Savannah River NUCLEAR SOLUTIONS℠

Scoping Summary for the Periodic Report on the Bioassessment of Savannah River Site Streams (2025 Periodic Report on the Bioassessment of SRS Streams Scoping)

SEMS Numbers: 69, 70, 71, 74, 84

SRNS-RP-2025-00853

July 2025 (Final)

DISCLAIMER

Printed in the United States of America

Prepared for
U.S. Department of Energy
and
Savannah River Nuclear Solutions, LLC
Aiken, South Carolina

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1.0 PROJECT PHASE AND STATUS

This scoping summary has been developed to support the 2025 Periodic Report (PR) on the Bioassessment of Savannah River Site (SRS) Streams (i.e., herein referred to as the 2025 Bioassessment Report). The integrator operable units (IOUs) addressed in the 2025 Bioassessment Report include the Upper Three Runs (UTR), Fourmile Branch (FMB), Pen Branch (PB), and Steel Creek (SC) IOU. This report is the first Periodic Report on the Bioassessment of SRS Streams for the SRS IOUs and is scheduled for submittal to the United States Environmental Protection Agency (USEPA) and South Carolina Department of Environmental Services (SCDES) on September 30, 2025.

The objective of the Bioassessment Report scoping meeting held on July 16, 2025, is to reach Core Team (representatives from United States Department of Energy [USDOE], USEPA, and SCDES) agreement on the following:

1. Sufficiency of the monitoring/sampling approach;
2. Conclusions of the bioassessment monitoring; and
3. The general scope of future monitoring to be conducted to support the next Bioassessment Report (2032).

2.0 IOU PROGRAM BACKGROUND

The SRS is divided into six watersheds that align with the stream systems that transverse the SRS including a portion of the Savannah River adjacent to the SRS (Figure 1). The SRS stream systems were added to the Federal Facility Agreement (FFA) in 1997 (FFA 1993). The SRS manages and monitors six IOUs (i.e., UTR, FMB, PB, SC, Lower Three Runs [LTR], and the Savannah River and Floodplain Swamp [SRFS]) that correspond to the surface water bodies (e.g., streams and pond/reservoirs) and associated wetlands within each watershed. These IOUs include the surface water, sediment/soil, and related biota associated with the major stream systems on the site. The term "Integrator Operable Unit" is used because these surface water bodies and associated wetlands could receive and integrate contamination from multiple sources including Resource Conservation and Recovery Act (RCRA)/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) operable units (OUs), Site Evaluation Areas, National Pollutant Discharge Elimination System (NPDES) outfalls, stormwater, and operational facilities. SRS monitors the IOUs because they represent a possible pathway for the release of contamination from SRS activities to human health and ecological receptors.

The SRS IOU program is implemented in three phases to support a final CERCLA Record of Decision (ROD) for each IOU as follows:

- Phase I of the IOU program consisted of an assessment of all existing data to determine if early actions were necessary and to define additional data needs to assess potential impacts to the IOUs from inactive waste units. RI Work Plans have been approved for all six IOUs, and Phase I of the IOU program is complete.
- Phase II of the IOU program consists of ongoing sampling and assessment of the IOUs and refinement of the conceptual site model (CSM) continuing in parallel with the OU investigations within each watershed. Figure 2 is a generalized CSM for the IOUs. Prior to the 2019 optimization of the IOU program, the status of each IOU during Phase II was documented through submittal of PRs to the USEPA and SCDES for review and approval. Information in the PRs included a full assessment of the IOU including unreported data, wildlife surveys, OU sampling as it impacts the IOUs, newly identified OUs, an early action evaluation, refined CSM, a data needs evaluation, and a screening level benchmark evaluation to assess contaminant threats to human health and ecological receptors. Phase II concludes when the OU investigations specific to each IOU are complete. Phase II is complete for the LTR IOU and ongoing for the remaining five IOUs.
- In Phase III, each IOU is addressed holistically for a final cleanup decision. Phase III includes an assessment of available data, development of the RI/Baseline Risk Assessment (BRA), and completion of the RI/FS process through the ROD, and remedial actions, if warranted. Phase III is complete for the LTR IOU and ongoing for the remaining five IOUs.

Most of the data compiled and reported by the IOU program in recent Phase II implementation is collected by other data stewards and reported under other SRS programs. Scoping of Phase III for the LTR IOU revealed that a significant amount of Phase II historical data from other data stewards and screening level data were not appropriate for use in the quantitative development of the

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RI/BRA, and extensive characterization was required to support Phase III. For this reason, a scoping meeting was held with the Core Team on March 21, 2019, to discuss optimization of Phase II of the IOU program with respect to future data collection and reporting requirements for the five remaining IOUs in Phase II (Scoping Summary for Optimization of the SRS IOU Program [Phase II], ERD-EN-2019-0007). The Core Team agreed to submit a single Bioassessment Report based on biological data every 7 years in place of individual IOU Phase II PRs to continue monitoring the potential impact of waste units and operating facilities on the IOUs. Agreement was reached that the Core Team would be advised should a major change to site conditions occur as indicated by ongoing SRS environmental monitoring or the SCDES monitoring program to allow for discussion of future IOU data needs and reporting

3.0 INTEGRATOR OPERABLE UNITS

The IOUs addressed in the 2025 Bioassessment Report include UTR, FMB, PB, and SC IOU. The LTR IOU is excluded from bioassessment monitoring since the Phase III final remedial action for the LTR IOU has been achieved.

Because the IOUs are large stream systems, they are subdivided into subunits that correspond to portions of a stream that may differ in exposure to the effects of contamination or have distinctive SRS activities within the watershed. Several IOU subunits have no waste sites or industrial facilities within their watershed boundaries and are relatively undisturbed by SRS operations. These subunits were designated as “reference sites” prior to the 2025 Bioassessment Report. In the 2025 Bioassessment Report, many of these “reference” sites are now designated as “upgradient” of SRS operations unless the potential for contamination from SRS activities has been identified. Sites downstream of SRS industrial areas but residing onsite and thus potentially impacted by SRS activities were designated as “downgradient” sites. Stream reaches located far enough downstream of SRS facilities to be potentially buffered from continuous disturbances from SRS industrial facilities were designated “lowest reaches.” Bioassessment locations and subunit designations are provided in Figure 3.

3.1 Upper Three Runs IOU

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The UTR IOU encompasses a large area that includes portions of Aiken and Barnwell counties located outside of the SRS (Figure 4). Approximately 250 km^2 (96.5 mi^2) of the UTR watershed is within the SRS boundary. Tributaries of UTR located within the SRS include Tinker Creek, Tims Branch, Crouch Branch, and McQueen Branch. Mill Creek and Reedy Branch are also located within the UTR IOU, but these streams discharge into UTR's main tributary, Tinker Creek. Much of UTR IOU is upstream from SRS industrial areas. Similarly, Tinker Creek and Mill Creek are largely undisturbed by SRS operations. Steed Pond (which received historical uranium and nickel discharges from M-Area) lies within Tims Branch.

UTR has never received thermal or radiological discharges from SRS reactors. Above its confluence with Tinker Creek, UTR is relatively unimpacted by SRS activities. Due to the ecological uniqueness of UTR, portions of the stream have been protected from site discharges, and it is currently managed and protected by a USDOE Stream Management Policy.

3.2 Fourmile Branch IOU

The FMB IOU originates near the center of SRS and follows a southwesterly direction for approximately 24 km (14.9 mi) (Figure 5). At its headwaters, FMB is a small blackwater stream unimpacted by historical SRS operations. The watershed drains about 57 km^2 (22 mi^2) and includes several SRS facility areas including C Area (C Reactor), N Area (Central Shops), and F, H, and E Areas (General Separations Area). Except for the extreme headwaters, most of FMB is potentially influenced by SRS discharges and industrial operations. FMB also received large volumes of heated cooling water from C Reactor in the past, causing extensive habitat destruction. Recovery and recolonization of FMB began in 1985 with the shutdown of C Reactor, and secondary succession is now well underway in the FMB stream channel and riparian zone.

3.3 Pen Branch IOU

The PB IOU includes PB and its tributary, Indian Grave Branch, located entirely within the SRS boundary (Figure 6). PB terminates in the swamp and does not have a clearly defined channel through the swamp to the Savannah River. Except for its extreme headwaters, nearly all Indian Grave Branch has been affected by operation of K Reactor. Heated cooling water from K Reactor entered Indian Grave Branch and flowed into PB causing the same type of thermal habitat destruction in lower PB as in FMB. Recovery began in 1988 with the cessation of K Reactor operations. Upper and middle PB are largely undisturbed by SRS operations.

3.4 Steel Creek IOU

The SC IOU includes SC and its major tributary, Meyers Branch (Figure 7). SC originates near P Reactor and flows approximately 3 km (1.9 mi) before entering L Lake, a 7 km (4.3 mi) long, 400 ha (988 ac) cooling reservoir constructed in 1985. Water discharged from L Lake dam enters the lower reach of SC, flows approximately 5 km (3 mi) to the Savannah River swamp, and then flows about another 2 km (1 mi) through the SRFS to the Savannah River. All of SC is potentially affected by SRS discharges, waste sites, and/or industrial operations. SC suffered extensive habitat degradation from the discharge of high temperature reactor cooling water during 1954 to 1968. Recovery began in 1986 subsequent to construction of L Lake. Meyers Branch, which intersects SC just downstream of L Lake, is largely unaffected by SRS operations.

