

WPFD254

Fill in all blanks on the cover page. Devise a short descriptive title for the proposal. Your project may fall into more than one of the four primary project types. If so, select all categories that apply. For #12 below, only list other monies that are secured at the time of application submittal. For #13c below, you may list any applicant matching support. Do not include Unsecured@ money that is not committed at the time of application submittal on this page.

**Cover Page**

**Cover Page: Application Information**

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**1. Title of Project: Brown Creek Riparian Restoration**

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**2. Type of Project:**

- Water Acquisition
- Capital Project or other
- Water Conservation
- Research

**3. Stream type**

- Perennial
- Intermittent
- Ephemeral

**4. Date submitted** August 2 1999

**5. a. Date Attended an AWPF Workshop** \_\_\_\_\_

**5. b. Date Attended an AWPF Consultation** \_\_\_\_\_

**6. Applicant Name** Lakeside Ranger District

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**7. Applicant address (city, county, zip code)**

Lakeside Ranger District  
RR. 3 Box B-50  
2202 W. White Mountain Blvd.  
Lakeside AZ, 85929

**8. Inside AMA**

- Phoenix  Outside AMA
- Tucson
- Prescott
- Pinal
- Santa Cruz

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**9. Contact person/title: E.H. "Duke" Klein / District Wildlife Biologist or**

**Kelly Bockting / Wildlife Biologist**

**Phone number: (520) 368-5111**

**Fax number: (520) 368-6476**

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10. Type of application:

New (X) Continuation ( )

11. Project start date: April 1, 2000

End date: March 31, 2003

12. Monies obtained and secured:

Agency/Organization:	Amount:
<u>AZ Game and Fish</u>	<u>\$21,500.00</u>
<u>NFWF</u>	<u>\$9,100.00</u>
<u>Forest Service</u>	<u>\$4,606.00</u>
<u>Total (copy to 13b)</u>	<u>\$35,206.00</u>

13. Estimated Funding:

(a) AWPFF Request: \$34,037.00  
(b) Monies secured: \$35,206.00  
(c) Applicant Match: \_\_\_\_\_  
(d) Total: \_\_\_\_\_

14. Tax ID number: \_\_\_\_\_

15. The undersigned hereby offers and agrees to perform in compliance with all terms, conditions, specifications and scope in the application. Signature certifies understanding and compliance with the attached application. Signature certifies that all information provided by the applicant within this application is true and accurate. The Arizona Water Protection Fund Commission may approve grant award agreements with modifications to scope items, methodology, schedule, final products, and/or budget.

Edward W. Collins

Typed Name of Authorized Representative

District Ranger (520) 368-5111

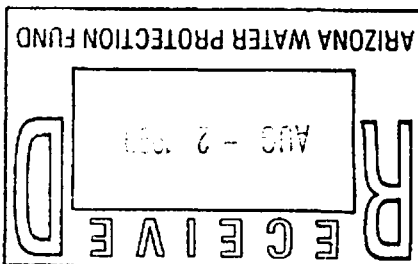
Title and Telephone No.

Edward W. Collins

Signature

7/30/99

Date Signed

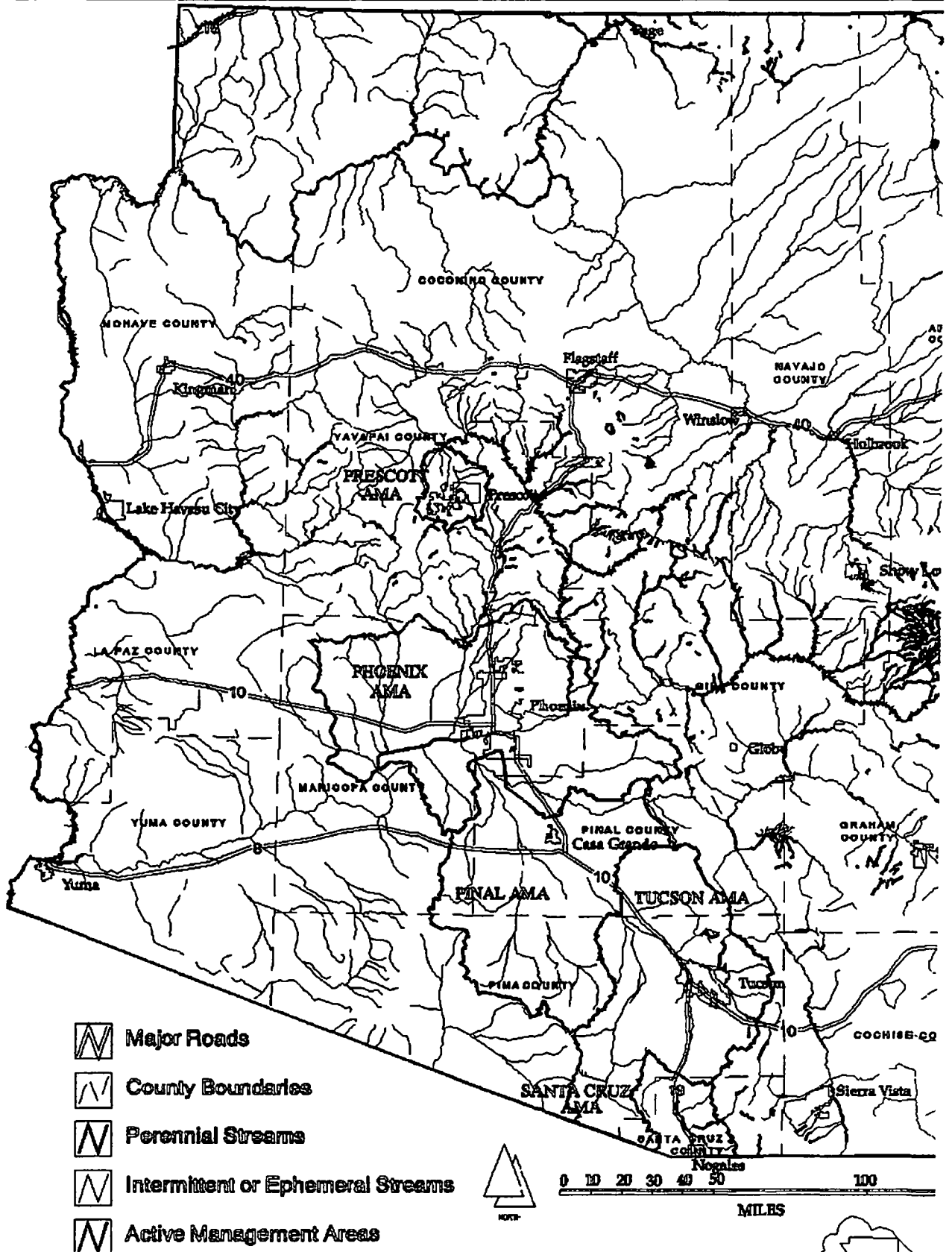


Indicate on the map the approximate location of your project. Ensure that your markings are clearly visible on all five copies submitted. This map is sent out to people requesting summary information about submitted projects.

Arizona Map

# Arizona Map Instructions

Indicate on the map the approximate location of your project. Ensure that your markings are clearly visible on all five copies.



**Limit this section to one page only!!** Begin this summary with a single sentence clearly stating the purpose of the project. List objectives, describe methods to be used, describe all major project features for which funding is being requested (which must also be indicated on the schematic drawing required on the next page) and indicate the significance of the proposed work to the maintenance, enhancement or restoration of Arizona's rivers, streams and associated riparian or aquatic habitats.

