

Water Resource Inventory and Assessment: Bond Swamp National Wildlife Refuge

Twiggs and Bibb, Georgia



Stone Creek in Bond Swamp NWR

U.S. Department of the Interior
U.S. Fish and Wildlife Service
Southeast Region
Atlanta, GA

March 2020

Water Resource Inventory and Assessment:
Bond Swamp National Wildlife Refuge
Twiggs and Bibb County, Georgia

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Cover Photo: Stone Creek in Bond Swamp NWR. Photo Credit: USFWS

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1 Executive Summary

This Water Resource Inventory and Assessment (WRIA) Report for the Bond Swamp National Wildlife Refuge (NWR) summarizes the results of data mining from national, regional, and local sources for information on hydrology, water rights, water availability, and water quality. This initial draft inventory report is a compilation and summary of available and relevant information for refuge water resources within the region of hydrologic influence (RHI). Topics addressed within this report include facility information, natural setting (geology, soils, climate, hydrology, topography), and a catalog/inventory of relevant hydrologic factors (water resources, water infrastructure, water rights). Information was compiled from national and regional databases, geographically referenced to the same projection, and presented within a Geographic Information System framework.

1.1 Findings

- Bond Swamp National Wildlife Refuge covers approximately 7,348 acres (approximately 11.5 square miles) and is located six miles south of Macon, GA.
- The Ocmulgee River and Stone Creek serve as the major drainage sources for the refuge.
- Bond Swamp NWR is predominantly forested/shrub wetlands along the floodplain of the Ocmulgee River.
- The yearly average precipitation from Station USW00003813 was 45.07 inches.
- According to the refuge, there is approximately 48 miles of streams in Bond Swamp NWR.
- There are 8.21 square miles of waterbodies within the acquisition boundary. Most of the waterbodies are characterized as unnamed swamp/marsh.
- There is a total of 292 water monitoring stations within the RHI of Bond Swamp, including streamgages, surface water quality stations, groundwater level wells, and groundwater quality stations.
- There are approximately 200 bird species that are believed to occur on the refuge including but not limited to waterfowl, waterbirds, shorebirds, and neotropical songbirds.
- Average discharge west of the refuge along Rocky Creek is less than 2000 cfs from June to November. March has the highest discharge yearly at approximately 5000 cfs.

1.2 Key Water Resources Issues of Concern

During a threat assessment, the refuge staff identified the major issues or concerns to the refuge as water quality, political/public relations, and landscape alterations. An analysis of these threats is in Section 6.1 and a table is shown in Table A- 11 in Appendix E.

1.3 Needs and Recommendations

Bond Swamp NWR indicated the following needs and recommendations: (1) Conduct a Contaminant Assessment Process (CAP) evaluation (2) Conduct a baseline contaminant study. An analysis and evaluation of needs are in Section 6.2 and are shown in Table A- 12 in Appendix E.

2 Introduction

The long-term goal of the National Wildlife Refuge System (NWRS) Water Resource Inventory and Assessment (WRIA) effort is to provide up-to-date, accurate, reconnaissance-level data on water quantity and quality to support NWRS planning and management actions to fulfill the NWRS mission and individual refuge purposes and management goals. An accurate water resources inventory is essential to prioritize issues and tasks, and to take prescriptive actions that are consistent with the established purposes of the refuge. WRIAs evaluate significant water resources (including rivers and streams, lakes and ponds, springs, wetlands, and groundwater), known water quality issues, water management infrastructure and practices, water rights, threats to water supplies, and other water resource issues for each field station.

This Water Resource Inventory and Assessment (WRIA) Report for Bond Swamp National Wildlife Refuge (Bond Swamp NWR or “the refuge”) summarizes available information relevant to refuge water resources. Major topics addressed in this report include the natural setting of the refuge (topography, climate, geology, soils, hydrology), impacts of development and climate change, significant water resources and associated infrastructure within the refuge, past and current water monitoring activities on and near the refuge, water quality information, and federal and state water use and water quality regulatory framework. Information was compiled from publicly available reports, databases, and geospatial datasets from federal, state, and local agencies; published research reports; websites maintained by government agencies, academic institutions, and non-governmental organizations; and from files and geospatial data layers maintained by the refuge.

This WRIA report is presented on two scales: intermediate (within a Region of Hydrologic Influence (RHI) encompassing the refuge), and local (within the NWR). The inventory and assessment process includes data assimilation at the local level and the assessment of key water resource issues of concern (threats or stressors) and needs. The WRIA report will synthesize the intermediate and local water resources inventory data and provide a summary of the threats and needs associated with water resources for ongoing water resource management and strategy development.

2.1 Document Organization

This WRIA report is partitioned into several categories and sub-categories according to a nationally adopted format for conducting water resource inventory and assessments through the US Fish & Wildlife Service (USFWS). This document follows this same format for easy inter-refuge operability, and is organized as follows:

- Facility information and habitats
- Natural Setting: topography, geology, hydrogeology, soils, hydrology and climate

- Inventory: water resources, water resource infrastructure, water quality, and water monitoring
- Assessment: threats and needs

The WRIA report contains general information and maps describing the natural setting of the refuge. More detailed information can be found in the inventory section about water resources, water infrastructure, water quality, and water monitoring. The inventory also contains information about federal and state regulations for Bond Swamp NWR and the surrounding area's water resources. Some of the information, such as data sources and links to the information will be provided in an Appendix.

2.2 Data Processing

Data for this inventory came from public domain databases through download and access requests. Unless specified otherwise in a table or figure caption or footnote, data presented in this WRIA report are the latest available as of August 30, 2018.

Geospatial data were processed using ArcGIS and summarized within two spatial domains: within the acquisition boundary for Bond Swamp National Wildlife Refuge and outside the refuge boundary but within the Region of Hydrologic Influence (RHI). ArcGIS datasets and non-geospatial datasets (e.g. climate data) were analyzed in R and Microsoft Excel to extract information for the inventory.

3 Facility Information

Bond Swamp National Wildlife Refuge (NWR) is located 6 miles south of Macon, Georgia, along the Ocmulgee River. The refuge was established on October 16, 1989, to preserve, protect, and improve the ecosystem along the floodplain of the Ocmulgee River (USFWS, 1989). Original purchase of the land included 7,348 acres (USFWS, 2009). An expansion to the NWR was proposed in 1999 and created the current acquisition boundary, pushing the original boundaries north, west, and largely south. The acquisition boundary includes portions of Twiggs and Bibb counties, and covers approximately 18,000 acres (USFWS, 2009). Bond Swamp NWR straddles the fall line, separating the Piedmont and Coastal Plain physiographic regions of Georgia.

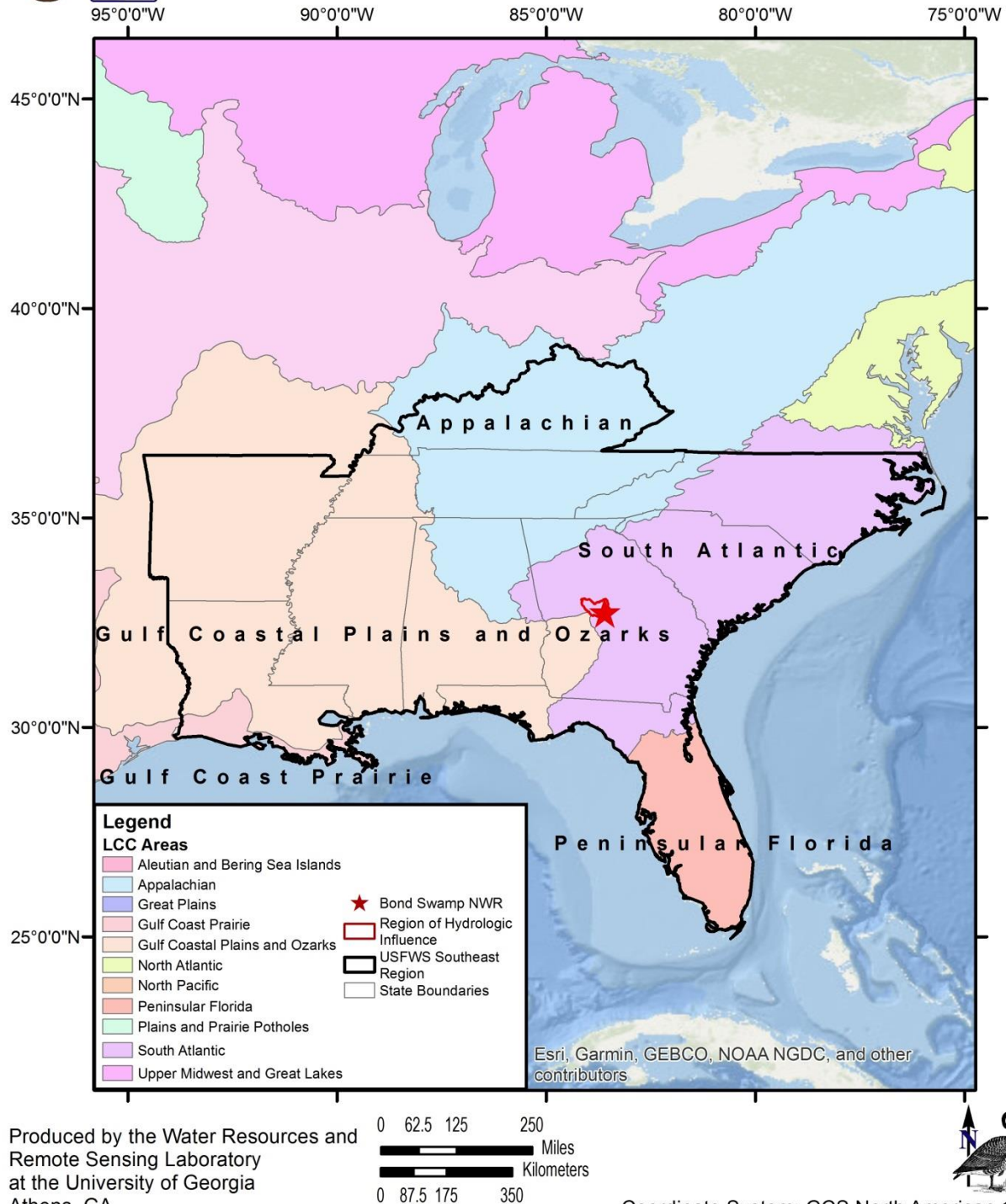
Bond Swamp National Wildlife Refuge plays a large role within the Ocmulgee Heritage Greenway and their efforts to protect the Ocmulgee River (USFWS, 2009). The refuge provides habitat for conservation of wildlife, plants, and fish within the Ocmulgee River system. Bond Swamp fits within a number of national and international conservation plans and initiatives. These include the North American Bird Conservation Initiative, the Partners-in-Flight Bird Conservation Plan, the U.S. Shorebird Conservation Plan, the Waterbird Conservation for the Americas, and the National Wetlands Priority Conservation Plan. Bond Swamp NWR is also a part of the South Atlantic Landscape Conservation Cooperative (Figure 1).

Bond Swamp NWR preserves a diverse ecosystem of wetland and upland habitats to benefit the flora and fauna that live on the floodplain of the Ocmulgee River. The refuge and its surrounding area are one of the largest remaining forested wetland habitats in Georgia (USFWS, 2009). The refuge provides habitat for one of three black bear populations in Georgia. The river cane habitat is associated with many rare species of butterflies. Approximately 200 bird species occur within the refuge. Neotropical songbirds of concern depend on bottomland hardwoods, include Swainson Warbler, wood thrush, and the yellow-billed cuckoo (USFWS, 2009). The warm, wet areas of Bond Swamp NWR also provide habitat for several species of reptiles and amphibians.



Bond Swamp National Wildlife Refuge

Landscape Conservation Cooperatives



Produced by the Water Resources and Remote Sensing Laboratory at the University of Georgia Athens, GA
Map Date: September 2018
File Name: lcc_bs

Figure 1. Landscape Conservation Cooperatives around Bond Swamp NWR. ¶Source: (Landscape Conservation Cooperatives Network, 2015).

4 Natural Setting

The following information about the natural setting for Bond Swamp NWR is presented at two different spatial scales: the Region of Hydrologic Influence (RHI), a hydrologically defined region of interest containing the refuge (see below), and the Bond Swamp NWR approved acquisition boundary (Figure 2).

Region of Hydrologic Influence

The Region of Hydrologic Influence (RHI) describes a portion of or entire watershed that the refuge site is located. The RHI represents the potential drainage impact on water resources flowing to the refuge.

For the purposes of the WRIA process, the RHI is defined on the basis of standard subdivisions within the National Watershed Boundary Database (NWD) at the HUC-10 scale. The NWD hierarchically divides the landscape into Hydrologic Units (HUs) that are assigned Hydrologic Unit Codes (HUCs). At the largest geographic scale, these hydrologic units are assigned two digit codes and are known as hydrologic regions or HUC-2s. Each hydrologic region is further subdivided at increasingly fine spatial scales into subregions, basins, subbasins, watersheds, and subwatersheds corresponding to 4-, 6-, 8-, 10-, and 12-digit HUCs, respectively.

The RHI for Bond Swamp was created using 3 HUC-10s and a ½ mile buffer on the southern part of the refuge that extends into a 4th HUC-10 (Figure 3). The 3 HUC-10s completely contained by the RHI are 0307010314 (Tobesofkee Creek), 0307010315 (Echeconnee Creek), and 0307010316 (Walnut Creek-Ocmulgee River). The fourth HUC-10 that is only partially included within the RHI is 0307010401 (Sandy Run-Ocmulgee River).



Bond Swamp National Wildlife Refuge

Bond Swamp National Wildlife Refuge

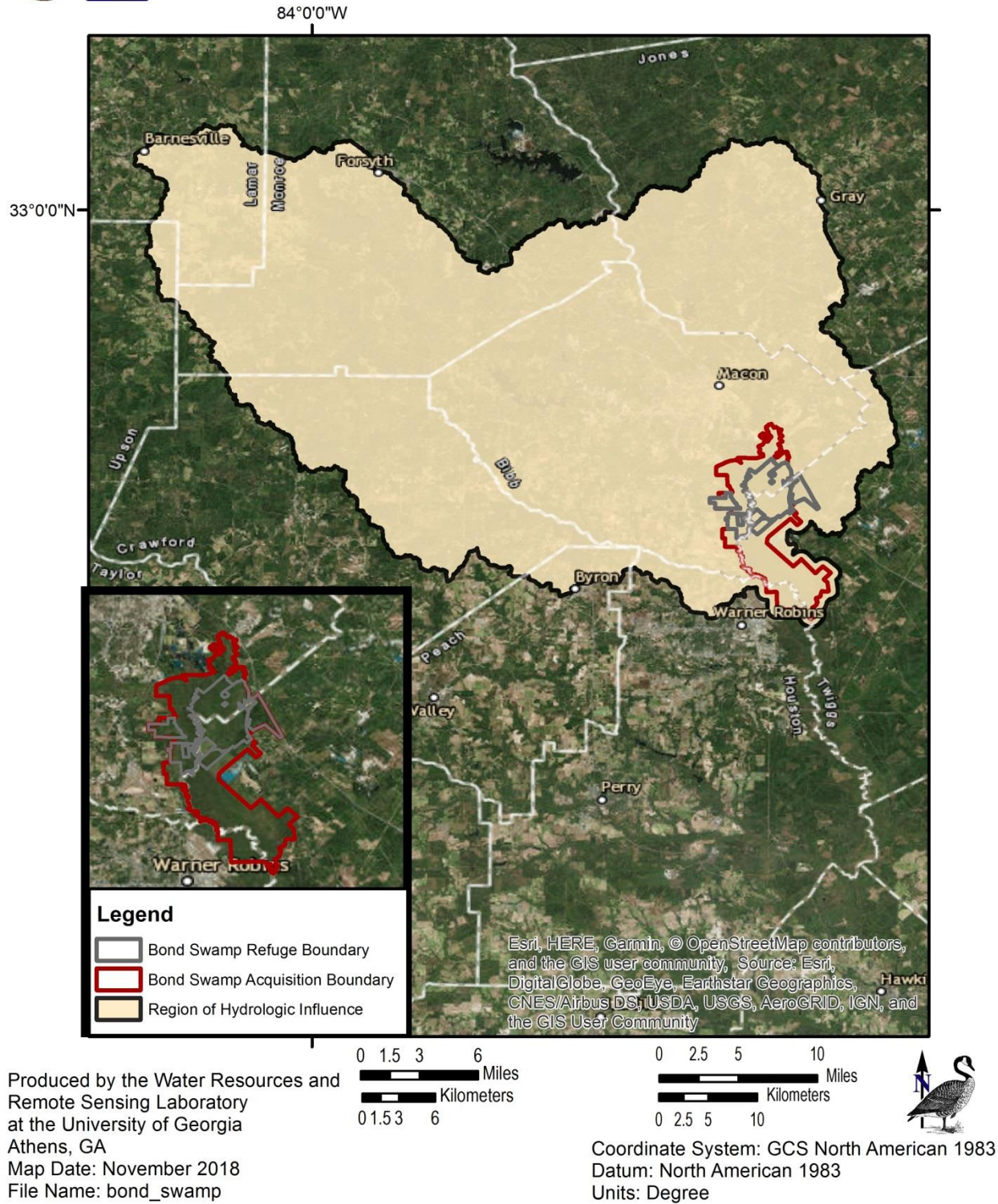
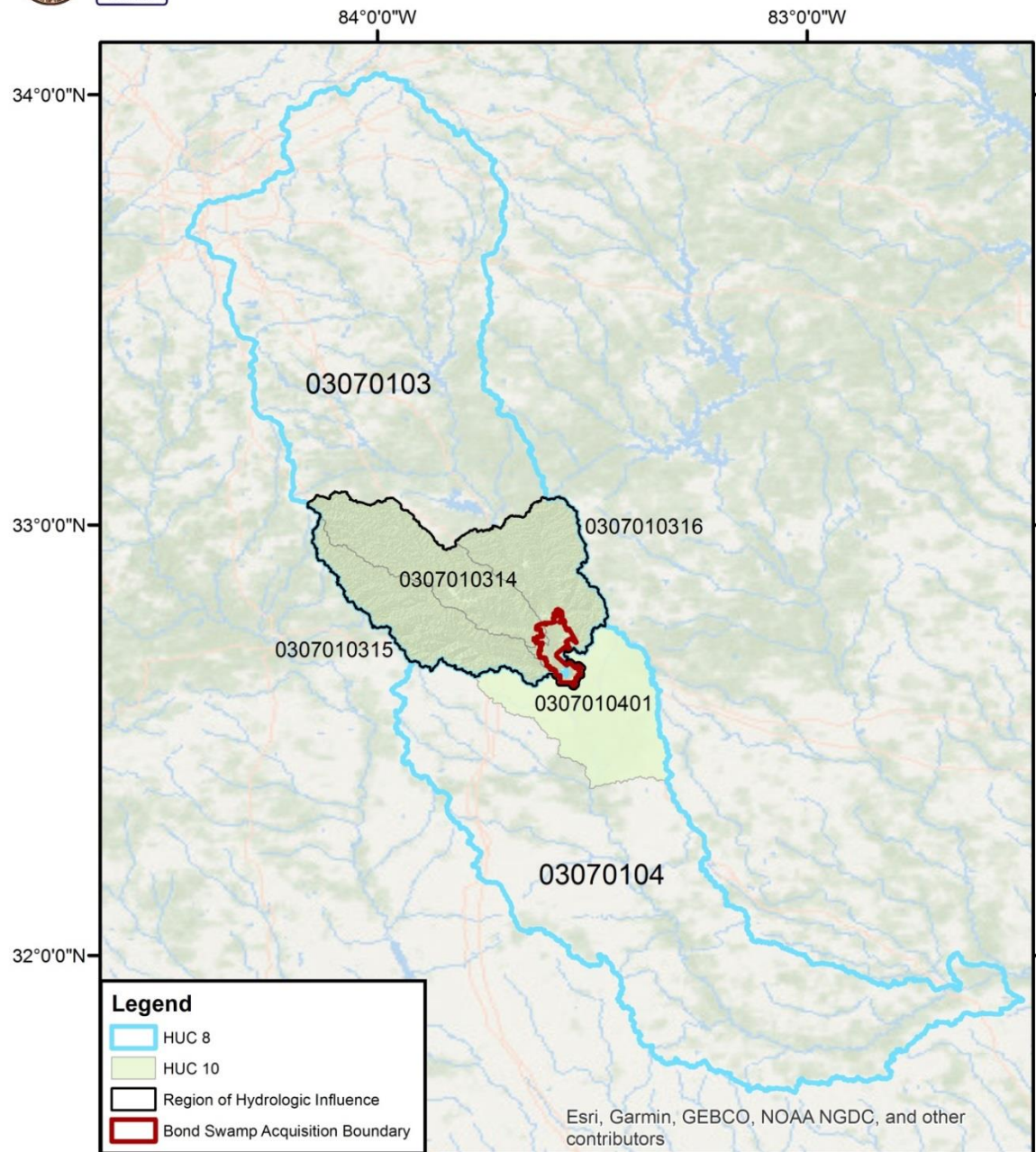


Figure 2. Region of Hydrologic Influence (RHI) of Bond Swamp NWR. Source: (USFWS, 2018).



Bond Swamp National Wildlife Refuge Hydrologic Unit Codes (HUCs)



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Athens, GA
Map Date: September 2018
File Name: HUCs_bs



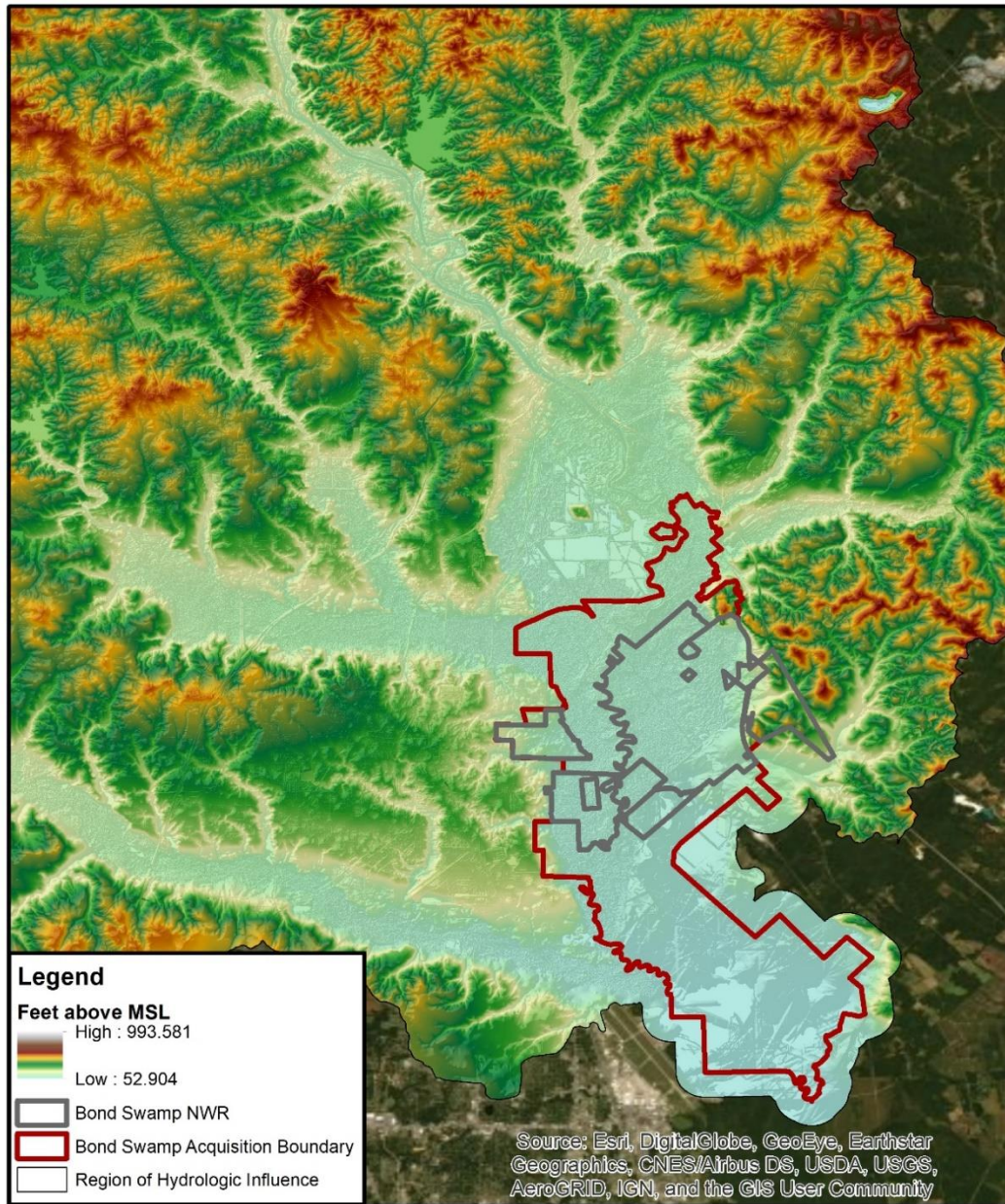
Figure 3. Hydrologic Unit Codes (HUCs) around Bond Swamp NWR. ¶“HUC” refers to a set of divisions of the watershed within the National Watershed Boundary Database (NWD). The NWD divides basins into Hydrologic Units (HUs) which are assigned Hydrologic Unit Codes (HUCs).Source: (USGS, 2013).

4.1 Topography and Landforms

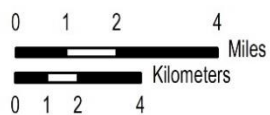


Bond Swamp National Wildlife Refuge

Topography



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Remote Sensing Laboratory
at the University of Georgia
Athens, GA
Map Date: November 2018
File Name: topo_bs



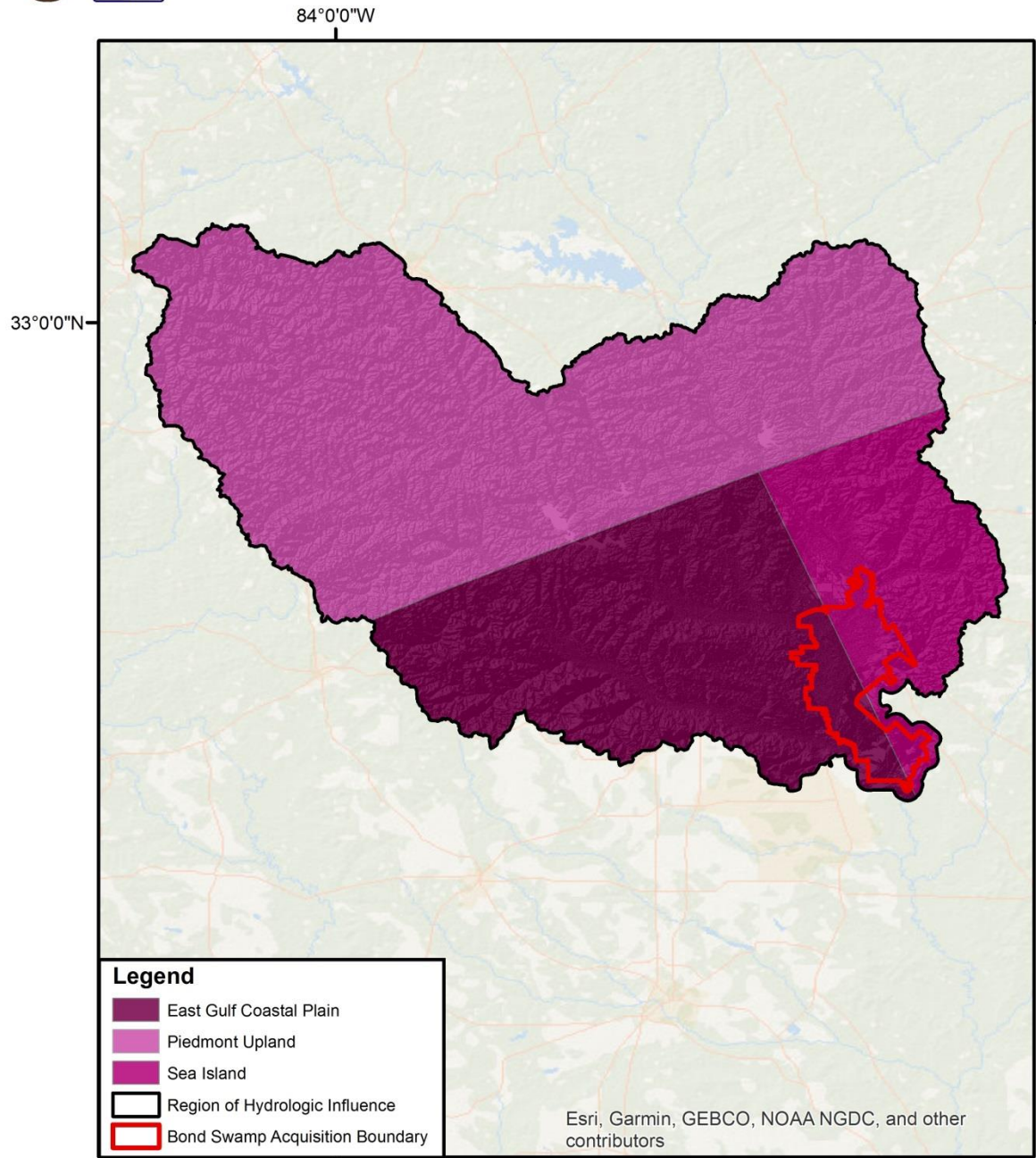
Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 4. Topography of Bond Swamp NWR. Elevation in feet above mean sea level (MSL). Source: (USGS, 2018b).



Bond Swamp National Wildlife Refuge

Physiographic Sections



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at the University of Georgia
Athens, GA
Map Date: September 2018
File Name: physio_bs



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

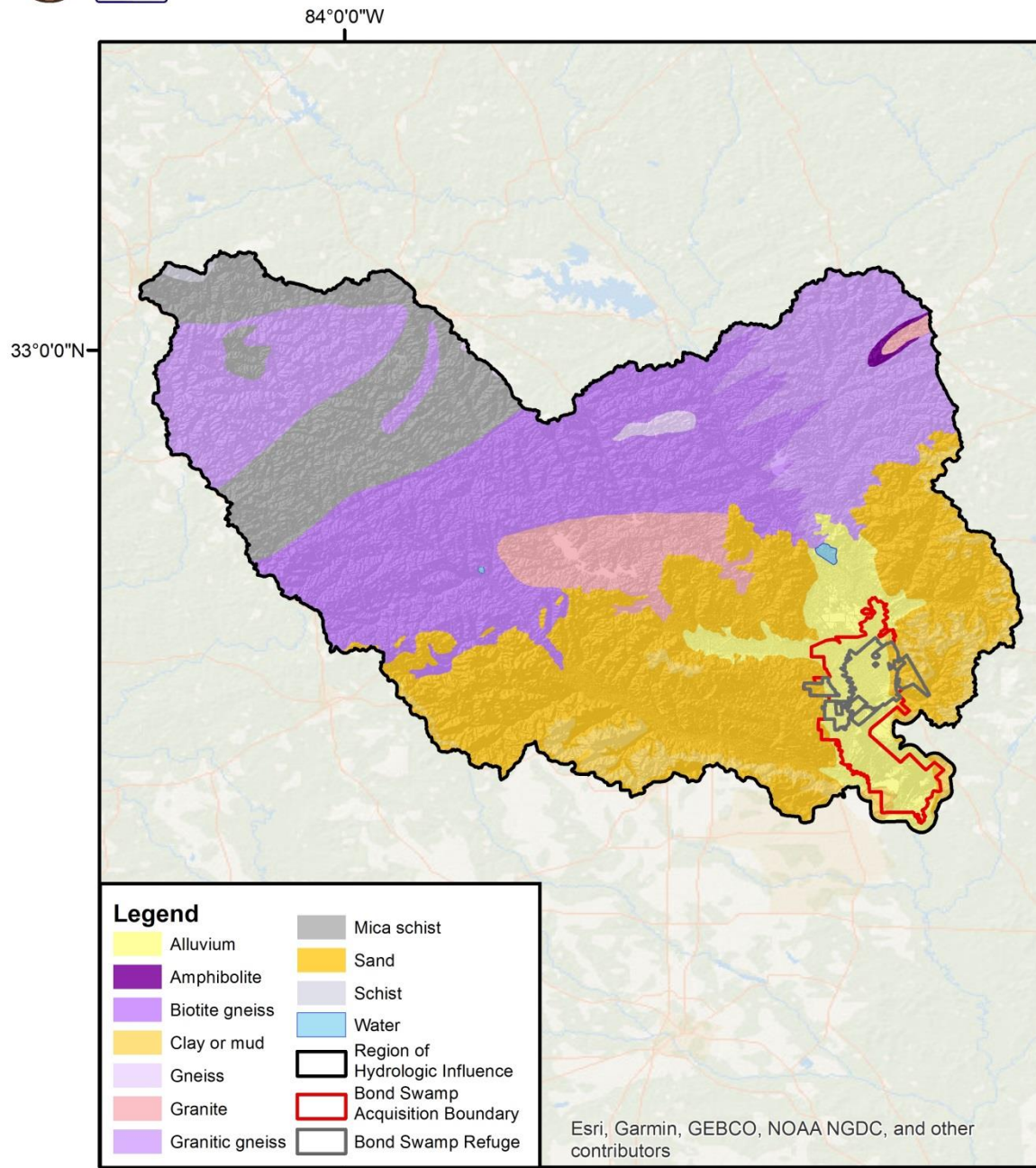
Figure 5. Physiographic sections of the RHI of Bond Swamp NWR. Source: (USGS, 1946).

4.2 Geology & Hydrogeology



Bond Swamp National Wildlife Refuge

Geology



Produced by the Water Resources and Remote Sensing Laboratory at the University of Georgia Athens, GA
Map Date: September 2018
File Name: geology_bs



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 6. Geology of the RHI of Bond Swamp NWR. Source: (USGS, 2009a).



Bond Swamp National Wildlife Refuge

Aquifers

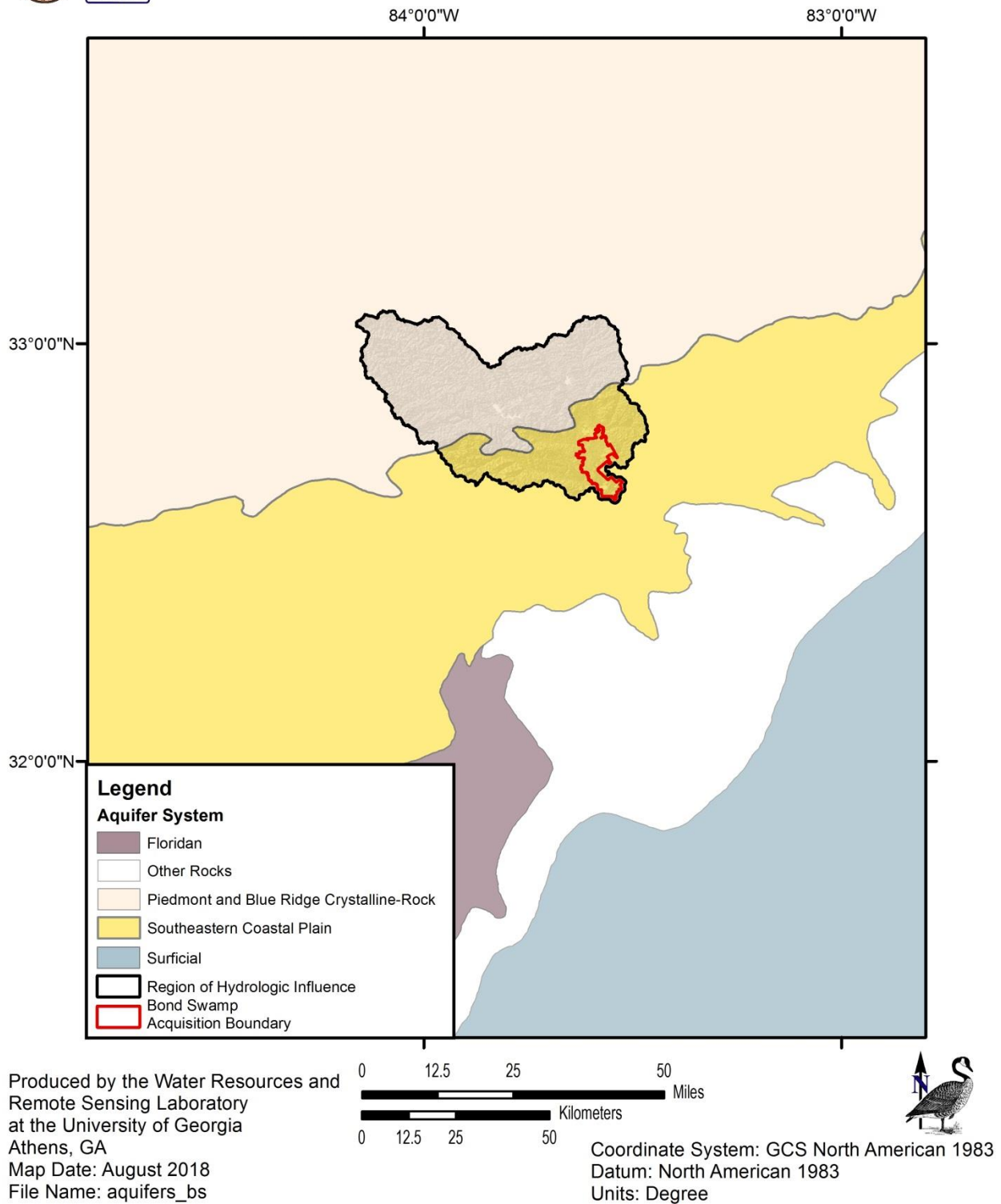


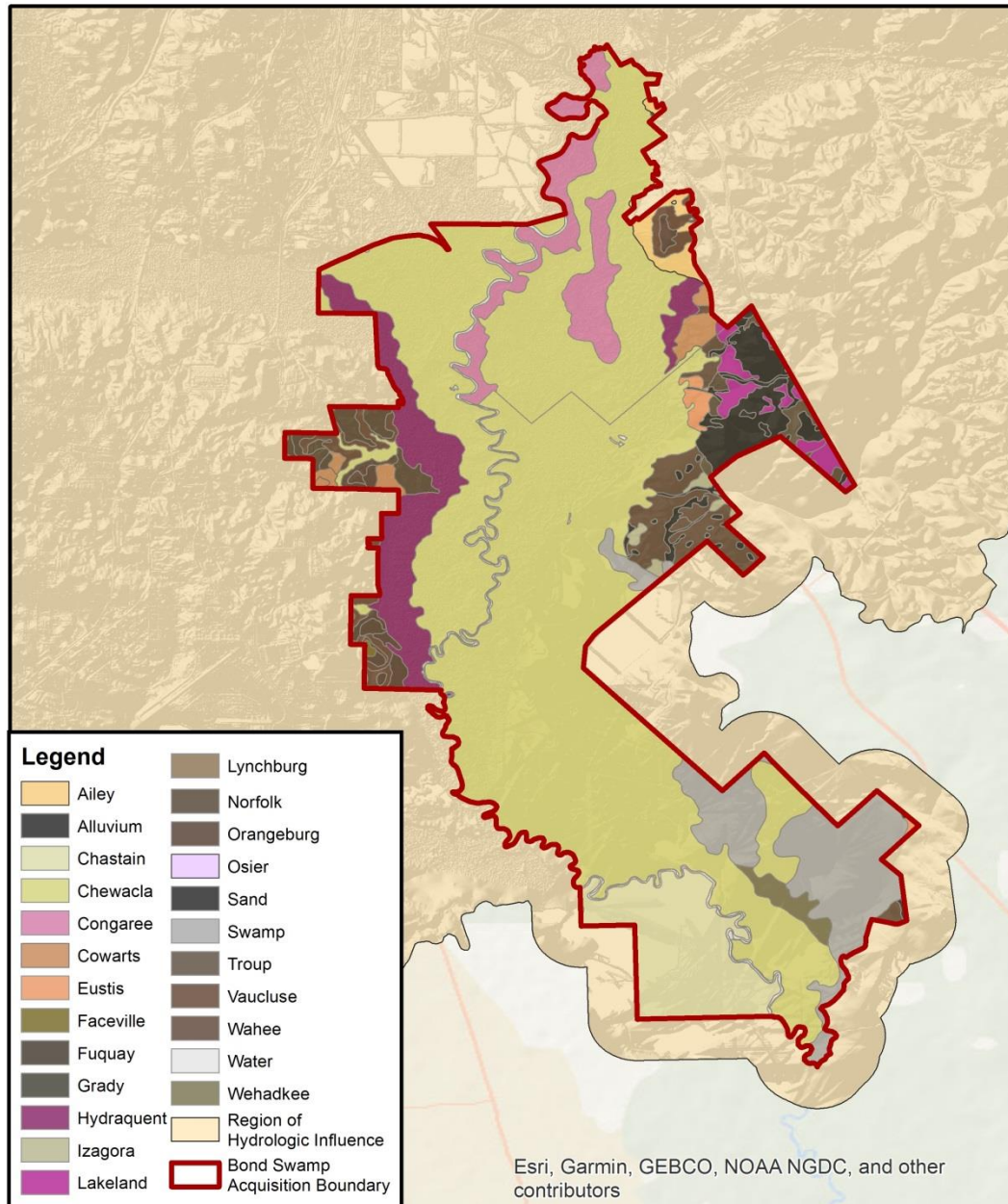
Figure 7. Aquifers in the RHI of Bond Swamp NWR and the surrounding area. Source: (USGS, 2003).