3.5 Savannah River and Floodplain Swamp IOU

The Savannah River provides SRS its western boundary for a 56-km (35-mi) stretch from the upstream boundary of the site near Jackson, South Carolina to the southern boundary of the Lower Three Runs corridor. The five major SRS streams feed directly into the river or through the Savannah River Swamp (UTR, FMB, PB, SC, and LTR). SRS is approximately 258 river-km (160 river-mi) from the Atlantic Ocean. The SRFS IOU (Figure 1) includes an approximate 72 km (45 mi) stretch along the Savannah River from the northern boundary of SRS near Jackson, South Carolina southward to the U.S. Highway 301 bridge.

The SRFS IOU is not included in the site-wide bioassessment monitoring at this time because the bioassessment monitoring program assesses the health of wadable stream systems and is not applicable to the Savannah River or Savannah River Swamp. Additionally, the lower portion of the SRS stream systems that ultimately discharge to the Savannah River are considered high integrity/healthy streams. Bioassessment monitoring continues to be collected from the SRFS IOU during Phase II of the IOU program through the Annual Savannah River Site Environmental Report monitoring. The data collected consists of freshwater fish samples that are analyzed for metals (antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, and zinc) and radionuclides (gross alpha, gross beta, cesium-137 and cobalt-60, strontium-90, technetium-99, and iodine-129). Sampling locations include upgradient of the SRS at the New Savannah Bluff Lock and Dam, at the mouth of UTR, FMB, SC, LTR, and the US 301 Bridge. Results of the fish sampling compare current levels to historical levels.

4.0 SCOPE OF BIOASSESSMENT MONITORING

Bioassessment is the collection of biological/ecological data that can be used to assess environmental conditions including, in the case of the IOU program, stream health. At SRS, bioassessment includes assessment and evaluation of organisms within a stream to assess biotic integrity: the ability of a stream to support self-sustaining biological communities and ecological processes typical of undisturbed, natural conditions.

SRS bioassessment monitoring was initiated in 1990 and is conducted periodically. Prior sampling data can be viewed in Tables 1 and 2. The SRS IOU bioassessment program includes three bioassessment methods: 1) the Index of Biotic Integrity (IBI) based on fish assemblage data collected from SRS streams by electrofishing (Paller et al. 1996); 2) the SCDES bioassessment protocol for macroinvertebrates collected from natural substrates in coastal plain streams referred to as the Multiple Habitat Sampling Protocol (MHSP) (SCDHEC[1] 1998); and 3) the collection of macroinvertebrates using Hester-Dendy artificial substrates (SCDHEC, 1998). The two macroinvertebrate-based methods are used in conjunction with the fish based IBI to provide a more comprehensive assessment of ecological conditions. Also, habitat data are collected from each stream to assist in determining whether ecological integrity was compromised by physical factors (e.g., erosion) or chemical factors (e.g., discharge of toxic materials).

Samples are collected from streams potentially impacted by SRS waste sites and industrial operations and reference streams largely free from SRS impacts.

The primary objectives of the SRS 2025 Bioassessment Periodic Report are to:

1. Present results from bioassessment sampling completed since 2019;
2. Assess changes in stream biotic health since the previous reporting period;

[1] South Carolina Department of Environmental Services was previously known as South Carolina Department of Health and Environmental Control (SCDHEC) prior to July 1, 2024.

3. Compare biotic integrity among SRS streams;
4. Update stream reach designation categories to reflect ongoing SRS activities; and
5. Present modifications to the implementation of bioassessment monitoring that could improve future monitoring and the interpretation of data generated.

Modifications to the implementation of the monitoring program will incorporate a long-term goal to make improvements in methodology, employing recommendations and adjustments, to appropriately assess long-term stream health of the SRS IOUs and utilize informative evaluation matrices.

4.1 2025 Bioassessment Data Collection

For the 2025 Bioassessment Report, fish data were collected following the IBI monitoring previously used and tailored to SRS coastal plain stream systems that were initiated in 1990. Macroinvertebrate community bioassessments were conducted using a modified SCDES MHSP and Hester-Dendy multiplate samplers. The 2025 Bioassessment Report includes historical and current sampling of fish and macroinvertebrates across 43 locations within 11 streams as presented in Table 1. Table 2 provides the results of sampling as described below. The bioassessment sampling locations across all IOUs are shown in Figure 3; individual sampling locations for each IOU are provided in Figures 4-7. Specific data collection methods include:

- Fish IBI assemblage sampling was conducted at each of 20 locations by backpack electrofishing, a total of 200 m (656 ft) per site, broken up into four 50 m (164 ft) stream segments. UTR was excluded from IBI fish sampling due to deep water conditions and fast currents that have previously influenced electrofishing data. IBI sampling was completed from June 27, 2022 and September 01, 2022.
- Macroinvertebrate community data was collected by two separate methods.
    - A modified, SRS-specific methodology based on the SCDES MHSP (1998) is used focusing on collecting as many unique species as possible at a sampling site based on a timed sampling approach.
    - MHSP samples were collected between November 2, 2022, to January 20, 2023.

- Hester-Dendy multiplate samplers were distributed to collect quantitative, comparative data between the different sampling sites in a stream.
- The Hester-Dendy artificial substrates are hung in each stream above the stream bottom limit specific effects of habitat on macroinvertebrate community composition. Two samplers from each site were submitted for macroinvertebrate identification.
- Hester-Dendy samplers were retrieved between May 8, 2023 and May 15, 2023.

- Habitat assessments were conducted and physicochemical parameters were collected at each sampling location including water temperature, pH, dissolved oxygen, and conductivity.

4.1.1 Fish Community Data Evaluation

Fish communities were analyzed using the IBI method established by Paller et al. (1996) specifically for the upper coastal plain of South Carolina and for the SRS. From the fish community data, ten individual metrics were calculated that relate to measures of species richness, species composition, trophic composition, indicator species, and abundance. Each parameter has an absolute value that is then binned into one of three scoring criteria: 1 (poor), 3 (medium), and 5 (best). The ten metrics are summed without any weighting and thus yield a maximum possible score of 50. In 2022, the metric for fish condition was not directly measured. However, while fish were being identified and counted, no abnormal or obviously diseased fish were noticed. Thus, the top score of 5 was assigned to each site for fish condition.

Macroinvertebrate Community Data Evaluation

For the MHSP, data were used to calculate two metrics (the Ephemeroptera Plecoptera, and Trichoptera [EPT]) taxonomic richness and MHSP BI) which generated an overall MHSP score. These metrics receive a score from 1.0 (poor) to 5.0 (best) which are then averaged to yield an overall MHSP score for stream bioclassification. This averaged score relates to the following bioclassifications: 4.5 – 5.0 is excellent, 3.5 – 4.4 is good, 2.5 – 3.4 is good-fair, 1.5 – 2.4 is fair, and 1.0 – 1.5 is poor. The two metrics that are averaged to produce the MHSP score are the EPT taxonomic richness (number of unique EPT taxa), corrected for stream width, and a MHSP BI value for the average pollution tolerance that is based on taxonomic identification and weighted by categorical abundance groups as described in the MHSP protocol (SCDHEC 1998; Lenat 1993). EPT species are generally known to be sensitive to poor water quality and habitat and the biotic index accounts for the sensitivity or tolerance across a wide range of taxa.

For the MHSP BI, higher values signify greater pollution tolerance, thus, the classification is inverted such that the BI for MHSP samples, or MHSP BI, has the following categories: < 5.42 = five, < 6 = four, < 6.67 = three, < 7.68 = two, > 7.68 = one.

Hester-Dendy samplers were analyzed for EPT richness (number of unique EPT taxa) and generate a Hester-Dendy BI. These metrics were evaluated independently and not combined. As with the MHSP BI, Hester-Dendy BI scores (and Biotic Index scores as a whole) represent pollution tolerance such that higher values indicate lower biotic integrity.

4.1.2 Habitat Assessment

Habitat assessments were conducted using two methods. Previous habitat assessments were conducted in 2003, 2007, and 2017, with the most recent being conducted in 2022. The EPA adapted approach, Revisions to Rapid Bioassessment Protocols for Use in Streams and Rivers, ascribes a rating from 1 to 20 for several variables, with lower scores indicating a poor rating (Barbour, Gerritsen, Snyder, and Stribling, 1999). The SC Aquatic Biology Section assessment (ABS) utilizes a rating of zero to five to assess five macroinvertebrate habitat categories (SCDHEC, 2017). These categories were root banks, logs/sticks/snags, rock/gravel riffle, mature leaf pack, and aquatic vegetation.

4.2 2025 Bioassessment Data Collection Results

Biotic integrity results are assessed temporally by plotting bioassessment scores for sites having at least three data points.

The range of fish IBI scores for reference or upgradient streams was measured to be between 36 and 50, with the 95% confidence interval between 41.6 and 46.7. These scores indicate high biotic integrity overall.

The range of MHSP scores for upgradient streams was measured to be between 3 and 5 (good-fair to excellent), with the 95% confidence interval between 3.94 and 4.59 (good to excellent).

The range of Hester-Dendy EPT scores for upgradient streams was measured to be between 1.6 and 3.8 for smaller streams and 3.5 to 10.5 for large streams. The range of Hester-Dendy BI scores for upgradient streams (excluding the lowest 5%) was measured to be between 5.5 and 6.6 for smaller streams and 3.7 and 5.7 for large streams. Hester-Dendy BI scores represent pollution tolerance such that higher values indicate lower biotic integrity.

Overall, most downgradient sites indicate biological recovery despite habitat assessment scores well below those of upgradient sites. There are several sampling sites, noted below, whose bioassessment results have indicated potential biotic integrity degradation over time.

