

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

JAN 1 ' 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 criteria (SSAC) for total nitrogen (TN) and total phosphorus (TP) for Minnow 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 the FDEP General Counsel, pursuant to 40 CFR 131. The SSAC were 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 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 130 expressed in the Minnow Creek Total Maximum Daily Load report as the SSAC. FDEP intends for these SSAC to serve as the numeric nutrient criteria for TN and TP for Minnow Creek in place of the otherwise applicable TN and TP criteria 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 Minnow Creek as the revised water quality standards for TN and TP. Any other criteria applicable to this waterbody remain in effect, including the requirements of paragraph 62-302.530(47)(a), F.A.C. 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,

A handwritten signature in black ink, appearing to read "J. Giattina", written over a white background.

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 Minnow Creek**

Summary Information

<b>WBID</b>	<b>Description</b>	<b>Class</b>	<b>Waterbody Type</b> <i>Impaired Waters Rule (IWR) Run 40</i>	<b>Listing Parameter</b>
130	Minnow Creek	Class III (freshwater)	Stream	Nutrients Dissolved Oxygen (DO)

A Dissolved Oxygen Total Maximum Daily Load (TMDL) for Minnow Creek (WBID 130) was developed by Florida Department of Environmental Protection and approved by the Environmental Protection Agency on September 28, 2010, pursuant to section 303(d) of the Clean Water Act (CWA). The 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 21,310 pounds/year (lbs/yr) and a total phosphorus (TP) load of 3,195 lbs/yr, not to be exceeded as annual loads, would meet its narrative criterion and adopted those loads as TMDL values at subsection 62-304.325(5), F.A.C. FDEP has submitted the TN and TP loads from the TMDL for the EPA review as hierarchy 1 site specific alternative nutrient criteria (SSAC) for Minnow Creek (WBID 130) 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 21,310 lbs/yr and TP of 3,195 lbs/yr, not to be exceeded as annual loads as hierarchy 1 criteria for Minnow Creek. Any other criteria applicable to this waterbody remain in effect including 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 criteria as expressed in the Minnow Creek (WBID 130) TMDL as the SSAC for Minnow Creek (WBID 130). These SSAC serve as primary site specific interpretations 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, these revised water quality standards are subject to review and approval by the EPA since FDEP intends for these SSAC to serve as numeric nutrient criteria for TN and TP for Minnow Creek WBID 130 in the place of the otherwise applicable TN and TP criteria 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 these criteria 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 standards "subject to the results of consultation," the EPA retains its discretion to take appropriate action if the consultation identifies deficiencies in the standards 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

Minnow Creek is located in northwest Jackson County, south of the City of Graceville and lies in the Dougherty Karst Plain ecoregion (see map on page 4). Its headwaters are in the northwestern portion of Jackson County. The creek flows southwest for approximately 7.7 miles to Alligator Creek which eventually flows into Homes Creek, a principal tributary of the Choctawhatchee River. The Minnow Creek watershed was estimated to cover a total area of about 7,603 acres. The predominant land uses are improved pasture and cropland, followed by upland forests, rangeland and wetlands. Human land uses located in the watershed covered about 51% of the total watershed area, while natural land uses accounted for 49%. Minnow Creek (WBID 130) is a Class III fresh waterbody, with designated uses of recreation, propagation and the maintenance of a health, well-balanced population of fish and wildlife.

### Discussion of how the loads were derived

WBID 130 was verified as impaired for nutrients based on assessment methodologies identified in Florida's IWR at Chapter 62-303, F.A.C. Consequently, WBID 130 was added to the verified list of impaired waters by Secretarial Order on January 15, 2010. The nutrient impairment was based on the exceedance of the DO criterion. FDEP identified nutrients as the causative pollutant for the observed exceedances. To address the nutrient impairment in WBID 130, FDEP developed a TMDL that was approved by the EPA on September 28, 2010. The DO TMDL for Minnow Creek (WBID 130) adopted at 62-304.325(5) has a TN loading of 21,310 lbs/yr and a TP loading of 3,195 lbs/yr, not to be exceeded as annual loads.