4.3 Soils



Bond Swamp National Wildlife Refuge

Soil Series



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Athens, GA
Map Date: September 2018
File Name: soil_bs

0 0.5 1 2
Miles
0 0.5 1 2
Kilometers



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 8. Soil Series in Bond Swamp NWR. Source: (Soil Survey Staff, 2017)

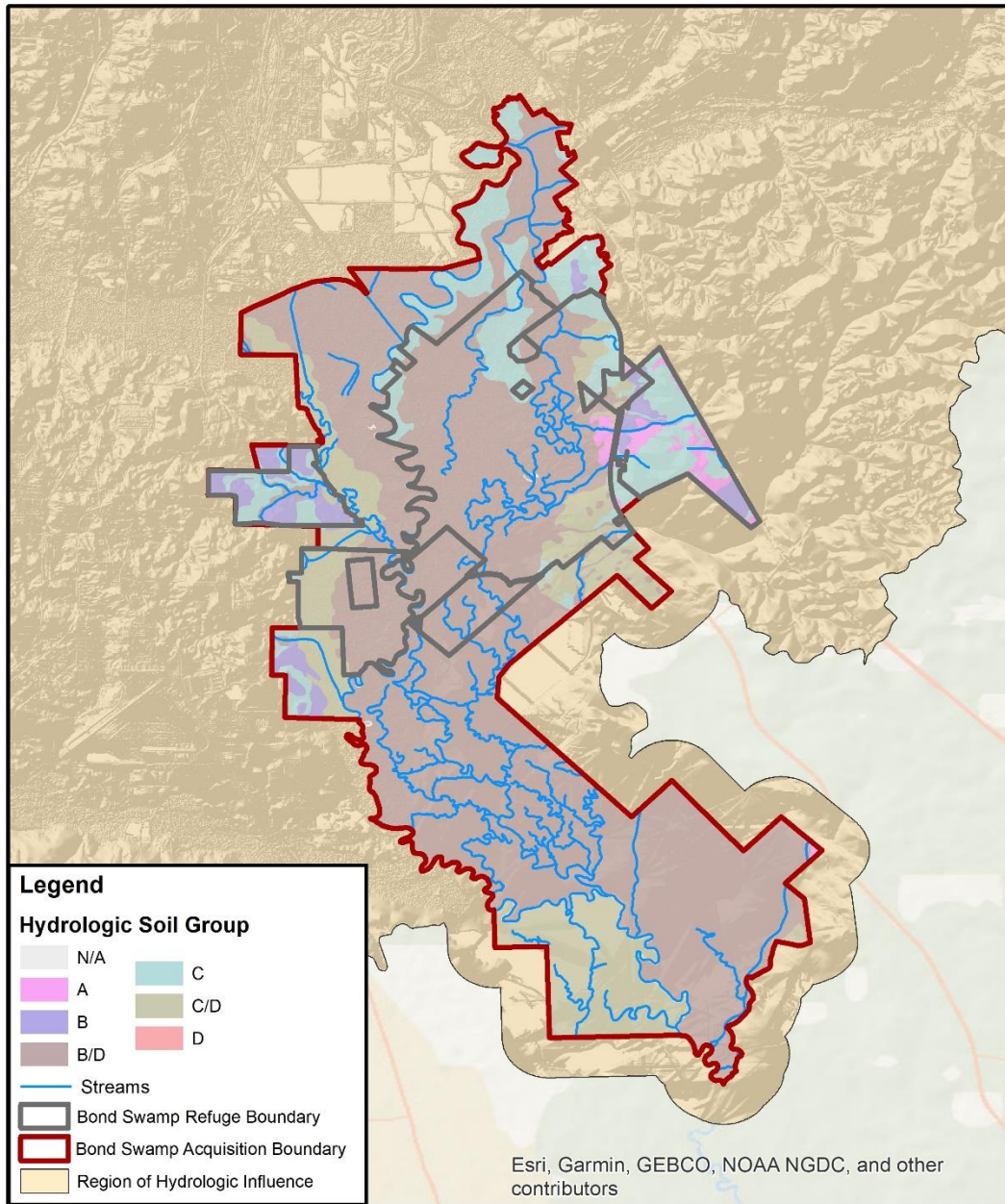
Table 1. Soil groupings in the acquisition boundary of Bond Swamp NWR. Source: (Soil Survey Staff, 2017).

Series Name	Acres within Acquisition Boundary	Slope	Drainage	Hydrologic Soil Group	Surface Texture	Subsurface Texture	Location	Parent Material
Ailey	193.2	2 to 6%	Well drained	C	Loamy sand	Sandy clay loam	Hilly backslope	Marine deposits
Chastain	1,321.5	0 to 2%	Poorly drained	C/D	Silty clay loam	Clay to sand	Flood plains	Alluvium
Chewacla	12,359.5	0 to 2%	Somewhat poorly drained	B/D	Silt loam	Loam	Flood plains	Alluvium
Congaree	1016	0 to 2%	Well drained	C	Silt loam	Loam	Flood plains	Alluvium
Cowarts	225.8	2 to 8%	Well drained	C	Sandy loam	Sandy clay loam	Hilly backslope	Marine deposits
Eustis	91	0 to 2%, and 8 to 12%	Well drained	A	Sand	Sandy clay loam	Hilly backslope	Marine deposits
Faceville	18.5	2 to 8%	Well drained	B	Sandy loam	Sandy clay	Interfluves	Marine deposits
Fuquay	4.9	1 to 5%	Well drained	B	Loamy sand	Sandy clay loam	Interfluves	Marine deposits
Grady	1.5	0 to 2%	Poorly drained	C/D	Sandy loam	Sandy clay	Depressions	Marine deposits
Hydraquent	1,241.4	0 to 2%	Very poorly drained	C/D	Silty clay loam	Silty clay	Depressions, Flood plains	Alluvium
Izagora	74.9	0 to 2%	Moderately well drained	C	Sandy loam	Sandy clay loam	Stream terraces	Alluvium
Lakeland	255.2	0 to 12%	Very poorly drained to somewhat excessively drained	C/D	Silty clay loam	Silty clay	Depressions, flood plains, hilly backslopes, hillslopes	Alluvium, marine deposits, sandy marine deposits
Lynchburg	0.6	0 to 2%	Somewhat poorly drained	B/D	Sandy loam	Sandy clay loam to sandy clay	Flats	Marine deposits
Norfolk	273.3	0 to 5%	Well drained	B	Sandy loam	Sandy clay loam	Interfluves	Marine deposits
Orangeburg	227.1	0 to 8%	Well drained	B	Sandy loam	Sandy clay loam	Interfluves	Marine deposits
Osier	0.7	0 to 2%	Poorly drained	A/D	Loamy sand	Sand to fine sand	Flood plains	Alluvium
Troup	79.3	5 to 8%	Somewhat excessively drained	A	Sand	Loamy sand to sandy loam to sandy clay loam	Ridges, knolls, marine terraces	Sandy and loamy marine deposits
Vaucluse	335.4	4 to 18%	Well drained	C	Loamy sand	Sandy clay loam to sandy loam	Hilly summit	Marine deposits
Wahee	655	0 to 5%	Well drained	B	Loamy sand	Sandy clay loam	Interfluves	Marine deposits
Wehadkee	153.9	0 to 2%	Poorly drained	B/D	Silt loam	Silt loam to sandy loam	Flood plains	Alluvium



Bond Swamp National Wildlife Refuge

Hydrologic Soil Groups



Produced by the Water Resources and
Remote Sensing Laboratory
at the University of Georgia
Athens, GA
Map Date: February 2018
File Name: hydro_soil_bs

0 0.5 1 2
Miles
0 0.5 1 2
Kilometers



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 9. Hydrologic soil groupings in the RHI of Bond Swamp NWR. Source: (Soil Survey Staff, 2017)

4.4 Hydrology



Bond Swamp National Wildlife Refuge

Hydrography

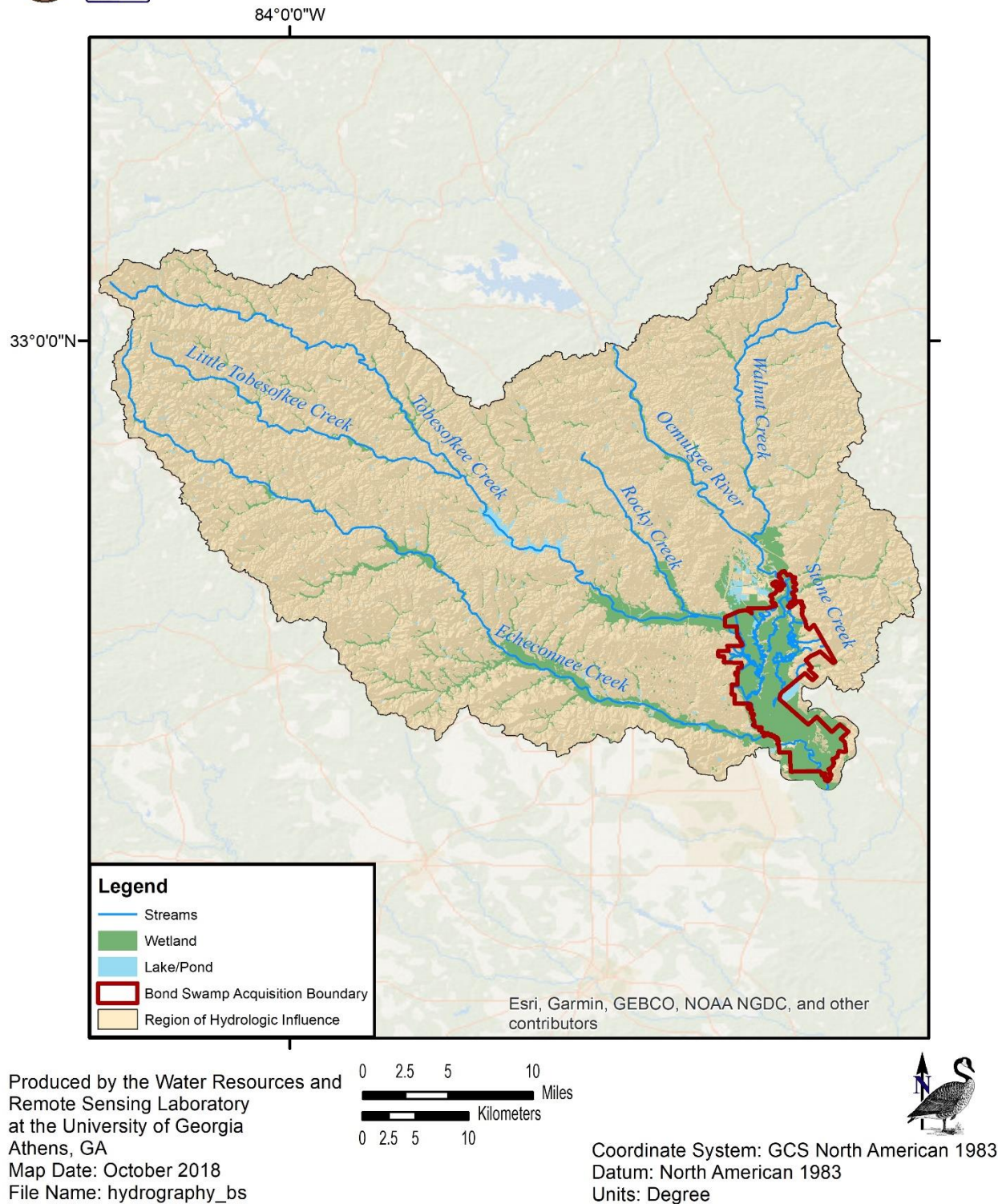


Figure 10. Hydrography of the RHI for Bond Swamp NWR. Source: (USGS, 2013a).

4.5 Land Cover

Table 2. Land Use Classifications in the RHI of Bond Swamp NWR. ¶Source: (USGS, 2014).

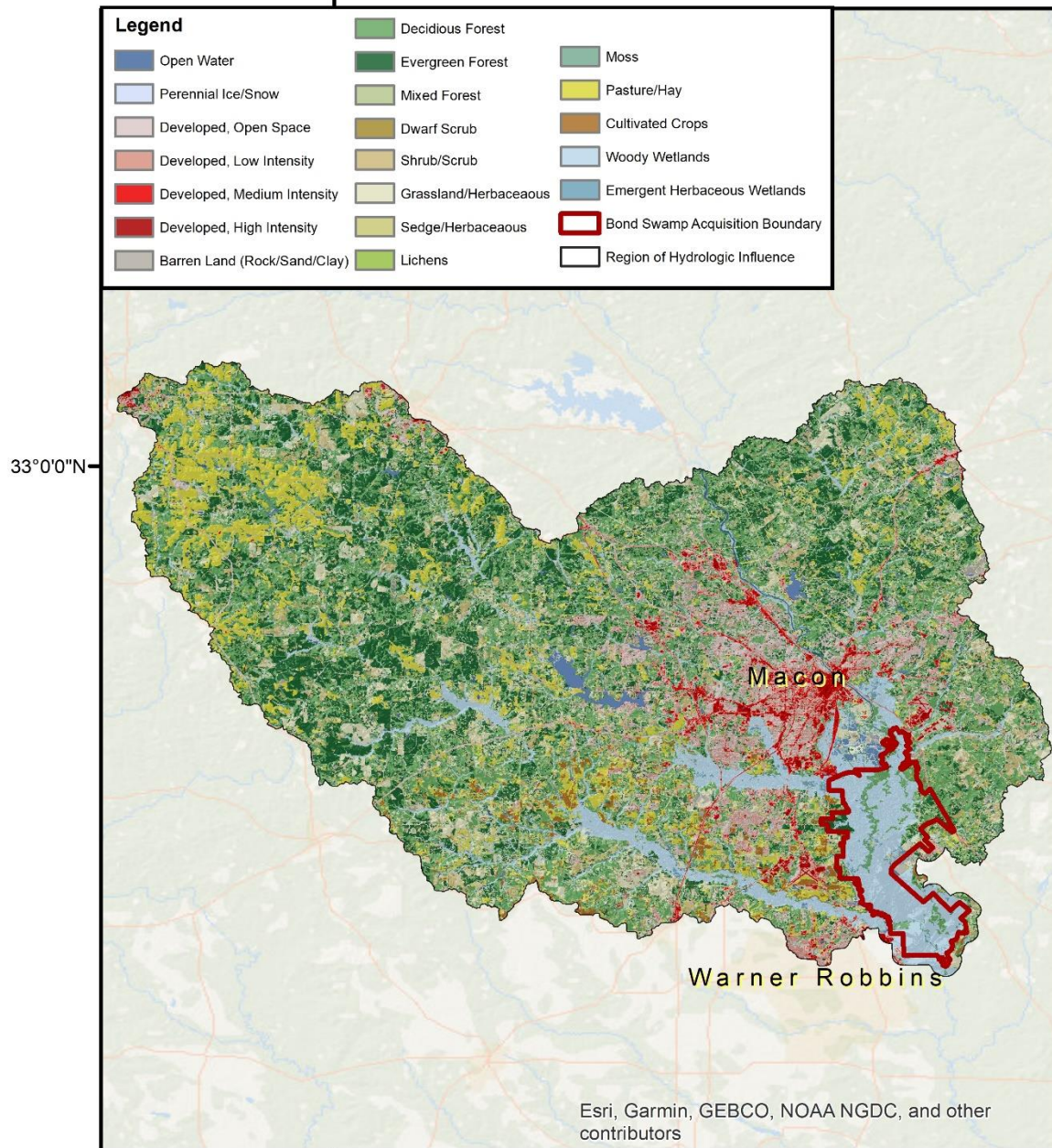
Classification	Percentage in RHI	Percentage in AB
Open Water	1.37	0.07
Developed, Open Space	8.49	0.51
Developed, Low Intensity	3.64	0.10
Developed, Medium Intensity	1.56	0.01
Developed High Intensity	0.68	0.00
Barren Land (Rock/Sand/Clay)	0.74	0.00
Deciduous Forest	25.97	13.33
Evergreen Forest	17.08	5.49
Mixed Forest	4.87	2.94
Shrub/Scrub	3.80	0.64
Grassland/Herbaceous	10.88	1.81
Pasture/Hay	9.87	0.17
Cultivated Crops	1.25	0.02
Woody Wetlands	9.28	72.26
Emergent Herbaceous Wetlands	0.52	2.64



Bond Swamp National Wildlife Refuge

Land Cover

84°0'0"W



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Athens, GA
Map Date: November 2018
File Name: land_cover_bs



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 11. Land Cover in the RHI of Bond Swamp NWR. The large developed areas include the cities of Macon and Warner Robbins, GA. Source: (USGS, 2014).

4.6 Climate

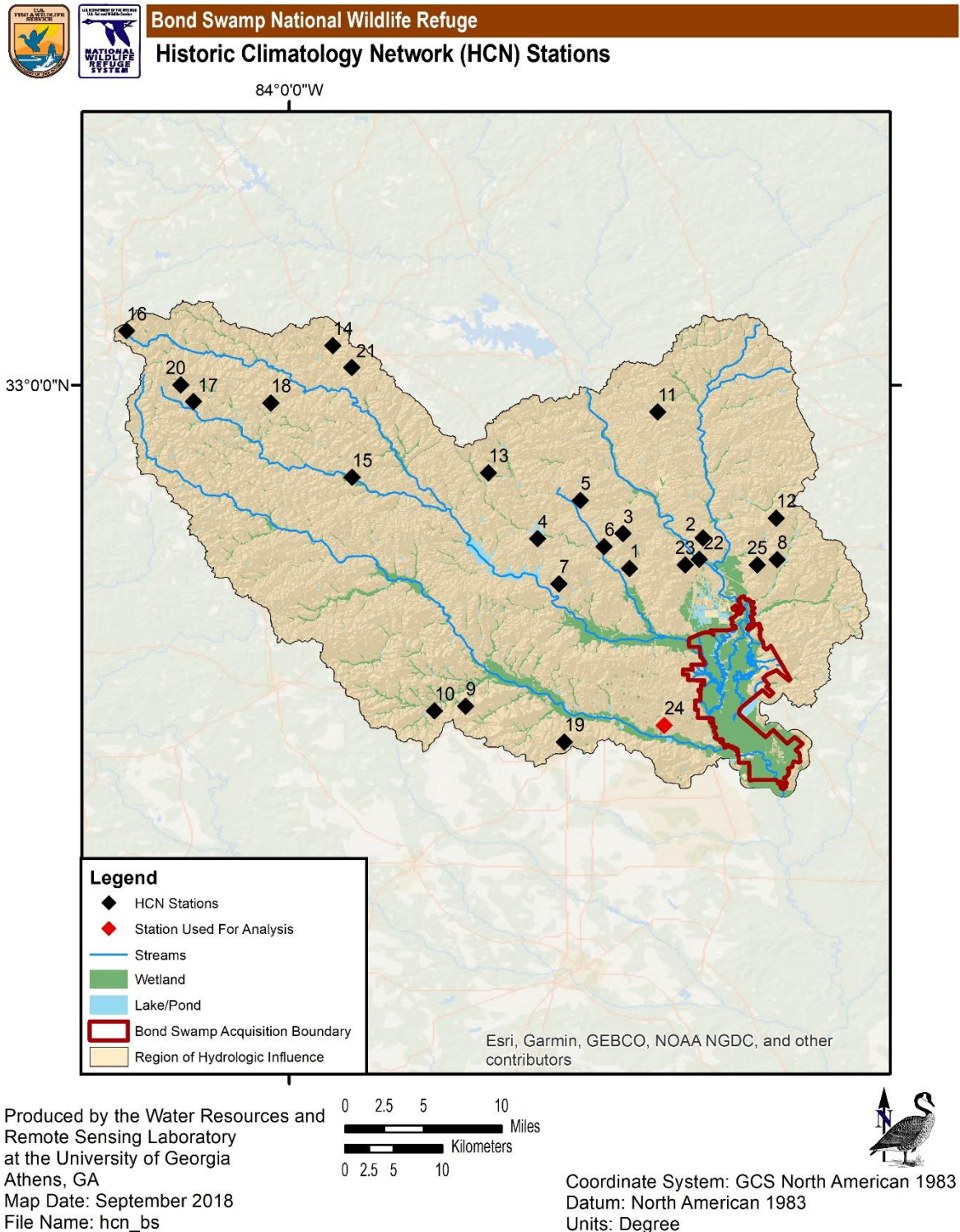


Figure 12. Historical Climatology Network (HCN) stations in the RHI of Bond Swamp NWR. Map ID numbers correspond to Table 3. Station 24 was used for further analysis in Figure 15, Figure 16, Figure 13, and Figure 14. The GHCN-Daily was used for this report and is a collection of over 100,000 climate stations around the globe. This database uses climate stations that collect temperature and precipitation data from various sources therefore; there is a large variation in length of record and data collected between stations. Source: (Menne et al., 2012).

Table 3. Historical Climatology Network (HCN) stations in the RHI. The bolded station indicates the station used for further analysis in Section 4.6. Map ID numbers correspond with Figure 12. Source: (NOAA Regional Climate Center, 2018).

Map ID	Station Number	State	City
1	US1GABB0001	GA	MACON
2	US1GABB0003	GA	MACON
3	US1GABB0004	GA	MACON
4	US1GABB0005	GA	MACON
5	US1GABB0006	GA	MACON
6	US1GABB0007	GA	MACON
7	US1GABB0010	GA	MACON
8	US1GABB0016	GA	MACON
9	US1GACR0001	GA	BYRON
10	US1GACR0002	GA	FORT
11	US1GAJN0002	GA	GRAY
12	US1GAJN0006	GA	MACON
13	US1GAMN0001	GA	MACON
14	US1GAMN0007	GA	FORSYTH
15	US1GAMN0010	GA	FORSYTH
16	USC00090660	GA	BARNESVILLE
17	USC00090661	GA	BARNESVILLE
18	USC00091200	GA	BRENT
19	USC00091448	GA	BYRON
20	USC00093303	GA	FAIRVIEW
21	USC00093506	GA	FORSYTH
22	USC00095438	GA	MACON
23	USC00095447	GA	MACON
24	USW00003813	GA	MACON
25	USW00013892	GA	MACON

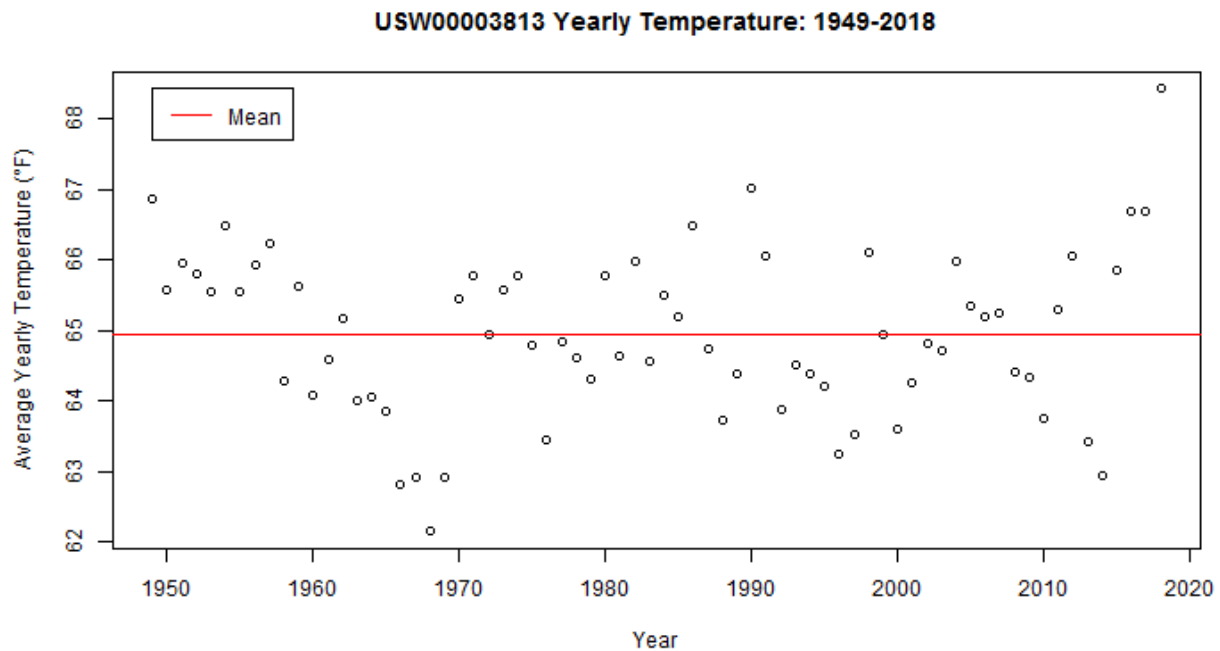


Figure 13. Average Annual Temperature from 1949-2018 for Station Number USW00003813. Location of the station is shown in Figure 12. Source: (NOAA Regional Climate Center, 2018).

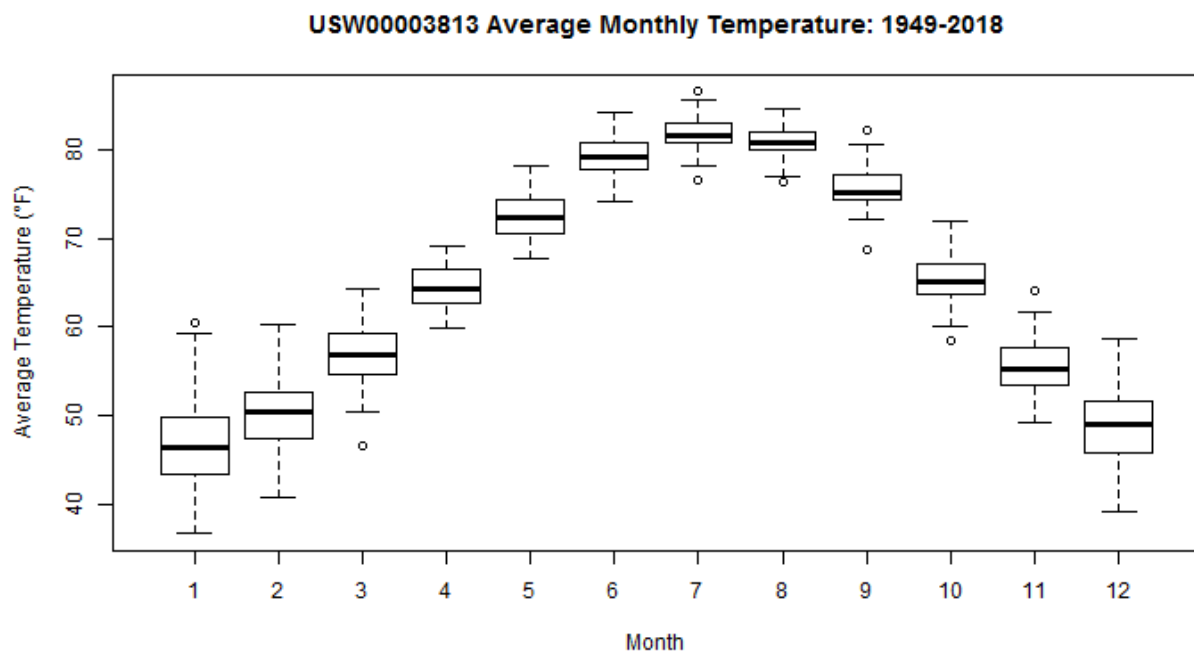


Figure 14. Average Monthly Temperature from 1949-2018 from Station Number USW00003813. Location of the station is shown in Figure 12. Source: (NOAA Regional Climate Center, 2018).

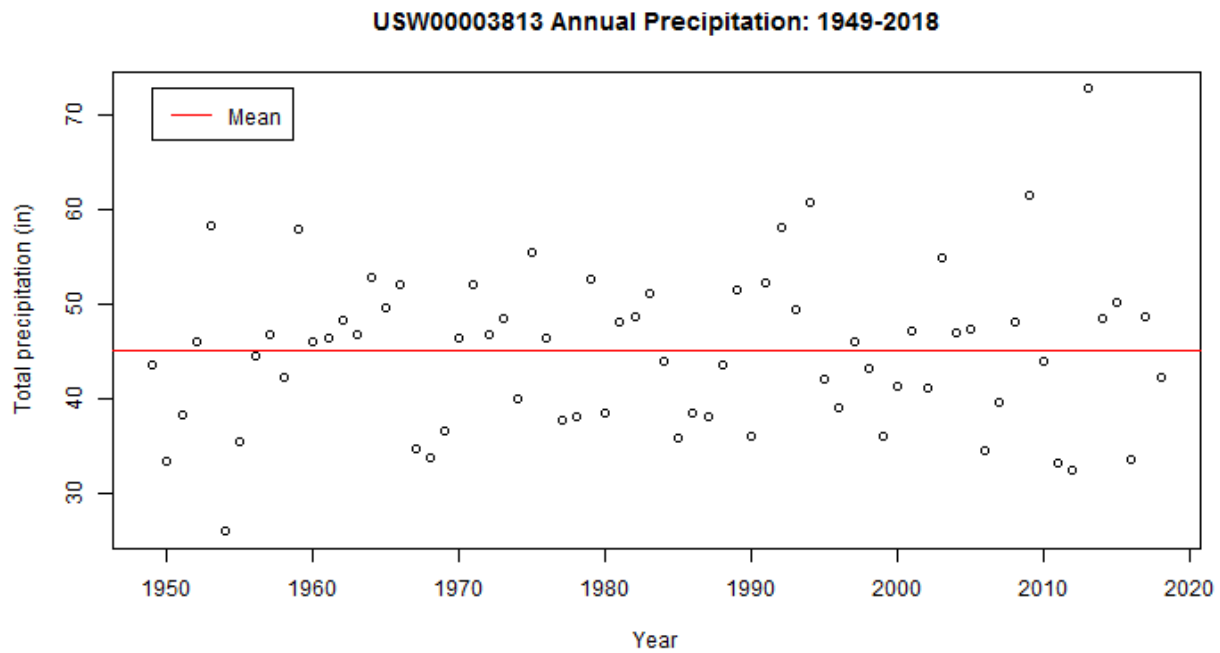


Figure 15. Annual Precipitation from 1949-2018 for Station Number USW00003813. Location of the station is shown in Figure 12. Source: (NOAA Regional Climate Center, 2018)

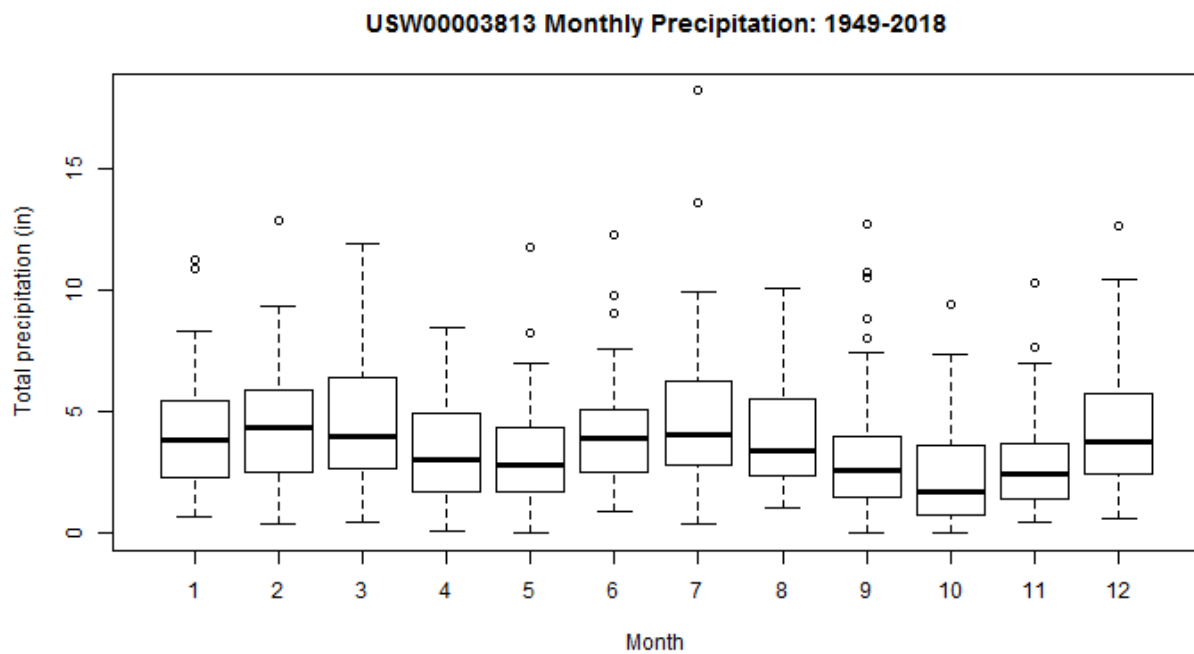


Figure 16. Monthly Precipitation from 1949-2018 from Station Number USW00003813. Location of the station is shown in Figure 12. Source: (NOAA Regional Climate Center, 2018).

Table 4. Overview of temperature and precipitation averages from Station USW00003813 from 1949-2018. ¶This station had 70 years with data. Source: (NOAA Regional Climate Center, 2018).

Annual Statistic	Overall Average	2018 Average
Yearly Precipitation (in)	45.07	43.77
Average Temperature (°F)	64.93	67.44
Average Daily Maximum Temperature (°F)	76.75	78.96
Average Daily Minimum Temperature (°F)	53.11	55.92

Table 5. Averages per date range of temperature and precipitation from Station USW00003813. ¶Source: (NOAA Regional Climate Center, 2018).

Annual Statistic	1949-1966	1966-1984	1984-2002	2002-2018
Average Temperature (°F)	65.13	64.57	64.77	65.19
Average Daily Maximum Temperature (°F)	76.77	76.42	76.49	77.26
Average Daily Minimum Temperature (°F)	53.50	52.72	53.05	53.12
Yearly Precipitation (in)	45.26	44.83	44.43	45.97

5 Inventory Summary and Discussion

This section will summarize the findings of the water resources inventory for both surface water and groundwater for the RHI around Bond Swamp NWR. This inventory includes physical water resources and related infrastructure, monitoring records, water quantity, and water quality conditions.

5.1 Water Resources

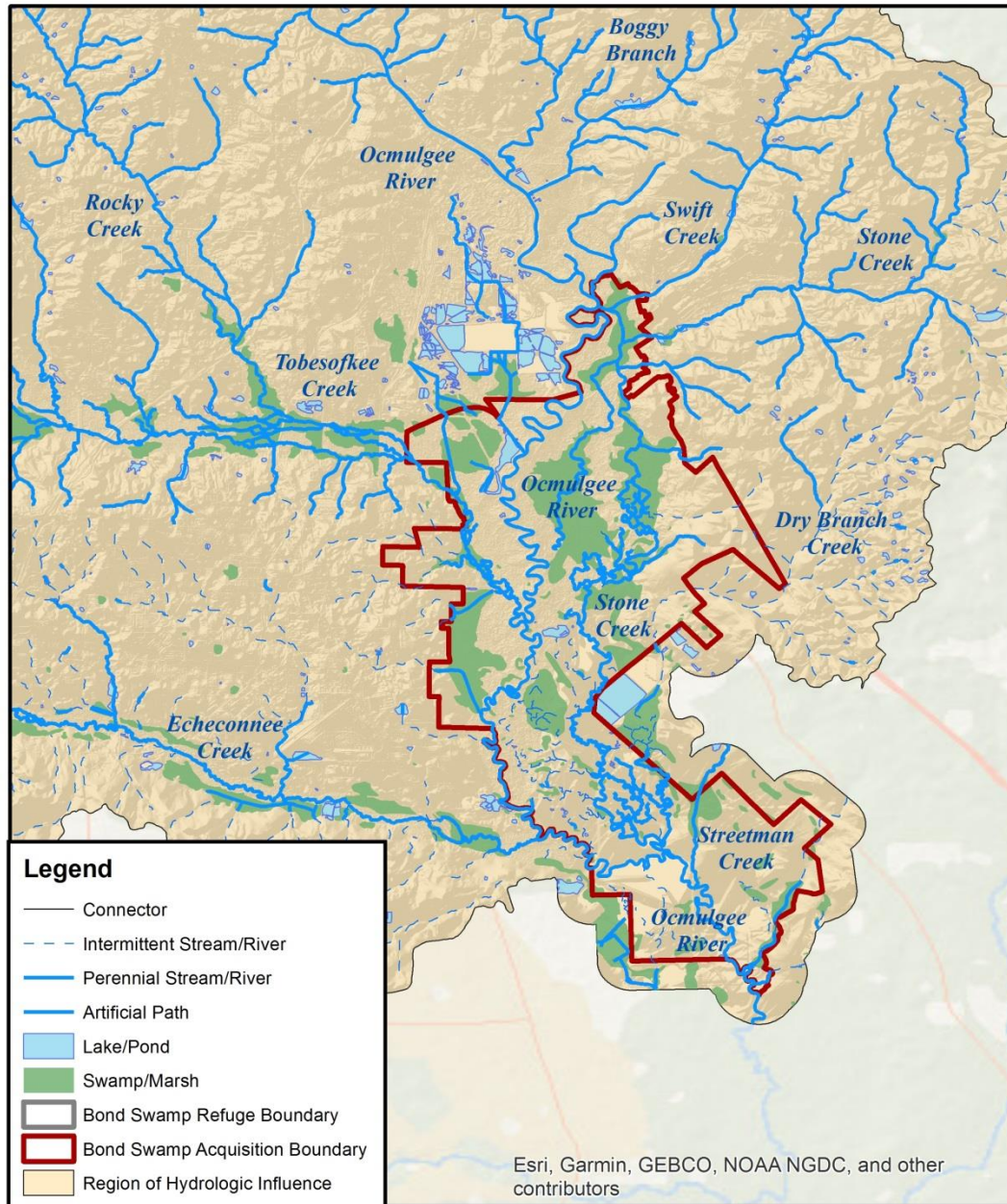
5.1.1 Rivers, Streams, and Creeks

The U.S. Geologic Survey (USGS) and the Environmental Protection Agency (EPA) started assembling the National Hydrography Dataset (NHD) in 1997. The NHD is a geospatial database representing surface water across the United States mapped at a scale of 1:24,000 or better. According to the NHD, there are four different categories of segments in the RHI: intermittent and perennial streams, artificial paths, and connectors (FCodes 46003, 46006, 55800, and 33400, respectively) (USGS, 2009b). Streams can have different segments that are in different categories. Artificial paths represent a surrogate for general flow direction within a reservoir, estuary, or wide river that is represented as an area rather than a line within NHD. Connectors represent a known but nonspecific connection between two nonadjacent network segments, such as between an artificial path segment upstream of a dam and a perennial stream segment downstream of the dam. Streams and rivers in the RHI, acquisition, and refuge boundaries can be found in Figure 17, Table 6, and Table 7.