## Summary Page

### Summary:

The goal of the Brown Creek Riparian Restoration is to enhance one of the last perennial reaches of stream that is not managed for recreational fisheries on the Lakeside Ranger District on the Apache-Sitgreaves National Forest, by excluding livestock grazing and managing for native riparian and aquatic communities. The district proposes to construct approximately 2.5 miles of 4-wire fence, 1/3 miles of "buck and pole" fence and remove about 1/2 miles of existing fence. The fence will encompass approximately 1.5 miles (100 acres) of riparian habitat along Brown Creek and Brown Spring. The fence removal will be inside the enclosure, and will no longer be needed due to the exclusion of livestock. This project will also include installation of a cattle guard and two 4,000 gallon guzzlers for wildlife and replacement livestock water. A monitoring plan will be implemented to evaluate the rehabilitation progress.

Planning for the first guzzler and fencing of the area has already been completed. Beginning in the fall of 1999 the mapped area at Brown Creek will be fenced to exclude livestock grazing. The first guzzler will be installed as a replacement water for livestock and wildlife use. This will be completed with secured money from the AZ G&F, NFWF and the Forest Service.

Brown Creek originates from Brown Springs on the Lakeside Ranger District in the Apache-Sitgreaves National Forest, and is within the Silver Creek watershed. During normal years Brown Creek maintains a perennial flow. During drought years, approximately two miles of the upper portion of the creek down stream from the spring, remains perennial. Evidence of past development exists at Brown Springs but it is no longer functioning. There is an old spring box to the east of where the effluent from Brown spring currently flows, that is no longer in use. Being the only perennial stream on the District that is not managed for recreational fisheries, it has a high potential for successful management for native aquatic species.

After a complete assessment of the Brown Creek riparian area, Carolyn Hanrahan (Forest Hydrologist) concluded that the upper reach is in a downward trend. This is due to the lack of woody riparian species. There are few remaining willows and no seedlings present. The banks are primarily vegetated with Bluegrass and lack the sedge and willow component that are key to stabilize the stream banks. It was reported that these problems were associated with over grazing and vehicle use in the area. Lower reaches of Brown Creek are considered to be stable and functioning.

Brown Spring and the upper reaches of Brown Creek lie within the Lake Mountain allotment. A grazing permit has been issued on the Lake Mountain allotment since 1910. The riparian meadows surrounding the upper reaches of Brown Creek have been subjected to over grazing in the past. This problem has been coupled with the area receiving steady use as an informal camping area for the last 50 years. Vehicles have had access to drive along the riparian corridor and cross the creek, contributing to the degradation of the stream banks and riparian corridor. The Forest Service, in cooperation with the Arizona Game and Fish Department will implement a variety of monitoring for 10 years following the installation of the fence and replacement waters to examine the extent of rehabilitation efforts. If continued degradation occurs from camping pressure, the Forest Service is committed to draft a plan to deal with future needs. Implementation of a monitoring plan is the key to determine future management practices.

For projects involving construction and/or investigation of several physical features, include in this space a schematic drawing showing all the important project features located in relationship to one another and in relationship to important site physical features. This should be to scale and should visually indicate all project features for which funding is requested. The drawing must include the locations of the project features which are discussed within the proposal (e.g. locations of checkdams, revegetation areas, fence lines, water distribution systems, etc.) and existing or planned well and gage locations. Drawing shall meet the following criteria: size: 8.5" by 11"; contain a north arrow; scale; and contain a project title and date of preparation. Submit as many drawings as needed to demonstrate all project features.

**Project Schematic Drawing ----- See Appendix A and B**

Project Site Photographs



Top & Bottom: Unauthorized vehicle use along Brown Creek.





Top: Looking downstream from the effluent of Brown Spring.

Bottom: Looking upstream to the effluent of Brown Spring.







Top & Bottom: Downcutting occurring along Brown Creek.



FR #224 for five miles and turn onto FR #271, continue north for 5 1/2 miles to FR #267 and follow FR #267 for 3/4 mile to Brown Creek.

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**ENVIRONMENTAL CONTAMINANT LOCATION INFORMATION**

For purposes of this manual, environmental contaminants are substances which pose risk of harm to human health or the environment and include hazardous substances, hazardous wastes, petroleum products or Environmental Protection Agency priority toxic pollutants (defined by CERCLA 42 USC '9601, RCRA 42 USC '6903 and the Environmental Protection Agency). Environmental contaminants do not include wastewater from a wastewater facility permitted by a local, state, or federal authority having jurisdiction over wastewater.

1. Does your project site contain known environmental contaminants? Yes \_\_\_\_\_ No X If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants.
  
2. Are there known environmental contaminants in the project vicinity? Yes \_\_\_\_\_ No X If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants.
  
3. Are you asking for Arizona Water Protection Fund monies to identify whether or not environmental contaminants are present? Yes \_\_\_\_\_ No X

Proposed capital development plans and research projects shall be located on land and water which the applicant owns or manages. Research projects on sites not controlled by the applicant shall include and attach the access agreement or permit allowing the research. At a minimum, the applicant must include in the application as one of the first tasks obtaining and submitting the appropriate agreements prior to initiation of the remaining project tasks. For water, either surface water, groundwater or effluent, when included as a project feature or benefit, you must include evidence of control and tenure with your application or include in your application a task to obtain control.

### **Evidence of Control and Tenure**

**1. If you own the land on which the project is located, attach a copy of the appropriate legal document showing title in the name of the Applicant, and including a legal description of the property.**

**If you manage the land on which the project is located, attach a copy of the lease, special use permit, intergovernmental agreement or other appropriate official instrument.**

**If you do not own or manage the land on which the project is located, attach documentation verifying ownership (as noted above) and attach a copy of the permit, agreement or letter of intent that allows you access to the site.**

**2. If your project, including the benefits claimed for the Fund, involves surface water flows or use of groundwater withdrawals, demonstrate ownership and tenure by attaching the appropriate documentation .**

**If you do not own or manage the water that the project uses or that benefits the Fund, attach documentation verifying ownership (as noted above) and attach a copy of the permit, agreement or letter of intent that allows you use of the water.**

## Introduction

Give the background of the project. List the problem or problems that you address in your proposal, list the cause or causes of these problems, list the remedies or solutions and state the years of project-related benefit from the project that you will implement. Provide the necessary introductory information which supports your listing of the problem(s), cause(s), and solution(s). Describe the project area=s relevant history if applicable. Justify the term your project will provide benefit. For on-going projects, the history and background of the project should be provided: Describe the site prior to project initiation, tasks that have been completed and any site changes that have occurred as a result of these activities.

### **Background:**

Brown Creek represents one of the few perennial flows still existing on the Lakeside District. The source (Brown Springs) and approximately 3 miles of reach occur entirely on National Forest Lands. Once this stream enters private land it is then diverted into a ditch for irrigation. An indication of the importance and uniqueness of this area is found in a decision made by the District in 1987. That decision included that portion of NFS lands that lies between the Brusally Ranch and the second parcel of private land in Section 4 where the diversion of Brown Creek occurs. Due to the diversion of Brown Creek, that portion of Brown Creek addressed by this decision is not perennial. Brusally Ranch (a private ranch 3 miles northwest of Brown spring) proposed exchanging lands for this area, but the District decided such an action was not in the best interest of the Forest Service. One of the reasons used was based on habitat values and the Forest emphasis on riparian habitat.

