SCDNR will initiate regulatory changes for these rivers systems. Regulatory changes that may be considered range from catch and release fishing only to full closure.

Reporting

SCDNR will provide updates for fishery-dependent and fishery-independent monitoring for these river systems in annual compliance reports for shad and river herring.

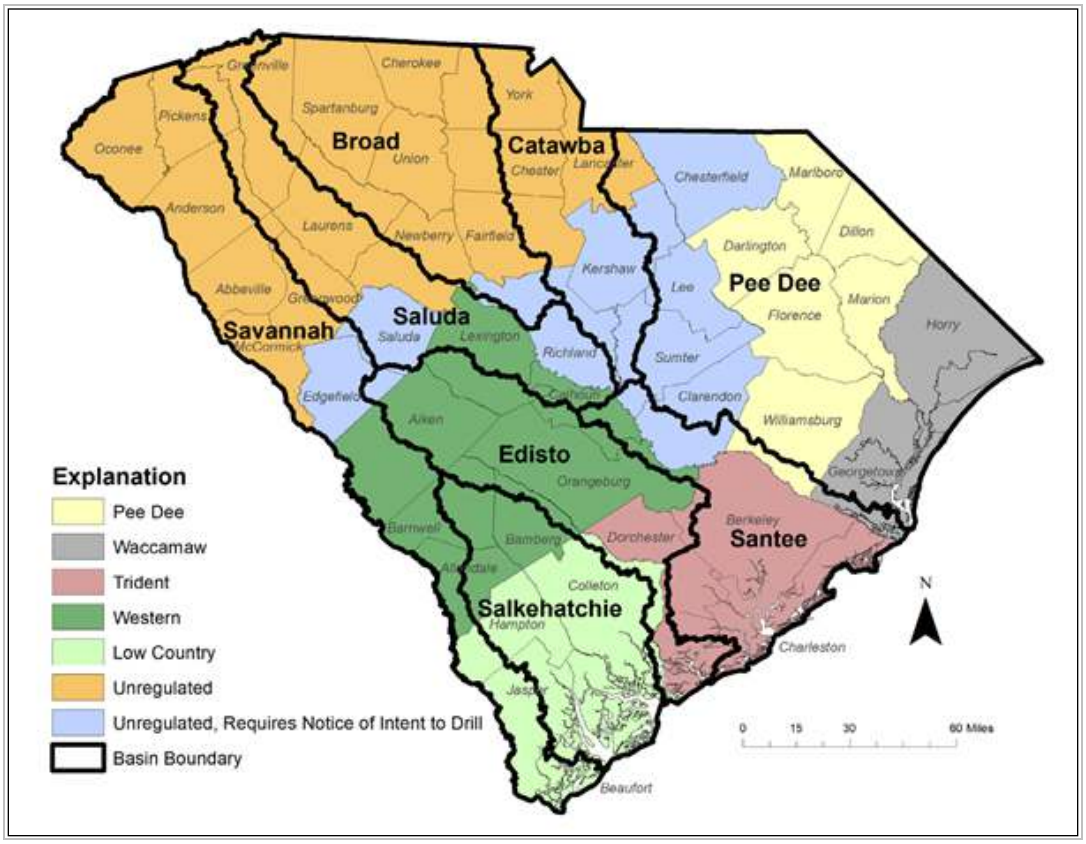

Figure 1. South Carolina river systems defined by river basin boundaries

(https://www.clemson.edu/public/water-assessment/).

