

**STATE OF GEORGIA
TMDL IMPLEMENTATION PLAN**

**For Cadmium in Purvis Creek
Satilla River Basin**

Prepared by
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TMDL Implementation Plans are platforms for establishing a course of actions to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies. The overall goal of the Plan is to define a set of actions that will help achieve water quality standards in the state of Georgia.

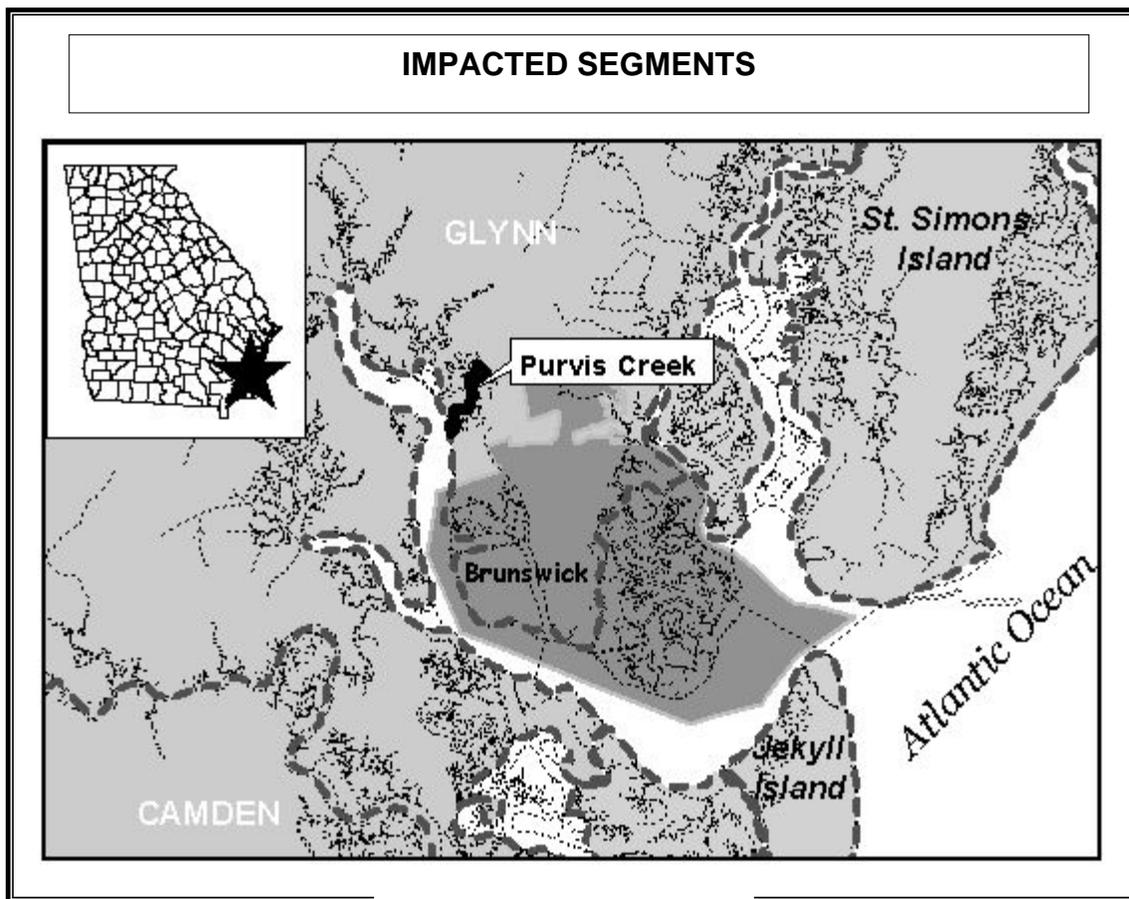


FIGURE 1

Impaired Waterbody Name	Location	Miles/Area Impacted	River Basin
1. Purvis Creek	Brunswick	1	Satilla

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) established a Total Maximum Daily Load (TMDL) for cadmium in Purvis Creek on July 2, 2001. Purvis Creek is also listed on the State of Georgia 2000 and 2002 Section 303(d) lists as not supporting its designated use. The exact source(s) of cadmium in Purvis Creek have not been identified, although the Linden Chemicals and Plastics (LCP) Superfund site is located adjacent to the saltwater tidal marsh near Purvis Creek. Over the last 70 years an oil refinery, a paint manufacturing company, power plant and a chlor-alkali plant have operated at the LCP site. Manufacturing operations ceased at the LCP site in early 1994 when the Georgia Environmental Protection Division (GA EPD) revoked the facility's air and water discharge permits.

The State of Georgia established the following criteria for dissolved cadmium:

acute saltwater criterion for dissolved cadmium is 43 μ g/l.
chronic saltwater criterion is 9.2 μ g/l.

The single measurement reported in the EPA STORET database for total cadmium in the Purvis Creek tidal system is 13 μ g/l. This measurement was taken in August 1991. The TMDL wasteload and load allocation for Purvis Creek is 55 grams per day. There are no point dischargers of cadmium on Purvis Creek.

DISCUSSION OF POLLUTANT

Cadmium is a naturally occurring metal that is frequently used in electroplating and in rechargeable batteries. Cadmium compounds have been used to create pigments for artists' paints, enamels, ceramics and glasses. Cadmium pigments have also been used to color plastics.

Cadmium is a known toxin. In humans, the element tends to bio-accumulate in internal organs such as the kidneys. Cadmium compounds may enter the water through erosion of soils, atmospheric deposition resulting from metal smelting operations and discharge from industrial sources. Since the early 1900's, cadmium levels in the environment have decreased due to improved production and recovery methods.

WATERBODIES COVERED IN THIS PLAN

Purvis Creek is a tidal stream approximately one mile long located near Brunswick in Glynn County. The stream is listed in the 2000 State of Georgia Section 303(d) list as not supporting its designated use due to cadmium.

POLLUTANT SOURCES

The source of cadmium contamination in Purvis Creek is not clear. The EPA Superfund ecological assessment made at the LCP site in 1997 did not detect cadmium in any sediment samples in Purvis Creek.

PLAN FOR IMPLEMENTATION OF TMDL/ MONITORING PLAN

The Superfund Remedial Program is assessing the need for further action at the LCP site. Since initial detection in 1991, no subsequent sampling has indicated the presence of cadmium in Purvis Creek. Additional sampling for cadmium in Purvis Creek should be done to determine if levels dissolved cadmium in Purvis Creek continue in excess of the stated criteria set forth by the State of Georgia.

EDUCATION/OUTREACH ACTIVITIES

The GA EPD will continue to provide guidance and education to the public on all water quality issues through outreach by the Water Protection Branch. When necessary, the Department of Natural Resources will issue fish consumption guidelines and identify specific stream segments where this is a problem.

STAKEHOLDERS

City of Brunswick, GA EPD

REFERENCES

Agency for Toxic Substances and Diseases Registry, 1999. *Cadmium-CAS # 7440-43-9*.
U.S. Environmental Protection Agency, 2002. *Remedial Investigation Fact Sheet*.