Eagle Lake and Water Quality

A Newsletter from the Lahontan Regional Water Quality Control Board February 2020

Welcome

The Lahontan Regional Water Quality Control Board developed this newsletter to communicate our efforts to protect water quality at Eagle Lake.

Please visit our webpage at https://www.waterboards.ca.gov/lahontan/ to learn more about us.

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Current Grazing Issues and Water Board Actions

In 2018, the Lahontan Water Board received public complaints and documentation of potential threats to water quality from livestock grazing activities along the shores of Eagle Lake, California. As required by the Lahontan Basin Plan, Lahontan Water Board staff inspected the Eagle Lake Basin in late 2018, documenting evidence of potential Eagle Lake shoreline grazing impacts.

In response, the Lahontan Water Board has required all private and federal shoreline grazing operations along Eagle Lake to submit either existing or newly developed Grazing Management Plans to protect water quality. We are happy to report that we have received Grazing Management Plans from all the grazing operators where cattle have access to Eagle Lake shoreline. Some of the plans may require additional information, and those operators have been notified. The plans will be used to both gain an understanding grazing specific operations and opportunities for additional management practices that may be necessary to help protect and restore water quality at Eagle Lake.

2019 Water Quality Monitoring Results

Lahontan Water Board staff have been conducted monthly sampling at four in-lake stations beginning in March of 2019. These in-lake sites correspond with historic Department of Water Resources (DWR) water quality monitoring sites. Results of this program will be posted once the data passes the rigorous quality control required for posting on the California Environmental Data Exchange Network (CEDEN). This will be a subject of a future article, once the data is posted to CEDEN. However, some general data trends can be reported: Compared to the historic DWR data, total nitrogen concentrations have declined, but total phosphorus concentrations have increased. Further evaluation of nitrogen sources is needed, but the most likely explanation is reduced loading from septic systems in the Eagle Lake Watershed. Beginning in the early 1980's, the Water Board began to require conversion of septic systems to wastewater treatment, which reduced nitrogen and phosphorus inputs to groundwater. Nitrogen in septage can converts to nitrate, which moves easily with groundwater into Eagle Lake. Phosphorus chemically sticks to soil particles, so does not readily move with groundwater.

Eagle Lake Info

Eagle Lake is home to the unique Eagle Lake Rainbow Trout, Bald Eagles, and the largest osprey and grebe colonies in the western United States. Eagle Lake has no natural outlet, so salts and nutrients can accumulate. The largest surface water tributary is Pine Creek, but most water input is from groundwater.

Why is Eagle Lake an *impaired waterbody*?

Water quality monitoring since the 1970s showed exceedances of water quality objectives for total nitrogen and total phosphorus (nutrients that spur plant and algae growth). The Federal Clean Water Act section 303d requires waterbodies determined to exceed water quality objectives to be listed as impaired and actions be taken to restore water quality.

What has the Water Board done to restore water quality?

Beginning in 1984 and continuing for nearly three decades, the Water Board focused on control of septic system discharges, which are high in nutrients, within the Eagle Lake Basin to reduce nutrient loading of local groundwater. These efforts have been completed, and we are now focusing on nutrient loading to surface waters of Eagle Lake.

Upcoming Studies

Lahontan Water Board staff hosted a kickoff meeting in January 2020 to initiate a lake-wide study of Eagle Lake with academic researchers (University of Nevada Reno and Desert Research Institute), as well as, other State agencies such as California Department of Fish and Wildlife and Department of Water Resources. This meeting served as the initial step in the potential development of a more comprehensive nutrient source analysis of Eagle Lake. It is anticipated that such a study would provide valuable information for land and resource managers to help make more informed decision about how to better manage the unique aquatic resource at Eagle Lake.

Photo: Erick Burres, State Water Resources Control Board Citizen's Monitoring Coordinator

Next Steps

Lahontan Water Board staff will:

- Continue to work with private grazing operators, the United States Forest Service, and the Bureau of Land Management to further refine and improve grazing management along the shoreline of Eagle Lake. It is anticipated that where grazing practices need improvement, practices will be implemented during the 2020 grazing season.
- Speak about Eagle Lake water quality at the Lassen County Board of Supervisor's meeting in Susanville on February 25th at 10:00 a.m.
- Continue to coordinate meetings to explore opportunities and synergies between research and academic institutions; federal and state partners; and other interested parties to begin to develop studies and funding that may help inform critical resource management decisions and implementation projects.