District personnel have previously sampled the stream for occurrence of fish and have found nothing. This could be due to fact that there is a natural barrier near the forest boundary, or because the flow becomes ephemeral about 3 miles downstream from the spring. During the field season of 1997, Terry Myers (Forest Biologist) and Duke Klein (District Biologist) made several visits to the Brown Creek area and discussed potential management. Because of the uniqueness of this area on the District (reliable flow, non-impounded, occurrence of riparian vegetation, and absence of introduced species (crayfish, trout, sunfish)) they felt it could potentially be managed in the future for native aquatic species. With this in mind, the site was also visited with Jim Novy, AGFD fisheries biologist. All were in agreement that the site had future potential to manage it as a refugia for native listed and sensitive aquatic species. .

Planning for the first guzzler and fencing of the area has already been completed. Beginning in the fall of 1999 the mapped area at Brown Creek will be fenced to exclude livestock grazing. The first guzzler will be installed as a replacement water for livestock and wildlife use. This will be completed with secured money from the AZ G&F, NFWF and the Forest Service.

### **Statement of problem(s):**

After a complete assessment of Brown Creek riparian area, Carolyn Hanrahan (Forest Hydrologist) concluded that the upper reach is in a downward trend. This is due to the lack of woody riparian species. There are few remaining willows and no seedlings present. The banks are primarily vegetated with Bluegrass and lack the sedge component and willow components that are needed to stabilize the stream banks. Lower reaches of Brown Creek are considered to be functional. It was reported that these problems were caused by over grazing and vehicle use in the area.

Terry Myers reported that some of the reaches below Brown Spring showed signs of heavy grazing and a few points along the creek showed moderate downcutting. However, bank structure was often intact with either well vegetated banks and even some slightly undercut banks..

### **Statement of cause(s) of the problem(s):**

Brown Spring and the upper reaches of Brown Creek lie within the Lake Mountain allotment. A grazing permit has been issued on the Lake Mountain allotment since 1910. The riparian meadows surrounding the upper reaches of Brown Creek have been subjected to over grazing in the past. This problem has been coupled with the area receiving steady use as an informal camping area for the last 50 years. Vehicles have had access to drive along the riparian corridor and cross the creek, contributing to the degradation of the stream banks and riparian corridor.

**Statement of project-related remedies or solutions:**

As stated above the area targeted is considered "functioning at risk." At this time it is hard to pinpoint any one causative factor; but the above listed causes of the problems have compounded over time to create the current situation. Following the 1998 Allotment Management Plan (AMP) process, the permitted number of livestock on this allotment will be reduced by 60% by the year 2002. Fencing the area and supplying alternative water sources for livestock and wildlife will minimize grazing impacts to the riparian corridor. There are also future plans to relocate the dispersed throwdown camping, away from the stream corridor, to minimize the impacts from vehicular use in the area. Long term plans have also been discussed to use this area as a reintroduction site for listed or sensitive native aquatic species.

The recreation staff is currently working on a solution to minimize the impacts to the area from camping pressure. One of these plans is to possibly construct a buck and pole fence along F.R. 267 to restrict vehicle use, and allow camping by foot access only. The buck and pole fence would be constructed with pine poles, rather than a conventional wire fence. This would give a more pleasing aesthetic look to the surrounding area, as well as deterring vehicles from the riparian corridor.

**Statement of project years of benefit** (Demonstrate your level of commitment to maintenance of project benefits and capital improvements; is it < 5 years, 5 - 10 years, 11-15 years, or 16 - 20 years? )

The benefits of this project will be long-term (>20 yrs). By reducing the grazing impacts along the riparian corridor and allowing for increased regeneration of riparian habitat species, this reach of stream has the potential to become a refugia to manage for native aquatic species. The Forest Service, in cooperation with the Arizona Game and Fish Department will implement a variety of monitoring for 10 years following the installation of the fence and replacement waters to examine the extent of rehabilitation efforts. If continued degradation occurs from camping pressure, the Forest Service is committed to devising a plan to deal with it in the future. Implementation of a monitoring plan is the key to determine future management activities.

Identify the overall goal(s) of your project (what you want to achieve), followed by the objectives of your project. Objectives are specific, measurable outcomes of the project. List these objectives in numerical order, with the first objective having the most important outcome.

### **Scope of Work: Goals & Objectives**

**Goal(s):**

The goal of the Brown Creek Riparian Restoration is to help reduce the stream bank erosion, improve the riparian habitat, and limit vehicle access to the area.

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**Objective #1:** Improve the riparian and aquatic habitat at Brown Spring and along Brown Creek, by excluding livestock grazing in the area.

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**Objective #2:** Implement a monitoring program to measure the improvements of vegetative cover and streambank stabilization along the Brown Creek riparian corridor.

### Scope of Work: Task Descriptions

Describe in detail the tasks you will perform to accomplish your objectives and achieve your desired results . These tasks must be exactly the same as the tasks listed in your task-timetable. Please use the same task numbering on each form.

- A deliverable is a product produced from a task, which is submitted to the Commission and proves that the task was completed. Deliverables are often reports, photos, data, etc. that are submitted along with invoices for materials and labor.
- Obtaining permits and conducting monitoring are potential tasks for all applications. Obtaining access agreements for research projects is also another potential task for all research projects.
- Revegetation and Monitoring Plan development must be a task with an appropriate cost assigned if you do not currently have one(s) prepared. Go to Appendix B for appropriate Plan content outline.
- If appropriate to your project, have your last task be a Final Report and assign a value commensurate with the overall project value (5% - 10% of overall project value).
- As much as possible, make each Task discrete and payable upon completion. A few tasks will continue throughout the contract duration.

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##### **Task #1 Description: Obtain Archeological Clearance**

The Forest Archeologist will do a ground reconnaissance and report on the findings,

**Deliverable description:** Archeological Report

**Deliverable due date:** September 30, 2000

**AWPF task cost:** \$825.

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##### **Task #2 Description: Collection of Baseline Data.**

After the fence is constructed, the baseline data will be collected. This will include establishing permanent photo points, veg. transects, collection of data, and creating an electronic database to analyze the restoration progress.

**Deliverable description:** Baseline Monitoring Data

**Deliverable due date:** September 30, 2000

**AWPF task cost:** \$7,432.

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##### **Task #3 Description: Installation of Second Guzzler.**

The Forest Service will purchase the second guzzler with AWPf contribution, and our construction and maintenance crew will install the guzzler and we will reseed the disturbed area.

**Deliverable description:** Photos of installed guzzler.

**Deliverable due date:** March 31, 2001

**AWPF task cost:** \$9,000.00

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**Task #4 Description: Monitoring.**

**Stream Bank Stabilization** - Permanent photo points will be established by placing a tagged rebar stake or a metal T-post every 200 meters beginning at Brown Spring and going downstream. This will allow 12 photo points along the 1.5 miles of stream. Four photos will be taken at each location, up stream, down stream, left and right. This will be done yearly, by using a 35mm camera, with in one month of when the initial photos were taken for the baseline data. A dry erase clip board will be used in the photo to document the photo point #, date, location, direction of photo, and grant number. Photos will be used to monitor stream bank restoration as well as willow regeneration.

**Veg Data** - Vegetation intercept transects (100 ft. long) will be established at each photo point to determine the riparian vegetation composition. A veg photo point will also be taken at these locations. 1 or 2 willow cages will also be constructed to monitor elk utilization levels on the willow component within the enclosure. This data will also be compared with the baseline data to measure the progression of the restoration efforts.

