2022 REQUEST FOR GRANT APPLICATION

Issued by the Utah Department of Natural Resources
Division of Forestry, Fire & State Lands
For Great Salt Lake Research Projects

1.0 STATEMENT OF INTENT

The Utah Department of Natural Resources, Division of Forestry, Fire & State Lands requests proposals for research projects that will assist the Division in becoming better-informed stewards of Great Salt Lake (GSL). It is the intent of the Division that gaining a better understanding of the lake system leads to a better and defendable basis for management decisions that lead to maintaining this important ecosystem.

The Great Salt Lake Tech Team, through its Research and Grants Subcommittee, has identified nine "hot topics" that research projects will address, either individually or in combination:

1. **Great Salt Lake salt mass balance studies:**

    a. **Subdivide south arm salt mass into upper brine layer and deep brine layer:** Both the South Arm and North Arm have been observed to form distinct layers within their water columns with different densities. This study will serve to characterize the salt mass in the upper brine layer (UBL) and deep brine layer (DBL) of the South Arm. Key result will be developing a relationship to describe the salt mass of the UBL and DBL that can be used in Great Salt Lake salt balance efforts.
    b. **Salt Loads into Great Salt Lake:** Prior to a recent study by the USGS, very little information was available to describe salt loads into Great Salt Lake. This study will serve to build upon the USGS's work to better characterize salt loads into Great Salt Lake as an important component of the overall Great Salt Lake salt balance.
    c. **Gunnison Bay salt crust and brine interaction:** What is the spatial extent and total mass of salt crust in the bed of Gunnison Bay? How is formation and dissolution of the salt crust affected by changes in lake elevation, salinity, seasonality, and hydrologic connectivity across the causeway? What are the physico-chemical interactions of subaerial and subaqueous groundwater springs with the north arm brine, salt crust, and fragile shoreline environment?
    d. **Impacts of deep brine transport on salt balance and mercury cycling**: Identify and understand the locations of mixing of the deep brine with the shallow brine and its implications for potential steps to control the salt balance as well as contaminant (e.g.

mercury and other trace elements) propagation from the deep brine into the ecosystem.

2. **Nest success on Great Salt Lake marshes:** Determine why ducks nesting on Great Salt Lake marshes have such a low rate of nest success, and what can be done to mitigate the problem. The problem is especially critical in cinnamon teal because current nesting population is only a fraction of what decades ago.

3. **Assessing water delivery and water needs of Great Salt Lake wetlands**: In order to sustain healthy water bird populations and healthy wetland habitats, wetland managers need to further understand just how much water is flowing into Great Salt Lake wetlands and how much water is necessary to sustain healthy bird populations. Managers need to understand the volume of water required to meet a range of needs such as, waterfowl production, monthly bird use, daily evapotranspiration rates, canal seepage losses and water depth requirements. Understanding historic water use would also be beneficial for ongoing GSL modeling efforts. Also, the identification of flow gage locations would be a helpful outcome of this project. This effort could focus on one wildlife management area or generalize across eastern Great Salt Lake wetland areas.

4. **Native wetland revegetation to restore wetland habitat**: Vast areas of Great Salt Lake wetlands are being cleared of invasive *Phragmites* but in many cases, the native vegetation is slow to return. Wetland managers seek proven techniques for rapidly reestablishing native plants to recover lost habitat and to prevent *Phragmites* reinvasion. Seeding as opposed to planting is the best revegetation approach given the scale of the restoration need but results of seeding to date have been extremely poor. What innovative techniques can be used to enhance the success of native plant seedings in Great Salt Lake wetlands and prevent invasives from taking over? This project should also consider how native vegetation has increased or decreased since USU completed the initial vegetation mapping in 2011.

5. **Invasive plants in wetlands:**

    a. Cattails have long been the bane of many managers' existence but its unclear what environmental conditions drive their success, which cattail species are present in Great Salt Lake wetlands, whether invasive hybrids have formed, and where different species and hybrids occur.
    b. In addition, in submerged wetlands *Myriophyllum* (watermilfoil) and *Hydrilla* (waterthyme) invaders may also become a problem in the near-future but their abundances and locations are unknown. Also, are their invasive hybrids forming between native and non-native *Myriophyllum* species and if so, where?

6. **Sources of microplastics to the Great Salt Lake:** Plastic deposition from the atmosphere is occurring everywhere, so even remote watersheds are accumulating and transporting particles in really small sizes - small enough to be mistaken for food by plankton. Most studies in rivers to date have used nets to capture plastics, but these generally have a cut off of 300 um or so, so the smaller particles are missed. How would microplastic sources to the Logan-Bear River

system and other Great Salt Lake tributaries be characterized? Further, how do microplastics in Great Salt Lake influence brine shrimp eating and behavior.

