2015

The Role of Funding Programs in Promotion of Best Management Practices for Effective Stream Restoration

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THE ROLE OF FUNDING PROGRAMS IN PROMOTION OF BEST MANAGEMENT PRACTICES FOR EFFECTIVE STREAM RESTORATION

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Professional Paper

presented in partial fulfillment of the requirements
for the degree of

Master of Science
in Resource Conservation

The University of Montana
Missoula, MT

December 2015

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Large amounts of money are spent on stream restoration projects across the United States every year. Restoration researchers and professionals commonly recommend a suite of Best Management Practices (BMPs), including project goals, objectives, monitoring, consideration of future conditions, adaptive management, and public reporting of results, which are widely recognized as contributing to effective projects. Studies over the last two decades demonstrated that these BMPs were not consistently incorporated into restoration projects, which highlighted the need to improve practices and for funding programs to incorporate BMPs into funding requirements. I reviewed 28 programs that fund stream restoration in the Rocky Mountain region to determine whether programs require information associated with BMPs in the application and evaluation process and if this varies with funding program size. Additionally, I reviewed budget restrictions and timelines to investigate impediments to achieving BMPs. Previous studies typically found few restoration plans included goals and objectives, but 91% of the current funding programs in my survey required both goals and objectives as part of the application process. The larger (project costs > $300,000) funding programs in this study had more comprehensive BMP requirements: all of the large funding programs required goals, objectives, and public reporting of project results, while none of the smaller (<$25,000 per project) funding programs required consideration for future conditions or adaptive management. Even though post-project monitoring is commonly indicated to be required, many funding timelines are less than two years which is too short to evaluate whether the restoration successfully achieved their objectives. To evaluate project success, smaller funding programs need to expand their BMP requirements. Overall, the field may need to consider alternatives for funding approaches that would better facilitate monitoring and adaptive management.

Introduction

Over $1 billion is spent each year in the United States on river and stream restoration (Bernhardt *et al.* 2005). Since 1990, the number of projects and dollars spent has increased exponentially (Bernhardt *et al.* 2005). Despite the large amount of money invested, little evidence exists to show whether or not these stream restoration projects are successful (Bernhardt *et al.* 2005; Rieman *et al.* 2015). This is a result of many projects not having clear and measurable goals and objectives included in restoration planning and activities, as well as limited post-restoration monitoring (Hobbs and Norton 1996; Bernhardt *et al.* 2005; Palmer *et al*. 2005). Rieman *et al.* (2015) and Bernhardt *et al.* (2005) have suggested that entities that fund restoration projects should encourage the inclusion of best management practices (BMPs) in restoration project applications or proposals to help resolve this. A review of published literature from the past 20 years highlights five commonly recommended BMPs including: setting project goals and objectives, considering future conditions in these goals and strategies, monitoring to evaluate whether objectives have been achieved, adaptively managing to ensure success, and reporting the outcome for the benefit of future projects (e.g. Hobbs and Norton 1996; Bernhardt *et al*. 2005; Palmer *et al.* 2005).

Project goals provide a measure of restoration success by defining desired results. These goals should be based on a planned project outcome, derived from a "guiding image" - a reference reach or an understanding of historical conditions (Hobbs and Norton 1996; SER 2004; Palmer *et al*. 2005). Goals should be clearly stated, identify the source of degradation and seek to restore ecosystem processes (Kondolf and Micheli 1995; Hobbs and Norton 1996; Roni *et al.*2002; Beechie *et al.* 2010; Rieman *et al.* 2015). Without identification and removal of the

source of degradation, impaired systems are likely to continue to be impacted, negating the actions taken by restoration activities (Kondolf and Micheli 1995; Hobbs and Norton 1996).

Project goals should be supported by objectives that are specific, achievable, and measurable in order to allow practitioners to assess the project's success (Kondolf and Micheli 1995; Hobbs and Norton 1996). Actions implemented should correspond to the objectives, be appropriate to the scale of degradation, and not cause lasting harm (Palmer *et al*. 2005; Beechie *et al*. 2010). Restoration project goals, objectives, and chosen actions also need to consider future environmental conditions (Rieman *et al*. 2007; Davies 2010; Beechie *et al*. 2013). For example, climate-induced future changes in stream temperature, disturbance regime, and stream flow are likely to reduce salmonid habitat size and connectivity (Davies 2010; Williams *et al.* 2015). Restoration strategies should consider these anticipated future conditions and seek to provide appropriate habitat based on future conditions (Beechie *et al.* 2013; Williams *et al.* 2015).

Monitoring evaluates whether or not restoration actions were installed and operate as planned ("implementation monitoring"), as well as whether or not those actions have the anticipated ecological effects ("effectiveness monitoring") (McDonald *et al.* 2007). Bernhardt *et al.* (2005) found that only 10% of projects included monitoring in any form; when monitoring does occur, it is usually implementation monitoring and does not include effectiveness monitoring (Kondolf and Micheli 1995; Lake *et al.* 2007; Palmer *et al.* 2007; McDonald *et al*. 2015). However, effectiveness monitoring should also be required as a way to measure actual efficacy of restoration efforts (McDonald *et al.* 2007). Effectiveness monitoring should provide a pre- and post-project systematic evaluation of the project; assessing key outcomes and indicators that align with stated objectives (Hobbs and Norton 1996; SER 2004; Palmer *et al.* 2005; Woolsey *et al.* 2007; Rieman *et al.* 2015). Pre-project monitoring includes recording baseline conditions at

the site and provides a comparison for post-project monitoring to measure project success (Kondolf and Micheli 1995). Periodic monitoring after project implementation can provide assessment of the project's continued biological success and facilitate the evaluation of the project for adaptive management (Rieman *et al.* 2015). Often, effectiveness monitoring is considered by funders to be "experimental" or "intangible" and limitations on funding frequently precludes these types of activities (Kondolf and Micheli 1995). Time constraints are also cited as a limitation to monitoring (Woolsey *et al.* 2007).

When effectiveness monitoring shows that objectives are not being met, a plan should exist for modifying actions, or adaptive management (Hobbs and Norton 1996; McDonald *et al.* 2007). Adaptive management tactics should be planned response activities that coincide with monitoring and aim to revise actions and management (Kondolf and Micheli 1995; Rieman *et al.* 2015). Considering the lag time between restoration activity and biological response, which can span years (Kondolf and Micheli 1995; Theiling *et al.* 2015), time constraints may be limiting the inclusion of adaptive management in restoration planning.

Restoration project research, planning, and outcomes need to be shared publicly in order for managers to apply information learned from past projects to future ones (Hobbs and Norton 1996; Bernhardt *et al.* 2005; Jenkinson *et al.* 2006). Regardless of success, project results should be documented, communicated, and publicly accessible (Kondolf and Micheli 1995; Hobbs and Norton 1996; Rieman *et al.* 2015).

