

Peer Review Summary Document

(2/19/2021)

Peer Review Plan

<https://www.usgs.gov/atom/108064> [74 KB PDF].

Title and Authorship of Information Product Disseminated

Selenium Hazards in the Salton Sea Environment: Summary of Current Knowledge to Inform Future Wetland Management, By Michael R. Rosen, Susan E.W. De La Cruz, Krishangi D. Groover, Isa Woo, Sarah A. Roberts, Melanie J. Davis, Cristiana Y. Antonino.

Peer Reviewers Expertise and Credentials

Reviewer #1 holds a B.S. in Fisheries Biology. Expertise includes endocrine disruption analysis of the Lake Mead and Salton Sea food webs. The reviewer has nearly 50 years' experience in contaminant biology studies and has authored or co-authored more than 50 research publications on environmental contaminants in lacustrine aquatic ecosystems and trace contaminants in aquatic systems.

Reviewer #2 holds a Ph.D. in Marine Sciences. Expertise includes work on Se cycling in lakes at the sediment water interface including the role microbes play in the selenium cycle. The reviewer is an internationally known researcher on microbial cycling of metals (selenium, arsenic, antimony, and tellurium and others) as well as methane and other organic chemicals and has authored or co-authored more than 200 publications on these and other metals and organic compounds.

Reviewer #3 holds a M.S. in Biology. Expertise includes studies of water pollution on the ecology in streams from relating human-influences on stream environments to biological effects and estimating risks of adverse effects, effects of mining and trace elements (including selenium) on stream ecosystems, and developing biotic ligand models to predict effects of metal mixtures in natural waters.

Reviewer #4 has over 20 years of experience as a biologist and holds a Ph.D. in Ecology. Expertise includes extensive work between 2006-2010 and 2013-present on Salton Sea ecological issues dealing with selenium and other contaminant risks. The reviewer has authored or co-authored over 50 publications.

Reviewer #5 is a career biologist and holds a Ph.D. in Wildlife Biology and Range Management. The reviewer's expertise was central to planning and executing work at the Salton Sea from 1990 to 2017, conducting research, which included organizing and chairing numerous special-topic workshops; authoring and co-authoring numerous scientific publications, and serving as a principal scientific authority on the Salton Sea for Federal agencies.

Charge Submitted to Peer Reviewers

The reviewers were asked to objectively evaluate the study methods, thoroughness of the information included from published and unpublished sources, results, conclusions and data and information gaps described in the manuscript.

Summary of Peer Reviewers Comments

All reviewers agreed the report was comprehensive and included a vast amount of literature that was well summarized. The reviewers had differing opinions about the organization of the manuscript and some expressed concern that many references included in the text were not included in the reference list. The most significant comments from reviewers related to the significance of toxicity, such as the toxicity of selenium to aquatic organisms and whether there was enough information to substantiate some of the conclusions and gap analyses, however, not all reviewers were in agreement on these comments. Reviewers 3, 4, and 5 provided the most extensive comments including questions about specific details in the manuscript, but none questioned the overall conclusions. Reviewer #5 requested additional discussion on policy issues. Some reviewers suggested revisions for the figures used. Overall, most of the comments from the reviewers were editorial in nature and no reviewer questioned the validity of the science described in the manuscript.

Summary of USGS Response to Peer Reviewers Comments

The authors addressed all comments and reconciled them as they thought appropriate. No changes to the organization of the manuscript were made because the suggested changes would affect the format and focus on selenium. Additional references were added to the reference section as suggested. All figures were redrawn as needed in response to comments from the reviewers. A more thorough justification of toxicity to wildlife based on solid evidence was added. The authors determined the manuscript should not address policy issues as suggested, so no changes were made in response to these comments.

The Dissemination

The published information product will be released as a USGS Scientific Investigations Report and will be available at <https://pubs.usgs.gov/>.