4.2.1 Upper Three Runs IOU

Many downgradient sampling sites in UTR, McQueen Branch, and Mill Creek have exhibited consistent or mixed (within the range of values measured for upgradient sites) improvement for the measured metrics, indicating stable and recovering biotic integrity for those sites. Tinker Creek, an entirely upgradient stream, has continued to improve with regards to macroinvertebrate metrics (Table 2). However, Tims Branch and Crouch Branch both have exhibited signs of biotic integrity degradation.

Tims Branch, a tributary within the UTR IOU, has consistently shown signs of reduced and worsening biotic integrity. Since initial surveying in 1995, the IBI for downgradient sites within Tims Branch has exhibited steady declines (Figure 8), with site TB1 having consistent IBI's at or below the lowest limits of the upgradient range (Table 2). The Tims Branch TB1 site indicates a stream with declining fish community health that falls below the lowest range measured at upgradient sampling sites. Additionally, Tims Branch had MHSP scores consistently near the lowest limit or below the upgradient range (Table 2). Tims Branch was also the only site with a significant linear trend indicating a decrease in Hester-Dendy EPT richness score over time (Table 2). Hester-Dendy BI values collected for Tims Branch were also consistently high (poor) despite being within the upgradient range, correlating with lower biotic integrity (Table 2). Several explanations for this ongoing trend have been proposed. Tims Branch receives a significant amount of storm process water discharge from A/M area. High iron and low oxygen concentrations in surface waters may cause heavy flocs to form, which have been observed previously on the stream bottom. Tims Branch also has poor habitat with a hard, densely compacted stream bed that may make it difficult for stream communities to thrive. Evidence suggests that the poor biotic integrity in Tims Branch is related to impaired habitat, not contaminants sourced from SRS OUs.

Since 2009, the fish IBI metric for Crouch Branch has declined steadily (Figure 9), and in 2022 the macroinvertebrate metrics scored at the bottom of the upgradient stream range at sampling site CB2, but presence of pollution sensitive taxa present on the Hester-Dendy samplers ensured the BI landed below the upgradient upper limit range (Table 2). While Crouch Branch's mixed results are potentially attributable to SRS active operational sources of contamination, including releases of copper and other metal contaminants from the H-02 constructed wetland effluent in H-area, Crouch Branch has habitat alterations that contribute to this variation. The stream is incised and may experience flashy hydrology, or frequent changes in stream flow. That further contributes to an unstable stream bed, which may ultimately have greater effects on biotic integrity than potential contaminant introductions.

4.2.2 Fourmile Branch IOU

FMB historically received reactor cooling water discharge that scoured the stream beds, displaced habitat structure, and prevented biota establishment until 1985 due to the extreme temperature and velocity of the discharge.

Upper FMB did not support full biological recovery and sites along FMB were significantly lower in indices compared with upgradient sites. However, based on IBI of fish communities, FMB has consistently fallen within the range of upgradient sites (Table 2). The MHSP score for two sites at FB branch (FMB3 and FMB4) occurred below the lowest threshold of the upgradient site range (Table 2). However, collections from several FMB sites (FMB3, FMB4, FMB6) yielded fewer than 100 individuals per site, below that typically expected for the BI calculation. Additional data collection at these locations will be conducted to support the 2032 Bioassessment Report.

4.2.3 Pen Branch IOU

Indian Grave Branch was the only site with a significant linear trend and indicated an increase in MHSP score over time, and had higher IBI scores than upgradient sites. This indicates ecological recovery despite receiving cooling water reactor discharge in the past. One downgradient Pen

Branch sampling site (PB3) had a marginally significant increase in MHSP score over time as well (Table 2). An upward trend, especially for downgradient sites, has also been noted for the mean Hester-Dendy EPT and mean Hester-Dendy BI metrics despite relatively poor habitat assessment scores.

4.2.4 Steel Creek IOU

There was a decline in IBI in middle SC to below the range for upgradient sites. One explanation for this is the presence of L Lake which separates upper and lower SC. This poses as a barrier to fish movement. Macroinvertebrate metrics were also significantly below the mean for upgradient sites, though they fell within the range of those collected for upgradient sites, indicating slow biotic recovery.

Meyers Branch was moved to the downgradient site category due to stormwater runoff from the P-Area remediation that may now first traverse P-Area ash-related remediation units (P-Area Ash Basin (remediation complete) and Wetland Area at Dunbarton Bay (remediation complete). Despite fish and macroinvertebrate communities maintaining bioassessment scores within the upgradient range over the past eleven years, a decrease in absolute score was observed in the recent data. Meyers Branch may be susceptible to future declines in biological quality, which could be related to the transfer of sedimentation deposits and/or remobilized ash from P-Area ash-related remediation units into upper Meyers Branch.

4.3 Summary

Results from the 2025 bioassessment sampling and data analyses indicate IOU conditions need to continue to be monitored to assess conditions and long-term trends.

Overall, there are no indications from the most recent bioassessment evaluation that any declines in ecological health are related to SRS OU impacts. SRS recommends a walk-down of potential stormwater impacts to Meyers Branch (SC IOU) to assess erosion and/or the potential for ash redeposition from P-Area ash-related OUs, particularly stormwater flow from around P-Area Ash Basin and the Wetland Area at Dunbarton Bay that may potentially reach Meyers Branch.

Implementation of the current SRS bioassessment approach revealed some areas of possible improvement. Recommended modifications to the monitoring program, if appropriate, based on this approach include the following:

1. Conduct sampling on a standardized seasonal timeframe to reduce seasonal related variability, and use the same sampling locations unless impracticable.
2. Tailor the macroinvertebrate MHSP sampling procedure to address a full characterization of represented habitats rather than rely on a specified time commitment to conduct the sampling. Also, inclusion and consideration of rare species should be considered in calculating the BI based on macroinvertebrate assemblages or by further adjusting the "bioassessment water quality rating" as also indicated below.
3. Incorporate metrics or an adjustment to the bioassessment water quality rating (IBI) that explicitly consider the distribution, ecology, and conservation value of a species to provide a clearer picture of the drivers of community change of SRS fishes.

5.0 IOU STRATEGY

No portion of the five remaining IOUs has been identified for acceleration into Phase III. Continued bioassessment monitoring and reporting in Phase II is necessary to continue to assess long-term stream health of the IOUs. Modifications to the implementation of the current bioassessment monitoring program have been identified above. Given Core Team agreement with the approach to be presented in the 2025 Bioassessment Report, these recommendations will be implemented. Also, if conditions within an IOU change, warranting consideration for additional bioassessment sample collection or investigation, the Core Team will be notified and a path forward will be determined as deemed warranted by the Core Team.

The Revision 0 2025 Periodic Report on the Bioassessment of Savannah River Site Streams will be submitted to the EPA and SCDES by September 30, 2025 for a 120-day review period. The next Periodic Report on the Bioassessment of Savannah River Site Streams will be due in 2032.

6.0 REFERENCES

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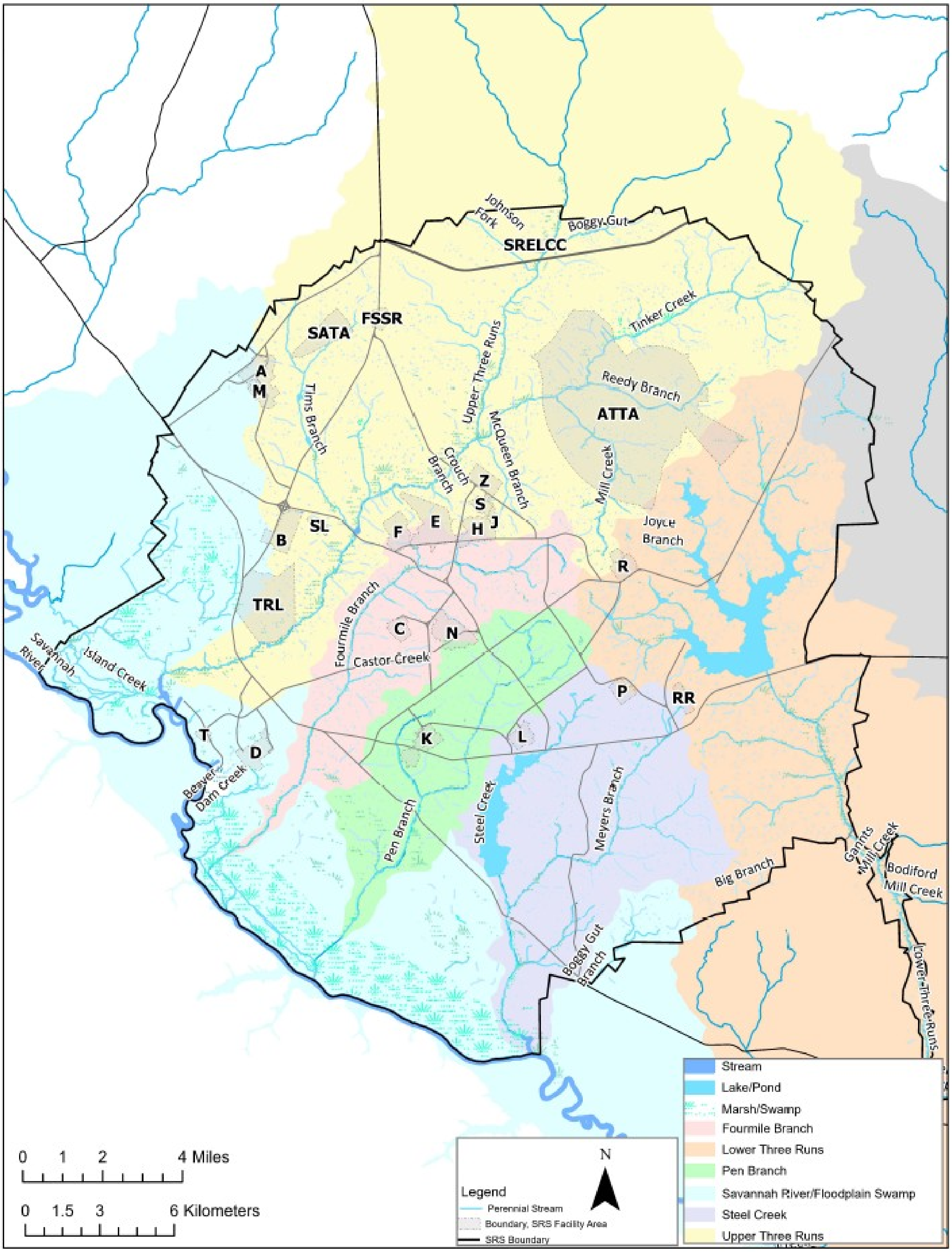