Most of these BMPs have been discussed in the literature since the mid-1990s; however Bernhardt *et al.* (2005) found that 20% of publicly available restoration plans had no listed goals and only 10% of plans included post-project monitoring or assessments. Larger, more expensive projects (>$400,000) were more likely to include a broader array of these BMPs. The lack of

BMPs in smaller-scale projects is an important omission to consider as the cumulative effects of these small-scale projects may have broad impacts (Bernhardt *et al.* 2005). Often, the failure to include recommended restoration BMPs reduces the ability to effectively plan and implement restoration projects, wastes time, money, and thwarts the furthering of ecological restoration science (Hobbs and Norton 1996; Bernhardt *et al.* 2005; Palmer *et al.* 2005). For example, the common lack of baseline data collection and post-project monitoring prevents the practitioner from assessing a project's success, which limits their ability to extend successful techniques to future projects (Palmer *et al.* 2005; Jenkinson *et al.* 2006; Rieman *et al.* 2015).

One avenue suggested for promoting the inclusion of BMPs in restoration projects is for funding entities to require projects to include commonly recommended BMPs as a condition of funding (Bernhardt *et al.* 2005; Rieman *et al.* 2015). To explore whether funding programs currently require these BMPs associated with stream restoration project proposals, this review will investigate the following questions:

1. Which BMPs (goals and objectives, consideration of future conditions, monitoring, adaptive management, and public reporting of results) are funding programs requiring as part of the application or proposal process?
2. Are funding programs willing to fund monitoring and reporting of project results, or are they limiting incorporation of BMPs by placing restrictions on uses of funds? Is the time allowed for use of funds sufficient to allow for implementation and effectiveness monitoring as well as adaptive management?
3. Do requirements and limitations vary by the amount of funds available per grant for these different funding programs?

Methods

I reviewed funding programs that provide money for restoration projects in the Rocky Mountains: Idaho, western Montana, western Wyoming, northern Colorado, and northeastern Utah. For the purposes of this paper, "funding programs" refers to grant programs that provide funds for restoration projects.

To identify funding entities for restoration projects in the region, I performed Google.com searches. I entered the United States Geological Survey hydrological cataloging units within the Rocky Mountain region (Supplemental Table S1) in combination with one of several key words "restoration," or "rehabilitation," and "watershed," and "plan" or "project". I also searched each Rocky Mountain State (MT, ID, WY, UT, NM, CO) in combination with the words "stream" or "river" and "restoration" and "funding" or "grant" (Figure 1). I reviewed each program, plan, and project document identified in this search to find funding entities for stream restoration projects in the Rocky Mountain region (Table 1).

I searched the website for each funding entity to capture Requests for Proposals (RFPs) or funding program application instructions and supplemental funding information. In the event that an RFP was not available on the website, I contacted the funding entity by phone or email. Contacts were considered non-responsive if three attempts were unsuccessful. If contact was made, I requested an RFP. If an RFP was not available, I interviewed a project manager from the funding program, to obtain information equivalent to that provided in an RFP (Supplemental Figure S1). If discussions with the project manager identified funding programs not previously discovered, I added them to my analysis. I did not include funding programs that were only coordinating funds from other sources, although contacts from these programs did help identify additional restoration funding programs.

To address my first question of whether funding programs require BMPs, I recorded whether each RFP or survey response included application components that addressed these BMPs (Table 2; Supplemental Figure S2). I searched websites of funding programs for project reports in order to determine whether project reports are publicly accessible.

Information to address the last two questions regarding total size of project budgets, limitations placed on use of funds, and timeline for budgets were gathered from RFPs, websites and surveys (Table 2). I categorized funding programs by maximum funds available per funding program as follows: small <$25,000; medium $25,000 - $299,999; and large >$300,000) (Table 1). I summarized information for each funding program and then examined whether BMP requirements differed among programs funding different size projects (Table 3).

Results

I obtained data from 24 funding entities across the Rocky Mountain region, including eight that fund large projects, ten that fund medium projects and six that fund small projects.

Overall, funding entities required many of the examined BMPs in this study as part of their application or proposal process. Of the 24 entities, 92% of funding entities required stated project goals and 88% required specific objectives. Goals and objectives were required to consider future environmental conditions by 38% of funders. Monitoring was required by 88% of the total funding programs: 20% specified implementation monitoring only and 29% also required pre-project monitoring. Twenty five percent of the funding entities required adaptive management. Reporting was required to be made publicly available by 80% of the funding programs, although requirements for reporting and the level of information available in the

reports varied greatly across funders. Of the publicly available reports, 58% provided a brief project overview rather than a detailed project report (Table 3).

Restrictions on the use of funds and the timeline for budgets could be influencing the capacity to achieve BMPs. Specifically commonly stated limitations to the use of funds included project planning and pre-project assessment (13%). Only six percent of the funding programs surveyed did not place any restrictions on activities for funds use. On average, funds were required to be used within a relatively short time frame, 2.8 years.

Comparison across the sizes of funding programs revealed that programs granting over $300,000 per project (large) required more of the BMP components than programs with smaller funding limits. All of the large funding programs and 90% of the medium programs required goals and specific objectives. The percentages for small programs were notably lower: goals 83% and objectives 67%. Fifty percent of large funding programs required projects to consider the source of degradation, as opposed to 30% for medium funding programs and 17% for small. Consideration of future environmental conditions was required by 38% of large, 60% of medium, and none of the small funding programs (Table 3).

Project monitoring was required by 88% of large, 90% of medium, and 83% of small programs. Funders specified a requirement for implementation monitoring in 13% of large, 30% of medium, and 17% of small programs. More large programs required pre-project monitoring (50%) than medium (20%) or small programs (17%). Adaptive management was also more often required by large programs (38%) than medium (30%) and was not required for any of the small funding programs (Table 3). All of the large, 90% of the medium, and 33% of the small funding programs required some level of reporting (Table 3).

Limitations placed on funds use varied very little across funding program sizes. Many of the budget category restrictions were similar across the different sized funding programs, but larger programs allowed longer budget timeframes. For example, half of the large programs and 25% of small programs that specified limitations prohibited funds from being used for collection of baseline data or project planning. Small programs averaged 1.3 years to use funds, medium averaged 1.8 years, and large averaged 5.4 years.

Discussion

In 2005, Bernhardt *et al.* analyzed nearly 40,000 stream and river restoration projects and found that few included BMPs such as a stated project goal, specific objectives, or monitoring. Bernhardt *et al.* (2005) indicated that funding programs had the potential to drive improvement in the inclusion of BMPs in restoration projects. Ten years later, I found that the majority of restoration funding programs in the Rocky Mountain West require that projects include project goals and objectives as part of the proposal process. Several BMPs, such as consideration of future conditions and adaptive management are only typically required in association with larger funding programs. In addition, some BMPs may be explicitly hindered because of restrictions on the use of funds and specific short-term time constraints associated with the budgets. Given the broad impact that reach-scale projects can have on the landscape (Pierce *et al.* 2013) and that the amount of money spent on small projects cumulatively is likely to be greater than that spent on large projects (Bernhardt *et al.* 2005), the low percentage of small funding programs requiring consideration of future conditions, effectiveness monitoring, and adaptive management highlights a crucial area for improvement for effective and efficient use of resources.

The importance of monitoring is widely acknowledged as a key to successful restoration; however, monitoring continues to be absent or poorly defined in the funding requirements.