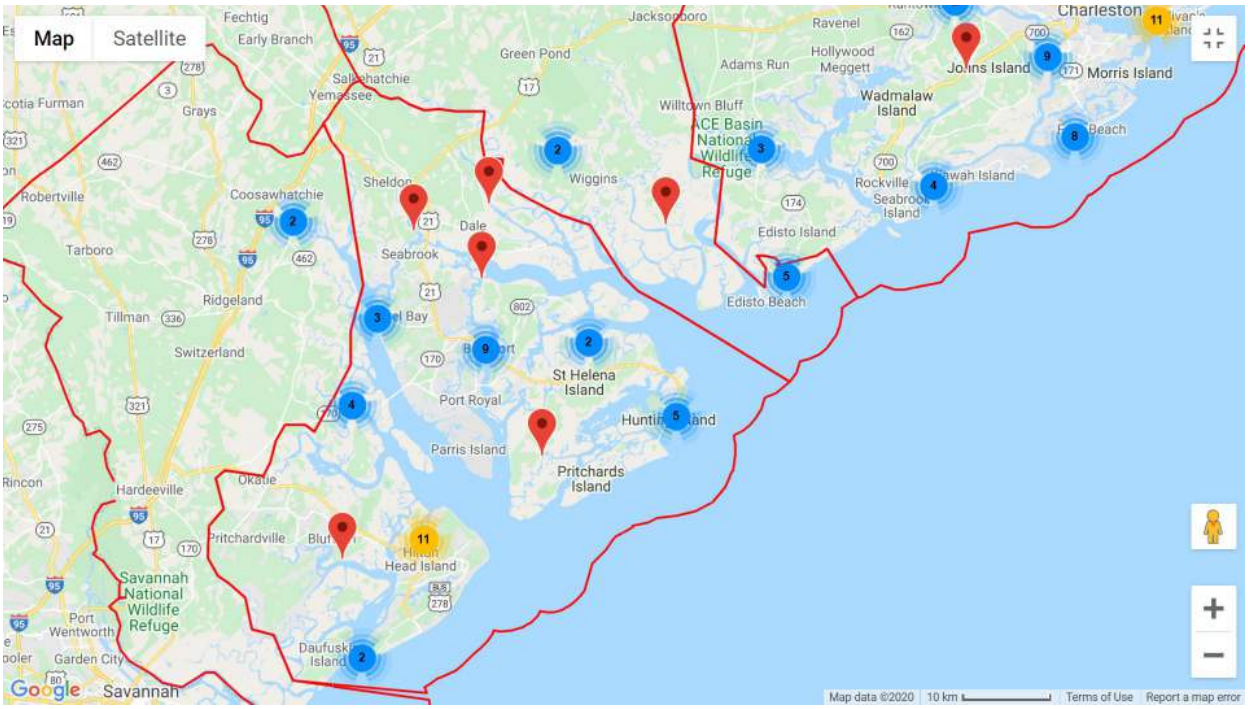

Figure 2. Example of MRIP creel sampling sites for ACE Basin and Savannah watersheds. Note: All 144 sites not shown in this figure, use interactive web tool provided at NOAA webpage.

https://www.st.nmfs.noaa.gov/msd/html/siteRegister.jsp

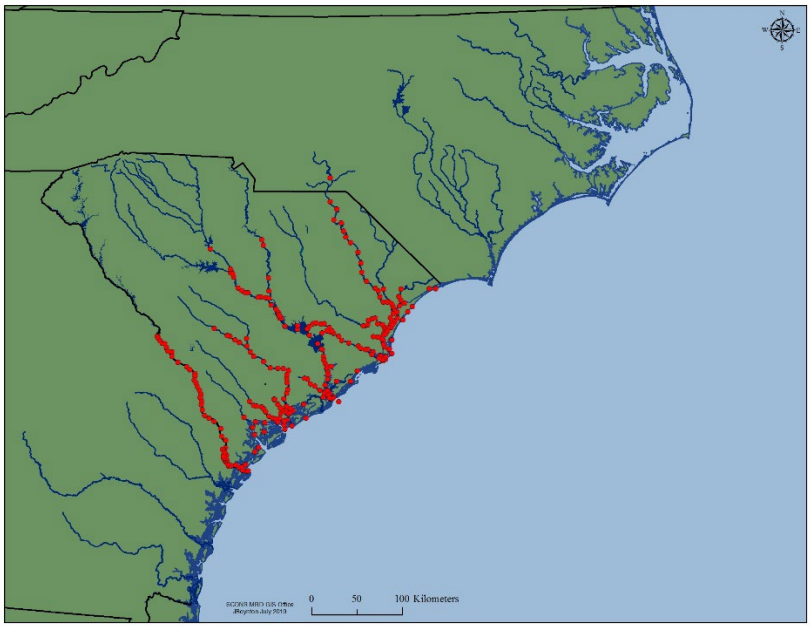

Figure 3. SC's ultrasonic telemetry array.

