US EPA ARCHIVE DOCUMENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

JAN 17 2014

Herschel T. Vinyard
Secretary
Florida Department of Environmental Protection
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Dear Secretary Vinyard:

The U. S. Environmental Protection Agency has completed its review of the site specific alternative criterion (SSAC) for total nitrogen (TN) for Sikes Creek. Florida Department of Environmental Protection submitted revised Chapter 62-302, including the SSAC, to the EPA on June 13, 2012, as new or revised water quality standards with the necessary certification by FDEP General Counsel, pursuant to 40 CFR Part 131. The SSAC was included in the list of site specific numeric interpretations of paragraph 62-302.530(47)(b), Florida Administrative Code (F.A.C.), referenced in paragraph 62-302.531(2)(a), F.A.C. and published at the FDEP's website at http://www.dep.state.fl.us/water/wqssp/swq-docs.htm. FDEP submitted the numeric interpretation of the state narrative nutrient criterion for WBID 142 expressed in the Sikes Creek Total Maximum Daily Load report as the SSAC. FDEP intends for this SSAC to serve as the numeric nutrient criterion for TN for Sikes Creek in place of the otherwise applicable TN criterion set out in paragraph 62-302.531(2)(c), F.A.C.

In accordance with section 303(c) of the Clean Water Act, I am hereby approving the SSAC for Sikes Creek as the revised water quality standard for TN. Any other criteria applicable to this waterbody remain in effect, including other applicable criteria at 62-302.531(2)(c), F.A.C. The requirements of paragraph 62-302.530(47)(a), F.A.C. also remain applicable. The details of the SSAC are discussed in the enclosed documentation. We would like to commend you and your staff for your continued efforts in environmental protection for the State of Florida.

If you have any questions regarding the EPA's approval, please contact me at (404) 562-9345 or have a member of your staff contact Ms. Annie M. Godfrey, Water Quality Standards Section Chief at (404) 562-9967.

Sincerely,

James D. Giattina
Director
Water Protection Division

Enclosure

cc: Matthew Z. Leopold, FDEP
Daryll Joyner, FDEP

Decision Document for Hierarchy 1 Site Specific Alternative Criterion for Sikes Creek

Summary Information

WBID	Description	Class	Waterbody Type	Listing Parameter
142	Sikes Creek	Class III (freshwater)	Stream	Dissolved Oxygen (DO)

A nutrient Total Maximum Daily Load (TMDL) for Sikes Creek WBID 142 was developed by Florida Department of Environmental Protection and approved by the Environmental Protection Agency pursuant to section 303(d) of the Clean Water Act (CWA). This TMDL was developed to identify the level of nutrients that would prevent an imbalance of flora and fauna as required by the state's narrative nutrient criterion at paragraph 62-302.530(47)(b), Florida Administrative Code (F.A.C). FDEP determined that a total nitrogen (TN) load of 21,819 pounds per year (lbs/yr), not to be exceeded as an annual load, would meet its narrative criterion and adopted that load as a TMDL value at subsection 62-304.325(7), F.A.C. FDEP has submitted the TN load from the TMDL for the EPA review as a hierarchy 1 site specific alternative nutrient criterion (SSAC) for Sikes Creek, pursuant to section 303(c) of the CWA and EPA's implementing regulations at 40 CFR Part 131. This decision document approves the SSAC for TN of 21,819 lbs/yr, not to be exceeded as an annual load, as a hierarchy 1 criterion for Sikes Creek WBID 142. Any other criteria applicable to this waterbody remain in effect. Specifically, as to nutrients total phosphorus (TP) criteria consistent with paragraph 62-302.531(2)(c), F.A.C. continue to apply, as well as the requirements of paragraph 62-302.530(47)(a), F.A.C.

In a letter dated June 13, 2012, from Thomas M. Beason, General Counsel for FDEP, to Gwendolyn Keyes Fleming, Regional Administrator of the EPA's Region 4 Office, FDEP submitted the numeric interpretation of the state narrative nutrient criterion as expressed in the Sikes Creek TMDL as the SSAC for Sikes Creek WBID 142. The SSAC serves as a primary site specific interpretation of Florida's narrative water quality criterion for nutrients set out in paragraph 62-302.530(47)(b), F.A.C., in accordance with paragraph 62-302.531(2)(a), F.A.C. Pursuant to section 303(c) of the CWA, this revised water quality standard is subject to review and approval by the EPA since FDEP intends for this SSAC to serve as a numeric nutrient criterion for TN for Sikes Creek in place of the otherwise applicable TN criterion set out in paragraph 62-302.531(2)(c), F.A.C. In the June 13, 2012, letter, FDEP General Counsel certified that the revised water quality standards were duly adopted pursuant to Florida law.