The TMDL utilized a TN target of 1.21 mg/L and a TP target of 0.089 mg/L for WBID 130. Data were first screened using statistical software programs and outliers were removed from the data set for regression analysis between nitrogen and DO during the model calibration. Regression analyses were performed to examine correlations between DO, TN, TP and Biological Oxygen Demand (BOD). Empirical equations were developed using daily stream data to establish nutrient targets for TN and TP that result in attainment of the DO criterion of 5.0 mg/L. A calibrated Hydrological Simulation Program--Fortran (HSPF) model was then used to establish the load reductions. The resulting loads for TN of 21,310 lbs/yr and for TP of 3,195 lbs/yr for Minnow Creek (WBID 130) were adopted at 62-304.325(5).

### Consideration of TMDL load as a new or revised water quality standard

The SSAC for WBID 130 (Minnow Creek) of TN of 21,310 lbs/yr and for TP of 3,195 lbs/yr correlate to a TN concentration of 1.21 mg/L and a TP concentration of 0.089 mg/L. Daily TN and DO measurements showed that there is an excellent relationship between the two parameters. These TN and TP concentrations were determined using the best-fit equation for TN that consists of adjusting model coefficients between model predictions and the measured data averaged from the entire watershed.

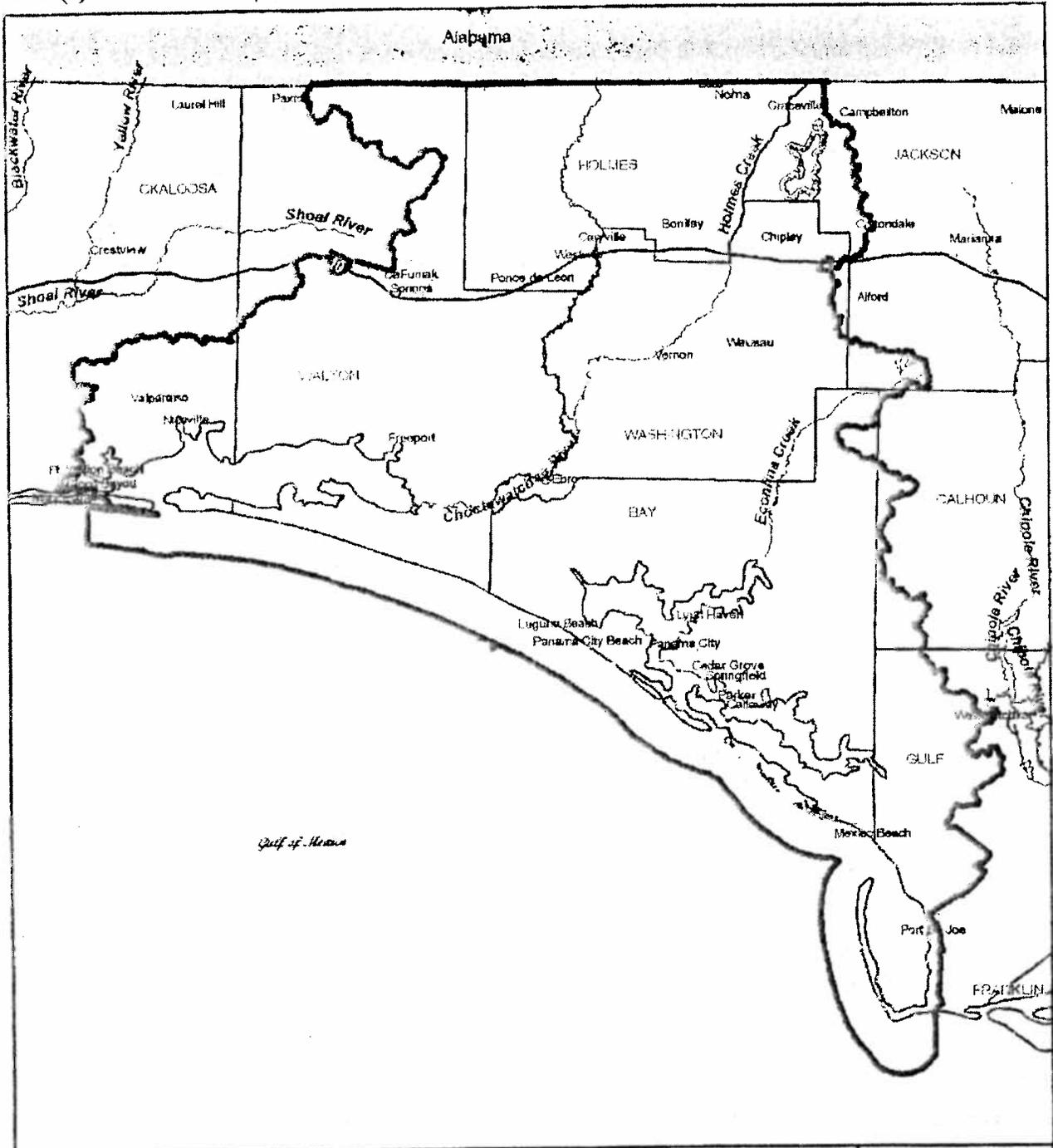
### Conclusion

Based on the chemical, physical and biological data presented in the development of the SSAC, the EPA concludes that the SSAC for TN and TP established for Minnow Creek (WBID 130) protect healthy, well-balanced biological communities in the waters to which the SSAC apply and are consistent with the CWA and its implementing regulations. More specifically, the SSAC are consistent with both 40 CFR 131.11(b)(1)(ii) and the EPA's 304(a) guidance on nutrient

criteria. The TN and TP SSAC for Minnow Creek (WBID 130) which provide for a TN loading of 21,310 lbs/yr and a TP loading of 3,195 lbs/yr, not to be exceeded as annual loads, will protect water quality and aquatic life. FDEP did not address downstream protection in this TMDL. Paragraph 62-302.531(4), F.A.C., 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 131.10. In accordance with Section 303(c) of the CWA, the SSAC for Minnow Creek with a TN loading of 21,310 lbs/yr and a TP loading of 3,195 lbs/yr, not to be exceeded as annual loads, are hereby approved as consistent with the CWA and 40 CFR Part 131.

Name(s) of Addressed Water(s)

