Montana Department of Environmental Quality
PPA/WQS/WPS
Attention: Kristy Zhinin
1520 East Sixth Avenue
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Helena, MT 59620-0901

For Department Use Only:
Received By:
Date:
Application Number:
Budget Submitted:

Montana DEQ 319 Mini-Grant Application

*Notice: Applicants **must** submit both a hardcopy and electronic application to DEQ NPS Outreach & Education Coordinator, Kristy Zhinin. kzhinin@mt.gov 406-444-7425.*
Please Refer to Mini-grant call for applicaitons for more information

Applicant Name, Organization & Contact Information (address, phone, email, fax)

Name:	Allison Rzemien, Fundraising and Communications Manager
Organization:	Montana Water Trust
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Tax ID Number for Fiscal Sponsor Organization (Fiscal Sponsors can be a School, Community Group, Non-Profit or Other Organization. Individuals Cannot Apply for this Grant)

Tax ID Number:	81-0544109

Project Description:

Project Title & Location:	Through the proposed Water Temperature Monitoring Project the Montana Water Trust (MWT) will monitor water temperatures in the following streams: Lolo Creek, Tin Cup Creek, Skalkaho Creek, and O'Brien Creek in the Bitterroot watershed, the Little Blackfoot River, Rattlesnake Creek, and Grant Creek in the Clark Fork watershed, and a few additional priority streams in the Upper Clark Fork and Big Hole River watersheds.

What Nonpoint Source Pollutions or Water Quality Issue is Being Addressed?	Water temperature is the most common physical assessment of water quality and impacts both the chemical and biological characteristics of surface water. Water temperature affects the dissolved oxygen level in the water, photosynthesis of aquatic plants, metabolic rates of aquatic organisms, and the sensitivity of these organisms to pollution, parasites, and disease. Water temperature is a critical factor affecting the distribution, spawning, rearing, survival, and growth of salmonid fish that reside in streams during the low flow summer season. Native fish species, especially bull trout, are among the most sensitive to thermal impairments, and their distribution is closely tied to the availability of cold-water habitats. As the trend of an increasingly warming environment continues, monitoring of baseline and future stream temperatures is an imperative step in fisheries conservation work.
What Activities are Planned to Address this Water Resource Issue?	MWT will purchase HOBO brand temperature loggers and deploy them in selected streams listed above. The temperature loggers will remain in the streams from spring to late fall of 2009 and will be redeployed in subsequent summers. MWT will consult with the appropriate local, state, and federal agency fishery personnel in the project areas to determine probe placement and to assure that data is not duplicated. At the end of the monitoring season, the loggers will be retrieved from the streams and the data collected will be downloaded at the MWT office. MWT will graph the data and compare the results to established critical temperature thresholds for fishery health. We will share our findings with partner organizations and use the data to prioritize streams for future flow restoration efforts.
Who are the Instructors/Project Leaders & what are their qualifications?	The project leader is Katie Gaut, MWT's Monitoring Coordinator/GIS Analyst. Katie manages our monitoring program and assists in identifying and evaluating streamflow restoration projects. She holds an M.S. in Biology and Computer Science from Southern Oregon University, where she focused her skills on water quality monitoring and invasive species research. She is currently finishing her Master's of Environmental Science from the University of Hawaii-Hilo.
If Equipment is being purchased, Where will it be Housed & How it will be maintaintained?	When they aren't being used instream, the loggers will be housed at the MWT office and maintained by MWT staff. Very little maintenance will be required, as they are sealed devices.
If Funding is needed for a Specific Site Event: Where is it, How will Transportation be Provided & What Contingencies have been made for Rain Days or Alternative Locations?	Most of the streams selected for this project are included in MWT's existing monitoring network and water temperature measurement will be incorporated into our regular stream monitoring activities at no additional cost. Mileage is the only site-specific expense that will result from measuring temperatures in the few selected streams that are located outside of our regular monitoring network.
What are Expected Measurable Outcomes and Long-term Impacts of the Project?	The loggers will record temperature data every 30 minutes, totaling 48 measurements per day, for each of the selected streams in the Bitterroot, Clark Fork, and Big Hole watersheds. Continuous temperature data has not been collected from most of the selected streams. The season-long, 30-minute temperature data that MWT will collect through this project will provide a complete picture of stream temperature fluctuations and will determine if the stream is meeting temperature standards. The data will help to guide the future restoration and conservation work of MWT and of other organizations, as our findings will be made available to the public through our website.

Objectives, Goals & Outcomes

What Skills and Abilities are to be Developed from the Project & What Knowledge is to be Gained from the Project Activities?

Native fish species are the most vulnerable to stress and mortality caused by high temperatures, and are especially at risk during the egg and juvenile life history stages. In some cases, the frequency and range of temperatures may be more critical to the health of native fish than maximum temperatures, making long-term, high-resolution data loggers essential in understanding the temperature regime that affects native fisheries. The data collected through this project will be used to further understand the temperature dynamics of streams occupied by native fisheries. This knowledge will assist MWT and other organizations in determining where and when increased flows will have the greatest benefit for fish populations. In streams where water temperatures exceed healthy levels for fish habitat, increasing flows can bring water temperatures down and restore habitat connectivity.

How will Pre & Post Project Participant Knowledge, Skills or Behaviors be Evaluated?

The thirty-minute temperature data collected will be analyzed, organized, and compared with any historical data that have been collected. These temperature data will be evaluated in terms of optimal temperature limits for native fisheries in conjunction with an analysis of streamflow. Because low streamflows exacerbate the issue of water temperature, this data will be valuable for MWT's strategic planning and prioritization future instream flow projects. The data will also be helpful in areas where we have current streamflow restoration projects to ensure that our efforts are having the greatest possible benefit for native fish.

Budget

What is the Cost of the Project & Where is the 40% local non-federal in-kind or cash match come from? List by Line-item all the Anticipated Expenses and Match Sources. Attach Separately if need be:

HOBO brand Temperature Loggers (model UA-001-64): 20 @ $55…….....$1,100
USB Cables for downloading temperature data: 2 @ $65...……...$130
Software for Datalogger: 1 @ $35…….....$35
Supplies for installing and securing loggers in stream…….$100
(i.e. rebar, flagging)
Mileage…….....$135
Staff Salaries for project implementation……...$1,000
Total Project Cost.....$2,500

Total DEQ Funds Requested (for equipment and mileage costs)……$1,500
Matching Funds Received from Compton Foundation (for staff salaries)...$1,000

Project Continuation

What Opportunities Exist for Project Continuation or Expansion?

MWT can use this equipment to continue our water temperature monitoring for many years, modifying our monitoring locations so that our data collection best suits our organizational goals. Because the temperature loggers are inexpensive, small, and simple to install, MWT could easily expand our temperature monitoring program as our work area and stream monitoring network continue to grow. We could also use this equipment to focus our temperature monitoring efforts so that if, for example, we find a stream with temperature impairments, we could elect to deploy more instruments along that stream to resolve where temperature becomes an impairment. We then could target this area for addressing the temperature problem, by means such as increasing streamflows.

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