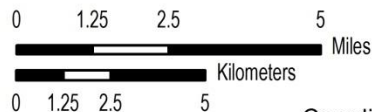


Bond Swamp National Wildlife Refuge

Streams and Lakes



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Map Date: September 2018
File Name: streams_bs



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 17. Streams and waterbodies around Bond Swamp NWR. Source: (USGS, 2013a).

Table 6. Streams/ rivers in Bond Swamp NWR. ¶Source: Bond Swamp National Wildlife Refuge.

Name	Miles in Refuge
Big Eddy	0.13
Dry Branch	1.32
Johns Branch	1.19
Ocmulgee River	12.74
Stone Creek	12.68
Tobesofkee Creek	3.44
Unnamed	16.51
Total	48.01

Table 7. Miles of named and unnamed streams in the RHI and acquisition boundary of Bond Swamp NWR. ¶Source: (USGS, 2013a).

FCode	Miles within the RHI	Miles within the Acquisition Boundary
Artificial Path (Named)	168.35	20.89
Artificial Path (Unnamed)	112.41	3.88
Connector (Named)	0.03	0.00
Intermittent (Named)	37.75	2.96
Intermittent (Unnamed)	820.81	29.74
Perennial (Named)	346.12	24.51
Perennial (Unnamed)	299.74	28.79
Total (Unnamed)	1,232.96	62.42
Total (Named)	552.25	48.36
Total	1,785.21	110.78

5.1.2 Canals and Drainage Ditches

According to the NHD, there are no canals or drainage ditches on the refuge or within the RHI of Bond Swamp.

5.1.3 Springs and Seeps

According to the NHD, there are no springs or seeps within the refuge or RHI.

5.1.4 Waterbodies

According to the NHD and USGS, there are 6.59 square miles of waterbodies in the acquisition boundary 30.74 square miles in the RHI with a majority categorized as swamp/marsh (Table 8 and Table 9). According to the Bond Swamp Comprehensive Conservation Plan, of the 7,348-acre refuge, 1,040 acres is mixed hardwood-pine uplands, 6,108 acres is forested wetlands, and 200 acres (~0.31 square miles) is streams and beaver ponds.

Table 8. Waterbodies in the acquisition boundary Bond Swamp NWR. ¶Source: (USGS, 2013a).

Name	FCode	Square Miles within the Acquisition Boundary
Denson Marsh	Swamp/Marsh	0.11
Rays Swamp	Swamp/Marsh	0.29
Unnamed	Perennial Lake/Pond	0.19
Unnamed	Swamp/Marsh	6.00
Total	Perennial	0.19
Total	Swamp/Marsh	6.40
Total	All	6.59

Table 9. Square miles of named and unnamed waterbodies in the RHI and acquisition boundary of Bond Swamp NWR. ¶Source: (USGS, 2013a)

FCode	Square Miles within the RHI	Square Miles within the Acquisition Boundary
Perennial (Named)	4.14	0.01
Perennial (Unnamed)	8.14	0.19
Swamp/Marsh (Named)	2.52	0.40
Swamp/Marsh (Unnamed)	15.95	6.00
Total (Unnamed)	24.09	6.19
Total (Named)	6.65	0.41
Total	30.74	6.60

5.1.5 Wetlands

The U.S. Fish and Wildlife Service published the National Wetland Inventory (NWI) for the entire United States in 1974. The NWI provides the status, abundance, characteristics, and distribution of wetlands in the United States (USFWS, 2018b). Table 10 examines the wetland types in the RHI and acquisition boundary of Bond Swamp. The main category of wetland present in Bond Swamp NWR is the Freshwater Forested/Shrub Wetland (Figure 18 and Table 10).

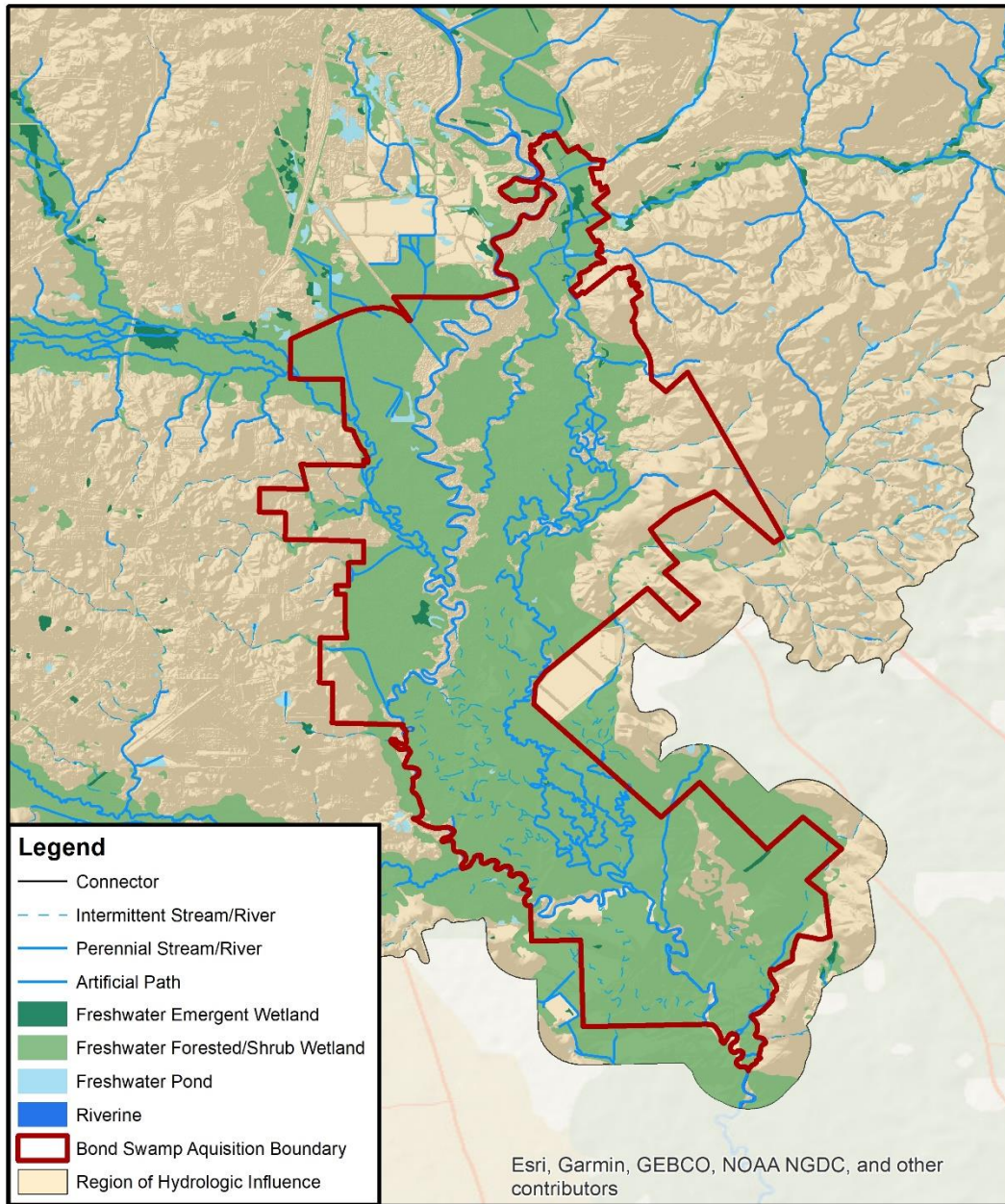
Table 10. Square miles of wetlands in the RHI and acquisition boundary of Bond Swamp NWR. ¶Source: (USFWS, 2018b)

Type of Wetland	Square Miles within the RHI	Square Miles within the Acquisition Boundary
Freshwater Emergent Wetland	2.76	0.15
Freshwater Forested/Shrub Wetland	77.15	24.27
Total	79.91	24.42

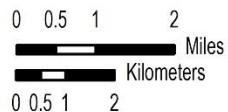


Bond Swamp National Wildlife Refuge

Wetlands



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Map Date: September 2018
File Name: wetlands_bs



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 18. Wetlands within the acquisition boundary and the surrounding area of Bond Swamp NWR. Source: (U.S. Fish and Wildlife Service [USFWS], 2018b).

5.2 Infrastructure

Infrastructure within the refuge or the RHI can potentially influence the water resources. The following section is an inventory of the infrastructure relevant to water resources within Bond Swamp NWR and the RHI.

5.2.1 Inventory Dams

According to the National Inventory of Dams (NID), there are 136 dams in the RHI, 8 of which are within a 2 mile radius of the acquisition boundary (Table 11 and Figure 19). More information on all of the dams within the RHI is in Figure A- 1 and Table A- 3 in Appendix B.

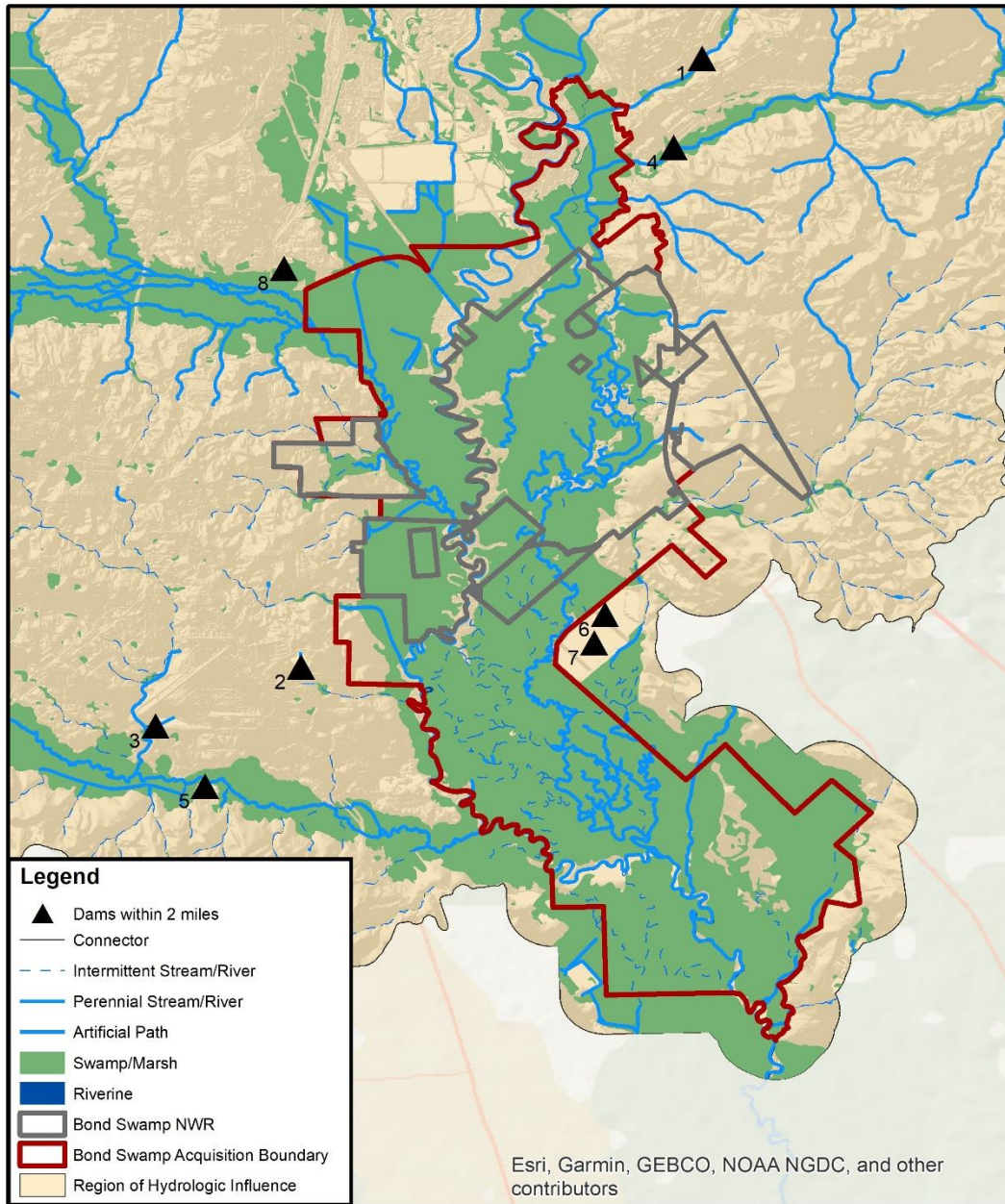
Table 11. Dams within 2 miles of Bond Swamp NWR acquisition boundary. Map ID references locations shown in Figure 19. Source: (USACE, 2018).

Map ID	Name	NID ID	Year Completed	Longitude	Latitude
1	EDWARDS LAKE DAM	GA00204	1968	-83.556361	32.807917
2	BATEMAN PEACH ORCHARD POND DAM	GA03284		-83.630833	32.695000
3	AIRPORT LAKE DAM	GA03708	1974	-83.657861	32.684028
4	STONE CREEK DAM (EAST)	GA03991		-83.561639	32.791444
5	PIKE LAKE DAM	GA05461		-83.648667	32.672833
6	KAMIN IMPOUND #2	GA05974		-83.574444	32.704722
7	HUBER NEW IMPOUND	GA06524		-83.576389	32.699444
8	GRAPHIC PACKAGING SOUTH ASH POND	GA07235		-83.633972	32.768944



Bond Swamp National Wildlife Refuge

Dams



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Map Date: September 2018
File Name: dams_bs



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 19. Dams within 2 miles of the acquisition boundary of Bond Swamp NWR. Numbered features correspond with Map ID in Table 11. Source: (USACE, 2018)

5.2.2 Dikes and Levees

According to the NHD, there are no dikes or levees in the RHI of Bond Swamp.

5.2.3 Roads and Bridges

According to the refuge, there are 31.98 miles of roads in the NWR, with the majority in the category of “two-track rd” (Table 12).

Table 12. Miles of roads in Bond Swamp NWR. Source: Bond Swamp National Wildlife Refuge.

Type	Miles in NWR
Local Rd	6.44
Minor Local Rd	1.27
Two-track Rd	21.94
US Hwy	2.32
Total	31.98

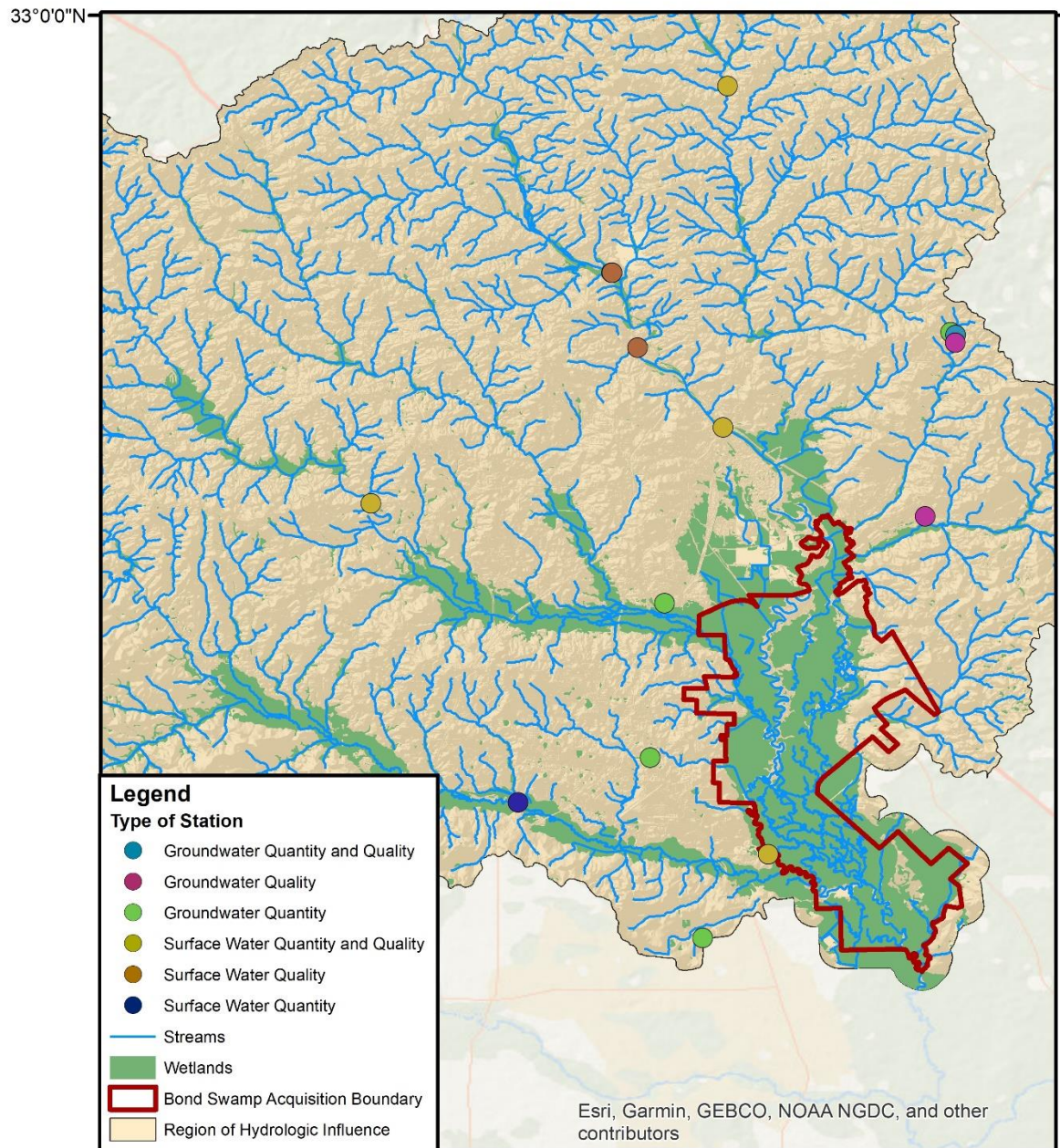
5.3 Water Monitoring

For the WRIA, a standard procedure was followed to delineate the RHI that included using USGS hydrologic unit codes. This meant that Echeconnee Creek was included in the RHI. It is important to note that Bond Swamp NWR is in the northern part of the acquisition boundary and the surface water on the refuge is not impacted by Echeconnee Creek. Thus monitoring sites on Echeconnee Creek may provide insight into regional hydrologic trends, but will not influence water quality or hydrology on the Refuge.

This section examines the water quantity and quality stations that exist on the refuge and in the RHI for both surface water and groundwater. The stations presented in each subsection are chosen by a minimum number of observations and length of continuous record. Additional information on individual stations can be found using the Water Quality Portal (WQP), sponsored by the USGS and EPA. Stations listed with the agency USGS can be found through the USGS but are not necessarily operated through the USGS. Stations listed by the USGS have URLs that link to web pages for the individual stations. There is a total of 728 monitoring stations in the RHI of Bond Swamp, but only 18 are considered to be relevant to the refuge (Figure 20). A complete list of monitoring stations, including those with no available data, is found in Table A- 5 in Appendix C.



Bond Swamp National Wildlife Refuge Significant Water Monitoring Stations



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Map Date: November 2018
File Name: sig_stations_bs



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 20. All significant water monitoring stations in the RHI of Bond Swamp NWR. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

5.3.1 Surface Water Quantity Monitoring

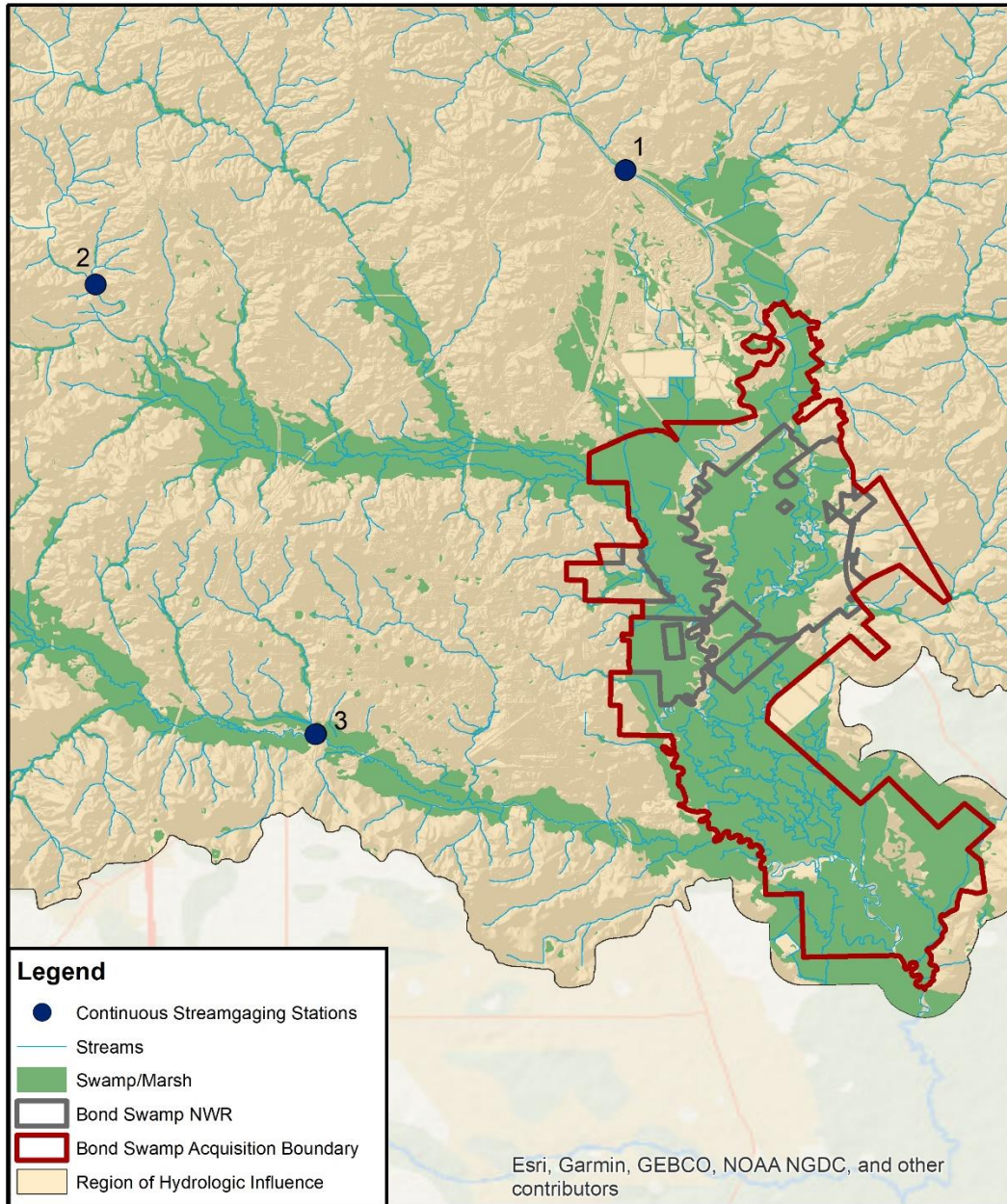
There are 3 stations in the RHI that measure water quantity continuously (Figure 21 and Table 13). Stations listed with the agency USGS can be found through the USGS but are not necessarily operated by the USGS. Information about all of the streamgages within the RHI can be found in Table A- 5 and Figure A- 2.

Table 13. Continuous streamgages in the RHI of Bond Swamp NWR. Map ID references locations shown in Figure 21. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018)

Map ID	Agency	Station Number	Name	Start Date
1	USGS	02213000	OCMULGEE RIVER AT MACON, GA	1988-10-01
2	USGS	02213500	TOBESOFKEE CREEK NEAR MACON, GA	1989-10-01
3	USGS	02214075	ECHECONNIE CREEK AT HOUSTON RD, NEAR BYRON, GA	2009-12-10



Bond Swamp National Wildlife Refuge Significant Streamgaging Stations



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Athens, GA
Map Date: November 2018
File Name: sw_quant_sig_bs

0 0.75 1.5 3 Miles
0 0.75 1.5 3 Kilometers



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 21. Significant streamgages in the RHI of Bond Swamp NWR. ¶Information about numbered locations is summarized in Table 13. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018)

5.3.2 Surface Water Quality Monitoring

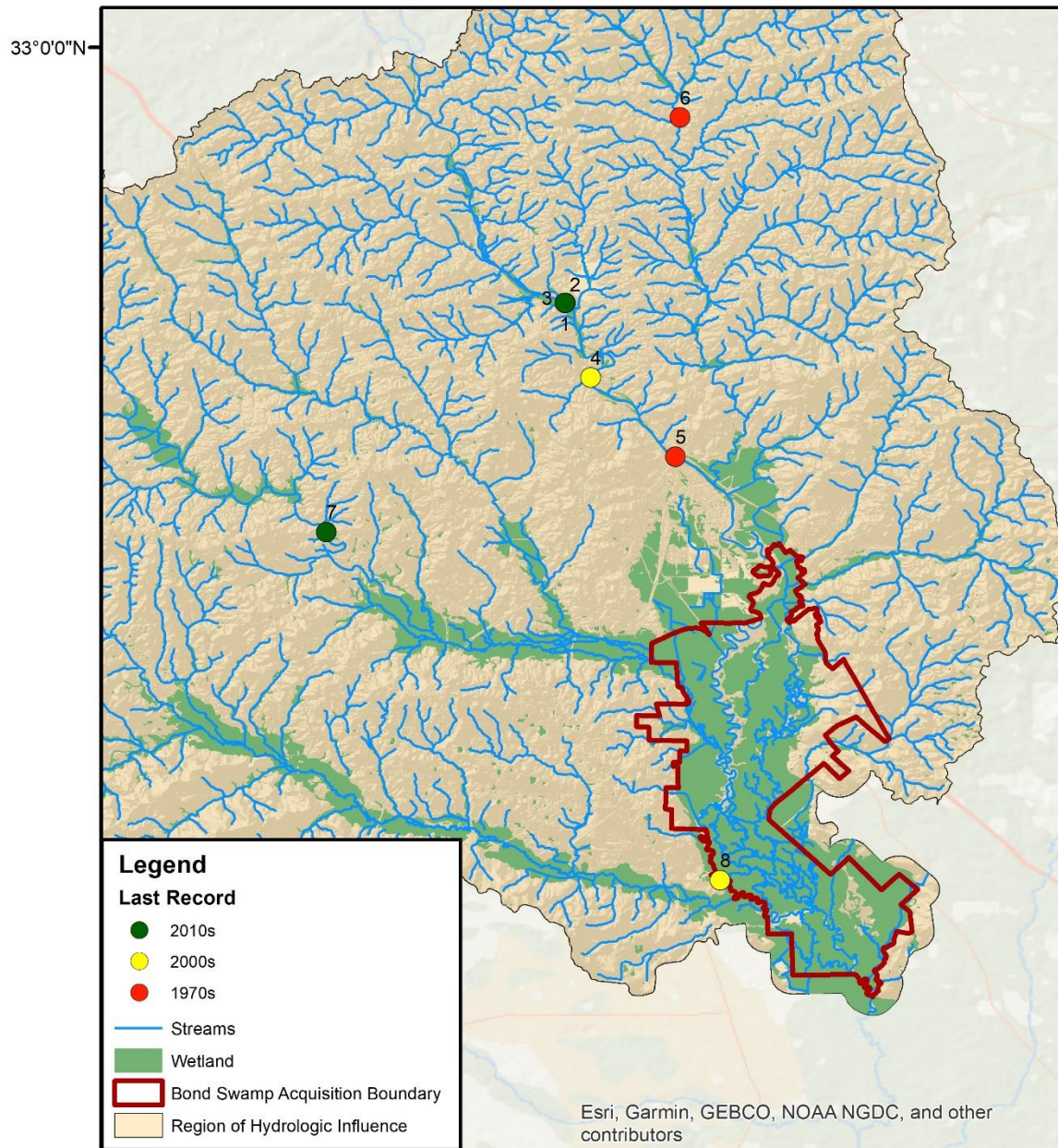
There are 8 stations that have at least 100 readings of water quality in the RHI of Bond Swamp NWR (Table 14 and Figure 22). More information on each station can be accessed through the USGS National Water Information System (NWIS) database. Information about all other surface water quality stations can be found in Figure A- 3 and Table A- 6 in Appendix C.

Table 14. Significant surface water quality stations in the RHI of Bond Swamp NWR. *Stations are considered significant if it has at least 100 measurements. Map ID references locations shown in Figure 22. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018)

Map ID	Agency	Site Number	Station Name	Start Date	End Date	Count
1	21GAEPD_WQX	503160201	Ocmulgee River - New Macon Water Intake	2004-02-04	2013-12-09	161
2	21GAEPD_WQX	RV_05_2165	Ocmulgee River - New Macon Water Intake	2013-01-09	2018-06-22	102
3	USGS	02212940	OCMULGEE RIVER NEAR MACON, GA	2002-01-31	2018-10-22	462
4	USGS	02212950	OCMULGEE RIVER ABOVE MACON, GA	1974-07-26	2001-12-12	335
5	USGS	02213000	OCMULGEE RIVER AT MACON, GA	1906-10-19	1975-12-30	632
6	USGS	02213050	WALNUT CREEK NEAR GRAY, GA	1962-08-21	1976-07-27	120
7	USGS	02213500	TOBESOFKEE CREEK NEAR MACON, GA	1937-03-20	2014-06-17	184
8	USGS	02213700	OCMULGEE RIVER NEAR WARNER ROBINS, GA	1970-10-15	2006-12-14	515



Bond Swamp National Wildlife Refuge Significant Surface Water Quality



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Map Date: November 2018
File Name: sw_qual_sig_bs



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 22. Significant surface water quality stations in the RHI of Bond Swamp NWR. Stations shown have at least 100 total measurements. Numbered locations are summarized in Table 14. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

5.3.3 Groundwater Quantity

Eleven groundwater quantity stations in the RHI have at least one measurement taken after 1990 or at least 10 total measurements (Table 15 and Figure 23). All the stations can be found through the USGS. More information on all groundwater quantity stations within the RHI can be found in Table A- 8 and Figure A- 4 in Appendix C.

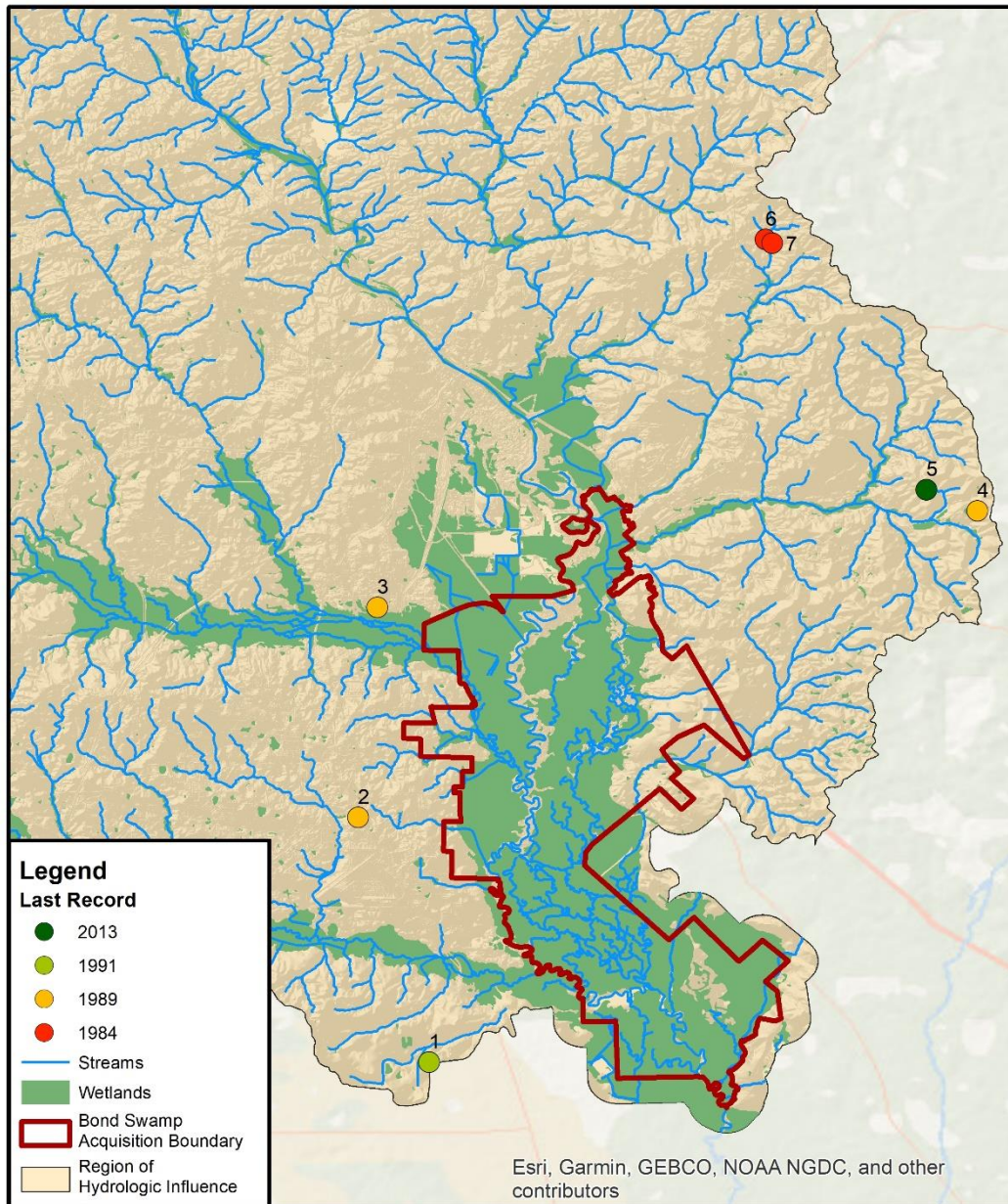
Table 15. Significant groundwater quantity stations in the RHI of Bond Swamp NWR. ¶ Stations are considered significant if there is a measurement taken after 2000 or there are at least 10 measurements. Map ID references locations shown in Figure 23. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

Map ID	Site Number	Station Name	Start Date	End Date	Count
1	323820083374501	16V019	1972-02-08	1991-10-22	17
2	324230083391101	16V002	1941-05-12	1989-11-06	12
3	324611083383801	16W023	1966-10-24	1989-11-06	13
4	324750083281401	18W002	1965-03-18	1989-11-07	18
5	324816083290901	18W003	1945-01-04	2013-09-16	6
6	325232083315401	17X002	1968-11-27	1984-10-22	10
7	325332083314601	17W008	1969-03-03	1984-10-22	11

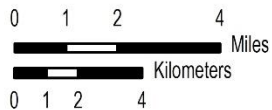


Bond Swamp National Wildlife Refuge

Significant Groundwater Level Stations



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Map Date: November 2018
File Name: gw_quant_sig_bs



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 23. Significant groundwater quantity stations in the RHI of Bond Swamp NWR. Information about numbered locations is summarized in Table 15. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

5.3.4 Groundwater Quality

Three groundwater quality stations in the RHI have more than one measurement after 1970 or more than 6 total measurements (Table 16 and Figure 24). Additional information on stations can be found using the Water Quality Portal (WQP), sponsored by the USGS and EPA. Stations listed with the agency USGS can be found through the USGS but are not necessarily operated through the USGS. Stations have URLs that link to web pages for the individual station information. More information on all groundwater quality stations within the RHI can be found in Table A- 7 Appendix C.

