PURPOSE AND NEED FOR ACTION

INTRODUCTION

The Forest Service has prepared this Environmental Assessment (EA) to provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact for the proposed Fred Burr High Lake Dam –Access for Repair 2011 project. This EA documents the analysis of the effects of the proposed project on the environment.

Background

Fred Burr High Lake, Inc (FBHLI) has requested helicopter access to Fred Burr High Lake dam in order to transport materials that cannot safely be packed in with stock. These materials are needed to replace a deteriorated catwalk or ramp that provides access to the dam's headgate and to replace a deteriorated log boom. The materials to be flown to the dam site include a prefabricated ramp 17 feet long and 3 feet wide with a hand rail and two sets of supports, one 15 feet tall and one set 3 feet tall. 30 feet of cable would be flown in for the replacement of the log boom. Four workers will travel by foot or stock to the work site at the dam.

Fred Burr High Lake Dam is a valid occupancy owned and operated by Fred Burr High Lake Corporation. Fred Burr High Lake Dam was constructed in 1914 and is currently authorized under a Special Use authorization. A valid application is being processed by the Forest Service that qualifies Fred Burr High Lake Reservoir and Dam under the provisions of Public Law 99-545 (a.k.a."Ditch Bill Act") for an Agricultural Irrigation and Livestock Watering Easement. See Appendix D for a discussion of Easement Authority and Direction.

Location

Fred Burr High Lake Dam is located on Bitterroot National Forest Lands within the Selway-Bitterroot Wilderness. Fred Burr High Lake Dam is located in Section PB41, Township 7North, Range 23 West, P.M., in the upper Fred Burr Creek drainage, west of Corvallis, Montana. Public access is via Forest Service Trail No. 38. Distance to the dam from the trailhead is approximately 11 miles. (See Map1, page 4.)

Purpose and Need

The purpose and need for the project stems from FBHLI's existing rights and obligations to maintain Fred Burr High Lake Dam facilities consistent with safety standards and other pertinent laws and regulations which also govern FBHLI's authorized use and the protection of National Forest System lands. Appendix A lists the authorities through which the Forest Service regulates dams on National Forest lands.

The purpose of this proposal is to authorize Fred Burr High Lake, Inc (FBHLI) adequate access (1)to their facilities and to prescribe terms and conditions related to this access and their subsequent work on the facilities as necessary to protect the National Forest.

The proposal is necessary because Fred Burr High Lake Dam's existing ramp (catwalk) to the headgate valve is unsafe and must be replaced. In addition, the log boom protecting the spillway needs to be replaced to comply with dam safety standards. The current condition of the catwalk to the headgate valve is extremely dangerous. It was constructed over ten years ago with existing driftwood and local timber. The wood has deteriorated significantly over time and is no longer safe to walk on.

Replacing the existing catwalk structure with a steel structure designed and fabricated for the purpose will address the safety issues and provide reliable access to the headgate for the foreseeable future. The log boom protecting the spillway will keep driftwood from plugging the outlet to the dam and creating further issues. Work on the log boom will be completed at the same time the steel fabricated catwalk ramp is installed.

Fred Burr High Lake Dam is classified as a low hazard dam. This classification is based on the potential consequences if the structure(s) fails, based on risks to downstream life and property.

The Forest Service is required by the Wilderness Act (2)to authorize reasonable access to valid occupancies. Fred Burr High Lake Dam is a valid occupancy owned and operated by Fred Burr High Lake Corporation. Fred Burr High Lake dam was constructed in 1914 and is currently authorized under a Special Use authorization. A valid application is being processed by the Forest Service that qualifies Fred Burr High Lake Reservoir and Dam under the provisions of Public Law 99-545 (a.k.a."Ditch Bill Act") for an Agricultural Irrigation and Livestock Watering Easement. See Appendix C for easement authority and direction.

Section 5(b) of the Wilderness Act (16 U.S.C. § 1134) provides for access to the dam for operation and maintenance of the facilities, within provisions of Forest Service regulations 36 CFR 251 subpart D and CFR 293.13 which implement these statutes. CFR 251.111 Subpart D defines adequate access as a route and method of access to non-federal land consistent with similarly situated non-Federal land that minimizes damage or disturbance to National Forest lands and resources. CFR 293.13. states that persons with valid occupancies wholly within National Forest Wilderness shall be permitted access to such surrounded occupancies by means consistent with the preservation of National Forest Wilderness which have been or are being customarily used with respect to other such occupancies surrounded by National Forest Wilderness.

1 Defined at FSM 2320.5.15 as "The combination of routes and modes of travel that the Forest Service has determined will have the least-lasting impact on the wilderness resource and, at the same time, will serve the reasonable purposes for which State or private land or right is held or used."

2 Wilderness Act, Sec. 5(b); codified at 16 U.S.C § 1134; and the implementing regulations at 36 CFR 293.13 Access to Valid Occupancies.

In this case, the Wilderness Act also requires the Forest Service to "prescribe the routes of travel to and from the surrounded occupancies, the mode of travel, and other conditions reasonably necessary to preserve the National Forest Wilderness". Based on these authorities, the Forest Service may not deny reasonable use of or access to the dam and reservoir, but may impose reasonable terms and conditions on the dam owner's use and access for the protection of the National Forest.(3)

These acts prescribe a narrow scope to the Agency's discretion, balanced between requirements to allow for the proponent's rights and responsibilities pertaining to the use of their authorized use and the Agency's responsibility to provide protections for National Forest and Wilderness values.

The Forest Service has reviewed the FBHLI's preliminary technical proposal and request for access and has determined that:

1. The FBHLI's proposal is consistent with the purpose, terms and conditions of the authorized use.
2. Based on preliminary environmental review by the interdisciplinary team, it appears the FBHLI's proposed plans are, or could be made consistent with environmental laws. (4) The interdisciplinary team developed the proposed terms and conditions based on this preliminary environmental review (p. 9-10).
3. A minimum requirements process was used to assist with the analysis of FBHLI's request. (5) The process indicates the proposal would meet Region 1 requirements for authorization to use mechanized transport and/or motorized tools within wilderness (6) (Appendix C)

3 Concomitantly, the Forest Service also has authority under its general grant from Congress to protect the National Forests (16 U.S.C. § 551) to regulate reasonably the valid occupancy in order to achieve the purposes for which the national forests were reserved, and the Selway-Bitterroot Wilderness was designated.

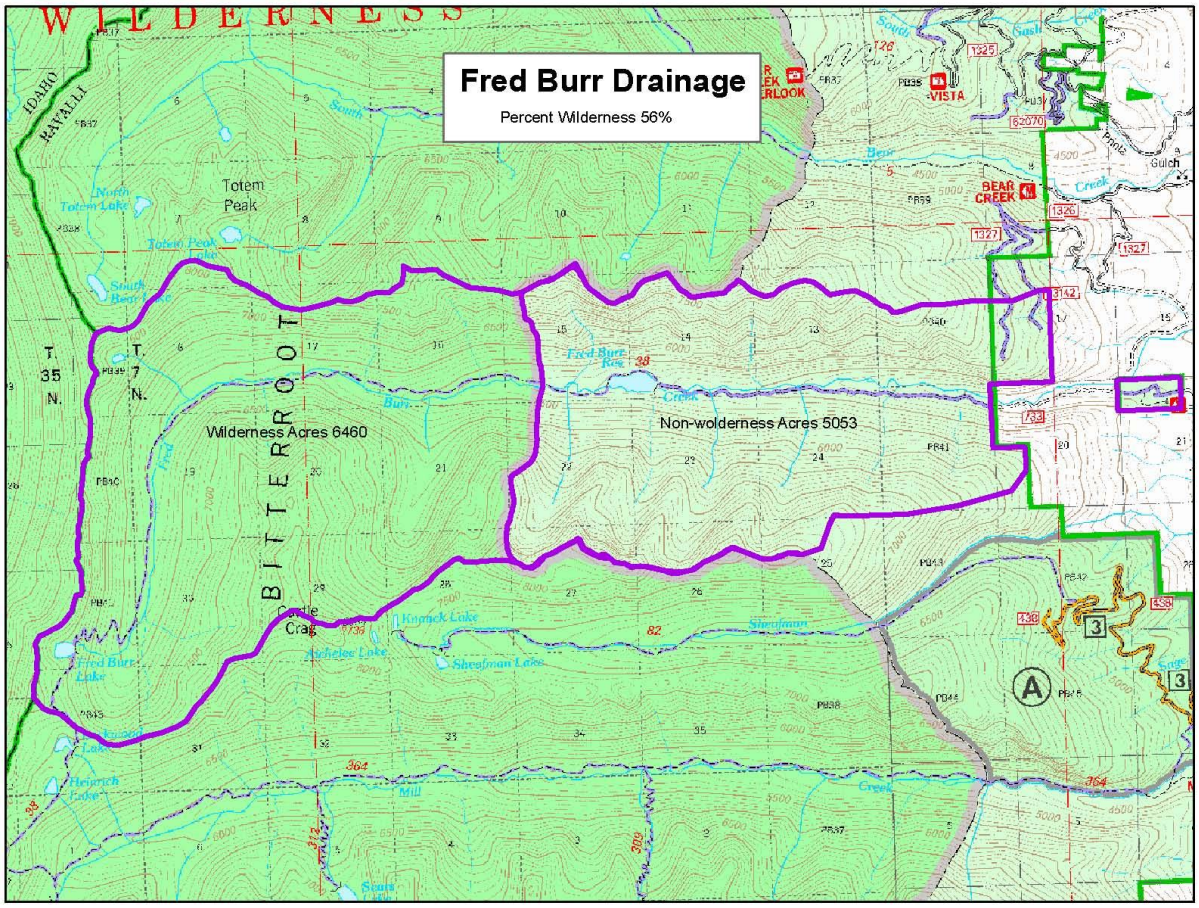
4 These include the Clean Air Act, Clean Water Act, Endangered Species Act, Historic Preservation Act, National Forest Management Act, etc.

5 The Minimum Requirement Decision Process was developed by federal agencies to help provide consistency to the way project proposals in wilderness are evaluated. This decision guide is a means to document the analysis process.

6 Regional Forest Service Manual Supplement 2300-98-1 requires proposals for use of mechanized transport to be evaluated based on the "minimum tool" necessary to accomplish the project and that one or more of the following conditions be met in order to approve requests for use of motorized transport or mechanized tools in association with wilderness dams:

1. Emergencies (Immediate threat to life and property)
2. Where impacts to wilderness/resources would be greater using non-motorized/non-mechanical methods
3. Where physically infeasible to use non-motorized methods
4. When costs make the use of primitive tools infeasible.

Map 1



PUBLIC INVOLVEMENT AND ISSUE IDENTIFICATION

Public Involvement

Scoping efforts included soliciting public comment via a legal notice in the Ravalli Republic on September 27, 2010, and mailing scoping letter to 14 groups or individuals as well as consulting with Forest Service personnel. Comments were solicited during a 30-day period. We received 5 public comments; 2 with information regarding the proposal and 2 promoting non-motorized, no helicopter alternative. None of the comments raised questions of scientific controversy surrounding potential effects of this authorization.

Issues

The Forest Service interdisciplinary team identified 3 key topics or issue themes raised during internal and external scoping. Two of these issues are elements or extensions of the purpose and need which concern “Public Safety” and questions, concerns, and support surrounding adequate “Access”. The remaining environmental issue concerned potential for adverse effects on

"Wilderness Character."

Other resources were analyzed but not considered key topics or issues. For instance, water resource impacts were not considered a key topic because the initial analysis suggests risk to water resources was low, and can be lowered further with certain operational controls. However, water resource effects discussion is included due to the ongoing public interest in water quality.

Other issues raised by the public, including other agencies, were addressed by restricting the timing of the proposed helicopter access activities to weekdays, when possible, and posting the Fred Burr High Lake Creek trailhead.

ALTERNATIVES

The Forest Service is considering three alternatives in detail. The three alternatives are: Alternative 1-No Action, Alternative 2- Proposed Action and Alternative 3 Use of traditional skills and access (non-mechanized, non-motorized means). This range of alternatives were considered in order to address the issues brought forward by the public in their scoping comments and in order to fulfill the purpose and need. The No action alternative is required to be considered.

ALTERNATIVE 1 – NO ACTION

The No Action alternative serves as a baseline condition with which to compare other alternatives.

Under alternative 1, FBHLI would not be authorized helicopter access to repair their facilities. Similarly, no additional terms or conditions would be placed on their authorized use. Routine maintenance would be allowed to continue under the existing authorized use. Routine trail maintenance would continue as scheduled, but trail work needed to facilitate the transport of catwalk components would not be completed.

Without helicopter access or trail work, FBHLI's ability to maintain their facilities would be negatively affected. This alternative would result in either the catwalk ramp at Fred Burr High Lake Dam remaining in the present deteriorated condition, or FBHLI would have to repair the catwalk and log boom using native materials found on site. The existing catwalk could deteriorate to the point of preventing FBHLI from reaching the headgate control valve. If FBHLI cannot safely access the headgate control valve, an emergency at the dam could lead to overtopping and failure of the embankment. The expected outcomes of implementing the No Action Alternative are summarized in Environmental Consequences sections for each resource.

ALTERNATIVE 2 –ACCESS BY HELICOPTER -PROPOSED ACTION

The Forest Service proposes to authorize sufficient access for FBHLI's valid occupancy at Fred Burr High Lake (FBHL) Dam, with certain terms and conditions, so that FBHLI may make these facilities safe.

Fred Burr High Lake, Inc. has requested one helicopter flight to access their dam in order to fly a

prefabricated ramp 17 feet long and 2 feet wide with a hand rail and two sets of supports, one 15 feet tall and one set 3 feet tall. There would also be 30 feet of cable flown in for the replacement of the log boom. Total weight of the ramp materials would be approximately 600 pounds. FBHLI, and their representatives, plan to perform work at the site using non-motorized tools. Two helicopter flights will be analyzed in this alternative and could be authorized to allow for contingency needs.

This alternative will address replacement of the existing unsafe ramp (catwalk) to the headgate. In addition, the log boom protecting the spillway for Fred Burr High Lake Dam will be replaced. The log boom will be assembled on-site with existing logs. Logs will be cut utilizing cross cut saws.

Pack stock would be used to transport camping equipment and food to a campsite 1.5 miles below the dam. Three workers would travel by foot or stock to the work site at the dam. The repair work is estimated to last up to 4 days.