7. **Using water banking to increase or maintain water deliveries to Great Salt Lake and wetlands:** Synergizing with Utah's Water Banking Pilot Program, water users and managers need to understand the opportunities and challenges of water banking for preserving Great Salt Lake. For example, specific questions/research could include modeling that estimates potential water deliveries from water banking in different locations and time periods, understanding how to shephard water to Great Salt Lake, or working with landowners/irrigation districts/farmers to maintain a Great Salt Lake water bank.

8. **Archaeological investigation:** With a historic low lake level, a new archeological survey could uncover sites and/or items on that have not been exposed for over 60 years. A study could identify sites that need to be preserved and/or further investigated.

The outcomes and deliverables of this Request for Grant Application are deliberately non-specific to allow the submitting entity to craft an approach that will bring understanding and/or define future research needs. The successful applicant must indicate the relevance and importance of the work to GSL and demonstrate how it will benefit the Division.

Proposals are solicited for one- to two-year research projects that address an aspect of one or more of the "hot topics" listed above. Priority will be given to one-year projects. Applicants wishing to receive a second year of funding must reapply for funding the following year.

All deliverables are due on June 24, 2022. If the project is a two-year project, an interim report is due on June 24, 2022; with the final deliverable due no later than June 24, 2023. Expenditures eligible for funding under this proposal include labor, supplies, travel, materials and equipment.

2.0 BACKGROUND

The Division of Forestry, Fire and State Lands as part of its statutory responsibilities recognizes the need to understand aspects of the GSL in order to manage the lake and protect its resources. The authority for this Request for Grant Application comes from Utah Code 65A-10-8 that outlines the management responsibilities of the Division for Great Salt Lake. Available funding under this Request for Grant Application comes from the Utah State Legislature to the Utah Division of Forestry, Fire and State Lands.

3.0 APPLICANT ELIGIBILITY/REQUIREMENTS

This request is directed to federal, state, tribal and local governments, communities, businesses, universities, colleges and non-profit organizations.

Applicants may apply for up to **$75,000** for any project. It is anticipated that a total of approximately $200,000 will be available for projects and that more than one project will be funded. Two-year

projects may be considered, however, 60% or more of the total grant request must be spent before June 24, 2022.

Applying organizations or businesses must have the ability to ensure fiscal accountability.

4.0 ELIGIBLE ACTIVITIES

Funds may be used for a range of approaches to the “hot topics” including: to conduct pilot projects; synthesize new or existing information; develop methods to address a research questions; apply existing knowledge to a specific problem; define and study an aspect of a specific research question; or define future research needs.

5.0 ADMINISTRATIVE REQUIREMENTS

5.1 Those submitting proposals must examine all contract documents, noting particularly all stipulations that in any way affect work output. Failure to fully understand the amount and nature of the work required to fulfill all terms of the contract documents will not be considered as a basis for extra compensation after a contract has been awarded.

5.2 If discrepancies, omissions, or ambiguities are found in contract documents, the Division will be notified at once. The Division will send written corrections or explanations. The Division will not be responsible for any oral instructions.

5.3 Proposals that substantially add to, subtract from, or otherwise change the provisions of this request will be considered void.

5.4 Proposals must certify that all entities responsible for authorizing activities have agreed that their proposal should be submitted as written.

5.5 Proposals must certify that funds awarded to the proposing entity by the Division through any contract issued pursuant to this Request will not be used to supplant funds that it may have at its disposal from other sources.

5.6 Proposals must indicate acceptance of terms required by this Request for Grant Application in a transmittal letter signed by the individual with authority to bind the entity to these requirements.

5.7 Because the source of grant monies are public funds, submitted proposals become the property of the Division of Forestry, Fire and State Lands and will become public records following the award of the grants. Content of unsuccessful proposals may be protected to the extent allowed by law at the request of the submitter. The request should be part of the proposal on the basis of proprietary ideas, processes, equipment, copyrights, etc. Information of the cover sheet will not be protected information.

5.8 Research reports will be available to the public through the Division of Forestry, Fire and State Lands and may be published online.

5.9 When submitting invoices for payment, grant recipients will provide the Division of Forestry, Fire and State Lands with detailed accounting information. Personnel costs should detail the charges per individual staff member working on the project. Copies of invoices and receipts from the purchase of materials and supplies for project should be submitted. Travels costs should be detailed (i.e., mileage reimbursement and cost per mile, vehicle rental charge).

5.10 The overhead for each project budget shall not exceed 10%.

5.11 In addition to the project deliverable, researchers will be required to present research findings at a Great Salt Lake Technical Team Meeting and provide a 1 – 2 page project summary.

6.0 PROPOSAL COMPONENTS

To be considered, project proposals must include the following components:

6.1 COVER SHEET

Use attached form.

