Summary of Comments on the Draft 2014 305(b)/303(d) List

1. **Comment:** Upatoi Creek (R031300030303) from Heriot Creek to Armory Creek has a designated use of "Drinking Water" in the draft 2014 list, but had a designated use of "Fishing" on the 2012 list. This creek is currently not used as a drinking water source and the change in designated use will complicate the TMDL which is scheduled to be drafted in 2017.

Response: The designated uses provided in the 305(b)/303(d) list have to match the uses provided in Georgia's Rules and Regulations for Water Quality Control. Drinking Water was added as a use for Upatoi Creek in Georgia's Rules and Regulations for Water Quality Control during Georgia's 2010 Triennial Review. The changes made to designated uses during this Triennial Review were not approved by U.S. EPA until after the final 2012 305b/303d list was submitted to U.S. EPA which is why the change in uses was not reflected in the 2012 list, but were included on the 2014 305(b)/303(d) list of waters. While Uptaoi Creek may not currently be used as a drinking water source, Federal Regulations require that a State's designated uses protect uses that existed in a waterbody on or after November 28, 1975. Therefore if the Creek was used as a drinking water source since 1975, then it is appropriate that EPD include Drinking Water as a designated use. The change in uses should not complicate the development of the TMDL for fecal coliform bacteria since the water quality criteria for fecal coliform bacteria are the same whether the use is Fishing or Drinking Water.

2. **Comment**: Rocky Branch (R031300030102) was placed in Category 4a on the draft 2014 list. Category 3 is more appropriate since the data from the City of Columbus did not show that the stream meets the criteria for impairment for fecal coliform bacteria. In addition, the TMDL completed in 2003 for fecal coliform bacteria may not apply.

Response: Georgia's water quality criteria for fecal coliform bacteria for waters with a designated use of Fishing are as follows: for the months of May through October, fecal coliform are not to exceed a geometric mean of 200 per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. For the months of November through April, fecal coliform are not to exceed a geometric mean of 1,000 per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours and are not to exceed a maximum of 4,000 per 100 mL for any sample.

Columbus submitted the results fecal coliform data collected between February 2011 and March 2013. Nine geometric means were calculated using this data and compared to Georgia's water quality criteria. Of these nine geometric means, there was one that

appeared to exceed Georgia's water quality criteria. This geometric mean was calculated using data collected between May 3 and June 8, 2011. Upon further evaluation, it was determined that this date range exceeds the 30-day averaging period used to calculate geometric means. It was decided that it was not appropriate to use this geometric mean in the assessment process. Since the remaining eight geometric means met the water quality criteria for fecal coliform bacteria, fecal coliform bacteria was removed as a cause of impairment from this creek and the water was assessed as "supporting" its designated use of Fishing.

3. **Comment:** The data used for adding streams in Muscogee County for fecal coliform bacteria should undergo a more detailed review. There are outliers in the single sample data and the data does not meet the definition of geometric means. Category 3 would be more appropriate for these waters.

Response: Fecal coliform bacteria was added as an impairment to 13 waters in Muscogee County on the draft 2014 list. EPD reevaluated the data used to list these streams. The data used for the listings were collected between February 2011 and March 2013 and nine geometric means were calculated from the data during this time period. Upon further evaluation, it was determined that the data collected in May and June 2011 (May 3rd – June 8th) exceeded the 30-day period used to calculate geometric means as described in the Rules and Regulations for Water Quality Control. Other than this data set, the data comprising the geometric means were collected in a manner that meets the definition of geometric means as described in the Rules and Regulations for Water Quality Control. Even if EPD were to exclude the May/June 2011 data set, there was at least one exceedence of the remaining 8 geometric means for 12 of the 13 waters that were added to the 2014 list for fecal coliform impairment. The only exception is the data set for Rocky Branch that is discussed above. As for outliers, EPD uses all data that is collected in making its 305b/303d listing decisions unless there is a scientific reason to exclude them (such as if samples were collected or processed incorrectly). Wide fluctuations in fecal coliform bacteria numbers are not unusual. Spikes in numbers are often seen after storm events. The listing decision for the remaining 12 waters therefore remains unchanged.

