

MEETING NOTES
Stevens Creek Hydroelectric Project (FERC No. 2353)

Dominion Energy South Carolina, Inc.
Fish Passage Technical Committee Meeting

September 29, 2020

Final KMK 10-30-20

ATTENDEES:

Amy Bresnahan (DESC)	Elizabeth Miller (SCDNR)
Ray Ammarell (DESC)	Bill Post (SCDNR)
Caleb Gaston (DESC)	Paula Marcinek (GADNR)
Alison Jakupca (Kleinschmidt)	Jay Payne (GADNR)
Kelly Kirven (Kleinschmidt)	Melanie Olds (USFWS)
Henry Mealing (Kleinschmidt)	Scott Glassmeyer (USFWS)
Jason Moak (Kleinschmidt)	Twyla Cheatwood (NMFS)
Bret Hoffman (Kleinschmidt)	Fritz Rohde (NMFS)

These notes are a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

The purpose of the meeting was to discuss the existing American Eel data collected by Georgia DNR and South Carolina DNR and discuss next steps. The PowerPoint presentation, Excel spreadsheet, and American Eel location maps shown during the meeting are attached to these notes for reference.

Alison provided a brief recap of the previous meeting held on June 23, 2020. During that meeting, stakeholders discussed the presence of American Eels at the Project, to what extent eels need to be studied during relicensing, and possible passage opportunities. The group also discussed whether studies are needed during relicensing or after a passage prescription is implemented.

Following the meeting recap, Alison presented the existing eel data that was collected and provided by Georgia DNR and South Carolina DNR and eel data that was collected as part of the 1993 Stevens Creek Entrainment Study. Data indicates that American Eels of multiple year classes are passing over Stevens Creek dam and traveling upstream. Henry added that the data shows eels are also passing over the Augusta Dam and New Savannah Bluff Lock and Dam (NSBLD). Fritz said that American Eels are being considered with the design of the fish ladder at Augusta Dam. He added that NMFS is currently working on their Biological Opinion and fish passage prescription and hope to file both by the end of 2020 or early 2021.

Alison said that after the previous meeting, there were several questions that stakeholders were considering. These questions are listed below.

- Is the Stevens Creek Dam an impediment to eel passage?
- How close to passage installation do studies need to occur?

- Could there be changes in the system prior to passage installation?
- Will flow dispersals change prior to passage installation?

The group considered these questions again. Henry asked the group if it is best to look for eels when a fish passage siting study is completed following a fish passage prescription for the Stevens Creek Project. Bill said that it is important that an eel ramp is installed in the correct location and therefore an eel siting study is important. This study should be completed closer to when fish passage installation would occur, since any changes in operations or flow dispersals could affect the proposed location of an eel ramp. Fritz agreed and noted that eel studies at the Wateree and Yadkin-Pee Dee projects were conducted as part of their new licenses. He also added that fish passage at Augusta is tied into passage installation at NSBLD. This puts fish passage installation at Augusta as occurring approximately six years from now. However, Twyla added that the fish passage prescription for Stevens Creek would be complete before passage is installed at Augusta.

Caleb asked if eel counts will be required at Augusta following passage installation. Fritz said the passage structure would have a fish counting window which will be used to view shad passage. Since eels mainly pass at night, no passage estimates for eels will be collected. Henry asked if there will be a way to count eels when testing the eel ladder at Augusta. Fritz said they haven't gotten that far into planning at this point.

Henry said that he saw the existing data collection effort for American Eels as something that could be included in the Aquatic Habitat Whitepaper. An entire section of the whitepaper will be dedicated to American Eels, including information on their history in the basin, existing location data, and ongoing passage efforts on the Savannah River. Alison noted that the Aquatic Habitat Whitepaper will be centered around fish passage and all applicable data collected during relicensing will feed into the whitepaper. The whitepaper will be distributed to the Fish Passage TWC for review and comment.

Alison also noted that during the June meeting, stakeholders discussed the possibility of a site visit to view the dam and possible passage opportunities. Alison asked if agencies were still interested in participating in a site visit in spring of 2021. Everyone indicated that this would be very helpful for future discussion of American Eel passage at Stevens Creek.