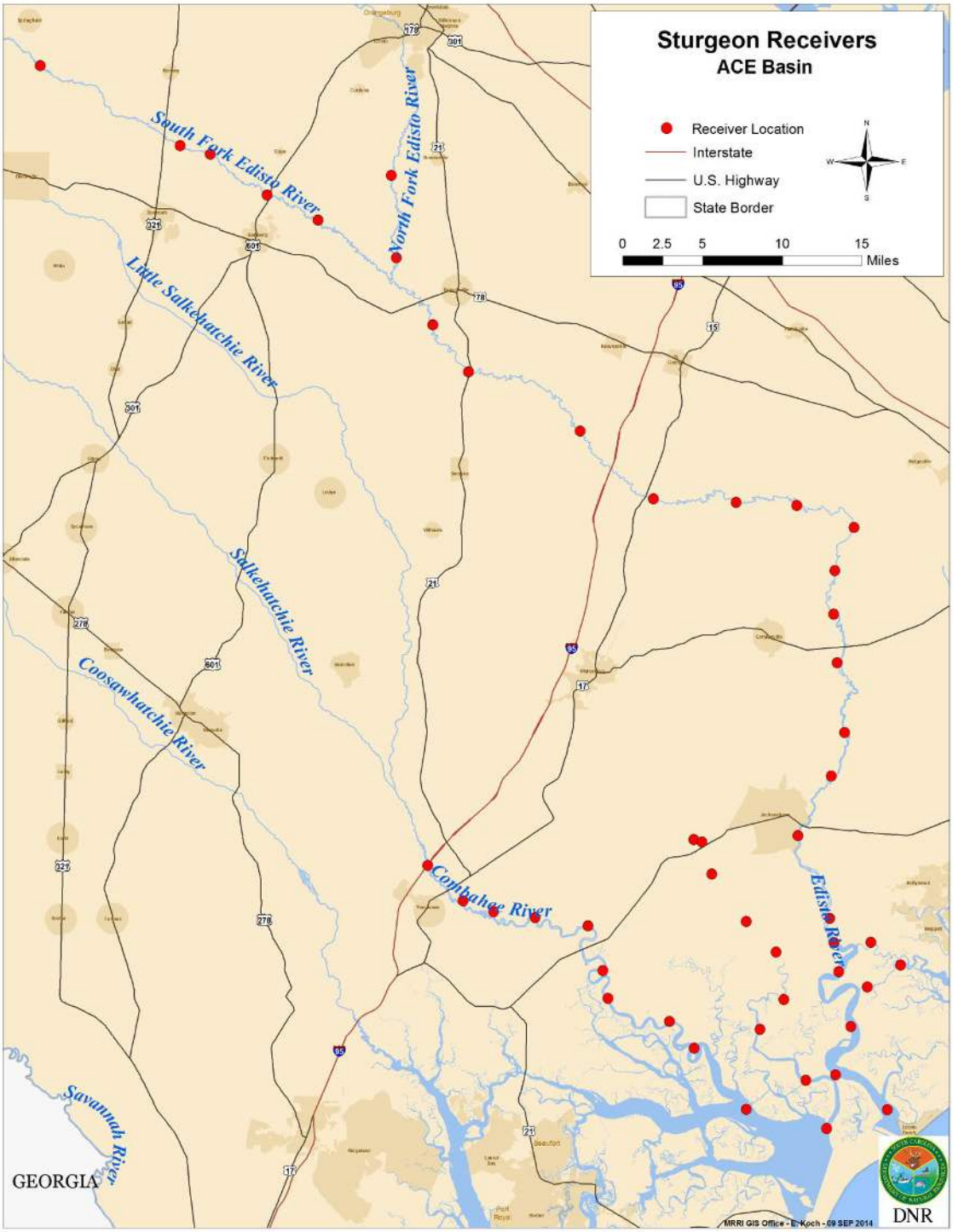

Figure 4. Receiver location in the ACE Basin Rivers.