4. **Comment:** There was an objection to the wording of the note in the listing of the Altamaha River from ITT Rayonier to Penholoway Creek that states: "EPD needs to develop a numeric translator for the narrative criteria for color before it can be determined whether water quality standards are being met". The language in the note does not comport with the purpose of Category 3, does not accurately describe the steps to be taken to address the Category 3 listing and improperly assumes an outcome before the data or other information is collected. The language in the note incorrectly assumes that a numeric translator is required. It is suggested that the

following language be used in the “notes” section of the list “TMDL completed TWR 2002. EPD needs to collect more data before it can be determined whether the water quality standard for color is being met”.

Response: A study plan is being drafted that will guide the collection of data to be used by EPD to determine if the designated use of “Fishing” in this section of the Altamaha River is being met. The draft study plan currently includes the following components: 1) a study will be conducted to evaluate the behavior of color as the effluent from Rayonier mixes with the Altamaha River (the data collected will be evaluated using the CORMIX model); 2) a river use survey will be conducted to determine whether the presence of the discharge influences the behavior and choices of people who fish in the area; 3) a fish and mussel assessment will be conducted upstream and downstream of Rayonier’s discharge to document the condition of the fish communities, habitats, and populations and to document the presence or absence of mussels and their habitats; and 4) an analysis of fish tissue and river water will be conducted for compounds associated with organoleptic effects.

EPD agrees that it is appropriate to modify the language in the “notes” section of the listing for the Altamaha River to better reflect the overall goals of the study plan. The revised language is “More data need to be collected and evaluated before it can be determined whether the designated use of Fishing is being met.”

5. Comment: A Tributary to Flat Shoal Creek (R031300021013) from its headwaters to Flat Shoal Creek is listed as having a designated use of “Fishing”. The stream may not be able to meet the designated use of “Fishing” due to natural conditions. For instance, in times of drought, the dissolved oxygen levels may be naturally low and the low or no-flow conditions could affect the species and composition of fish and other fauna, even in the absence of any pollution sources. The absence of fishable fish appears to be the reason for the listing of the stream as impaired.

The listing of Flat Shoal Creek and similar tributaries in the Georgia Piedmont may rely upon subjective and imprecise Fish Index of Biotic Integrity which needs to be validated. The stream should not be listed as impaired in the absence of more comprehensive IBI validation and supportive field data.

Response: The goal of the Clean Water Act is for all waters of the U.S. to be fishable and swimmable. All designated uses for a State’s waters are required to meet the “fishable/swimmable” goal of the Clean Water Act unless the State performs a Use Attainability Analysis that shows that there are factors present that prevent the attainment of the fishable/swimmable use. All of Georgia’s waters have a designated use of “Fishing”, unless another designated use is explicitly provided in the Rules and

Regulations for Water Quality Control. The “Fishing” use is protective of both the fishable and swimmable uses under the Clean Water Act. The State does not believe that every stream with a designated use of “Fishing” has the potential to support “fishable” fish (e.g. one wouldn’t expect to find large bass in a small headwater stream). However, Georgia EPD does expect all State waters to have the ability to support a healthy biological community.

The Tributary to Flat Shoal Creek is listed as impaired for Biota Fish (Bio F) based on Index of Biotic Integrity (IBI) sampling conducted by Georgia’s Wildlife Resources Division (WRD) in May 1999. The purpose of IBI sampling is to document the health of the fish community and does not focus on the presence or absence of “fishable” fish. The fish IBIs developed for the various ecoregions of Georgia are based entirely on fish species found in the State of Georgia. The original Midwestern IBI provided the template for Georgia’s fish IBI but the Georgia fish IBI was built and refined independently. Georgia’s Piedmont fish IBI incorporates scoring criteria based entirely on fish communities assessed in the Georgia Piedmont and further grouped by major river basin. In addition, fish communities are compared only to fish communities in streams with similarly-sized drainage basin areas.

Some of the more significant findings of WRD’s IBI study on the Tributary to Flat Creek include the following: 1) the number of native species collected was about half the number expected from a Piedmont stream in the Chattahoochee River basin with a watershed area similar in size to the watershed of the Tributary to Flat Creek, 2) the total number of fish collected was less than 10% of the expected number, 3) there were no intolerant species collected, 4) there were no sucker species collected, 5) only one native sunfish species was collected, and 6) only one native minnow species was collected. The stream scored an IBI narrative ranking of “poor”. Streams that score a “poor” or “very poor” are listed by Georgia EPD as impaired on the 305(b)/303(d) list of waters.