Alison asked Fritz if NMFS would be able to provide an update on the status of fish passage at Augusta and NSBLD during the spring site visit. Fritz said yes and added that the current schedule for fish passage installation at NSBLD includes initiation of upland work in January and in-water work in April.

Action items from this meeting are listed below.

ACTION ITEMS:

- Kleinschmidt will distribute maps and spreadsheet with existing American Eel data.
- DESC and Kleinschmidt will draft the American Eel section of the Aquatic Habitat Whitepaper and distribute to the TWC for review.
- DESC and Kleinschmidt will schedule a site visit for the spring of 2021.

- NMFS will provide an update on the status of fish passage at Augusta and NSBLD at the site visit.

Stevens Creek Hydroelectric Project (FERC No. 2535)

Fish Passage Technical Working Committee

September 29, 2020

Agenda

Re-Cap Previous
Discussions

Review Existing Data and
Sources

Open Discussion on
“What Does This Tell Us?”

Next Steps





Meeting Re-Cap: June 23, 2020

- ▶ The purpose of the meeting was to discuss the presence of American Eels at the Project,
- ▶ determine to what extent eels need to be studied during relicensing, and
- ▶ begin discussion of possible passage opportunities.
- ▶ Discussions on whether information was needed on:
 - ▶ Abundance
 - ▶ Size
 - ▶ Passage Location
- ▶ Question: Are studies needed during relicensing or after passage prescription is implemented?
- ▶ Action Items: Compile and Review Existing Eel Data

Action Item Results: Review and Compile Existing Eel Data

▶ Data Sources:

- ▶ GADNR Stream Team Data
- ▶ SCDNR Stream Team Data
- ▶ 1993 Stevens Creek Entrainment Study Data

▶ Details:

- ▶ 66 Sampling Events Logged
- ▶ Date Range: 1972 through 2018
- ▶ 128 eels captured during 66 sampling events
- ▶ Length/Weight Information Not Complete: When available ranged from
 - ▶ 15 g (Savannah River, Downstream of SC)
 - ▶ 1360 g (3 Eels-Batch Weight: Savannah River, In SC Project Boundary)

Action Item Results: Review and Compile Existing Eel Data

- ▶ 1993 Stevens Creek Entrainment Study Data
 - ▶ Eels were the 4th most abundant species captured during this study
 - ▶ Regression Equation: Likely Between 2 and 10 Years old (Helfman et al. 1984)

TABLE 2
FISH COLLECTED VIA RECOVERY NETTING
AT THE STEVENS CREEK HYDROELECTRIC PROJECT

SPECIES	NUMBER	SIZE RANGES (mm)	MEDIAN LENGTH (mm)	PERCENT OF ABUNDANCE
American eel	12	187-609	357	12.37
Blackbanded darter	2	49-78	63.5	2.06
Blueback herring	9	94-153	132	9.28
Bluegill	15	35-183	81	15.46
Brook silversides	1	63	63	1.03
Channel catfish [*]	2	63-111	87	2.06
Gizzard shad	4	111-122	117.5	4.12
<i>Lepomis</i> sp.	1	80	80	1.03
Redbreast sunfish	5	95-164	134	5.15
Snail bullhead	1	179	179	1.03
Spottail shiner	4	94-107	98	4.12
Tadpole madtom	1	60	60	1.03
Threadfin shad	23	38-76	51	23.71
White bass	1	399	399	1.03
White catfish	1	191	191	1.03
White perch	1	145	145	1.03
Yellow perch	14	78-249	89	14.43

Maps

The background features a series of overlapping, semi-transparent green shapes in various shades, ranging from light lime to dark forest green. These shapes are primarily triangular and polygonal, creating a dynamic, layered effect. A thin, light gray line runs diagonally across the lower-left portion of the image, intersecting the green shapes.