Trail # 38, above the Fred Burr Reservoir, would require 6.3 miles of clearing including some unscheduled spot reconstruction (relocating a ford, improving a ford, hardening saturated muddy seeps) in order to accommodate 5 head of packstock to pack camp supplies to a campsite 1.5 miles below Fred Burr High Lake. The last 1.5 miles to the dam would be cleared, but no blasting would be done to improve tread to accommodate packstock. (See Appendix C for a description of the trail condition and the work needed to improve the trail in order to use packstock to support the repair work at the dam, also Wilderness,Trails and Recreation section of the Environmental Analysis (EA), p. 18-28.).

ALTERNATIVE 3 –PACKSTOCK ACCESS

In this alternative FBHLI would not be authorized helicopter access to repair their facilities. All equipment and supplies would be packed in by packstock. Most likely the ramp material will be packed in before the workers arrive. Packstock will transport the ramp in pieces to the base of the climbing turns below the dam. Packstock will then pack the ramp the rest of the way to the dam after the workers are on site. Packstock would be used to transport camping equipment and food to a campsite 1.5 miles below the dam.

The unassembled ramp would be in pieces a maximum of 6 foot long. When bolted together on site, the ramp would be 17 feet long and 2 feet wide with hand rails. There would be two sets of supports, one 15 foot tall and one three foot tall. There would be extra connectors needed to assemble shorter pieces into full length members. Total weight of the ramp materials would be approximately 700 pounds. There would also be 30 feet of cable for the log boom.

Ramp and supports would be re-assembled at the dam site. The log boom will be assembled on-site with existing logs, and the 30’ of cable packed in. Logs will be cut utilizing cross cut saws. FBHLI and their representatives, plan to perform work at the site using non-motorized tools.

Three workers would travel by foot or stock to the work site at the dam. The repair work is estimated to last up to 8 days Work would be done without the use of motorized tools.

This alternative addresses the need to replace the existing unsafe ramp (catwalk) to the headgate. In addition, the log boom protecting the spillway for Fred Burr High Lake Dam will be replaced.

This alternative was developed to consider completing the work at the dam without the use of mechanized transport. In the course of evaluating FBHLI's request for helicopter access, the Forest Service explored in detail non-mechanized means of access and the analysis is displayed in Appendix B the minimum requirements analysis.

The Forest Service cannot decide for FBHLI which methods shall be used to ensure safely rehabilitated dam facilities. The responsibility for safety of the dam facilities, as well as for the personnel, stock, and materials involved, lies solely with FBHLI. See Appendix B, p. 4 for further discussion.

Trail # 38, above the Fred Burr Reservoir, would require 7.8 miles of clearing including some unscheduled spot reconstruction (relocating a ford, improving a ford, hardening wet spots) in order to accommodate up to 7 head of packstock carrying bulky prefabricated ramp material all the way to Fred Burr High Lake. Camp supplies would be packed to the campsite 1.5 miles below Fred Burr High Lake. The last 1.5 miles to the dam would be cleared and blasting would be done to improve tread to accommodate packstock carrying prefabricated ramp material.

See Appendix C for a description of the trail condition and the work needed to improve the trail in order to use packstock to support the repair work at the dam as well as in the Wilderness, Trails and Recreation section of the EA, p. 18-28.

Table 1 – Comparison of Action Alternatives:

Comparison of action alternatives	**Alternative 2-Access by Helicopter - Proposed Action**	**Alternative 3- Access by Packstock**
Number of days for 3 workers at Fred Burr High Lake Dam working on project	4 days - 2 days in+out, 1 day preparation, 1 day installation	8 days - 4 Additional days required to assemble ramp, which was disassembled for packing
Number of stock planned for proposed project	5 head of stock are estimated. Solitude along the trail will be impacted by 5 head of packstock traveling in and out to the trailhead one time	Up to 7 head of pack stock are estimated. Solitude along the trail will be impacted by up to 7 head of packstock traveling in and out to the trailhead twice
Campsite Impacts	The camp used by the irrigators is off-trail and most likely will not displace other recreationists. Effects to the campsite below the dam should naturalize themselves by the next growing season.	The camp used by the irrigators is off-trail and most likely will not displace other recreationists. Longer lasting impacts at the camp site used by FBHLI may attract other campers to use that site.

	Packstock will be trailed from camp to the dam 3-4 days and grazed near the campsite 3 nights	Packstock will be trailed from camp to the dam up to 7-8 days and grazed near the campsite up to 7 nights.
Trail Rehabilitation Work	Long term, the trail would be improved to the campsite 1.5 miles below the dam. It would lose some of its higher degree of challenge that is appropriate for Opportunity Class 2 objectives. Trail improvements will be similar to the kinds of deferred maintenance trail improvements that would be done for recreation access. Trail crew would work for 8 days on trail reconstruction work.	Long term, the trail would be improved full length the dam. It would lose more of its higher degree of challenge that is appropriate for Opportunity Class 2 objectives. Just below the dam in the climbing turns, trail improvements (spot blasting to improve tread) will exceed the kinds of deferred maintenance trail improvements that would be done to provide for recreation access. Trail crew would work for approximately 15 days on trail reconstruction work.

MITIGATION MEASURES, TERMS AND CONDITIONS, MONITORING REQUIREMENTS AND PERMITS REQUIRED FOR THE PROPOSED ACTION

Mitigation measures are those controls or guidelines that reduce or eliminate adverse effects of management activities. Monitoring is the gathering of information and observation of management activities to provide a basis for confirming that work is accomplished as designed and that mitigation measures are effective.

In addition to Forest Service policy and Forest Plan requirements, the interdisciplinary team identified project-specific mitigation measures and other plans and specifications that would be required. The environmental impacts of the proposed action discussion are based on implementation of the listed mitigation measures. Terms and conditions describe mitigation items that will be required of FBHLI.

The following terms and conditions, required permits and required plans for the Alternative 2-proposed action are displayed on the following tables.

The following items in Table 2, 3, 4 are Fred Burr High Lake Creek Irrigation District's (FBHLI) responsibility:

Table 2 - Terms and Conditions (FBHLI)

Fred Burr High Lake Dam Access EA– Terms and Conditions
Dam and Public Safety
1. Plans and specifications will be in accordance with federal laws related to dam safety. FBHLI will implement the project according to the professional standard of care and generally accepted industry standards, especially for critical elements that affect the overall safety and integrity of the ramp to access the dam headgate.
2. The FBHLI is responsible to provide their own radio or telephone communications.
Wilderness, Recreation, Wildlife and Water Resources
3. Airlift flights in the valley will be routed to minimize noise near residences. Whenever possible, helicopters will avoid flying directly over trails. Helicopters should avoid flying low over mountain goats or within 1.25 miles of goats to minimize the degree of disturbance to goats. Given the abundance of goat summer range in several areas throughout the drainage, including the immediate vicinity of the dam site, it may be difficult to completely avoid flying near goats. If goats cannot be avoided, flights should minimize the amount of time spent in close proximity to goats to minimize the risk and duration of severe disturbance.
4. Fred Burr High Lake Creek Trailhead will be posted by FBHLI by mid-July alerting the public to the helicopter activity. Visitors passing through and camping in the Fred Burr drainage will still be allowed.
5 Where feasible and safe to do so, helicopters will avoid flying over mountain goats.
6. Schedule helicopter use to weekdays and non-holiday days if possible.
7. All solid wastes will be removed from National Forest lands.
8. Burning of non-woody material **is prohibited**. All repair debris and other non-burnable garbage will be packed out.
9. Camps and sanitary facilities shall follow wilderness guidelines (minimum 200’ from water’s edge). Latrines will be located at least 200’ from water and filled in after completion of project.
10. Latrines will be used for human wastes and kitchen wastewater.
Cultural Resource
11. Avoid known cultural sites by landings, equipment and supply staging, and crew camps. If previously unknown cultural sites are discovered during implementation, project activities in the vicinity of the site must be halted and the Forest's Heritage program manager notified. If necessary, additional mitigation protection or avoidance measures will be devised in consultation among the Forest Service, Montana State Historic Preservation Office, Confederated Salish and Kootenai Tribal Preservation Department, and the FBHLI.
Weed Control Measures, Revegetation and Reclamation
12. All equipment and supplies, including cargo netting, transported to the dam site will be inspected and cleaned of weed-seed prior to entering the wilderness to ensure no weed seed is introduced. Workers should be sure that the helicopter base used for staging equipment transfer into the Wilderness is free of noxious weeds (FSM 2080).
13. Use noxious weed-free helibases when flying into the wilderness.
14 Inspect, and remove and properly dispose of weed seed found on clothing and equipment.

Fred Burr High Lake Dam Access EA– Terms and Conditions
15. Feed stock certified weed-free feed for several days prior to entering National Forest lands. Brush animals to remove weed seed prior to entering National Forest System lands. Use certified weed-free feed at the dam site, if feed is needed for stock while being used to access the dam.
16. Low impact camping techniques should be used to reduce the risk of introducing weeds or creating habitat suitable for seed germination or creating soil erosion.
17. While in the backcountry, tie stock in a manner that minimizes soil disturbance and loss of native vegetation.
18. Freshly exposed soil on the dam should be reseeded with a native seed mix recommended by the Forest Botanist. Areas of bare soil will be revegetated as soon as possible after work is completed.
Threatened, Endangered, and Sensitive Plants
19. Transport logs below the high water line. Refrain from dragging logs in undisturbed areas.

Table 3 - Required Permits (FBHLI)

Required Permits
1. The operations proposed by the FBHLI may require state and federal permits. All permit application work is the responsibility of the FBHLI as project proponent. Agencies responsible for these permits review the proposal for environmental compliance, and can withhold permitting pending appropriate changes, if necessary.
2. Representatives of FBHLI will be made fully aware and ensure compliance of requirements in permits, mitigation measures, and terms and conditions specified in the NEPA decision.

Table 4 – Required plans (FBHLI)

Required Plans
1. FBHLI will provide plans and specifications for the work to be done at the dam facilities, to the Forest Service prior to work commencing on the dam facilities
2. A Camp Management plan will be required as a condition for the repair work and will be developed by FBHLI prior to repair work commencing.
3. FBHLI will provide a schedule of the planned helicopter flight to the Forest Service prior to work commencing on the dam to enable monitoring protocols to be set in place.

Table 5 - Mitigation Measures that are Forest Service (FS) Responsibility:

Measure
1. A Forest Service wilderness ranger will discuss resource protection standards with workers.
2. Wilderness visitor safety will be protected by notification at the trailhead.
3. Where cultural resources or human remains are encountered during project implementation, the Forest has the authority to modify or halt project activities.

ENVIRONMENTAL MONITORING

Monitoring is the gathering of information and observation of management activities to provide a basis for periodic evaluation of Forest Plan goals and objectives, and includes administration of this project. The purpose is to determine how well objectives have been met and how closely management standards and mitigation measures have been applied.

FBHLI's Monitoring and Inspection Responsibilities

- Follow-up inspections of the catwalk and log boom to provide monitoring of the effectiveness of the work to meet safety standards.

Forest Service's Monitoring Responsibilities

- A Forest Service wilderness ranger will provide additional on-site monitoring during project work to ensure wilderness and resource protection standards are met at the dam site and within the access corridor. The wilderness ranger will provide feedback to ensure access and project work meet mitigation and protection standards. The national framework for monitoring wilderness character will be utilized while the project is ongoing (PF G-7)

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES ANALYSIS

This section describes the environmental resources of the area that would be affected by the alternatives. This section also provides an analysis of the key environmental impacts of the alternatives considered in detail. It provides the necessary information to determine whether or not to prepare an Environmental Impact Statement.

The analysis and conclusions about the potential effects of alternatives are presented in this section. Consistent with the Council on Environmental Quality (CEQ) guidance7. the past, present, and reasonably foreseeable actions were considered for analysis of cumulative effects where appropriate for each resource. A comprehensive list of past, present and **r**easonably foreseeable future activities are provided in Appendix E. Additional information is contained in the specialists' reports, which are available in the Project File, located at the Stevensville Ranger District, Stevensville, Montana.

Generally, the affected area for this proposed project is within the Fred Burr Creek drainage. However, the analysis area may vary by resource, and changes to the analysis area will be noted in the resource specialist report.

Effects of more extensive past wilderness dam repairs (Mill Lake Dam, Canyon and Wyant Lake Dams, Tin Cup Lake Dam and Bass Lake Dam) can be obtained from the Bitterroot National Forest website: http://www.fs.fed.us/r1/bitterroot/projects/mill_lake_100106.shtml
in the Land and Resource Management/Plans/Related Links section.

The environmental consequences of alternatives analyses for all resources in this section are based on implementation of the terms and conditions and mitigation measures listed on pages 9,10. Mitigation measures are those controls or guidelines that allow activities to proceed with minimized environmental impacts. These required mitigation measures are designed to eliminate or minimize resource effects such as those from helicopter flights, erosion, sedimentation, human waste, and noxious weeds.

KEY TOPICS

Public and Dam Safety

Scope of Analysis

The affected environment includes both private and public property along Fred Burr Creek from the dam and the entire Fred Burr Creek basin to the Bitterroot River.

7 CEQ Memorandum to the Heads of Federal Agencies regarding Guidance on the consideration of Past Actions in Cumulative Effects Analysis, June 24, 2005.

Regulatory Framework

Dams on Forest Service system lands are required to be maintained and operated in a manner compliant with federal regulations. Refer to Appendix A for a discussion of dam safety laws and dam owners responsibility.

Affected Environment

Refer to Pages 1, 2, Chapter 1 for a detailed description of the existing condition of Fred Burr High Lake Dam and related facilities

Desired Condition

The desired condition from a dam safety perspective is a safe, durable dam and related structures that are operated, maintained, and repaired in accordance with current federal dam safety laws and standards, with concern for public safety. In addition to providing a safe and reliable facility that provides irrigation water to downstream users, the dam also provides other public benefits. Benefits include the recharge of critical groundwater aquifers from irrigation water, improving riparian areas for wildlife habitat during late summer when discharges from dam storage augment low flows in Fred Burr Creek.

Environmental Consequences

Direct Effects

Alternative 1 – No Action

In this alternative, no work would be done to the catwalk or the log boom. The catwalk would further deteriorate and become unusable, but would not directly cause negative impacts to the surrounding environment. This would lead to the headgate valve being unusable, which would cause less water to be available to Fred Burr Creek. The catwalk to access the headgate valve should not be allowed to deteriorate.