**Hydrological Flow** - Hydrological flow will be monitored monthly at the spring effluent and the enclosure effluent. This data will be used to help determine the probability of managing this watercourse as a refugia for listed and sensitive species in the future.

**Deliverable description:** Annual monitoring data and analysis reports

**Deliverable due date:** (1) March 31, 2001 (2) March 31,2002 (3) Final Report March 31, 2003\_

**AWPF task cost:** \$11,037

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**Task #5 Description: Attend AWPF Information Transfer Meeting.**

**Deliverable description:** Photograph of poster to be used at annual session or copy of paper given.

**Deliverable due date:** March 31, 2003

**AWPF task cost:** \$500

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**Task #6 Description: Final Project Report**

Prepare and submit a final report that will summarize all methodologies used, outcome of all tasks, summarize and analyze project data & monitoring data, suggest any further changes needed in the project and evaluate project success measured against the objective.

**Deliverable description:** Final project report

**Deliverable due date:** March 31, 2003

**AWPF task cost:** \$4,400



## Scope of Work: Sampling, Revegetation and Monitoring Plans

**Sampling Plans, Revegetation Plans, Monitoring Plans (Water Quality, Hydrology, Vegetation, Wildlife, etc.), Photo Monitoring Plans:** Some applications may include baseline environmental inventories and most will contain project monitoring. Within your application, describe your monitoring or sampling objective and, in as much detail as possible, describe the monitoring and sampling methodology, and/or study design that will be used to accomplish that objective. Include a description of the equipment you wish the Fund to purchase. For water features include: water level, well schematics, USGS gage station data, well number/location, existing hydrologic reports, recharge or recovery plans. Reference Appendix B for more detailed outlines.

Again, submit as much of the sampling plan, monitoring plan, revegetation plan, etc. information as possible with the application addressing as elements of plan outlines in Appendix B. If you receive a grant award, you must submit detailed plans as deliverables. *Include in your application* a task and appropriate budget within the Scope of Work: Sampling, etc. Plans and on budget forms to complete detailed plan(s) after grant award.

**Stream Bank Stabilization** - Permanent photo points will be established by placing a tagged rebar stake or a metal T-post every 200 meters beginning at Brown Spring and going downstream. This will allow 12 photo points along the 1.5 miles of stream to monitor streambank stabilization and rehabilitation. Four photos will be taken at each location, up stream, down stream, left and right. This will be done yearly, by using a 35mm camera, with in one month of the same time of year when the initial photos were taken for the baseline data. A dry erase clip board will be used in the photo to document the photo point #, date, location, direction of photo, and grant number. Photos will be used to monitor stream bank restoration as well as willow regeneration. We will GPS these points and plot them on a map, and identify them as permanent monitoring locations in conjunction with the veg. transects. This data will be compared with the baseline data to measure the progression of the restoration efforts.

**Veg Data** - Vegetation intercept transects (100 ft. long) will be established at each photo point to determine the riparian vegetation composition. A 3'x3' vegetation photo will also be taken, looking straight down at the ground, at each transect by using the permanent marker as the top left hand corner of the 3'x3' plot. 1 or 2 willow cages will also be constructed to monitor elk utilization levels on the willow component within the enclosure. This data will also be compared with the baseline data to measure the progression of the restoration efforts.

**Hydrological Flow** - Hydrological flow will be monitored monthly by using an electronic flow meter at the spring effluent and the enclosure effluent. The data will allow us to monitor the monthly and seasonal variations in the stream flow. This data will also be used to help determine the probability of managing Brown Creek as a refugia for listed and sensitive species in the future.







**AWPF FUNDS REQUESTED**

<b>TASK: Number and short description</b>	<b>ADMIN COSTS (1)</b>	<b>DIRECT LABOR COSTS (2)</b>	<b>OTHER DIRECT COSTS</b>	<b>OUTSIDE SERVICE</b>	<b>CAPITAL OUTLAY (3)</b>	<b>TOTAL</b>
1. Archeological Clearance		\$825.00				\$825.00
2. Baseline Data Collection		\$2,632.00	\$4,800.00			\$7,432.00
3. Guzzler Installation	\$1,015.00	\$3,728.00	\$5,100.00			\$9,843.00
4. Monitoring		\$10,287.00	\$750.00			\$11,037.00
5. AWPF Meeting		\$500.00				\$500.00
6. Final Report	\$380.00	\$4,020.00				\$4,400.00
<b>AWPF TOTAL</b>	<b>\$1,395.00</b>	<b>\$21,992.00</b>	<b>\$10,650.00</b>			<b>\$34,037.00</b>

- (1) Administration costs are limited to 5% of the total dollars requested for a project.
- (2) Include wages, salaries, and fringe benefits.
- (3) Attach list of capital equipment expenditures over \$1,000.00, Water (CAP/Effluent), etc.



## Budget Information - AWPf Request

Provide a breakdown of your funding request to AWPf. Identify any direct labor costs, other direct costs, outside services and any capital costs. Identify costs by task.

### **AWPF Budget Breakdown**

#### **Task 1**

##### Direct Labor Cost:

Archeologist - 3 days @ \$275/day

#### **Task 2**

##### Direct Labor Cost:

Hydrologist - 2 days @ \$172/day

Project Manager - 5 days @ \$230/day

Wildlife Biologist - 6 days @ \$172/day

2 Wildlife Techs - 6 days @ \$91/day

##### Other Direct Costs:

Electronic Flowmeter, 35mm film, vehicle use, willow cages, rebar and tags = \$4,800

#### **Task 3**

##### Direct Labor Cost:

C&M Crew - 1day @ \$1,280/day

Tractor use - 2 days @ \$85/ day

Tractor operator - 2 days @ \$172/day

2 Wildlife Techs - 4 days @ \$91/day

Wildlife Biologist - 3 days @ \$172/day

Project Manager - 3 days @ \$230/day

##### Other Direct Costs:

Guzzler, vehicle use, fence materials, native seed = \$5,100

#### **Task 4**

##### Direct Labor Cost:

Wildlife Biologist - 12 days/yr @ \$172/day for 3 yrs

2 Wildlife Techs - 15 days/yr @ \$91/day for 3 yrs

##### Other Direct Costs:

Film and processing, vehicle use = \$250/yr for 3 yrs

#### **Task 5**

##### Direct Labor Cost:

Project Manager - \$500

#### **Task 6**

##### Direct Labor Cost:

Project Manager - 10 days @ \$230/day

Wildlife Biologist - 10 days @ \$172/day

Provide written evidence of all secured funds (in-hand or committed in writing) that you are listing on the cover page. The value of volunteer labor is based on current minimum wage; technical volunteer labor can be based on an hourly fee comparable to a consultants fee. An explanation of any in-kind contributions listed in your application is recommended. Identify costs by task.

**Budget Information - Matching**



## Existing Plans

Discuss any existing plans, reports or information that are relevant to the project and that the Commission should be aware of when evaluating your proposal. This might include other projects that are being performed or being planned in the area that may affect your project, or local planning/zoning changes that could impact the project area. Emphasize any institutional partnerships and collaborative planning being used in your project. Identify any unsecured funds@, list their amount and describe their status. If you were to obtain them, list when this would occur and how it would affect the project.