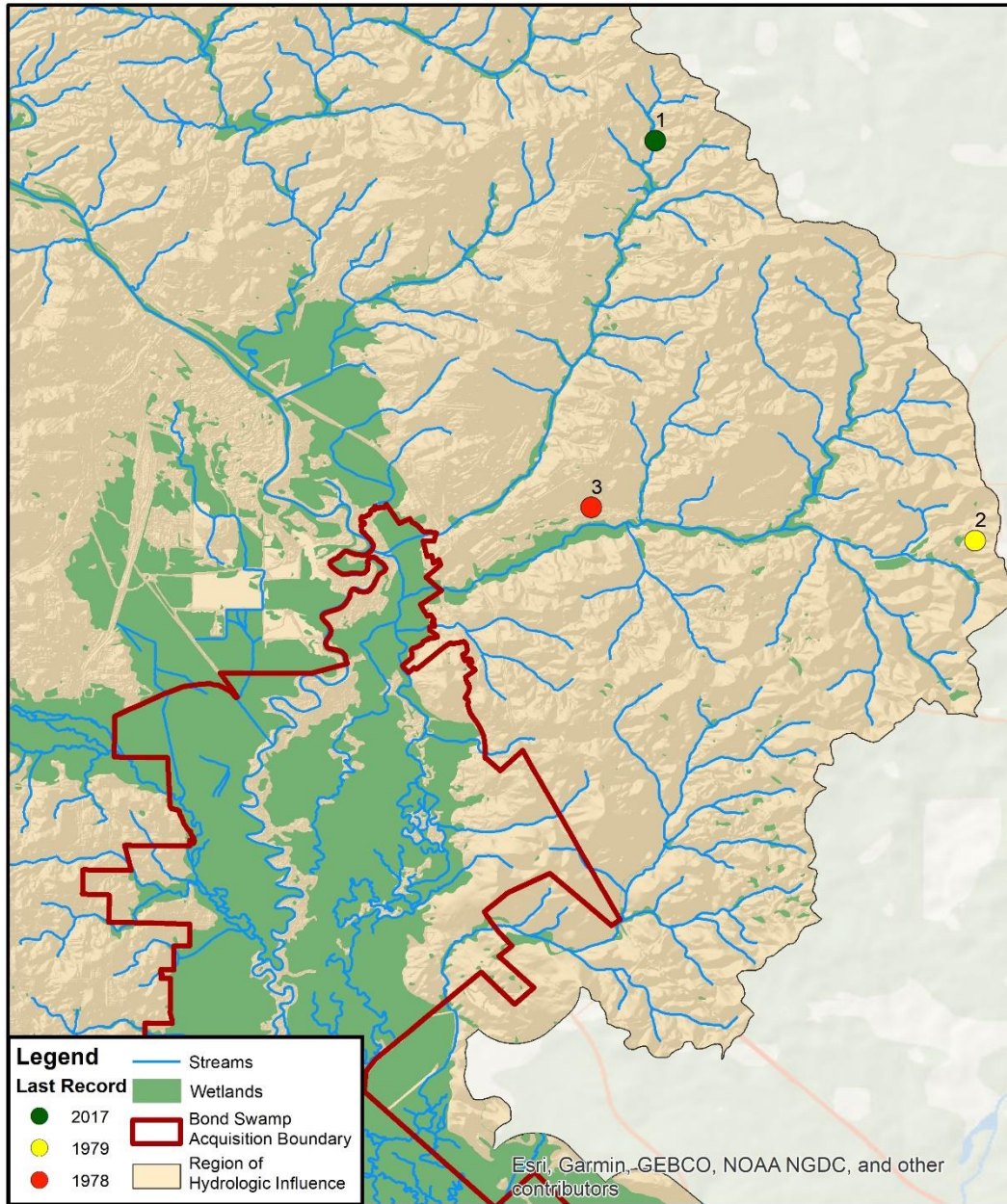
Table 16. Significant groundwater quality stations in the RHI of Bond Swamp NWR. ¶Map ID references locations shown in Figure 24. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

Map ID	Agency	Site Number	Station Name	Start Date	End Date	Count
1	GA EPD	21GAEPD_WQX-GW_05_2560	Jones County #4	2/25/2015	6/8/2017	2
2	USGS	324750083281401	18W002	12/31/1974	1/15/1979	6
3	USGS	324813083322801	17W004	6/9/1975	6/9/1987	6



Bond Swamp National Wildlife Refuge

Significant Groundwater Quality Stations



Produced by the Water Resources and Remote Sensing Laboratory at the University of Georgia Athens, GA
Map Date: November 2018
File Name: gw_qual_sig_bs

0 0.5 1 2 Miles
0 0.5 1 2 Kilometers



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure 24. Significant groundwater quality stations in the RHI of Bond Swamp NWR. ¶Map ID locations is summarized in Table 16. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

5.3.5 Aquatic Habitat and Biota

The USFWS department of Information for Planning and Consultation (IPaC) has a database of all endangered species and migratory birds in the area. According to IPaC, there are 11 endangered or threatened species within the RHI although the refuge only indicates one endangered flowering plant on the refuge (Table 17). According to Bond Swamp's Comprehensive Conservation Plan, there are approximately 200 bird species that are believed to occur on the refuge including but not limited to waterfowl, waterbirds, shorebirds, and neotropical songbirds (USFWS, 2009). The floodplain forests of the refuge provide important habitat that supports species of birds designated as priorities due to declining populations, habitat threats, and other factors. According to IPaC, there are 17 migratory birds of conservation concern in the areas around Bond Swamp NWR (Table 18). The migratory birds have different levels of concern that are Non-BCC Vulnerable, BCC Rangewide (CON), and BCC – BCR. The Non-BCC Vulnerable indicates species that are not a Bird of Conservation Concern (BCC) but they need to have some special attention. The BCC Rangewide (CON) means that the bird is a BCC for the whole continental United States and Alaska. Finally, the BCC – BCR level indicates a BCC only in certain Bird Conservation Regions (BCR).

Table 17. Endangered species in Bond Swamp. Source: Bond Swamp National Wildlife Refuge.

Group	Common Name	Name	Status
Flowering Plants	Fringed Campion	<i>Silene polypetala</i>	Endangered

Table 18. Migratory Birds of Conservation Concern in the RHI of Bond Swamp. Asterisks indicate species that are within the acquisition boundary of Bond Swamp NWR. Source: (USFWS, 2011).

Common Name	Name	Level of Concern	Breeding Season
American Kestrel*	<i>Falco sparverius paulus*</i>	BCC - BCR	Breeds Apr 1 to Aug 31
Bald Eagle*	<i>Haliaeetus leucocephalus*</i>	Non-BCC Vulnerable	Breeds Sep 1 to Aug 31
Blue-winged Warbler	<i>Vermivora pinus</i>	BCC - BCR	Breeds May 1 to Jun 30
Cerulean Warbler*	<i>Dendroica cerulea*</i>	BCC Rangewide (CON)	Breeds Apr 23 to Jul 20
Common Ground-dove*	<i>Columbina passerina exigua*</i>	BCC - BCR	Breeds Feb 1 to Dec 31
Dunlin*	<i>Calidris alpina arctica*</i>	BCC - BCR	Breeds elsewhere
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	BCC Rangewide (CON)	Breeds May 1 to Aug 20
Kentucky Warbler*	<i>Oporornis formosus*</i>	BCC Rangewide (CON)	Breeds Apr 20 to Aug 20
Le Conte's Sparrow	<i>Ammodramus leconteii</i>	BCC - BCR	Breeds elsewhere
Lesser Yellowlegs*	<i>Tringa flavipes*</i>	BCC Rangewide (CON)	Breeds elsewhere
Prairie Warbler*	<i>Dendroica discolor*</i>	BCC Rangewide (CON)	Breeds May 1 to Jul 31
Prothonotary Warbler*	<i>Protonotaria citrea*</i>	BCC Rangewide (CON)	Breeds Apr 1 to Jul 31
Red-headed Woodpecker*	<i>Melanerpes erythrocephalus*</i>	BCC Rangewide (CON)	Breeds May 10 to Sep 10
Rusty Blackbird*	<i>Euphagus carolinus*</i>	BCC Rangewide (CON)	Breeds elsewhere
Semipalmated Sandpiper*	<i>Calidris pusilla*</i>	BCC Rangewide (CON)	Breeds elsewhere
Swallow-tailed Kite*	<i>Elanoides forficatus*</i>	BCC Rangewide (CON)	Breeds Mar 10 to Jun 30
Wood Thrush*	<i>Hylocichla mustelina*</i>	BCC Rangewide (CON)	Breeds May 10 to Aug 31

5.4 Water Quantity and Timing

This section will further examine data from a streamgauge and a well that were discussed in section 5.3.1 and section 5.3.3, respectively, and will provide insight to overall hydrologic patterns.

USGS Site 02213000 (Map ID #1 Table 13 and Figure 21) is located approximately 7 miles north of Bond Swamp NWR on the Ocmulgee River and was used for further analysis. According to the mean monthly discharge, September has the lowest discharge and March has the highest (Figure 25). Annual mean discharge from 1910 to 2018 has fluctuated between 1000 and 6500 cfs (Figure 26).

USGS Site 324611083383801 (Map ID #4 Table 15 and Figure 23) had the most years of consecutive data and was chosen to use for further analysis of groundwater level. There was a large drop in the groundwater level around 1976 that was followed by an abrupt increase until around 1978, when it reached a depth of about 40 feet below the ground surface (Figure 27). Groundwater level since then decreased until the last year of record (1990), when it reached approximately 67 feet below the ground surface.

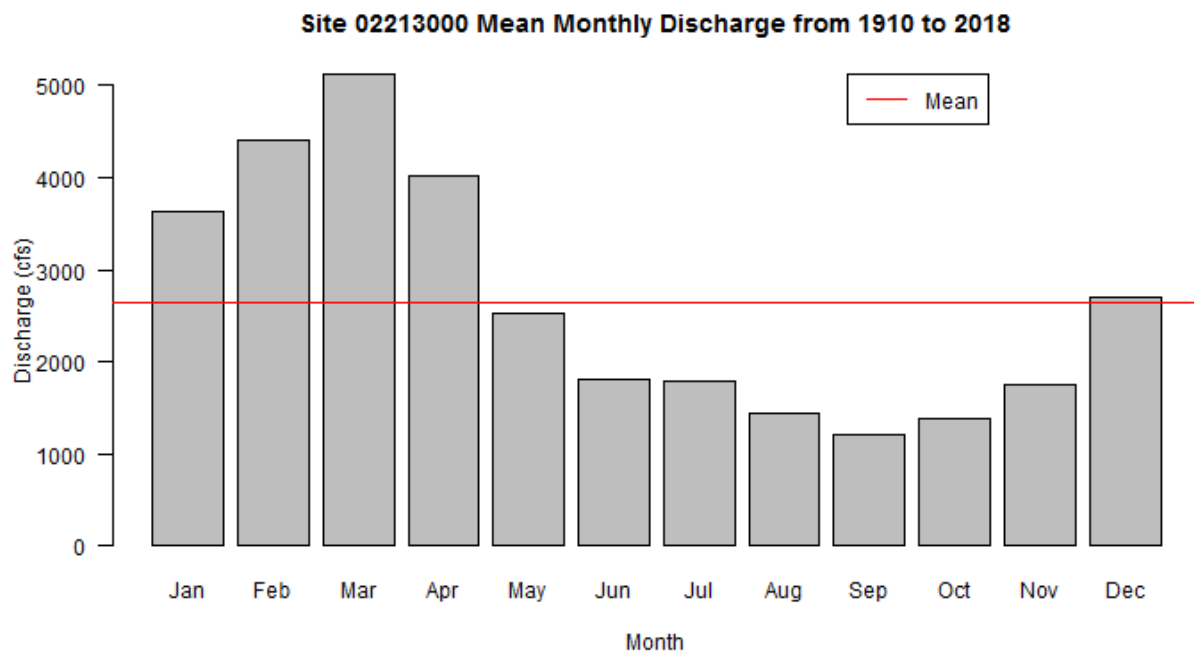


Figure 25. Average monthly discharge from USGS Site 02213000 from 1910 to 2018. ¶This station is Map ID #4 in Table 13 and Figure 21. Source: (USGS, 2018).

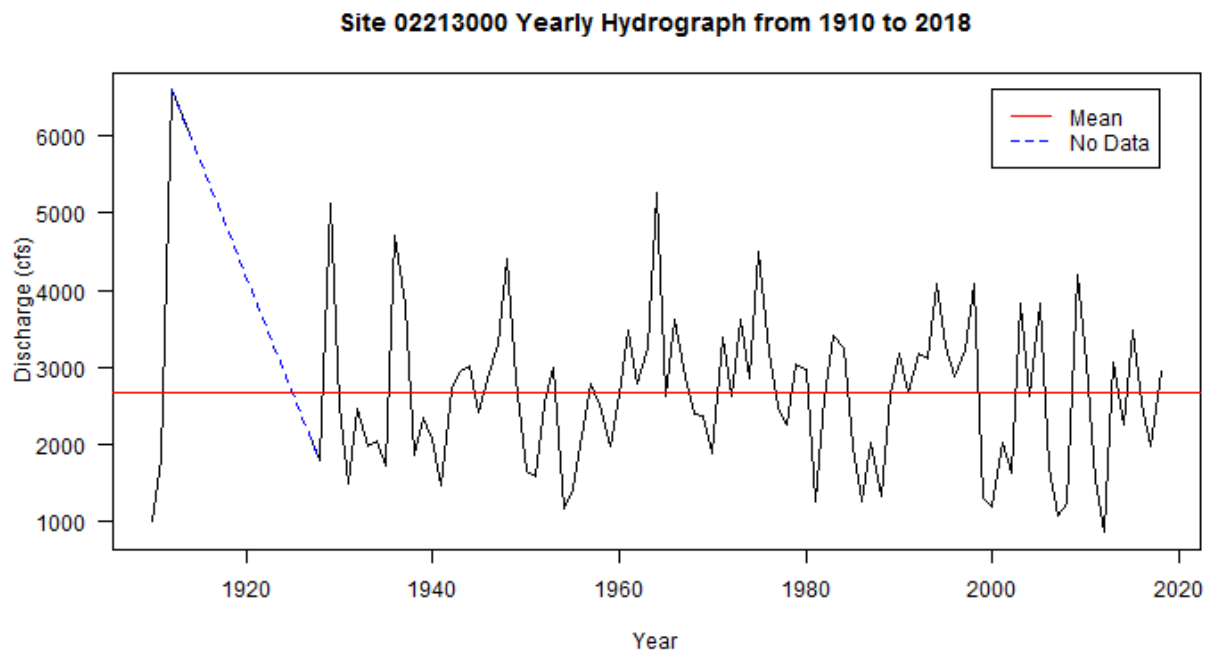


Figure 26. Annual Hydrograph of USGS Site 02213000 from 1910 to 2018. ¶This station is Map ID #4 in Table 13 and Figure 21. Source: (USGS, 2018).

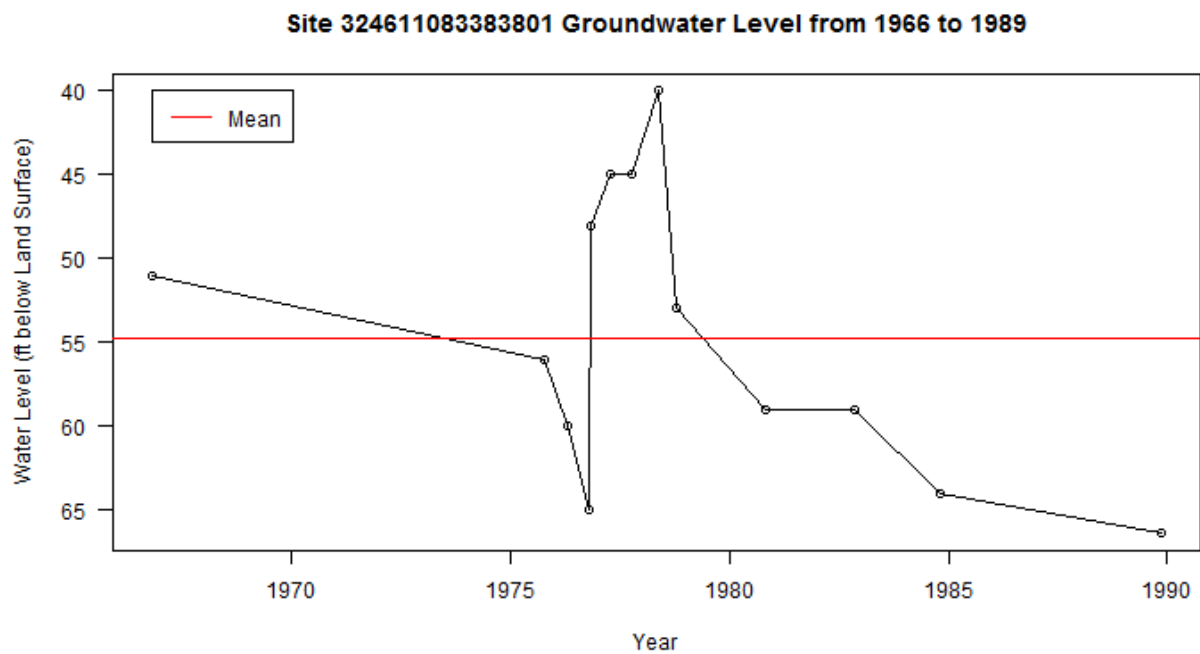


Figure 27. Groundwater Levels at USGS Site 324611083383801 from 1966 to 1989. ¶This station is Map ID #4 in Table 13 and Figure 21. Source: (USGS, 2018).

5.5 Federal and State Water Regulations

The Environmental Protection Agency (EPA) is the national organization responsible for establishing and maintaining water quality regulations. The EPA monitors the enforcement of national environmental policies such as the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA). In most cases, the EPA delegates oversight and enforcement of these national policies to state agencies. The Environmental Protection Division (EPD) within the Department of Natural Resources (DNR) establishes and maintains quality and quantity of Georgia's water resources (O.C.G.A. § 12-5-21(b)). Within the EPD, the Watershed Protection Branch maintains water resources current and future needs (GAEPD, 2018). The Georgia Water Quality Control Act (WQCA) has control over the impacts of water resources (O.C.G.A. § 12-5-2). The rules and regulations pertaining to water resources within the state of Georgia are the Georgia Ground-Water Use Act (O.C.G.A. 12-5-90) and Georgia Safe Drinking Water Act of 1977 (O.C.G.A. 12-5-170).

5.5.1 Water Quality Standards

The Georgia Environmental Protection Division (GA EPD) and the Georgia Department of Natural Resources (GA DNR) maintain water quality standards and are responsible for enforcing environmental protection laws (Rule 391-3-6-.01). Within the GA DNR, the Board of Natural Resources creates rules and regulations to control and manage water pollution and surface water quality as well as water usage and quality standards. The Watershed Protection Branch within the GA EPD ensures water systems are operating properly, controls non-point source pollution, conducts monitoring and modeling of Georgia watersheds, and provides reviews and revisions to water quality standards (GAEPD, 2018).

5.5.2 Groundwater Regulations

The Safe Drinking Water Act (SDWA), nationally regulated through the EPA, is responsible for groundwater protection. The SDWA intends to protect the quality of groundwater serving as a source for municipal water supply wells by establishing maximum allowable contaminant level standards for drinking water. The GA EPD requires a permit for water withdrawal in the State of Georgia (Rule 391-3-2.03). Applicants must complete a series of forms including general system information, conservation plan, and progress reports depending on municipal or industrial use of the water. In addition, they must provide well data. Protection of public-supply groundwater wells is administered by GA EPD. The EPD works with local governments and federal agencies to create water management plans for areas of high water demand. Monitoring of wells and aquifers is done by the Geologic Survey Branch and USGS (Gordon & Painter, 2018)

5.5.3 Impaired Waters and TMDLs

Under 303(d) of the Clean Water Act, states are required to compile a list of impaired waters and submit that list to EPA for approval. Impaired waters are those which do not meet state water

quality standards for water resource pollutant concentrations, determined based on designated use(s) for each waterbody. High-priority impairments are then scheduled for development of a Total Maximum Daily Load (TMDL), which provides a plan that can be implemented to restore the designated use of the water.

Every two years under the CWA Section 303(d), it is required that surface water conditions are reported to the EPA. Data reported to the EPA is put into the Assessment, Total Maximum Daily Load (TMDL), Tracking and Implementation System (ATTAINS) for access to the Nation’s surface waters. The Regional Program within the EPA considers Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and 6 tribes as Region 4: The Southeast (EPA, 2018a). This program reviews the states 303(d) lists, and approves or disapproves any state-submitted Total Maximum Daily Loads (TMDL). The program will create TMDL’s for impaired waters, and the state will post the proposed document, final TMDL, and notice. Within the RHI of Bond Swamp NWR there is one waterbody that is on the impaired list that does not have a TDML associated with it (Table 19).

Table 19. Impaired waters in need of a TDML in the RHI of Bond Swamp NWR. ¶Source: (EPA, 2018a)

ID	Waterbody	Reason for Impairment	Most Recent Year	Other Years Available
GAR030701031512	Tributary to Gum Branch	Benthic Macroinvertebrates Bioassessments	2014	2012, 2010, 2008

5.5.4 NPDES Permits

The National Pollutant Discharge Elimination System (NPDES) is a permit program authorized by the Clean Water Act which regulates point sources of pollutants. NPDES permits are required to operate domestic or industrial wastewater facilities and associated activities. In Georgia, NPDES permits are handled through the Watershed Protection Branch via the Georgia Department of Natural Resources (GA DNR). Each point source is listed as Major, Non-Major, Minor, or Unpermitted by the EPA based on the severity of their pollutants and discharge. Point sources classified as “Major” are major municipal dischargers that have design flows of greater than one million gallons per day with an EPA or State approved industrial pre-treatment program. Table 20 shows the number of permits each category in the RHI and Table 21 lists the Major NPDES facilities. Information on all NPDES facilities can be found in Appendix D.

Table 20. Number of NPDES facility types in the RHI of Bond Swamp. ¶Source: (EPA, 2018c).

Type of Permit	Number in RHI
Major	3
Minor	76
Non-Major	378
Unpermitted	7
Total	464

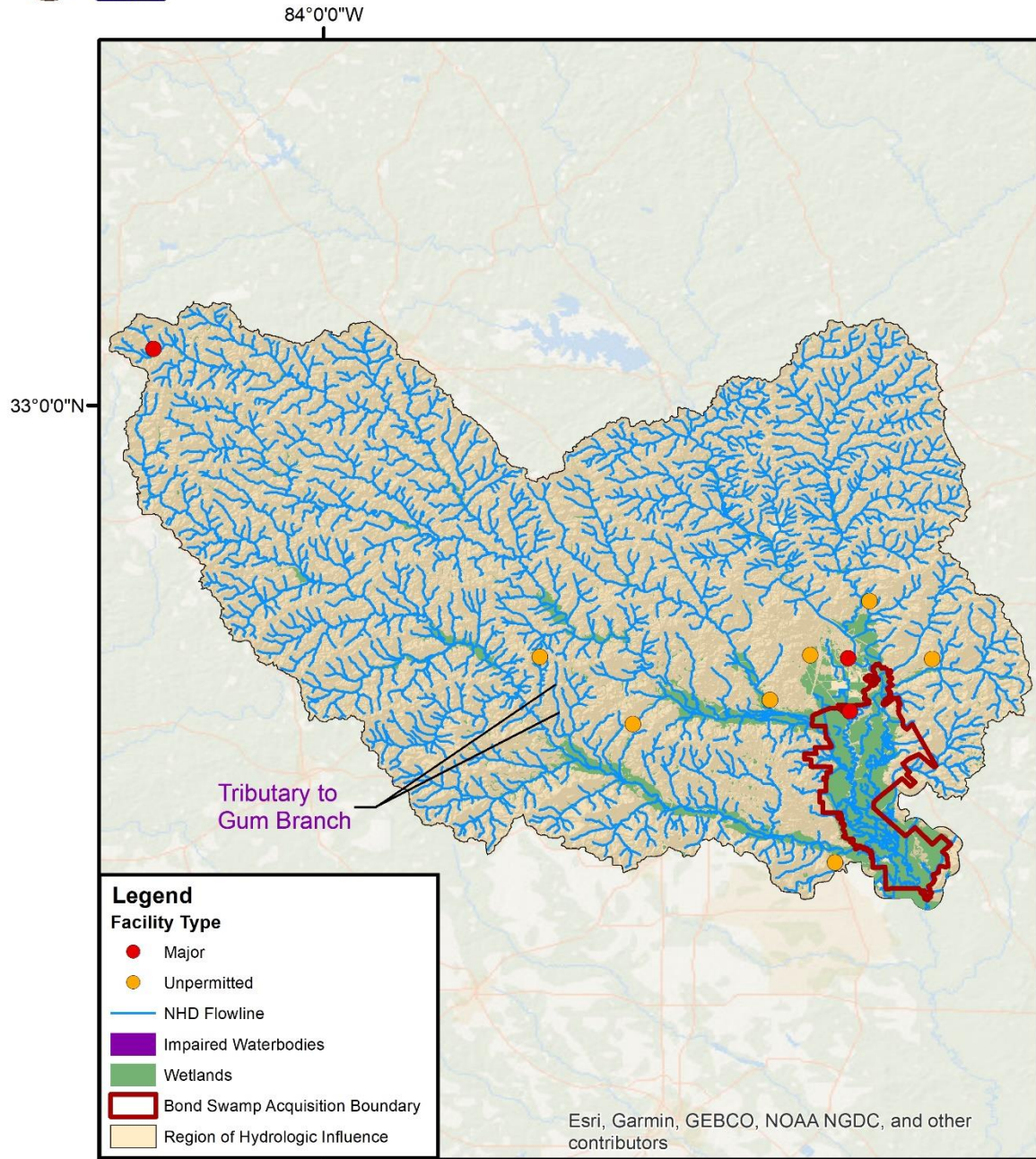
Table 21. Major NPDES facilities within the RHI. ¶Source: (EPA, 2018c).

Registry ID	Name	City	Latitude	Longitude
110064610675	BARNESVILLE, CITY OF (JAMES A. KING WWTF)	BARNESVILLE	33.042611	-84.128528
110039690377	MACON POPLAR STREET WPCP	MACON	32.808300	-83.602561
110039861414	MACON WATER AUTHORITY (ROCKY CREEK WPCP)	MACON	32.768169	-83.601294

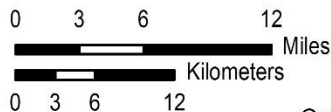


Bond Swamp National Wildlife Refuge

Selected NPDES Permit Facilities and Impaired Waters



Produced by the Water Resources and
Remote Sensing Laboratory
at the University of Georgia
Athens, GA
Map Date: September 2018
File Name: npdes_bs



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree



Figure 28. NPDES facilities and impaired waters in the RHI. Source: (EPA, 2018a, 2018b).

5.6 Water Law/Water Rights

The Georgia Environmental Protection Division (GA EPD) provides links to the environmental rules that are found on the Georgia Secretary of State's website and the laws that are published by the Official Code of Georgia Annotated (O.C.G.A.) website. The rules and laws shown in Table 22 are the basis for most of the information in this section.

Table 22. Environmental rules and corresponding laws pertaining to the water resources of Georgia. ¶Source: (GAEPD, 2018a).

Georgia's Environmental Rule	Corresponding Law
391-3-2 Groundwater Use	OCGA 12-5-90 Georgia Ground-Water Use Act
	OCGA 12-5-170 Georgia Safe Drinking Water Act of 1977
391-3-5 Safe Drinking Water	OCGA 12-5-470 Georgia Water Supply Act
	OCGA 12-5-120 Georgia Water Well Standards Act
391-3-6 Water Quality Control	OCGA 12-5-20 Georgia Water Quality Act
	OCGA 12-5-520 Comprehensive Statewide Water Management Planning Act
391-3-28 Flint River Drought Protection	OCGA 12-5-540 Georgia Flint River Drought Protection Act
391-3-30 Rules for Drought Management	OCGA 12-5-20 Georgia Water Quality Act
	OCGA 12-5-90 Ground-Water Use Act
	OCGA 12-5-170 Georgia Safe Drinking Water Act of 1977
391-3-31 Rules for Water Conservation and Carwash Best Management Practices	OCGA 12-5-20 Georgia Water Quality Act
	OCGA 12-5-90 Ground-Water Use Act
391-3-32 Rules for Regional Water Planning	OCGA 12-5-20 Georgia Water Quality Act
	OCGA 12-5-90 Ground-Water Use Act
	OCGA 12-5-520 Comprehensive Statewide Water Management Planning Act
	OCGA 12-5-4 Programs for Voluntary Water Conservation and Enhancing Water Supply
391-3-33 Rules for Public Water Systems to Improve Water Supply Efficiency	OCGA 12-5-20 Georgia Water Quality Act
	OCGA 12-5-90 Ground-Water Use Act
	OCGA 12-5-170 Georgia Safe Drinking Water Act of 1977

5.6.1 State Water Law Overview

The administration of water regulation is divided among many Georgia state organizations; however, the Georgia Environmental Protection Division (GA EPD) is largely responsible for many of these regulations. The GA EPD requires permits for withdrawal, tracks both surface and subsurface withdrawals, and requires users to report their annual usage.

Georgia closely follows the riparian reasonable use rights doctrine which states that a riparian landowner has rights to withdraw surface water if the landowner does not divert water from the original channel or unreasonably hinder or harm another's water use (O.C.G.A. § 44-8-1).

Although the state laws regarding groundwater are considered under the reasonable use doctrine, groundwater statutes are more often subject to appropriation in Georgia (Large, 1977).

Surface Water Withdrawals

Surface water withdrawals are divided into two categories: riparian and non-riparian. Riparian landowners are those who own land containing or abutting lakes, streams, or rivers. Riparian landowners have the right to withdraw this surface water if it does not unreasonably hinder another's water use. Non-riparian users are people or companies who do not own land possessing surface water. Non-riparian withdrawals require registration and permitting through the EPD.

In the case of a surface water shortage, the Director can issue an emergency order if and when the shortage is "as to place in jeopardy the health or safety of the citizens of such area or to threaten serious harm to the water resources of the area" (OCGA § 12-5-102). This order can be issued only after a verified mailing to give notice to the affected permit holders.

Groundwater Withdrawals

Groundwater withdrawal is similar to surface water withdrawal in that the realty owner of the land has right to the water that is on the property while still cooperating with the reasonable use rule. The landowner has the right to use groundwater from a well on his or her land if it does not unreasonably hinder another's use. Landowners with wells which meet or exceed the withdrawal capacity of 100,000 gallons per day must register with the GA EPD.

In the case of groundwater shortage, the Division can issue an emergency order in a "situation requiring immediate action to protect the public health or welfare". (OCGA § 12-5-102)

5.6.2 Aspects of State Water Law that May Affect the Refuge

All state water laws are applicable to the water resources within Bond Swamp NWR. The absence of water monitoring stations, dams, and wells within the refuge limits the amount of water laws applicable to the refuge.

6 Assessment

6.1 Threats

Management of Bond Swamp NWR has indicated 3 threats to water quality on the refuge. The first is mercury advisory for fish consumption. This is of moderate severity and is an advisory for a section of the Ocmulgee River and Tobesofkee Creek. The second water quality threat is contamination from upstream dischargers. Bond Swamp NWR is located downstream of several dischargers in Macon, GA. These dischargers include a paper mill, Macon Sewer Plant, and several other point and non-point sources of pollution. The third water quality threat is a potential railroad spill. A railroad runs along the east side of the refuge and poses a potential threat of possible derailment and contamination.

Other threats indicated by the refuge staff were related to political/public relations and landscape alteration. Specifically, the political/public relations threat is concerned with unsolicited garbage dumping on or near the refuge. This is of moderate severity, due to the unknown contents of the refuse and potential impacts to public safety and recreational activity on the refuge. The landscape alteration threat is specifically referring to the loss, alteration, and degradation of the floodplain that the refuge intersects. Changes to the hydrology and floodplain off the refuge, such as construction of roads in the floodplain or raising the Macon Industrial Levee on the west side of the river, can impact flooding and floodplain habitat within the refuge boundaries. More information about these threats can be found in Table A- 11 in Appendix E.

6.2 Needs and Recommendations

The most immediate need for Bond Swamp NWR is to conduct a Contaminant Assessment Process (CAP) evaluation to identify potential contaminant threats and pathways. A follow-up need would be to conduct a more targeted baseline contaminant study guided by the results of the CAP. This study would assess legacy contamination on the refuge, transport pathways, and potential risks to wildlife. With the direction of this study, strategies can be recommended to mitigate the identified risks. More information about these needs can be found in Table A- 12 in Appendix E.

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Appendix A Expanded Data Records

Table A- 1. Geographic information data sources.

Data	Region	Year	Website	Agency
Aqueducts and Canals	National	2014	https://nationalmap.gov/small_scale/mld/gmdrain.html	USGS
Aquifers	National	2003	https://water.usgs.gov/ogw/aquifer/map.html	USGS
Dams	National	2018	https://nid.sec.usace.army.mil/ords/f?p=105:19:4110774495960::NO::	National Inventory of Dams
Geology	National	2009	https://ngmdb.usgs.gov/gmna/#gmnaGeo	USGS GMNA Resource
Hydrography (Streams/Rivers, Lakes/Ponds, Canal/Ditch, Spring/Seep, Streamgages, Wells)	National	2018	https://viewer.nationalmap.gov/basic/#productSearch	NHD
Impaired Waters	National	2018	https://www.epa.gov/waterdata/waters-geospatial-data-downloads#303dListedImpairedWaters	EPA
Landscape Conservation Cooperatives	National	2015	https://catalog.data.gov/dataset/landscape-conservation-cooperatives	USFWS
Major Land Resource Area	National	2006	https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053624	USDA
NPDES (National Pollutant Discharge Elimination System)	National	2018	https://catalog.data.gov/dataset/epa-facility-registry-service-frs-wastewater-treatment-plants	EPA

Data	Region	Year	Website	Agency
Physiographic Regions	National	1946	https://water.usgs.gov/GIS/metadata/usgswrd/XML/physio.xml	USGS
Railroads	National	2014	https://nationalmap.gov/small_scale/mld/1rails.html	USGS
Roads	Georgia	2014	https://catalog.data.gov/dataset/tiger-line-shapefile-2014-state-georgia-primary-and-secondary-roads-state-based-shapefile	US Census Bureau, Department of Commerce
Soils	Georgia	2006	https://www.nrcs.usda.gov/wps/portal/nrcs/main/ar/soils/	MLRA
Streamgages	National	2013	http://nationalatlas.gov/atlasftp-1m.html	The National Map: USGS
Structures	National	2016	https://viewer.nationalmap.gov/basic/#productSearch	USGS
The National Elevation Dataset	National	2014	https://nationalmap.gov/small_scale/mld/gmelev.html	USGS
Water Monitoring Stations	National	2018	https://www.waterqualitydata.us/portal/	USGS
Wetlands	National	2016	https://www.fws.gov/wetlands/data/State-Downloads.html	FWS

Table A- 2. Other data sources.

Data	Region	Frequency of Data	Website	Agency
Climate Station Data	National	Daily	ftp://ftp.ncdc.noaa.gov/pub/data/ghcn/daily/	NOAA
Groundwater wells	National	Sporadic	https://waterdata.usgs.gov/nwis	USGS

Data	Region	Frequency of Data	Website	Agency
Groundwater wells	National	Sporadic	https://www.waterqualitydata.us/portal/	All State and Federal
Streamgage quantity and quality	National	Daily-Sporadic	https://waterdata.usgs.gov/nwis	USGS
Surface water quality	National	Sporadic	https://www.waterqualitydata.us/portal/	All State and Federal

Appendix B Dams Records

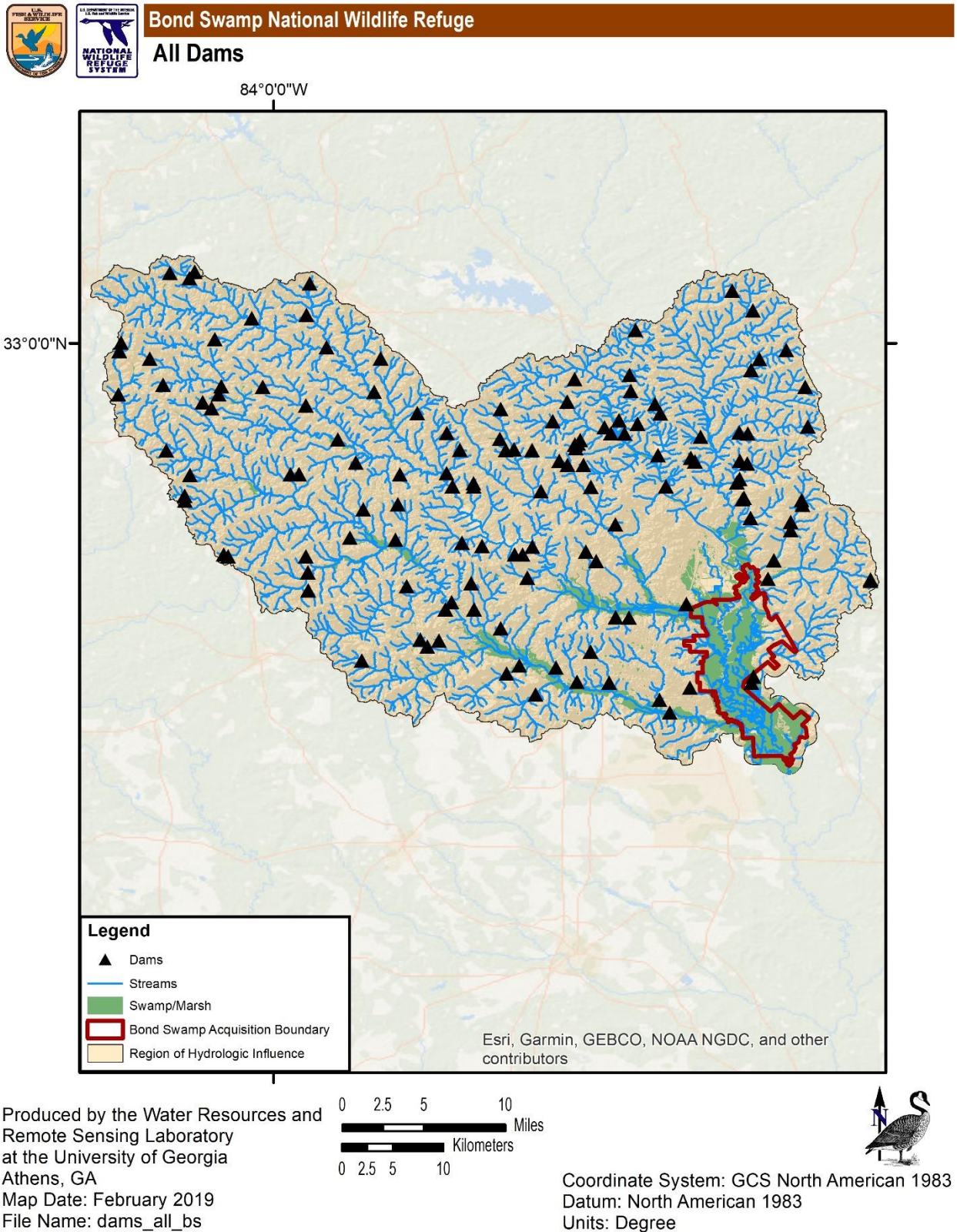


Figure A- 1. All dams within the RHI of Bond Swamp NWR. Source: (USACE, 2018).

Table A- 3. Dams in the RHI of Bond Swamp. Source: (SARP, 2017).