What Does This Tell Us? AND Existing Questions

- ▶ Eels are passing upstream of dam
- ▶ Regression data points to multiple year classes making it over SC dam
- ▶ Existing Questions from Previous Meeting:
 - ▶ Is the dam an impediment to eel passage?
 - ▶ How close to passage installation do studies need to occur?
 - ▶ Could there be changes in the system prior to passage installation?
 - ▶ Will flow dispersals change prior to passage installation?

Next Steps

- ▶ TWC Site Visit: Spring 2021

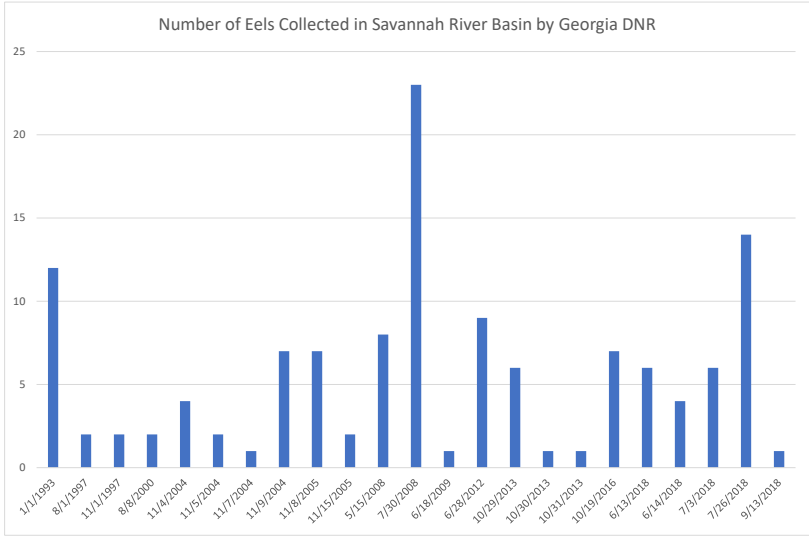


ID#	Date	Lat	Long	Sample Site #	# of eels	Weight (g)	GA/SC	Stream
1	11/2/1972	33.8	-82.125				SC	Beaverdam Cr., trib Stevens Cr., 6 AM E Parkville (Upstream of SC Project Boundary)
2	11/2/1972	33.7916	-82.1958				SC	Stevens Cr., 1 M E Parkville (Upstream of SC Project Boundary)
3	1993				12			From 1993 Dames & Moore Entrainment Study at Stevens Creek
4	Aug-97	33.523759	-82.010988	3	2	318	GA	
5	Nov-97	33.523759	-82.010988	3	2	No weight	GA	
6	6/4/1998	33.43088	-81.92057				SC	Savannah River, below the I-20 bridge in the Augusta shoals, boarder of Richmond Co., GA and Aiken Co.,
7	08-Aug-00	33.29212	-82.27698		1	261.4	GA	Boggy Gut Creek
8	08-Aug-00	32.91485	-81.77280		1	47.2	GA	Beaverdam Creek
9	11/4/2004	33.571113	-82.06288	2	3	1360	GA	Savannah River, In Stevens Creek Project Boundary
10	11/4/2004	33.571113	-82.06288	2	1	320	GA	Savannah River, In Stevens Creek Project Boundary
11	11/5/2004	33.612993	-82.170539	1	1	215	GA	Savannah River, In Stevens Creek Project Boundary
12	11/5/2004	33.612993	-82.170539	1	1	540	GA	Savannah River, In Stevens Creek Project Boundary
13	11/7/2004	33.523759	-82.010988	3	1	1200	GA	Savannah River, Downstream of Stevens Creek Project Boundary
14	11/9/2004	33.508396	-81.995496	4	1	25	GA	Savannah River, Downstream of Stevens Creek Project Boundary
15	11/9/2004	33.508396	-81.995496	4	4	820	GA	Savannah River, Downstream of Stevens Creek Project Boundary
16	11/9/2004	33.508396	-81.995496	4	2	54	GA	Savannah River, Downstream of Stevens Creek Project Boundary
17	11/8/2005	33.523759	-82.010988	3	1	114	GA	Savannah River, Downstream of Stevens Creek Project Boundary
18	11/8/2005	33.523759	-82.010988	3	1	356	GA	Savannah River, Downstream of Stevens Creek Project Boundary
19	11/8/2005	33.523759	-82.010988	3	1	210	GA	Savannah River, Downstream of Stevens Creek Project Boundary
20	11/8/2005	33.523759	-82.010988	3	1	204	GA	Savannah River, Downstream of Stevens Creek Project Boundary
21	11/8/2005	33.523759	-82.010988	3	1	446	GA	Savannah River, Downstream of Stevens Creek Project Boundary
22	11/8/2005	33.508396	-81.995496	4	1	110	GA	Savannah River, Downstream of Stevens Creek Project Boundary
23	11/8/2005	33.508396	-81.995496	4	1	464	GA	Savannah River, Downstream of Stevens Creek Project Boundary
24	11/15/2005	33.518577	-82.006207	7	1	280	GA	Savannah River, Downstream of Stevens Creek Project Boundary
25	11/15/2005	33.518577	-82.006207	7	1	315	GA	Savannah River, Downstream of Stevens Creek Project Boundary
26	15-May-08	32.28654	-81.19148		8	97.4	GA	Sweigoffer Creek