**Existing Plans:** See Attachments

Indicate the community support for your project from within the project impact area. Include signed copies of letters from community organizations or groups that support your project. Please be aware that for public support to affect your proposals criteria rating score, it must be included with your application. If pertinent, describe your commitment to work jointly with affected cities, towns, counties, NRCs, special districts, and/or Indian tribes. If you are a federal or state agency, you should attach evidence of support from those citizens who lease or hold use-permits for the lands to be impacted by your project. Indications of public support for your proposal that are received after your application is submitted will be forwarded to the Commission and may affect their decisions on which proposals to fund, but will not affect the criteria rating score.

### **Community Support**

**Community Support:** See Attachments

## Personnel

Indicate the key personnel associated with this project. Identify a Project Manager and include a brief biographical sketch that describes relevant qualifications of all key personnel.

### Personnel:

Project Manager: E.H. "Duke" Klein, District Staff Wildlife Biologist --- 11 yrs. experience

Wildlife Biologist: Kelly Bockting, Lakeside Ranger District --- 4 yrs. experience

Archeologist: Bruce Donaldson, Lakeside Ranger District --- 25 yrs. experience

Hydrologist: Carolyn Hanrahan, Apache-Sitgreaves Supervisors Office --- 5 yrs. experience

**SHPO Certification**

(must be submitted)

This certification is required by regulations implementing the State Preservation Act (A.R.S. 41-861 through 41-864), effective July 24, 1982. It is understood that recipients of state funds are required to comply with this law throughout the project period. The State Historic Preservation Act mandates that all State agencies consider the potential of activities or projects to impact significant cultural resources. Each State agency is required to consult with the State Historic Preservation Officer with regard to those activities or projects that may impact cultural resources. All projects that affect the ground-surface that are funded by AWPf require SHPO clearance including those on private lands.

**PROJECT TITLE:**           Brown Creek Riparian Restoration          

Please answer the following questions which provide information about the potential of the project to impact cultural resources:

1. Does the project have the potential to disturb the surface and/or subsurface of the ground?

YES:   X   NO:           

2. Are there any buildings or structures (including mines, bridges, dams, canals, etc.) which are 50 years or older within the project area that have the potential to be disturbed by the proposed activity?

YES:            NO:   X  

3. Are there any known prehistoric and/or historic archaeological sites within the project area?

YES:            NO:   X  

4. Are you aware of any archeological investigations that have been performed within one (1) mile of the project area?

YES:   X   NO:           

If you have answered "NO" to all of the above questions, please sign on the line below certifying that the activity or project is in compliance (and will remain in compliance throughout the project period) with the State Historic Preservation Act. **YOU MUST SUBMIT THIS FORM WITH YOUR COMPLETED APPLICATION.**

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

If you have answered "YES" to any of the questions above, please answer the following questions.

SHPO Certification

If you answered yes to question #1, specifically identify any surface or subsurface impacts that are expected. Attach extra sheets if more space is needed.

The installation of guzzlers will require excavation of a hole 4' deep by approx. 20' in diameter, in which to install the guzzler and walk-in drinker at ground level. Existing skid trails in the area will be used for access during implementation of the project. Any ground disturbance that is created during installation of the guzzlers will be rehabilitated and seeded following installation.

If you answered yes to question #1, describe the current ground surface condition within the entire project area boundary (i.e., is the ground in a natural undisturbed condition, or has it been bladed, paved, graded, used for agriculture, etc.). Attach extra sheets if more space is needed.

Past ground disturbance has occurred, in the upland areas, due to timber sales. Evidence of skid trails, that have been rehabilitated, remain in the area in which the guzzlers are to be installed. These trails will be used as access during guzzler installation and fence construction. This will minimize the potential impacts to the soils in the area. Other disturbance along the riparian corridor occurs from grazing and recreational use along Brown Creek.

If you answered yes to question #2, list the sites, their names, and provide a brief description of the site.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Has the project area been previously surveyed for cultural resources by a qualified Archaeologist?

YES:  X  NO: \_\_\_\_\_

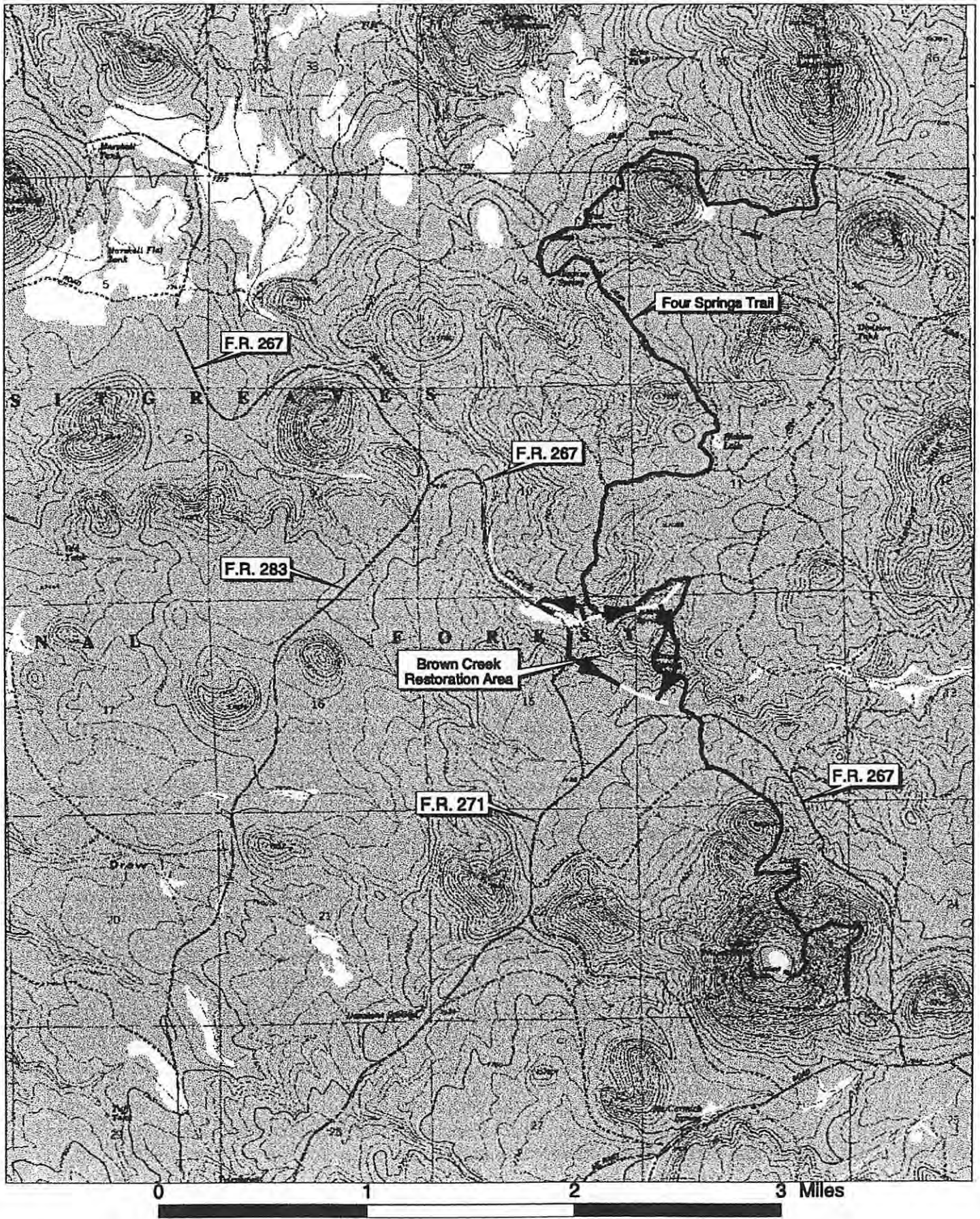
DON'T KNOW: \_\_\_\_\_

If yes, submit a copy of the Archaeologist's report with your application.

