



**FORESTRY, FIRE & STATE LANDS
REQUEST FOR GRANT APPLICATION
Cover Sheet**



Project Title	Relations between mercury, nutrients and plankton along the Farmington Bay–Gilbert Bay salinity gradient in the Great Salt Lake		
Lead Project Sponsor	Utah State University		
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Project Description / Abstract	<p>Summary: The salinity of open waters of Farmington Bay and Gilbert Bay has a strong influence on zooplankton and phytoplankton growth. Preliminary analyses indicate that salinity and other factors change along an environmental gradient from south to north in Farmington Bay. Additionally, mercury and methyl mercury have been detected in high concentrations. Observations of zooplankton, phytoplankton and metals along this gradient have provided some insight into the changes that occur as different water sources enter the bay, but we do not understand the mechanisms causing these changes, nor do we have a definitive understanding of the spatio-temporal changes. We propose to do two transects in August and September along Farmington Bay’s S-N salinity gradient, with one additional sample site in Gilbert Bay, to determine if nutrients, salinity, or both control the development of cyanobacterial blooms and zooplankton assemblages. We will also collect information on mercury and methyl mercury. A suite of limnological variables will be measured, including chlorophyll, phycocyanin (a cyanobacterial pigment), algal isotopes, cyanotoxins and physical-chemical variables (salinity, light penetrations, inorganic and total N and P). These two transects will be supplemented by a separately-funded transect and nutrient-addition bioassay that will be completed in June 2012.</p>		
Project Funding	Amount Requested	Matching	Total Project Cost
	\$ 49,736	See Cooperative Partner Section	\$49,736