27	6/24/2008	33.51522	-81.99334				SC	Upstream of SC Project Boundary
28	7/29/2008	33.9009	-81.96869				SC	
29	30-Jul-08	33.38391	-82.00403		14	343.2	GA	Butler Creek
30	30-Jul-08	33.34646	-82.09145		4	906.5	GA	Spirit Creek
31	30-Jul-08	33.34641	-82.09122		4	28.4	GA	Friendship Branch
32	30-Jul-08	33.42300	-82.00695		1	26.8	GA	Rocky Creek
33	18-Jun-09	33.07265	-81.90310		1	28	GA	Fitz Branch
34	28-Jun-12	33.60099	-82.23458		9	961	GA	Kiokee Creek (Upstream of Stevens Creek Project Boundary)
35	10/29/2013	33.523759	-82.010988	3	1	132	GA	Savannah River, Downstream of Stevens Creek Project Boundary
36	10/29/2013	33.523759	-82.010988	3	1	256	GA	Savannah River, Downstream of Stevens Creek Project Boundary
37	10/29/2013	33.523759	-82.010988	3	1	381	GA	Savannah River, Downstream of Stevens Creek Project Boundary
38	10/29/2013	33.523759	-82.010988	3	1	185	GA	Savannah River, Downstream of Stevens Creek Project Boundary
39	10/29/2013	33.523759	-82.010988	3	1	190	GA	Savannah River, Downstream of Stevens Creek Project Boundary
40	10/29/2013	33.523759	-82.010988	3	1	15	GA	Savannah River, Downstream of Stevens Creek Project Boundary
41	10/30/2013	33.457362	-81.921657	5	1	215	GA	Savannah River, Downstream of Stevens Creek Project Boundary
42	10/31/2013	33.518577	-82.006207	7	1	381	GA	Augusta Canal
43	10/19/2016	33.523759	-82.010988	3	1	62	GA	Savannah River, Downstream of Stevens Creek Project Boundary
44	10/19/2016	33.523759	-82.010988	3	1	580	GA	Savannah River, Downstream of Stevens Creek Project Boundary
45	10/19/2016	33.523759	-82.010988	3	1	480	GA	Savannah River, Downstream of Stevens Creek Project Boundary
46	10/19/2016	33.523759	-82.010988	3	1	620	GA	Savannah River, Downstream of Stevens Creek Project Boundary
47	10/19/2016	33.523759	-82.010988	3	1	1200	GA	Savannah River, Downstream of Stevens Creek Project Boundary
48	10/19/2016	33.523759	-82.010988	3	1	45	GA	Savannah River, Downstream of Stevens Creek Project Boundary
49	10/19/2016	33.523759	-82.010988	3	1	280	GA	Savannah River, Downstream of Stevens Creek Project Boundary
50	13-Jun-18	33.23029	-82.092432		6		GA	Mcbean Creek
51	14-Jun-18	33.174052	-81.848294		4		GA	Newberry Creek
52	03-Jul-18	33.224492	-81.858417		6		GA	Boggy Gut
53	26-Jul-18	33.29212	-82.27698		2		GA	Boggy Gut Creek
54	26-Jul-18	33.355782	-82.141344		12		GA	South Prong Creek
55	13-Sep-18	32.82131	-81.62127		1		GA	Beaverdam Creek
56	2009	33.44544	-81.91992				SC	
57	2009	33.43927	-81.91287				SC	Savannah River, 400 m below SC 28
58	2009	33.42564	-81.93223				SC	Savannah River, 0.5 mi downstream from Columbia Nitrogen outfall, RM
59	2009	33.37039	-81.9466				SC	Savannah River below Lock and Dam, RM 186.5-187.2
60	2009	33.37222	-81.94097				SC	Savannah River at Lock and Dam, RM 187.5
61	2009	33.54388	-81.99645				SC	Fox Creek
62	2009	33.49842	-81.99981				SC	Raes Creek, Lake Olmstead at Lakeshore Loop Road
63	2009	33.2651	-81.8439				SC	
64	2009	33.21213	-81.80717				SC	Savannah River at Demeires Landing, RM 160.3
65	2009	33.22758	-81.82384				SC	Savannah River above Shell Bluff Landing, RM 162
66	2009	33.22116	-81.77186				SC	Savannah River, Intake Canal 1G