Kondolf and Micheli (1995) noted that funding programs are less likely to support "intangible" project activities, citing monitoring and evaluation as examples. In this study, I discovered that effectiveness monitoring and adaptive management are the least often to be required by funding programs, and project planning was the activity most frequently restricted. Although monitoring in general was more often required in the programs investigated here than in Bernhardt *et al.*'s 2005 study, language in RFPs regarding monitoring was often vague – only three funding programs specifically required that monitoring be directly related to the project objectives and frequently the programs do not specify what level of monitoring (implementation, effectiveness, or both) is required.

Limitations on time to use allocated funds provide further restrictions to incorporation of monitoring and adaptive management. Long-term monitoring and adaptive management are critical to the success of restoration projects (Pierce *et al.* 2013). The average time funders allowed for using allocated funding was 2.8 years. Of the 17 RFPs that require effectiveness monitoring, 10 allow only three or fewer years for use of funds. These time limitations severely prohibit the ability of restoration practitioners to actually monitor the effectiveness of the project. Often many years pass between implementation of an activity and observation of measurable results, or effectiveness, of that activity (Kondolf and Micheli 1995, Beechie *et al.* 2010). Effectiveness monitoring is a long-term activity – depending on the action monitored, recommended timeframes range from 1 to 15 years (Woolsey *et al.* 2007), possibly exceeding multiple decades (Pierce *et al.* 2013; Theiling *et al.* 2015). Long-term monitoring provides evaluations that guide adaptive management actions (Woolsey *et al.* 2007), whereas a lack of long-term monitoring precludes adaptive management (Rieman *et al.* 2015).

It may be unrealistic or unnecessary for all restoration projects to include all BMPs. Palmer *et al.* (2005) suggest that "common sense" projects, such as vegetating a barren riparian zone, may be simply implemented without regards to the typically recommended restoration process. In addition, Bernhardt *et al.* (2005) contend that elaborate monitoring is not possible on every project. Although, when small projects are part of a basin-scale management plan, monitoring and adaptive management become important components because those small projects can have cumulative effects across the watershed (Pierce *et al.* 2013).

Funding entities currently award millions of dollars to projects each year through programs that do not require a complete suite of BMPs. Limitations on funding use are often cited for the lack of monitoring in restoration projects (Kondolf and Micheli 1995; Rieman *et al.* 2015), although monitoring is important unto itself and as a part of adaptive management. In addition, only one-third of the funding programs in this study required that restoration activities address the source of degradation, in spite of the fact that if not removed, the source is likely to continue degrading the site, negating the effects of restoration activities (Hobbs and Norton 1996; Roni *et al.* 2002). Consideration of future environmental conditions is increasingly becoming acknowledged as an important component of restoration (Beechie *et al.* 2013; Williams *et al.* 2015), though required by only a small proportion of RFPs in this study. By making small changes to RFP criteria, such as expanding requirements for BMPs and lengthening timelines to use funds, funding programs could promote BMPs and thus increase likelihood that restoration projects generate the intended outcome.

In addition to changes in funding requirements, there are other options available to restoration practitioners to allow for a more comprehensive inclusion of BMPs. Most projects rely on a combination of funding programs each with different funding restrictions. If a certain

funding program prohibits that funds be used for one activity, such as monitoring or planning, funds could be acquired through a different source for those activities. In addition, some of these funding programs may be applied for during multiple phases of the same project. A combination of strategic planning, budgeting, and funding from a diverse suite of programs could allow for the inclusion of most BMPs into many restoration projects.

TABLES AND FIGURES

Figure 1: Process for locating restoration plans, projects, and RFPs: 1) Search Google for keywords: USGS HUCs in Rocky Mountain region and "restoration" or "rehabilitation" and "watershed" and "plan"; also search Google for funding programs 2) Search plans and projects for funding programs; 3) Search Google for funding applications and RFPs for funders; 4) Call funders for whom funding applications and RFPs are not available online and request RFP or funding application; 5) Interview funders who do not use RFPs or applications in order to get at funding criteria, criteria, and sources; 6) For new funders identified in step 5, return to step 3.

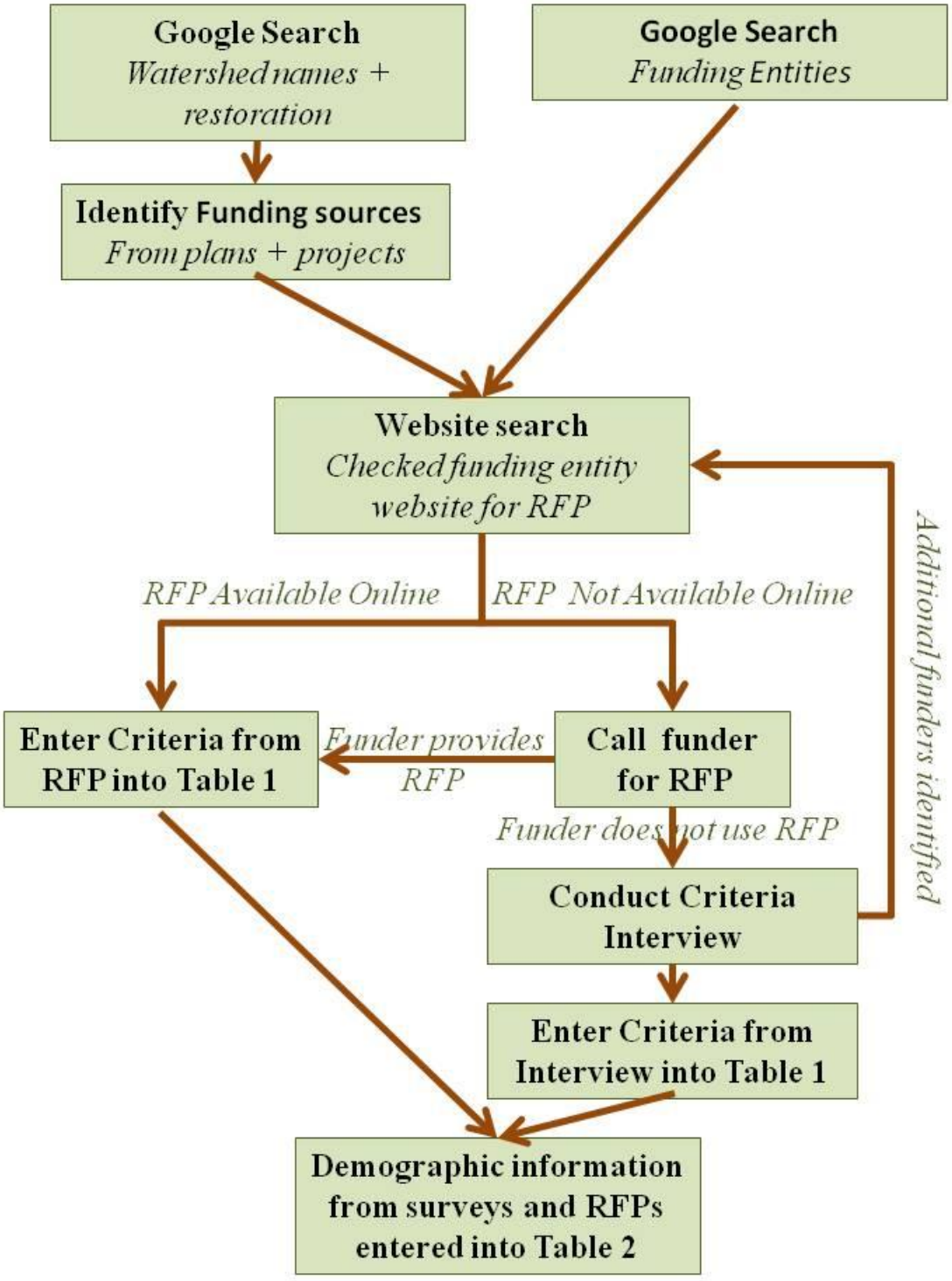

Table 1. Funding programs detected. For each program in the analysis, I either located an RFP or conducted a survey. Funding programs that were not included were either programs that coordinated funding from other sources (N/A) or were not responsive (N). If an RFP was located or project manager was surveyed, I categorized potential funding contribution size per project.