The EPA's decision to approve the criterion is subject to the results of consultation under section 7 of the Endangered Species Act with the U.S. Fish and Wildlife Service. By approving the standard "subject to the results of consultation," the EPA retains its discretion to take appropriate action if the consultation identifies deficiencies in the standard requiring remedial action by the EPA. The EPA will notify FDEP of the results of the section 7 consultation upon completion of the action.

Description of waters for which a SSAC has been proposed

The headwaters of Sikes Creek are situated in the mid-central portion of Holmes County (see maps on pages 4 and 5). The creek flows southwest for approximately 12.5 miles to the Choctawhatchee River. The upper northwest portion of the watershed is drained by Tiger Ford Branch, which flows into upper Sikes Creek. Sikes Creek also receives flow from a number of smaller branches. The drainage area within the Sikes Creek WBID boundary is approximately 16.9 square miles (10,830 acres) and is predominantly made up of forested land and wetlands. Additional information about the hydrology and geology of this area is available in the Basin Status Report for Choctawhatchee–St. Andrew Bay (FDEP 2003). Sikes Creek watershed drains about 10,167 acres of land. The primary land uses are coniferous plantations (38.4 percent), followed by mixed wetland forest (22 percent), and upland coniferous forest (18 percent). Residential and other land uses with high imperviousness are less than 0.2 percent of the watershed.

Discussion of how the load was derived

WBID 142 was verified as impaired for DO based on assessment methodologies identified in Florida's Impaired Waters Rule (IWR) at Chapter 62-303, F.A.C. Consequently, WBID 142 was added to the verified list of impaired waters by Secretarial Order on January 15, 2010. This waterbody was verified as impaired based on low DO because, using the IWR methodology, more than 10 percent of the values exceeded the Class III freshwater criterion in the verified period based on 14 out of 25 samples. Nitrogen was identified as the causative pollutant due to an elevated median value in 2008 and a significant correlation with DO.

Numerous regressions were conducted on the data to examine the correlations between DO and TN, TP and Biological Oxygen Demand. The relationship between TN and DO was used to establish a TN concentration (nutrient target) that would result in DO levels at or above the water quality criterion for DO. The Hydrological Simulation Program–Fortran (HSPF) Model was used to establish the relationship between nutrient load reductions and DO concentrations to establish the allowable nutrient loads. The target concentration of 0.87 mg/L, not to be exceeded as a monthly average, was used for deriving the TN load.