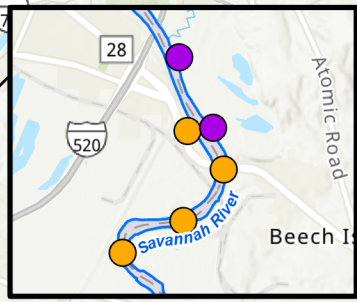
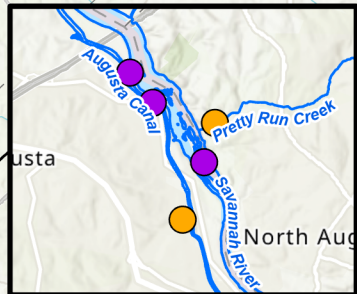
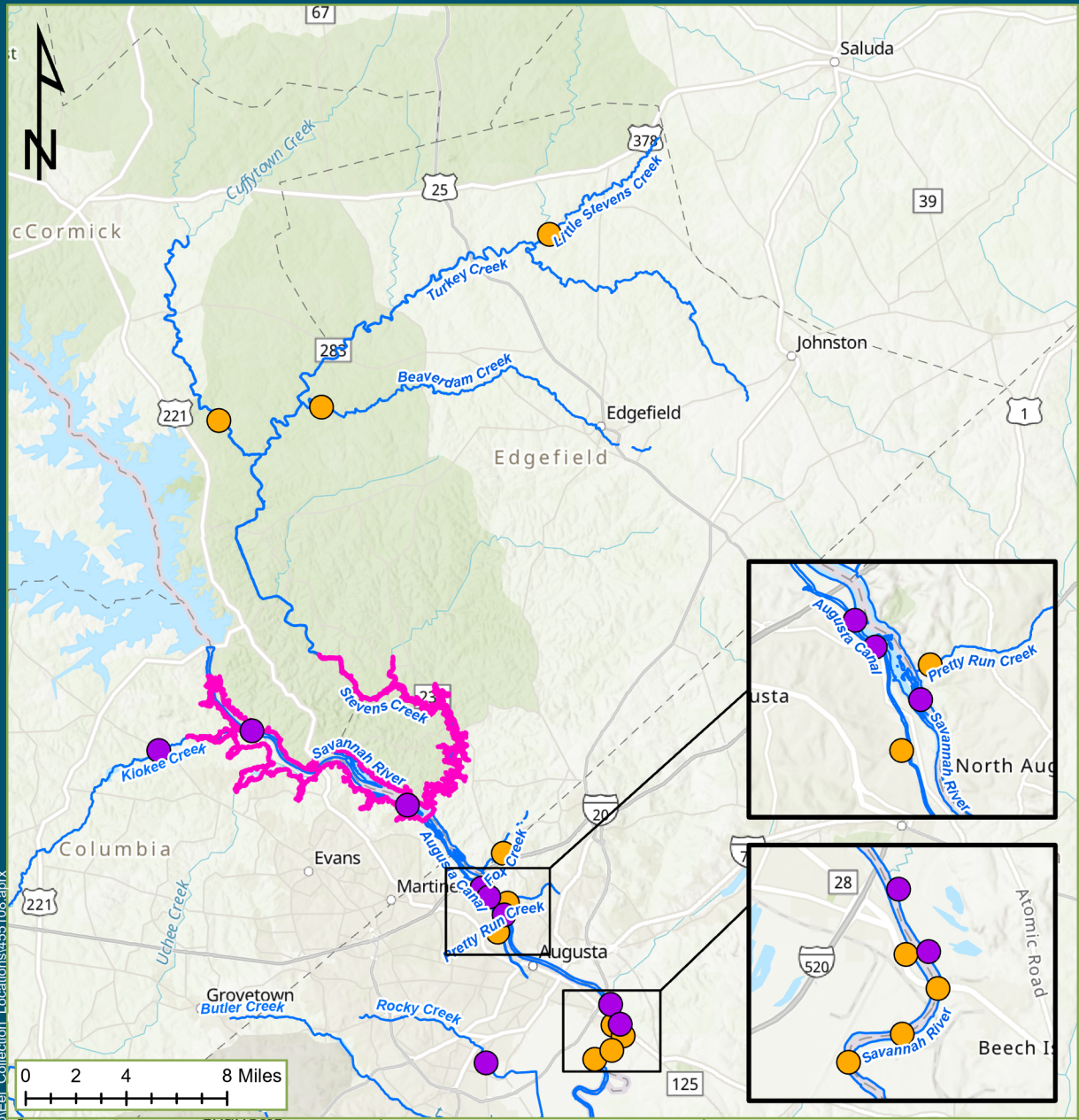
Eels collected upstream of Stevens Creek Dam
27

