

**Four Forest Restoration Initiative (4FRI) Stream and Riparian Monitoring Plan
Statement of Work and Request for Proposals
Coconino, Tonto, and Apache-Sitgreaves National Forests, Arizona**

Background and Statement of Work: The National Forest Foundation (NFF) seeks a contractor to efficiently develop a stream and riparian area monitoring plan focused on the portions of the [Rim Country project area](#) within the Four Forest Restoration Initiative (4FRI) [footprint](#) where perennial streams exist. A well-designed plan is essential to draw strong inferences about landscape-scale (i.e., mechanical thinning and prescribed fire) and site-specific (e.g., stream channel erosion control) restoration treatment effects on these rare and disproportionately important ecosystems. The monitoring plan will be designed to answer the following questions that have been prioritized by the Forest Service and the 4FRI Multi-Party Monitoring Board (MPMB):

1. How do restoration treatments (at landscape and site-specific scales) change the morphology of spring or stream channels? Possible indicators include: floodplain and riparian connectivity, channel roughness, meanders, bank stability, or other morphological metrics.
2. How do restoration treatments change habitat for aquatic species? Possible indicators include: channel stability, channel shading, underbank cover, overbank cover, coarse woody debris, depth of pools, persistence of water in deep pools, substrate embeddedness, hydraulic habitat diversity, water quality, abundance and diversity of macroinvertebrates, water temperature, sediment loads, or other meaningful habitat metrics.
3. How do restoration treatments affect native riparian plant species? Possible indicators include: diversity, extent, cover, structural complexity, vigor, demography, recruitment, or survival of native riparian plant species.

Information Requested

If interested in this project, please provide a proposal for the above statement of work by providing:

1. Proposed approach, including methods and timeline
2. Work experience, including experience related to creating study designs, monitoring plans, or data collection protocols, and experience conducting relevant analyses using disparate datasets
3. Cost, itemized as in the pricing schedule above
4. Description of your capacity for this project (staff experience, staff availability, time availability)
5. Qualifications
 - a. Resumes – Please provide resumes for key project team members who will implement this project
 - b. Past Experience – Please provide a brief explanation of previous work experience with land management agencies
 - c. Examples – If available, please provide one or two examples of past products that demonstrate proficiency relevant to this project



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This is a request for proposals only and quotations furnished are not offers. This request does not commit the National Forest Foundation to pay any costs incurred in the preparation of submission of the quotation or to contract for supplies or services.

General Specifications

- (a) Description of Work – This Request for Proposals is for services related to creation of a stream and riparian monitoring plan, including the following:
 1. Project Preparation: Contractor shall coordinate with the NFF, the Forest Service, and the MPMB to finalize project priorities, acquire appropriate existing maps or data from the Forest Service, and determine approach for ongoing coordination through an initial kickoff meeting.
 2. Create Draft Monitoring Plan: Contractor shall create a monitoring plan that answers the questions above and follows the specifications laid out in Appendix A. The ideal plan would be cost effective and efficient, maximize use of existing datasets, and incorporate existing, widely used protocols where possible to minimize annual training and data collection costs.
 3. Ongoing Coordination: Contractor will coordinate with the NFF and the MPMB by providing brief monthly updates via email or video teleconference.
 4. Review of Draft Final Plan: Contractor shall provide draft of plan components for interim review by NFF and the Forest Service. Once the draft-final plan is complete it will be reviewed by the NFF, Forest Service, and the MPMB. Final revisions will be made by the contractor.
 5. Delivery of Final Monitoring Plan: The Contractor shall provide a final report which includes items specified in Appendix A.

The Contractor shall identify which efforts and materials they can supply in terms of materials, labor, equipment, supplies, supervision, quality control, and incidentals required to complete the work described. The Contractor shall perform all work in a safe and conscientious manner.

- (b) Project Location - It is expected that all work will be completed remotely, with no travel required. Focal areas for the plan are the Coconino, Tonto, and Apache-Sitgreaves National Forests (Appendix B).
- (c) Work Schedule - Anticipated start date is by October 1, 2022. Preferred date of final deliverable is March 1, 2023.