NID ID	Name	Longitude	Latitude	Year of Completion
GA00193	HULETT LAKE DAM	-83.575000	33.029167	1971
GA00196	LOWE LAKE DAM	-83.593333	33.046667	1972
GA00201	LAKE TOBESOFKEE DAM	-83.770580	32.819940	1965
GA00202	VFW LAKE DAM	-83.723290	32.815470	1957
GA00204	EDWARDS LAKE DAM	-83.556361	32.807917	1968
GA00206	SAWYER LAKE DAM	-83.541667	32.834444	1958
GA00207	LAKESIDE DAM	-83.577280	32.845370	1890
GA00208	GIBSON LAKE DAM	-83.702500	32.699444	1941
GA00209	BANKSTON LAKE DAM	-83.696639	32.757222	1965
GA00210	HARDY LAKE DAM	-83.685000	32.757111	1965
GA00211	J.R. GIBSON LAKE DAM	-83.749528	32.712694	1967
GA00212	LAKE WILDWOOD DAM	-83.763056	32.868940	1970
GA00213	MARGARET LAMON LAKE DAM	-83.786944	32.906111	1954
GA00281	SCOUT LAKE DAM	-83.767778	32.688889	1958
GA00311	WILLIS' LAKE DAM	-83.583056	32.863056	
GA00340	SMITH LAKE DAM	-84.009722	32.961389	
GA00341	REYNOLDS LAKE DAM	-83.841389	32.873333	
GA00348	BIGLER LAKE DAM	-83.725333	32.892306	
GA00352	TYE LAKE DAM NO. 1	-83.846389	32.920556	
GA00378	MCQUILLAN & YAMNITZ LAKE DAM	-83.779167	32.812778	
GA00446	TUCKER LAKE DAM	-83.870000	32.737500	
GA00501	LAWHORN LAKE DAM	-83.746667	32.895833	
GA00518	RIVOLI LAKE DAM #3	-83.732944	32.910194	
GA01039	PIERSON LAKE DAM #1	-84.095000	32.905000	1968
GA01041	TOBESOFKEE CREEK STR # 70	-84.046417	32.962083	1961
GA01042	PERSONS LAKE DAM	-83.970833	33.025000	1950
GA01235	KRAFTSMANS ASSOCIATION LAKE DAM	-83.782222	32.714444	
GA01240	HOGAN LAKE DAM	-83.921944	32.718889	1950
GA01241	MERRITT LAKE DAM	-83.853333	32.736667	1960
GA01242	WALKER LAKE DAM	-83.969167	32.781111	1940
GA02567	JONES LAKE DAM	-84.019444	33.022222	1963
GA02568	MAYNARD LAKE DAM	-83.888056	32.883889	1960
GA02571	PIPPIN IRRIGATION LAKE DAM	-84.062778	32.947778	1977

NID ID	Name	Longitude	Latitude	Year of Completion
GA02572	MANGHAM LAKE DAM	-84.109722	32.986389	1977
GA02593	CAULEY LAKE DAM	-83.531111	32.856944	1964
GA02615	SANDERS LAKE DAM	-84.051944	33.003611	
GA02631	CLAY LAKE DAM # 1 (LOWER)	-83.822389	32.873028	1947
GA02708	HAYGOOD BROTHERS IRRIGATION LAKE DAM	-84.137500	32.954722	1979
GA02725	LAKE DEER RUN DAM	-83.677222	32.928611	1970
GA02726	HOWELL LAKE DAM	-83.630000	32.898611	1924
GA02727	MCEARCHERN LAKE DAM	-83.834722	32.905556	
GA02728	LAKE WADLEY DAM	-83.798611	32.941667	
GA02729	HILLS LAKE DAM	-83.799444	32.915278	1970
GA02779	BATEMAN LAKE DAM	-83.545556	32.993889	1947
GA02780	ANDERSON LAKE DAM	-83.569444	32.986111	1947
GA02781	NEWBERRY LAKE DAM	-83.576667	32.976389	1965
GA02785	ETHERIDGE LAKE DAM	-83.528611	32.961389	
GA02786	SMITH LAKE DAM	-83.586778	32.879944	1950
GA02787	LAKE TONOWANDA DAM	-83.586667	32.895833	1950
GA02788	NELSON LAKE DAM	-83.580000	32.893611	1950
GA02789	CLUB LAKE DAM	-83.657056	32.937917	1970
GA02790	COULTER LAKE DAM	-83.626389	32.895278	1950
GA02812	MCCOOK DAM	-83.926944	32.894444	
GA02813	HART DAM	-83.977500	32.884167	1960
GA02814	ABERNATHY DAM	-83.905000	32.986667	1960
GA02870	HAYGOOD POND DAM	-84.078611	32.860556	1970
GA02872	TABERNACLE CAMP LAKE DAM	-83.920556	32.853056	1970
GA02873	MONTPELIER LAKE DAM	-83.889722	32.857500	
GA02874	GREEN ACRES LAKE DAM	-83.943056	32.914722	1941
GA02913	GARBY LAKE DAM	-84.070000	33.063333	1969
GA02998	CLAY LAKE DAM # 2 (UPPER)	-83.822639	32.876111	
GA03001	DAUGHTERY LAKE DAM	-83.824722	32.787500	1955
GA03002	JAMES STOKES LAKE DAM	-83.822167	32.764361	1959
GA03003	RIVOLI LAKE DAM # 1	-83.730000	32.911111	1955
GA03004	WESLEYAN COLLEGE LAKE DAM	-83.718611	32.872778	
GA03005	CRYSTAL LAKE DAM	-83.713889	32.806944	
GA03006	ROWELL LAKE DAM	-83.891944	32.825833	1950
GA03010	HARTLEY LAKE DAM	-83.971222	32.811167	1970

NID ID	Name	Longitude	Latitude	Year of Completion
GA03011	DINGLER LAKE DAM	-83.932222	32.827778	1975
GA03012	STACKLER LAKE DAM	-83.847778	32.764444	1973
GA03192	CRUMPTON LAKE DAM	-84.074722	33.057500	1972
GA03283	NEWBERRY LAKE DAM	-83.798611	32.747500	1952
GA03284	BATEMAN PEACH ORCHARD POND DAM	-83.630833	32.695000	
GA03671	PETERMAN LAKE DAM	-83.969444	32.797222	1970
GA03708	AIRPORT LAKE DAM	-83.657861	32.684028	1974
GA03967	GA POWER PLANT ARKWRIGHT ASH POND # 3	-83.706667	32.925556	1977
GA03968	GA POWER PLANT ARKWRIGHT ASH POND # 2	-83.700833	32.920278	
GA03991	STONE CREEK DAM (EAST)	-83.561639	32.791444	
GA03992	NOWELL LAKE DAM	-83.731028	32.700167	
GA03993	RIVOLI LAKE DAM # 2	-83.728139	32.914167	1955
GA03994	STOKES LAKE DAM	-83.718889	32.726944	1965
GA04191	SANDHILL LAKE DAM	-83.863611	32.731389	
GA04340	DURR LAKE DAM	-83.696944	32.839444	
GA04342	EVANS LAKE DAM	-83.770833	32.905278	1989
GA04343	FRANK C. AMERSON JR. LAKE DAM	-83.739444	32.892222	1987
GA04542	TOWN CREEK RESERVOIR DAM	-83.659167	32.900833	1993
GA04681	MCCOOK LAKE DAM	-83.531944	32.861111	1950
GA04682	SUN VALLEY LAKE DAM	-83.589167	32.876667	
GA04683	CAMP PINE LAKE DAM	-83.587222	32.921139	
GA04787	PIPPIN BROTHERS IRRIGATION LAKE DAM NO. 2	-84.055000	32.942500	1978
GA04972	TOBESOFKEE CREEK WATERSHED #41	-83.971389	32.945000	1963
GA04973	DAVIS LAKE DAM	-84.078889	32.865000	
GA04974	PIERSON LAKE DAM #2	-84.074167	32.883333	
GA04975	FORSYTH RESERVOIR	-83.953056	32.996667	
GA04976	BURGESS DAM	-83.872500	32.938056	1990
GA04977	GRIFFITH DAM	-83.846667	32.885000	1990
GA04982	PUBLIC SAFETY TRAINING CENTER DAM	-83.968056	33.052778	1987
GA04983	OGBURN DAM	-83.752500	32.931111	1987
GA05048	CHAFIN LAKE DAM	-83.470833	32.789444	
GA05054	SOUTHERN CLAY TRACT POND DAM	-83.470833	32.790833	
GA05106	PIPPIN LAKE DAM # 3	-84.048611	32.955000	
GA05235	ECHECONNIE CREEK LAKE DAM	-83.842222	32.770556	

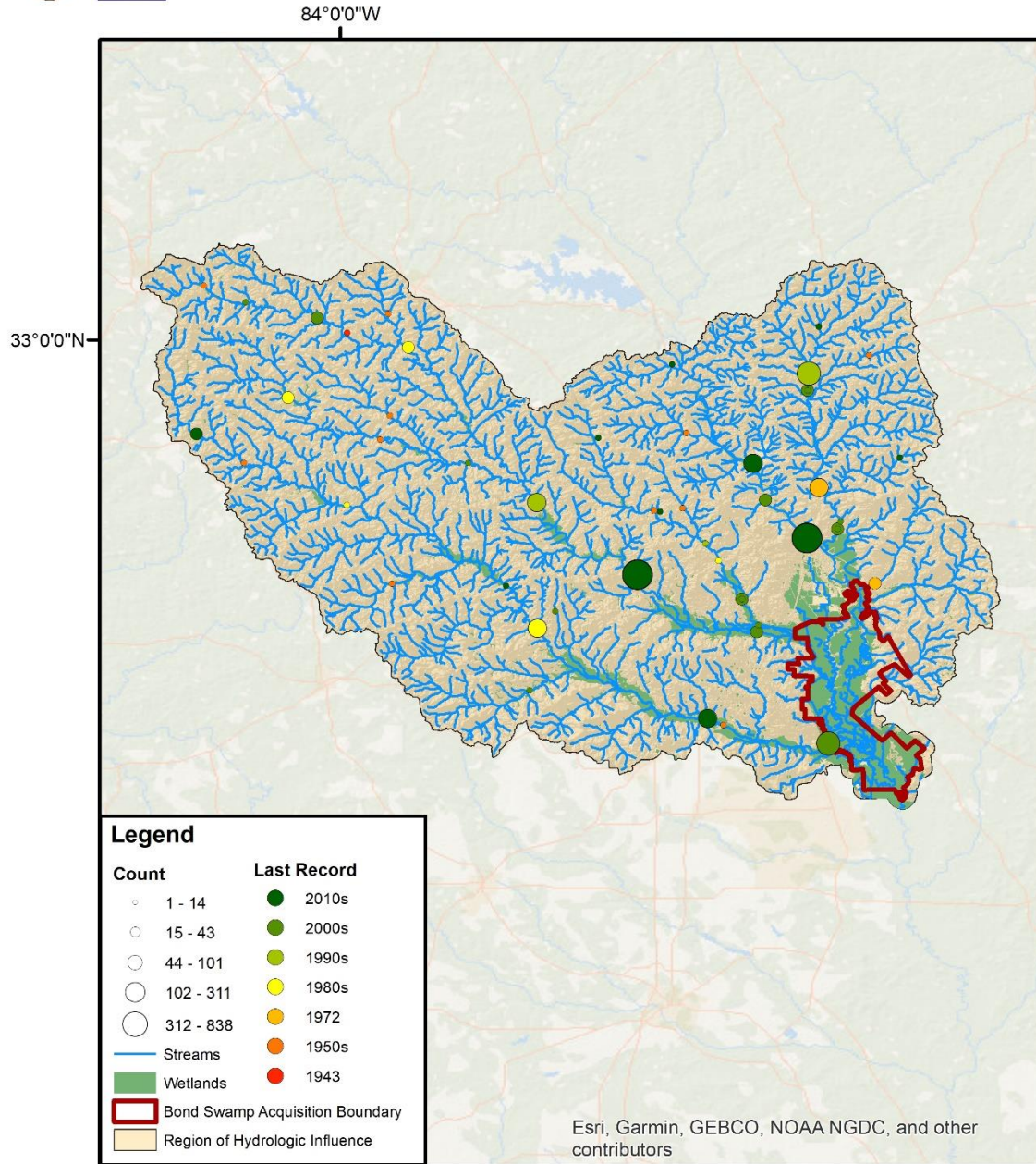
NID ID	Name	Longitude	Latitude	Year of Completion
GA05276	PROPOSED MACON - BIBB COUNTY WATER AND SEWAGE AUTHORITY RAW	-83.652222	32.873333	
	WATER RESERVOIR DAM			
GA05277	NORTH LAKEWOODS LAKE DAM	-83.815278	32.820556	
GA05278	FOWLER LAKE DAM	-83.786389	32.812778	1986
GA05391	RIVERSIDE COUNTRY CLUB LAKE DAM	-83.739722	32.948333	
GA05461	PIKE LAKE DAM	-83.648667	32.672833	
GA05465	DICKEY LAKE DAM #1 REHAB	-84.040278	32.811250	
GA05466	ROBERT DICKEY LAKE DAM #2 RECONSTRUCTION	-84.044167	32.812778	1997
GA05575	TIM SHERIDAN LAKE DAM	-83.910833	32.956944	
GA05593	HAMPTON RIDGE LAKE DAM	-83.794167	32.905278	
GA05615	WHITEWATER LAKE (REDESIGN)	-83.793333	32.707500	
GA05620	HOVEY LAKE DAM	-84.136667	32.993056	
GA05786	HITCHCOCK QUARRY LAKE DAM	-83.526389	32.926389	
GA05788	KOPLIN LAKE DAM	-83.683333	32.957778	2004
GA05789	LANFORD FARM POND	-83.579667	32.919889	
GA05791	GLAWSON POND A	-83.688889	32.920000	2004
GA05792	GLAWSON POND B	-83.693889	32.931944	2004
GA05793	JABOT LAKE DAM	-83.661944	32.946111	
GA05797	STEWART IRRIGATION	-83.621389	32.917222	
GA05798	WALSH LAKE DAM	-83.684444	32.971944	2004
GA05801	JOHNNY OWEN LAKE	-84.091944	33.062222	
GA05824	KERSEY LAKE DAM	-83.541583	32.841611	
GA05861	CENTRAL GEORGIA WOODMEN OF THE WORLD CAMP	-83.985000	32.883889	
GA05974	KAMIN IMPOUND #2	-83.574444	32.704722	
GA06008	YARBROUGH LAKE DAM	-83.833056	32.823333	
GA06009	TOBEE CREEK SUBDIVISION LAKE DAM	-83.775083	32.792472	
GA06050	SMITH POND DAM	-83.584250	32.861833	
GA06079	RIVOLI LAKE DAM #4	-83.731944	32.907167	1955
GA06455	SUGAR HILL FARM LAKE DAM # 2	-84.098056	32.963333	
GA06524	HUBER NEW IMPOUND	-83.576389	32.699444	
GA07015	TOM WILLIAMS LAKE DAM	-83.881972	32.784861	1997
GA07204	LAWSON LAKE DAM	-83.733056	32.968333	
GA07224	PROPOSED DAN OWENS LAKE DAM	-84.135139	33.000417	
GA07235	GRAPHIC PACKAGING SOUTH ASH POND	-83.633972	32.768944	
GA10002	FIVE POINTS DAM	-83.679161	33.011665	1941

Appendix C Water Quality and Quantity Stations

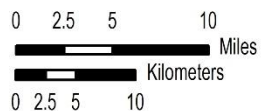


Bond Swamp National Wildlife Refuge

All Streamgage Stations



Produced by the Water Resources and Remote Sensing Laboratory at the University of Georgia Athens, GA
Map Date: November 2018
File Name: sw_quant_bs



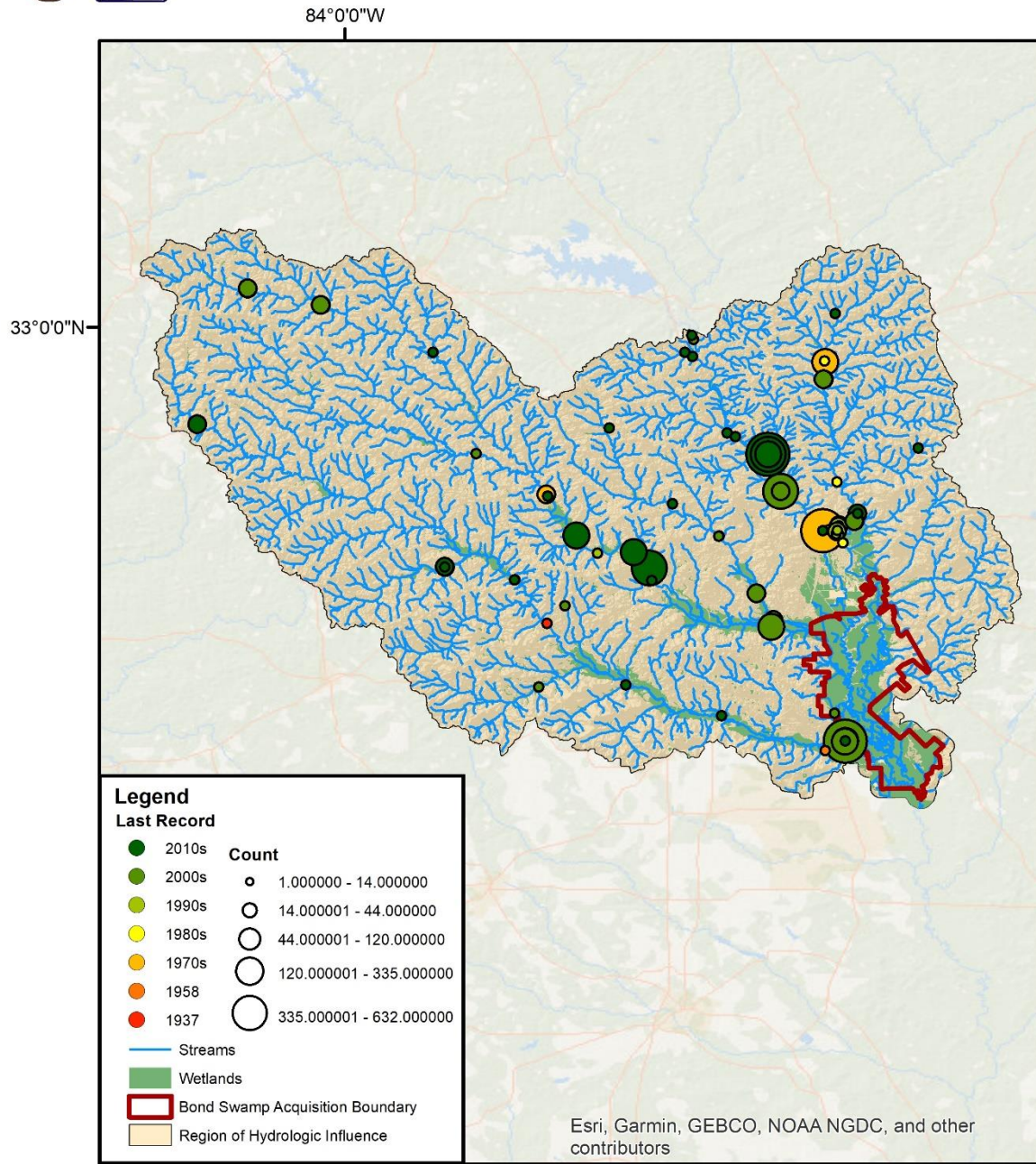
Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure A- 2. All streamgages in the RHI of Bond Swamp NWR. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

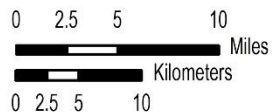


Bond Swamp National Wildlife Refuge

All Surface Water Quality Stations



Produced by the Water Resources and
Remote Sensing Laboratory
at the University of Georgia
Athens, GA
Map Date: November 2018
File Name: sw_qual_bs



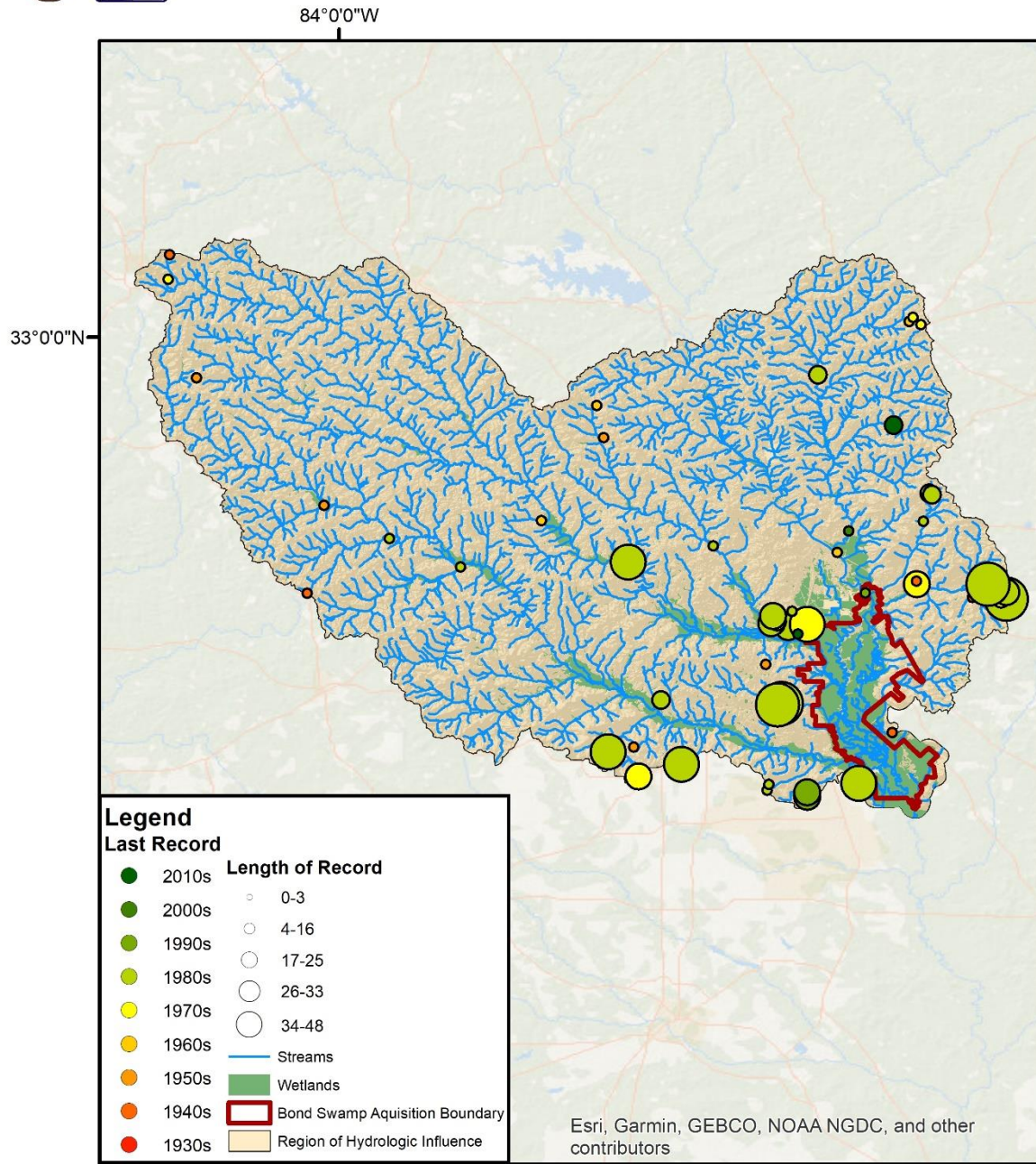
Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure A- 3. All surface water quality stations in the RHI. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

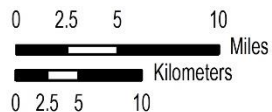


Bond Swamp National Wildlife Refuge

All Groundwater Quantity Stations



Produced by the Water Resources and
Remote Sensing Laboratory
at the University of Georgia
Athens, GA
Map Date: November 2018
File Name: gw_quant_bs



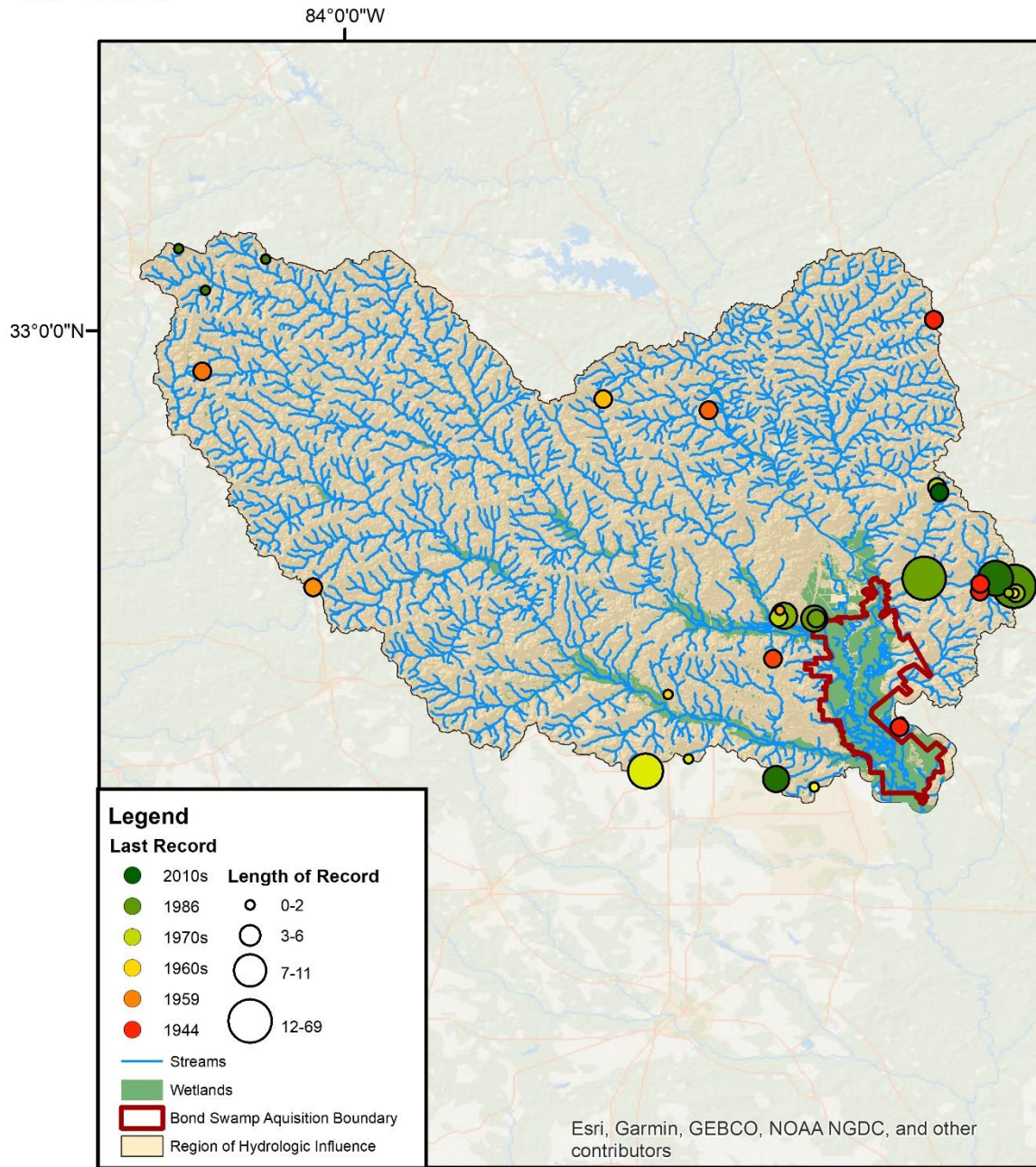
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Datum: North American 1983
Units: Degree

Figure 29. All groundwater quantity stations in the RHI. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

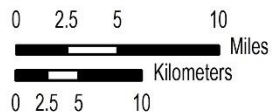


Bond Swamp National Wildlife Refuge

All Groundwater Quality Stations



Produced by the Water Resources and
Remote Sensing Laboratory
at the University of Georgia
Athens, GA
Map Date: November 2018
File Name: gw_qual_bs



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

Figure A- 4. All groundwater quality stations in the RHI. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

Surface Water Quantity

Table A- 4. Streamgages with peak discharge recorded in the RHI. ¶Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

Agency	Site Number	Station Name	Start Date	End Date	Peak Count	Latitude	Longitude
USGS	02212930	SABBATH CREEK AT NORTHSIDE DR, NEAR MACON, GA	1970-03-20	1972-01-11	3	32.89319347	-83.6824022
USGS	02212950	OCMULGEE RIVER ABOVE MACON, GA	1919-12-11	1975-04-04	8	32.8698606	-83.6540686
USGS	02212990	OCMULGEE RIVER AT SPRING ST, AT MACON, GA	1948-11-29	1975-04-04	2	32.84569438	-83.6282352
USGS	02213000	OCMULGEE RIVER AT MACON, GA	1887-08-01	2017-01-23	126	32.8386111	-83.6205556
USGS	02213010	OCMULGEE RIVER (CENT OF GA RR) AT MACON, GA	1948-11-29	1948-11-29	1	32.8379167	-83.6187908
USGS	02213050	WALNUT CREEK NEAR GRAY, GA	1962-02-22	1994-07-06	33	32.9723583	-83.6187863 9
USGS	02213100	WALNUT CREEK AT US 129, OLD80, AT MACON, GA	1959-02-04	1974-02-05	6	32.87958246	-83.6104558
USGS	02213130	OCMULGEE RIVER (SCLRR) AT MACON, GA	1948-11-29	1948-11-29	1	32.82402798	-83.6001796
USGS	02213205	SWIFT CREEK AT GA 87, US 129 & 27, NR MACON, GA	1970-03-20	1972-01-11	3	32.80013928	-83.5693464
USGS	02213215	OCMULGEE RIVER (SOUTHERN RR) BL MACON, GA	1925-01-19	1925-01-19	1	32.7595848	-83.6004596
USGS	02213280	TOBESOFKEE CREEK NEAR BARNESVILLE, GA	1994-07-05	1994-07-05	1	33.0437388	-84.1110257 9
USGS	02213350	TOBESOFKEE CREEK BELOW FORSYTH, GA	1963-01-20	1994-07-06	26	32.9937432	-83.9446311 9
USGS	02213400	LITTLE TOBESOFKEE CREEK NEAR FORSYTH, GA	1951-04-22	1994-07-06	13	32.95291	-84.0424119
USGS	02213420	LITTLE TOBESOFKEE CR AT GA 42, NR RUSSELLVILLE, GA	1994-07-06	1994-07-06	1	32.91874537	-83.9674096
USGS	02213450	LITTLE TOBESOFKEE CREEK NEAR BOLINGBROKE, GA	1994-07-06	1994-07-06	1	32.8995803	-83.8957412
USGS	02213470	TOBESOFKEE CREEK ABOVE MACON, GA	1967-08-25	1994-07-06	14	32.86735989	-83.8399069
USGS	02213500	TOBESOFKEE CREEK NEAR MACON, GA	1929-03-01	2017-01-04	81	32.80888889	-83.7583333
USGS	02213540	TOBESOFKEE CREEK (I-475) NEAR MACON, GA	1929-01-01	1944-03-21	2	32.76541934	-83.7104617

Agency	Site Number	Station Name	Start Date	End Date	Peak Count	Latitude	Longitude
USGS	02213560	<u>TOBESOFKEE CREEK AT US 41, AT MACON, GA</u>	1929-01-01	1944-03-21	2	32.76791868	-83.659905
USGS	02213670	<u>ROCKY CREEK AT GA 74, OLD US 80, AT MACON, GA</u>	1970-03-20	1971-03-02	2	32.82041766	-83.6924044
USGS	02213674	<u>ROCKY CREEK AT NEW US 80, AT MACON, GA</u>	1970-03-20	1970-03-20	1	32.81541776	-83.6885155
USGS	02213700	<u>OCMULGEE RIVER NEAR WARNER ROBINS, GA</u>	1973-04-08	2001-03-06	20	32.6715317	-83.6029603
USGS	02213880	<u>ECHECONNEE CREEK AT GA 74, NEAR CULLODEN, GA</u>	1994-07-06	1994-07-06	1	32.88013487	-84.0271333
USGS	02214000	<u>ECHECONNEE CREEK NEAR MACON, GA</u>	1938-04-07	1994-07-06	36	32.7651409	-83.8393524
USGS	02214075	<u>ECHECONNEE CREEK AT HOUSTON RD, NEAR BYRON, GA</u>	2011-02-06	2017-01-03	7	32.69187778	-83.7009722
USGS	02214080	<u>ECHECONNEE CREEK AT US 41, NEAR MACON, GA</u>	1970-03-20	1972-03-15	3	32.68681008	-83.6882395

Table A- 5. Surface water quantity stations within the RHI. ¶Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

Agency	Site Number	Station Name	Start Date	End Date	Count	Latitude	Longitude
USGS	02212910	<u>BEAVERDAM CREEK NEAR MACON, GA</u>	1954-11-04	1955-09-22	2	32.924026	-83.7185138
USGS	02213000	<u>OCMULGEE RIVER AT MACON, GA</u>	1928-12-04	2018-10-16	829	32.8386111	-83.6205556
USGS	02213050	<u>WALNUT CREEK NEAR GRAY, GA</u>	1961-09-26	1994-04-27	311	32.9723583	-83.61878639
USGS	02213055	<u>WALNUT CREEK AT MCKAY ROAD, NEAR CLINTON, GA</u>	1999-06-02	2005-02-01	5	32.95874747	-83.61989799
USGS	02213070	<u>BONNER CREEK AT US 129, NEAR CLINTON, GA</u>	1954-10-07	1955-09-23	2	32.9870804	-83.5698949
USGS	02213100	<u>WALNUT CREEK AT US 129, OLD 80, AT MACON, GA</u>	1942-11-01	1972-10-19	64	32.87958246	-83.6104558
USGS	02213109	<u>WALNUT CREEK AT JEFFERSONVILLE ROAD, AT MACON, GA</u>	2004-07-19	2005-02-01	2	32.85208294	-83.593234
USGS	02213110	<u>WALNUT CREEK EMERY HWY (US 80) AT MACON, GA</u>	1999-06-02	2001-05-08	2	32.8462497	-83.5954565
USGS	02213200	<u>SWIFT CREEK NEAR MACON, GA</u>	1950-10-13	1972-10-19	16	32.80180588	-83.5651795
USGS	02213280	<u>TOBESOFKEE CREEK NEAR BARNESVILLE, GA</u>	1952-10-23	1954-09-28	2	33.0437388	-84.11102579
USGS	02213285	<u>TOBESOFKEE CREEK AT RAMAH CH RD, NR BARNESVILLE, GA</u>	2004-05-11	2005-01-20	2	33.0304066	-84.0768579
USGS	02213300	<u>TOBESOFKEE CREEK NEAR FORSYTH, GA</u>	1954-10-06	2005-02-01	20	33.01763016	-84.0188004
USGS	02213320	<u>TOBESOFKEE CREEK AT GA 83, NEAR FORSYTH, GA</u>	1942-10-30	1943-10-18	2	33.0054087	-83.99435509
USGS	02213340	<u>TODD CREEK AT GA 83, AT FORSYTH, GA</u>	1954-10-05	1954-10-05	1	33.02096419	-83.9610206
USGS	02213350	<u>TOBESOFKEE CREEK BELOW FORSYTH, GA</u>	1962-09-14	1988-07-28	17	32.9937432	-83.94463119
USGS	02213400	<u>LITTLE TOBESOFKEE CREEK NEAR FORSYTH, GA</u>	1942-10-30	1988-07-28	24	32.95291	-84.0424119
USGS	02213420	<u>LITTLE TOBESOFKEE CR AT GA 42, NR RUSSELLVILLE, GA</u>	1952-10-22	1954-10-06	2	32.91874537	-83.9674096
USGS	02213430	<u>YELLOW RIVER AT GA 42, NEAR RUSSELLVILLE, GA</u>	1952-10-22	1954-10-06	2	32.93818928	-83.9596317
USGS	02213450	<u>LITTLE TOBESOFKEE CREEK NEAR BOLINGBROKE, GA</u>	1974-10-29	2003-09-16	5	32.8995803	-83.8957412
USGS	02213470	<u>TOBESOFKEE CREEK ABOVE MACON, GA</u>	1967-04-06	1994-07-05	52	32.86735989	-83.8399069

USGS	02213500	TOBESOFKEE CREEK NEAR MACON, GA	1937-03-20	2018-10-18	725	32.80888889	-83.7583333
USGS	02213560	TOBESOFKEE CREEK AT US 41, AT MACON, GA	1990-09-11	2001-05-08	3	32.76791868	-83.659905
USGS	02213610	ROCKY CREEK AT TUCKER RD, NEAR MACON, GA	1952-10-23	1955-09-22	3	32.86097238	-83.7446271
USGS	02213640	WOLF CREEK AT TUCKER RD, AT MACON, GA	1952-10-22	1955-09-22	3	32.86291666	-83.7215709
USGS	02213670	ROCKY CREEK AT GA 74, OLD US 80, AT MACON, GA	1943-10-19	1980-08-07	14	32.82041766	-83.6924044
USGS	02213675	ROCKY CREEK AT ROCKY CREEK RD, AT MACON, GA	1999-06-29	2001-05-08	3	32.7890294	-83.673238
USGS	02213700	OCMULGEE RIVER NEAR WARNER ROBINS, GA	1969-09-23	2006-10-23	248	32.6715317	-83.6029603
USGS	02213870	ECHECONNEE CREEK AT US 341, NEAR CULLODEN, GA	1942-10-30	1954-10-06	2	32.8995782	-84.0782459
USGS	02213900	ECHECONNEE CREEK NEAR CULLODEN, GA	1952-10-22	1980-08-07	4	32.86541344	-83.9946324
USGS	02213930	LITTLE ECHECONNEE CREEK NEAR ROBERTA, GA	1954-10-22	1954-10-22	1	32.80152715	-83.9579649
USGS	02214000	ECHECONNEE CREEK NEAR MACON, GA	1937-03-20	1988-07-27	76	32.7651409	-83.8393524
USGS	02214075	ECHECONNEE CREEK AT HOUSTON RD, NEAR BYRON, GA	2009-12-09	2018-10-16	55	32.69187778	-83.7009722
USGS	02214080	ECHECONNEE CREEK AT US 41, NEAR MACON, GA	1943-10-19	1955-09-23	2	32.68681008	-83.6882395
21GAEPD_WQX	05009901	Ocmulgee River - New Macon Water Intake	2002-01-31	2003-09-11	35	32.8992	-83.6641
21GAEPD_WQX	05010001	Ocmulgee River - Macon Water Intake	1999-01-20	2000-12-21	43	32.8697	-83.6542
21GAEPD_WQX	05011101	Walnut Creek at Clinton Street near Macon, Georgia	1999-01-20	2000-03-06	22	32.9586	-83.62
21GAEPD_WQX	05011251	Walnut Creek at U.S. Highway 80 near Macon, Georgia	1999-01-20	2000-03-08	22	32.8461	-83.5956
21GAEPD_WQX	05011901	Tobesofkee Creek at Parks Road near Forsyth, Georgia	1999-01-21	2000-03-06	22	33.0175	-84.0189
21GAEPD_WQX	05013501	Rocky Creek at Log Cabin Drive near Macon, Georgia	1999-01-20	1999-02-17	4	32.8342	-83.7031
21GAEPD_WQX	05013575	Rocky Creek at Rocky Creek Road near Macon, Georgia	1999-03-31	2000-02-24	17	32.7889	-83.6733
21GAEPD_WQX	05013601	Tobesofkee Creek - U.S. Highways 41 and 129	1999-01-20	2000-02-24	21	32.7622	-83.6614

