

A Hitchhiker's Guide to Coeur d'Alene Lake Management: A Brief Look at 40 Years of Progress in Coeur d'Alene Lake

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The Coeur d'Alene Lake Management Program (LMP) is collaboration between the State of Idaho, the Coeur d'Alene Tribe, and USEPA that manages historic mining contamination within the lake's sediments. The LMP is an alternative to USEPA action under CERCLA, and seeks to support natural attenuation of the lake's metals pollution by maintaining high dissolved O₂ levels in the lake's bottom waters. High O₂ levels help trap metals within sediments and facilitate long-term burial. Oxygen levels are maintained by controlling nutrient input to levels that maintain the lake within an oligotrophic state (i.e., reduced primary productivity). The LMP achieves this through a combination of (i) monitoring/assessment, (ii) coordination with land/water management authorities, (iii) education/outreach to the surrounding communities, and (iv) acceleration of nutrient reduction/control activities.

The LMP is conducting a review of the lake's status relative to performance criteria established in the 2009 Lake Management Plan. Preliminary results indicate that metals levels in the lake have begun to decline. The lake still exceeds State and Tribe WQS for cadmium, lead, and zinc. These metals also negatively impact the lake's food web. However, zinc levels have declined since the 1990's and now occasionally meet WQS at some locations. Cadmium levels are generally steady, but show some signs of decline. Lead levels are variable and correlate to regional hydrology.

Trophic indicators are trending away from oligotrophic status. Phosphorus and chlorophyll-a levels are increasing, and bio-indicators reinforce this trophic trend. Summertime dissolved O₂ levels fall below management criteria at several sampling locations. Hypoxia and anoxia is commonly observed in the southern lake and in the lake's northwestern corner adjacent to the Spokane River. Enhanced nutrient and metals release from sediments occurs in these regions. Increased phosphorus loading has been observed in the watershed, and the LMP is evaluating potential drivers of long-term change.