FORESTRY, FIRE & STATE LANDS
REQUEST FOR PROPOSALS
Cover Sheet

Project Title	**Selenium Contamination in Waterbird Eggs and Risk to Avian Reproduction in the Great Salt Lake**		
Lead Project Sponsor	**US Geological Survey, Western Ecological Research Center, 3020 State University Dr. E, Suite 3006, Sacramento, CA 95819-2632**		
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Project Description / Abstract	We propose to examine selenium exposure in waterbirds breeding in the Great Salt Lake. A particular strength of this proposal is the large amount of matching funds provided by two already-funded and ongoing projects assessing methylmercury contamination in waterbirds. Specifically, our team has studied mercury bioaccumulation in over 30 species of birds nesting within the Great Salt Lake Ecosystem during 2010 and 2011, and we have determined methylmercury levels in more than a thousand eggs. In this proposal, we request funds to analyze a subset of these archived egg samples for selenium as well, representing several bird guilds with distinct foraging ecology. We will compare selenium concentrations and molar ratios of selenium to mercury in eggs to published toxicity levels in order to assess relative risk to birds. Selenium and mercury are individually toxic to avian reproduction and, when bioaccumulated in combination, their toxic effect can either be reduced or enhanced depending on their molar ratio. The Great Salt Lake is contaminated with both selenium and mercury, so any full understanding of toxicity to wildlife should incorporate both of their effects. Therefore, by adding a selenium component to our large studies on methylmercury contamination in birds, we will be able to more fully address the toxicity of these contaminants to birds breeding within the Great Salt Lake Ecosystem. Our results will have direct implications for management of the Great Salt Lake, and will further development of the selenium standard.		
Project Funding	Amount Requested **$74,984**	Matching Funds **$453,366**	Total Project Cost **$528,366**