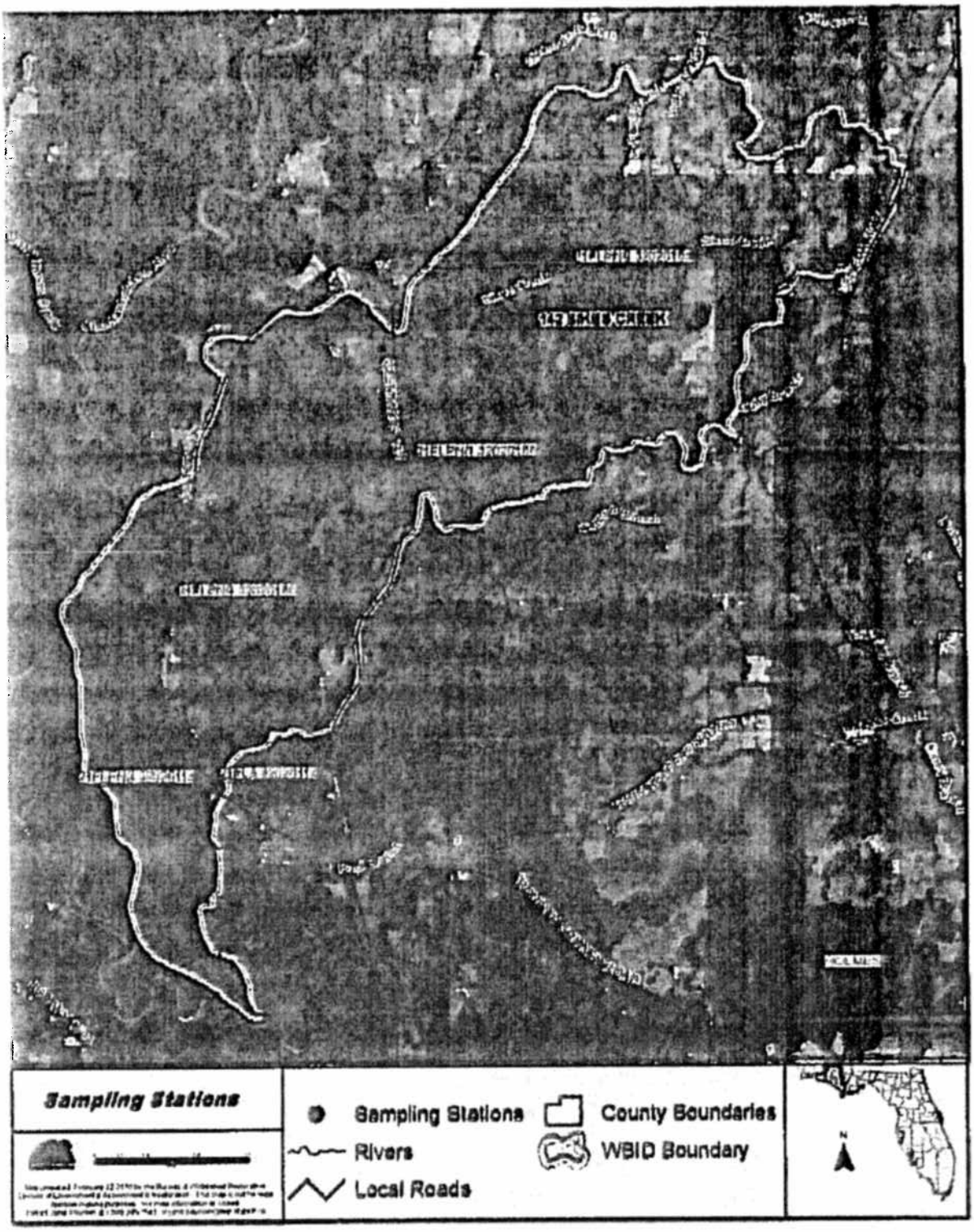
Consideration of TMDL load as new or revised water quality standard

The regression analysis relating TN and DO was used to establish the TN target for the TMDL calculation. Based on this relationship, a TN target of 0.87 mg/L as a monthly average was selected for the creek to meet the DO criterion. FDEP then determined through modeling that a TN load of 21,819 lbs/year for Sikes Creek would result in meeting the instream TN target.