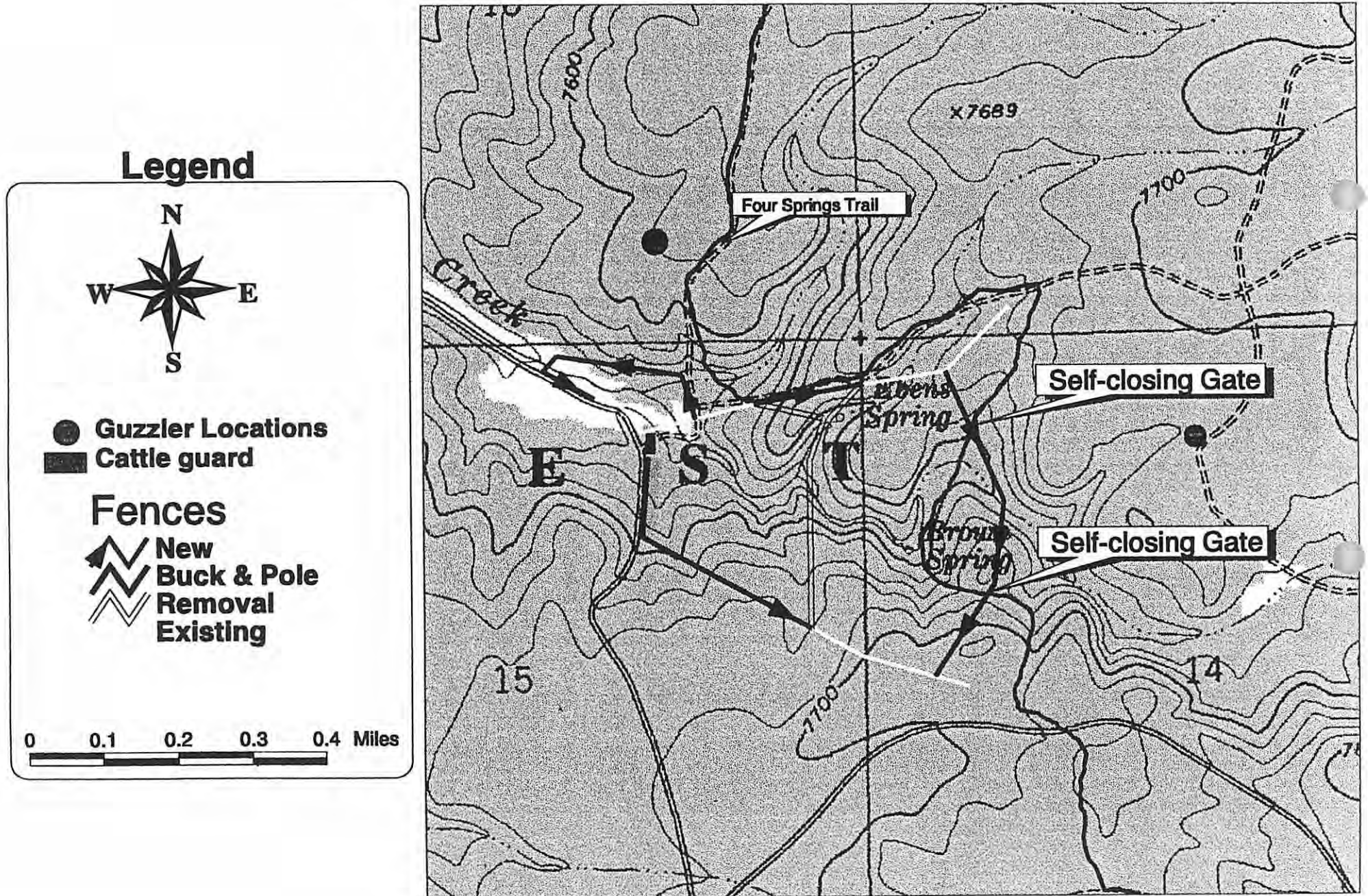
Heritage inventories in the area indicate a very low potential for site occurrence. Hand-constructed fences are not defined as undertakings. The required inventory of the guzzler locations and equipment access roads shall be accomplished prior to project implementation.

YOU MUST SUBMIT THIS FORM WITH YOUR COMPLETED APPLICATION

# Brown Creek Riparian Restoration



# Brown Creek Riparian Restoration



Biologic/Ecologic Review  
Arizona Water Protection Fund  
Review Period (August 2 – September 10, 1999)

Review Date: 09/15/99

Reviewer's Name: S. Adams

Project #: WPF 0254 Brown Creek Restoration Project

Instructions to reviewer: Please answer questions to the best of your ability. These questions are provided to help guide you in your review. If you are uncertain about how to answer a question, or you simply do not know, please feel free to state that or leave it blank. Our intention is to elicit your professional evaluation of this project as a supplement to our own review. Any additional pertinent information about the project that is not specifically requested can be added under General Comments. We would like to thank you for your valuable assistance in this review process!

Arizona Water Protection Fund Commission and staff

**NEED FOR PROJECT / FEASIBILITY OF PROJECT:**

**1. Please review the "Introduction" provided in the grant application. This section lists "Statement of problems," "Statement of cause/s of the problem/s," and "Statement of remedies or solutions." Based on your knowledge of the project area, are the problems and causes accurately identified and do remedies or solutions fit the identified problems? Explain.**

The grant application discusses the restoration of Brown Creek in the Introduction section. However, for the most part, the discussion deals with the poor condition of Brown Creek due to livestock grazing and recreation use. The identified remedies or solutions discuss fencing the area and supplying alternative water sources to minimize grazing impacts in the riparian corridor, and restricting vehicle access into the area with a buck and pole fence. Both of the fences and one of the alternative water sources have been already funded, through the Arizona Game and Fish Department (\$21,500) and the National Fish and Wildlife Foundation (\$9,100). The application is misleading, as it continually discusses the fences and controlling both livestock and recreation access into the area. However, this grant application is for AWPf funds (\$34,037) to primarily conduct data collection and monitoring within the fenced area. There is very little discussion on the proposed monitoring in the Introduction section.

The fenced portion of Brown Creek encompasses approximately 100 acres, which includes only 1.5 miles of stream. A large portion of Brown Creek is still subject to both livestock grazing and recreation access. The fencing project funded by the Department is primarily aimed at controlling livestock access into a small portion of the creek and controlling recreational use in a very heavily impacted dispersed camping area. While the fencing will control livestock grazing in the area, recreation use will continue to occur, although access will be somewhat controlled. However, recreation vehicles will continue to have access to the heavily impacted dispersed campsite, and will in fact continue to cross Brown Creek.



Livestock use in the riparian area can be easily controlled through season of use, timing of grazing, and proper utilization levels. However, recreation use is less easily controlled. In addition, impacts from recreational use may require much more time for riparian recovery than from livestock grazing impacts (i.e., soil compaction, soil loss). It appears that the FS is actually encouraging recreation use in the area, as recreation kiosks and signage are in the area. Recreational use in the area, particularly vehicular crossing of Brown Creek, will continue to impact the area and negatively impact Brown Creek. The site currently contributes sediment into Brown Creek, as existing ground cover and vegetation is inadequate to hold soil in place. Continued recreation pressure and vehicle access will continue to process.