Date	No. of Eels
1/1/1993	12
Aug-97	2
Nov-97	2
8/8/2000	1
8/8/2000	1
11/4/2004	3
11/4/2004	1
11/5/2004	1
11/5/2004	1
11/7/2004	1
11/9/2004	1
11/9/2004	4
11/9/2004	2
11/8/2005	1
11/8/2005	1
11/8/2005	1
11/8/2005	1
11/8/2005	1
11/8/2005	1
11/8/2005	1
11/8/2005	1
11/8/2005	1
11/15/2005	1
11/15/2005	1
11/15/2005	1
5/15/2008	8
7/30/2008	14
7/30/2008	4
7/30/2008	4
7/30/2008	1
6/18/2009	1
6/28/2012	9
10/29/2013	1
10/29/2013	1
10/29/2013	1
10/29/2013	1
10/29/2013	1
10/29/2013	1
10/30/2013	1
10/31/2013	1
10/19/2016	1
10/19/2016	1
10/19/2016	1
10/19/2016	1
10/19/2016	1
10/19/2016	1
10/19/2016	1
10/19/2016	1
6/13/2018	6
6/14/2018	4
7/3/2018	6
7/26/2018	2
7/26/2018	12
9/13/2018	1

Date	No. of Eels
1/1/1993	12
8/1/1997	2
11/1/1997	2
8/8/2000	2
11/4/2004	4
11/5/2004	2
11/7/2004	1
11/9/2004	7
11/8/2005	7
11/15/2005	2
5/15/2008	8
7/30/2008	23
6/18/2009	1
6/28/2012	9
10/29/2013	6
10/30/2013	1
10/31/2013	1
10/19/2016	7
6/13/2018	6
6/14/2018	4
7/3/2018	6
7/26/2018	14
9/13/2018	1
Total	128



Eel Collection Locations



- Legend**
- SCDNR Eel Collection Locations
 - GADNR Eel Collection Locations
 - Streams
 - Stevens Creek Project Boundary