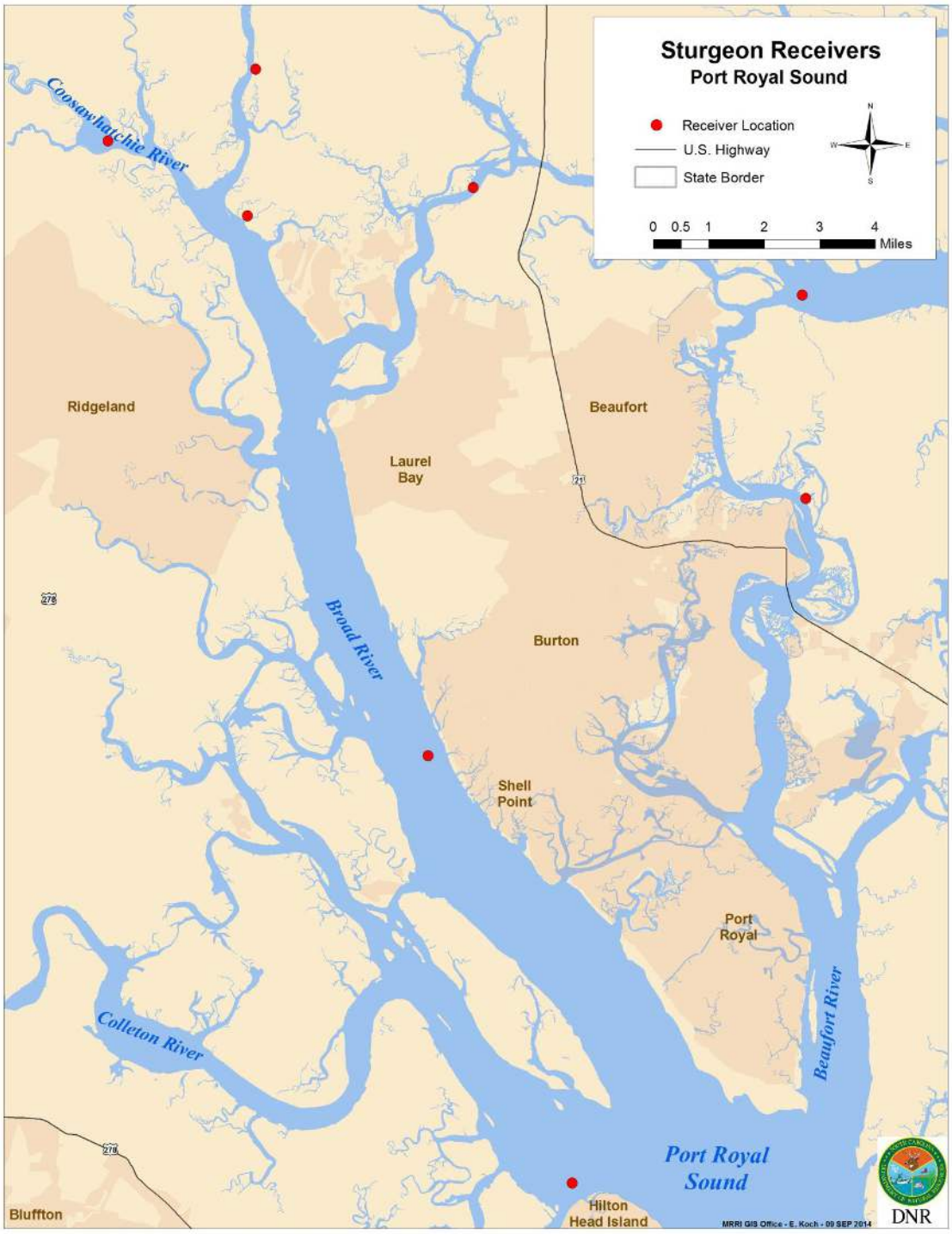

Figure 5. Receiver location in the Port Royal and Coosawhatchie River.