Funding Programs Detected	**RFP available (R) or Surveyed (S), or Not Included (N)**	**Funding Size: S= <$25,000 M=$25,000 - $299,999 L=>$300,000**
Collaborative Forest Landscape Restoration Program (CFLRP)	*S*	*L*
Environmental Protection Agency Wetland Program Development Grants	*R*	*L*
Friends of the Teton River	*S*	*L*
Department of Environmental Quality 319 Grant (Montana)	*R*	*L*
Montana Fish, Wildlife and Parks Future Fisheries Program	*R*	*L*
Natural Resources Conservation Service Commodity Credit Corporation (USDA)	*R*	*L*
United States Department of Natural Resources and Conservation - Reclamation and Development Grant	*R*	*L*
United States Fish and Wildlife Service State Competitive Grant Program (SWG)	*S*	*L*
American Rivers	*R*	*M*
Colorado Water Conservation Board Restoration Program Healthy Rivers Fund	*R*	*M*
Jackson Hole One Fly	*R*	*M*
National Fish and Wildlife Federation Five Star Grant	*R*	*M*
National Fish and Wildlife Federation Bring Back the Natives	*R*	*M*
National Fish and Wildlife Federation Conservation Partners Program	*R*	*M*
National Forest Foundation Matching Award Program (MAP)	*R*	*M*
United States Fish and Wildlife Service Endangered Species Traditional Grants	*R*	*M*
United States Fish and Wildlife Service Partners for Fish and Wildlife	*R*	*M*
Western Native Trout Initiative	*R*	*M*
Idaho Fish and Wildlife Foundation	*R*	*S*
Rio Grande Water Conservation District	*R*	*S*
Rocky Mountain Elk Foundation (PAC)	*R*	*S*
Trout Unlimited Embrace-A-Stream	*R*	*S*
Trout Unlimited Montana Chapter Mini Grant	*R*	*S*
United States Department of Natural Resources 223 Grant	*R*	*S*
Clark Fork Coalition	N/A	N/A
Crown of the Continent / Southwest Crown Collaborative	N/A	N/A
The Nature Conservancy	N/A	N/A
Wildlife Society	N/A	N/A
Big Hole Watershed Committee	N	

(Table 1 continued) **Funding Programs Detected**	**RFP available (R) or Surveyed (S), or Not Included (N)**	**Funding Size:** **S= <$25,000** **M=$25,000 - $299,999** **L=>$300,000**
Bonneville Power Administration	N	
Bureau of Land Management	N	
Clear Creek Watershed Foundation	N	
Ducks Unlimited	N	
Environmental Protection Agency, Superfund	N	
Lemhi Forest Restoration Group	N	
National Parks Conservation Association	N	
Natural Resource Damage Program	N	
Palouse-Clearwater Restoration Group	N	
Sierra Club	N	
United States Army Corps of Engineers	N	
United States Bureau of Reclamation	N	
United States Department of Natural Resources and Conservation, Watershed Planning Assistance Grant	N	
United States Department of Natural Resources and Conservation, Conservation Security Program (NM)	N	
United States Department of Natural Resources and Conservation, Renewable Resource Grant and Loan	N	
United States Forest Service Forest Legacy Program	N	
United States Forest Service Partnership Grant	N	
United States Forest Service RAC	N	

Table 2. RFP requirements for funding, prioritization criteria, funding timeframe, and limitations on use of funds.

Project Information	**Details**	**Response**
Funding Information		
	Funding Program	Name of agency, organization, etc.
	Funding timeline	# of years to use funds
Project Information		
	Restrictions on funding use	List
	Max time to use funds	List
	Source of degradation	Req'd (1) / not mentioned (0)
Goal/outcome requirements		
	Overall goal	Req'd (1) / not mentioned (0)
	Specific objectives (S.M.A.R.T.)	Req'd (1) / not mentioned (0)
	Address processes	Req'd (1) / not mentioned (0)
	Long-term solution	Req'd (1) / not mentioned (0)
	Future considerations (climate change, development, etc.)	Req'd (1) / not mentioned (0); list
Monitoring and follow-up requirements		
	Implementation monitoring	Req'd (1) / not mentioned (0)
	Pre-project monitoring	Req'd (1) / not mentioned (0)
	Post-project monitoring	Req'd (1) / not mentioned (0)
	Reference site monitoring	Req'd (1) / not mentioned (0)
	Adaptive management	Req'd (1) / not mentioned (0)
	Reporting	Req'd (1) / not mentioned (0)
Comments		

Table 3: The proportion of requests for proposals (RFPs) that requested the specific best management practice criteria in the overall study and by size or the maximum allowable funding amount for each project. *Timeline (average time to use funds) is shown with and without Collaborative Forest Landscape Restoration Program (CFLRP), as it was an outlier at 10 years to use funds.

Requirements in RFPs	**Overall**	**RFP Size**		
		Small (<$25k) n=6	**Medium ($25k - $299,999) n=10**	**Large (>$300,000) n=8**
Address source of degradation	33%	17%	30%	50%
Overall goal	92%	83%	90%	100%
Specific objectives	88%	67%	90%	100%
Address processes	38%	0	60%	38%
Long term solution	46%	17%	70%	38%
Future considerations	38%	0	60%	38%
Pre-project monitoring	29%	17%	20%	50%
Post-project monitoring	88%	83%	90%	88%
Adaptive management	25%	0	30%	38%
Reporting	80%	33%	90%	100%
Timeline (average time to use funds) Excluding CFLRP* Including CFLRP*	 2.3 years 2.7 years	 1.3 year	 1.78 years	 3.75 years 5.0 years

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SUPPLEMENTAL INFORMATION

Figure S1: Telephone survey questions asked of funding programs whose RFPs or funding applications are not available on-line.

