




WASHINGTON STATE
DEPARTMENT OF
E C O L O G Y

Lake Chelan Watershed DDT and PCB Total Maximum Daily Load

Water Quality Improvement Report

June 2006
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Prepared by:

David Schneider and Randy Coots
Washington State Department of Ecology
Water Quality Program

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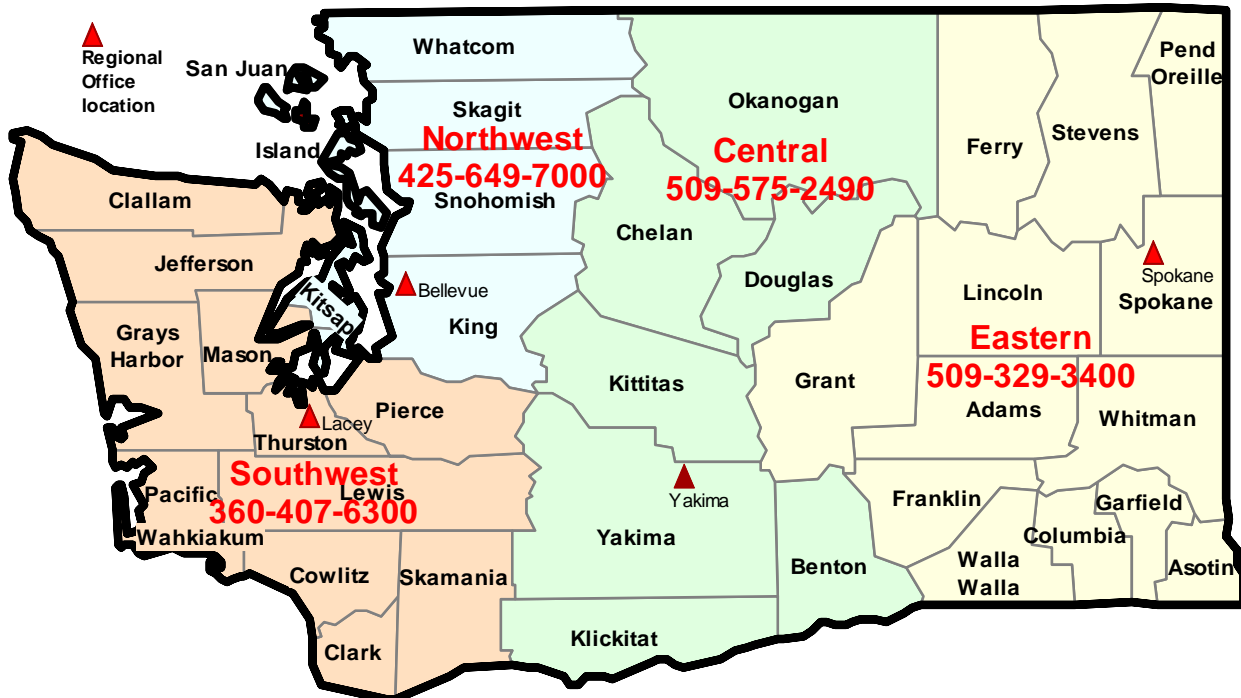
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For more information contact:

Department of Ecology
Water Quality Program
Central Regional Office
15 W Yakima Avenue, Suite 200
Yakima, WA 98902

Telephone: (509) 454-7894

Headquarters (Lacey) 360-407-6000



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Executive Summary

Introduction

Lake Chelan and Roses Lake, a small lake located adjacent to Lake Chelan, are included on Washington States 303(d) list as water quality impaired because of non-attainment of the U.S. Environmental Protection Agency (EPA) human health criteria for 4,4' DDT, DDT metabolites 4,4'-DDE and 4,4' DDD, PCB 1254 and 1260, in edible fish tissue. Roses Lake is listed for 4,4'-DDE only.

As required by the Clean Water Act a total maximum daily load assessment (TMDL) was conducted for Lake Chelan and Roses Lake to determine loading reductions needed to bring the lakes into compliance with water quality standards. In this effort the Washington State Department of Ecology collected fish tissue, water, and sediment samples during May through November of 2003 from Lake Chelan, Roses Lake, and their inflows. During the TMDL study, some tributaries and irrigation drains to Lake Chelan were discovered to exceed water quality standards for DDT, including First Creek, Knapp Coulee, Culvert near Crystal View, Purtteman Creek, Culvert at Veroske's, Cooper Drainage, Bennet Road, Keupkin Street, Buck Orchards, Joe Creek, and Stink Creek. Total DDT Loads and reductions needed in tributaries and irrigation drains are identified in Table 2. Actions identified in the Summary Implementation Strategy section will address tributary and irrigation drain exceedences.

The purpose of this submittal report to EPA is to: 1) provide an assessment of DDT, PCB, and pollution to the Lake Chelan watershed, including sources, loads and reductions needed to meet Federal and Washington State water quality standards; and 2) identify actions and monitoring to be implemented which will result in attainment of standards over time.

This report is organized to describe: the *Loading Capacity* that Lake Chelan can assimilate and still meet water quality standards; the *Load Allocations* or reductions needed from pollutant inputs; the *Margin of Safety* or conservative assumptions based on consideration of any lack of knowledge about causes of the water quality problem or its loading capacity; the *Summary Implementation Strategy* or actions and monitoring to be implemented that will reduce pollutant inputs; *Reasonable Assurance* that actions will achieve water quality standards by the target dates set and *Adaptive Management* that will be utilized to attain water quality standards.

Lake Chelan Basin

Lake Chelan is located in north-central Washington State (Figure 1). It is the longest and deepest natural lake in the state. The Lake Chelan watershed drains a 924-square-mile area. Ninety percent of the basin is forested or open lands, the