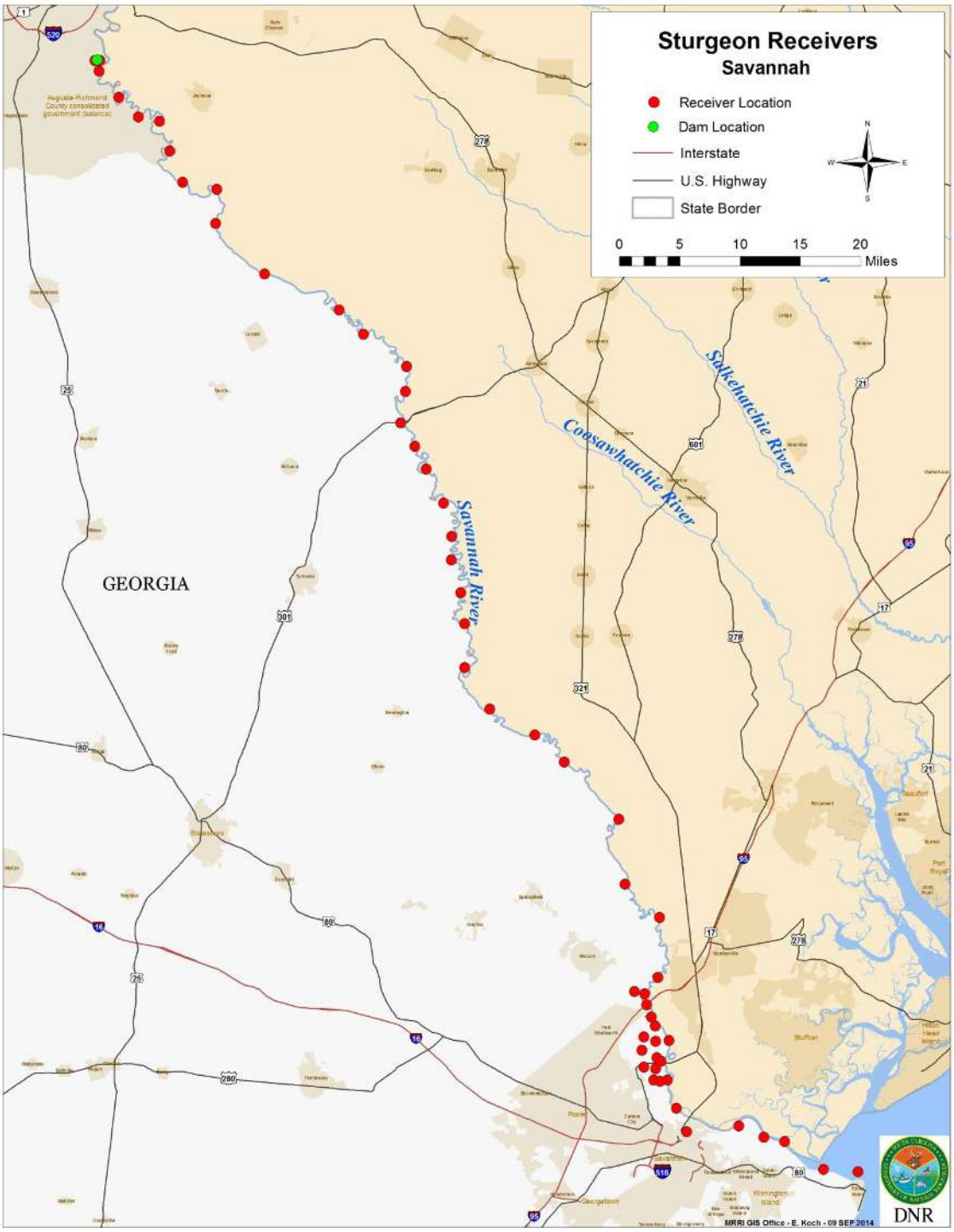

Figure 6. Receiver location in the Savannah River System.