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Georgia/South Carolina Border

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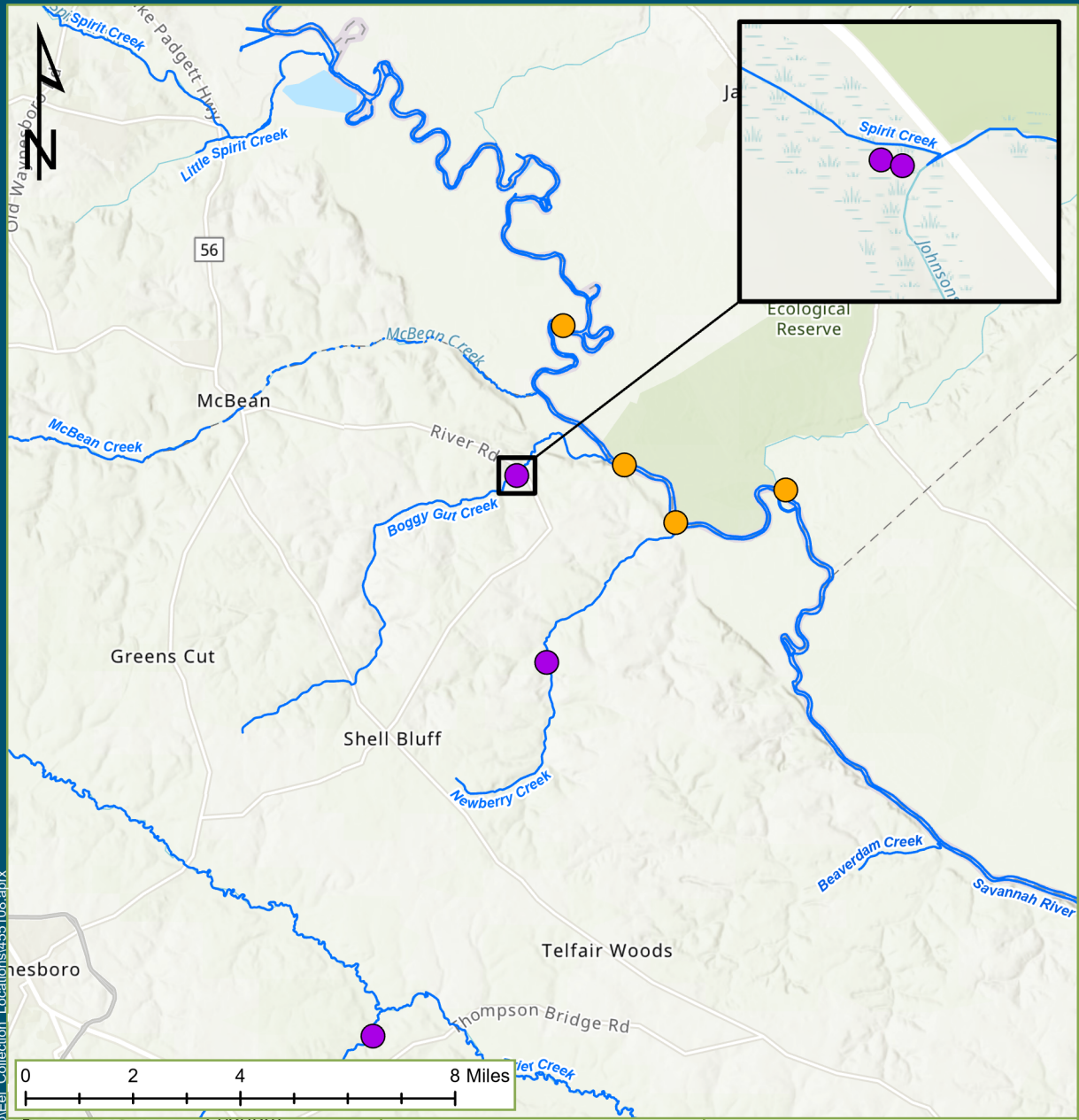
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Eel Collection Locations