There is no evidence that the low IBI score was caused by natural conditions in the stream. WRD will not sample a stream if the stream flow is so low that they would not expect it to be capable of supporting a healthy fish community. In addition, the dissolved oxygen concentration at the time the fish were collected was 8.43 mg/L, well above the 4.0 mg/L criterion. WRD also assessed the habitat in the stream while completing the IBI survey. The stream bottom was carrying a heavy sediment load, the banks were unstable, and there was poor instream habitat/cover, including the absence of riffles.

6. **Comment:** It is troublesome that over 50% of the water on the 2014 list were not supporting their designated uses.

Response: EPD agrees that the number of waters not meeting their designated uses is unfortunate. Many of the impairments are caused by nonpoint sources of pollution which are difficult to control and are often not under EPD's authority to regulate. EPD remains committed to working with the regulated community and with the citizens of Georgia to restore and protect the State's waters.

7. **Comment:** How is the new index system for macroinvertebrates being developed, what will it be based on and is EPD using EPA guidance in developing it?

Response: Georgia EPD's multimetric index for macroinvertebrates was developed based upon the bioassessment techniques described in the United States Environmental Protection Agencies *Rapid Bioassessment Protocol* (Barbour *et al.* 1999). The multimetric index was first used for 305(b)/303(d) listing purposes in 2008. Sites that scored in the bottom 25th percentile were given the narrative ranking of "poor" or "very poor" and were assessed as impaired for Bio M. Sites that scored in the upper 75th percentile were given the narrative ranking of "good" or "very good" and were assessed as supporting. Sites that scored between the 25th and 75th percentile were given the narrative rank of fair. They were not assessed as supporting or not supporting, but were instead placed in Category 3 (Assessment Pending). EPD placed these waters in Category 3 because we wanted to collect more data to confirm that the metrics used in our multimetric index were the most appropriate and also to select the best break point between what would be considered supporting and impaired. EPD does not believe that the use decision will change for waters we have either assessed to be supporting or not supporting even should we change the multimetric index since these sites basically consisted of the best of the best and the worst of the worst (e.g. bottom 25th and upper 75th percentiles). Once the additional data has been collected, EPD will reevaluate the data and determine if any changes need to be made to the metrics and will also determine the break point between scores that will be assessed as supporting and those that will be assessed as not supporting.

8. **Comment:** When will the new macroinvertebrate index be ready to use? It is important that it is done in a timely manner as the correct categorization of waters depends upon it.

Response: The reevaluation of the multimetric index for macroinvertebrates is a high priority for EPD. It is not possible to predict when the new index will be completed. As stated above, EPD is in the process of collecting additional macroinvertebrate data to use when recalculating the metrics. Our goal is to collect data from 20 – 25% of the streams with a watershed between 10 and 100 km^2 in each subecoregion. We would also like to collect data from all the "least impaired" streams in each subecoregion. Having this quantity of data will help us to be confident that the multimetric index we

develop accurately distinguishes streams that support a healthy macroinvertebrate community from those that do not. The macroinvertebrate sampling season lasts from October through February. Sampling efforts can sometimes be hindered by events beyond our control. For instance, Georgia's Standard Operating Procedures (SOP) for macroinvertebrate sampling states that macroinvertebrate sampling should be postponed for at least two weeks after a major rain event since high flows can cause the resident macroinvertebrates to drift and it takes time for them to reestablish themselves. Drought can also hinder sampling efforts as our SOP cautions against sampling when the stream flow is very low. Therefore if we experience a very rainy or very dry year, EPD is limited in how much sampling it can accomplish. Additionally, once samples are taken, they must be sent to an outside laboratory for identification and this can take many months to complete. EPD has collected approximately 25% of the additional data that is needed before the metrics can be reevaluated.

9. **Comment:** EPD is encouraged to include stakeholders and the public in the process of developing the index.

Response: At this time, EPD does not plan to include stakeholders when developing the index. However, the index will be made available to the public once it is complete and comments will be welcome.

10. **Comment:** How does EPD intend to determine the "natural DO' concentration for waters in the Southeastern and Coastal Plains? A timeframe for completion is needed. Stakeholders should be included in the process.