21GAEPD_WQX	05015001	Rocky Creek - North Channel In Macon	1999-01-20	2003-09-11	76	32.6714	-83.603
21GAEPD_WQX	05015601	Horse Creek at Warner Robins, Georgia	1999-01-20	2000-01-06	13	32.6217	-83.5686
21GAEPD_WQX	05016001	Ocmulgee River - Georgia Highway 96	1999-01-19	2000-02-23	22	32.5425	-83.5369
21GAEPD_WQX	05016151	Ocmulgee River - Georgia Highway 96	1999-01-19	2000-02-22	21	32.4519	-83.4525
21GAEPD_WQX	RV_05_16777	Echeconnee Creek at Rock Quarry Rd nr Yatesville	2017-01-30	2017-12-11	17	32.9231	-84.1169
21GAEPD_WQX	RV_05_16779	Trib to Walnut Creek at Chehaw Trail nr Macon	2017-01-03	2017-12-12	12	33.0107	-83.6109
21GAEPD_WQX	RV_05_17305	Echeconnee Creek at Eisenhower Pkwy near Macon, GA	2018-01-23	2018-12-12	11	32.7997	-83.8652
21GAEPD_WQX	RV_05_2147	Calaparchee Creek at Sanders Road (CR 49) near Bolin	2018-01-23	2018-11-07	11	32.92	-83.79
21GAEPD_WQX	RV_05_2149	Rocky Creek at Tucker Road (CR 742) near Macon, GA	2018-01-23	2018-12-12	11	32.86	-83.74
21GAEPD_WQX	RV_05_2163	Tobler Creek at U.S. Highway 23 near Forsyth, GA	2018-01-23	2018-12-12	12	32.98	-83.73
21GAEPD_WQX	RV_05_2165	Ocmulgee River - New Macon Water Intake	2013-01-09	2017-12-11	101	32.8992	-83.6641
21GAEPD_WQX	RV_05_2178	Sandy Run Creek at U.S. 129 near Warner Robbins, GA	2015-01-06	2015-12-17	4	32.5768	-83.5901
21GAEPD_WQX	RV_05_2185	Ocmulgee River - Georgia Highway 96	2014-05-15	2017-12-07	30	32.5425	-83.5369
21GAEPD_WQX	RV_05_2281	Bay Gall Creek at Russell Pkwy	2015-01-06	2015-12-17	4	32.5939	-83.6197
21GAEPD_WQX	RV_05_2282	Cainey Branch at Sandy Run Rd	2015-01-06	2015-12-17	4	32.5723	-83.6094
21GAEPD_WQX	RV_05_2817	Crooked Creek at Westlake Rd nr Bonaire, GA	2000-11-25	2018-12-04	21	32.5019	-83.4874
21GAEPD_WQX	RV_05_2818	Deep Creek at Marshall Mill Road nr Lizella, GA	2001-11-03	2001-11-03	1	32.7147	-83.846
21GAEPD_WQX	RV_05_2821	Gum Branch nr Doris Dr, nr Lizella, GA	2003-02-13	2003-02-13	1	32.7791	-83.8252
21GAEPD_WQX	RV_05_5087	Sandy Run Creek at Moody Rd near Warner Robins, GA	2015-01-06	2015-12-17	4	32.5837	-83.6232
21GAEPD_WQX	RV_05_5127	Dry Bone Creek at Chapman Rd. near Macon, GA	2015-02-24	2015-12-09	3	32.904	-83.545

Surface Water Quality

Table A- 6. All surface water quality stations in the RHI. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

Agency	Site Number	Station Name	Start Date	End Date	Count	Latitude	Longitude
USGS	02212940	OCMULGEE RIVER NEAR MACON, GA	2002-01-31	2018-10-22	438	32.89916667	-83.6641667
USGS	02212950	OCMULGEE RIVER ABOVE MACON, GA	1974-07-26	2001-12-12	335	32.8698606	-83.6540686
USGS	02213000	OCMULGEE RIVER AT MACON, GA	1906-10-19	1975-12-30	632	32.8386111	-83.6205556
USGS	02213050	WALNUT CREEK NEAR GRAY, GA	1962-08-21	1976-07-27	120	32.9723583	-83.61878639
USGS	02213055	WALNUT CREEK AT MCKAY ROAD, NEAR CLINTON, GA	1999-01-20	2004-12-08	38	32.95874747	-83.61989799
USGS	02213109	WALNUT CREEK AT JEFFERSONVILLE ROAD, AT MACON, GA	2004-03-02	2004-12-08	16	32.85208294	-83.593234
USGS	02213110	WALNUT CREEK EMERY HWY (US 80) AT MACON, GA	1999-01-20	2000-03-08	22	32.8462497	-83.5954565
USGS	02213285	TOBESOFKEE CREEK AT RAMAH CH RD, NR BARNESVILLE,GA	2004-02-04	2004-12-09	21	33.0304066	-84.0768579
USGS	02213300	TOBESOFKEE CREEK NEAR FORSYTH, GA	1999-01-21	2004-12-08	38	33.01763016	-84.0188004
USGS	02213450	LITTLE TOBESOFKEE CREEK NEAR BOLINGBROKE, GA	2003-03-12	2003-09-16	3	32.8995803	-83.8957412
USGS	02213470	TOBESOFKEE CREEK ABOVE MACON, GA	1967-05-18	1973-12-04	33	32.86735989	-83.8399069
USGS	02213500	TOBESOFKEE CREEK NEAR MACON, GA	1937-03-20	2014-06-17	184	32.80888889	-83.7583333
USGS	02213560	TOBESOFKEE CREEK AT US 41, AT MACON, GA	1991-03-14	2000-02-24	41	32.76791868	-83.659905
USGS	02213561	TOBESOFKEE CREEK TRIB AT US 41 AT MACON, GA	1990-07-17	1990-12-27	6	32.76236327	-83.6607385
USGS	02213660	ROCKY CREEK AT LOG CABIN DRIVE, AT MACON, GA	1999-01-20	1999-02-17	4	32.83430625	-83.7029599
USGS	02213675	ROCKY CREEK AT ROCKY CREEK RD, AT MACON, GA	1999-03-31	2000-02-24	17	32.7890294	-83.673238

USGS	02213700	OCMULGEE RIVER NEAR WARNER ROBINS, GA	1970-10-15	2006-12-14	515	32.6715317	-83.6029603
USGS	02213925	LITTLE ECHECONEE CR, SMITH CHAPEL RD, NR MUSELLA, GA	2004-02-03	2004-12-08	21	32.80986069	-83.9204643
USGS	02213950	ECHECONNEE CREEK NEAR ROBERTA, GA	1957-08-07	1958-05-02	12	32.79958396	-83.864908
USGS	02214000	ECHECONNEE CREEK NEAR MACON, GA	1937-03-20	1937-03-25	2	32.7651409	-83.8393524
USGS	02214120	ECHECONNEE CREEK NEAR WARNER ROBINS AFB, GA	1958-02-26	1958-05-27	4	32.66430987	-83.6187939
11NPSWRD_WQX	OCMU_DNR_CRK	UNNAMED CREEK NORTH OF INTERSTATE 16	1995-08-10	1995-08-10	1	32.8394167	-83.6153611
11NPSWRD_WQX	OCMU_FRUS_1	APPROXIMATELY 6.4 KM NORTH OF SPRING ST BRIDGE	1988-07-13	1988-07-26	4	32.8962222	-83.6622778
11NPSWRD_WQX	OCMU_MWA_ABS	UNNAMED CREEK .03 MILES WEST OF PARK BNDRY	1995-04-22	1995-09-13	20	32.8429167	-83.6076389
11NPSWRD_WQX	OCMU_MWA_DF	UNNAMED CREEK IN DRAKE'S FIELD	1995-04-22	1995-09-13	21	32.8417222	-83.60825
11NPSWRD_WQX	OCMU_MWA_DWS	UNNAMED CREEK SOUTH OF PARK ROAD	1994-05-20	1994-05-22	3	32.8375278	-83.6097222
11NPSWRD_WQX	OCMU_MWA_PR	INTERSECTION OF UNNAMED CREEK AND PARK ROAD	1995-04-23	1995-04-28	6	32.8380556	-83.6094167
11NPSWRD_WQX	OCMU_MWA_S1	UNNAMED CREEK .03 MILES WEST OF PARK BNDRY	1994-05-20	1994-05-22	3	32.8424444	-83.6079444
11NPSWRD_WQX	OCMU_MWA_S2	UNNAMED CREEK .02 MILES NORTH OF PARK ROAD	1995-04-22	1996-06-01	20	32.8381111	-83.6092778
11NPSWRD_WQX	OCMU_MWA_STO	NEAR CONFLUENCE OF UNNAMED CREEK & WALNUT CREEK	1994-05-22	1994-05-22	1	32.8353333	-83.6077778
11NPSWRD_WQX	OCMU_MWA_SWP	SWAMP S OF PARK ROAD BELOW LESSER TEMPLE MOUND	1994-05-20	1994-05-22	3	32.8360556	-83.6100833
11NPSWRD_WQX	OCMU_MWA_UPS	UNNAMED CREEK AND MOUND VILLAGE TRAIL	1994-05-20	1994-05-22	3	32.8386944	-83.6090833
11NPSWRD_WQX	OCMU_WNC_H11	INTERSECTION OF WALNUT CREEK AND HIGHWAY 11	1986-07-16	1986-08-27	2	32.8772222	-83.6094444
11NPSWRD_WQX	OCMU_WNC_H18	INTERSECTION OF WALNUT CREEK AND HIGHWAY 18	1986-07-16	1986-08-27	2	32.9732778	-83.6191667

11NPSWRD_WQX	OCMU_WNC_I16	INTERSECTION OF WALNUT CREEK & INTERSTATE HWY 16	1986-07-16	1986-08-27	2	32.8290556	-83.6046389
11NPSWRD_WQX	OCMU_WNC_JVR	INTERSECTION OF WALNUT CREEK & JEFFERSONVILLE RD	1986-07-16	1986-08-27	2	32.8520278	-83.5934167
21GAEPD	05009901	Ocmulgee River - New Macon Water Intake	2002-01-31	2003-09-11	35	32.8992	-83.6641
21GAEPD	05010001	Ocmulgee River - Macon Water Intake	1999-01-20	2000-12-21	43	32.8697	-83.6542
21GAEPD	05011101	`Walnut Creek at Clinton Street near Macon, Georgia`	1999-01-20	2000-03-06	22	32.9586	-83.62
21GAEPD	05011251	`Walnut Creek at U.S. Highway 80 near Macon, Georgia`	1999-01-20	2000-03-08	22	32.8461	-83.5956
21GAEPD	05011901	`Tobesofkee Creek at Parks Road near Forsyth, Georgia`	1999-01-21	2000-03-06	22	33.0175	-84.0189
21GAEPD	05012701	Lake Tobesofkee - Midlake	2004-03-03	2004-11-18	4	32.8346	-83.8161
21GAEPD	05012901	Lake Tobesofkee - Dam Forebay	2004-03-03	2004-11-18	4	32.8215	-83.7706
21GAEPD	05013501	`Rocky Creek at Log Cabin Drive near Macon, Georgia`	1999-01-20	2001-12-03	5	32.8342	-83.7031
21GAEPD	05013575	`Rocky Creek at Rocky Creek Road near Macon, Georgia`	1999-03-31	2000-02-24	17	32.7889	-83.6733
21GAEPD	05013601	Tobesofkee Creek - U.S. Highways 41 and 129	1999-01-20	2003-12-23	78	32.7622	-83.6614
21GAEPD	05015001	Rocky Creek - North Channel In Macon	1999-01-20	2003-09-11	77	32.6714	-83.603
21GAEPD	05015601	`Horse Creek at Warner Robins, Georgia`	1999-01-20	2000-01-06	13	32.6217	-83.5686
21GAEPD	05016001	Ocmulgee River - Georgia Highway 96	1999-01-19	2000-02-23	22	32.5425	-83.5369
21GAEPD	05016151	Ocmulgee River - Georgia Highway 96	1999-01-19	2000-02-22	21	32.4519	-83.4525
21GAEPD_WQX	0503140103	Tobesofkee Creek at Ramah Church Road near Barnesville, GA	2004-02-04	2004-12-09	19	33.0307	-84.0768
21GAEPD_WQX	0503140105	Tobesofkee Creek at Parks Road near Forsyth, GA	2000-01-04	2004-12-02	14	33.017117	-84.018517
21GAEPD_WQX	0503140203	Tobesofkee Creek at Mountpelier Road near Forsyth, GA	2012-01-03	2012-12-12	12	32.98	-83.93
21GAEPD_WQX	0503140501	Tobesofkee Creek - U.S. Highway 80	2012-01-03	2012-12-12	12	32.798983	-83.756357

21GAEPD_WQX	0503140503	Lake Tobesofkee - Midlake	2004-05-13	2014-10-22	43	32.8346	-83.8161
21GAEPD_WQX	0503140505	Lake Tobesofkee - Dam Forebay	2004-05-13	2014-10-22	44	32.8215	-83.7706
21GAEPD_WQX	0503140506	Tobesofkee Creek at SR 74 near Macon, GA	2012-01-03	2012-12-12	12	32.866	-83.839
21GAEPD_WQX	0503140606	Rocky Creek at Rocky Creek Road near Macon, GA	2000-01-06	2000-02-24	2	32.788889	-83.673333
21GAEPD_WQX	0503140608	Tobesofkee Creek - U.S. Highways 41 and 129	2000-01-06	2000-02-24	2	32.762222	-83.661389
21GAEPD_WQX	0503150303	Little Echeconne Creek at Smith Chapel Road near Musella, GA	2004-03-16	2012-12-12	21	32.809933	-83.920533
21GAEPD_WQX	0503150604	Echeconnee Creek at Houston Rd near Warner Robbins, GA	2012-01-03	2012-12-12	12	32.692	-83.701
21GAEPD_WQX	0503160201	Ocmulgee River - New Macon Water Intake	2004-02-04	2013-12-09	161	32.899247	-83.664064
21GAEPD_WQX	0503160203	Ocmulgee River - Macon Water Intake	2000-01-06	2000-12-21	22	32.8697	-83.6542
21GAEPD_WQX	0503160204	Ocmulgee River - Fifth Street Bridge In Macon	2010-10-04	2014-08-27	5	32.838611	-83.620556
21GAEPD_WQX	0503160303	Walnut Creek at McKay Road (CR 11) near Clinton, GA	2000-01-06	2004-11-22	13	32.958611	-83.62
21GAEPD_WQX	0503160403	Walnut Creek at Jeffersonville Road at Macon, GA	2004-03-03	2012-12-12	23	32.85215	-83.593133
21GAEPD_WQX	0503160404	Walnut Creek at U.S. Highway 80 near Macon, GA	2000-01-04	2000-03-08	2	32.846111	-83.595556
21GAEPD_WQX	0503160502	Ocmulgee River - 6.0 Miles Downstream from Tobesofkee Creek	2000-01-06	2006-12-14	54	32.671792	-83.602851
21GAEPD_WQX	0504010102	Horse Creek at Warner Robins, GA	2000-01-06	2004-11-17	12	32.621667	-83.568611
21GAEPD_WQX	0504010201	Sandy Run Creek at U.S. 129 near Warner Robbins, GA	2004-02-04	2004-12-08	15	32.576767	-83.59005
21GAEPD_WQX	0504010202	Sandy Run Creek at S. Houston Road near Warner Robbins, GA	2004-02-04	2004-12-08	20	32.575567	-83.663217
21GAEPD_WQX	0504010602	Shellstone Creek at Reddog Farm Road (County Road 219) near Ocmulgee River - Georgia Highway 96	2000-01-05	2000-02-22	2	32.451944	-83.4525
21GAEPD_WQX	0504010701	Lake Tobesofkee - Midlake	1998-12-28	2014-12-09	36	32.5425	-83.536944
21GAEPD_WQX	LK_05_2144	Lake Tobesofkee - Dam Forebay	2006-11-20	2019-06-25	67	32.8346	-83.8161
21GAEPD_WQX	LK_05_2146	Lake Tobesofkee - Dam Forebay	1992-10-27	2019-06-25	61	32.8215	-83.7706
21GAEPD_WQX	RV_05_16442	Ocmulgee River, Popes Ferry	2001-08-23	2001-08-23	1	32.9903	-83.7233

21GAEPD_WQX	RV_05_16777	Echeconnee Creek at Rock Quarry Rd nr Yatesville	2017-01-30	2017-12-11	17	32.9231	-84.1169
21GAEPD_WQX	RV_05_16779	Trib to Walnut Creek at Chehaw Trail nr Macon	2017-01-03	2017-12-12	12	33.0107	-83.6109
21GAEPD_WQX	RV_05_17305	Echeconnee Creek at Eisenhower Pkwy near Macon, GA	2018-01-23	2018-12-12	11	32.7997	-83.8652
21GAEPD_WQX	RV_05_17379	Ocmulgee River at River North Drive, NW of Macon, Ga	2018-06-22	2018-06-22	1	32.913	-83.69
21GAEPD_WQX	RV_05_17410	Ocmulgee River 500 m D/S of Rum Creek near Popes Ferry, GA	2018-06-22	2018-06-22	1	32.9934	-83.7246
21GAEPD_WQX	RV_05_17411	Tobler Creek U/S of Ocmulgee River near Bolingbroke GA	2018-06-22	2018-06-22	1	32.9767	-83.724
21GAEPD_WQX	RV_05_17412	Beaverdam Creek U/S of Ocmulgee River near Macon, GA	2018-06-22	2018-06-22	1	32.9161	-83.6965
21GAEPD_WQX	RV_05_2090	Tobessofkee Creek at SR 74 near Macon, GA	2012-01-03	2012-10-18	6	32.866	-83.839
21GAEPD_WQX	RV_05_2092	Echeconnee Creek at Houston Rd near Warner Robbins, GA	2012-01-03	2012-10-18	6	32.692	-83.701
21GAEPD_WQX	RV_05_2142	Tobesofkee Creek - U.S. Highway 80	2012-01-03	2012-10-18	6	32.799	-83.7564
21GAEPD_WQX	RV_05_2147	Calaparchee Creek at Sanders Road (CR 49) near Bolin	2018-01-23	2018-11-07	11	32.92	-83.79
21GAEPD_WQX	RV_05_2149	Rocky Creek at Tucker Road (CR 742) near Macon, GA	2018-01-23	2018-12-12	11	32.86	-83.74
21GAEPD_WQX	RV_05_2158	Little Echeconne Creek at Smith Chapel Road near Musella, GA	2012-01-03	2012-10-18	6	32.8099	-83.9205
21GAEPD_WQX	RV_05_2161	WHITEWATER CREEK	2015-12-01	2015-12-01	1	32.7162	-83.7768
21GAEPD_WQX	RV_05_2163	Tobler Creek at U.S. Highway 23 near Forsyth, GA	2018-01-23	2018-12-12	12	32.98	-83.73
21GAEPD_WQX	RV_05_2165	Ocmulgee River - New Macon Water Intake	2013-01-09	2018-06-22	102	32.8992	-83.6641
21GAEPD_WQX	RV_05_2173	Walnut Creek at Jeffersonville Road at Macon, GA	2012-01-03	2012-10-18	6	32.8522	-83.5931
21GAEPD_WQX	RV_05_2176	Ocmulgee River - 6.0 Miles Downstream from Tobesofkee Creek	1991-10-08	2016-07-07	6	32.6718	-83.6029
21GAEPD_WQX	RV_05_2178	Sandy Run Creek at U.S. 129 near Warner Robbins, GA	2015-01-06	2015-12-17	4	32.5768	-83.5901
21GAEPD_WQX	RV_05_2185	Ocmulgee River - Georgia Highway 96	1992-09-23	2017-12-07	49	32.5425	-83.5369

21GAEPD_WQX	RV_05_2281	Bay Gall Creek at Russell Pkwy	2015-01-06	2015-12-17	4	32.5939	-83.6197
21GAEPD_WQX	RV_05_2282	Cainey Branch at Sandy Run Rd	2015-01-06	2015-12-17	4	32.5723	-83.6094
21GAEPD_WQX	RV_05_2817	Crooked Creek at Westlake Rd nr Bonaire, GA	2000-11-25	2018-12-04	21	32.5019	-83.4874
21GAEPD_WQX	RV_05_2818	Deep Creek at Marshall Mill Road nr Lizella, GA	2001-11-03	2001-11-03	1	32.7147	-83.846
21GAEPD_WQX	RV_05_2821	Gum Branch nr Doris Dr, nr Lizella, GA	2003-02-13	2003-02-13	1	32.7791	-83.8252
21GAEPD_WQX	RV_05_2830	Savage Creek @ at Bullard Rd near Macon, GA	2009-01-08	2009-01-15	2	32.671	-83.4232
21GAEPD_WQX	RV_05_2831	Tobesofkee Creek at Mountpelier Road near Forsyth, GA	2012-01-03	2012-10-18	7	32.98	-83.93
21GAEPD_WQX	RV_05_5087	Sandy Run Creek at Moody Rd near Warner Robins, GA	2015-01-06	2015-12-17	4	32.5837	-83.6232
21GAEPD_WQX	RV_05_5127	Dry Bone Creek at Chapman Rd. near Macon, GA	2015-01-14	2015-12-09	4	32.904	-83.545
NALMS	1781	Tobesofkee	1996-07-06	1996-07-06	1	32.8208	-83.7994
OST_SHPD	NRSA0809-GA024	Ocmulgee River	2009-08-02	2009-08-02	1	32.69376	-83.61136
OST_SHPD	NRSA1314-GARM-1001	Ocmulgee River	2014-07-15	2014-07-15	1	32.61633	-83.54926

Groundwater Quantity Stations

Table A- 7. All groundwater level stations within the RHI. ¶All the stations are operated through the USGS. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

Agency	Site Number	Station Name	Start Date	End Date	Count	Latitude	Longitude
USGS	323816083375001	16V020	1968-07-16	1991-10-22	9	32.6351441	-83.6285164
USGS	323820083374501	16V019	1972-02-08	1991-10-22	17	32.63875514	-83.6285164
USGS	323825083393701	16V030	1988-03-30	1988-03-30	1	32.6404221	-83.6601836
USGS	323842083393201	16V029	1987-04-07	1987-04-07	1	32.6451442	-83.6587946
USGS	323851083353601	17V021	1958-01-01	1989-11-07	7	32.64597669	-83.5876823
USGS	323904083454601	15V002	1975-02-12	1989-11-06	5	32.6512561	-83.7626852
USGS	323910083453901	15V001	1956-10-19	1975-05-18	2	32.65153389	-83.76212959
USGS	323929083440601	16V022	1956-01-01	1989-11-06	6	32.6609779	-83.7282402
USGS	324026083460001	15V004	1959-09-24	1959-09-24	1	32.67458879	-83.7660185
USGS	324032083465301	15V003	1960-01-08	1989-11-06	6	32.6709776	-83.7862965
USGS	324110083334001	17V010	1944-12-22	1944-12-22	1	32.686253	-83.561015
USGS	324218083385201	16V021	1967-03-03	1977-11-29	4	32.70569798	-83.6493499
USGS	324220083385701	16V018	1967-03-13	1989-11-06	9	32.70569798	-83.6496277
USGS	324230083391101	16V002	1941-05-12	1989-11-06	12	32.70930899	-83.64907209
USGS	324233083385701	16V001	1941-08-01	1989-11-06	5	32.70819794	-83.6521277
USGS	324315083423001	16V025	1980-10-24	1989-11-06	3	32.71208787	-83.7443516
USGS	324426083394201	16V016	1959-04-01	1959-04-01	1	32.7401416	-83.6612945
USGS	324600083390501	16W026	1968-04-10	1968-04-10	1	32.76708526	-83.651016
USGS	324611083383801	16W023	1966-10-24	1989-11-06	13	32.76986289	-83.6435157
USGS	324611083396301	16W025	1969-12-18	1969-12-18	1	32.76986297	-83.6507381
USGS	324615083390301	16W005	1948-06-15	1948-06-15	1	32.77097406	-83.650738
USGS	324616083374301	16W027	1979-10-02	1989-11-06	4	32.7712516	-83.6304599
USGS	324619083373701	16W007	1968-09-23	1968-09-23	1	32.77208487	-83.6268486
USGS	324620083375701	16W018	1946-04-20	1976-01-22	3	32.77208489	-83.6285153
USGS	324623083392501	16W024	1964-12-18	1989-11-06	6	32.7729185	-83.6568493
USGS	324624083391201	16W020	1964-05-15	1978-05-15	8	32.7743073	-83.6524047
USGS	324642083392001	16W019	1964-04-09	1989-11-06	6	32.7787517	-83.655738
USGS	324656083382601	16W008	1953-10-02	1953-10-02	1	32.7820848	-83.6404597
USGS	324656083382602	16W009	1989-10-09	1989-10-09	1	32.78236257	-83.6404597
USGS	324721083283501	18W005	1955-03-24	1975-02-21	2	32.79763924	-83.4762874
USGS	324731083280901	18W014	1937-01-01	1937-01-01	1	32.7920839	-83.4690648

Agency	Site Number	Station Name	Start Date	End Date	Count	Latitude	Longitude
USGS	324731083281401	18W013	1944-12-31	1989-11-07	3	32.79208389	-83.4704538
USGS	324732083282901	18W006	1968-09-19	1978-11-06	4	32.79236156	-83.4746208
USGS	324736083295101	18W011	1944-12-22	1944-12-22	1	32.7934721	-83.4974004
USGS	324748084013101	13W001	1946-01-01	1946-01-01	1	32.7968044	-84.0251884
USGS	324750083281401	18W002	1965-03-18	1989-11-07	18	32.79763938	-83.4704536
USGS	324758083295001	18W008	1944-12-23	1944-12-23	1	32.79958315	-83.49712229
USGS	324813083322801	17W004	1957-06-12	1978-11-13	5	32.80375007	-83.54156779
USGS	324816083290901	18W003	1945-01-04	1984-10-25	5	32.80375006	-83.4851767
USGS	324822083323101	17W002	1942-04-01	1942-04-01	1	32.80625004	-83.5418455
USGS	325113083321101	17W010	1989-11-07	1989-11-07	1	32.85374927	-83.5362878
USGS	325225083314801	17W005	1978-04-10	1978-11-06	2	32.87374894	-83.5298979
USGS	325232083315401	17X002	1968-11-27	1984-10-22	10	32.87597113	-83.5315645
USGS	325332083314601	17W008	1969-03-03	1984-10-22	11	32.87486	-83.52962009
USGS	325644083474401	15X001	1964-07-01	1964-07-01	1	32.94569136	-83.7954603
USGS	325803084064701	13X001	1956-01-01	1956-01-01	1	32.96763095	-84.1129696
USGS	330035083321801	17Y003	1972-05-01	1972-05-01	1	33.00985796	-83.5382262
USGS	330044083325201	17Y002	1965-01-01	1965-01-01	1	33.01235785	-83.547671
USGS	330055083324101	17Y004	1975-01-01	1975-01-01	1	33.01541337	-83.5446153
USGS	330354084080401	12Y014	1943-09-01	1943-09-01	1	33.06512629	-84.1343602
USGS	332615079073009	GEO- 59	1969-01-01	1969-01-01	1	33.43766799	-79.1247648
USGS	332716080430601	ORG- 634	2009-06-18	2016-01-25	11	33.45459997	-80.7181466
USGS	332719080392109	ORG- 427	2004-11-03	2004-11-03	1	33.45543548	-80.6556459
USGS	332720078593009	HO- 557	1973-01-01	1973-01-01	1	33.6223921	-78.991423
USGS	332720081505000	AK- 419	1967-01-04	1967-01-04	1	33.4556942	-81.8470572
USGS	332946081501400	AK- 219	1949-01-01	1982-11-08	2	33.493193	-81.8373344
USGS	332946081520000	AK- 240	1952-07-30	1952-07-30	1	33.49624816	-81.8665017
USGS	332950080380009	CA- 96	1987-01-01	1987-01-01	1	33.49738026	-80.6331443
USGS	332950081445101	AK-2712	2011-12-30	2014-11-25	2	33.49725278	-81.7475528
USGS	332950081515809	AK- 345	1959-01-01	1959-01-01	1	33.49735924	-81.8659462
USGS	332952079455101	WL- 603	1982-09-01	1982-09-01	1	33.49794318	-79.7639596
USGS	332952079455109	WL- 123	1985-01-01	1985-01-01	1	33.49794318	-79.7639596
USGS	332956079552100	WL- 14	1982-08-25	1989-11-01	2	33.49905539	-79.9222977
USGS	332958081523400	AK- 437	1992-02-27	1992-02-27	1	33.49958128	-81.8759464

Groundwater Quality Stations

Table A- 8. All groundwater quality stations within the RHI. ¶All the stations are operated by the USGS. Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

Agency	Site Number	Station Name	Start Date	End Date	Count	Latitude	Longitude
USGS	323820083374501	16V019	1972-03-17	1972-03-17	1	32.63875514	-83.6285164
USGS	323842083393201	16V029	2013-09-16	2013-09-16	3	32.6451442	-83.6587946
USGS	323910083453901	15V001	1963-01-16	1974-06-12	5	32.65153389	-83.76212959
USGS	323929083440601	16V022	1974-06-13	1974-06-13	1	32.6609779	-83.7282402
USGS	324110083334001	17V010	1944-12-22	1944-12-22	2	32.686253	-83.561015
USGS	324315083423001	16V025	1969-06-23	1969-06-23	1	32.71208787	-83.7443516
USGS	324426083394201	16V016	1959-11-19	1959-11-19	2	32.7401416	-83.6612945
USGS	324619083373701	16W007	1972-11-28	1978-11-28	2	32.77208487	-83.6268486
USGS	324620083375701	16W018	1968-06-19	1978-05-18	3	32.77208489	-83.6285153
USGS	324623083392501	16W024	1975-06-09	1975-06-09	2	32.7729185	-83.6568493
USGS	324624083391201	16W020	1975-10-09	1977-10-16	3	32.7743073	-83.6524047
USGS	324642083392001	16W019	1964-05-12	1964-05-12	1	32.7787517	-83.655738
USGS	324731083280901	18W014	1971-06-15	1976-09-28	2	32.7920839	-83.4690648
USGS	324731083281401	18W013	1971-06-15	1971-06-15	1	32.79208389	-83.4704538
USGS	324732083282901	18W006	1976-09-28	1976-09-28	1	32.79236156	-83.4746208
USGS	324736083295101	18W011	1944-12-22	1944-12-22	2	32.7934721	-83.4974004
USGS	324748084013101	13W001	1963-01-16	1963-01-16	2	32.7968044	-84.0251884
USGS	324750083281401	18W002	1974-12-31	1979-01-15	6	32.79763938	-83.4704536
USGS	324758083295001	18W008	1944-12-23	1944-12-23	2	32.79958315	-83.49712229
USGS	324813083322801	17W004	1975-06-09	1978-06-09	6	32.80375007	-83.54156779
USGS	324816083290901	18W003	1944-12-23	2013-09-16	5	32.80375006	-83.4851767
USGS	325225083314801	17W005	1978-05-01	1978-05-01	1	32.87374894	-83.5298979
USGS	325232083315401	17X002	1975-06-09	1975-06-09	2	32.87597113	-83.5315645
USGS	325332083314601	17W008	1978-03-13	1978-03-13	1	32.87486	-83.52962009
USGS	325612083424401	16X005	1960-10-19	1960-10-19	2	32.9368034	-83.7121244
USGS	325644083474401	15X001	1966-03-03	1966-03-03	2	32.94569136	-83.7954603
USGS	325803084064701	13X001	1962-01-17	1962-01-17	2	32.96763095	-84.1129696
USGS	330030083320301	17Y001	1944-12-05	1944-12-05	2	33.0084691	-83.53405939
USGS	330154084063801	13Y010	1986-02-10	1986-02-10	1	33.03179495	-84.11047
USGS	330323084034601	13Y009	1986-01-16	1986-01-16	1	33.05651678	-84.062691
USGS	330352084075401	12Y010	1986-01-16	1986-01-16	1	33.0645708	-84.1315823

Agency	Site Number	Station Name	Start Date	End Date	Count	Latitude	Longitude
USGS	332721079344500	GEO- 72	1977-04-19	1977-04-19	3	33.45600008	-79.5789533
USGS	332950081445101	AK-2712	2015-07-15	2015-07-15	1	33.49725278	-81.7475528
USGS	332955079315500	GEO- 38	1965-08-17	1965-08-17	1	33.4987781	-79.5317287
USGS	332956079552100	WL- 14	1969-04-29	1969-04-29	1	33.49905539	-79.9222977
21GAEPD_WQX	GW_05_2560	Jones County #4	2015-02-25	2017-06-08	2	32.8718	-83.5297
21GAEPD_WQX	GW_05_2564	KaMin Well #6, Macon	2017-09-26	2017-09-26	1	32.7022	-83.5586
21GAEPD_WQX	GW_05_2778	Warner Robins #2	2014-01-22	2017-06-08	3	32.6065	-83.623

No Data Stations

Table A- 9. Stations with no data within the RHI. ¶Source: (USGS, 2018; National Water Quality Monitoring Council, 2018).

Agency	Site Number	Station Name	Latitude	Longitude
USGS	02212890	Intake on OCMULGEE RIVER ABV MACON, GA 6341456	32.92777778	-83.69888889
USGS	02213505	TOBESOFKEE CREEK AT US 80 NEAR LIZELLA, GA	32.798752	-83.7562953
USGS	02214065	ECHECONNIE CREEK AT I-75 NEAR BYRON, GA	32.69431048	-83.737407
USGS	323841083393401	16V060	32.6449111	-83.6595972
USGS	323856083352501	17V025	32.64890556	-83.5905111
USGS	323857083391901	16V061	32.6491972	-83.6555056
USGS	323913083350701	Outfall on OCMULGEE RIVER AT WARNER ROBINS, GA	32.6536111	-83.5852778
USGS	323913083372901	17V031	32.6538722	-83.6247694
USGS	323917083345801	Outfall on HORSE CREEK TRIB AB WARNER ROBINS, GA	32.6547222	-83.5827778
USGS	323952083461001	Outfall on JUNIPER CREEK TRIB AT BYRON, GA	32.66444444	-83.7694444
USGS	324000083440050	BYRON EXP STATION EVAPORATION GAGE, GEORGIA	32.66681115	-83.7332403
USGS	324006083415501	16V062	32.6685722	-83.69866389
USGS	324014083471701	15V013	32.6708	-83.7881528
USGS	324127083375501	16V049	32.69096667	-83.6320722
USGS	324129083374801	16V050	32.69140556	-83.6300194
USGS	324151083345901	Outfall on STONE CREEK NEAR HUBER, GA	32.6975	-83.5830556
USGS	324200083390050	NOAA, EDS AT MACON AIRPORT, GA. W03813	32.70014258	-83.6499055
USGS	324204083420001	16V043	32.70120556	-83.7000583
USGS	324204083420002	16V044	32.7012111	-83.7001111
USGS	324217083385001	16V031	32.704975	-83.6474472
USGS	324220083333601	17V027	32.7056222	-83.5601944
USGS	324221083335401	17V029	32.70599444	-83.5651556
USGS	324226083423101	16V045	32.7072972	-83.7087167
USGS	324252083443501	16V034	32.71471389	-83.74326389
USGS	324252083443502	16V035	32.71470556	-83.7432333
USGS	324310083415701	16V048	32.71968889	-83.6992333
USGS	324311083415701	16V047	32.71975833	-83.6992333
USGS	324312083452101	15V010	32.72017778	-83.7559444
USGS	324313083452101	15V011	32.72034167	-83.7558583
USGS	324326083423101	16V046	32.7239722	-83.70876389
USGS	324338083425701	16V036	32.7273222	-83.716025
USGS	324338083425702	16V037	32.7272861	-83.716025

Agency	Site Number	Station Name	Latitude	Longitude
USGS	324338083444501	16V053	32.72745	-83.7459194
USGS	324338083444601	16V054	32.727475	-83.7461917
USGS	324345083422001	16V042	32.7293	-83.7058028
USGS	324345083422101	16V040	32.72921389	-83.7059028
USGS	324345083422102	16V041	32.729225	-83.70585
USGS	324347083430501	16V057	32.7299972	-83.7182472
USGS	324352083422301	16V033	32.73138889	-83.7065278
USGS	324353083422201	16V032	32.73140833	-83.7063611
USGS	324405083314001	17V032	32.73491389	-83.5280111
USGS	324405083314101	17V033	32.73483056	-83.5281028
USGS	324438083423601	16V056	32.74398056	-83.71025
USGS	324438083423701	16V055	32.74398889	-83.7103056
USGS	324448083422701	16V051	32.74679167	-83.7077722
USGS	324449083422801	16V052	32.7469722	-83.7079306
USGS	324456083391901	16V038	32.74913889	-83.6555028
USGS	324458083400701	16V039	32.74966389	-83.6687083
USGS	324503083314801	17W016	32.7508722	-83.5302056
USGS	324520083395601	16W030	32.7558111	-83.66576389
USGS	324521083395701	16W031	32.75583889	-83.6658944
USGS	324526083400001	16W029	32.7572361	-83.6667111
USGS	324530083505501	15W016	32.75855278	-83.84873889
USGS	324603083360501	Outfall on OCMULGEE RV TRIB BLW MACON, GA	32.7675	-83.60138889
USGS	324606083360001	Intake on OCMULGEE RIVER BLW MACON, GA 6341594	32.76833333	-83.5983333
USGS	324607083382601	Outfall on ROCKY CRK BLW MACON, GA	32.7686111	-83.6405556
USGS	324624083390301	Outfall on ROCKY CREEK DITCH AT MACON, GA	32.77333333	-83.6508333
USGS	324624083390701	16W028	32.77338333	-83.6520972
USGS	324647083315801	Outfall on UGLY CREEK NR DRY BRANCH, GA	32.7797222	-83.5327778
USGS	324723083382801	16W033	32.78995278	-83.64125
USGS	324735083293201	18W034	32.79318889	-83.4923194
USGS	324740083432101	16W032	32.7944861	-83.7225806
USGS	324745083355401	Intake on BORROW PIT 1 NR MACON, GA	32.79583333	-83.5983333
USGS	324745083355402	Intake on BORROW PIT 5 NR MACON, GA	32.79583333	-83.5983333
USGS	324745083355403	Intake on BORROW PIT 6 NR MACON, GA	32.79583333	-83.5983333
USGS	324745083355404	Intake on BORROW PIT 9 NR MACON, GA	32.79583333	-83.5983333
USGS	324745083355405	Intake on BORROW PIT 10 NR MACON, GA	32.79583333	-83.5983333

Agency	Site Number	Station Name	Latitude	Longitude
USGS	324746083284201	18W015	32.79626944	-83.4784972
USGS	324747083284201	18W026	32.79645556	-83.4784722
USGS	324803083280601	18W028	32.80101667	-83.468475
USGS	324804083282601	18W027	32.80113889	-83.4740167
USGS	324804083373101	Outfall on OCMULGEE RV TRIB AT MACON, GA	32.80111111	-83.6252778
USGS	324808083281301	18W025	32.8024472	-83.47031389
USGS	324809083280001	18W018	32.8027472	-83.4668194
USGS	324810083280001	18W029	32.80295	-83.4666917
USGS	324812083281801	18W019	32.80351944	-83.47175
USGS	324813083281701	18W030	32.80366389	-83.4716
USGS	324824083283701	18W024	32.80670278	-83.4769583
USGS	324840083360901	Outfall on OCMULGEE RV NEAR MACON, GA	32.81111111	-83.6025
USGS	324913083322201	17W011	32.8203972	-83.5395056
USGS	324954083294601	18W033	32.83189444	-83.4961472
USGS	324955083294601	18W032	32.83195278	-83.4961778
USGS	325114083320701	17W013	32.85388889	-83.53538889
USGS	325151083321501	17W014	32.86444444	-83.53763889
USGS	325155084051701	13W002	32.86541268	-84.0879682
USGS	325219083314601	17W012	32.87194444	-83.5296667
USGS	325229083322201	17W015	32.87499167	-83.53948889
GA009	325352083394201	Intake on OCMULGEE RIVER AT MACON, GA 6341486	32.89777778	-83.6616667
USGS	325403083393101	JAVORS LUCAS LAKE ABV MACON, GA	32.90083333	-83.6586111
USGS	325403083393102	Outfall on JAVORS LUCAS LAKE ABV MACON, GA	32.90083333	-83.6586111
GA009	325433083400001	Intake on JAVORS LUCAS LAKE ABV MACON, GA	32.90638889	-83.6622222
USGS	325534083313401	Outfall on ROCK CREEK NEAR MACON, GA	32.92611111	-83.5261111
USGS	325611083460801	15X009	32.93641944	-83.7690806
USGS	325626083470201	15X010	32.94058889	-83.78415
USGS	325633083473001	15X011	32.94258889	-83.7918694
USGS	325720083441201	16X009	32.95564167	-83.73693889
USGS	325804083433401	16X006	32.96794167	-83.72635
USGS	325805083433401	16X007	32.96814444	-83.7262583
USGS	325810083432801	16X008	32.96948333	-83.7245472
USGS	325844083363601	17X003	32.97915556	-83.6100833
USGS	325844083364101	17X004	32.97905833	-83.6115306
USGS	325847083364001	17X005	32.97983889	-83.6113528

Agency	Site Number	Station Name	Latitude	Longitude
USGS	325850084064601	13X002	32.980686	-84.1126919
USGS	325922084075501	12X012	32.98957437	-84.1318592
GA009	325948083571101	Intake on TOBESOFKEE CREEK NR FORSYTH, GA 6340236	32.99666667	-83.9530556
USGS	330037083560301	Outfall on SLIPPERY ROCK CREEK BLW FORSYTH, GA	33.01027778	-83.9341667
USGS	330041083322801	17Y005	33.01150278	-83.5413
USGS	330144083590401	14Y005	33.02901944	-83.9845583
USGS	330232084073801	Outfall on TOBESOFKEE CREEK BLW BARNESVILLE, GA	33.0422222	-84.1272222
USGS	330243084063901	13Y008	33.0454054	-84.110748
USGS	330257084053401	13Y003	33.0492944	-84.0926919
USGS	330257084053402	13Y005	33.0492944	-84.0926919
USGS	330258084053401	13Y007	33.04957217	-84.0926919
USGS	330304083332801	Outfall on CHEHAW CREEK NR WAYSIDE, GA	33.0511111	-83.5577778
USGS	330319083575401	14Y002	33.05540726	-83.96490969
USGS	330323083583801	14Y004	33.05651815	-83.97713239
USGS	330324083575901	14Y003	33.05679607	-83.9662986
USGS	332610080250509	ORG- 61	33.4362744	-80.4178663
USGS	332610080545501	ORG- 482	33.43626605	-80.91509379
USGS	332610081281509	AK- 310	33.43625744	-81.470662
USGS	332610081472009	AK- 105	33.436251	-81.7887227
USGS	332612081091601	ORG- 526	33.4368192	-81.1542675
USGS	332612081141301	ORG- 337	33.43681797	-81.2367707
USGS	332711081344000	AK- 245	33.4531993	-81.5776078
USGS	332715080480509	ORG- 288	33.4543211	-80.80120319
USGS	332715080503001	ORG- 487	33.45432116	-80.8414815
USGS	332715081030301	ORG- 586	33.4543205	-81.0506521
USGS	332715081031001	ORG- 597	33.45432047	-81.0525966
USGS	332720079492609	WL- 127	33.4557217	-79.82368429
USGS	332720080425009	ORG- 371	33.4557112	-80.7137021
USGS	332720080443009	ORG- 370	33.4557102	-80.7414802
USGS	332720080482509	ORG- 287	33.45570998	-80.80675879
USGS	332720081313009	AK- 242	33.4557005	-81.5248292
USGS	332720081354509	AK- 243	33.4556988	-81.5956637
USGS	332722081334509	AK- 208	33.45625517	-81.56232979
USGS	332723081485009	AK- 150	33.45652785	-81.81372309
USGS	332727080494701	ORG- 403	33.45765439	-80.8295368

Agency	Site Number	Station Name	Latitude	Longitude
USGS	332728081170909	BW- 241	33.4579278	-81.2856603
USGS	332944081393901	AK-2719	33.4956722	-81.6609444
USGS	332944081515100	AK- 239	33.49569265	-81.8640017
USGS	332945079105009	GEO- 76	33.49600169	-79.180323
USGS	332945079553001	WL- 311	33.49599988	-79.9247978
USGS	332945080270501	ORG- 589	33.49599707	-80.45119759
USGS	332945081520709	AK- 565	33.49597037	-81.8684462
USGS	332945081521009	AK- 564	33.49597036	-81.8692796
USGS	332950079104401	GEO- 342	33.49739058	-79.1786563
USGS	332952081361709	AK- 248	33.49792006	-81.6045523
USGS	332953081164900	ORG- 201	33.49820509	-81.2801044
USGS	332953081164909	ORG- 4	33.49820509	-81.2801044
USGS	332955080232001	CLA- 162	33.49877499	-80.3886972
USGS	332955081544509	AK- 407	33.4987476	-81.9123362
USGS	332958079552009	WL- 122	33.49961094	-79.9220199
USGS	332958080555901	ORG- 557	33.49959805	-80.9328707
USGS	333015079071201	GEO- 311	33.50416667	-79.12
USGS	335849084064601	13X003	32.98040826	-84.1126919

Appendix D NPDES Facilities

Table A- 10. Facilities with NPDES permits within the RHI. ¶Source: (EPA, 2018c).