For non-government agencies/organizations:

1. Does your organization fund projects, or do you coordinate funding for projects?
    a. If your role is to coordinate
        i. Specifically, where does the funding come from?
        ii. Do you have criteria/requirements above and beyond those required by your funding programs?
2. How do you prioritize the projects that you do fund, or coordinate funding for?
    a. Do you require that projects occur in a particular area, benefit certain species, or meet other criteria?
    b. Do you require projects to:
        i. Have over-all goal?
        ii. Have specific, measurable objectives (SMART or some other derivative)?
        iii. Address natural processes?
        iv. Provide a long-term solution?
        v. Address future conditions, such as water shortages, climate change, development, etc.?
3. Do you have any implementation, pre- and post-project monitoring and reporting requirements associated with these projects? If required, do you provide funding for monitoring and reporting?
4. What other restrictions, if any, do you place on funding?
    a. Timeline
    b. Maximum budget/ask
    c. Use of funds
    d. Funding match requirements
5. Do you have any annual reports or project reports for the projects that you are involved with? If so, could I have access to ones from the last 5 years? (If not easily located on the web.)

For government agencies:

1. If the projects are part of a long-term relationship, do you have contracts or MOUs for the work? How do you prioritize the projects you will fund within these agreements?
2. What programs do you offer funding for stream restoration through? And what are the criteria associated with those programs?
3. Can you send me a copy of your application/rfp/contract/prioritization document, or is it publicly available?

If application/contract/prioritization document is not available:

6. How do you prioritize the projects that you do fund, or coordinate funding for?
    a. Do you require that projects occur in a particular area, benefit certain species, or meet other criteria?
    b. Do you require projects to:
        i. Have over-all goal?
        ii. Have specific, measurable objectives (SMART or some other derivative)?
        iii. Address natural processes?
        iv. Provide a long-term solution?
        v. Address future conditions, such as water shortages, climate change, development, etc.?

7. Do you have any implementation, pre- and post-project monitoring and reporting requirements associated with these projects? If required, do you provide funding for monitoring and reporting?
8. What other restrictions, if any, do you place on funding?
    a. Timeline
    b. Maximum budget/ask
    c. Use of funds
    d. Funding match requirements
9. Do you have any annual reports or project reports for the projects that you are involved with? If so, could I have access to ones from the last 5 years? (If not easily located on the web.)

Figure S2. Example RFP and evaluation.

WESTERN NATIVE TROUT INITIATIVE

Steering Committee

Julie Meka Carter
Arizona Game and Fish Department

Roger Harding
Alaska Department of Fish and Game

Lee Nelson
Montana Fish, Wildlife and Parks

Jeff Dillon
Idaho Department of Fish and Game

Jon Sjoberg
Nevada Dept. of Wildlife

Bruce McIntosh
Oregon Department of Fish and Wildlife

Roger Wilson
Utah Division of Wildlife Resources

Craig Burley
Washington Department of Fish and Wildlife

Melissa Dickard
Bureau of Land Management

Scott Spaulding
U.S. Forest Service

Robert Clarke
U.S. Fish and Wildlife Service

Warren Colyer
Trout Unlimited

Rich Haskins
Western Association of Fish and Wildlife Agencies

Mike Stone
Western Association of Fish and Wildlife Agencies

Announcing Western Native Trout Initiative 2015 NFHP Projects Program Request for Proposals

September 10, 2014

Dear Friends,

The Western Native Trout Initative **(WNTI)** and our partners are proud to announce our 2015 request for project proposals. As one of 19 federally recognized National Fish Habitat Partnerships, WNTI is a collaborative effort between 12 western states, 5 federal agencies, sovereign tribes, and private conservation groups that seek to cooperatively restore and recover 21 western native trout and char species and sub-species across their historic range. WNTI works to achieve this vision by funding locally-based efforts that raise awareness for the importance of native trout and focus limited financial and human resources toward the highest-impact, locally-led, on-the-ground projects.

While WNTI is supported by several different entities and partners, the bulk of project funding from the U.S. Fish and Wildlife Service is made available to grantees annually through the National Fish Habitat Partnership **(NFHP)**. Since 2006, WNTI has helped to invest over $16 million of private and public funding toward 110 native trout projects that have reconnected, restored and enhanced over 466 stream miles; and helped complete native trout population assessments to guide collaborative watershed planning and management.

Eligible Applicants: WNTI is currently undergoing a process of updating our strategic conservation priorities and will limit applications for funding in the 2015 cycle to INVITED APPLICANTS ONLY due to anticipated lower than normal levels of funding.

If you are not an invited applicant, please check back in June 2015 for updated information on WNTI's strategic priorities and RFP requirements for the 2016 grants cycle. We wish all community partners continued success in their endeavors over the next year.

Eligible Projects: Projects considered for funding may include riparian or in-stream habitat restoration, barrier removal or construction, rangewide population or watershed habitat assessments needed for prioritization and planning of habitat conservation, evaluating stream flows or lake water levels, and habitat-related community outreach and education. Projects not eligible for WNTI NFHP funding include research or personnel and staff salaries or benefits. WNTI funds projects that can be completed within 18-36 months of receipt of funding. Multiyear projects MUST be broken into distinct phases by year for tasks, accomplishments, and budget.

Available Funding: WNTI anticipates receiving between $70,000 and $200,000 in NFHP funds for FY 2015 projects. However, the exact amount of funding available to the partnership varies annually and is not known at this time. Last year, WNTI funded 3 projects ranging in request from $12,000 to $48,000 and helped three additional projects seek funding from other sources. Successful proposals must demonstrate a minimum 1:1-match, which may include cash, time, materials, or other services. Special consideration will be given to projects with more than the minimum match.

The deadline to submit a WNTI project under the 2015 NFHP funding cycle is October 24, 2014.

If you have any questions, please feel free to contact Therese Thompson, the new WNTI Coordinator, at tthompson@westernnativetrout.org.

Sincerely,

Therese Thompson
Coordinator

Julie Carter
WNTI Steering Committee Chair

NATIONAL FISH HABITAT PARTNERSHIP

WESTERN NATIVE TROUT INITIATIVE

Project Application Instructions

Please include the following documents in your final project application. Incomplete applications will not be considered:

1) Cover letter – Include in your cover letter a brief narrative describing the overarching project goals and anticipated outcomes; why WNTI funds are needed; how WNTI funds will be spent; and how this project addresses WNTI and NFHP funding priorities.

2) Completed Project Application including 3 page WNTI Funding cover sheet

3) Detailed Project Budget – Indicate how project funds will be spent in detail

4) Attachments – **A letter of support from the State Fish and Wildlife agency is required**. Other letters of support, photographs of project site, designs, maps, planning documents, permits, articles, scientific studies, etc. **are optional but encouraged within limits described**.

Submission Instructions

- Please combine all documents and attachments into a single pdf file. Number each page.
- File name should include the submission year followed by the project Name and name of submitter (Example "2015 Friendly Creek Trout Unlimited.)
- Submit electronically as an email attachment to Therese Thompson tthompson@westernnativetrout.org. Only electronic submissions will be accepted. As a courtesy, the FWS POC should get a copy, as it may be possible to fund the project with NFPP or other monies.
- **Please note, proposals should not exceed 10 pages, including the WNTI Funding cover sheet (see page 7 below) and attachments such as photos, maps, letters of support, etc. Your cover letter and landowner letter (if needed) do not count toward your 10 pages.**

Please note, the Western Native Trout Initiative will not consider:

1. Late requests.
2. Requests for projects or programs already completed.
3. Refunding projects, programs or items purchased before the project is approved or awarded.
4. Participating in or funding of any political campaign on behalf of any issues, organizations or candidates.
5. Projects without a monitoring component.

