# FORESTRY, FIRE & STATE LANDS
# REQUEST FOR PROPOSALS
# Cover Sheet

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| **Project Title** | Mercury Speciation in Great Salt Lake:A Comprehensive Mapping of Mercury Species of Water and Biota | |
| **Lead Project Sponsor** | Quicksilver Scientific, USGS (Utah) | |
| **Project Contact** | Name | Dr. Christopher W. Shade |
| | Mailing Address | 1376 Miners Drive, Ste 101, Lafayette, CO 80026 |
| | Phone Number | 303-263-6903 |
| | Fax Number | 303-926-0349 |
| | E-Mail Address | chris@quicksilverscientific.com |
| **Project Description / Abstract** | High mercury levels are a threat to ecosystem competency and to human health through consumption of food resources, both directly through bird hunting and indirectly through aquaculture (brine shrimp used as fish feed). This proposed project seeks to:<br><br>1) Greatly expand the currently available data set for distribution and abundance of aqueous mercury forms throughout the lake. Specifically, this project will provide a comprehensive map of the lake both across its surface and within its depth through water column profiles at a time when brine shrimp are present and when they are largely absent. This project will also quantify mercury partitioning onto particulates (both mineral and phytoplankton) at different depths.<br><br>2) Apply ultra low detection mercury speciation methods to archived biotic samples to examine the evolution in total Hg and the ratios of methylmercury (MeHg) to inorganic mercury (HgII) in macroivertebrates (i.e. brine shrimp, brine flies, and predatory birds). This specialized method will be able to trace levels and ratios of MeHg and HgII (particularly in the liver) over the course of a year.<br><br>3) Provide extensive data useful in both making informed management decisions and framing subsequent research projects to further an in–depth understanding of (1) major processes within the lake, (2) their distribution and potential for disruption of ecosystem competency, and (3) potential ways to mitigate bioaccumulative problems. | |

| **Project Funding** | Amount Requested | Matching Funds | Total Project Cost |
|---|---|---|---|
| | $ 73,890 | $ 21,050 | $ 93,940 |