The log boom would eventually fail, allowing logs and debris to accumulate in the spillway. This could cause potential overtopping or a similar event, causing a large volume of water to spill out of the reservoir in a short period of time. This could cause massive erosion and turbid waters.

Alternative 2 – Access by Helicopter - Proposed Action

In this alternative, the deteriorating wood catwalk to the headgate valve would be replaced with a sturdy, longer-lasting steel catwalk. This would provide dependable access to the headgate valve, allowing the dam to release and or retain water as needed.

The log boom would be repaired, allowing it to function properly and keep debris from plugging the inlet. This will facilitate proper operation of the spillway.

Alternative 3 – Access by Packstock

In this alternative, the work would be done to replace the catwalk and repair the log boom. There is no significant difference between Alternative 2 and Alternative 3 from an engineering perspective.

Indirect and Cumulative Effects

Effects on Public Health and Safety

Dams can have serious effects on people, property and the environment, which extend far beyond the property of the dam owner.

The dam owner is responsible for correcting the deficiencies of the dam. The condition of the catwalk is a potential threat to public safety and should be corrected. The catwalk should be repaired to comply with OSHA regulations, and public safety policy The condition of the log boom is a potential hazard with regard to the condition of the dam. This condition must be corrected to comply with dam safety laws, regulations, and policy.

Alternative 1 – No Action

Alternative 1 presents a potential threat to public health and safety, in addition to public and private property. If the repairs are not completed in a timely manner, the catwalk will create a liability for the dam owners, as well as the United States if the headgate valve cannot be reached in an emergency. Additionally, the dam owners and employees may be subjected to hazardous conditions if repair work is not done in a timely manner. If the log boom is not repaired, the spillway can become plugged and cause a hazardous dam situation.

Alternative 2 – Access by Helicopter - Proposed Action

Alternative 2 acknowledges FBHLC's rights and responsibilities to access and maintain the dam facilities. FBHLC is responsible for correcting unsafe conditions or deficiencies affecting the integrity of the dam, including the unsafe catwalk and the aging, failing log boom. FBHLC proposes to bring their dam related structures into compliance with federal safety laws and regulations relating to dam and workplace safety in the proposed action. This includes replacing the deteriorated wood catwalk, and rebuilding the log boom to protect the outlet from debris. Deficiencies have been noted in letters from FBHLC owners. Alternative 2 protects public health and safety by replacing and upgrading the existing catwalk and log boom.

The proposed modifications and implementation plans must conform to sound engineering principles and practices. The work shall be accomplished in a safe manner to protect the safety of the owners, contractors, and all employees completing the project. This includes implementing precautions for the safety of the general public, such as posting the Fred Burr Creek Trailhead while helicopters are utilized to mobilize equipment and supplies.

Alternative 3 – Access by Packstock

Alternative 3 acknowledges FBHLC's rights and responsibilities to access and maintain the dam facilities. With this alternative, the necessary repairs would still be made but the use of mechanized transport would not be authorized. The materials for the catwalk would be fabricated in pieces and packed to the dam using stock.

In this alternative, the Forest Service would require the dam owners to use the trail to pack approximately 700 pounds of steel up to the dam to make this repair. Even with improvements to the trail, packing the catwalk and other materials to the dam with stock could result in serious injury to FBLHC and/or their contractors.

Consistency with Law, Regulation, Policy, or Forest Plan

Dam owners are responsible for complying with statutory and regulatory requirements. These requirements apply to the design, construction, operation, and maintenance of the dam and related facilities.

Alternative 1 – No Action

Alternative 1 is not consistent with safety laws, regulations, and policy necessary to protect public and private health and safety. Failure to take corrective action and address deficiencies in the catwalk could lead potential injury to the dam owners or their employees. Failure to address the deteriorating log boom creates a hazardous situation that is not in compliance with dam safety laws, regulations, and policy. Corrective actions have been identified by FBHLC. Failure to exercise their duty of care within a reasonable timeframe could constitute negligence in their duties to act as a responsible dam owner.

Alternative 2 – Access by Helicopter - Proposed Action

Alternative 2 is consistent with public and dam safety laws, regulations, and policy because the intent is to improve the safety of Fred Burr High Lake Dam and related facilities. Preliminary plans have been developed by FBHLC's representative to replace the deficient head gate access catwalk structure. Preliminary plans have also been developed to address the deteriorating condition of the log boom outlet protection structure. The overall objective of the proposed action is to increase the safety of the existing dam and its related facilities, which could ultimately prevent a potentially hazardous condition of the dam from developing in the future.

Alternative 3 – Access by Packstock

Alternative 3 is consistent with public and dam safety laws, regulations, and policy because the intent is to improve the safety of Fred Burr High Lake Dam and related facilities. Preliminary plans have been developed by FBHLC's representative to replace the deficient head gate access catwalk structure. Preliminary plans have also been developed to address the deteriorating condition of the log boom outlet protection structure. The overall objective of the proposed action is to increase the safety of the existing dam and its related facilities, which could

ultimately prevent a potentially hazardous condition of the dam from developing in the future.

Alternative 3 acknowledges FBHLC's rights and responsibilities to access and maintain the dam facilities. With this alternative, the necessary repairs would still be made but the use of mechanized transport would not be authorized. The materials for the catwalk would be fabricated in pieces and packed to the dam using stock.

Refer to Appendix G -Past, Present and Reasonably Foreseeable Future Activities for the Cumulative Effects Area – for a list of activities which were considered in the analysis of public and dam safety.

Access

Scope of Analysis

The area of analysis for the proposed project is the Fred Burr creek drainage from its headwaters to the wilderness boundary, and also from the wilderness boundary to the Fred Burr trailhead, because the potential direct and indirect effects of the proposal are generally well contained within this watershed boundary.

Regulatory Framework

The Forest Service is required by the Wilderness Act to authorize adequate access to valid occupancies such as this facility held by the FBHLI. See EA p. 1-3 and Appendix C- Minimum Requirements Analysis for a discussion of Forest Service regulation of access to dams in wilderness.

Affected Environment

See EA p. 1-3 (Background) for a description of the affected environment. See EA p. 20-21 (Trails) for a description of the trail access.

Environmental Consequences

Direct, Indirect and Cumulative Effects on Access

Alternative 1 – No Action

FBHLI would not be authorized helicopter access for the purpose of replacement of the catwalk and log boom. This alternative would not meet the need to replace the unsafe catwalk, or replace the log boom. FBHLI would continue to access Fred Burr High Lake Dam on foot or with stock for routine maintenance under the existing authorization.
.
This alternative would not meet the legal requirements to permit ingress and egress to valid occupancies by reasonable regulations, consistent with the preservation of the area as wilderness, as stated in the Wilderness Act. See EA p. 2,3.

Alternative 2 – Access by Helicopter - Proposed Action

Helicopter access would be authorized for the purpose of replacement of the catwalk and log boom at Fred Burr High Lake Dam. This alternative provides the owner and operator of Fred Burr High Lake Dam with reasonable access to meet their legal responsibilities to maintain their facilities according to state and federal safety regulations. Some equipment, camp supplies, and personnel would be transported by foot or stock.

Alternative 3 – Access by Packstock

FBHLI would not be authorized helicopter access for the purpose of replacement of the catwalk and log boom. FBHLI would be access their dam facilities by foot or stock in order to pack in materials and equipment for the purpose of replacement of the catwalk and the log boom at Fred Burr High Lake Dam. This alternative provides the owner and operator of Fred Burr High Lake Dam with reasonable access to meet their legal responsibilities to maintain their facilities according to state and federal safety regulations.. FBHLI would continue to access Fred Burr High Lake Dam on foot or with stock for routine maintenance under the existing authorization.

In this alternative, trail improvements to Trail #38 would result in long term changes to the trail's Opportunity Class objectives. The resulting improvements in the trail would result in a lower degree of challenge on this trail which would not meet Opportunity Class 2 objectives. (EA p. 7,8 and p 18-28, and Appendix B- Minimum Requirements analysis).

Consistency with Law, Regulation, Policy or Forest Plan

Alternative 1 – No Action

Alternative 1 is not consistent with the law, regulation, policy, or Forest Plan direction. This alternative does not meet the purpose and need to authorize Fred Burr High Lake, Inc (FBHLI) adequate access to their facilities and the legal requirements to authorize access as stated in the Wilderness Act. This alternative is beyond the Forest Service legal discretion, because the agency cannot deny the FBHLI reasonable access for the valid use of their authorization. (EA p.3-5 and Appendix E).

Alternative 2 – Access by Helicopter - Proposed Action

Alternative 2 is consistent with the rights to access valid occupancies prescribed by law, regulation, policy or Forest Plan direction. This alternative provides the owner of Fred Burr High Lake Dam with reasonable and adequate access necessary to correct the deficiencies associated with the catwalk and meet their legal responsibilities to maintain their facilities according to state and federal safety regulations.

Alternative 3 – Access by Packstock

Alternative 3 results in replacement of the catwalk, but would result in altering the design of the catwalk in order to pack the catwalk on stock. This alternative would not meet the legal requirements to permit ingress and egress to valid occupancies by reasonable regulations, consistent with the preservation of the area as wilderness, as stated in the Wilderness Act.

Wilderness, Trails and Recreation

Wilderness Character

Scope of Analysis

The affected environment for the proposed project is in the Fred Burr Creek drainage, including, Forest Road 733 from the Forest boundary, through private land and then to the Fred Burr reservoir, and Fred Burr Trail #38 from Fred Burr Reservoir dam and continues past Fred Burr High Lake and the basin surrounding Fred Burr High Lake. Portions lie both inside and outside of the Selway-Bitterroot Wilderness. The Fred Burr drainage area inside wilderness is approximately 6460 acres in size. See Map #1, p. 4.

Wilderness Resource (Including Wilderness, Recreation and Trails)

Regulatory Framework

The Selway-Bitterroot Wilderness (SBW) lies within the Bitterroot, Nez Perce, Clearwater and Lolo National Forests. General management direction for the Selway Bitterroot Wilderness is contained in the SBW General Management Direction (Forest Plan Amendment #7, 1992), (Project File (PF)-G6). This document is included as an appendix to each of the four Forest Plans. The Selway-Bitterroot Wilderness, third largest wilderness in the lower 48 states, totals 1.3 million acres and the Bitterroot National Forest contains 508,000 acres of this total. The entire Selway Bitterroot Wilderness is Bitterroot National Forest Plan Management Area 7c.

A unique characteristic of this wilderness is the presence of sixteen irrigation dams all established before the 1964 Wilderness Act and some established before designation of the Bitterroot National Forest.

General wilderness characteristics of this drainage are summarized in five categories:

1. Untrammeled or “apparent naturalness’ is essentially unhindered and free from modern human control or manipulation. Human activities are primarily confined to the narrow trail corridor and the area immediately adjacent to the dam and reservoir. The remainder of the area is topographically rugged and discourages human activity. Humans have had a minor impact in these areas through the suppression of fires.

2. Natural integrity refers to the extent to which Wilderness ecological systems are substantially free from the effects of modern civilization and is measured by the presence and magnitude of human induced change.

3. Undeveloped Quality refers to Wilderness retaining its primeval character and influence, and is essentially without permanent improvements or modern human occupation. The impacts of human activity are generally light, with the exception of the Fred Burr High Lake Dam, Trail #38 and campsites.

4. Solitude or Primitive and Unconfined Recreation quality refers to how Wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation. Solitude is a personal, subjective value defined as "isolation from the sight, sound and presence of others and the developments of humans". The feeling of solitude in its purest sense is sometimes available within the trail corridor or lake basin. Encounters are not frequent in the trail corridor and lake basin. The tight topography of the lake basin allows sounds of visitors to carry easily.

5. Remoteness is a perceived condition of being secluded, inaccessible and out of the way. The presence of humans is sometimes apparent in the trail corridor and immediate lake area. Any remoteness is experienced due to the topographic relief and vegetation screening.

The wilderness is divided into four Opportunity Classes (OC) developed to allow for and provide a range of wilderness experience, from the most pristine Opportunity Class 1 to most heavily used Opportunity Class 4. By allocating different opportunity classes, overall degradation of the wilderness resource can be prevented, while simultaneously establishing realistic objectives for those areas that receive more use, and consequently more impacts. However, each area will be managed to meet the limits of acceptable change prescribed for it designated opportunity class. The opportunity class descriptions provide managers with a hypothetical framework for managing towards the desired further conditions for the wilderness and by outlining the desired resource, social and managerial settings. These descriptions are in narrative form in the SBW General Management Direction (p. A-3 to A-6 and B-2, as well as summarized on Table A-1, p.A-2, and Table A-2 and 3 p. A-7,8 (PF G-6)

The analysis area is in Opportunity Class 2. Although the natural environment is characterized as being unmodified, there are two areas affected by the actions of users. One area is at a campsite in Section 18 about 2.5 miles NNE of Fred Burr High Lake. The campsite rates as heavy/extreme and exceeds Opportunity Class 2 standards. The other is at Fred Burr High Lake itself where the natural environment has been modified by the dam and reservoir for nearly 100 years. At Fred Burr High Lake there is one moderately impacted campsite and also places where fire rings have been removed on mineral soil exposed by dam construction. Site impacts are evaluated using standardized procedures that measure various impacts, including vegetation loss, soil disturbance, damage to trees, development, cleanliness, etc. This drainage has seven campsites inside wilderness and 2 outside wilderness (of the wilderness campsites two are lightly impacted, four are moderately impacted and one is heavily impacted. Standards limit the number

of campsites to 2 sites per square mile and impacts to one light, one moderate of those two sites. Fred Burr high Lake is at 7500 elevation with a short growing season and fragile vegetation.

Affected Environment

Wilderness and Recreation

The Recreation Opportunity Spectrum (ROS) ranges from Roaded Natural at the Fred Burr trailhead to Primitive within the Selway-Bitterroot Wilderness. Fred Burr's basin and close proximity between Victor and Hamilton makes it a moderately visited day use area up to the lower Fred Burr Reservoir, which is outside of wilderness. A large campsite at the west end of the reservoir receives most of the overnight use in Fred Burr. Above the reservoir day use is light. There is an outfitter camp under permit in wilderness in Section 18, that rates as heavy/extreme. Overnight summer and fall hunting is authorized but it has received only occasional use since 2007. Otherwise overnight use in the wilderness is very light. Camping use at the Upper Fred Burr High Lake is light, especially in the fall. A registration box is located at the trailhead and numbers between 2004 and 2010 show the highest use in 2007 with 83 visitors and lowest in 2005 with 2 visitors. As is typical with voluntary registration compliance can be spotty and not always reliable. Most of this use is only going as far as the reservoir . Diverse recreational opportunities include hiking, horseback riding, hunting, fishing, berry picking, climbing, and photography.

