

Appendix H

Priority Waterbodies without Minimum Flows and Minimum Levels - Assessment

Technical Memorandum
North Florida Regional Water Supply Plan
Priority Waterbodies without Minimum Flows and Minimum Levels – Assessment
September 1, 2016

Within the North Florida Regional Water Supply Plan (NFRWSP) area, there are two river reaches, six springs, and 13 lakes on the Districts' priority lists for future minimum flows and minimum levels (MFLs) development. Of these priority waterbodies, only the river reaches and springs were evaluated in this analysis due to the current lack of a meaningful screening threshold available for the lakes. Upon MFL adoption, the 13 lakes will be assessed in a subsequent water supply plan. This assessment provides a sense of the potential for water resource impacts in portions of the planning area where MFLs have not been adopted.

Methodology

Reference conditions for the priority waterbodies were calculated using the North Florida-Southeast Georgia regional groundwater flow model (NFSEG) pumps off scenario. Predicted spring flows under this reference condition were compared to the NFSEG-simulated withdrawal conditions at the 2035 planning horizon within the NFRWSP area only and within the entire NFSEG domain. Waterbodies showing more than a 10 percent reduction in flow from reference conditions were identified, however, these results were not utilized in the NFRWSP sufficiency analysis.

A 10 percent reduction in flow does not necessarily correspond to an ecological threshold beyond which significant harm would occur. Conversely, waterbodies experiencing less than a 10 percent reduction in flow may still experience significant harm. The ten percent threshold does, however, highlight areas where resource constraints may occur upon upcoming MFLs adoption. Accounting for the unique hydrologic and ecological conditions for individual priority springs and linking changes in flow to a quantitative significant harm threshold occurs during MFL development. Subsequent versions of the NFRWSP will incorporate any newly adopted or reevaluated MFLs in the water resource assessment and sufficiency analysis in order to utilize the best information available at the time of plan development.

Results

The Alapaha, and the Upper Suwannee Rivers and Stevenson Springs, did not show predicted flow reductions greater than 10 percent at 2035 conditions within the NFRWSP area or at 2035 conditions within the entire NFSEG domain. Alapaha Rise did not show predicted flow reduction greater than 10 percent at 2035 conditions within the NFRWSP area, however, flow reductions exceeded 10 percent under 2035 conditions within the entire NFSEG domain. Holton Creek Rise, Unnamed spring (SUW1017972), Suwannee Spring, and White Spring predicted flow reductions exceeded 10 percent under both 2035 pumping scenarios. Per the SRWMD priority list, MFLs will be set on the Upper Suwannee River and associated priority springs in 2017.

Table H1: NFRWSP Priority Waterbodies without MFLs Assessment Results

Type	Name	County/Basin	WMD	MFL Priority List Year	Reduction in Flow at 2035 > 10% (NFRWSP Area) ¹	Reduction in Flow at 2035 > 10% (NFSEG Model Domain) ²
River	Alapaha	Alapaha	SR	2017	No	No
River	Upper Suwannee	Upper Suwannee	SR	2016	No	No
Spring	Alapaha Rise	Upper Suwannee	SR	2016	No	Yes
Spring	Holton Creek Rise	Upper Suwannee	SR	2016	Yes	Yes
Spring	Lime	Upper Suwannee	SR	2016	No	No
Spring	Lime Run Sink	Upper Suwannee	SR	2016	No	No
Spring	SUW923973 (Stevenson)	Upper Suwannee	SR	2016	No	No
Spring	SUW1017972 (Unnamed)	Upper Suwannee	SR	2016	Yes	Yes
Spring	Suwannee	Upper Suwannee	SR	2016	Yes	Yes
Spring	White	Upper Suwannee	SR	2016	Yes	Yes

¹ Groundwater modeling scenario simulated 2035 projected withdrawals within the NFRWSP area, with areas outside the NFRWSP area set at 2009 conditions

² Groundwater modeling scenario simulated 2035 projected withdrawals within the entire NFSEG domain