Benefits to Brown Creek riparian conditions would be best achieved through closure and rehabilitation of the existing dispersed recreation site.

**2. Does the applicant accurately identify the ecosystem and habitat values that would be benefited by the proposed project? (In other words, do you agree with the statements made by the grantee about the habitat and ecosystem benefits of this project?) Explain.**

The applicant recognizes the value of the riparian ecosystem associated with Brown Creek, one of the few perennial streams on the Lakeside District, and identified the potential to manage the area in the future for native aquatic species. However, given the limited nature of the project, it is unlikely that anticipated enhancement will occur.

**3. Are the habitat needs and threats adequately identified in the application? Will the activities proposed in this project adequately address these needs and threats?**

A large portion of Brown Creek is still subject to the impacts from both livestock grazing and recreation use. Controlling livestock grazing on 1.5 miles of stream when the majority is still accessible to livestock grazing may not have significant positive effects relative to improved riparian conditions of Brown Creek. In addition, reaches of Brown Creek downstream from the proposed fence are also heavily impacted from recreational use as the creek is still accessible to recreation and vehicle use. Recent site visits indicated that numerous campsites currently exist along the creek with direct vehicle access. In addition, there is evidence of recent and continued OHV use immediately adjacent to the stream channel. To enhance or improve riparian conditions of Brown Creek, additional fencing is necessary to control livestock grazing and recreation use along a larger portion of Brown Creek.

**4. If there is a habitat protection/enhancement/restoration/creation component to this project, do you believe the project will achieve a significant net benefit to the habitat type? (In other words, will the project really make a difference?) Explain.**

The previously funded fencing project will provide limited habitat protection,

enhancement and restoration to a very limited portion of Brown Creek. However, while the fencing will limit camping to a single designated camp site within the project area, there continues to be unlimited access to recreational sites outside the enclosure which will continue to impact Brown Creek.

In addition given the limited nature of the project (1.5 miles of Brown Creek), it is unlikely that enhanced riparian conditions will be achieved, particularly as the creek is still accessible to recreation use and is currently being impacted from that use.

**5. If addition of an outside water supply is a component of the project, is it appropriate for the proposed use? If not, briefly indicate why not.**

The grant application includes a funding request for approximately \$10,000 for purchase and installation of a guzzler. In the Introduction section, the applicant indicates that the guzzler will supply an alternative water source for livestock and wildlife in the area while minimizing grazing impacts in the riparian corridor. It should be noted that the guzzler is being installed solely for livestock watering purposes. The current fence construction will still facilitate wildlife movement and access to Brown Creek, so there is no need for an alternative water source for wildlife in the area. The fence will prevent livestock from accessing Brown Creek, and that is the purpose of the proposed guzzler.

**6. Do you agree with the “years of benefit” to the resource that are claimed by the applicant (see Introduction - Statement of project years of benefit). Explain.**

It is difficult to assess the validity of the proposed years of benefit without additional information. All of the benefits are associated with reduction of livestock grazing impacts along the riparian corridor. However, there is no mention of fence maintenance in the application. Given the terrain, topography, and current tree density in the area, fence maintenance will be a major factor in determining success of the project. Should the integrity of the fence be compromised, livestock will again have access to the area, again impacting the riparian corridor. Fence maintenance responsibilities should be included in the monitoring plan.

**7. If the ecosystem is disturbance based, does the project provide for future disturbance? (For instance, is some sort of disturbance needed in a naturally functioning system of this type to regenerate vegetation, establish seedbeds, etc.) If not, briefly indicate why not.**

The ecosystem is not disturbance based.

## **PROJECT OBJECTIVES**

**1. Are the project objectives clearly identified? Are they realistic and achievable?**

Project objective #1, to improve riparian and aquatic habitat at Brown Spring and along

Brown Creek, by excluding livestock grazing in the area, has already been accomplished through other funding sources. However, excluding livestock along 1.5 miles of the creek will probably not significantly improve riparian conditions along Brown Creek, particularly given the current recreational pressure along the Creek.

Project objective #2, to implement a monitoring program to measure the improvement of vegetative cover and streambank stabilization along Brown Creek riparian corridor is fairly vague. It appears that the proposed monitoring program is inadequate to determine improvement in streambank conditions along the Brown Creek corridor.

**2. In your opinion, will the project actions (tasks) accomplish the project objectives if the project is successfully implemented? Explain.**

Excluding livestock grazing and limiting recreational use in the fenced area should aid in restoring riparian conditions along Brown Creek. However, given the limited extent of the project area (1.5 miles), it is unlikely that the project objectives will be fully realized, particularly since livestock grazing and recreation access/use will continue to occur immediately downstream. The project tasks relate directly to the limited nature of the project.

**3. Is the proposed methodology clearly identified? Are the methods appropriate and adequate? Will they achieve the desired outcome? Please explain.**

The proposed methodology is not clearly identified, particularly relative to the proposed monitoring plan. There is no time frame discussed. Many of the anticipated improvements may take several years to decades to be realized. For example, photos at permanent photo points along the excluded portion of Brown Creek will be used to monitor streambank stabilization/restoration. The applicant is requesting funding for three years of monitoring. It is doubtful that streambank stabilization will be achieved in three years.

Vegetative data monitoring is also not clearly identified. The applicant discusses establishing vegetation transects at each photo point to determine riparian vegetation composition. Actual data collection is not discussed. Is the applicant looking at species composition (desirables), percent bare ground, condition and trend? Will this information be gathered once annually for again, only 3 years? What does the monitoring program indicate to the applicant – a desirable change in species composition, an increase in vegetative cover, increased plant vigor? It is not clear what the objective of the proposed monitoring is and how the monitoring data will be used.

**4. If there are design specifications provided for aspects of the project, please review them and provide comment on their suitability.**

A local fencing company representative was encountered during the recent site review; he was reviewing the feasibility of installing the buck and pole fence at the proposed location for potential contract bid purposes. He indicated that construction would be

extremely difficult and would probably not last long. The fence was to be constructed on top of the ground and would not be anchored. The terrain is uneven and the ground is extremely rocky. In addition, the density of trees immediately adjacent to the proposed fence location was a concern, due to the likelihood of fallen trees affecting the integrity of the fence.

## **MONITORING**

**1. Is the monitoring program sufficient to evaluate the results of the proposed action(s) and the success of the project? If not, what aspects are lacking?**

Many of the discussions above relate to the proposed monitoring program (see response to Project Objective questions 1 and 3.) In summary, the proposed monitoring program discussed in the application is extremely vague, and does not appear adequate to determine whether project objectives have been achieved.

**2. Identify any on-going AGFD or other monitoring efforts in the project area which the applicant or AWPf may be able to take advantage of (recognizing that coordination would be needed). Please identify the entity conducting the monitoring and contact person, if known.**

The Department has implemented an herbaceous forage production and utilization monitoring program across the Region to estimate annual utilization levels by elk for incorporation into annual population management objectives. Ideally, the fenced area should provide an additional monitoring site for incorporation into the Department's monitoring program. However, it is unclear whether the proposed livestock enclosure meets the Department's key area monitoring criteria. In addition, recreation access into the area may impact the suitability of the area for Department monitoring purposes.