Trails

Most of the first 4.5 miles of "trail" to the lower Fred Burr Reservoir is actually RD733, a single lane road closed to motorized traffic. Trail #38 starts at the north end of Fred Burr Reservoir. The trail is very rough around the north end of the reservoir. Stock users usually wait until the reservoir is nearly drained in late summer to ride further past the reservoir. Then they ride across the reservoir bed to access wilderness. This limits stock use in the upper canyon from August to early November. Trail #38 above the reservoir to Fred Burr High Lake is 7.8 miles long. The trail is not steep until the last mile below Fred Burr High Lake. There are approximately 3 miles that are fire affected, which has resulted in snags and downfall, usually restricting horse access until the trail is cleared. There are 4 fords and about 8 wet areas. There is not much constructed trail tread. Most of the tread is smooth, but some is very rough, some is overgrown and hard to see, and some is washed out. The last mile of trail to the upper lake gains 1000 feet in elevation and has 35 climbing turns. Fred Burr Trail #38 connects with Mill Creek Trail #364 to provide a loop trip opportunity. Fred Burr Trail #38 is scheduled for yearly maintenance though sometimes it is skipped because of priority work on more heavily used trails. The trail was cleared in 2010 and is scheduled for clearing in 2011.

See Appendix C for a description of the trail condition and trail improvements that may be needed to accommodate pack stock support for construction of a new ramp and log boom at Fred Burr Lake.

The trailhead has two hitch rails and a pull through lane for traffic, and some limited parking for stock trailers and 6 passenger vehicles. The dam at lower Fred Burr Reservoir has a hitchrail and

cable highline.

Environmental Consequences

This section will discuss and disclose the environmental effects of this project on the wilderness, trails and recreation resources of the Fred Burr Creek drainage from its headwaters at Fred Burr High Lake to the wilderness boundary (approximately 6.8 miles) and also from the wilderness boundary to the Fred Burr Reservoir dam (approximately 0.9 miles).

Effects are measured using parameters determined through public scoping and by using criteria in the Forest Plan (1987) and in the Selway-Bitterroot Wilderness General Forest Plan Management Direction (Amendment #7). These documents disclose standards and management direction for the Selway-Bitterroot Wilderness, trails and recreation.

The environmental consequences of each alternative will be discussed and evaluated within the context of five settings: the wilderness resource setting (untrammeled or "apparent naturalness", undeveloped, natural and outstanding opportunities for solitude or a primitive and unconfined type of recreation), the trails and general recreation setting.

Effects Common to All Alternatives

In all alternatives, the presence of Fred Burr High Lake Dam affects the wilderness resource. The natural integrity of water flows is restricted by the storage and release of water from the reservoir. Apparent naturalness and visitor's sense of remoteness are affected by visual evidence of human structure. These effects are considered acceptable within the parameters of the Wilderness Act and subsequent legislation because Congress recognized these irrigation facilities existed at the time of the Wilderness act, access to valid occupancies such as these dam facilities held by FBHLI is required. (PF G4, G12, G13).

The Fred Burr Creek drainage receives relatively light use during the summer season and fall seasons. The trail corridor within the drainage is mapped in Opportunity Class 2. Opportunity Class 2 is characterized by an unmodified natural environment. Ecological and natural processes on some sites are slightly affected by the actions of users. Environmental impacts are restricted to minor loss of vegetation where camping occurs and along most travel routes. Impacts in a few areas persist from year to year and are noticeable to a few users.

The area provides a high opportunity for isolation and solitude free from evidence of human activities, and very infrequent encounters with other users. This environment often offers opportunities for a high degree of challenge and self-reliance. Interparty contacts will be very few while travelling and very low at the campsite.

Goals for Opportunity 2 class trails offer a high degree of challenge, and accommodate a small number of hiker and stock users. The trail is identifiable. Primary design criteria will minimize resource damage. The trail maintenance level will retain a primitive condition requiring a high degree of skill and challenge to travel.

The area immediately around Fred Burr High Lake Dam is a modified natural environment noticeably impacted for nearly 100 years by construction and use of the dam. The rest of Fred Burr Creek is an unmodified natural environment. The Fred Burr drainage is within the Forest Plan standards with the exception of 1 heavily impacted campsite that is 2.1 miles below the campsite site used by FBHLI. The FBHLI campsite is substantially unnoticeable the following summer after use. The campsite used by FBHLI is also 1.5 trail miles from the dam. At the dam there are 2 campsites on mineral soil that was exposed during dam construction. Over the years numerous fire rings have been removed from spots where mineral soil was exposed by dam construction.

Effects Common to Action Alternatives

Wilderness Resource Setting

Repair of the ramp would have some effect to apparent naturalness because of the new materials used for the ramp. There will be fresh signs of permanent trail improvements. After a recovery period, as the ramp ages, natural integrity, apparent naturalness and solitude (isolation from the developments of humans) would be unchanged. The very lightly impacted campsite, used almost exclusively by FBHLI one night a year may become permanently impacted. Some species of wildlife may be temporarily displaced at the dam, at the camp and along the trail during the project. The actual work at the dam, presence of workers and transportation of workers and equipment would affect visitor's sense of remoteness and solitude through the duration of work.

Trails and General Recreation Setting

There will not be an area closure during the project. Routine maintenance will continue at the dam and along the trail. Additional trail improvements to correct deferred maintenance items will decrease degree of challenge and risk on the trail.

Wilderness Regulatory Setting

Work to make the dam infrastructure safe would benefit the wilderness regulatory setting by reducing or eliminating the amount of future maintenance needs and associated requests to use mechanized or motorized equipment. Dam operator safety will be improved if the ramp is replaced. The spillway will function more reliably with a new log boom.

Alternative 1 – No Action

Direct Effects

Wilderness Resource Setting

FBLHI would not be authorized motorized access in the fall of 2011 to repair the ramp (catwalk) and log boom. There would be no immediate disturbance to existing natural integrity, apparent naturalness, visitor's sense of remoteness and solitude, or special features. The ramp and log boom would remain in a deteriorated condition. Dam operator safety would not be improved. The spillway function will be less reliable with the old log boom. Other routine maintenance

would continue at the dam. The effects of routine maintenance including removing logs from the spillway and removal of vegetation on the dam are considered acceptable within the parameters of the Wilderness Act and subsequent legislation.

Trails and General Recreation Setting

There would be no additional use of the trail. Routine trail maintenance would continue with trail clearing scheduled for 2011. Otherwise trail reconstruction work is not scheduled for Trail #38. Likely in the near future there would be little trail reconstruction work (permanent improvement) done. There would be no effects to safety of visitors associated with the helicopter flight to transport the catwalk.

Wilderness Regulatory Setting

There would be no use of mechanized transport or motorized equipment. There would be no increase of use at campsites and therefore no change in the lake basin's Opportunity Class status. There would be no effects to worker safety. The unsafe catwalk would continue to deteriorate posing a hazard to the dam operators.

This alternative is beyond the Forest Service legal discretion, because the agency cannot deny the Fred Burr dam owners reasonable access for the valid use of their authorization. (See p. 1,3)

Indirect Effects

Wilderness Resource Setting

Lack of repair would increase the risk of dam failure over the long term. If the existing log boom were to fall into disrepair the spillway could become plugged. If the existing ramp were to collapse it could render the headgate unusable The longer the dam components are not maintained the greater the potential for failure by water overtopping the embankment. If there were flood damage it would adversely affect wilderness integrity (destroyed riparian vegetation, scoured stream channels). This soil movement has the potential for effects to the natural quality (changing stream channels and opening areas to noxious weeds as a result of trail or watershed repairs).

Trails and General Recreation Setting

Without repair there is an increased risk of dam failure which could lead to flood damage. Flood damage would adversely affect the trail at four fords between Fred Burr High Lake and Fred Burr Reservoir. Trail damage would temporarily limit visitor access and be disruptive to hiking and camping.

Wilderness Regulatory Setting

Without timely repair, FBHLI would have not met its responsibility to maintain the dam facilities. Over time the need to replace the ramp and log boom would become more urgent.

Alternative 2 – Access by Helicopter - Proposed Action

Direct and Indirect Effects

Wilderness Resource Setting

FBLHI would be authorized helicopter access in the fall of 2011 to fly in a welded, preassembled ramp (catwalk) and a log boom cable. The existing ramp and log boom would be replaced. There would be disturbance to apparent naturalness, visitor's sense of remoteness and solitude. Sights and sounds of one helicopter flight would be apparent along Trail #38 and the lake basin. These sights and sounds would be intrusions on visitor's sense of remoteness and solitude. There would be a potential for a helicopter crash - with fuel spill, rescue, investigation and removal impacts. Effects to the campsite below the dam should naturalize themselves by the next growing season. Sights and sounds of workers at the dam removing and replacing the ramp and log boom would last 4 days. Visitor use is light so the number of visitors most likely affected would be small. Solitude along the trail would be impacted by FBHLI pack stock traveling in the first day and out to the trailhead one round trip.

Before the dam project solitude would also be impacted by trail crew presence before the dam project. Trail crew workers would take up to 8 days to complete the needed trail improvement work. The trail crew packer would pack in and out 2 times for a total of 4 trips.

Mitigations for signing the trailhead and pre-announcing when various activities will be taking place, personal contacts and monitoring by Wilderness rangers will allow most potential users the opportunity for solitude and remoteness in the remaining 1.3 million acres of the SBW.

Trails and General Recreation Setting

There would be no motorized equipment at the dam. Recreationists may choose not to camp at the lake over the duration of the project (4 days).

Trail #38 would be improved for 6.3 miles to the campsite 1.5 miles below the dam. It would lose some of its higher degree of challenge. Trail improvement would be done to prevent or control resource damage and would retain the appropriate degree of challenge for Opportunity Class 2 objectives. There would be no blasting to improve tread just below the dam.

Prior to work commencing on the dam, visitors would be impacted by a trail crew working approximately 8 days to accomplish the trail reconstruction work. The additional trail crew days needed for this trail (8 days) would reduce high priority trail work needed on other wilderness trails, because work on those trails would not get accomplished. See Appendix C for a description of the trail condition and the work needed to improve the trail in order to safely use pack stock to support the repair work at the dam infrastructure. The trail crew packer would pack in and out 2 times for a total of 4 trips.

Visitors would encounter stock during trail reconstruction and during the work at the dam. During the dam project visitors would be impacted by pack stock on the trail for 4 days.

There would be no use restrictions on the trail during the project but visitors would be inconvenienced (at the parking area and by encounters with stock along the trail). One stock trip with 5 head of pack stock would be required to transport camp equipment for the dam project. Stock would stay in camp during the project.

Alternative 3 – Access by Packstock

Direct and Indirect Effects

Wilderness Resource Setting

FBLHI would not be authorized helicopter access in the fall of 2011 to fly in a ramp (catwalk) and log boom. FBLHI would access the dam along Trail #38, using pack stock to pack in a prefabricated ramp and a log boom cable. The unassembled ramp would be in pieces a maximum of 6 foot long. The existing ramp and log boom would be replaced. There would be disturbance to apparent naturalness, visitor's sense of remoteness and solitude. Effects to the campsite below the dam would take longer than one growing to naturalize themselves. Sights and sounds of workers at the dam removing and replacing the ramp and log boom would last up to 8 days. Visitor use is light so the number of visitors most likely affected would be small. Solitude along the trail would be impacted by FBHLI pack stock traveling in the first day and out to the trailhead twice. Solitude would also be impacted by trail crew presence before the dam project. Trail crew workers may take up to 15 days to complete the needed trail improvement work. The trail crew packer would pack in and out 4 times for a total of 8 trips.
Longer lasting impacts at the camp site used by FBHLI may attract other campers to use that site. In 2010 this site did not rate out as a site when monitored, SBW Site Impacts worksheet. Also, increasing ease of accessibility may lead to more use by recreationists. Should use increase the area might become a "problem area" in need of some management action.

Trails and General Recreation Setting

There would be no motorized equipment at the dam. Recreationists may choose not to camp at the lake over the duration of the project (up to 8 days).

Trail #38 would be improved for 7.8 miles to the dam. Trail improvements below the dam in the climbing turns, (spot blasting to improve tread) would be done to provide safe access for packstock transporting the catwalk and log boom equipment to the dam. This work would reduce the existing degree of challenge that is appropriate for Opportunity Class 2 objectives.

Prior to work commencing on the dam, visitors would be impacted by a trail crew working approximately 15 days to accomplish the trail reconstruction work. The additional trail crew days needed for this trail work (15 days) would reduce high priority trail work needed on other wilderness trails, because work on those other trails would not get accomplished. See Appendix C for a description of the trail condition and the work needed to improve the trail in order to safely use pack stock that would be packing the prefabricated ramp. The trail crew packer would pack in and out 4 times for a total of 8 trips. This increase in stock use would impact the trail with more use than it gets in a typical season.

During the dam project, visitors would be impacted by pack stock on the trail for up to 8 days.

There would be no use restrictions on the trail during the dam project but visitors would be inconvenienced at the parking area and by encounters with stock along the trail. Visitors would encounter stock during trail reconstruction and during repair work at the dam. Approximately 2 stock trips with up to 7 head of pack stock would be required to transport camp equipment, tools and materials. Stock would travel twice up the trail and back to the trailhead during the project.

Cumulative Effects Common to All Alternatives

Because of the ephemeral and geographically limited nature of this proposal's effects on the wilderness setting, there does not appear to be cumulative effects (overlapping in both time and space) with other past, present or reasonable foreseeable actions (See Appendix E for Past, Present and Reasonably Foreseeable Future Activities for the Cumulative Effects Area). But there may be concurrent, similar activities (ongoing trail and dam maintenance, etc.) and reasonable foreseeable activities (trail and dam maintenance) in the broader wilderness area.