Registry ID	Name	Interest	City	Latitude	Longitude
110005666243	GRAPHIC PACKAGING MACON MILL	ICIS-NPDES NON-MAJOR	MACON	32.772590	-83.630140
110005666243	GRAPHIC PACKAGING MACON MILL	ICIS-NPDES NON-MAJOR	MACON	32.772590	-83.630140
110070256083	JONES COUNTY TRAILS @ 6LOCS- PHASE 2	ICIS-NPDES NON-MAJOR	GRAY	33.006480	-83.534350
110005710766	MIDDLE GEORGIA STATE COLLEGE	ICIS-NPDES MINOR	MACON	32.809409	-83.732368
110070257521	WIDENING OF JEFFERSONVILLE ROAD	ICIS-NPDES NON-MAJOR	MACON	32.851699	-83.594858
110006777434	WALTERS FARMS	ICIS-NPDES NON-MAJOR	BARNESVILLE	33.067969	-84.079619
110070256325	NORTH MACON PLAZA	ICIS-NPDES NON-MAJOR	MACON	32.929660	-83.729670
110070009655	SA RECYCLING- MACON	ICIS-NPDES NON-MAJOR	MACON	32.781570	-83.654490
110013616667	WILSON TRUCKING CORPORATION	ICIS-NPDES NON-MAJOR	MACON	32.783620	-83.638930
110011326591	MERCER GREASE CO	ICIS-NPDES UNPERMITTED	LIZELLA	32.809330	-83.836100
110045521921	MACON PLANT OPERATIONS	ICIS-NPDES NON-MAJOR	HUBER	32.700278	-83.581667
110043266408	READY MIX USA-SUDDETH SAND MINE	ICIS-NPDES NON-MAJOR	MACON	32.920792	-83.529479
110070000298	CITY OF BARNESVILLE	ICIS-NPDES NON-MAJOR	BARNESVILLE	33.054570	-84.154727
110013451086	OSAN PETROLEUM COMPANY, INC.	ICIS-NPDES NON-MAJOR	MACON	32.823860	-83.630790
110043288787	FIRST QUALITY BABY PRODUCTS, LLC	ICIS-NPDES NON-MAJOR	MACON	32.683440	-83.647240
110070032697	THE BOEING COMPANY	ICIS-NPDES NON-MAJOR	MACON	32.700570	-83.668850
110070032816	PROPOSED FREDDY'S	ICIS-NPDES NON-MAJOR	MACON	32.879980	-83.766400
110070030316	TRIMX RECYCLING, LLC	ICIS-NPDES NON-MAJOR	MACON	32.810250	-83.564680
110070029945	HILL TOP PACKAGE & C-STORE	ICIS-NPDES NON-MAJOR	MACON	32.914796	-83.705623
110010039724	MACON MINE	ICIS-NPDES NON-MAJOR	BIBB COUNTY	32.783333	-83.591667
110070005893	DRAINAGE IMPROVEMENTS FOR HILLSHIRE BRANDS	ICIS-NPDES NON-MAJOR	MACON	32.729960	-83.726080
110070011057	BOJANGLES'- PIO NONO	ICIS-NPDES NON-MAJOR	MACON	32.786090	-83.667290
110070017340	A NEW PROCESSING FACILITY FOR BAY VIEW FOODS	ICIS-NPDES NON-MAJOR	MACON	32.804300	-83.555570
110070012773	PACTIV CORPORATION	ICIS-NPDES NON-MAJOR	MACON	32.696470	-83.673990
110070012774	A&M METALS PROCESSING OF GEORGIA, LLC	ICIS-NPDES NON-MAJOR	MACON	32.852350	-83.591309
110070010970	WAREHOUSE/OFFICE DEVELOPMENT -312 CORPORATE PKWY	ICIS-NPDES NON-MAJOR	MACON	32.930700	-83.710950
110070030234	SANJAB RECYCLING, LLC	ICIS-NPDES NON-MAJOR	MACON	32.748300	-83.656360
110011329437	MACON (SWP)	ICIS-NPDES NON-MAJOR	MACON	32.836170	-83.631650

110070005744	ROSA JACKSON COMMUNITY CENTER	ICIS-NPDES NON-MAJOR	MACON	32.858070	-83.610870
110070012081	MERCER UNIVERSITY- NEW SCIENCE CENTER BLDG	ICIS-NPDES NON-MAJOR	MACON	32.828770	-83.648150
110070011625	MIDDLE GA REGIONAL AIRPORT	ICIS-NPDES NON-MAJOR	MACON	32.836170	-83.631650
110070010673	TRANSWASTE SERVICES, LLC	ICIS-NPDES NON-MAJOR	WARNER ROBINS	32.657260	-83.625010
110070006918	THE LOFTS AT BASS PHASE 2	ICIS-NPDES NON-MAJOR	MACON	32.925600	-83.732490
110070007101	REAMES CONCRETE COMPANY - MACON	ICIS-NPDES NON-MAJOR	MACON	32.830640	-83.620250
110070007745	HAECO AIRFRAME SERVICES-MACON	ICIS-NPDES NON-MAJOR	MACON	32.696560	-83.640950
110070007765	DR. JONES ANNEX	ICIS-NPDES NON-MAJOR	MACON	32.920670	-83.704550
110070007653	RENOVATION AND MODIFICATIONS FOR THE PROMISE CENTER	ICIS-NPDES NON-MAJOR	MACON	32.820200	-83.671080
110070010572	BUTLER NISSAN	ICIS-NPDES NON-MAJOR	MACON	32.915600	-83.706060
110070008127	CITY OF BARNESVILLE- GOGGINS ROAD MUNICIPAL SOLID WASTE LANDFILL	ICIS-NPDES NON-MAJOR	BARNESVILLE	33.068200	-84.141000
110000360163	ARMSTRONG WORLD INDUSTRIAL INCORPORATED	ICIS-NPDES NON-MAJOR	MACON	32.773497	-83.651600
110000360163	ARMSTRONG WORLD INDUSTRIAL INCORPORATED	ICIS-NPDES NON-MAJOR	MACON	32.773497	-83.651600
110070046055	FORSYTH RECYCLING CENTER	ICIS-NPDES NON-MAJOR	FORSYTH	33.031399	-83.958136
110070008032	THOMASTON CROSSING APARTMENTS	ICIS-NPDES NON-MAJOR	MACON	32.838290	-83.749190
110070008796	BIBB MT. ZION BAPTIST CHURCH	ICIS-NPDES NON-MAJOR	MACON	32.699930	-83.683650
110070009486	DOLLAR GENERAL BLOOMFIELD	ICIS-NPDES NON-MAJOR	MACON	32.803880	-83.707440
110070008254	USPS MAINTENANCE FACILITY	ICIS-NPDES NON-MAJOR	MACON	32.840620	-83.638280
110070009611	RV DISPLAY LOT FOR CAMPERS INN	ICIS-NPDES NON-MAJOR	BYRON	32.664536	-83.741656
110070009378	O-N MINERALS HYDRATE OPERATION	ICIS-NPDES NON-MAJOR	MACON	32.776024	-83.636683
110070009030	ASHEEV, LLC DBA PIN STRIKES	ICIS-NPDES NON-MAJOR	MACON	32.913010	-83.697960
110070009565	AGGREGATES USA (MACON)	ICIS-NPDES NON-MAJOR	MACON	32.920792	-83.529479
110070017965	MEDICAL ARTS COMPLEX PARKING IMPROVEMENTS FOR MEDICAL CENTER OF CENTRAL GA	ICIS-NPDES NON-MAJOR	MACON	32.831739	-83.635739
110070013658	ABF FREIGHT SYSTEM - MACON	ICIS-NPDES NON-MAJOR	MACON	32.780230	-83.650260
110070014155	SOUTHERN EQUIPMENT LLC	ICIS-NPDES UNPERMITTED	LIZELLA	32.758467	-83.765541
110070014155	SOUTHERN EQUIPMENT LLC	ICIS-NPDES NON-MAJOR	LIZELLA	32.758467	-83.765541
110070021435	MACON BEVERAGE OUTLET	ICIS-NPDES NON-MAJOR	MACON	32.907740	-83.687640
110070016661	ACTION TIRE	ICIS-NPDES NON-MAJOR	MACON	32.832430	-83.730520
110070023181	SOUTHEASTERN FREIGHT LINES, INC.	ICIS-NPDES NON-MAJOR	MACON	32.806970	-83.548690

110070014180	<u>301 JOE TAMPLIN BOULEVARD CLEARING & GRASSING</u>	ICIS-NPDES NON-MAJOR	MACON	32.798730	-83.566790
110070014700	<u>WHEELER'S LANDING PHASE 3</u>	ICIS-NPDES NON-MAJOR	MACON	32.818718	-83.538035
110070016646	<u>AIR COMPRESSOR SALES</u>	ICIS-NPDES NON-MAJOR	MACON	32.835420	-83.724600
110063627062	<u>SWIFT CREEK MSWLF</u>	ICIS-NPDES NON-MAJOR	MACON	32.821690	-83.514520
110070012338	<u>ADAMSVILLE PARK RESIDENTIAL S/D</u>	ICIS-NPDES NON-MAJOR	FORSYTH	33.020610	-83.934070
110070014399	<u>PAUL WALLACE DEVELOPMENT- (EPD-WCD)</u>	ICIS-NPDES NON-MAJOR	CULLODEN	32.943100	-84.083470
110070014914	<u>HENRY A. HUNT SCHOOL VILLAGE SITE DEVELOPMENT</u>	ICIS-NPDES NON-MAJOR	MACON	32.859600	-83.607420
110070016965	<u>INERT WASTE LANDFILL CLOSURE PBR-011-37IL</u>	ICIS-NPDES NON-MAJOR	MACON	32.836170	-83.631650
110070015010	<u>CARBEL'S BEAUTY SUPPLY</u>	ICIS-NPDES NON-MAJOR	MACON	32.840990	-83.579070
110070017796	<u>PLANTATION VILLAGE AKA PLANTATION CENTRE PHASE 3</u>	ICIS-NPDES NON-MAJOR	MACON	32.879963	-83.765576
110070018272	<u>CENTRAL CITY PARK RENOVATION</u>	ICIS-NPDES NON-MAJOR	MACON	32.831881	-83.615430
110070022567	<u>MULTI-USE BLDG. AT THE GA INDUSTRIAL CHILDREN'S HOME</u>	ICIS-NPDES NON-MAJOR	MACON	32.847190	-83.713150
110070017076	<u>BASS PRO SHOPS</u>	ICIS-NPDES NON-MAJOR	MACON	32.936867	-83.738841
110070016096	<u>BAYSIDE VILLAGE</u>	ICIS-NPDES NON-MAJOR	MACON	32.805540	-83.747830
110070025670	<u>AKINS FEED & SEED CO - MATBETH RD</u>	ICIS-NPDES NON-MAJOR	BARNESVILLE	33.022640	-84.117360
110070013038	<u>FEDERAL EXPRESS MCNA4</u>	ICIS-NPDES NON-MAJOR	MACON	32.778463	-83.659115
110070019279	<u>COOK OUT RESTAURANT-MACON</u>	ICIS-NPDES NON-MAJOR	MACON	32.812100	-83.720380
110070015497	<u>SUTTON- PROPOSED PARKING ADDITION</u>	ICIS-NPDES NON-MAJOR	MACON	32.923740	-83.711260
110070022392	<u>MIDDLE GA REGIONAL AIRPORT- BORROW SITE</u>	ICIS-NPDES NON-MAJOR	MACON	32.691710	-83.666225
110070020874	<u>BUILDING EXPANSION 400- KROGER</u>	ICIS-NPDES NON-MAJOR	MACON	32.742900	-83.713869
110070012137	<u>MIDDLE GEORGIA REGIONAL AIRPORT</u>	ICIS-NPDES NON-MAJOR	MACON	32.702860	-83.651350
110070046262	<u>MACON-BIBB COUNTY NEW FIRE STATION NO.3</u>	ICIS-NPDES NON-MAJOR	MACON	32.857600	-83.689340
110064584481	<u>GRAY, CITY OF (GRAY WTP)</u>	ICIS-NPDES NON-MAJOR	GRAY	33.013127	-83.543070
110070016370	<u>PRINCE PROPERTIES BORROW PIT, FKA PROPOSED INDUSTRIAL PARK</u>	ICIS-NPDES NON-MAJOR	MACON	32.712318	-83.653413
110005715627	<u>UNITED PARCEL SERVICE, INC.</u>	ICIS-NPDES NON-MAJOR	MACON	32.813150	-83.630510
110070046279	<u>NORFOLK SOUTHERN PROPOSED WYE AND DETOUR TRACKS (EPD-WCD)</u>	ICIS-NPDES NON-MAJOR	MACON	32.827247	-83.625174
110070012766	<u>EAGLES COVE AT ROCK MILL SUBDIVISION</u>	ICIS-NPDES NON-MAJOR	MACON	32.863970	-83.830160
110070016414	<u>GRAY NORTH BY-PASS DIRT PIT E</u>	ICIS-NPDES NON-MAJOR	GRAY	32.989660	-83.567351
110070019394	<u>A.L. MILLER VILLAGE, LP</u>	ICIS-NPDES NON-MAJOR	MACON	32.832670	-83.657680
110070021664	<u>MERCER UNIVERSITY SOUTH CAMPUS IMPROVEMENTS- PHASE 1</u>	ICIS-NPDES NON-MAJOR	MACON	32.827060	-83.655450

110070023844	<u>CITY OF BARNESVILLE 2.4 MGD WASTEWATER TREATMENT PLANT</u>	ICIS-NPDES NON-MAJOR	BARNESVILLE	33.044050	-84.143845
110070020173	<u>RUSSELL ELLIOTT POULTRY FARM</u>	ICIS-NPDES NON-MAJOR	LIZELLA	32.760180	-83.827590
110070015043	<u>GEORGIA MASONRY SUPPLY-MACON</u>	ICIS-NPDES NON-MAJOR	MACON	32.706335	-83.643073
110070014942	<u>GILEAD BAPTIST CHURCH FELLOWSHIP HALL ADDITION & SITE IMPROVEMENTS</u>	ICIS-NPDES NON-MAJOR	MACON	32.803357	-83.735996
110070014946	<u>COTTAGE JUNCTION AT TIMBER RIDGE PRESERVE</u>	ICIS-NPDES NON-MAJOR	BYRON	32.673350	-83.746120
110070026976	<u>FRIEND'S AND FAMILY CORNER</u>	ICIS-NPDES NON-MAJOR	WARNER ROBINS	32.653640	-83.612660
110070012460	<u>MACON-BIBB CO - WALKER ROAD MSWLF</u>	ICIS-NPDES NON-MAJOR	MACON	32.822514	-83.618969
110070027464	<u>LEGACY FARMS PRESERVE STREAM BANK (WALNUT CREEK PH)</u>	ICIS-NPDES NON-MAJOR	GRAY	32.995290	-83.617090
110070015642	<u>BOWMAN VILLAGE</u>	ICIS-NPDES NON-MAJOR	MACON	32.923860	-83.728920
110070020013	<u>CENTRAL OF GEORGIA RAILROAD CO - MACON</u>	ICIS-NPDES NON-MAJOR	MACON	32.848300	-83.677350
110070018537	<u>MACON CHIPS INC</u>	ICIS-NPDES NON-MAJOR	MACON	32.772260	-83.635490
110070018631	<u>BRIDGE POINTE CENTER</u>	ICIS-NPDES NON-MAJOR	MACON	32.743580	-83.715450
110070020108	<u>KING- DANFORTH ELEMENTARY SCHOOL</u>	ICIS-NPDES NON-MAJOR	MACON	32.859660	-83.600720
110070021769	<u>CONVENIENCE STORE 3170 MILLERFIELD RD</u>	ICIS-NPDES NON-MAJOR	MACON	32.865130	-83.569190
110070020996	<u>SOUTH PLANT INTERCEPTOR SEWER</u>	ICIS-NPDES NON-MAJOR	FORSYTH	33.034578	-83.939420
110070024127	<u>C.W. CONTRACTING CO. INC.- THOMAS HULETT BORROW PIT</u>	ICIS-NPDES NON-MAJOR	MACON	32.696700	-83.688420
110070012589	<u>SUMMER GROVE SUBDIVISION</u>	ICIS-NPDES NON-MAJOR	MACON	32.826990	-83.745330
110070020906	<u>CITY OF WARNER ROBINS COMPOSTING FACILITY</u>	ICIS-NPDES NON-MAJOR	WARNER ROBINS	32.658959	-83.620843
110070024513	<u>FEDEX GROUND NEW FACILITY</u>	ICIS-NPDES NON-MAJOR	MACON	32.733525	-83.724823
110070024959	<u>FILMORE THOMAS PARK</u>	ICIS-NPDES NON-MAJOR	MACON	32.838610	-83.695850
110070020650	<u>WOMEN'S HEALTH INSTITUTE OF MACON AND ELO OUTPATIENT SURGERY CENTER</u>	ICIS-NPDES NON-MAJOR	MACON	32.906830	-83.693100
110070027509	<u>AMERSON WATER WORKS PARK</u>	ICIS-NPDES NON-MAJOR	MACON	32.875345	-83.659927
110070022074	<u>SHU BEE, INC. ADDITION 110 COLUMBUS W. DRIVE</u>	ICIS-NPDES NON-MAJOR	MACON	32.808890	-83.749330
110070026912	<u>CARLYLE PLACE MAINTENANCE FACILITY</u>	ICIS-NPDES NON-MAJOR	MACON	32.879550	-83.738630
110070015573	<u>WATER TOWER PARK SENIOR VILLAGE</u>	ICIS-NPDES NON-MAJOR	GRAY	32.999860	-83.547900
110070015887	<u>THOMAS METAL RECYCLING, LLC</u>	ICIS-NPDES NON-MAJOR	MACON	32.847900	-83.599080
110070027796	<u>PROPOSED BUILDING FOR DR. PRICE & LUU</u>	ICIS-NPDES NON-MAJOR	MACON	32.829500	-83.630390
110070012384	<u>CENTRAL GEORGIA AUTO RECYCLING</u>	ICIS-NPDES NON-MAJOR	WARNER ROBINS	32.655490	-83.615270

110070021507	ELLIOTT FARMS	ICIS-NPDES NON-MAJOR	LIZELLA	32.783890	-83.838200
110070012315	TRI-COUNTY EMC	ICIS-NPDES NON-MAJOR	GRAY	33.004258	-83.547667
110070012315	TRI-COUNTY EMC	ICIS-NPDES NON-MAJOR	GRAY	33.004258	-83.547667
110070017075	FIRESTATION NO. 111	ICIS-NPDES NON-MAJOR	MACON	32.837360	-83.546660
110070022447	FORSYTH DLOG SITE IMPROVEMENTS	ICIS-NPDES NON-MAJOR	FORSYTH	33.040913	-83.955024
110000360207	GA POWER CO	ICIS-NPDES NON-MAJOR	MACON	32.926944	-83.699167
110057866527	PANAPRINT, INC.	ICIS-NPDES NON-MAJOR	MACON	32.693760	-83.670160
110061607621	OCMULGEE RIVER CROSSING PROJECT	ICIS-NPDES NON-MAJOR	MACON	32.935978	-83.712688
110064428524	JERRY CARPENTER (HWY 247 & ELBERTA RD) INERT LANDFILL	ICIS-NPDES UNPERMITTED	WARNER ROBINS	32.653640	-83.612660
110064338658	REEVES CONSTRUCTION CO.	ICIS-NPDES NON-MAJOR	MACON	32.920792	-83.529479
110070074314	CIRCLE K MACON (NORTHSIDE)	ICIS-NPDES NON-MAJOR	MACON	32.899200	-83.703850
110070074161	BAYSIDE VILLAGE PHASE 2	ICIS-NPDES NON-MAJOR	MACON	32.805540	-83.747830
110070074211	VOLKSWAGEN DEALERSHIP PROPOSED	ICIS-NPDES NON-MAJOR	MACON	32.922037	-83.710487
110070074214	VA CBOC	ICIS-NPDES NON-MAJOR	MACON	32.834027	-83.742976
110070074218	DRIVER'S TRAINING COURSE EXPANSION FOR GEORGIA PUBLIC SAFETY TRAINING CTR	ICIS-NPDES NON-MAJOR	FORSYTH	33.053547	-83.952547
110070074329	EQUIPMENT STORAGE AND MAINTENANCE FACILITY FOR LOVIN CONTRACTING CO., INC	ICIS-NPDES NON-MAJOR	MACON	32.737750	-83.657570
110070074347	FREEDOM PARK GIRLS SOFTBALL FIELDS	ICIS-NPDES NON-MAJOR	MACON	32.848680	-83.678020
110070074473	BOJANGLES'- RIVERSIDE	ICIS-NPDES NON-MAJOR	MACON	32.878200	-83.666670
110055486184	TENNIS COURTS & CROSS COUNTRY TRACK IMPROVEMENTS FOR FIRST PRESBYTERIAN DAY SCHO	ICIS-NPDES NON-MAJOR	MACON	32.871600	-83.749750
110055486184	TENNIS COURTS & CROSS COUNTRY TRACK IMPROVEMENTS FOR FIRST PRESBYTERIAN DAY SCHO	ICIS-NPDES NON-MAJOR	MACON	32.871600	-83.749750
110015656226	FREUDENBERG TEXBOND LP	ICIS-NPDES NON-MAJOR	MACON	32.774967	-83.647119
110070074361	YOUTH CENTER AND CAFE ADDITION NORTHWAY CHURCH	ICIS-NPDES NON-MAJOR	MACON	32.879821	-83.757540
110070074365	NAVICENT CHILDREN'S HOSPITAL SITE DEVELOPMENT	ICIS-NPDES NON-MAJOR	MACON	32.835060	-83.637190
110070074527	NEW SENIOR CITIZENS CENTER	ICIS-NPDES NON-MAJOR	MACON	32.831881	-83.615430
110070074535	PROPOSED MEDICAL OFFICE- (5551 NEW FORSYTH RD)	ICIS-NPDES NON-MAJOR	MACON	32.935040	-83.725100
110070098157	TYSON FOODS-COLD STORAGE WAREHOUSE EXPANSION	ICIS-NPDES NON-MAJOR	MACON	32.729960	-83.726080
110070098125	JAREX INVESTMENT-ADDITION	ICIS-NPDES NON-MAJOR	MACON	32.929750	-83.710530

110070074181	KPS TEMPLE BALL FIELD	ICIS-NPDES NON-MAJOR	MACON	32.801428	-83.731416
110070074256	BOWMAN STATION APARTMENT COMMUNITY	ICIS-NPDES NON-MAJOR	MACON	32.921176	-83.726012
110070074258	HOLIDAY INN EXPRESS & SUITES	ICIS-NPDES NON-MAJOR	MACON	32.927552	-83.737413
110070098031	IRIS WALKER PROPERTY BORROW PIT	ICIS-NPDES NON-MAJOR	MACON	32.804122	-83.608955
110011329446	BIBB COUNTY (SWP)	ICIS-NPDES NON-MAJOR	MACON	32.838140	-83.628060
110011329446	BIBB COUNTY (SWP)	ICIS-NPDES NON-MAJOR	MACON	32.838140	-83.628060
110005279340	WESLEYAN COLLEGE	ICIS-NPDES NON-MAJOR	MACON	32.876110	-83.713830
110046592335	KUMHO TIRE GEORGIA, INC.	ICIS-NPDES NON-MAJOR	MACON	32.743530	-83.651130
110070077114	FOREST RIDGE SUBDIVISION (PEACH CO)	ICIS-NPDES NON-MAJOR	BYRON	32.674910	-83.745000
110070073827	CS 586/HOUSTON ST @1LOC AND CS 587/SUMMERS FIELD RD @ 1LOC	ICIS-NPDES NON-MAJOR	BARNESVILLE	33.049640	-84.156380
110070074089	LOWE ELECTRIC COMMERCIAL DEVELOPMENT	ICIS-NPDES NON-MAJOR	MACON	32.838310	-83.644640
110070073989	FAZOLI'S- BIBB COUNTY	ICIS-NPDES NON-MAJOR	MACON	32.879970	-83.766040
110070074431	NEW BURGER KING RESTAURANT	ICIS-NPDES NON-MAJOR	MACON	32.925670	-83.734020
110070074593	PROPOSED SANITARY SEWER RELOCATION- ELBERTA RD. TO KING DR.	ICIS-NPDES NON-MAJOR	WARNER ROBINS	32.651000	-83.626140
110070074122	NEW INFINITY DEALERSHIP	ICIS-NPDES NON-MAJOR	MACON	32.920310	-83.709550
110070074138	SOUTH BIBB RECREATION CENTER	ICIS-NPDES NON-MAJOR	MACON	32.706913	-83.698028
110064610675	BARNESVILLE, CITY OF (JAMES A. KING WWTF)	ICIS-NPDES MAJOR	BARNESVILLE	33.042611	-84.128528
110070012502	HUDSON SAND MINE	ICIS-NPDES NON-MAJOR	BYRON	32.685800	-83.718600
110070046050	OCONEE CONCRETE COMPANY	ICIS-NPDES NON-MAJOR	UNKNOWN	32.679722	-83.707500
110013625434	FLORIDA ROCK & TANK LINES INC..	ICIS-NPDES NON-MAJOR	MACON	32.741220	-83.661960
110070013547	NEW PARKING AND ENTRY FOR WORLD CHAMPIONSHIP CROSS COUNTRY COURSE FOR MID GA STA	ICIS-NPDES NON-MAJOR	MACON	32.808100	-83.745700
110070009976	US41 @ CRESTVIEW CHURCH ROAD	ICIS-NPDES NON-MAJOR	NA	32.732200	-83.718300
110070018541	SMITH CHAPEL ROAD PHASE 2 (EPD-WCD)	ICIS-NPDES NON-MAJOR	NA	32.791389	-83.903056
110064518703	ER SNELL - GRAY CONCRETE PLANT	ICIS-NPDES NON-MAJOR	GRAY	33.027370	-83.536680
110070073971	W. HIGHLAND DRIVE- SITE DEVELOPMENT	ICIS-NPDES NON-MAJOR	NA	32.827992	-83.716603
110013134580	BOLINGREEN NURSING CENTER WPCP	ICIS-NPDES NON-MAJOR	MACON	32.939236	-83.779245
110013134580	BOLINGREEN NURSING CENTER WPCP	ICIS-NPDES NON-MAJOR	MACON	32.939236	-83.779245
110070025237	JUSTIN SPILLERS DEVELOPMENT- CRAWFORD CO. (EPD-WCD)	ICIS-NPDES NON-MAJOR	KNOXVILLE	32.729167	-83.919444
110070113913	YULISTA AVIATION INC	ICIS-NPDES NON-MAJOR	MACON	32.696789	-83.641081
110070023584	POTEMKIN SENIOR VILLAGE OF WARNER ROBINS PHASE 2	ICIS-NPDES NON-MAJOR	WARNER ROBINS	32.637000	-83.631700

110070013446	<u>BRIDGEPOINTE- GRADING & EROSION CONTROL PLAN</u>	ICIS-NPDES NON-MAJOR	NA	32.744400	-83.716600
110070026535	<u>THE LOFTS AT NAVICENT HEALTH</u>	ICIS-NPDES NON-MAJOR	MACON	32.834700	-83.637700
110070022449	<u>DOLLAR GENERAL STORE 18002</u>	ICIS-NPDES NON-MAJOR	LIZELLA	32.760912	-83.845717
110070024606	<u>SHERWIN- WILLIAMS (4032 CAVALIER DR)</u>	ICIS-NPDES NON-MAJOR	NA	32.831167	-83.735361
110070025248	<u>GRAY NORTH BY-PASS DIRT PIT A & B</u>	ICIS-NPDES NON-MAJOR	GRAY	33.028472	-83.542936
110070074298	<u>GLOBAL PARTS DISTRIBUTORS ADDITION</u>	ICIS-NPDES NON-MAJOR	MACON	32.698700	-83.681500
110070019302	<u>NORTHSIDE CROSSING</u>	ICIS-NPDES NON-MAJOR	NA	32.898002	-83.705359
110070064775	<u>EROSION, SEDIMENT, & POLLUTION CONTROL PLAN- SITE DEVELOPMENT IMPROVEMENTS, NEW FINE ARTS CENTER FOR THE MONROE COUNTY BOARD OF EDUCATION</u>	ICIS-NPDES NON-MAJOR	NA	32.934500	-83.789600
110070007652	<u>THE LOFTS AT CAPRICORN</u>	ICIS-NPDES NON-MAJOR	FORSYTH	33.030000	-83.930000
110070024848	<u>UMIYA NAGAR SUBDIVISION</u>	ICIS-NPDES NON-MAJOR	MACON	32.831800	-83.627400
110070017712	<u>MACON CONCRETE RECYCLING</u>	ICIS-NPDES NON-MAJOR	MACON	32.800197	-83.732313
110070073890	<u>THE GARDENS APARTMENTS</u>	ICIS-NPDES NON-MAJOR	MACON	32.828333	-83.618889
110070074510	<u>PACTIV LLC</u>	ICIS-NPDES NON-MAJOR	MACON-BIBB	32.830881	-83.735386
110009356552	<u>COLISEUM MEDICAL CENTER- EMERGENCY DEPARTMENT EXPANSION</u>	ICIS-NPDES NON-MAJOR	MACON	32.708110	-83.649770
110070113303	<u>M-94 MINE</u>	ICIS-NPDES NON-MAJOR	MACON	32.845770	-83.618800
110070046080	<u>CHEMTRADE SOLUTIONS - MACON FACILITY</u>	ICIS-NPDES NON-MAJOR	UNKNOWN	32.766600	-83.516600
110070007868	<u>NICHIHA USA, INC. - MACON CEMENT FIBERBO</u>	ICIS-NPDES NON-MAJOR	MACON	32.776860	-83.636750
110038104039	<u>NICHIHA USA, INC. - MACON CEMENT FIBERBO</u>	ICIS-NPDES NON-MAJOR	MACON	32.691740	-83.675080
110038104039	<u>NEW HAVEN, LOT 203 & 204</u>	ICIS-NPDES MINOR	MACON	32.691740	-83.675080
110070115499	<u>LOFTS AT ZEBULON</u>	ICIS-NPDES NON-MAJOR	BYRON	32.654710	-83.773900
110070103434	<u>LOVE'S TRAVEL STOP/ MACON</u>	ICIS-NPDES NON-MAJOR	MACON	32.879760	-83.752560
110070021946	<u>BOJANGLES'- GRAY HIGHWAY</u>	ICIS-NPDES NON-MAJOR	MACON-BIBB	32.718000	-83.734700
110070025329	<u>APPLEBEE'S</u>	ICIS-NPDES NON-MAJOR	MACON	32.850897	-83.621505
110070012274	<u>GDOT STP00-3213-00(003) PI #351130; BRMLB-3213-00(005) PI #351135 (EPD-WCD)</u>	ICIS-NPDES NON-MAJOR	MACON	32.882679	-83.765949
110070027900	<u>SCARLET OAKS</u>	ICIS-NPDES NON-MAJOR	NA	32.885542	-83.695722
110070020373	<u>EMERY HIGHWAY CONVENIENCE STORE</u>	ICIS-NPDES NON-MAJOR	MACON	32.838060	-83.752950
110070073958	<u>GRAY NORTH BY-PASS TEMP. CONCRETE PLANT</u>	ICIS-NPDES NON-MAJOR	MACON	32.791667	-83.549722
110070015586	<u>GRAY NORTH BY-PASS TEMP. CONCRETE PLANT</u>	ICIS-NPDES NON-MAJOR	GRAY	33.003380	-83.540700
110070015586	<u>CONVENIENCE STORE 3910 ARKWRIGHT RD</u>	ICIS-NPDES NON-MAJOR	GRAY	33.003380	-83.540700
110070005978	<u>AEROSPACE DEFENSE COATINGS OF GA</u>	ICIS-NPDES NON-MAJOR	NA	32.905800	-83.525700
110000360172	<u>FEDEX GROUND - MACON</u>	ICIS-NPDES NON-MAJOR	MACON	32.698530	-83.664180
110070145712		ICIS-NPDES NON-MAJOR	MACON	32.737100	-83.725400

110043682912	FIVE STAR COLLISION CENTER	ICIS-NPDES NON-MAJOR	MACON	32.889330	-83.675900
110043682912	FIVE STAR COLLISION CENTER	ICIS-NPDES NON-MAJOR	MACON	32.889330	-83.675900
110070146920	PROJECT UNICORN	ICIS-NPDES NON-MAJOR	MACON	32.719730	-83.723130
110070146909	PARKING EXPANSION FOR THE MONROE COUNTY FINE ARTS	ICIS-NPDES NON-MAJOR	FORSYTH	33.033220	-83.932644
110070160760	NORTH MACON PRESBYTERIAN CHURCH - PROPOSED SANCTUARY	ICIS-NPDES NON-MAJOR	MACON	32.907630	-83.748790
110039690377	MACON POPLAR STREET WPCP	ICIS-NPDES MAJOR	MACON	32.808300	-83.602561
110070162141	HOUSTON AUTO AUCTION	ICIS-NPDES UNPERMITTED	MACON	32.776740	-83.661930
110070162299	NEW SPINE CENTER FOR ORTHOGA	ICIS-NPDES NON-MAJOR	MACON	32.896990	-83.691320
110070146016	YANCEY BROTHERS COMPANY MACON STORE	ICIS-NPDES NON-MAJOR	MACON	32.740040	-83.722850
110070160827	SUDS EXPRESS CAR WASH	ICIS-NPDES NON-MAJOR	MACON	32.899043	-83.700396
110070201232	475 TOBESOFKEE LAKES	ICIS-NPDES NON-MAJOR	MACON	32.794610	-83.721580
110070204846	SOUTHERN NATURAL GAS- SOUTH MAIN 2ND LOOP LINE EXTENTION	ICIS-NPDES NON-MAJOR	MACON	32.906830	-83.822500
110070146187	PROJECT TIGER	ICIS-NPDES NON-MAJOR	MACON	32.741090	-83.645780
110070202076	UNION BAPTIST CHURCH- LIFE CENTER	ICIS-NPDES NON-MAJOR	MACON	32.856430	-83.607444
110070152773	NEW CHURCH FACILITIES FOR RHEMA INTERNATIONAL MINITRIES	ICIS-NPDES NON-MAJOR	MACON	32.869090	-83.563950
110070145099	THE PARK @ EMPIRE YARD	ICIS-NPDES NON-MAJOR	MACON	32.833870	-83.622760
110007085279	SOUTHERN FOREST INDUSTRIES	ICIS-NPDES NON-MAJOR	FORSYTH	32.960772	-83.863494
110039861414	MACON WATER AUTHORITY (ROCKY CREEK WPCP)	ICIS-NPDES NON-MAJOR	MACON	32.768169	-83.601294
110039861414	MACON WATER AUTHORITY (ROCKY CREEK WPCP)	ICIS-NPDES MAJOR	MACON	32.768169	-83.601294
110033625307	UPS GROUND FREIGHT	ICIS-NPDES NON-MAJOR	MACON	32.780010	-83.642360
110070217274	LOFTS AT MERCER LANDING II	ICIS-NPDES NON-MAJOR	MACON	32.832720	-83.648970
110070026243	HARTSON-KENNEDY CABINET TOP CO.	ICIS-NPDES NON-MAJOR	MACON	32.830230	-83.729260
110000360074	MARBLE MASTERS OF MIDDLE GEORG IA	ICIS-NPDES NON-MAJOR	WARNER ROBINS	32.651380	-83.612760
110000360118	SOLENIS-MACON PLANT	ICIS-NPDES NON-MAJOR	MACON	32.701282	-83.663101
110000360127	CHEROKEE BRICK & TILE COMPANY	ICIS-NPDES NON-MAJOR	MACON	32.803910	-83.635720
110022447823	LAFARGE BUILDING MATE	ICIS-NPDES NON-MAJOR	MACON	32.844090	-83.667710
110000360181	TRANE CO	ICIS-NPDES NON-MAJOR	MACON	32.701253	-83.667998
110000360216	GEORGIA WIRE PRODUCTS	ICIS-NPDES NON-MAJOR	MACON	32.810760	-83.542690
110001389024	JOHNS MANVILLE	ICIS-NPDES NON-MAJOR	MACON	32.809350	-83.544940
110000360243	YKK USA INC MACON	ICIS-NPDES NON-MAJOR	MACON	32.811550	-83.568930