Deadline

- Applications are due on **Friday, October 24, 2014** by 5:00 pm Mountain Standard Time.

The WNTI Steering Committee will review and rank projects in December 2014, and successful applicants will be notified soon after. Successful applications are submitted to the National Fish Habitat Board and the US Fish and Wildlife Service for final funding approval in the Spring of 2015. Questions? Please contact Therese Thompson, at tthompson@westernnativetrout.org.

Project Selection Guidelines, Evaluation Criteria and Process

The WNTI Steering Committee will review and evaluate proposals based on the criteria listed below and will also consider project rankings from species conservation teams and input from U.S. Fish and Wildlife Service regional NFHP Coordinators. A list of the projects that are recommended for funding will be submitted to the NFHP Board and the U.S. Fish and Wildlife Service for final approval. Funds are anticipated to become available during early to mid-summer, following grant approval by the U.S. Fish and Wildlife Service in 2015.

In order to help project proponents put forward the best possible proposals, WNTI has provided below a set of criteria and considerations by which projects are evaluated for funding. **Project proponents must address these requirements, guidelines, and criteria in their project applications.**

Requirements

1. Project must be consistent with, and list, specific WNTI goals and objectives (outlined in the WNTI Strategic Plan) that the project addresses (available for download at http://www.westernnativetrout.org/content/plan-strategic-action). WNTI Goals include:
    - Protect, enhance, or restore western native trout populations.
    - Protect intact watersheds, and enhance or restore habitats that have been impacted by human activities or catastrophic natural events.
    - Develop collaborative approaches and partnerships among agencies and stakeholders that emphasize cooperation and shared effort, and increased funding to implement high-priority projects for the protection, conservation and enhancement of western native trout.
    - Develop and implement effective communication, education and outreach programs as a tool to increase public awareness of WNTI and the NFHP effort and encourage partnerships that benefit western native trout.

Project must be consistent with and list which specific NFHP criteria (listed below) the project addresses. This minimum benchmark set of Fish Habitat Conservation Project prioritization criteria are intended to ensure core tenets of the National Fish Habitat Action Plan are considered by Fish Habitat Partnerships when ranking projects for funding. To access NFHP Action Plan (2nd ed.) and its priority conservation strategies go to www.fishhabitat.org.

1. Direct linkages of project to specific Fish Habitat Partnership strategic plan/framework priorities and/or National Fish Habitat Partnership action plan (2nd edition)/priority conservation strategies.
2. Project alignment/compatibility with other conservation plans (e.g. State Wildlife Plans; Biological Opinions, Land Management Plans).
3. Project identification of specific habitat measures of success and performance targets that are observable and amenable to pre- and post-project monitoring and include social, economic and biological benefits such as enhanced recreational, commercial and subsistence fishing opportunities, increased public visitation, or innovative project designs that address specific fish conservation challenges.
4. Capabilities/experience of project proponents to complete what is proposed.
5. Well-defined budget linked to clear deliverables and outcomes.
6. Leveraging of match funds

7. Project protects aquatic habitat or addresses the causes and processes behind aquatic habitat decline.
8. Project has an outreach/education component in the local community.

2. Project must benefit at least one of the following WNTI target native trout and char species or sub-species in their historic range: Apache trout, Bonneville cutthroat trout, Bull trout, California golden trout, Coastal cutthroat trout, Colorado River cutthroat trout, Gila trout, Greenback cutthroat trout, Lahontan cutthroat trout, Little Kern golden trout, Paiute cutthroat trout, Redband trout, Rio Grande cutthroat trout, Westslope cutthroat trout, Yellowstone cutthroat trout, Alaskan native Arctic char, Arctic grayling, Dolly Varden, resident rainbow trout , native naturally-occurring freshwater Kokanee, or native naturally-occurring lake trout.

3. For the present funding cycle, all funds awarded by WNTI are for habitat-related and western native trout conservation projects only. To be eligible for WNTI funds, projects must achieve habitat restoration or protection; rangewide population or watershed habitat assessments needed for prioritization and planning; assessing stream flows or water levels; or be designed to help define/guide habitat projects and/or priorities. Examples of eligible projects include riparian or in-stream habitat restoration, barrier removal or construction, rangewide population, watershed habitat, or water flow and water level assessments needed for prioritization and planning or future partner water leases or acquisitions to improve in-stream flows. Please visit our website westernnativetrout.org for examples of previously funded projects.

4. Project proposals must be supported by the state and/or federal fish and wildlife management agencies, or tribal governments, within project-area jurisdictions. In addition to the required letter of support from the State or Federal fish and wildlife agency (see application instructions), the project application must include a signature and contact information for a 'sponsoring professional' from the relevant management agency.

5. If project is located on private land, a support letter from the landowner is required (see attached landowner letter of support template).

6. Projects must have a monitoring component.

General Criteria and Considerations used in evaluating project proposals

Eligibility Screening Points
Project is eligible for NFHP funding
Project is consistent with the goals identified in the WNTI strategic plan
Project addresses a WNTI species
Project includes a monitoring component
If a multiyear project, a breakdown of tasks, accomplishments, and budget by year in distinct phases must be provided
Fish and wildlife management agencies with project-area jurisdiction are supportive of this project

Resource Impacts/Deliverables (restoration)
Project addresses a WNTI goal
Project is likely to provide long-term benefits for WNTI priority species and/or habitats
Project addresses a priority need/limiting factor as identified in completed management plans or assessments
Project conveys large conservation benefit to priority target species

Urgency: project window is short, or immediate action is required to forestall degradation or deterioration of the resource
Project directly benefits multiple native species, assemblages/communities, and non-fish stream- and riparian-dependent species
Project addresses a root cause of degradation, rather than symptoms
Project restores natural processes and is self-sustaining
OR
Resource Impacts/Deliverables (assessment)
Project addresses a WNTI goal
Project is likely to provide long-term benefits for WNTI priority species and/or habitats
Project addresses a priority need/limiting factor as identified in completed management plans or assessments.
Project conveys large conservation benefit to priority target species
Urgency: project window is short, or immediate action is required to forestall degradation or deterioration of the resource
Assessment results in an 'actionable' and prioritized restoration or conservation plan/report

Technical Merit
Project demonstrates sound technical and scientific merit and is supported by established scientific studies or principles
Project objectives are realistic, measurable, and achievable; methods are clearly defined and appropriate to meet stated objectives
Environmental and regulatory compliance requirements already met or not required
Project (or current phase of project) has a high probability of being completed within 2 years
Mechanism in place to evaluate, monitor and disseminate the results of the project, including lessons learned and best practices used. WNTI supports monitoring of projects over time, however monitoring is the responsibility of the project proponents and is not funded by NFHP dollars.

Partnership Involvement
Project has multiple and diverse partners working in collaboration, including important local/regional partners

Administrative Considerations

- Have NEPA, 404 or other required state and federal permits been acquired? Projects with completed environmental compliance will score higher in the ranking criteria.

- Who are the various partners that will participate in the administration and implementation of the project? Is the partner list diverse? Does the partner list include other NFHAP-recognized Fish Habitat Partnerships?

- Does the Application provide adequate information to assess whether the applicant or implementing partners have the experience and capacity to successfully achieve the goals and objectives as described in the proposal?