Response: EPD has to consider numerous factors when determining "natural DO" concentrations of a waterbody as the "natural DO" of a water may be different depending upon whether it is a coastal water or freshwater and whether the water body is blackwater or clearwater. In an effort to understand how dissolved oxygen concentrations naturally fluctuate in the Coastal Plain, EPD has installed continuous monitors in a couple of watersheds in both black and clear water streams. In addition, EPD will be developing models for the estuaries to help determine the natural DO in these waters. Stakeholders will be included in the development of the natural DO criteria. EPD plans to hold one or more public meetings regarding the development of the new DO criteria. At this meeting(s), EPD will describe the processes we are using to develop the new criteria and solicit feedback from the public to determine if there are additional factors that we need to consider. EPD does not currently have a timeframe for these meetings since we are still in the process of collecting data. Since the new DO criteria will have to be adopted into Georgia's Rules and Regulations for Water Quality Control, EPD will also be holding at least one formal public hearing as required by State and Federal Regulations in conjunction with a mandated 45-day comment

period. This will provide stakeholders with another opportunity to participate in the process.

11. **Comment:** It is premature to remove a water as being impaired for "DO" while a determination of "natural DO" is being made.

Response: DO was removed as a pollutant from three waters in the Savannah River Basin, one water in the Ogeechee River Basin, and six waters in the Satilla River Basin pending determination of the natural dissolved oxygen concentration for these waters. These waters had been placed on the 303(d) list in 2006, prior to EPD's development of the current Listing Assessment Methodology that addresses waters in areas where DO is likely to naturally be below the DO criteria. EPD reassessed the data for these streams in the development of the 2014 list and considered land use and the absence of point source discharges in making the decision to remove dissolved oxygen as an impairment pending development of the natural DO criteria.

12. **Comment:** The Ogeechee Riverkeeper applauds EPD for starting to use the narrative water quality criteria to list waters that may be impaired for excessive nutrients.

Response: Comment Noted. EPD will continue to use its narrative criteria to list waters impaired for nutrients and will also continue to work toward developing appropriate numeric nutrient criteria.

13. **Comment:** Streams may have had total maximum daily loads (TMDLs) written for them many years ago, but they are still listed as impaired. EPD should make new TMDL plans a priority. To prevent further degradation, EPD must enforce NPDES and LAS permits on a regular basis. Best Management Practicies (BMPs) for nonpoint pollution such as for urban runoff, agriculture and forestry should be utilized and encouraged at all costs.

Response:

TMDLs are written for waters on Georgia's 303(d) list of impaired waters. These TMDLs establish the amount of pollutants that both point and nonpoint sources can contribute to a water without causing the water to become impaired. When a TMDL requires a municipal or industrial wastewater treatment plant to reduce its permitted load, the permit is modified or reissued in a timely manner to include the more stringent limits. Enforcement of permit limits is a high priority for EPD and permit violations are addressed in an appropriate manner. In addition to assigning permit limits based on TMDLs, EPD also requires municipalities that have a wastewater treatment plant with a permitted flow greater than 1 MGD to conduct a watershed assessment and to develop

a watershed protection plan to protect the water quality of State waters within their political boundaries and/or service area.

Unlike with point sources, EPD often does not have the regulatory authority to require load reductions from nonpoint sources of pollution. In these cases, instead of working as a regulatory authority, EPD must work cooperatively with stakeholders throughout the State in order to reduce impacts from nonpoint sources of pollution to improve water quality. Some of the tools that EPD's Nonpoint Source Program uses to protect and restore State Waters include educating Georgia's citizens regarding the importance of water quality and teaching about ways they can improve it; providing technical assistance to local and State agencies; and providing funds to help implement BMPs or other actions to restore impaired waters. EPD has formed partnerships with the Georgia Soil and Water Commission to help address impacts from agricultural sources; the Georgia Forestry Commission to help address impacts from silviculture; the Georgia Department of Community Affairs to address impacts from urban runoff; and with Georgia's Resource and Conservation and Development Councils and Regional Commissions who in turn provide guidance regarding water quality issues to Georgia's local governments. Additionally, EPD encourages local governments and other organizations to develop watershed based implementation plans for impaired waters in their areas. These plans are more specific than the initial implementation plans provided at the end of Georgia's TMDLs. The local governmental entities are then encouraged to apply for a Section 319(h) Grant to implement their watershed management plan as leverage towards involving local stakeholders in implementing BMPs needed to improve water quality.