The Selway Bitterroot Wilderness includes approximately 1,340,360 acres. The Fred Burr Drainage is approximately 11,523 acres (6460 wilderness acres and 5053 non-wilderness acres). While the work is going on users choices on destinations in the Fred Burr drainage may be limited for short periods but Wilderness visitors would continue to have the opportunity to visit another portion of the remaining 1,328,847 acres within the SBW to obtain the wilderness experience they have come to expect. (See Map 1, p. 4)

Consistency with Law, Regulations, Policy or Forest Plan

The Wilderness Act of 1964 directs that wilderness be administered "…for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness…". By definition, wilderness has "outstanding opportunities for solitude or a primitive and unconfined type of recreation". (PF G-4- Wilderness Act)

The Wilderness Act of 1964 does not specifically address the method of access to wilderness dams. In Section 5(b) it states "In any case where valid mining claims or other valid occupancies are wholly within a designated forest wilderness area, the Secretary of Agriculture shall, by reasonable regulations consistent with the preservation of the area as wilderness, permit ingress and egress to such surrounding areas by means which have been or are being customarily enjoyed with respect to such other areas similarly situated."

The Act specifically addresses motorized/mechanized prohibitions stating"…except as necessary to meet requirements for the administration of the area for the purposes of this Act there shall be no…use of motor vehicles…no landing of Aircraft, no other form of mechanical transport" [sec.4c].

The Forest Service Manual 2300-90-1, 2326.1 – Conditions Under Which Use May be Approved allows the use of motorized equipment or mechanical transport when: A). a delivery or

application problem necessary to meet wilderness objectives cannot be resolved within reason through the use of non-motorized methods. B). an essential activity is impossible to accomplish by non-motorized mans because of such factors as time or season limitation, safety or other material restrictions. See Appendix B Minimum Requirements Analysis.

The project is located in the Forest Plan Management Area 7c. The goals for Management Area 7c are to "manage in accordance with the Wilderness Act of 1964… to ensure an enduring system of high quality Wilderness…"

Direction for Bitterroot National Forest management of the wilderness portion of the affected area is contained in the Selway-Bitterroot Wilderness General Forest Plan Management Direction (Forest Plan Amendment #7, 1992) (PF G-6). This amendment established the following goals for the Selway-Bitterroot Wilderness.

- Preserve the integrity of the Selway-Bitterroot Wilderness resource to meet the purposes described in the Wilderness Act; to protect and preserve natural conditions so that the wilderness generally appears to have been affected primarily by the forces of nature, with the imprint of human work substantially unnoticeable, and has outstanding opportunities for solitude or primitive and unconfined recreation.

- Provide for limiting and distributing visitor use of specific portions in accordance with periodic estimates of the maximum levels of use that allow natural processes to operate freely and that do not impair the values for which wildernesses were created.

- Apply a Prevention of Significant Deterioration (PSD) approach to prevent a net degradation of the wilderness resource while acknowledging that wilderness, and the impacts caused therein, is dynamic.

The Bitterroot National Forest Plan notes in Amendment #7, page M-1 (PF G-6) that many special use dams exist in the Wilderness, that they need to be maintained to a safe condition, and may need mechanical access and motorized equipment to maintain at least some of them.

The Bitterroot National Forest Plan specifies in Amendment #7, Section II, M-2 (PF G-6: Environmental assessments or environmental statements will be prepared for all reconstruction and heavy maintenance work on reservoirs within the wilderness. These reports will include analysis of non-motorized vs. motorized means of doing work. Motorized equipment or other non-conforming activities will be authorized when it can be demonstrated that:

- It is the only feasible means of accomplishing the necessary maintenance.
- The continued existence of the reservoir is more in the public interest than its breaching.

Feasibility for the use of primitive equipment will be based on the technical requirements of the project. While a part of this analysis will include economic considerations, economics is not an overriding factor in the justification for the use of motorized equipment.

Section II, A-3 specifies: “The minimum tool principle will be applied to the management of all

resources within the Selway-Bitterroot Wilderness. This means that the minimum management actions necessary to correct a given problem will be identified. These will be implemented using the methods and equipment that accomplish the objective with the least impact on the physical, biological and social characteristics of wilderness."

A Minimum Requirements Decision Process was used to evaluate the minimum tool necessary to accomplish proposed work and methods of access. See Appendix B for the Minimum Requirements Analysis.

OTHER RESOURCES

Water Resources

Introduction

This document details water resources that could potentially be affected by the Fred Burr High Lake Dam Access project. The existing resource conditions are discussed, along with the potential consequences of the proposed activities.

Physical Description and Existing Condition

Fred Burr High Lake lies in the headwaters area of Fred Burr Creek, near the Bitterroot divide and the Montana-Idaho state line. It is located within the Selway-Bitterroot Wilderness Area. The proposed activity is within an authorization granted to Fred Burr High Lake, Inc. (FBHLI), which manages the Fred Burr High Lake Dam for irrigation purposes. U.S. Forest Service management direction in the area is largely controlled by its designated wilderness status, which strictly controls activities that could negatively affect natural resources or wilderness character. Work within the FBHLI's easement may occur as per their legal rights (and must occur to meet State and Federal dam safety standards), with the Forest Services' obligation to provide reasonable access to the easement holder and also oversight to protect surrounding resources. FBHLI's Operating Plan for the dam includes clearing the spillway, adjusting outlet flows to meet irrigation needs, and maintaining the structure as needed.

Maintenance on Trail 38, which parallels Fred Burr Creek for most of its length, is often limited to clearing downfall and rocks which have fallen onto the trail. Use on the trail is considered to be light. The trail crosses the creek and various tributaries many times between the lower Fred Burr Reservoir and Fred Burr Lake and the FBHLI dam, and wet areas are common. All stream crossings are open fords and most are armored, although some have soft soils and ongoing minor erosion.

Overall, activities in the Fred Burr Creek watershed have been mostly limited to recreational activities such as hiking, horseback riding and hunting, which, in conjunction with FBHLI's and Forest Service work, have produced very limited influence to date on water resources in the upper watershed.

Farther down the watershed, the larger Fred Burr Reservoir is accessed by a primitive road, which is opened for administrative use only. This dam and reservoir control much more water

than the High Lake Dam, and stream flow between the dam and the Bitterroot River is heavily influenced by its operations. About 3 miles of channel on-Forest are affected. Other than flow regime changes, the dam operation, recreational activities, and trail/road maintenance has not adversely affected water resources on the Forest. Below the Forest boundary, irrigation diversions, agriculture, domestic development and other influences affect water resources, but the stream is not on the MT DEQ 303(d) list for pollution-related impairments.

Consequences of Alternatives

Please see Chapter 2, Section II of the Environmental Assessment (EA) for a complete description of the proposed activities and the proposed action (Alternative 2). All action alternatives include obtaining whatever permits are required for the types of work proposed. Depending on the final details and guidelines of the issuing agencies, several permits noted below may not be needed.

Permits to consider include:

- 310 permit (Montana Natural Streambed and Land Preservation Act) for operations near a stream or wetland, from local Conservation District (mandatory),
- 318 authorization for unavoidable short-term water quality violation of turbidity standard, from MTDEQ,

All permit application work is the responsibility of FBHLI as project proponent and operators of the dam.

Affected Area

The water resources that may be affected by the alternatives are those downstream of the dam and adjacent to and within the reservoirs. This would include the channel of Fred Burr Creek, the reservoirs, and wetlands or riparian areas within the watershed. This includes the stream channel all the way to the Bitterroot River, although effects from dam repair are less likely to affect those reaches farther from the dam. Watershed area is 15,379 acres, with the Bitterroot National Forest managing approximately 11,516 acres.

Sensitive Areas

The work proposed at the dam by FBHLI would produce minimal disturbance and is highly unlikely to affect any sensitive or unique water resources in the vicinity or downstream. Some riparian areas traversed by Trail 38 may be considered sensitive to increased horse and foot traffic. There are no water resources that would be sensitive to helicopter use, excepting a crash or loss of load near the stream. The difference in access affects is discussed below in the Direct and Indirect Effects section.

Mitigation Measures

Mitigation measures are those controls or guidelines that allow activities to proceed with minimized environmental impacts. The minimal activities proposed (no heavy equipment or earth moving) do not have the potential to create substantial water resource effects, and therefore the mitigation measures are also minimal. These required measures are designed to eliminate or

minimize water resource effects from human waste and from potential fuel spillage. The Consequences of Alternatives discussion (below) is based on implementation using the listed mitigation measures:

- Camps and sanitary facilities shall follow wilderness guidelines (minimum 200' from water's edge);
- Contractors hired by FBHLI are responsible for obtaining needed permits and ensuring permit compliance.
-

Direct and Indirect Effects

Three basic alternatives have been developed, based on different types of access. Alternative 1 is the "No Action" Alternative required by NEPA. Alternative 2 is the Proposed Action, which would allow helicopter access to replace the headgate control ramp. Alternative 3 allows for traditional surface access only, using livestock and traditional travel and work methods. .

Alternative 1 – No Action:

This alternative would not allow special access to Fred Burr High Lake dam, but it would allow regular dam maintenance and use to continue. Permittees would access the dam by foot or horse, as they have been in the past.

Without helicopter access or trail work, FBHLI's ability to maintain their facilities would be negatively affected. This alternative would result in either the catwalk ramp at Fred Burr High Lake Dam remaining in the present deteriorated condition, or FBHLI would have to repair the catwalk and log boom using native materials found on site. The existing catwalk could deteriorate to the point of preventing FBHLI from safely reaching the headgate control valve. If FBHLI cannot safely access the headgate control valve, an emergency at the dam could lead to overtopping and failure of the embankment. The likely consequences of overtopping would be an uncontrolled breaching of the earthen dam and downstream sediment transport. Stream reaches immediately below the dam would see heavy sediment deposition and possible scouring, with lower reaches experiencing less effect. Due to the small size of the reservoir, distance between the dam and the Forest boundary and the presence of a second, larger reservoir downstream, it is highly unlikely that human life and safety would be threatened on private land.

Alternative 2 – Access by Helicopter - Proposed Action

This alternative allows helicopter transport of the replacement headgate ramp, but requires workers to use traditional methods of foot or livestock travel. There would likely be just one flight to bring in the ramp itself. The only possible direct effect from the proposed action (Alternative 2) would be either a helicopter crash or loss of sling-loaded construction materials. This would be minimized through minimizing exposure to just one flight, and by use of standard loading and hauling methods designed to reduce mishaps. The likelihood of a crash or dropped load creating a substantial or long-lasting water resource impact is quite low, even if one of these unfortunate events occurred. This is due to the limited amount of aquatic, wetland, or floodplain sites within the drainage, and the low degree of connectivity between upland sites greater than several hundred feet from a channel or wetland. Helicopter flight planning and safety guidelines

have successfully prevented mishaps during the many flights used to access various wilderness dams, further supporting a low probability of an accident.

Actual ramp replacement would occur within the dam easement and is unlikely to affect water resources due to minimal disturbance and its location on the interior dam face.

Alternative 3 – Access by Packstock

Alternative 3 proposes substantial trail work to aid livestock hauling of a replacement headgate ramp. Minor sediment from trail reconstruction and re-routing would be produced in the short term, but the trail work would likely reduce sediment in the long term by improving trail drainage and tread durability. The extra trips for pack stock to carry in the disassembled headgate ramp may also produce some minor sediment at trail/stream crossings, but the duration of this higher intensity use is estimated to be quite short (about a week), and therefore the effects of transporting the ramp would also be very brief. Similar to Alternative 2, the actual ramp replacement would not affect water resources in the area.

Floodplains

None of the alternatives would significantly modify, encroach upon nor threaten floodplains downstream along Fred Burr Creek.

Cumulative Effects

The 6th-level watershed (HUC# 170102051102) boundary for Fred Burr Creek defines the cumulative impacts analysis area. The upper watershed is within the Selway-Bitterroot Wilderness and has experienced little human disturbance other than dam construction and maintenance. The Fred Burr High Lake reservoir was constructed without substantial mechanized equipment. The effects of the original construction (mainly sediment from quarry sites and ground disturbance) have likely subsided to the point of non-existence, or were mitigated by storage in the reservoir pools. Reservoir and dam operations since that time have included the clearing of driftwood and occasional maintenance of the spillway and dam crest. Effects from maintenance have been minimal, as evidenced by site conditions around the dam and good water quality in the creek. This maintenance is expected to continue in the future with any of the alternatives, with similar limited environmental effects.

On private lands below the forest, development and irrigation diversion have created various impacts, as noted in the Existing Condition discussion above. Due to the lack of ground disturbance, activities at Fred Burr High Lake have little to no potential to affect water resources either at the site or downstream. The proposed activities would therefore not add to cumulative effects anywhere within the watershed.

To summarize cumulative effects, the action alternatives (Alternatives 2 and 3) have an extremely low potential to produce substantial sediment in Fred Burr Creek. With very little existing human impact in the upper watershed, and little possibility of substantial effects from this project, loss of beneficial uses, water quality, or channel damage in Fred Burr Creek are unlikely to occur.

Forest Plan and Regulatory Consistency

Alternatives 2 and 3, implemented with the mitigation measures, would be fully consistent with the 1987 Bitterroot Forest Plan Standards and Guidelines (listed in the Affected Environment – Water Resources Report). Alternative 1 would likely need to be followed with another proposal for either a different type of repair or a planned breaching. All other pertinent regulations pertinent to water resources would also be met, as long as proper permitting processes are followed.

Summary

For water resources, the main difference in effects between Alternatives 1 (No-Action) and 2 (Proposed Action) is the trail work required for Alternative 3. This is a minor difference and neither action alternative would produce notable or measureable water resource effects. Alternative 1 (No Action) has no work-related impacts but allows the threat of dam failure and associated sedimentation to remain.