Figure 1. Savannah River Site Integrator Operable Units

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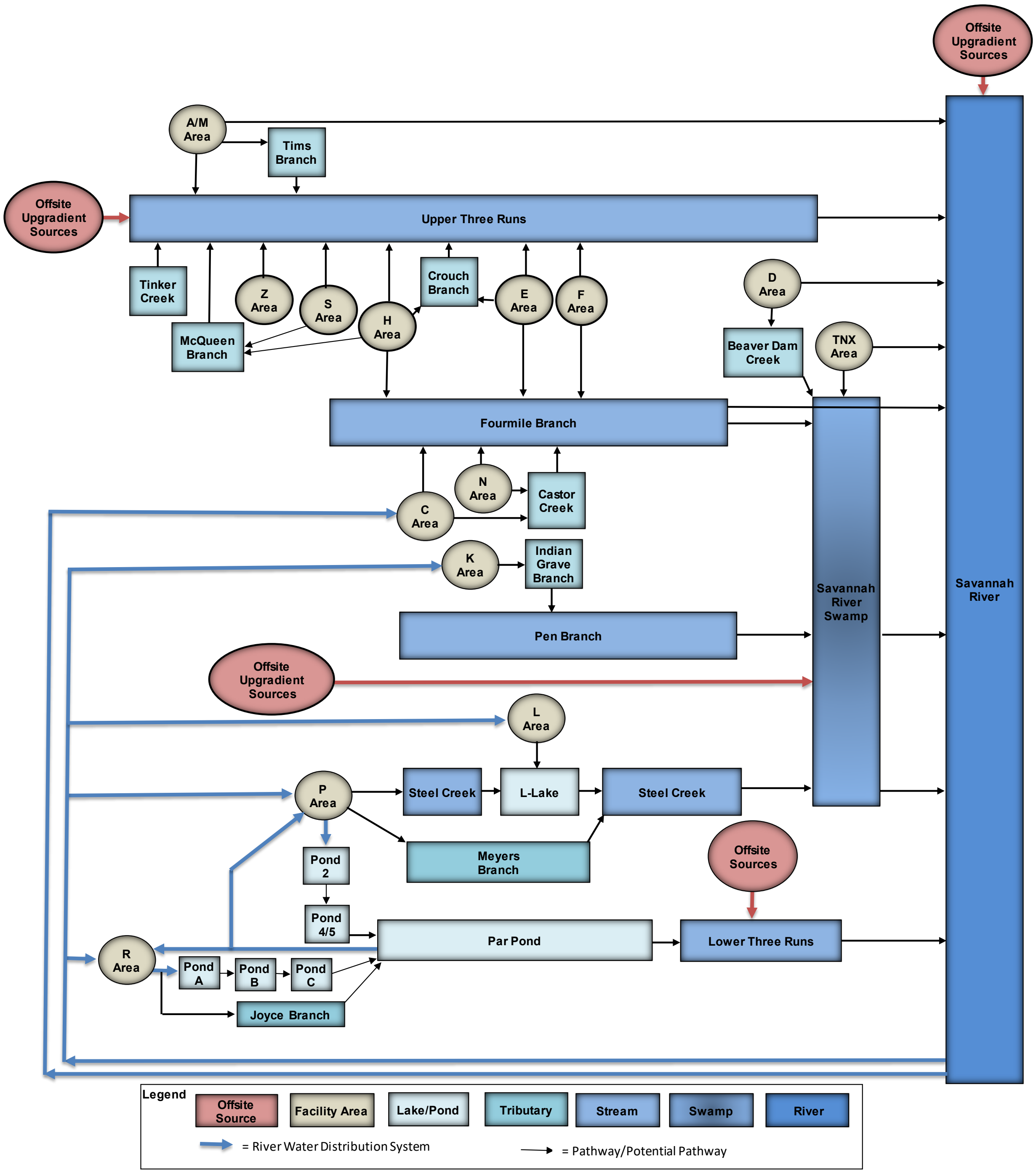

