[redacted]

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Planned Activities: *

- Over the summer and spring, I plan to collect turbidity data in three meadows in the Sierra National Forest that I have been studying for my master's degree. Turbidity data tells us how much sediment is being transported downstream, which is critical in understanding the effects of the Creek Fire on vulnerable meadow ecosystems. One of the challenges we have faced is that the instruments that we have been using to measure turbidity (turbidity probes) were handed down to us by another project, and they no longer are taking accurate measurements. Calculating accurate sediment loads is a critical pillar to my research, so purchasing a new turbidity probe would greatly improve my analysis. I selected the ClariVue10-33-PT turbidity probe as it was recommended as most appropriate device for our sampling locations by the geomorphologist with the US Forest Service Pacific Southwest Research Station. Ultimately, the results of this study will give us insight into if we can use the post-fire sediment to restore important meadow habitat in the Sierra National Forest.

Benefits to the student: *

- I will be finishing my thesis at the end of the summer semester, so the quality of the data that we collect this spring and summer will directly affect the quality of my research. I plan to publish my research, but the current limited sediment data has resulted in high uncertainty. This research is high-impact as it uses potentially-detrimental post-fire sediment to restore degraded meadows which have started to release carbon into the atmosphere. While presenting my preliminary data at American Geophysical Union Fall Meeting in December, 2022, there was much interest in repeating this project across the United States. Publishing high-quality data will not only benefit myself as a researcher, but also the restoration field at large. This research will also continue past my thesis and will support master's and undergraduate students who work on this project in the future.

Current student support (scholarships, fellowships, TA-ships, GA-ships, grant employment, etc.): *

My summer field work salary is currently funded by the US Forest Grant, which also has a small supplies budget. However, there are not enough funds in that budget to purchase the ClariVue10-33-PT turbidity probe ($1,795.11), so the objective is to split the cost between the FSSRA funds and the US Forest Grant. My tuition cost is currently supplemented by the CSU Fresno Women's Association Scholarship, the Fly Fishers for Conservation Scholarship, the Seymour Mack Scholarship, and the Ken Schmidt Hydrogeology Scholarship.

Achievements for any previous FSSRA: *

I was awarded a 2020-2021 FSSRA, and used the funds to purchase AGU and Geological Society of America (GSA) student memberships. As an AGU member, I presented a poster at the 2021 AGU Fall Meeting and was the first in my research group (US Forest Service, Humboldt Polytechnic, and Fresno State) to formally present on our meadow restoration research. As a GSA member, I was able to apply for the Graduate Student Research Grant to purchase sediment samplers vital to my meadow sediment study. Using FSSRA funds, I also purchased camping and first aid equipment for the Fresno State undergraduate technicians who assisted me in collecting data during the summer 2021 field season, as we spent many days in the field. The Forest Service and other collaborators will use at hydrologic, geomorphologic, and biologic data that we collected. I was awarded a 2021-2022 FSSRA, and gave both a presentation and a talk at the AGU Fall meeting in December, 2022. I received vital feedback on my project, made connections with potential employers, and had the opportunity to share this important research at an international conference.

Deliverables (published paper, scientific presentation, research repot, etc.) in bullet-point format: *

-Presenting a poster at the Salmonid Restoration Federation, April 2023 -Submitting master's thesis for summer, 2023 graduation -Publishing research in peer-reviewed journal in 2023

Items/Cost:

Budget Page for FSSRA.

Chemicals/enzymes, etc. *

NA

Brief budget justification: *

The ClariVUE10-33-PT turbidity probe is the best instrument for our field site (burned meadow in the Sierra National Forest), and was recommended by Forest Service employees who work in this area. Of the three study meadows, we plan to install the turbidity probe at Lower Grouse meadow, which is between Shaver and Huntington lakes and was burned in the Creek Fire. The ClariVue10-33-PT senses turbidity has a smaller range than the current one, so will be more likely to only measure the turbidity of the water and not make incorrect measurements due to shadows, algae, and wood pieces in the water.

By checking this box, I acknowledge that any award is contingent on completion of required safety training and paperwork, and I agree to follow all university protocols and guidelines in conducting the activities proposed. *

- [x] I agree

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