Fisheries

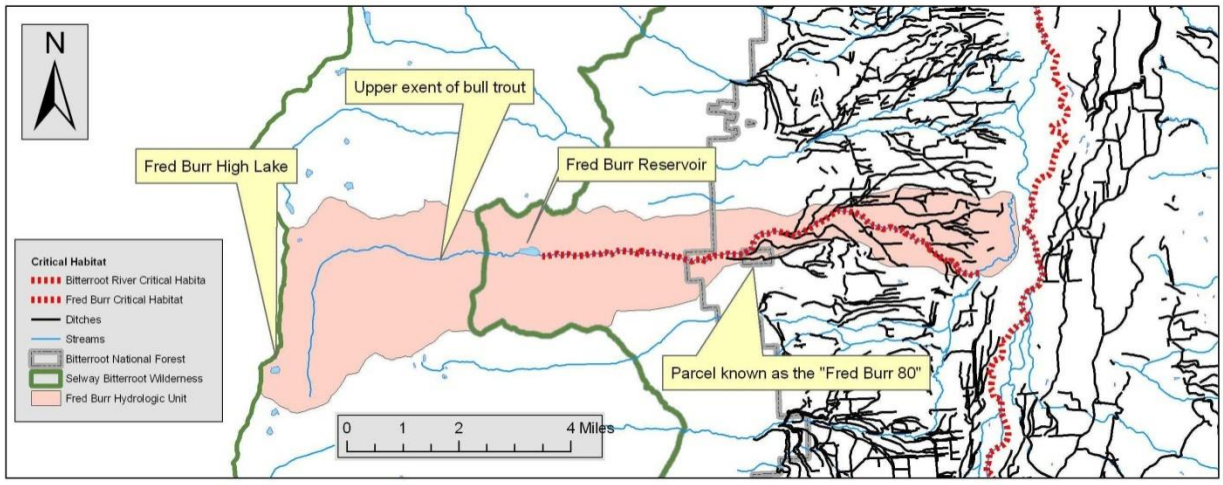
Affected Environment

The affected area for this proposed project is the Fred Burr Creek drainage. From a fisheries perspective, one of the most notable aspects of Fred Burr Creek is that it is listed as critical habitat for bull trout under the Endangered Species Act (Map 1). Bull trout have been observed approximately 4.5 miles downstream of the project site (Fred Burr High Lake) which is upstream and downstream of Fred Burr Reservoir. Cutthroat trout exist in Fred Burr High Lake and downstream to the creek's mouth at the Bitterroot River. The genetic strain of cutthroat trout in Fred Burr is unknown. The cutthroat trout in the lake may be pure westslope cutthroat trout (WSCT), but are likely to be an introduced strain as a result of fish stocking in Fred Burr High Lake.

Another notable feature of the Fred Burr fisheries is that there are no non-native brook, brown, or rainbow trout upstream of Fred Burr Reservoir. All these species (cutthroat, brook, brown, rainbow, and bull trout have been observed downstream of the Fred Burr Reservoir.

Brook trout feed on the young of the native trout and can interbreed with bull trout. Brown trout and rainbow trout have also been observed in lower Fred Burr Creek. Brown trout are becoming more prevalent in the steeper stream reaches on the Forest, and is a concern because of their suspected niche overlap (competition) with bull trout. In 2010 snorkelers saw more brown trout in the pool immediately below the dam than ever before.

Figure 1 – Extent of Brook Trout in Fred Burr Creek



None of the ditches that take water from Fred Burr Creek are known to have screens to prevent fish from being shunted down the ditches, including the two ditches that have diversions between the main Forest Boundary and Fred Burr 80 (Figure 1). Cutthroat and brook trout have been observed in the upper ditch, and bull trout could periodically be present in both ditches.

The listing of bull trout and lower Fred Burr Creek as critical habitat under the Endangered Species Act emphasizes the levels of protection that agencies are required to place upon the federal portion of the watershed. However, these documents do not exclude activity from occurring in the watershed, they simply add emphasis that projects should not retard attainment of, and trend toward recovery of stream and riparian related objectives (such as cool clean water, adequate amounts of large woody debris, natural channel shape).

Generally water quality in Fred Burr Creek is very good. Two concerns are water temperatures and, to a lesser degree, fine sediments.

Cool summer water temperatures are important for the survival of native fishes. Warmer waters favor the non-native trout species. Water temperatures are increased by:

- Reducing stream flows (diversion of water discussed above),
- Pooling water where it can be exposed to sunlight (such as in the reservoirs), and
- Reducing vegetation along the stream (which is not currently a problem).

Fine sediments (dirt) in the stream are a concern in some section upstream of Fred Burr 80. Pulses of sediment input occur in the fall below the reservoir as a result of draining the last few feet of water from the reservoir. Some water-barring and other drainage work occurred on the access road in 1999 to control sediment inputs from the road.

Environmental Consequences

This section provides an analysis of the key environmental impacts of alternatives 1, 2, and 3. The past, present, and reasonably foreseeable actions were considered for analysis of cumulative

effects to fisheries and aquatic habitats. After considering the direct, indirect, and cumulative effects, the conclusion is that the risk of impacts occurring to fisheries or aquatic habitats, with the implementation of any of the alternatives, is very small.

Alternative 1 – No Action

Selection of the No Action alternative would likely have a minor effect on fisheries and aquatic habitat. There would minor increased risk of erosion from the trail and dam, and potential for dam deterioration as a result of the reduced level of maintenance. The risk of catastrophic failure of the dam (such as sudden erosion of the dam and large amounts of water being released and eroding the stream) would likely remain low, but risk would increase because of reduced control of the headgate that the catwalk accesses. The reason for this conclusion is related to the size of the dam and the reservoir and the rocky nature of the channel downstream.

Figure 2 – Wet Area on Trail #38, Fourth Ford

A minor negative impact would be that trail reconstruction would likely be postponed. This is a negative impact to fisheries and aquatic habitat because the trail erodes and vegetation is below its potential in these sections (Photo). A frequent user of the trail stated the condition well: "…it would be good if some work could be done on some of those bog holes through those upper meadows past the outfitter camp. The worst one is actually well before the outfitter camp just before (east) of the third creek crossing. It seems like this spot gets worse every time I go in there. A side stream runs down the trail for a few feet here and it's become a real mud hole" (D. Bessler-Hackett, email 9/29/2010).

Alternative 2 – Proposed Action

This alternative would likely have a minor effect on fisheries and aquatic habitat. The project would maintain the dam which would reduce the risk of erosion and dam deterioration relative to the No Action alternative.

The amount and intensity of trail maintenance would likely be very similar to the No Action alternative. The impact to fisheries and aquatic habitat would be negligible.

Helicopter operations are generally very well-managed and pose very little risk to fish or aquatic habitats.

Alternative 3 – Access by Packstock

The project using this alternative would result in adequate dam maintenance, improved trail

maintenance, and some trail reconstruction (see Priority 1 and 2 items in Appendix B). The trail maintenance would result in some minor and short term negative impacts, because the trail reconstruction exposes bare ground until vegetation re-establishes. Once vegetation grows back in the disturbed locations the positive effects of the reconstruction (narrower, drier and more stable trails especially near streams) generally out-weigh the short-term negative effect.

Consistency with the Forest Plan and Laws and Regulations

The proposal and alternatives 1 and 3 meet applicable laws and regulation related to fisheries management on the National Forest. It is also consistent with the Forest Plan and other conservation agreements.

Forest-wide fisheries standards that apply to this project are contained in two documents:

1. The Bitterroot National Forest Plan (USDA Forest Service 1987)
2. The Inland Native Fish Strategy (USDA Forest Service 1995: A-6 to A-13)

There are three Forest-wide fisheries standards in the 1987 Bitterroot Forest Plan that apply to this project, all of which are met with all alternatives:

a) Cutthroat trout populations will be used as an indicator of fisheries habitat changes (page II-20, standard e(7)),
b) Watershed project analysis will estimate the effects of sediment on fish habitat (II-20, e(8)), and
c) The habitat needs of sensitive species (westslope cutthroat trout and western pearlshell mussel), as listed by the Regional Forester, will be considered in all project planning (II-21, e(16)). The Bitterroot Forest Plan (1987) designates the westslope cutthroat trout as the management indicator species for assessing changes to fish habitat on the Bitterroot National Forest (II-20, e(7)).

The Inland Native Fish Strategy (INFISH) amended the Bitterroot Forest Plan in 1995. The INFISH amendment to the Forest Plan established additional Forest-wide fisheries standards, all of which are met with all alternatives. The bottom-line of the Standards and Guidelines in INFISH that pertain to this projects (RM-1, RM-2, RM-3,LH-1, LH-2, and LH-3) is that the project must avoid adverse effects on native fish and not prevent the attainment of Riparian Management Objectives. These objectives include providing cold water, a natural width to depth ratio, adequate pool habitat, and adequate amounts of large wood in the channel.

Threatened, Endangered, and Sensitive Species

The bull trout is listed as a threatened species under the Endangered Species Act and critical habitat has been finalized. The Bitterroot River and Fred Burr Creek are critical habitat (USDI 2010). A document, which combines the Biological Assessment (BA) and Biological Evaluation (BE), has been completed to address the direct, indirect, and cumulative effects on these species' habitats, individual fishes, and populations (FSM 2670).

Recovery Plans

The draft Bull Trout Recovery Plan was released by the U.S. Fish and Wildlife Service in November 2002, and is currently being revised following the recent completion of the listing of critical habitat (USDI Fish and Wildlife Service website: http://www.fws.gov/pacific/bulltrout/Recovery.html). The Bitterroot River drainage downstream of Painted Rocks Dam is one of the core areas for recovery. Within the Bitterroot core area, Fred Burr Creek Drainage is one of the local populations that are focus areas for recovery Bull trout Local Population Map (USDI FWS May 29, 2009). Many recommendations in the 2002 recovery plan apply to the analysis area (USDI 2002; pages 141-162), but the recommendations of the recovery plan most applicable to this project are focused on reducing road-derived sediment inputs. This project would not adversely affect the attainment of any of the objectives in the 2002 recovery plan.

Conservation Strategies and Agreements

In 2010, the Bitterroot National Forest's portion of the Western Montana Bull Trout Conservation Strategy was drafted. Being a "local population" the bull trout habitat of Fred Burr Creek was specifically addressed in this document. There were no direct effects of Fred Burr High Lake or the trial mentioned and the proposed project or alternative do not affect the implementation of the strategy (USFS 2010). There are references to water temperature and reservoir effects, but these are directed toward the effect of the mid-valley reservoir, Fred Burr Lake.

In 2007, conservation agreement for westslope cutthroat trout in Montana was revised (MFWP 2007). The Bitterroot National Forest is a partner in the westslope cutthroat trout conservation agreement. The objectives of the agreement were reviewed and this project would not adversely affect the attainment of any of the objectives.

Wildlife Resource

Analysis Area

The analysis area used for evaluation of effects to wildlife species is the entire Fred Burr Creek drainage west of the National Forest boundary. This drainage provides habitat for wildlife species typically found in coniferous forests of western Montana. Wildlife habitat in the drainage includes riparian vegetation along Fred Burr Creek, large grassy or rocky openings with scattered ponderosa pine and Douglas-fir on many of the south facing slopes, and extensive areas of montane forest dominated by lodgepole pine, Douglas-fir and sub-alpine fir on the north aspects. With increased elevation, the forest transitions into whitebark pine and sub-alpine larch. In addition to streamside riparian zones, portions of the drainage contain seeps and wallows that provide riparian vegetation associated with high water table areas. These wet areas are extremely important as microsites providing habitat for small mammals and birds as well as big game species.

Wildlife species and habitat evaluated in this analysis include: Forest Plan management indicator species, Threatened, Endangered and Sensitive species listed for the Bitterroot National Forest) and species of special interest or with unique or limited habitat in the assessment area (mountain goat).

Management Indicator Species

The Bitterroot National Forest (BNF) Forest Plan lists three wildlife Management Indicator Species (MIS) (FP-II-19 and 20). Pine marten and pileated woodpecker are MIS for old growth habitats. Elk population status is an MIS for commonly hunted ungulate species and the status of their habitat.

Alternative 1

The No Action alternative would not affect habitat or populations for any wildlife MIS.

Alternative 2

This alternative would not affect habitat for any wildlife MIS. Helicopter flights could result in minor, temporary disturbance impacts to individuals of any of these species that happened to be near the flight path of the helicopter when it flew over, landed or took off. Construction activities at the dam could also have minor, temporary disturbance impacts to individual pine marten or elk that were near the construction site. The dam is above the typical elevational limits for pileated woodpecker habitat, so it is likely that activities at the dam would not affect pileated woodpeckers.

Alternative 3 – Access by Packstock

Trail construction included in this alternative could have very minor effects to habitat for pine marten or elk by removing some down logs, snags or green trees within the trail right of way, or by widening the existing trail tread. Trail construction activities could also result in minor, temporary disturbance impacts to individuals of these species that happened to be near that portion of the trail. Construction activities at the dam could also have minor, temporary disturbance impacts to individuals of these species that were near the construction site. Both the trail construction site and the dam are above the typical elevational limits for pileated woodpecker habitat, so it is likely that activities at either site would not affect pileated woodpeckers.

Threatened, Endangered and Candidate Species

The USFWS lists gray wolf (Endangered, 10J population) and yellow-billed cuckoo (Candidate) as Threatened, Endangered or Candidate wildlife species that could occur on the BNF (PF WILD-001). Gray wolves are habitat generalists and are well distributed across the Forest. There are documented occurances of gray wolves in the Fred Burr Creek drainage. Yellow-billed cuckoo habitat occurs in riparian areas with dense cottonwoods, willows, and shrubs. Habitat is limited to areas along the Bitterroot River and major tributaries in the valley bottom. There is

only a limited amount of marginal habitat on the Forest, and none along the Fred Burr Trail or near the dam.

Alternative 1

The No Action alternative would not affect habitat or populations for any Threatened, Endangered wildlife species. The effects call for yellow-billed cuckoo is No Impact. The effects call for gray wolf is No Effect.

Alternative 2

This alternative would not affect habitat or populations of yellow-billed cuckoo. The effects call for this species would be No Impact. Helicopter flights or construction activities at the dam could have minor, temporary disturbance impacts to wolves in the vicinity. The effects call for wolves is Not Likely to Jeopardize the Continued Existence of the Species or Result in Adverse Destruction or Modification of Proposed Critical Habitat. This effects call does not require consultation with the U.S. Fish and Wildlife Service.

Alternative 3

This alternative would not affect habitat or populations of yellow-billed cuckoo. The effects call for this species would be No Impact. Trail construction activities could have very minor effects to wolf habitat. Trail construction activities or maintenance activities at the dam could have minor, temporary disturbance impacts to wolves in the vicinity at the time that activities were occurring. The effects call for wolves is Not Likely to Jeopardize the Continued Existence of the Species or Result in Adverse Destruction or Modification of Proposed Critical Habitat. This effects call does not require consultation with the U.S. Fish and Wildlife Service.

Sensitive Species

Region 1 Sensitive wildlife species that could occur in the project area based on habitat include: black-backed woodpecker, Coeur d'Alene salamander, fisher, flammulated owl, peregrine falcon, western toad and wolverine. Sensitive wildlife species that are not expected to occur in the project area due to lack of suitable habitat include bald eagle, northern bog lemming, northern leopard frog and western big-eared bat.