Figure 2. Overall Conceptual Site Model for the SRS IOUs

Figure 3. Bioassessment Sampling Locations

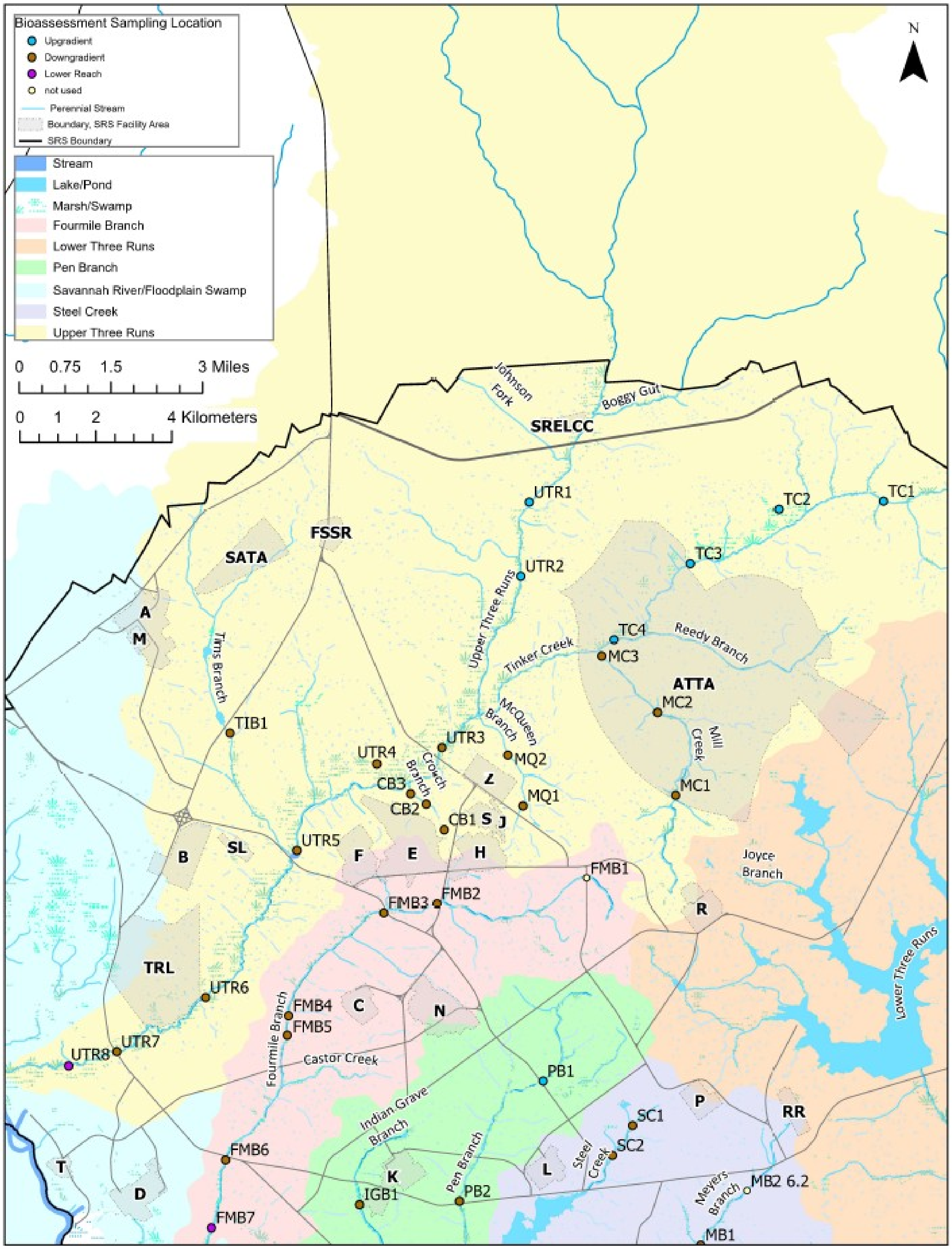

Figure 4. Upper Three Runs IOU

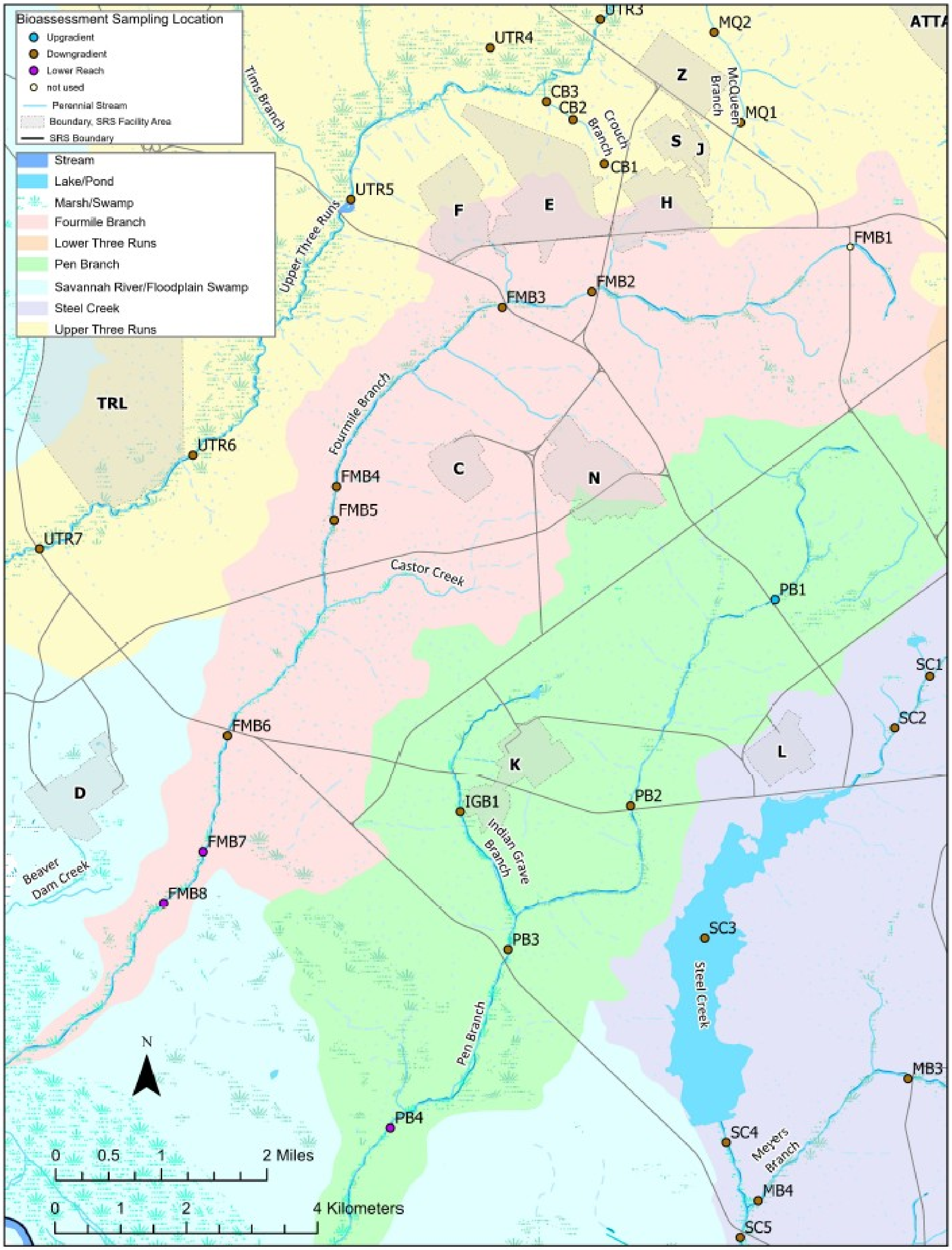

Figure 5. Fourmile Branch IOU

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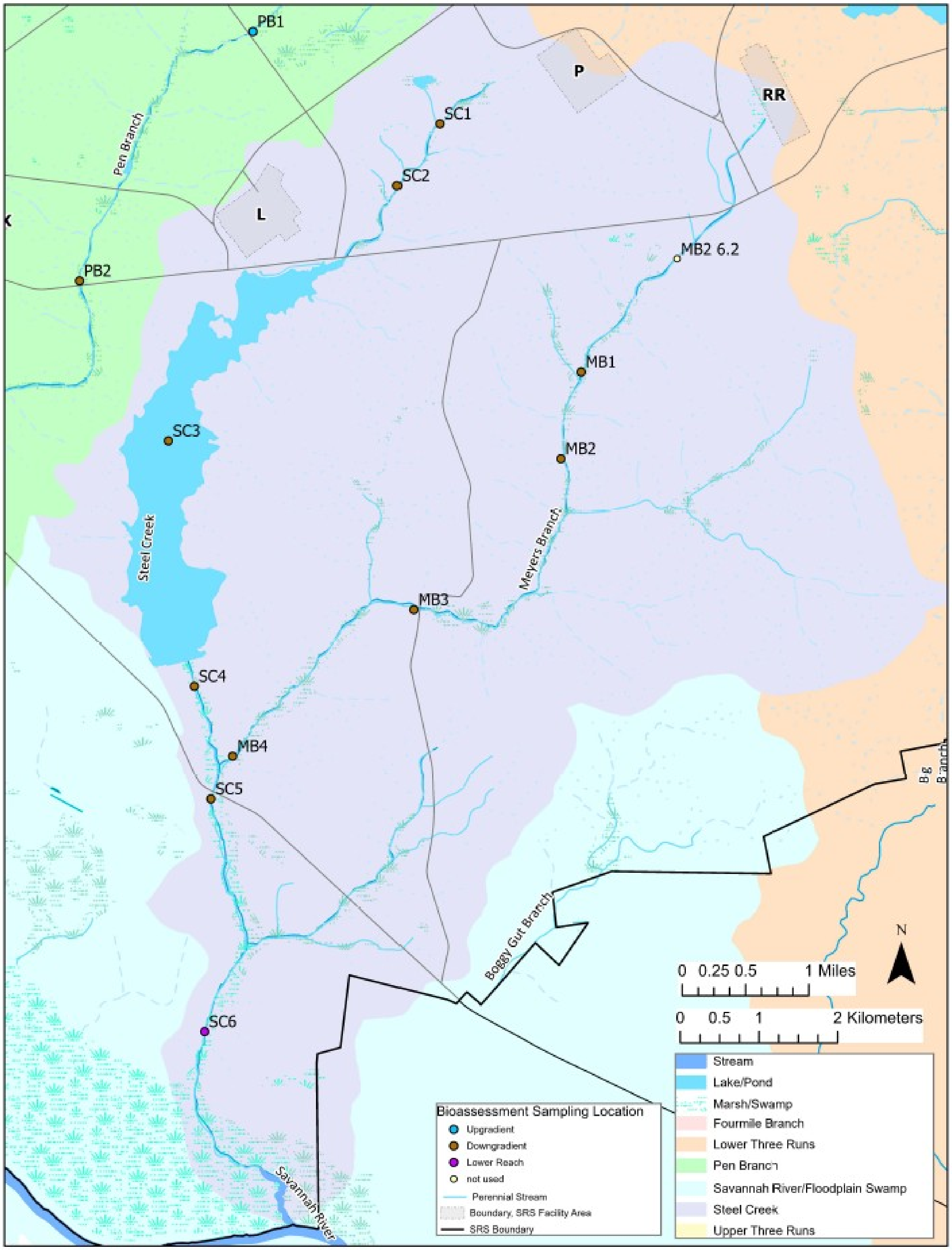

Figure 6. Pen Branch IOU

Figure 7. Steel Creek IOU

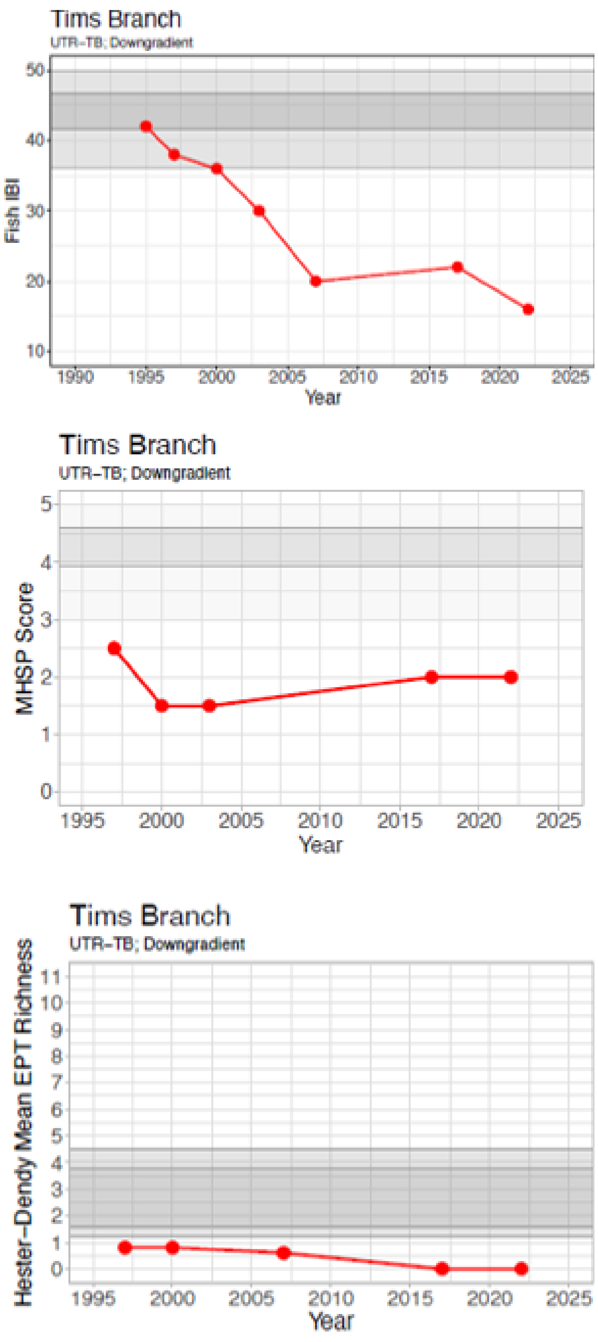

Figure 8. 2022/2023 Bioassessment Data Summary for Tims Branch

Graph 1: IBI trends in SRS streams over time. Subtitles indicated Integrator Operable Unit and whether the sample sites were upgradient (blue) or down gradient (red/brown) of potential impacts or were at the lowest stream reaches (purple). The light grey box indicates the range of upgradient IBIs minus the lowest 5% and the dark grey is the 95% confidence interval of the upgradient range.