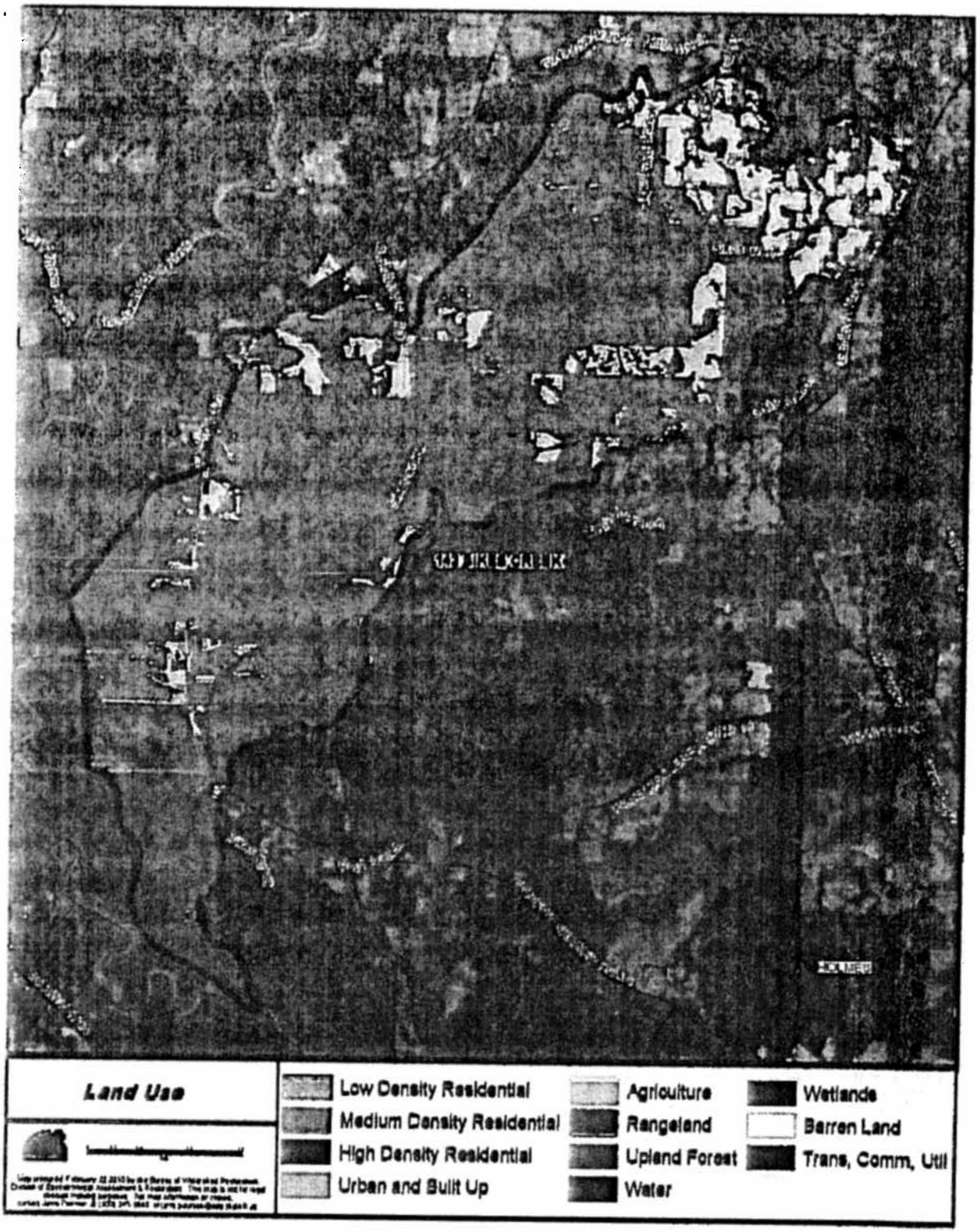
Conclusion

Based on the chemical, physical and biological data presented in the development of the SSAC, the EPA concludes that the SSAC for TN established for Sikes Creek WBID 142 protects healthy, well-balanced biological communities in the waters to which the SSAC applies and is consistent with the CWA and its implementing regulations. More specifically, the SSAC is consistent with both 40 CFR Part 131.11(b)(1)(ii) and the EPA's 304(a) guidance on nutrient criteria. The TN SSAC for Sikes Creek WBID 142 which provides for TN loading of 21,819 lbs/yr, will protect water quality and aquatic life. FDEP did not address downstream protection in this TMDL. Paragraph 62-302.531(4) will apply to this WBID in conjunction with the Hierarchy 1 SSAC to ensure attainment and maintenance of water quality standards of downstream waters,

in accordance with 40 CFR Part 131.10. In accordance with section 303(c) of the CWA, the SSAC for the Sikes Creek for TN load of 21,819 lbs/yr, not to be exceeded as an annual load, is hereby approved as consistent with the CWA and 40 CFR Part 131.



Sikes Creek Watershed with Sampling Stations



Sikes Creek Land Use

Appendix 1- Summary of the TMDL Background

Name(s) of Addressed Water(s)	**Sikes Creek WBID 142**
WBIDs	142
Description	Low gradient stream in rural/agricultural area
Classification(s)	Class III freshwater
Basin	Choctawhatchee River Basin
Date Placed on Verified List	2009 Settlement agreement, January 2010
Reference Streams	None
Source of majority of flow	The headwaters of Sikes Creek are situated in the mid-central portion of Holmes County. The creek flows southwest for approximately 12.5 miles to the Choctawhatchee River. The upper northwest portion of the watershed is drained by Tiger Ford Branch, which flows into upper Sikes Creek. Sikes Creek also receives flow from a number of smaller branches. The drainage area within the Sikes Creek WBID boundary is approximately 16.9 square miles (mi2) (10,830 acres) and is predominantly made up of forested land and wetlands. Additional information about the hydrology and geology of this area is available in the Basin Status Report for Choctawhatchee–St. Andrew Bay.
Indicators	Dissolved Oxygen
Identification of Causative Pollutants	TN
Sources of Nutrient Enrichment	Not specifically identified
Proposed Nitrate/Phosphorus SSAC and Frequency	N/A
Proposed Nitrogen SSAC and Frequency	(TN 21,819 lbs/year) for WBID 142 (24 percent reduction)
SCI Scores	none