Pricing Schedule

Contractor shall price work according to the schedule below. Prevailing wages are required per conditions of funding sources.

Description	Unit	Unit Cost	Quantity	Total Cost
1. Project preparation				
2. Monitoring Plan: Suggested sampling scheme				

3. Monitoring Plan: Identify data needs (existing and to be collected)				
4. Monitoring Plan: Analysis plan				
5. Monitoring Plan: Field data collection plan				
6. Monitoring Plan: Data management plan				
7. Monitoring Plan: Implementation cost estimate scenarios				
8. Ongoing coordination				
9. Review of draft products				
10. Final report delivery				

Prohibited Telecommunications Services and Equipment

The Contractor is responsible for compliance with the prohibition on certain telecommunications and video surveillance services or equipment identified in 2 CFR 200.216.

Bid Submission

Submit bids via email to Sasha Stortz, ssortz@nationalforests.org by August 30, 2022.

Contractor Selection Process

The NFF will use evaluation factors including cost, contractor experience, and the proposed approach to the project to review each submitted proposal. Based on the outcomes of that selection process, the NFF will notify successful and unsuccessful bidders by September 30, 2022 and will prepare a separate contract document.

Point of Contact

For questions about the details of producing the bid, please contact:

Sasha Stortz
National Forest Foundation Arizona Program Manager
928.961.0318
ssortz@nationalforests.org

Equal Opportunity Provider

In accordance with Federal law and U.S. Department of Agriculture policy, the National Forest Foundation is prohibited from discriminating on the basis of race, color, national origin, sex, age, religion, political beliefs, or disability.

Appendix A: Monitoring Plan Specifications

The final plan should not be longer than approximately 25 pages not counting maps, figures, and appendices.

The monitoring plan shall include but is not limited to the following sections and information:

1. Sampling approach: Create a stratified sampling scheme that accounts for differences in stream types, conditions, gradients, elevations, and other factors relevant to answering the questions above
 - i. Sampling scheme should include recommended controls to differentiate treatment effects from differences in sites, background conditions, etc
2. Data Requirements: Identify types of data (i.e., specific metrics) required to answer the above monitoring questions, including:
 - i. Existing datasets and resources that may be used to answer the monitoring questions above without requiring further data collection
 - ii. Instrumentation and equipment needed for data collection
 - iii. How the data will be analyzed
 - iv. How analysis would account for seasonal and interannual precipitation and weather variability and other potentially confounding variables
 - v. What the data may be able to predict and the estimated confidence of the results based on a power analysis.
3. Data Collection: Include a field data collection plan which will describe:
 - i. The spatial locations of all perennial streams across the 4FRI landscape and rationale for the stratification process.
 - ii. The data that will be collected at each site and the how they will be used to address the monitoring plan purpose (including periodic and continuous data).
 - iii. The frequency that data will need to be collected at each site.
 - iv. Recommended protocols (new or existing) for data collection
4. Data Management: Include recommendations for how to store and manage the data that would allow the U.S. Forest Service to add to, update, and analyze the data per the data analysis component of the plan ((a) 2. iii.)
5. Implementation Costs: Include cost estimate scenarios that allow for scaling the level of monitoring effort (e.g., per-stream-mile cost associated with aquatic habitat assessment rather than a single overall cost estimate that can't be scaled by number of sites or area covered).
6. Assumptions and Data Usage: Describe major assumptions that are being made about:
 - i. The sufficiency of existing data and/or proposed new data collection in addressing the purpose of the monitoring plan.
 - ii. The timeframe required to address the purpose of the monitoring plan and its components (i.e., answer the monitoring questions above).
 - iii. The expertise needed to collect and analyze the various types of data recommended in the plan.
7. Conclusions: Describe any recommendations, as well as challenges encountered and caveats
8. Maps, Figures, and Appendices



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Appendix B: Maps

Maps of the Rim Country EIS focal area are available at:

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd1000483.pdf