Graph 2: MHSP trends in SRS streams as average MHSP scores over time.

Graph 3: Hester-Dendy EPT trends in SRS streams as average number of unique EPT taxa (richness) over time. Subtitles indicate Integrator Operable Unit (IOU)s and whether the sample sites were upgradient (blue) or down gradient (red/brown) of potential impacts or at the lowest stream reaches (purple). Light grey box indicates the upgradient range minus the lowest 5%, and dark grey box indicates the 95% confidence interval (CI) of the upgradient range.

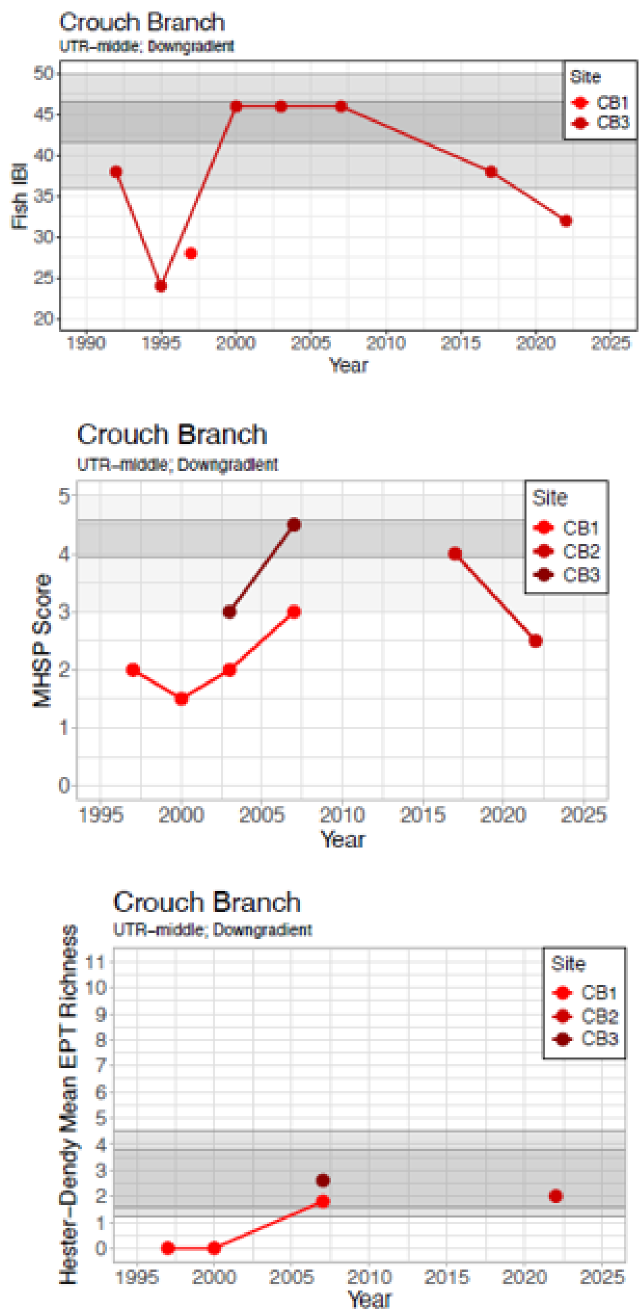

Figure 9. 2022/2023 Bioassessment Data Summary for Crouch Branch

Graph 1: IBI trends in SRS streams over time. Subtitles indicated Integrator Operable Unit and whether the sample sites were upgradient (blue) or down gradient (red/brown) of potential impacts or were at the lowest stream reaches (purple). The light greybox indicates the range of upgradient IBIs minus the lowest 5% and the dark grey is the 95% confidence interval of the upgradient range.

Graph 2: MHSP trends in SRS streams as average MHSP scores over time.

Graph 3: Hester-Dendy EPT trends in SRS streams as average number of unique EPT taxa (richness) over time. Subtitles indicate Integrator Operable Unit (IOU)s and whether the sample sites were upgradient (blue) or down gradient (red/brown) of potential impacts or at the lowest stream reaches (purple). Light grey box indicates the upgradient range minus the lowest 5%, and dark grey box indicates the 95% confidence interval (CI) of the upgradient range.

ARF-025134
SRNS-RP-2025-00853

Table 1. Sampling Locations for Fish and Macroinvertebrate Surveys

IOU	Stream	Stream abbrev.	IOU subunit	Type	Location	Latitude	Longitude	Site Code	Longitudinal Order
Fourmile Branch	Fourmile Branch	FMB	FMB-upper	*	Rd F	33.2809843	-81.6118631	FMB1	1
		FMB	FMB-middle	D	Rd 4	33.2746087	-81.6541117	FMB2	2
		FMB	FMB-middle	D	Rd C	33.2723646	-81.6687777	FMB3	3
		FMB	FMB-middle	D	RD A-6	33.2478241	-81.6954815	FMB4	4
		FMB	FMB-middle	D	RD A-7	33.2431886	-81.6958227	FMB5	5
		FMB	FMB-lower	D	Rd A	33.2135086	-81.7130537	FMB6	6
		FMB	FMB-lower	L	Rd A Railroad	33.1973771	-81.7169048	FMB7	7
		FMB	FMB-lower	L	Rd A13.2	33.1902566	-81.7232807	FMB8	8
Pen Branch	Indian Grave Branch	IGB	PB-IGB	D	Near cooling tower site	33.2031390	-81.6751047	IGB1	1
	Pen Branch	PB	PB-upper	U	Rd C	33.2326956	-81.6238207	PB1	1
		PB	PB-middle	D	Rd B	33.2040806	-81.6472527	PB2	2
		PB	PB-lower	D	Rd A	33.1842586	-81.667164	PB3	3
		PB	PB-lower	L	Rd A13.2	33.1596746	-81.6859847	PB4	4
Steel Creek	Meyers Branch	MB	SC-MB	D	Headwaters	33.194	-81.579	MB1	1
		MB	SC-MB	D	Old Dunbarton Rd	33.1842206	-81.5816878	MB2	2
		MB	SC-MB	*	Rd 6.2 (upper)	33.207	-81.566	MB0	3
		MB	SC-MB	D	Rd 9	33.1668686	-81.6016128	MB3	3
		MB	SC-MB	D	Boardwalk	33.1507282	-81.6264100	MB4	4
	Steel Creek	SC	SC-upper	D	P area	33.2222904	-81.5984301	SC1	1
		SC	SC-upper	D	Rd C	33.2151826	-81.6041088	SC2	2
		SC	SC-upper	D	Rd B-5	33.186	-81.635	SC3	3
		SC	SC-middle	D	below L Lake dam	33.1579691	-81.6312759	SC4	4
		SC	SC-lower	D	Rd A	33.1449526	-81.6289057	SC5	5
		SC	SC-lower	L	Cypress Bridge below	33.1183386	-81.6295828	SC6	6
Upper Three Runs	Upper Three Runs	UTR	UTR-upper	U	Rd 8-1	33.3703505	-81.6286933	UTR1	1
		UTR	UTR-upper	U	Tyler Bridge Rd	33.3527690	-81.630973	UTR2	2
		UTR	UTR-lower	D	Rd F-5	33.312	-81.653	UTR3	3
		UTR	UTR-lower	D	Rd F-4	33.3017288	-81.6740103	UTR4	4
		UTR	UTR-lower	D	Rd C	33.2870491	-81.6934380	UTR5	5
		UTR	UTR-lower	D	Cato Rd	33.252	-81.719	UTR6	6