6.2 PROJECT NARRATIVE

Please limit to eight (8) pages single sided, singled spaced, 12-point type document not including resumes (see list of appendices, below). The narrative should provide:

A. Information about the principal investigator and project team members.

B. Name and nature of the sponsoring institution, including relevant financial information such as overhead rate or 501(c)3 status.

C. Declaration of close associations of research team members with staff of the Division of Forestry Fire and State Lands, members of the Great Salt Lake Technical Team, or members of the Utah State Legislature.

D. Plan of work including goals, objectives and methods of the research project. This section should include a discussion of how the requested funding and approach will be adequate to accomplish the goals and objectives of the research project.

E. Discussion of the Importance of the project to the public interest, to a better understanding of a significant research issue, or to management of Great Salt Lake.

F. Discussion of how the project addresses an aspect of at least one of the “hot topics” listed in 1.0 Statement of Intent.

G. Discussion concerning related work done or in progress by principal investigator and members of the project team.

6.3 COLLABORATION/PROJECT PARTNERS

Please restrict to a summary section of two (2) pages single sided, singled spaced, 12-point type document not including letters of commitment (see list of appendices, below).

A. Identify partners and their contributions to the proposed project.

B. Letters of commitment describing the specific commitment (provided by the project partner and included as an appendix).

C. Potential for future leverage associated with the research project.

6.4 PROJECT BUDGET AND SCHEDULE

Project proposals must present a budget table in a format similar to that of the example below. The budget table should include expenses expected to be covered with grant funds, plus any state and local match sources.

A. Total Projected Costs by Category. Categories are: personnel, equipment, supplies, travel, administration, other.

B. Identification of matching funds or contributed resources, whether cash or in-kind services. If in-kind, state the category: personnel, equipment, supplies, travel, administration, other.

6.5 APPENDICES

A. Resumes of key project team members.

B. Letters of support from community leaders, community groups, agencies, etc.

C. Letters of commitment from declared partners.

Sample Budget Table

Budget Category	Unit Cost ($)	# Of Units	Grant funds requested	Matching Funds (Cash or In-kind)	Total
Personnel					
Equipment					
Materials/Supplies					
Travel					
Administrative Overhead					
Other (list)					
TOTAL PROJECT COST					

Sample Estimated Schedule of Work

Organization	Activity/Output	QTY	Month 1-3			Month 4-6			Month 7-9		
University of Bluffdale	Literature search	1									
University of Bluffdale	Field work	1									
University of Bluffdale	Data analysis and report	1									

7.0 RANKING CRITERIA

The Division will follow guidelines developed by members of the Great Salt Lake Technical Team to review and evaluate proposals. An evaluation team made up of State and Great Salt Lake Technical Team members will evaluate proposals. The evaluation process will be based on how project elements contribute to the stated goals, the qualifications of the proposal and the information asked for in this Request for Grant Application. Proposals will be evaluated based on following criteria:

Weight	Criteria
25%	Potential to demonstrate an early “success” with respect to an aspect of one or more of the four “hot topics.”
30%	Project importance to the Utah public AND/OR Project potential to increase understanding of a research need AND/OR Project potential to assist the management of Great Salt Lake
10%	Project potential for current or future partnerships with funding and/or collaboration
10%	Understanding and articulation of the research concern
10%	Specific work plan elements ❑ milestones ❑ reasonable and rational budget ❑ reasonable work plan and scope of work ❑ quality of presentation ❑ completeness of proposal
10%	Qualifications and past performance of investigators
5%	Other

8.0 PROPOSAL APPLICATION PROCEDURE

All proposals must be electronic and received attached to an email as a Microsoft Word document, or .pdf document. Each proposal must be received no later than **Thursday, April 15, 2021 at 5:00 pm**. Absolutely no exceptions will be made for proposals not received by the appointed time. **Proposals shall be submitted to Laura Vernon at the email address below.** Questions regarding the Request for Grant Application should also be addressed to Laura Vernon.

Laura Vernon
Great Salt Lake Coordinator
Forestry Fire & State Lands
1594 W North Temple Ste 3520
PO Box 145703
Salt Lake City, UT 84114
lauravernon@utah.gov
(801) 673-0227

9.0 CONTRACT DURATION

The contract period will extend from the date of contract approval by the Utah Division of Forestry, Fire & State Lands until June 30, 2022.

10.0 FUNDING NOTIFICATION AND GRANT AWARD

Proposals selected for funding will be notified within 30 days of the submission deadline. This initial notification should not be construed as an official grant award. The Division is responsible for follow-up with the appropriate documentation to award the grant. Successful candidates are encouraged to consult with the awarding agency before incurring any expenses, as pre-award costs are not usually allowed.

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

Project Title			
Lead Project Sponsor			
Project Contact	Name		
	Mailing Address		
	Phone Number		
	Fax Number		
	E-Mail Address		
Project Description / Abstract			
Project Funding	Amount Requested $	Matching Funds $	Total Project Cost $