- Does the project include an outreach and/or education component? (Applicants are encouraged to work with the WNTI Steering Committee to coordinate media and public outreach to raise the profile of WNTI-funded projects).

- Are the responsible parties for reporting requirements and the successful completion of this proposal clearly identified? Who is a point of contact should the Committee have questions regarding this project?

Please note that during future funding cycles we anticipate funds other than those provided by the U.S. Fish and Wildlife Service will become available to support a more diverse portfolio of on-the-ground conservation strategies like land or water purchases, and in-stream flow acquisitions and for other "non habitat-related" projects. At this time, the WNTI NFHP program does not provide funding for the purchase of private land or water rights, leases or easements, general organizational operating revenue, or staff salaries and benefits.

WESTERN NATIVE TROUT INITIATIVE

Application for 2015 WNTI Funding
Cover Sheet

Application Deadline: October 24, 2014
Application not to exceed 10 pages total (including this 3 page cover sheet)

Applicant Information

Lead Applicant Organization or Entity:
Contact Person Name: Address:
City, State, Zip: Email:
Telephone: Website Address:

Project Information

Project Title:
Project Location State: County: Nearest Town:
Watershed/Stream/Lake:
Native Trout Species Benefitted by Project:
Total Project Budget: $ Total Amount Requested: $
Total Matching Funds or In-Kind Support Secured: $
Project Map Coordinates (decimal degrees) Lat: Long:
Project Start Date: Project Completion Date:
Is there a monitoring plan following Partnership guidelines? Yes No
If multiyear project, is there a breakdown of tasks, accomplishments, and budget by year in distinct phases? Yes No
Land Ownership (public or private; if public, specify managing agency):
If project is located on private land, please attach a letter of support from landowner

In which USFWS Region is the project located? (1, 2, 6, 7, 8) ____
Region 1: Idaho, Oregon, Washington Region 2: New Mexico, Arizona
Region 6: Montana, Colorado, Utah, Wyoming Region 7: Alaska
Region 8: California, Nevada

Is your project currently listed in the U.S. Fish and Wildlife FONS system? Yes / No
Please indicate FONS Project Number (if applicable): _____
Note: Many previously submitted, but unfunded projects have been placed in the Fishery Operational Needs System (FONS). Please check with your local U.S. Fish and Wildlife Service Office if you are unsure about the question.

Sponsoring Professional (federal, state, or tribal agency resource manager)

Name:
Title:
Affiliation:
Signature:
Mailing Address:
Phone: Email:

WNTI Funds Requested: **$**_____

Total Matching Contributions (cash and in-kind): **$**_____

Match ratio (WNTI:Partner) _____ : _____

Total Project Cost: **$**_____

Partner Contribution Detail (List and briefly describe the project partners and their financial contributions.)

Partner	**Cash**	**In-Kind**
Budget Totals		

Note: NFHP Funds for a project are processed through the U.S. Fish and Wildlife Service Regional Offices. Grants are paid on a reimbursable basis. A FWS project agreement will be completed with successful applicants through interactions with FWS regional or local staff.

Project Partners (list all project partners and contact information)

Partner Organization:
Contact Name: Position:
Email: Telephone:

Partner Organization:
Contact Name: Position:
Email: Telephone:

Partner Organization:
Contact Name: Position:
Email: Telephone:

Partner Organization:
Contact Name: Position:
Email: Telephone:

Partner Organization:
Contact Name: Position:
Email: Telephone:

Partner Organization:
Contact Name: Position:
Email: Telephone:

Project Components (select all that apply)

☐ Riparian or In-Stream Habitat Restoration
☐ Barrier Removal or Construction
☐ Watershed or Population Assessment
☐ In-Stream Flow Acquisition Planning
☐ Watershed Connectivity
☐ Monitoring
☐ Education/outreach
☐ Watershed Planning

Anticipated Outcomes (fill in values applicable to project)

___ # Stream Miles Restored or Enhanced
___ # Stream Miles Reconnected or Reopened
___ # Acres of Lake/Wetlands Restored/Enhanced
___ # Barriers Removed or Constructed
___ # Watersheds or Rivers Assessed
___ # Stream Miles Assessed
___ # Populations Assessed
___ Other:

Project Narrative

Please use 12 pt. font, single line spacing, and standard margins. This portion of your application should not exceed 7 pages.

I. Project Summary - a one paragraph description of what tasks will be accomplished.

II. Problem the Project Addresses - A description of why the project is important to the resource and which WNTI and NFHP objectives will be met. What are all of the major factors limiting the healthy function of the watershed/habitat? Describe how your proposed project addresses the causes of degradation rather than the symptoms, and how your project addresses species recovery needs or other

species conservation needs. Describe how the project is important to the long-term persistence of the species.

III. Project Objectives/Supporting Documentation - What specifically will be accomplished? How do these objectives support the goals of the WNTI Strategic Plan, existing species recovery plans and conservation strategies, watershed restoration plans, etc.? If possible cite relevant plans and their specific objectives and goals that the project addresses.

IV. Project Methodology - Describe what you are planning to do. If a multiyear project, it must be broken into distinct phases with measurable tasks and accomplishments broken down by year, what year(s) the funding you seek will cover, and how other years of the project will be funded. How will the project be completed, and who is responsible for actually doing the work? **Attach photos and map of the project area if possible.**

V. Project Monitoring/Evaluation of Success - How will the success of the project be assessed, and who is responsible for long-term maintenance and monitoring? Has an evaluation/monitoring plan been completed? The benefit(s) should be quantifiable; that is, you can measure or count the amount of habitat and/or species benefited, or the result of your project.

VI. Partnerships for this Project - briefly describe the project partners' involvement in planning, implementation, and evaluation of this project.

VII. Project Timeline - Please provide an estimated timeline for the project, including major milestones and achievements, including plans and responsible person to prepare and submit a final report with high quality digital photographs.

VIII. Supplemental Information

Status of Project Design and Environmental Compliance - Identify the stage of project design and when implementation is expected to occur. Identify what environmental compliance documents are needed and the status of completion for these documents.

Species Present - List all species that will directly benefit or be affected by your project, and how. Include special status designations if applicable—ESA status, species of special concern, etc.

Outreach/Education - Describe any outreach or education efforts associated with this project, including public workshops, tours, signs, newsletters, scientific journal articles, scientific conference presentations, educational forums, etc.

IX. Budget

Category	WNTI	Partner Match	Total
a. Personnel	N/A		
b. Travel			
c. Equipment*			
d. Supplies			
e. Contractual			
f. Construction			
g. Other			
TOTAL			

**Equipment is any individual item over $5,000. Even if an item is tangible, nonexpendable, and having a useful life of more than one year, items costing less than $5,000 should be placed under the Supplies category.*

X. Budget Narrative – for supplies and contractual, provide some detail. Explain budget categories and amounts listed above as needed. If a multiyear project, please provide a budget breakdown by year (e.g., Phase 1 – 2015, Phase 2 – 2016).