110043089065	<u>YKK (USA) INC - CHESTNEY FACILITY</u>	ICIS-NPDES NON-MAJOR	MACON	32.821570	-83.537170
110020139731	<u>BUSH DAIRY</u>	ICIS-NPDES NON-MAJOR	FORSYTH	32.964457	-84.033914
110070021308	<u>BYRON READY MIX</u>	ICIS-NPDES NON-MAJOR	BYRON	32.673100	-83.714000
110070023295	<u>ACTIVE MINERALS INTL - WILLIAMS-BURGESS</u>	ICIS-NPDES NON-MAJOR	DRY BRANCH	32.790900	-83.509200
110070074881	<u>SHADOWBROOK - FKA EASTWYKE - PHASE I</u>	ICIS-NPDES NON-MAJOR	UNKNOWN	32.878889	-84.022778
110059640526	<u>MIDSTATE STEEL, INC</u>	ICIS-NPDES NON-MAJOR	MACON	32.851750	-83.586480
110059640526	<u>MIDSTATE STEEL, INC</u>	ICIS-NPDES UNPERMITTED	MACON	32.851750	-83.586480
110070212823	<u>WESTERN EXCELSIOR</u>	ICIS-NPDES NON-MAJOR	MACON	32.697433	-83.681551
110070033025	<u>MACON DOWNTOWN AIRPORT</u>	ICIS-NPDES NON-MAJOR	MACON	32.826050	-83.567070
110070216386	<u>SARDIS CHURCH ROAD / SKIPPER ROAD IMPROVEMENTS- PROJECT UNICORN</u>	ICIS-NPDES NON-MAJOR	MACON	32.719730	-83.723130
110070235693	<u>WISE AVENUE PARK</u>	ICIS-NPDES NON-MAJOR	MACON	32.847413	-83.638211
110070227654	<u>MACON-BIBB LANDFILL BORROW PIT # 1</u>	ICIS-NPDES NON-MAJOR	MACON	32.801550	-83.609010
110070009385	<u>WOOD FIBER TECHNOLOGIES</u>	ICIS-NPDES NON-MAJOR	MACON	32.685580	-83.674490
110070028023	<u>REAMES CONCRETE CO- WARNER ROBINS PLANT</u>	ICIS-NPDES NON-MAJOR	WARNER ROBINS	32.658950	-83.620140
110070204213	<u>GOODALL WOODS- PHASE 2-LOTS 37-71, 78-117, AND 121-129</u>	ICIS-NPDES NON-MAJOR	MACON	32.720700	-83.705500
110070252527	<u>NORFOLK SOUTHERN RAILWAY CORPORATION NEW FACILITY FOR TRANSPORTATION AND CAMPUS POLICE</u>	ICIS-NPDES NON-MAJOR	MACON	32.835138	-83.623024
110070145825	<u>RENOVATIONS AND ADDITIONS TO NORTHEAST HIGH SCHOOL & APPLING MIDDLE SCHOOL</u>	ICIS-NPDES NON-MAJOR	MACON	32.819400	-83.735800
110070230764	<u>GOODALL WOODS PHASE 3</u>	ICIS-NPDES NON-MAJOR	MACON	32.867177	-83.619489
110070203635	<u>MONROE COUNTY BOE NEW POLE BARN</u>	ICIS-NPDES NON-MAJOR	MACON	32.720700	-83.705500
110070251657	<u>COPART</u>	ICIS-NPDES NON-MAJOR	FORSYTH	33.013130	-83.921710
110070204060	<u>SITE IMPROVEMENTS FOR SOLAMERICA ENERGY- BIBB JONES SITE</u>	ICIS-NPDES NON-MAJOR	NA	32.683300	-83.706500
110070238575	<u>KUMHO TIRE GEORGIA INC.</u>	ICIS-NPDES NON-MAJOR	MACON	32.779300	-83.755500
110070014278	<u>LITTLE RICHARD PENNIMAN CONNECTOR PHASE 3</u>	ICIS-NPDES NON-MAJOR	MACON	32.745600	-83.649100
110070237912	<u>PI# M005670, BRIDGE JACKING AND REHABILITATION</u>	ICIS-NPDES NON-MAJOR	MACON	32.825700	-83.637900
110070152865	<u>IMTT MACON</u>	ICIS-NPDES NON-MAJOR	MACON	32.900800	-83.783900
110001422498	<u>NORFOLK SOUTHERN RAILWAY CO BROSAN YARD</u>	ICIS-NPDES NON-MAJOR	MACON	32.736461	-83.658533
110020496435		ICIS-NPDES NON-MAJOR	MACON	32.799254	-83.626788

110020496435	NORFOLK SOUTHERN RAILWAY CO BROSNA YARD	ICIS-NPDES NON-MAJOR	MACON	32.799254	-83.626788
110020496435	NORFOLK SOUTHERN RAILWAY CO BROSNA YARD	ICIS-NPDES NON-MAJOR	MACON	32.799254	-83.626788
110070238176	MOUNT OLIVE MISSIONARY BAPTIST CHURCH	ICIS-NPDES NON-MAJOR	MACON	32.831530	-83.641070
110070236787	SOUTH BIBB PARK	ICIS-NPDES NON-MAJOR	MACON	32.706913	-83.698028
110070387533	ARKWRIGHT AP3 LANDFILL ACCESS DRIVE & WET WELL	ICIS-NPDES NON-MAJOR	MACON	32.934239	-83.704832
110070387484	FREEDOM PARK	ICIS-NPDES NON-MAJOR	MACON	32.850051	-83.678703
110046086258	FED EX FREIGHT - MACON	ICIS-NPDES NON-MAJOR	MACON	32.843030	-83.666240
110040492357	BOMBARDIER SERVICES CORPORATION	ICIS-NPDES NON-MAJOR	MACON	32.702300	-83.644200
110061791878	FIRST QUALITY PACKAGING SOLUTIONS	ICIS-NPDES NON-MAJOR	MACON	32.704900	-83.663440
110070382616	DISTRICT 2 WATER SYSTEM IMPROVEMENTS THARPE ROAD WATER MAIN EXTENSION	ICIS-NPDES NON-MAJOR	FORSYTH	32.864700	-83.896400
110070362123	C.W. CONTRACTING CO. INC.- APPLING BROTHERS BORROW PIT	ICIS-NPDES NON-MAJOR	MACON	32.894500	-83.593900
110006399584	SWECO/MACON WIRE COMPANY	ICIS-NPDES NON-MAJOR	MACON	32.873230	-83.560430
110070371171	RETAIL STORE - BARNESVILLE	ICIS-NPDES NON-MAJOR	BARNESVILLE	33.039000	-84.153720
110070381337	KINSALE SUBDIVISION PHASE ONE - LOTS 1-10	ICIS-NPDES MINOR	MACON	32.825327	-83.759967
110070381337	KINSALE SUBDIVISION PHASE ONE - LOTS 1-10	ICIS-NPDES MINOR	MACON	32.825327	-83.759967
110070381337	KINSALE SUBDIVISION PHASE ONE - LOTS 1-10	ICIS-NPDES MINOR	MACON	32.825327	-83.759967
110070381337	KINSALE SUBDIVISION PHASE ONE - LOTS 1-10	ICIS-NPDES MINOR	MACON	32.825327	-83.759967
110070381337	KINSALE SUBDIVISION PHASE ONE - LOTS 1-10	ICIS-NPDES NON-MAJOR	MACON	32.825327	-83.759967
110070381337	KINSALE SUBDIVISION PHASE ONE - LOTS 1-10	ICIS-NPDES MINOR	MACON	32.825327	-83.759967
110070381337	KINSALE SUBDIVISION PHASE ONE - LOTS 1-10	ICIS-NPDES MINOR	MACON	32.825327	-83.759967
110070381337	KINSALE SUBDIVISION PHASE ONE - LOTS 1-10	ICIS-NPDES MINOR	MACON	32.825327	-83.759967
110070370534	WATER SYSTEM IMPROVEMENTS - SOFKEE INDUSTRIAL PARK	ICIS-NPDES NON-MAJOR	MACON	32.741022	-83.642541
110070359144	TRACTOR SUPPLY DISTRIBUTION CENTER	ICIS-NPDES NON-MAJOR	MACON	32.727094	-83.731416
110070380982	HIGHLAND PLANTATION PHASE 1 - LOT 45-47	ICIS-NPDES NON-MAJOR	MACON	32.849737	-83.710229
110070381162	ED DEFORE SOCCER COMPLEX	ICIS-NPDES NON-MAJOR	MACON-BIBB COUNTY	32.818600	-83.750700
110070381575	ED DEFORE SPORTS COMPLEX FOOTBALL	ICIS-NPDES NON-MAJOR	MACON-BIBB COUNTY	32.818600	-83.752800
110070383580	POPE'S FERRY LANDING PUBLIC BOAT RAMP	ICIS-NPDES NON-MAJOR	FORSYTH	32.993750	-83.725030
110070390070	RONALD MCDONALD HOUSE	ICIS-NPDES NON-MAJOR	MACON	32.836072	-83.639730
110070383660	RENOVATIONS TO H.G. WEAVER MIDDLE SCHOOL	ICIS-NPDES NON-MAJOR	MACON	32.824460	-83.745390

110070382122	ACKERMAN AUTO SALVAGE	ICIS-NPDES UNPERMITTED	MACON	32.810830	-83.631290
110070383834	GILBERT TRUCK CENTER	ICIS-NPDES NON-MAJOR	MACON	32.842490	-83.576000
110070381412	FILMORE THOMAS PARK, PHASE 2	ICIS-NPDES NON-MAJOR	MACON	32.838610	-83.695850
110070382481	HIGHLAND PLANTATION PHASE 1 - LOT 20	ICIS-NPDES NON-MAJOR	MACON	32.849740	-83.709690
110070006932	DEMOLITION OF TINDALL HEIGHTS (PHASE 1B)	ICIS-NPDES NON-MAJOR	MACON	32.823510	-83.648200
110070006932	DEMOLITION OF TINDALL HEIGHTS (PHASE 1B)	ICIS-NPDES NON-MAJOR	MACON	32.823510	-83.648200
110070006932	DEMOLITION OF TINDALL HEIGHTS (PHASE 1B)	ICIS-NPDES NON-MAJOR	MACON	32.823510	-83.648200
110070006932	DEMOLITION OF TINDALL HEIGHTS (PHASE 1B)	ICIS-NPDES NON-MAJOR	MACON	32.823510	-83.648200
110070006932	DEMOLITION OF TINDALL HEIGHTS (PHASE 1B)	ICIS-NPDES NON-MAJOR	MACON	32.823510	-83.648200
110070074344	FORSYTH STATION	ICIS-NPDES NON-MAJOR	FORSYTH	33.034166	-83.938244
110070382941	HIGHLAND PLANTATION PHASE 1 - LOT 48	ICIS-NPDES NON-MAJOR	MACON	32.851480	-83.705400
110070358235	VINEVILLE INTERNAL MEDICINE	ICIS-NPDES NON-MAJOR	MACON	32.857110	-83.681830
110070364573	TOMMY'S EXPRESS CAR WASH	ICIS-NPDES NON-MAJOR	MACON	32.878200	-83.666670
110070103532	MACON TO MILLEDGEVILLE RE-ROUTE (EPD-WCD)	ICIS-NPDES NON-MAJOR	MACON	32.901030	-83.686900
110070074678	PI# 0010412, SR BRIDGE REPLACEMENT OVER NORFOLK SOUTHERN RR- (EPD-WCD)	ICIS-NPDES NON-MAJOR	MACON	32.903130	-83.581615
110070074679	NHIM0-0016-01(092), PI#311000, PH.1 RECONSTRUCTION I-16 FROM I-75 TO COLISEUM DR	ICIS-NPDES NON-MAJOR	NA	32.832441	-83.608359
110070227789	ZAXBY'S - HUDDLE HOUSE - C STORE MULTI-USE SITE	ICIS-NPDES NON-MAJOR	FORSYTH	33.034297	-83.938242
110070006535	STP00-0004-02(031), PI# 322540 (EPD-WCD)	ICIS-NPDES NON-MAJOR	NA	32.903130	-83.581615
110070011524	GDOT STP00-0000-00(566), PI# 0000566 (EPD WCD)	ICIS-NPDES NON-MAJOR	NA	32.716870	-83.724586
110070358157	LOFTS @ RIVER CROSSING	ICIS-NPDES NON-MAJOR	MACON	32.923490	-83.713430
110070370159	MIDDLE GEORGIA FITNESS	ICIS-NPDES NON-MAJOR	MACON	32.885060	-83.761850
110070013663	GDOT CSBRG-0007-00(054), PI #0007054 (EPD-WCD)	ICIS-NPDES NON-MAJOR	NA	32.800694	-83.498511
110070356191	IRVING CONSUMER PRODUCTS- INDUSTRIAL SPUR TRACK	ICIS-NPDES NON-MAJOR	MACON	32.741090	-83.645780
110070366117	ZEBULON STORAGE	ICIS-NPDES NON-MAJOR	MACON	32.880200	-83.774071
110070046275	NH000-0016-01(104), PI# 0012700 (EPD-WCD)	ICIS-NPDES NON-MAJOR	NA	32.841671	-83.645095
110070387811	LEVEE SEEPAGE REPAIRS	ICIS-NPDES NON-MAJOR	MACON	32.823901	-83.601417
110070373542	STUDENT SERVICES BUILDING - GORDON STATE COLLEGE	ICIS-NPDES NON-MAJOR	BARNESVILLE	33.047021	-84.153490
110059464388	AEROSPACE DEFENSE COATINGS OF GEORGIA	ICIS-NPDES NON-MAJOR	MACON	32.707010	-83.666460
110070391618	NORTH RIVERSIDE SUBSTATION	ICIS-NPDES NON-MAJOR	MACON	32.896765	-83.685306
110057605523	L.H. THOMSON COMPANY, INC.	ICIS-NPDES NON-MAJOR	MACON	32.697000	-83.666090

110059204123	CALIFORNIA CEREAL PRODUCTS	ICIS-NPDES NON-MAJOR	MACON	32.784720	-83.639120
110070010194	ALDI BORROW AREA	ICIS-NPDES NON-MAJOR	MACON	32.820900	-83.711700
110005684250	THE BOEING COMPANY	ICIS-NPDES NON-MAJOR	MACON	32.683399	-83.642269
110006901978	FOREST SERVICE NATIONAL SEED LAB	ICIS-NPDES UNPERMITTED	DRY BRANCH	32.807778	-83.538996
110020139759	HAYGOOD FARMS	ICIS-NPDES NON-MAJOR	YATESVILLE	32.959887	-84.149185
110013814738	MACON WALKER ROAD MSW LANDFILL	ICIS-NPDES NON-MAJOR	MACON	32.828654	-83.619363
110012143377	BLC HARDWOOD FLOORING, LLC	ICIS-NPDES NON-MAJOR	MACON	32.700087	-83.669456
110070564739	CLOSURE FOR ARGOS	ICIS-NPDES MINOR	MACON	32.771494	-83.657709
110070561207	BORROW FOR ARGOS CLOSURE	ICIS-NPDES MINOR	MACON	32.771494	-83.657709
110070391472	WOODLAND SPRINGS TOWNHOMES	ICIS-NPDES NON-MAJOR	GRAY	33.001720	-83.542700
110070391612	HOME PLACER LLC	ICIS-NPDES NON-MAJOR	MACON	32.757111	-83.681791
110070390619	MACON CONCRETE PLANT	ICIS-NPDES NON-MAJOR	MACON	32.827410	-83.618260
110070388123	BARRINGTON PLACE - PHASE 1	ICIS-NPDES NON-MAJOR	MACON	32.860010	-83.697820
110070390578	SNOW'S MEMORIAL CHAPEL	ICIS-NPDES NON-MAJOR	MACON	32.922610	-83.740440
110070387340	SKECA, LLC LAFARGE MINE	ICIS-NPDES NON-MAJOR	MACON	32.674916	-83.622088
110070393152	RIDGEVIEW PHASE II	ICIS-NPDES NON-MAJOR	BYRON	32.661320	-83.757550
110070388272	NGA VU PUOULTRY HOUSES	ICIS-NPDES NON-MAJOR	LIZELLA	32.762950	-83.809570
110061657247	SOUTHLAND WASTE SYSTEMS OF GEORGIA	ICIS-NPDES NON-MAJOR	MACON	32.846600	-83.585410
110070392668	LIBERTY CHURCH ESTATES- LOTS 41-42	ICIS-NPDES NON-MAJOR	MACON	32.720158	-83.664209
110070388122	LIBERTY CHURCH ESTATES- LOTS 38-40	ICIS-NPDES NON-MAJOR	MACON	32.719537	-83.664229
110070392151	HIGHLAND PLANTATION PHASE 1 - LOT 13-14	ICIS-NPDES NON-MAJOR	MACON	32.848737	-83.709522
110070393265	HIGHLAND PLANTATION PHASE 1 - LOT 16-18	ICIS-NPDES NON-MAJOR	MACON	32.849335	-83.709919
110070391080	MIKADO BAPTIST CHURCH ADDITION	ICIS-NPDES NON-MAJOR	MACON	32.719380	-83.687840
110007498369	LOWER POPLAR STREET WATER RECLAMATION FACILITY	ICIS-NPDES NON-MAJOR	MACON	32.811708	-83.603778
110009139823	BYRON, CITY OF	ICIS-NPDES NON-MAJOR	BYRON	32.664833	-83.769528
110009139869	FORSYTH, CITY OF (SOUTH WPCP)	ICIS-NPDES NON-MAJOR	FORSYTH	33.010583	-83.934333
110054245045	BROSNAN	ICIS-NPDES NON-MAJOR	UNKNOWN	32.812381	-83.625509
110054245045	BROSNAN	ICIS-NPDES NON-MAJOR	UNKNOWN	32.812381	-83.625509
110054245045	BROSNAN	ICIS-NPDES NON-MAJOR	UNKNOWN	32.812381	-83.625509
110054245045	BROSNAN	ICIS-NPDES NON-MAJOR	UNKNOWN	32.812381	-83.625509
110054245045	BROSNAN	ICIS-NPDES NON-MAJOR	UNKNOWN	32.812381	-83.625509
110054245045	BROSNAN	ICIS-NPDES NON-MAJOR	UNKNOWN	32.812381	-83.625509
110054245045	BROSNAN	ICIS-NPDES NON-MAJOR	UNKNOWN	32.812381	-83.625509
110054245045	BROSNAN	ICIS-NPDES NON-MAJOR	UNKNOWN	32.812381	-83.625509
110054245045	BROSNAN	ICIS-NPDES NON-MAJOR	UNKNOWN	32.812381	-83.625509
110054245045	BROSNAN	ICIS-NPDES NON-MAJOR	UNKNOWN	32.812381	-83.625509

110054245045	<u>BROSNAN</u>	ICIS-NPDES NON-MAJOR	UNKNOWN	32.812381	-83.625509
110070500212	<u>BELLSOUTH TELECOMMUNICATIONS, LLC. DBA AT&T GEORGIA</u>	ICIS-NPDES NON-MAJOR	WEST CENTRAL DISTRICT	32.780740	-83.720400
110037386192	<u>XPO LOGISTICS FREIGHT, INC</u>	ICIS-NPDES NON-MAJOR	BYRON	32.668210	-83.742430
110011331326	<u>MACON WATER AUTHORITY - FRANK C. AMERSON WTP</u>	ICIS-NPDES NON-MAJOR	MACON	32.913701	-83.664856
110070505796	<u>WHEELERS LANDING LOTS 183-184</u>	ICIS-NPDES NON-MAJOR	MACON	32.815100	-83.536180
110070504939	<u>WESLEYAN CROSSING LOTS 2, 6</u>	ICIS-NPDES NON-MAJOR	MACON	32.914210	-83.716591
110070520353	<u>KINSALE SUBDIVISION PHASE ONE - LOTS 130-132</u>	ICIS-NPDES NON-MAJOR	MACON	32.825327	-83.759967
110070518899	<u>KINSALE SUBDIVISION PHASE ONE - LOTS 133-134</u>	ICIS-NPDES NON-MAJOR	MACON	32.825327	-83.759967
110070519543	<u>WOODS AT OCALA, LOT 67</u>	ICIS-NPDES NON-MAJOR	MACON	32.724662	-83.695818
110070505858	<u>CARRICK, 319</u>	ICIS-NPDES NON-MAJOR	MACON	32.853940	-83.707850
110070500234	<u>TOBEE CREEK LOT 100</u>	ICIS-NPDES NON-MAJOR	LIZELLA	32.794640	-83.778120
110070518842	<u>PROVIDENCE/CARILLON LOTS 37,38</u>	ICIS-NPDES NON-MAJOR	MACON	32.928504	-83.742680
110070520028	<u>RAINBOW SPRINGS, LOT 38</u>	ICIS-NPDES NON-MAJOR	MACON	32.725875	-83.695878
110070517457	<u>HOUSTON COUNTY TENNIS COMPLEX</u>	ICIS-NPDES NON-MAJOR	WARNER ROBINS	32.649010	-83.630210
110070503500	<u>CARILLON, 369</u>	ICIS-NPDES NON-MAJOR	MACON	32.928530	-83.743100
110070519540	<u>HP LIQUORS</u>	ICIS-NPDES NON-MAJOR	MACON	32.880060	-83.772090
110070518758	<u>TOBEE CREEK, LOT 74</u>	ICIS-NPDES NON-MAJOR	LIZELLA	32.795810	-83.777400
110001422719	<u>AGGREGATES USA (MACON), LLC</u>	ICIS-NPDES NON-MAJOR	MACON	32.920792	-83.529479
110070074683	<u>NH000-0016-01(104), PI# 311410 (EPD-WCD)</u>	ICIS-NPDES NON-MAJOR	MACON	32.844615	-83.643053
110070517308	<u>WESLEYAN CROSSING LOT 36</u>	ICIS-NPDES NON-MAJOR	MACON	32.913931	-83.715210
110070517830	<u>WAVERLY POINT, 28A</u>	ICIS-NPDES NON-MAJOR	MACOB	32.926804	-83.745342
110070502535	<u>SUMMER GROVE LOTS 5, 81, 108, 109, 110, 111</u>	ICIS-NPDES NON-MAJOR	MACON	32.825390	-83.745880
110043229896	<u>SCHNITZER SOUTHEAST- LOWER POPLAR</u>	ICIS-NPDES NON-MAJOR	MACON	32.824429	-83.610265
110070502141	<u>WHEELERS LANDING LOTS 185-187</u>	ICIS-NPDES NON-MAJOR	MACON	32.815413	-83.536406
110070031140	<u>ER SNELL - MACON CONCRETE PLANT</u>	ICIS-NPDES NON-MAJOR	MACON	32.845069	-83.590789
110070501772	<u>BEAUMONT HEIGHTS</u>	ICIS-NPDES NON-MAJOR	MACON	32.801350	-83.696460
110063157159	<u>ARDENT MILLS</u>	ICIS-NPDES NON-MAJOR	MACON	32.829626	-83.620907
110070503979	<u>TINDALL FIELDS II</u>	ICIS-NPDES NON-MAJOR	MACON	32.823740	-83.648593
110070561006	<u>TREE TOPS LOT A-28</u>	ICIS-NPDES MINOR	MACON	32.915570	-83.690100
110070561006	<u>TREE TOPS LOT A-28</u>	ICIS-NPDES MINOR	MACON	32.915570	-83.690100
110070502935	<u>IRVING TISSUE RAILROAD SPUR TRACK</u>	ICIS-NPDES NON-MAJOR	MACON	32.741040	-83.637250
110070548203	<u>ELLIS RESIDENCE</u>	ICIS-NPDES MINOR	MACON	32.905820	-83.761870
110070563120	<u>KINSALE SUBDIVISION PHASE ONE - LOT 126</u>	ICIS-NPDES MINOR	MACON	32.825327	-83.759967

110070545701	WHEELERS LANDING LOT 209	ICIS-NPDES MINOR	MACON	32.817800	-83.535200
110070547723	HIGHLAND PLANTATION PHASE 1 - LOT 59	ICIS-NPDES MINOR	MACON	32.850210	-83.705970
110070527582	BEAUMONT HEIGHTS LOT 134-138	ICIS-NPDES NON-MAJOR	MACON	32.801372	-83.696613
110070527466	PROVIDENCE/CARILLON LOT 4	ICIS-NPDES NON-MAJOR	MACON	32.928530	-83.743100
110070564713	SCOTT CONSTRUCTION LLC	ICIS-NPDES MINOR	JULIETTE	32.973460	-83.736050
110070529797	BUTLER DESIGN CENTER	ICIS-NPDES NON-MAJOR	MACON	32.915570	-83.690100
110070529797	BUTLER DESIGN CENTER	ICIS-NPDES MINOR	MACON	32.915570	-83.690100
110070530162	AVERITT EXPRESS MACON SERVICE CENTER (BIBB COUNTY)	ICIS-NPDES NON-MAJOR	MACON	32.801940	-83.735980
110070544990	HENDERSON STADIUM NEW FOOTBALL FIELD DRAINAGE AND TURF	ICIS-NPDES MINOR	MACON	32.820863	-83.676802
110070563509	LOT 5	ICIS-NPDES MINOR	MACON	32.854168	-83.823731
110070563934	HUNNICUTT ROAD	ICIS-NPDES MINOR	MACON	32.773840	-83.740080
110070252411	ARCILLA MINING & LAND COMPANY, LLC (M94L)	ICIS-NPDES NON-MAJOR	DRY BRANCH	32.757778	-83.528056
110070563300	PENNSULA POINTE LOT 52 / EDMONDS	ICIS-NPDES MINOR	MACON	32.864504	-83.822234
110070251844	ARCILLA MINING & LAND COMPANY, LLC (M94 MINE)	ICIS-NPDES NON-MAJOR	DRY BRANCH	32.767488	-83.522798
110070544958	HIGHLAND PLANTATION PHASE 1 - LOT 58	ICIS-NPDES MINOR	MACON	32.850280	-83.705830
110070530666	VILLAS AT RIVOLI	ICIS-NPDES MINOR	MACON	32.888570	-83.730330
110055167812	FORSYTH, CITY OF (RUSSELLVILLE WTP)	ICIS-NPDES NON-MAJOR	FORSYTH	33.017770	-83.939290
110070547290	PEAKE ROAD TIDAL WAVE AUTO SPA	ICIS-NPDES MINOR	MACON	32.878000	-83.763860
110070554962	HIGHLAND PLANTATION PHASE 1 - LOT 123	ICIS-NPDES MINOR	MACON	32.849280	-83.704410
110070555061	WHEELERS LANDING LOT 189	ICIS-NPDES MINOR	MACON	32.815480	-83.536046
110070544509	TOBESOFKEE CROSSING SHOPPING CENTER	ICIS-NPDES MINOR	MACON	32.834190	-83.744160
110070545677	DOLLAR GENERAL DRY BRANCH	ICIS-NPDES MINOR	MACON	32.829898	-83.536753
110070554136	BEAUMONT HEIGHTS LOT 95	ICIS-NPDES MINOR	MACON	32.801380	-83.693550
110070555745	1400 BASS ROAD DEVELOPMENT PHASE 1	ICIS-NPDES MINOR	MACON	32.924120	-83.739130
110070552450	HIGHLAND PLANTATION PHASE 1 - LOT 125	ICIS-NPDES MINOR	MACON	32.849430	-83.704050
110070032258	ATLANTA SAND & SUPPLY COMPANY (HUDSON SAND MINE)	ICIS-NPDES NON-MAJOR	BYRON	32.689157	-83.723847
110070545052	DOLLAR GENERAL STORE # 20581	ICIS-NPDES MINOR	GRAY	32.962604	-83.580245
110070548859	MIDSOUTH PACKERS	ICIS-NPDES MINOR	FORSYTH	32.965072	-83.956174
110070546579	COPART BYRON EXPANSION	ICIS-NPDES MINOR	BYRON	32.683100	-83.707200
110070010763	PEACOCKS AUTO SALVAGE	ICIS-NPDES NON-MAJOR	MACON	32.917900	-83.514900
110070556095	BELL AIR	ICIS-NPDES MINOR	WARNER ROBINS	32.644322	-83.639939
110070562870	TINDALL FIELDS III	ICIS-NPDES MINOR	MACON	32.823510	-83.648200

110070562169	<u>LAKEVIEW AT TREETOPS</u>	ICIS-NPDES MINOR	MACON	32.831242	-83.765942
110070553177	<u>KINSALE SUBDIVISION PHASE ONE - LOT 11-14</u>	ICIS-NPDES MINOR	MACON	32.825327	-83.759967
110070553442	<u>HIGHLAND PLANTATION PHASE 1 - LOT 123- 127</u>	ICIS-NPDES MINOR	MACON	32.848737	-83.709522
110070554937	<u>WHEELERS LANDING LOT 188-190</u>	ICIS-NPDES MINOR	MACON	32.815413	-83.536406
110070551838	<u>OAKCREEK LOTS 38, 39 & 40</u>	ICIS-NPDES MINOR	MACON	32.873335	-83.673911
110070555144	<u>WHEELERS LANDING LOT 188</u>	ICIS-NPDES MINOR	MACON	32.815648	-83.535987
110070547341	<u>JOINTLY OWNED NATURAL GAS NEW LINE EXTENSION</u>	ICIS-NPDES MINOR	MACON	32.730104	-83.720569
110070552629	<u>BEAUMONT HEIGHTS LOT 96</u>	ICIS-NPDES MINOR	MACON	32.801380	-83.693600
110070552560	<u>HIGHLAND PLANTATION PHASE 1 - LOT 124</u>	ICIS-NPDES MINOR	MACON	32.849370	-83.704170
110070547910	<u>NORTH HOUSTON SPORTS COMPLEX</u>	ICIS-NPDES MINOR	WARNER ROBINS	32.635683	-83.641514
110070544481	<u>WHEELERS LANDING LOT 219-222</u>	ICIS-NPDES MINOR	MACON	32.815413	-83.536406
110070017378	<u>REEVES CONSTRUCTION CO.</u>	ICIS-NPDES NON-MAJOR	MACON	32.885920	-83.601420
110070548532	<u>HIGHLAND PLANTATION PHASE 1 - LOT 49-51</u>	ICIS-NPDES MINOR	MACON	32.848737	-83.709522
110070547656	<u>LIBERTY CHURCH ESTATES- LOTS 13-17</u>	ICIS-NPDES MINOR	MACON	32.719537	-83.664229
110070555179	<u>GEORGIA CENTER FOR PLASTIC AND RECONSTRUCTIVE SURGERY</u>	ICIS-NPDES MINOR	MACON	32.873303	-83.759089
110070553847	<u>ARMSTRONG SIDING EXTENSION</u>	ICIS-NPDES MINOR	MACON	32.782068	-83.651785
110070552748	<u>TOBEE CREEK LOT 93</u>	ICIS-NPDES MINOR	LIZELLA	32.794390	-83.775780
110070553152	<u>CASTEEL CONSTRUCTION</u>	ICIS-NPDES MINOR	MACON	32.911479	-83.843009
110070553020	<u>LIBERTY CHURCH ESTATES- LOTS 45-47</u>	ICIS-NPDES MINOR	MACON	32.719537	-83.664229
110070553503	<u>LIBERTY CHURCH ESTATES- LOTS 43-44</u>	ICIS-NPDES MINOR	MACON	32.719537	-83.664229
110070547074	<u>WADDESDON SUBDIVISION LOT 9</u>	ICIS-NPDES MINOR	MACON	32.915270	-83.850076
110070551837	<u>THE GARDEN APARTMENTS</u>	ICIS-NPDES MINOR	MACON	32.830510	-83.734260
110070563485	<u>CASTEEL CONSTRUCTION</u>	ICIS-NPDES MINOR	MACON	32.911479	-83.843009
110070551700	<u>DOUBLEGATE PHASE I</u>	ICIS-NPDES MINOR	LIZELLA	32.746070	-83.775950
110016749633	<u>AEROSPACE DEFENSE COATINGS OF GEORGIA</u>	ICIS-NPDES NON-MAJOR	MACON	32.706991	-83.666249
110070552034	<u>BELLEWOOD, LOT 14</u>	ICIS-NPDES MINOR	FORSYTH	32.885468	-83.922444
110070552034	<u>BELLEWOOD, LOT 14</u>	ICIS-NPDES MINOR	FORSYTH	32.885468	-83.922444
110070551905	<u>WHEELERS LANDING LOT 190</u>	ICIS-NPDES MINOR	MACON	32.815816	-83.535929
110070553649	<u>WHEELERS LANDING LOT 201</u>	ICIS-NPDES MINOR	MACON	32.818840	-83.534830
110022433990	<u>GEORGIA PUBLIC SAFETY TRAINING CENTER</u>	ICIS-NPDES NON-MAJOR	FORSYTH	33.059322	-83.963006
110022433990	<u>GEORGIA PUBLIC SAFETY TRAINING CENTER</u>	ICIS-NPDES NON-MAJOR	FORSYTH	33.059322	-83.963006
110070553740	<u>BEAUMONT HEIGHTS LOT 140</u>	ICIS-NPDES MINOR	MACON	32.800580	-83.696160
110070554728	<u>ALLENTOWN PHASE I</u>	ICIS-NPDES MINOR	MACON	32.742280	-83.669420
110070555467	<u>HIGHLAND PLANTATION PHASE 1 - LOT 126</u>	ICIS-NPDES MINOR	MACON	32.849580	-83.703830

110070553855	<u>TONY BUTLER HOME DESIGN</u>	ICIS-NPDES MINOR	MACON	32.900770	-83.762390
110070553961	<u>BEAUMONT HEIGHTS LOT 163</u>	ICIS-NPDES MINOR	MACON	32.801450	-83.692590
110070554858	<u>HEATH LAKE VILLAGE</u>	ICIS-NPDES MINOR	MACON	32.814610	-83.745840
110070552508	<u>LEONARD W HINDSMAN, LLC HOME DESIGN</u>	ICIS-NPDES MINOR	MACON	32.876870	-83.789210
110070553264	<u>HIGHLAND PLANTATION PHASE 1 - LOT 127</u>	ICIS-NPDES MINOR	MACON	32.849790	-83.703640
110070555955	<u>SCOTT CONSTRUCTION LLC HOME DESIGN</u>	ICIS-NPDES MINOR	MACON	32.853130	-83.709230
110070554907	<u>BEAUMONT HEIGHTS LOT 166</u>	ICIS-NPDES MINOR	MACON	32.800950	-83.692280
110070561420	<u>RIVER EDGE RECOVERY CENTER</u>	ICIS-NPDES MINOR	MACON	32.805540	-83.747830
110043229912	<u>SCHNITZER SOUTHEAST - EDGEWOOD</u>	ICIS-NPDES NON-MAJOR	MACON	32.817620	-83.632500
110037592469	<u>PIEDMONT GREEN POWER, LLC</u>	ICIS-NPDES NON-MAJOR	BARNESVILLE	33.046780	-84.129680

Appendix E Threats and Needs

Threats

Table A- 11. Threats to Bond Swamp National Wildlife Refuge.

Threat Name	Threat Category	Description	Threat Status	Severity	Immediacy	Under FWS Control?	Comments
Mercury advisory for fish consumption	Water Quality	Mercury advisory exists on the consumption of Large Mouth Bass from Bond Swamp.	Current	Moderate	Existing	No	Verify. GAEPD advisory for Ocmulgee River for Large Mouth Bass is 1 meal/week due to Mercury. Site tested 6 miles downstream of Tobesofkee Creek on Ocmulgee River. This is also for Tobesofkee Lake.
Contamination from upstream dischargers	Water Quality	Bond Swamp is downstream of several upstream dischargers in Macon, GA which include a paper mill, Macon Sewer plant, and several other point and non-point sources of pollution. A Chemical plant could be installed on the west end of Bond Swamp.	Current	Unknown	Existing	No	A CAP could help identify potential contaminant sources
Loss, alteration, and degradation of the floodplain	Landscape Alteration	Changes to the hydrology and floodplain off the Refuge can impact the floodplain on Refuge.	Current	Unknown	Existing	No	Specifically, the construction of roads in the floodplain or raising the Macon Industrial levee on the west side of the river, and flooding from Jackson lake upstream can alter the hydrology.
Potential RR spill	Water Quality	Railroad track crosses the Ocmulgee River. A spill could dump contaminants into the Ocmulgee upstream of Bond Swamp.	Current	Unknown	Existing	No	RR tracks run north south through the east side of the refuge so derailment could be huge issue. This same line crosses the River going into Macon.

Needs and Recommendations

Table A- 12. Needs and recommendations for Bond Swamp National Wildlife Refuge.

Need Title	Need Type	Need Description	Status	Priority	Effort Required	Immediacy	Under FWS Control ?	Comments	Source
Conduct a Contaminant Assessment Process (CAP) evaluation	Water Quality Mitigation	Conduct a screening level CAP analysis to identify potential contaminant threats and pathways.	Current	Moderate	Minor	Short-term (< 2 yr)	Yes		WRIA Recommendation
Conduct a baseline contaminant study.	Modeling / Research / Assessment	Assess legacy contamination on the refuge, transport pathways, and potential risks to wildlife. Develop recommended strategies to mitigate identified risks.	Current	Moderate	Minor	Medium (2-5 yr)	Yes	This would be a more in-depth contaminant investigation with targeted sampling and analysis to assess potential contaminant issues identified in the CAP assessment.	Personal communication with refuge staff