Legend

- SCDNR Eel Collection Locations
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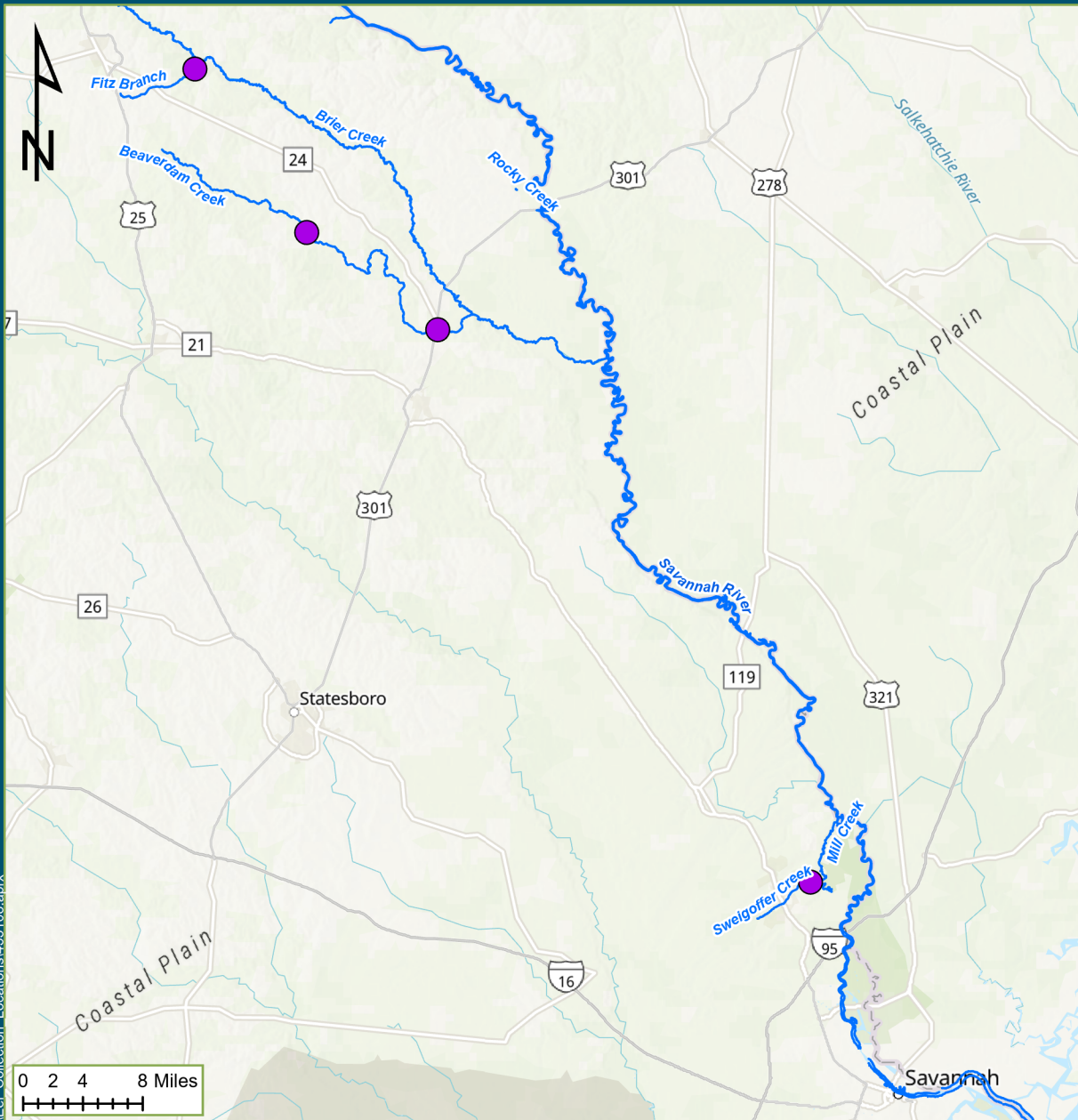
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Eel Collection Locations



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