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August 31, 2015



Dear California State Water Resources Board,

I am writing to encourage you to continue with the discussions on the water quality impacts of Cattle grazing. I have conducted scientific research for the past 15 years in the Sierra Nevada watershed as part of the UC Davis Tahoe research group. We sampled and surveyed water quality in multiple areas of a 300-mile section of the Sierra Nevada. Many of these areas had active cattle grazing zones. Based on scientific research I state the following:

- 1. In areas where cattle grazing occur, water quality has become progressively worse over the past 15 years.
- 2. High numbers of E-coli bacteria are associated with cattle areas, and current standards for permissible E-coli in recreational watersheds are not strict enough.
- 3. Highly significant increases in quantities of algae are found in lakes and streams where cattle graze, when compared to non-grazed areas. Certain algae secrete toxins that are harmful to humans, pets, and wildlife.
- 4. The Sierra Nevada risks developing a toxic algae problem similar to what has occurred in the Klamath River watershed.
- 5. UC Davis has documented increased night temperatures as part of global climate change in the Sierra. Warmer temperatures, and decreased stream flows favor increases in E-coli and pathogenic bacteria as well as increases in Algae.

We have nearly 20 scientific articles documenting our findings and expressing our concerns. We are happy to forward to you if interested.

Sincerely,

Robert W. Derlet, M.D. Professor Emeritus Department Chief Emeritus University of California, Davis