Minnow Creek



**Group 3**  
**Choctawhatchee**  
**St. Andrews**

Miles

Map prepared February 19, 2010 by the Bureau of Stream and Wetlands, Division of Environmental Assessment and Planning for the Florida Department of Natural Resources. All rights reserved. No warranty is made for use of this map for purposes not intended by the Florida Department of Natural Resources.

- WBID Boundary
- Interstates
- Choctawhatchee-St. Andrews
- Cities
- Counties
- Alabama



**Appendix 1 – Summary of the TMDL Background**

<b>Waterbody Type(s)</b>	Stream
<b>WBIDs</b>	130
<b>Description</b>	Minnow Creek is located in northwest Jackson County, south of the City of Graceville. Its headwaters are in the northwestern portion of Jackson County. The creek flows southwest for approximately 7.7 miles to Alligator Creek, which eventually flows into Homes Creek, a principal tributary of the Choctawhatchee River.
<b>Classification(s)</b>	Class III
<b>Basin</b>	Choctawhatchee-St. Andrew Bay Basins
<b>Date Placed on Verified List</b>	January 15, 2010
<b>Date TMDL was approved</b>	September 28, 2010
<b>Reference Streams</b>	N/A
<b>Source of majority of flow</b>	Minnow Creek receives flow from a number of smaller branches and is characterized by karst terrain. In this area, the Floridan aquifer is at or near the surface in much of the region, and the aquifer is unconfined, allowing water to enter, move through, and discharge from the Floridan aquifer system more readily and rapidly.
<b>Indicators</b>	Placed on verified list for low DO impairments
<b>Identification of Causative Pollutants</b>	TN, TP
<b>Sources of Nutrient Enrichment</b>	<p>About half of the watershed is covered by human land uses, mostly improved pastures and crop land uses (43%). Potential nonpoint sources of nutrients include agricultural activities, onsite sewage treatment and disposal systems that are not functioning properly, septic tanks, and wildlife. In addition, the karst features in the watershed make it vulnerable to contamination in terms of quick transport of pollutants and limited attenuation.</p> <p>NPDES point sources within the watershed are not a potential source of nutrients, although residential areas adjacent to Minnow Creek and its tributaries could be a potential source.</p>
<b>Nutrient Watershed Region in Proposed 62.302</b>	Panhandle West
<b>Proposed Total Nitrogen SSAC and Frequency</b>	21,310 lbs/year
<b>Proposed Phosphorus SSAC and Frequency</b>	3,195 lbs/year
<b>SCI Scores</b>	N/A