Alternative 1

The No Action alternative would not affect habitat or populations for any Region 1 Sensitive wildlife species. The effects call for all Sensitive species is No Impact.

Alternative 2

This alternative would not affect habitat or populations of bald eagles, northern bog lemming, northern leopard frog and western big-eared bat because they do not occur in the project area. Flammulated owls may occur in lower Fred Burr canyon, but would not be affected by helicopter

disturbance because they are nocturnal and are fairly tolerant of close approach by humans. A distant helicopter during the day would not disturb flammulated owls. The effects call for these Sensitive species is No Impact.

Helicopter flights would not affect habitat for any sensitive wildlife species. Helicopter flights could have minor, temporary disturbance impacts to black-backed woodpeckers, fishers, peregrine falcons, western toads and wolverines that happened to be near the flight path of the helicopter when it flew over, landed or took off.

Peregrine falcons nest in cliffs near the mouth of Fred Burr canyon, and could be disturbed by flights during the nesting season. However, young peregrines in the Bitterroot drainage typically fledge by early July, and have largely dispersed from their natal territory by mid to late August. A helicopter flight in the fall may cause minor, temporary disturbance to peregrine falcons, but is unlikely to affect breeding success. Coeur d'Alene salamanders are typically underground or in rock crevices during the day, so are unlikely to be disturbed by a helicopter flight.

Construction activities at the dam could have minor, temporary disturbance impacts to black-backed woodpeckers, Coeur d'Alene salamanders, fishers, western toads and wolverine that were in the area during construction. The effects call for these species is May Impact Individuals or Habitat, but Will Not Likely Result In a Trend Towards Federal Listing Or Reduced Viability for the Species or Population.

Alternative 3

This alternative would not affect habitat or populations of bald eagles, northern bog lemming, northern leopard frog and western big-eared bat because they do not occur in the project area. Peregrine falcons and flammulated owls may occur in lower Fred Burr canyon, but there is no suitable habitat for this species near either the trail construction site or the dam. The effects call for these Sensitive species is No Impact.

Trail construction could have minor, temporary impacts to black-backed woodpeckers, fishers, western toads and wolverines that happened to be in the area during construction. Construction activities at the dam could have minor, temporary disturbance impacts to black-backed woodpeckers, Coeur d'Alene salamanders, fishers, western toads and wolverine that were in the area during construction. The effects call for these species is May Impact Individuals or Habitat, but Will Not Likely Result In a Trend Towards Federal Listing Or Reduced Viability for the Species or Population.

Other Wildlife Species

Mountain Goats

Fred Burr canyon supports a robust herd of mountain goats. Winter range for this herd is located on the south-facing canyon walls from the canyon mouth to approximately the Wilderness boundary. Summer range is located from approximately the Wilderness boundary to the Montana – Idaho boundary, but is mostly on the ridges and basins around Totem Peak and the upper end

of the South Fork of Bear Creek. Goat summer range for the Mill Creek herd is located south of Fred Burr Creek in the area around Castle Crag. A third goat summer range is located in the area around Fred Burr Lake south to the lakes in the head of Mill Creek canyon.

Helicopter flights have been shown to disturb mountain goats (Cote 1996). The degree of disturbance is directly related to the distance between the helicopter and the goats. In Cote's study, 85% goats were greatly disturbed by helicopter flights less than 500 meters away, while only 9% of goats were greatly disturbed by flights more than 1500 meters away (*Ibid*). Goats that were greatly disturbed would run to the nearest escape terrain, typically a cliff face, where they may stay alert and forego foraging for some time. Cote (1996) recommended that helicopters remain at least 2 km (1.25 miles) away from mountain goat herds.

Alternative 1

The No Action alternative would not affect habitat or populations for mountain goats.

Alternative 2

Helicopter flights or construction activities at the dam could have minor to severe, but temporary disturbance impacts to goats in the vicinity of flights or construction.

Helicopters should avoid flying low over goats or within 1.25 miles of goats to minimize the degree of disturbance to goats. Given the abundance of goat summer range in several areas throughout the drainage, including the immediate vicinity of the dam site, it may be difficult to completely avoid flying near goats. If goats cannot be avoided, flights should minimize the amount of time spent in close proximity to goats to minimize the risk and duration of severe disturbance.

Alternative 3

Trail construction or construction at the dam could have minor, temporary disturbance impacts to mountain goats that happened to be near the construction sites at the time.

Threatened, Endangered, and Sensitive Plant Species

Introduction

Scope of Analysis

The area analyzed for sensitive plants includes the Fred Burr High Lake Dam and area above, below and adjacent to the Dam that could be impacted by repair activities. Known sensitive plant locations within 10 miles of the area are noted as their presence may increase the potential for these species to occur areas of proposed activities.

Regulatory Framework

An evaluation of threatened, endangered, and sensitive plant species for the Fred Burr High Lake Dam Access Project was conducted in order to determine species most likely to be affected by proposed activities. Plant surveys were previously conducted in 1994 and 2002 in included surveying the dam and the trail leading into the dam. The Montana Natural Heritage Program database and Bitterroot National Forest records were reviewed to identify known sensitive plant populations in or near the proposed project area. Aerial photographs were used to determine potential habitat for sensitive plant species in the project area. Based on this data, the following list was compiled of sensitive plant species that either are known to occur within the project area or have the potential to occur in the area:

Sandweed	*Athysanus pusillus*
Rocky mountain paintbrush	*Castilleja covilleana*
Yellow lady's slipper	*Cypripedium parviflorum*
Diamond clarkia	*Clarkia rhomboidea*
Scalepod	*Idahoa scapigera*
Lemhi Penstemon	*Penstemon lemhiensis*
Wooly headed clover	*Trifolium eriocephalum*
Holly leaf clover	*Trifolium gymnocarpon*

The Endangered Species Act requires that the Forest Service conserve endangered and threatened species. The National Forest Management Act and Forest Service policy direct that National Forests be managed to maintain populations of all existing native plant and animal species at or above minimum population levels. A minimum viable population consists of the number of individuals adequately distributed throughout their range necessary to perpetuate the existence of the species in natural, genetically stable, self-sustaining populations. Plant species for which population viability is a concern are identified by the Forest Service as sensitive species. This category may include federal candidates (plants being studied by the U.S. Fish and Wildlife Service for proposed listing as threatened or endangered status), or plant species proposed for listing as threatened or endangered in the Federal Register (MNHP 2005). Forest Service policy requires that activities conducted on National Forest lands be reviewed for possible impacts on endangered, threatened, or sensitive species (FSM 2670).

Three federally listed threatened plant species occur in Montana: water howellia (*Howellia aquatilis*), Spalding's catchfly (*Silene spaldingii*), and Ute ladies' tresses (*Spiranthes diluvialis*). None of these species have been found on the Bitterroot National Forest. The Northern Region Sensitive Plant Species List (USDA Forest Service 2004) identifies a number of plants for each National Forest for which population viability is a concern. This list includes 32 vascular and two non-vascular plant species on the Bitterroot National Forest.

Affected Environment

Existing Condition

Species listed above that are found within 3-1/2 miles east of the project area include Sandweed

and Scalepod on vernally moist rock ledges along the canyons. Suitable habitat was found for the following species: Sandweed, Rocky mountain paintbrush, Yellow lady's slipper, Diamond clarkia, Scalepod, Lemhi Penstemon, Wooly headed clover, and Holly leaf clover within the project area.

Environmental Consequences

Alternative 1 - No Action

Direct and Indirect Effects

There should be no direct or indirect impacts on sensitive plants or sensitive plant habitat as a result of the No Action Alternative. Alternative 1 (No Action) has no activities planned in areas where potentially suitable sensitive plant habitat occurs, so this alternative is unlikely to adversely affect any habitat.

Cumulative Effects

The cumulative effects of years of dam maintenance have contributed to disturbance at the site and may have been a factor in the introduction of spotted knapweed at the dam site. Recreational use by backpackers, hikers, and other stock users are also contributing factors to weed spread.

Alternative 2 – Proposed Action

Direct and Indirect Effects

Alternative 2 proposes one helicopter fly-in, a log boom being assembled, pack stock coming in for supplies, a work site established, and trail work conducted. It will be necessary to follow strict guidelines to prevent the transport of new weeds into the Wilderness by using helispots that are weed free, and keeping the helicopter, cargo baskets and equipment clean of weed-seed. All guidelines for stock should be followed to keep any new noxious weed seeds from entering the area. Freshly exposed soil on and around the dam should be reseeded with a native seed mix recommended by the Forest Botanist (Refer to Table 2, Terms and Conditions, EA p. 9,10). Soil disturbance could occur by logs being moved around if the terms and conditions are not followed. Logs should be carefully moved to the lake and then transported below the high water mark so that plant habitat will not be damaged.

Although, there were no sensitive plant species found within the project area, there is suitable habitat for several species in the project area where proposed activities will occur. The biological evaluation determined that for individual species this alternative will have "No Impact" however, habitat was found for some listed species and the proposed alternative "May Impact Individuals or Habitat, but Will Not Likely Result in a Trend Toward Federal Listing or Reduced Viability for the Population or Species" (Table 6). Proposed activities would not directly impact any sensitive plant species since none are present but may directly impact potentially suitable habitat if noxious weed seed is transported onto the dam site.

Due to mitigation measures used in protecting rare plant sites and/or potential habitat found in the project area during surveys, there would be no direct and minimal indirect effects to these

species. Therefore, implementation would not contribute to the Federal listing of vascular plants rare plant species.

Cumulative Effects

Since no sensitive plant species were found in the area during our surveys the likelihood of the existence of any of these species historically is probably low. Most likely the amount of disturbance involved in initial dam construction was not sufficient to impact the viability of any plant species. The main impact of recreational and permittee use of the site has been the introduction of spotted knapweed (see Noxious Weed section for more information).

Alternative 3 – Access by Packstock

Direct and Indirect Effects

Alternative 3 proposes greater number of stock for a longer period of time, longer camp site stay, and greater trail work. Effects to the project area would be greater with alternative 3. There would be more habitat disturbance and vectors for noxious weeds. With the additional stock and extra days proposed there will be more impacts to the camp site. Habitat disturbance will still occur even after the terms and conditions and mitigation measures are implemented. It is still necessary to follow strict guidelines to prevent the transport of new noxious weed seeds into the Wilderness. All guidelines for stock should be followed to keep any new noxious weed seeds from entering the area. Soil disturbance should be avoided as much as possible in moving logs down to the lake. Transport logs below the high water mark. Clean all equipment and supplies to ensure weed free transports. Freshly exposed soil on and around the dam should be reseeded with a native seed mix recommended by the Forest Botanist (Refer to Table 2, Terms and Conditions, EA p. 9,10).

Although, there were no sensitive plant species found within the project area, there is suitable habitat for several species in the project area where proposed activities will occur. The biological evaluation determined that for individual species this alternative will have “No Impact” however, habitat was found for some listed species and the proposed alternative “May Impact Individuals or Habitat, but Will Not Likely Result in a Trend Toward Federal Listing or Reduced Viability for the Population or Species” (Table 6). Proposed activities would not directly impact any sensitive plant species since none are present but may directly impact potentially suitable habitat if noxious weed seed is transported onto the dam site.

Due to mitigation measures used in protecting rare plant sites and/or potential habitat found in the project area during surveys, there would be no direct effects, but there will be indirect effects to these species. Implementation would not contribute to the Federal listing of vascular plants rare plant species.

Cumulative Effects

Cumulative effects will be similar to Alternative 2. Although, there is high potential for new populations of noxious weeds and new species that will utilize and minimize rare plant habitat. Soil disturbance will take much longer time to recover and be available for utilization from native or rare plant species.

Summary of Effects to Sensitive Plant Species

None of the alternatives proposed for accessing the dam would adversely impact any Bitterroot Forest Sensitive Plant species since individuals were not found at the dam or on the trail accessing the dam. There may be some adverse impacts on potentially suitable sensitive plant habitat due to the spread or introduction of noxious weeds and soil disturbance. However, these impacts will not likely result in a trend toward federal listing or reduced viability for any sensitive plant species.

Table 6. Bitterroot National Forest Rare Plant Species and Habitat Effects List.