## **PROJECT COSTS**

**1. If you are familiar with other projects of this type, do project costs seem reasonable? You may address this question on an overall project basis, or you may address specific items.**

The proposed project costs seem extremely high. Overhead costs related to personnel salaries for individuals involved account for approximately 60-70% of funding requests. In addition, the time frames indicated to accomplish the identified tasks also appear excessive, adding to the overall cost of the project.

Task 1 –Archeological Clearance

Anticipated duration - 3 days

Anticipated cost - \$825

It is assumed that the archeological clearance is tied solely to installation of the second proposed guzzlers, as the clearance for the fence construction and first guzzler installation should have already been addressed in a previous funding request. The

archeological clearance for placement of the second guzzler should involve the field or site review and evaluation. Given the limited nature and extent of the guzzler project site, the site evaluation should not require extensive field time. Completing the report and paperwork based on the field review should also not be extensive. Three days for the site evaluation and documentation for a guzzler appears extremely excessive.

#### Task 2 – Baseline Data Collection

Anticipate duration – 19 man days

Anticipated cost – \$7,432

Collection of baseline data involves establishing permanent photo points and vegetation transects, collecting initial data, and creating the data base to analyze future monitoring results. Within the 1.5 miles of Brown Creek, that will involve 12 permanent sites. It is unclear why it should take 5 individuals 19 days to accomplish those tasks.

#### Task 3 – Guzzler Installation

Anticipated duration – approximately 18 man days

Anticipated cost - \$9,843 (includes \$5,100 cost of guzzler)

Discussions with Department personnel who have conducted similar activities indicate that both the time expenditure and cost appears excessive, particularly with regard to personnel costs. It is unclear why both the project manager and the wildlife biologist are programmed to spend 3 days each in installation of the guzzler, especially given the fact that 2 wildlife technicians will also spend 4 days each in the activity, in addition to a C&M Crew. The high salaries associated with the project manager and wildlife manager significantly increase the cost of the guzzler installation.

#### Task 4 – Monitoring

Anticipated duration – 27 man days per year, for 3 years

Anticipated cost - \$11,000 per year, for 3 years

Monitoring activities in the proposal include establishing permanent photo points. However, the photo points should have been established earlier during the baseline data collection task. There should be no need to re-establish to sites or establish additional sites. At the previously established 12 photo points, 4 photos will be taken annually, for a total of 48 photos per year. The proposal also indicates that vegetation transects will be established during the monitoring discussion. Again, the transects should have been established during baseline data collection. Aside from establishing the transects, there is no discussion as to vegetation monitoring activities to be conducted during the monitoring task, such as species composition, ground cover, condition and trend, etc.

The project monitoring area only encompasses 100 acres, and only 1.5 miles of stream habitat. Annual monitoring activities involve taking 48 photos, reading 12 vegetation transects, and measuring hydrologic flow 24 times. It is questionable whether monitoring the small project area actually requires 3 individuals for 27 days per year, at a cost of more than \$11,000 annually, given the limited monitoring activities identified in the proposal.

Task 6 – Final Report

Anticipated duration – 20 man days

Anticipated cost - \$4,400

Twenty man days and \$4,400 is excessive to prepare and submit the final report. The project area only encompasses 100 acres and 1.5 miles of stream, the monitoring appears very limited, and the duration of the monitoring period is only 3 years.

**2. To the best of your knowledge, do project benefits seem commensurate with costs (are we getting good value for our dollar)?**

The project benefits do not appear commensurate with proposed costs.

In total, costs associated with the Brown Creek Riparian Restoration Project approach \$70,000 (actual estimates \$69,243) for the fencing, guzzlers and data collection. The project area is only 100 acres and only includes 1.5 miles of Brown Creek. Given the limited project area, \$70,000 is extremely excessive. The majority of the costs are attributed to personnel costs. In addition, the applicant contribution to the project is less than 7%. Given the limited extent of the project, it is unlikely that riparian conditions will be significantly improved in Brown Creek. \$70,000 seems excessive when it doubtful that the project objectives will be accomplished.

3. Check one:

High cost/low benefit <u>XX</u>	Medium cost/low benefit _____	Low cost/low benefit _____
High cost/med. benefit _____	Medium cost/med.benefit _____	Low cost/med.benefit _____
High cost/high benefit _____	Medium cost/high benefit _____	Low cost/high benefit _____

**IMPACTS**

**1. Is there an indication that off-site and/or on-site impacts may occur to natural resources, including T&E species, as a result of this proposed project?**

Yes

**2. If yes, provide brief explanation. If impacts could be acceptable with the inclusion of appropriate conditions, please suggest specific stipulations that should be required of the grantee to minimize impacts, should this project be funded.**

Continued livestock grazing and recreation access along Brown Creek outside of the fenced project area will continue to impact riparian conditions of Brown Creek. Excluding 1.5 miles of the creek is inadequate to achieve the objective of restoring or

improving riparian conditions along Brown Creek given outside impacts.

To increase the likelihood of accomplishing stated objectives, suggestions include:

- 1) closing existing degraded dispersed campsite and rehabilitating area
- 2) expanding fence configuration to exclude livestock grazing from a larger portion of Brown Creek
- 3) controlling recreational vehicle use/access along Brown Creek downstream of current fence configuration (i.e., boulders or rocks that prohibit vehicle access while permitted foot access

## **EXISTING PLANS**

1. **Please review the sheet labeled “Existing Plans.” Is the proposed action(s) consistent with existing plans and designations. If not, briefly explain.**

Attachments include Decision Memo for Brown Creek Riparian Improvement Project and Decision Notice for Lake Mountain Allotment Management Plan. The Decision Memo is accompanied by the Categorical Exclusion for the proposed improvements (2.5 miles of barbed fence, 0.3 miles of buck and pole fence, two water guzzlers, and one cattleguard) associated with the project. With the exclusion of one of the water guzzlers, much of the proposed work associated with the improvements has already been conducted.

The Decision Notice for the grazing allotment documents the NEPA analysis associated with the new AMP, which will establish permitted livestock numbers on the allotment. There is no discussion of the Brown Creek restoration project in the document. The project occurs within the allotment boundary; otherwise, there is no direct link between the two actions.

2. **Would the proposed project complement or conflict with on-going or planned habitat maintenance/enhancement/restoration efforts? If applicable, identify project(s) and contact person and provide brief description.**

Enhancement or restoration of riparian areas on the Forest has been an ongoing objective of both the Department and Forest Service since the Forest Plan was issued in 1987. However, progress has been extremely slow, given the political and social elements associated with the issue. Merely labeling a project as a restoration project is not adequate, more actions need to be taken to actually begin making significant progress toward riparian restoration on the Forests. The small effort undertaken with this project is minimal compared to what needs to be done to improve riparian conditions on Brown Creek.

## **OTHER**

1. **Are you aware of any institutional constraints that would preclude the**

**applicant from implementing the project?**

No.

- 2. Has the applicant identified all permits necessary to accomplish the project (for example, EA, EIS, section 7, 401/404, AGFD permits or coordination)? Does timeline provide adequate time for permitting?**

Not aware of any additional permits necessary to accomplish the project.

**IF YOU ARE VERY FAMILIAR WITH THE PROJECT AREA**

- 1. Are you aware of any environmental contaminants contained on or near the project area?**

NO

- 2. Can you verify that the stream type identified on page 1 of this application is correct? If so, do you believe it to be correct? If not, explain.**

YES

**GENERAL COMMENTS:**