*excluded from analysis due to poor habitat quality

Table 2. Sampling Data Summary

					Fish Data			MHSP Data			Hester-Dendy Samplers			
Stream abbrev.	IOU subunit	Type	Site Code	Sample Year	Reach length	No. passes	IBI	EPT score	BI score	MHSP	# samplers	Mean BI	Mean # EPT	Mean # taxa
FMB	FMB-upper	*	FMB1	1997	NA	NA	NA	2	2	2	5	8.1	0	1
		*	FMB1	2000	NA	NA	NA	2	1	1.5	5	8.8	0.4	4
	FMB-middle	D	FMB2	1997	150	1	20	NA	NA	NA	NA	NA	NA	NA
		D	FMB2	2003	NA	NA	NA	3	2	2.5	NA	NA	NA	NA
		D	FMB2	2007	NA	NA	NA	NA	NA	NA	5	7.8	2.6	16.4
		D	FMB3	1997	150	1	40	1	3	2	5	7.1	0.2	2.8
		D	FMB3	2000	150	1	44	1	2	1.5	5	6.5	1.6	9.6
		D	FMB3	2003	150	1	46	NA	NA	NA	NA	NA	NA	NA
		D	FMB3	2007	NA	NA	NA	NA	NA	NA	5	7.2	1	8.4
		D	FMB3	2022	200	3	46	1	2	1.5	2	4.54	4.5	6.5
		D	FMB4	2000	150	1	44	1	2	1.5	5	6.6	3	10.8
		D	FMB4	2003	150	1	48	NA	NA	NA	NA	NA	NA	NA
		D	FMB4	2007	NA	NA	NA	NA	NA	NA	5	7.5	2.2	15.6
		D	FMB4	2017	200	2	50	3	3	3	2	6	6	16.5
		D	FMB4	2022	200	3	46	3	2	2.5	2	5.9	4.5	12.5
		D	FMB5	1990	250	7	36	NA	NA	NA	NA	NA	NA	NA
		D	FMB5	1997	150	1	42	2	3	2.5	5	6.4	5.6	11
		D	FMB5	2003	NA	NA	NA	3	3	3	NA	NA	NA	NA
		D	FMB5	2007	150	1	46	NA	NA	NA	5	6	3.2	19
	FMB-lower	D	FMB6	1997	150	1	44	2	2	2	5	5.9	2.8	5.8
		D	FMB6	2000	150	1	50	2	2	2	5	6.5	3.4	17.2
FMB	FMB-lower	D	FMB6	2003	150	1	40	4	3	3.5	NA	NA	NA	NA
		D	FMB6	2007	NA	NA	NA	3	2	2.5	5	6.4	3.4	19.4
		D	FMB6	2022	200	3	36	NA	NA	NA	NA	NA	NA	NA
		L	FMB7	2022	NA	NA	NA	3	3	3	2	5.6	3.5	10
		L	FMB8	1995	173	5	42	NA	NA	NA	NA	NA	NA	NA
		L	FMB8	2007	150	1	50	4	4	4	5	5.3	10.2	27.2
		L	FMB8	2017	200	2	34	5	5	5	2	4.7	4	11
		L	FMB8	2022	200	3	36	4	4	4	2	4.8	4.5	7.5
IGB	PB-IGB	D	IGB1	1997	150	1	48	3	2	2.5	5	6.6	1.4	6.6
		D	IGB1	2000	150	1	48	3	2	2.5	5	7	3.2	13.8
		D	IGB1	2003	150	1	48	3	3	3	NA	NA	NA	NA
		D	IGB1	2007	150	1	44	4	2	3	5	7.4	1.8	12.3
		D	IGB1	2017	200	2	50	4	4	4	2	6.2	2.5	11
		D	IGB1	2022	200	3	44	5	5	5	2	5.7	4.5	7.5
PB	PB-upper	U	PB1	1995	300	5	46	NA	NA	NA	NA	NA	NA	NA

					Fish Data			MHSP Data			Hester-Dendy Samplers			
Stream abbrev.	IOU subunit	Type	Site Code	Sample Year	Reach length	No. passes	IBI	EPT score	BI score	MHSP	# samplers	Mean BI	Mean # EPT	Mean # taxa
		U	PB1	1997	150	1	50	4	3	3.5	5	5.5	3.8	5.4
		U	PB1	2000	150	1	50	2	2	2	5	5.8	3.6	10.2
		U	PB1	2003	150	1	42	4	5	4.5	NA	NA	NA	NA
		U	PB1	2007	150	1	44	2	2	2	5	7.3	1.6	7.2
		U	PB1	2009	150	2	42	NA	NA	NA	NA	NA	NA	NA
		U	PB1	2017	200	2	40	5	5	5	2	6.6	1	6
		U	PB1	2022	200	3	36	4	4	4	2	5.8	2.5	11
	PB-middle	D	PB2	1990	200	7	42	NA	NA	NA	NA	NA	NA	NA
		D	PB2	1995	300	5	50	NA	NA	NA	NA	NA	NA	NA
		D	PB2	1997	150	1	46	3	3	3	5	5.2	4.2	8.8
		D	PB2	2000	150	1	50	3	4	3.5	5	4.7	5.2	14.6
		D	PB2	2003	150	1	50	2	4	3	NA	NA	NA	NA
PB	PB-middle	D	PB2	2007	150	1	44	5	3	4	5	5.4	3.2	10.6
		D	PB2	2009	200	2	50	NA	NA	NA	NA	NA	NA	NA
		D	PB2	2017	200	2	50	4	5	4.5	2	5.4	6	13.5
		D	PB2	2022	200	3	42	3	4	3.5	2	5.2	6	14
	PB-lower	D	PB3	1990	160	7	30	NA	NA	NA	NA	NA	NA	NA
		D	PB3	1995	240	5	44	NA	NA	NA	NA	NA	NA	NA
		D	PB3	1997	150	1	48	2	2	2	5	6.5	1	7.4
		D	PB3	2000	NA	NA	NA	3	3	3	5	5.9	7	19.8
		D	PB3	2003	NA	NA	NA	2	3	2.5	NA	NA	NA	NA
		D	PB3	2007	NA	NA	NA	4	2	3	5	6.7	8.4	25.8
		D	PB3	2022	200	3	42	3	4	3.5	2	5.7	6.5	12.5
		L	PB4	1990	100	6	24	NA	NA	NA	NA	NA	NA	NA
		L	PB4	2000	150	1	46	NA	NA	NA	NA	NA	NA	NA
		L	PB4	2003	150	1	46	NA	NA	NA	NA	NA	NA	NA
		L	PB4	2007	150	1	48	5	4	4.5	5	5.5	7.4	19.8
		L	PB4	2017	200	2	46	3	5	4	2	5.8	6	16
		L	PB4	2022	200	3	42	5	4	4.5	2	4.8	9	14
MB	SC-MB	D	MB1	2009	160	2	40	NA	NA	NA	NA	NA	NA	NA
		D	MB2	1990	400	7	44	NA	NA	NA	NA	NA	NA	NA
		D	MB2	1997	150	1	46	5	4	4.5	5	4.8	3.2	8.2
		D	MB2	2000	150	1	46	4	2	3	5	6.5	3.6	19.2
		D	MB2	2003	150	1	50	3	2	2.5	NA	NA	NA	NA
		D	MB2	2007	150	1	50	5	4	4.5	5	6.1	1.8	7.4
		D	MB2	2009	200	2	48	NA	NA	NA	NA	NA	NA	NA
		D	MB2	2017	200	2	46	NA	NA	NA	NA	NA	NA	NA
		D	MB2	2022	200	3	42	5	3	4	2	5.1	5	11
		*	MB0	2003	NA	NA	NA	2	1	1.5	NA	NA	NA	NA

					Fish Data			MHSP Data			Hester-Dendy Samplers			
Stream abbrev.	**IOU subunit**	**Type**	**Site Code**	**Sample Year**	**Reach length**	**No. passes**	**IBI**	**EPT score**	**BI score**	**MHSP**	**# samplers**	**Mean BI**	**Mean # EPT**	**Mean # taxa**
		D	MB3	1990	140	7	50	NA	NA	NA	NA	NA	NA	NA
MB	SC-MB	D	MB3	1995	300	4	38	NA	NA	NA	NA	NA	NA	NA
		D	MB3	2007	NA	NA	NA	5	4	4.5	5	4.8	5.6	13.8
		D	MB3	2017	NA	NA	NA	4	5	4.5	2	5.5	7.5	15.5
		D	MB3	2022	200	3	42	5	4	4.5	2	4.9	5	9.5
		D	MB4	1990	300	7	44	NA	NA	NA	NA	NA	NA	NA
SC	SC-upper	D	SC1	1996	150	1	28	NA	NA	NA	NA	NA	NA	NA
		D	SC1	2003	NA	NA	NA	3	4	3.5	NA	NA	NA	NA
		D	SC1	2007	NA	NA	NA	NA	NA	NA	5	8.1	0	8
		D	SC2	1997	150	1	28	3	2	2.5	5	5.8	1.6	4.2
		D	SC2	2000	150	1	22	4	5	4.5	5	5	5.6	9.4
		D	SC2	2003	150	1	28	NA	NA	NA	NA	NA	NA	NA
		D	SC2	2007	150	1	22	NA	NA	NA	5	5.6	5.2	17.4
		D	SC2	2017	200	2	22	4	3	3.5	2	5.5	3.5	10
		D	SC2	2022	200	3	20	3	4	3.5	2	5.8	3	8.5
		D	SC3	1990	220	5	28	NA	NA	NA	NA	NA	NA	NA
	SC-middle	D	SC4	2007	NA	NA	NA	2	3	2.5	5	6.3	5	22
	SC-lower	D	SC5	1990	180	7	32	NA	NA	NA	NA	NA	NA	NA
		D	SC5	1996	180	7	39	NA	NA	NA	NA	NA	NA	NA
		D	SC5	2000	180	7	45	NA	NA	NA	NA	NA	NA	NA
		D	SC5	2003	150	1	46	NA	NA	NA	NA	NA	NA	NA
		D	SC5	2007	150	1	46	5	3	4	5	5.9	4.6	18.8
		D	SC5	2017	200	2	48	3	4	3.5	2	4.9	8.5	14.5
		D	SC5	2022	200	3	34	4	4	4	2	5	6.5	13
		L	SC6	1990	340	3	24	NA	NA	NA	NA	NA	NA	NA
		L	SC6	2022	200	3	36	3	4	3.5	2	5.3	4.5	10.5
CB	UTR-middle	D	CB1	1997	150	1	28	2	2	2	5	8.9	0	1.2
		D	CB1	2000	NA	NA	NA	2	1	1.5	5	5.4	0	6
		D	CB1	2003	NA	NA	NA	2	2	2	NA	NA	NA	NA
CB	UTR-middle	D	CB1	2007	NA	NA	NA	3	3	3	5	9.4	1.8	6
		D	CB2	1995	281	5	24	NA	NA	NA	NA	NA	NA	NA
		D	CB2	2017	200	2	38	4	4	4	NA	NA	NA	NA
		D	CB2	2022	200	3	32	2	3	2.5	2	6.3	2	5.5
		D	CB3	1992	300	5	38	NA	NA	NA	NA	NA	NA	NA
		D	CB3	2000	150	1	46	NA	NA	NA	NA	NA	NA	NA
		D	CB3	2003	150	1	46	3	3	3	NA	NA	NA	NA
		D	CB3	2007	150	1	46	4	5	4.5	5	5.1	2.6	8.2
MC	UTR-TC	D	MC1	2003	NA	NA	NA	3	4	3.5	NA	NA	NA	NA

