



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



<b>Project Title</b>	<b>Climate variability impacts for Utah’s Great Salt Lake with proposed causeway modifications</b>		
<b>Lead Project Sponsor</b>	Utah State University		
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<b>Project Description / Abstract</b>	<p>This research will quantify how climate variability and causeway modifications interact to affect water and salt flows in the Great Salt Lake. Long-term reconstructed streamflow (~1500 to present) from tree-ring data show considerably more variability than measured streamflow from the 20<sup>th</sup> Century, indicating past droughts and wet periods could be longer, more intense, and of greater magnitude than more recent records. Increases in lake level could require pumping to protect existing infrastructure, whereas decreased runoff could desiccate the lake and lead to high salinity levels (especially in the north arm) that do not support brine shrimp and brine fly production. Changes in either direction could threaten ecological and economic resources of the Great Salt Lake. We will apply the updated USGS Great Salt Lake Fortran Model to simulate water and salt flow with long term reconstructed streamflow and bracket the range of variability of lake elevations and salinities in the north and south arms of the lake with historical, present, proposed bridge, and whole lake causeway modifications. Results from this research will help the Division of Forestry, Fire &amp; State Lands and other stakeholders manage and protect the ecological and economic resources of the Great Salt Lake.</p>		
<b>Project Funding</b>	Amount Requested	Matching Funds	Total Project Cost
	\$68,133	\$0	\$68,133