

Summary of Present Lake Cahuilla Discussion (Thursday, July 27, 2017)
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The three main issues that concern the state of California, the United States government, and the general public with regard to the environmental changes coming to the Salton Sea region are the following: 1) air quality, 2) public health challenges from dust, and 3) habitat loss for endangered species. Although significant public funds are soon to be made available for remediation and monitoring of the area, there are no specific funds set aside (or planned) for basic scientific research. NGOs are concerned primarily with more applied problems, so the National Science Foundation, who's mission is basic research, seems the most likely if high risk source of funding. The group was interested in linking the sediments, water, organisms, and atmosphere with some areas that could be of interest to funding agencies:

- Prof. Bahreini's recent work with dust particles found that selenium (Se) is unusually concentrated in samples collected in summer. Did microbial processes drive this observation in exposed sediments on the lakeshore? Is the increased Se in the form of dimethyl-Se, a structurally similar molecule to dimethyl-sulfide, which is in high abundance in the area.
- What are the greenhouse gas fluxes in the region? Is there methane originating from the highly anaerobic, sulfidic lake waters? Is the current ecosystem a net sink or source for nitrous oxide, carbon dioxide, or methane?
- How will the microbial communities change as salinity continues to increase? How might altered microbial biogeochemistry affect the habitat for the birds and fish that will survive high salinities?
- What is the current food web that supports the desert pupfish and birds that use Salton Sea as part of the Pacific Flyway? Are there stable isotope tracers of important dietary components and how might the base of the food web change with water diversion?
- How do the ecosystems of the Salton Sea basin, the Colorado River, and Gulf of California function as a continuum now? And how will they change in the near future?

The group proposed to look for opportunities to engage in more applied, focused research, while actively pursuing funding and ideas for scientific discovery and basic research. As the team begins to work together and formulate strategies for funding, we should investigate NSF, ARB, USDA, the Salton Sea Authority, US Fish and Wildlife, CA Fish and Wildlife for programs linked to Salton Sea. For private funding, the Gordon and Betty Moore Foundation was established to create positive outcomes for future generations. In pursuit of that vision, we foster path-breaking scientific discovery, environmental conservation, patient care improvements and preservation of the *special character of the San Francisco Bay Area*. Could they be convinced to broaden their scope to this under-funded area of California?

(<https://www.moore.org/programs/environmental-conservation>)