XI. Project Staff - List names and relevant qualifications of project staff.

XII. Optional Supporting Materials - Includes maps, photographs, letters of support, etc.

XIII. Signature of Applicant - An original signature page must be received with the application.

I certify that the above information is true and accurate,

Signature: _____

Print Name: _____

Title: _____

Organization: _____

Date: _____

Landowner Consent Template

I, _____as [one of] the owner[s] of the property (street, location), agree to participate in the project being proposed and/or consent to the (((restoration project, inspection, appraisal, and/or survey))) of the property being considered for funding by the Western Native Trout Initiative. I agree to allow members of the (((Blank Organization))), NFHP Program representatives, and associated partners or their designated staff to inspect the property at any mutually agreeable time for the purposes of this proposal. I understand I shall be notified in advance of all inspection visits. I also understand that the project being proposed may not happen if the application does not meet the needs or qualifications of the National Fish Habitat Plan and is subject to availability of funds and ranking priority.

Dated: _____ By: _____

Project Information	Details	Response
Funding Information		
	Funding Program	Western Native Trout Initiative
	Specific funding purpose	Protect, enhance or restore western native trout populations, protect intact watersheds, enhance or restore habitats, develop collaborative approaches
	Funding timeline	Up to 36 months for phase funded
Project Information		
	Max funds request	Varies annually
	1:1 or other match req'd	1:1
	Restrictions on funding use	Will only fund new projects, won't refund/reimburse for completed projects, won't fund project w/o monitoring component; won't cover salaries or benefits
	Address source of degradation	**Req'd (1)** / not mentioned (0)
Goal/outcome requirements		
	Overall goal	**Req'd (1)** / not mentioned (0)
	Specific objectives (ex: S.M.A.R.T.)	**Req'd (1)** / not mentioned (0)
	Address processes	**Req'd (1)** / not mentioned (0)
	Long-term solution	**Req'd (1)** / not mentioned (0)
	Future considerations (climate change, development, etc	Req'd (1) / **not mentioned (0**); list
Monitoring and follow-up requirements		
	Implementation monitoring	Req'd (1) / **not mentioned (0)**
	Pre-project monitoring	Req'd (1) / **not mentioned (0)**
	Post-project monitoring	**Req'd (1**) / not mentioned (0)
	Adaptive management	Req'd (1) / **not mentioned (0)**
	Reporting	**Req'd (1)** / not mentioned (0)
Other prioritization/criteria notes		Protect, enhance, restore western native trout populations; protect/restore watersheds/habitats, collaboration/partnerships, communication/education/outreach, alignment with other conservation plans, likelihood of completion, leveraging of matching funds
	Volunteering opportunities	**Not mentioned (0);** mentioned, not req'd (1); req'd (100)
	Citizen Science	**Not mentioned (0);** mentioned, not req'd (1); req'd (100)
	Education/Outreach	Not mentioned (0); mentioned, not req'd (1); **req'd (100)**

Table S1. List of Hydrologic Units, sub-regions, and cataloging units in the study area. I will search cataloging units in Google combined with keywords "restoration," "rehabilitation," "watershed," and "plan" to locate restoration plans (USGS.com).

HU	Sub-region	Cataloging Units
10 – Missouri	Saskatchewan	St. Mary River, MT
		Belly River, MT
	Missouri Headwaters	Missouri, MT
		Jefferson , MT
		Red Rock, MT
		Beaverhead, MT
		Ruby, MT
		Big Hole, MT
		Boulder, MT
		Madison, MT, WY
		Gallatin, MT, WY
	Missouri-Marias	Upper Missouri, MT
		Smith, MT
		Teton, MT
		Two Medicine Creek, MT
		Willow Creek, MT
	Upper Yellowstone	Yellowstone Headwaters, MT, WY
		Upper Yellowstone, MT, WY
		Shields, MT
		Upper Yellowstone Lake, MT
		Stillwater, MT
		Clarks Fork Yellowstone, MT, WY
	Big Horn	Upper Wind, WY
		Little Wind, WY
		Popo Agie, WY
		Lower Wind, WY
		Greybull, WY
		Big Horn Lake, MT
		North Fork Shoshone, WY
		South Fork Shoshone, WY
		Lower Bighorn, MT
	North Platte	North Platte Headwaters, CO
		Upper North Platte, CO
13 – Rio Grande	Rio Grande headwaters	Rio Grande headwaters, CO
		Alamosa-Trinchera, CO, NM
		San Luis, CO
		Saguache, CO
		Conejos, CO
14 – Upper Colorado	Colorado headwaters	Blue River, CO
		Eagle, CO
		Roaring Fork, CO
		Plateau, CO
		Parachute-Roan, CO
	Gunnison	East-Taylor, CO
		Upper Gunnison, CO
		Tomichi, CO

		North Fork Gunnison, CO Lower Gunnison, CO Uncompahange, CO
	Upper Colorado-Dolores	Westwater Canyon, UT Upper Dolores, CO, UT San Miguel, CO Lower Dolores, CO, UT Kane Springs, CO,UT
	Great Divide-Upper Green	New Fork, WY Upper Green-Slate, WY Big Sandy, WY Upper Green-Flaming Gorge, UT, WY Blacks Fork, UT, WY Muddy, UT, WY Vermilion, CO, WY
	White-Yampa	Upper Yampa, CO Lower Yampa, CO Little Snake, CO, WY Upper White, CO Piceance-Yellow, CO Lower White, CO, UT
	Lower Green	Lower Green, CO, UT Duchesne, UT Strawberry, UT Lower Green-Desolation Canyon, UT Willow, UT Price, UT Lower Green, UT
	San Juan	Upper San Juan, CO, NM Piedra, CO Chaco, AZ, NM Mancos, CO, NM
	Rio Grande-Elephant Butte	Rio Grande – Santa Fe, NM Jemez, NM Arroyo Chico, NM
17 – Pacific Northwest	Kootenai-Pend Oreille-Spokane	Upper Kootenai, ID, MT Fisher, MT Yaak, MT Lower Kootenai, ID, MT
	Pend-Oreille	Upper Clark Fork, MT Flint-Rock, MT Blackfoot, MT Middle Clark Fork, MT Bitterroot, MT North Fork Flathead, MT Middle Fork Flathead, MT

	Flathead Lake, MT
	South Fork Flathead, MT
	Stillwater, MT
	Swan, MT
	Lower Flathead, MT
	Lower Clark Fork, ID, MT
Upper Snake	Snake headwaters, WY
	Gros Ventre, WY
	Greys-Hobock, WY
	Palisades, ID, WY
	Salt, ID, WY
	Teton, ID, WY
	Raft, ID, WY
	Goose, ID, NV, UT
Salmon River Basin	
	Upper Salmon, ID
	Pahsimeroi, ID
	Middle Salmon-Panther, ID
	Lemhi, ID
	Upper Middle Fork Salmon, ID
	Lower Middle Fork Salmon, ID
	Middle Salmon-Chamberlain, ID
	South Fork Salmon, ID
	Lower Salmon, ID
	Little Salmon, ID
Clearwater River Basin	
	Upper Selway, ID
	Lower Selway, ID
	Lochsa, ID
	Middle Fork Clearwater, ID
	South Fork Clearwater, ID
	Clearwater, ID
	Upper North Fork Clearwater, ID
	Lower North Fork Clearwater, ID