

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

**Water Science and Technology Board
Division on Earth and Life Studies**

The Future of Water Quality in Coeur d'Alene Lake

Statement of Task

Coeur d'Alene Lake in Northern Idaho is an invaluable water, economic, and natural resource to residents of Idaho and Eastern Washington. Historical mining activities led to the contamination of millions of tons of lake sediments with metals such as zinc, cadmium, and lead. Since the implementation of environmental regulations in the mid-1970s, metal concentrations in the lake have declined. However, development along the shores and drainages around the lake, land use changes within the larger basin, and other dynamics could reverse this success due to increased loading of nutrients (i.e., phosphorus and nitrogen) that could release metals bound to lake sediments.

The Idaho Department of Environmental Quality, Kootenai County, and the Environmental Protection Agency, with the support of the Coeur d'Alene Tribe, have asked the National Academies to analyze available data and information about Coeur d'Alene Lake water quality and provide recommendations to address identified issues of concern. This will involve reviewing historical and recent water quality data, and any available modeling efforts, stemming from the 2009 Lake Management Plan and other available information, with the goal of determining what future water quality conditions in the lake will be. More specifically, the study will:

- Evaluate current water quality in the lake, lower rivers and lateral lakes with a focus on observed trends in nutrient loading and metals concentrations, while also considering how changes in temperature or precipitation could affect those trends.
- Consider the impacts of current summertime anoxia on the fate of the metals and nutrients.
- Consider whether reduced levels of zinc entering the lake as a result of the upgrade to the Central Treatment Plant and other upstream activities are removing an important control on algal growth.
- Discuss whether metals currently found in lake sediments will be released into the lake if current trends continue. If sufficient data are not available to result in a high level of confidence in its conclusions, the National Academies will identify the additional data that are required to achieve an appropriate level of confidence.
- Discuss the relevance of metals release in the lake to human and ecological health.

Sponsors: Idaho Department of Environmental Quality, EPA, and Kootenai County