Stream abbrev.	IOU subunit	Type	Site Code	Sample Year	Fish Data: Reach length	Fish Data: No. passes	Fish Data: IBI	MHSP Data: EPT score	MHSP Data: BI score	MHSP Data: MHSP	Hester-Dendy Samplers: # samplers	Hester-Dendy Samplers: Mean BI	Hester-Dendy Samplers: Mean # EPT	Hester-Dendy Samplers: Mean # taxa
		D	MC1	2009	150	2	34	NA	NA	NA	NA	NA	NA	NA
		D	MC1	2022	200	3	34	5	5	5	2	5.4	3.5	7
		D	MC2	1990	280	3	40	NA	NA	NA	NA	NA	NA	NA
		D	MC2	1997	150	1	40	4	4	4	5	4.9	3.8	6.4
		D	MC2	2000	150	1	40	5	5	5	5	5.7	6.2	15.4
		D	MC2	2003	150	1	50	5	4	4.5	NA	NA	NA	NA
		D	MC2	2007	NA	NA	NA	2	1	1.7	5	8.2	2.6	16
		D	MC3	1990	320	7	48	NA	NA	NA	NA	NA	NA	NA
		D	MC3	2007	150	1	48	3	2	2.5	5	5.5	6	14
		D	MC3	2017	NA	NA	NA	5	5	5	NA	NA	NA	NA
		D	MC3	2022	200	3	44	5	5	5	2	4.8	6.5	13.5
MQ	UTR-TC	D	MQ1	2000	NA	NA	NA	2	3	2.5	5	7.3	0	2.4
		D	MQ1	2000	150	1	34	NA	NA	NA	NA	NA	NA	NA
		D	MQ1	2003	150	1	36	NA	NA	NA	NA	NA	NA	NA
		D	MQ1	2007	150	1	42	4	4	4	5	6.5	3	14.8
		D	MQ1	2022	200	3	40	NA	NA	NA	NA	NA	NA	NA
		D	MQ2	1990	350	7	42	NA	NA	NA	NA	NA	NA	NA
		D	MQ2	1997	150	1	44	5	5	5	5	5.2	2.4	3.8
		D	MQ2	2003	NA	NA	NA	5	5	5	NA	NA	NA	NA
		D	MQ2	2007	NA	NA	NA	4	1	2.5	5	7.4	0.6	17.2
		D	MQ2	2009	150	2	36	NA	NA	NA	NA	NA	NA	NA
		D	MQ2	2022	NA	NA	NA	5	3	4	2	5.7	4.5	10
TC		U	TC1	1990	300	7	50	NA	NA	NA	NA	NA	NA	NA
		U	TC1	1992	300	7	40	NA	NA	NA	NA	NA	NA	NA
		U	TC1	1995	241.5	4	44	NA	NA	NA	NA	NA	NA	NA
		U	TC1	2003	150	1	46	4	3	3.5	NA	NA	NA	NA
		U	TC1	2007	150	1	48	3	3	3	5	4.9	4.5	11.5
		U	TC1	2017	200	2	42	NA	NA	NA	2	5.4	4	12
		U	TC1	2022	200	3	34	5	5	5	2	4.8	10.5	16
		U	TC2	2009	210	2	50	NA	NA	NA	NA	NA	NA	NA
		U	TC3	1990	240	7	36	NA	NA	NA	NA	NA	NA	NA
		U	TC4	1990	360	5	36	NA	NA	NA	NA	NA	NA	NA
		U	TC4	2003	NA	NA	NA	5	4	4.5	NA	NA	NA	NA
		U	TC4	2007	NA	NA	NA	5	5	5	5	5.7	4.2	14
TC		U	TC4	2017	NA	NA	NA	5	5	5	NA	NA	NA	NA
TB	UTR-TB	D	TIB1	1995	294	4	42	NA	NA	NA	NA	NA	NA	NA
		D	TIB1	1997	150	1	38	2	3	2.5	5	6.7	0.8	6.5
		D	TIB1	2000	150	1	36	1	2	1.5	5	7.8	0.8	4
		D	TIB1	2003	150	1	30	2	1	1.5	NA	NA	NA	NA
		D	TIB1	2007	150	1	20	NA	NA	NA	5	8.3	0.6	5.4

					Fish Data			MHSP Data			Hester-Dendy Samplers			
Stream abbrev.	**IOU subunit**	**Type**	**Site Code**	**Sample Year**	**Reach length**	**No. passes**	**IBI**	**EPT score**	**BI score**	**MHSP**	**# samplers**	**Mean BI**	**Mean # EPT**	**Mean # taxa**
		D	TIB1	2017	200	2	22	2	2	2	2	7.8	0	4.5
		D	TIB1	2022	200	3	16	1	3	2	2	6.1	0	3.5
UTR	UTR-upper	U	UTR1	1992	300	4	38	NA	NA	NA	NA	NA	NA	NA
		U	UTR1	1997	150	1	32	4	5	4.5	5	3.7	6	9.6
		U	UTR1	2000	NA	NA	NA	4	5	4.5	5	5.5	3	13.4
		U	UTR1	2003	150	1	24	NA	NA	NA	NA	NA	NA	NA
UTR	UTR-upper	U	UTR1	2007	NA	NA	NA	4	4	4	5	5.9	7.2	23.4
		U	UTR2	1992	300	6	28	NA	NA	NA	NA	NA	NA	NA
		U	UTR2	1998	150	1	26	NA	NA	NA	NA	NA	NA	NA
		U	UTR2	2003	NA	NA	NA	4	3	3.5	NA	NA	NA	NA
		U	UTR2	2007	150	1	32	4	4	4	5	4.2	7.2	23
		U	UTR2	2017	NA	NA	NA	5	5	5	2	4.6	3.5	11.5
		U	UTR2	2022	NA	NA	NA	3	5	4	2	5.9	5.5	16
	UTR-lower	D	UTR3	1992	300	7	44	NA	NA	NA	NA	NA	NA	NA
		D	UTR4	1992	300	6	38	NA	NA	NA	NA	NA	NA	NA
		D	UTR5	1992	300	7	46	NA	NA	NA	NA	NA	NA	NA
		D	UTR5	1995	200	4	34	NA	NA	NA	NA	NA	NA	NA
		D	UTR5	1997	NA	NA	NA	4	5	4.5	5	4.8	7	14.4
		D	UTR5	2000	NA	NA	NA	4	5	4.5	5	5.8	5	14
		D	UTR5	2003	150	1	46	2	5	3.5	NA	NA	NA	NA
		D	UTR5	2007	NA	NA	NA	4	5	4.5	5	4.9	10.6	25
		D	UTR5	2017	NA	NA	NA	3	5	4	NA	NA	NA	NA
		D	UTR5	2022	NA	NA	NA	2	5	3.5	2	3.5	6.5	12
		D	UTR6	1992	300	5	44	NA	NA	NA	NA	NA	NA	NA
		D	UTR7	1992	300	6	36	NA	NA	NA	NA	NA	NA	NA
		L	UTR8	1998	150	1	34	NA	NA	NA	NA	NA	NA	NA
		L	UTR8	2000	150	1	44	NA	NA	NA	NA	NA	NA	NA
		L	UTR8	2003	150	1	42	NA	NA	NA	NA	NA	NA	NA
		L	UTR8	2007	150	1	44	5	5	5	5	5.5	7	19.2
UTR	UTR-lower	L	UTR8	2017	NA	NA	NA	5	5	5	2	4.6	7	13.5
		L	UTR8	2022	NA	NA	NA	4	5	4.5	2	4.4	4.5	6

Collated data across all sampling periods and sample types. Included are the stream abbreviation, subunit of the IOU, station type (upgradient [U], potentially impacted by SRS waste sites or operations (downgradient [D]), or potentially in recovery from SRS impacts (lowest reaches [L]), the year sampled and then data from fish surveys (reach length, number of passes, and IBI value), macroinvertebrate Multiple Habitat Sampling Protocol (MHSP) surveys (EPT [Ephemeroptera Plecoptera, and Trichoptera] score, BI (Biotic Index), and MHSP scores), and macroinvertebrate Hester-Dendy Sampler surveys (the number of samplers deployed at each site; and the mean Biotic Index (BI) value, total number of EPT taxa, and total number of taxa for all samplers at each site).

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Table 3. Record of Core Team Agreements

Record of Core Team Agreements	
Date	**Description of Agreement**
3/21/2019	Core Team agreed to replace submittal of all future Phase II Periodic Reports (including PR5 for the Pen Branch IOU due in September 2019) with the Bioassessment of Streams on the Savannah River Site report submitted every 7 years beginning in 2025. (Reference: Scoping Summary for Optimization of the SRS IOU Program, ERD-EN-2019-0007, March 2019 [Final])
	Core Team agreed to scope the contents of the Bioassessment of Streams on the Savannah River Site report in early FY2020 including submittal frequency for future reports. (Reference: Scoping Summary for T of the SRS IOU Program, ERD-EN-2019-0007, March 2019 [Final])
11/5/2019	Core Team agreed with the proposed Bioassessment of Streams on the Savannah River Site report outline and contents as presented at the Adobe webcast meeting held on November 11, 2019. (Reference: Draft Format and Content Template for the 20XX Periodic Report on the Bioassessment of Savannah River Streams)

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