

STATE OF GEORGIA
REVISED TMDL IMPLEMENTATION PLAN
Ogeechee River Basin
Revision 01; June 15, 2007

FISH CONSUMPTION GUIDELINES FOR DIELDRIN

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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 initial TMDL Implementation Plan was part of the TMDL developed in 2005. This Revision supercedes the initial TMDL Implementation Plan.

This Implementation Plan is applicable to the following segments in the Ogeechee River Basin:

Stream	River Basin	Location	Miles/Area Impacted
Casey Canal	Ogeechee	DeRenne Ave. to Montgomery Crossroad, Savannah (Chatham Co.)	3
Hayners Creek (known upstream as Casey Canal)	Ogeechee	Casey Canal (Montgomery Crossroad) to Vernon River (Chatham Co.)	2

INTRODUCTION

The State of Georgia has identified these segments in the Ogeechee River Basin as not supporting their designated use due to the issuance of Fish Consumption Guidelines (FCG) because of Dieldrin contamination. The water use classification for the Ogeechee River is Fishing. Dieldrin was detected in fish tissue from Casey Canal near Montgomery Crossroads. 1997 fish tissue data had a range of total dieldrin from Non-Detected (≤ 0.020 mg/kg) to 0.08 mg/kg. The 1997 data triggered the fish consumption guideline of one meal per week as listed in the *2003 Update of Guidelines for Eating Fish from Georgia Waters* (GA DNR, 2002). The specific species listed with the recommended consumption limit of 1 meal per week is Striped Mullet. There are No Restrictions limits for Largemouth Bass and Bluegill

Sunfish. The most conservative approach of using the highest value was used for developing the TMDL for Dieldrin in Fish Tissue.

DISCUSSION OF POLLUTANT

The TMDL is for dieldrin; however, information is provided regarding aldrin since aldrin changes to dieldrin in the environment. Aldrin and dieldrin are the common names of two structurally similar compounds that were once used as insecticides. They are chemicals that are made in the laboratory and do not occur naturally in the environment. These chemicals are no longer produced or used. From the 1950's until 1970, aldrin and dieldrin were used extensively as insecticides on crops such as corn and cotton. The U.S. Department of Agriculture canceled all uses of aldrin and dieldrin in 1970. However, in 1972, EPA approved aldrin and dieldrin for killing termites. Use of aldrin and dieldrin to control termites continued until 1987. In 1987, the manufacturer voluntarily canceled the registration of the compounds for use in controlling termites.

In the environment, dieldrin does not easily dissolve in water. It attaches to soil and sediment at the bottom of lakes, ponds and streams. Dieldrin is lipophilic in that it tends to accumulate in the fatty tissue of fish and wildlife, and is also known to bioaccumulate in various organisms.

There is a dieldrin standard for fish consumption published by the Food and Drug Administration (FDA), as well as guidelines published by the State of Georgia. This document will not detail the human health problems or threats to wildlife posed by this chemical; consult the references in the TMDL for more detailed information. The Agency for Toxic Substances and Disease Registry (ATSDR), which is an agency of the U.S. Department of Health and Human Services, and the U.S. Environmental Protection Agency are both good sources of information on dieldrin. Much of the background information provided in this section, as well as additional information, can be found on their websites.

POLLUTANT SOURCES

A source assessment characterizes the known and suspected sources of dieldrin in the watershed for use in a water quality model and the development of the TMDL. The sources of dieldrin in this watershed are unknown, but they may come from either point sources or nonpoint sources. Both are addressed in the TMDL.

Dieldrin is a toxic priority pollutant and its use and discharge is not permitted in any of the listed segments. There are no permitted point source dischargers with existing allocations for dieldrin.

Sources of dieldrin in the listed segments may be attributed to contamination of urban runoff and nonpoint source pollution. Other possible sources may include movement of contaminated bedload sediment, soil erosion, and air deposition. It is

likely that the dieldrin measured in fish tissue in 1997 was due to legacy contamination and no current sources exist.

PLAN FOR TMDL IMPLEMENTATION

Currently there are no major NPDES permitted facilities on these streams. Future permits may have a monitoring requirement put in the permit if it is believed levels higher than is allocated will be reached. The permittee will characterize the effluent and the source of drinking water in the area for dieldrin concentrations through this monitoring. If the dieldrin concentration in the effluent of any future permitted facility is greater than the water quality target mentioned in the TMDL or greater than the dieldrin concentration in the source of drinking water, then the permittee will have to develop and implement a dieldrin minimization plan. This dieldrin minimization plan will involve source identification and then the reduction and elimination of dieldrin from the effluent.

EPD will continue efforts to put into use BMPs that will reduce the non-point source loads of dieldrin. EPD will also work closely with other agencies and organizations to see that these BMPs are carried out.

MONITORING PLAN

EPD will continue to collect ambient data on dieldrin concentrations in water, sediments, and fish.

EDUCATION/OUTREACH ACTIVITIES

The Environmental Protection Division will continue to provide guidance and education to the public on all water quality issues through outreach by the Watershed Protection Branch. The Pollution Prevention Assistance Division is another excellent resource for this outreach. When necessary, the Department of Natural Resources will issue fish consumption guidelines. These guidelines are updated annually, identify specific stream segments where there is a problem, and list all known species of fish with dieldrin contamination and how often they may be consumed. The DNR fish-testing program is ongoing. Testing on additional lakes and rivers is balanced with retesting of waters where change may be occurring. Contaminant levels in fish change very slowly, and sampling the same species of fish from the same locations over time will allow the DNR to document changes and trends in contaminant levels. Information on contaminant levels is updated yearly and published in the *Guidelines for Eating Fish from Georgia Waters*.

REFERENCES

Georgia Department of Natural Resources, 2002. Guidelines for Eating Fish from Georgia Waters – *2003 Update*.

Georgia Department of Natural Resources, 2006. Guidelines for Eating Fish from Georgia Waters – *2006 Update*.

GA-EPD, 2005. Total Maximum Daily Load Evaluation For Two Segments in the Ogeechee River Basin Casey Canal and Hayners Creek (Dieldrin in Fish Tissue) March 2005

Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6-03, Water Use Classifications and Water Quality Standards, Revised February 2004.