Threatened & Endangered Species					
SPECIES	**Habitat**	**Presence**	**ALT 1 Effects Determination**	**ALT 2 Effects Determination**	**ALT 3 Effects Determination**
Howellia aquatilis Water howellia	Low elevation wetlands surround by deciduous trees	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Silene spaldingii Spalding's catchfly	Open mesic grasslands in valleys and foothills	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Spiranthes diluvialis Ute ladies' tresses	Alkaline wetlands, swales and old, meander channels	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Vascular Sensitive Species					
SPECIES	**Habitat**	**Presence**	**ALT 1 Effects Determination**	**ALT 2 Effects Determination**	**ALT 3 Effects Determination**
Allium acuminatum Taper-tip onion	Grasslands and Ponderosa pine	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI

Allium parvum Dwarf onion	Grasslands and open Ponderosa pine	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Arabis fecunda Sapphire rockcress	Calcareous soils	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Astragalus paysonii Payson's milk-vetch	Found in granite and sandy soils in disturbed areas such as road cuts and edges of clear cuts (ID side)	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Athysanus pusillus Sandweed	Vernally moist rocky areas	INDIVIDUALS: No HABITAT: Yes	NI NI	NI MIIH	NI MIIH
Carex paupercula Poor sedge (Idaho only)	Fens and Bogs (ID side)	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Castilleja covilleana Rocky Mountain paintbrush	Grasslands, Ponderosa pine, and Rocky alpine	INDIVIDUALS: No HABITAT: Yes	NI NI	NI MIIH	NI MIIH
Cypripedium parviflorum Yellow lady's slipper	Riparian	INDIVIDUALS: No HABITAT: Yes	NI NI	NI MIIH	NI MIIH
Clarkia rhomboidea Common clarkia	Open Ponderosa pine	INDIVIDUALS: No HABITAT: Yes	NI NI	NI MIIH	NI MIIH
Douglasia idahoensis Idaho douglasia (Idaho only)	Subalpine (ID side)	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Drosera anglica English sundew	Fens and Bogs	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Dryopteris cristata Crested shield-fern	Fens, Bogs, and Wetland	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI

Epipactis gigantea Giant helleborine	Riparian and Thermal	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Erigeron asperugineus Rough fleabane	Alpine Rocky	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Erigeron evermannii Evermann's fleabane	Alpine Rocky	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Eupatorium occidentale Western boneset	Talus	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Glossopetalon spinescens Green-bush	Granite outcrops	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Halimolobos perplexa Perplexed halimolobos	Grasslands, Sagebrush, and Open Ponderosa pine	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Happlopappus macronema* var. *macronema Whitestem Goldenbush	Alpine Rocky	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Heterocodon rariflorum Western pearl-flower	Canyon seeps	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Idahoa scapigera Scalepod	Vernally moist rocky area	INDIVIDUALS: No HABITAT: Yes	NI NI	NI MIIH	NI MIIH
Mimulus nanus Dwarf purple monkey flower	Grasslands, Sagebrush, and Open Ponderosa pine	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Mimulus primuloides	Fens and Bogs	INDIVIDUALS: No HABITAT:	NI NI	NI NI	NI NI
Penstemon lemhiensis Lemhi penstemon	Grasslands, Ponderosa pine, and Sagebrush	INDIVIDUALS: No HABITAT: Yes	NI NI	NI MIIH	NI MIIH

Penstemon payettensis Payette penstemon	Grasslands, Ponderosa pine, and Sagebrush	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Physaria humilis Bitterroot	Alpine Rocky	INDIVIDUALS: No HABITAT:	NI NI	NI NI	NI NI
Saxifraga tempestiva Storm saxifrage	Alpine Vernal Rocky area	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI
Scheuchzeria palustris	Fens and Bogs	INDIVIDUALS: No HABITAT:	NI NI	NI NI	NI NI
Tonestus aberrans Idaho goldenweed	Granite outcrops	INDIVIDUALS: No HABITAT:	NI NI	NI NI	NI NI
Trifolium eriocephalum Woolly-head clover	Mixed conifer and Open meadows	INDIVIDUALS: No HABITAT: Yes	NI NI	NI MIIH	NI MIIH
Trifolium gymnocarpon Hollyleaf clover	Grasslands, Ponderosa pine, and	INDIVIDUALS: No HABITAT: Yes	NI NI	NI MIIH	NI MIIH
Veratrum californicum	Riparian	INDIVIDUALS: No HABITAT:	NI NI	NI NI	NI NI
Non-Vascular Sensitive Species					
SPECIES	**Habitat**	**Presence**	**ALT 1 Effects Determination**	**ALT 2 Effects Determination**	**ALT 3 Effects Determination**
Meesia triquetra 3-Angled	Fens and Bogs	INDIVIDUALS: No HABITAT:	NI NI	NI NI	NI NI
Nodobryoria subdivergens Old Man's Beard	Alpine rocky	INDIVIDUALS: No HABITAT: No	NI NI	NI NI	NI NI

NI = No Impact

MIIH = May Impact Individuals or Habitat, but Will Not Likely Result in a Trend Toward Federal Listing or Reduced Viability for the Population or Species.

LIFV* = Likely To Impact Individuals or Habitat with a Consequence that the Action may Contribute Towards Federal Listing or Result in Reduced Viability for the Population or Species.

BI = Beneficial Impact

***Trigger for a Significant Action**

Noxious Weeds

Introduction

Noxious weeds are non-native aggressive plants brought to North America either accidentally or intentionally. These species out-compete our native species for water, nutrients, and light which in turn crowds out and reduces populations of native species. Noxious weeds degrade recreation areas, increase fire risk, reduce forest health, decrease habitat for wildlife, invade croplands / pastures, and decrease availability of livestock forage. Certain species are potentially toxic to humans and other animals. Seeds can remain viable for many years and they have extensive root systems which can re-sprout even after the tops of plants have been removed making it critical to use early detection and rapid response. By detecting noxious weed sites early and rapidly treating them, this decreases the chance for new populations establishing, and increases the chance to eradicate noxious weed species out of the area. Noxious weeds have no natural predators at the infestation site since their native habitat is outside the U.S. which makes it very difficult to control these species. Noxious weeds are primarily found in disturbed areas often along roads and trails. Noxious weeds were nonexistent before the arrival of European settlers. Native vegetation and habitats would have been more intact in the Bitterroot Valley before the arrival of European settlers.

Regulatory Framework

Bitterroot National Forest Plan, 1987: page II-3 (9) Control noxious weeds to protect resource values and minimize adverse effects on adjacent private land. Mitigation measures for noxious weed prevention are intended to minimize adverse effects.

Federal Noxious Weed Control Act (PL-93-629): The Act provides for the control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health. Mitigation measures for noxious weed prevention comply with the intent of this Act.

Affected Environment

Existing Condition

During surveys for rare plant species, the project area was also surveyed for noxious weeds during the 1994 & 2002 field seasons. Surveys documented one species of noxious weeds near the project area (Table 7).

Centaurea stoebe ssp. *macranthos* (Spotted knapweed) was found on the trail going up to the project area. This species is of particular concern on the Bitterroot National Forest since treating populations of noxious weeds is a priority for the Forest in areas of high concern such as wilderness areas. Some of the populations of these species are currently small and may have success in eradication from the project area. Populations have been treated in the past and continue to be treated. Since the populations are not large it will be monitored annually and treated as necessary until it is controlled.

Table 7. Noxious weed species found within the project area.		
Scientific Name	**Common Name**	**Listing Status**
Centaurea stoebe	Spotted Knapweed	Priority 2B

Species are listed using the guidelines from the state of Montana	
Priority 1A	These weeds are not present in Montana. Management criteria will require eradication if detected; education; and prevention
Priority 1B	These weeds have limited presence in Montana. Management criteria will require eradication or containment and education.
Priority 2A	These weeds are common in isolated areas of Montana. Management criteria will require eradication or containment where less abundant. Management shall be prioritized by local weed districts.
Priority 2B	These weeds are abundant in Montana and widespread in many counties. Management criteria will require eradication or containment where less abundant. Management shall be prioritized by local weed districts.
Priority 3	Regulated plants: (Not Montana listed noxious weeds). These regulated plants have the potential to have significant negative impacts. The plant may not be intentionally spread or sold other than as a contaminant in agricultural products. The state recommends research, education and prevention to minimize the spread of the regulated plant.

Spotted Knapweed (*Centaurea biebersteinii* {*C. maculosa*})

The Bitterroot National Forest is currently infested with about 274,000 acres of spotted knapweed (USDA Forest Service 2004). It generally occurs below 6,500 feet on the Bitterroot Forest, except on extreme southern aspects. There is a strong correlation between canopy closure and knapweed coverage; with more sunlight, there is an increased likelihood of infestation. Knapweed infestation is also correlated with aspect, soil type and the degree of soil disturbance. It is most commonly found on dry, sterile, gravelly, or sandy soils in pastures, and will quickly invade disturbed sites such as road and railroad right-of-ways, waste places, abandoned fields, timber harvest units and overgrazed rangeland. It is not common on cultivated land or on irrigated pasture. Spotted knapweed is not usually found in shaded areas. Ponderosa pine and/or Douglas-fir bunchgrass types, dry shrub communities and scree types are the most susceptible to knapweed invasion (Losensky 1987).

Current treatments for spotted knapweed include mechanical (hand pulling and mowing), biological and chemical. Hand pulling has proven to be up to 35% effective, costs up to $8,498 per acre and can only be accomplished for small areas (USDA Forest Service 2003a). Mowing has been done at recreation sites to make outdoor activities more accessible, although it does not reduce the number of plants. Several biological agents have been released throughout the Forest

specific for spotted knapweed.

Biological controls are more of a long-term solution and no decrease in knapweed populations is expected until these insect levels have increased. Biological control agents should decrease knapweed seed production by up to 80% once they become well established. In the meantime, chemical control methods (especially Picloram) appear to be the most successful for treatment of smaller infestations of knapweed or to aid in containment of existing populations (USDA Forest Service 1996a). Spotted knapweed is listed by the state of Montana as a priority 2B.

Environmental Consequences

Alternative 1 – No Action

Direct and Indirect Effects

If the No Action Alternative is selected weeds would likely continue to spread at a very low to moderate rate due to various factors. Wildlife, humans, stock, pets, and wind can continue to spread invasive plants by transporting weed seed into open areas (Zouhar 2001a). It's more likely that weeds will spread into canopy openings or disturbed sites created in areas that are adjacent to weed-infested sites. Spotted knapweed, in particular, has an affinity for open areas on dry aspects and can invade these openings without soil disturbance as long as a seed source is available nearby (Zouhar 2001a).

Cumulative Effects

The cumulative effects of years of dam maintenance and recreation have contributed to disturbance at the site and may have been a factor in the introduction of spotted knapweed near the dam site. Spotted knapweed is present along the trail leading up to the dam. Recreational use by backpackers, hikers, and other stock users are definitely contributing factors to weed spread. In addition, wildlife may transport weed seed to new areas. The Fred Burr High Lake Dam is periodically monitored for noxious weeds and have been spot treated with herbicides and/or hand pulled for several years to control known populations.

Alternatives 2 and 3

Direct and Indirect Effects

The helicopter flight into the dam site, proposed for alternative 2, to bring in equipment should not contribute to the spread of noxious weeds if proper prevention measures are used. This includes using weed-free helispots both inside and outside the Wilderness and keeping all cargo and netting free of weed seed. The supply loads from stock, proposed for both alternatives, has the potential to introduce invasive seed. Weed control measures including using weed seed free forage for stock are required (as outlined in Forest Service Manual 2000, Zero Code 2080 – Noxious Weed Management; Supplement R1 2000-2-1-1). It is recommended that stock users also feed their animals weed-free feed for several days prior to entering National Forest lands. The trail and dam are periodically treated with herbicides or hand pulled to control spotted knapweed.

Alternative 2 and 3 will require more stock trips into the dam than the No Action Alternative, thereby increasing the risk of transporting weeds into the Wilderness and dam site. People working on the dam should inspect their clothing and remove and dispose of any weed seed prior to entering the wilderness. Any camping equipment should also be inspected to prevent new weed populations (Refer to Table 1, Terms and Conditions, EA p 9, 10) Camp sites, any new trail work areas, and any disturbed sites should be inspected for new populations of noxious weeds

Cumulative Effects

The cumulative effects of past activities in Alternative 2 are similar to those for Alternatives 1. The risks associated with weed spread along the trail by stock and at the dam by helicopter, stock, equipment and workers would be greater. Using weed prevention measures (EA p. 9, 10) for accessing and working at the dam site should reduce the risk of introducing or spreading noxious weeds during the proposed activities.

Noxious weeds have started to impact plant communities, especially in drainages and along roadsides in the project area. Foreseeable activities in the project area are expected to be similar to past and current activities: recreations use, stock, and wildlife. These types of activities would result in new disturbed sites available for colonization by existing noxious weed populations, and they offer the possibility of introduction of new noxious weed species under any alternative, including the No Action alternative. Noxious weed sites found within the project area have been documented and mapped. Mitigation measures have been put in place eliminates any potential impacts that noxious weeds would have from any action that may occur from this project. Given unpredictable vectors for weed spread, such as wildlife, water, and wind currents, it is not possible to quantify with any degree of confidence the rate of weed spread in the future, or even the degree by which that potential would be increased by the proposed actions. However, the proposed action, inclusive of mitigation measures, would minimize the spread of noxious weeds, and treatments would reduce existing weed populations. The Forest Service is working to increase communication and treatment opportunities with other land owners, agencies, and organizations through the cooperation with the Ravalli County Weed Board with the hope of increasing the effectiveness of treatments and a cumulative decrease in the spread of noxious weeds. Due to this cooperation, many noxious weed sites have been located and treated on federal and adjacent non-federal lands. This communication has also increased the educational outreach to land owners about the importance in treating and managing noxious weeds, hopefully reducing the overall spread of noxious weeds throughout the Forest.

Consistency with the Bitterroot Forest Plan and Other Regulatory Direction

All alternatives would be consistent with Forest Plan goals to “control noxious weeds to protect resource values and minimize adverse effects on adjacent private land”. Mitigation measures and terms and conditions require all equipment to be cleaned prior to entering the project area. All ground-disturbing activities are required to follow certain weed prevention methods as outlined in the Noxious Weed supplement to FSM 2080 (PFG-16.

Cultural Resources

Analysis Area

The area analyzed for potential effects to cultural resources includes all national forest lands which may be impacted by the Fred Burr Lake Dam access proposal. This area of potential effect includes locations where direct effects might occur as well as areas where indirect effects (visual, auditory, or atmospheric) may influence cultural resources or their setting.

Methodology Used

The inventory conducted within the Fred Burr Lake Dam Access project area complied with all applicable federal requirements and were performed by cultural resources specialists who met or exceeded state and federal professional standards for their positions. See PF XX for more details.

Desired Resource Condition

Cultural resource inventory of all moderate-to-high probability terrain, and a representative sampling of low-probability terrain (as described in the Forest's Site Identification Strategy) within the proposed project area of potential effect are completed. Previously unknown sites will be recorded and evaluated, and their National Register eligibility status determined. Significant historic properties will be preserved and monitored.

Regulatory Framework

The primary legislation governing modern cultural resource management is the National Historic Preservation Act of 1966 (NHPA) (amended 1976, 1980, and 1992). All other cultural resource management laws support clarify or expand on NHPA. Specific Forest Service cultural resource management practices are based on Federal Regulations 36CFR800 (Protection of Historic Properties), 36CFR63 (Determination of Eligibility to the National Register of Historic Places), 36CFR296 (Protection of Archaeological Resources), and Forest Service Manual 2360 (FSM2360).

Other laws addressing various aspects of cultural resource management on the National Forests include the National Environmental Policy Act of 1969 (NEPA), the National Forest Management Act of 1976 (NFMA), the Antiquities Act of 1906, the Historic Sites Act of 1935, and the Archaeological Resource Protection Act of 1979 (amended 1988) (ARPA). Along with ARPA, two other regulatory acts, the Native American Graves Protection and Repatriation Act (NAGPRA) and the American Indian Religious Freedom Act of 1978 (AIRFA), define the role of Tribes in federal cultural resource management. The National Historic Preservation Act also specifically requires Tribal participation in the consultation process.

Affected Environment

Fred Burr Lake is situated high on the east slope of the Bitterroot Divide, at the headwater of Fred Burr Creek. The creek flows easterly through a steep, glaciated canyon to the Bitterroot Valley, where it enters the main Bitterroot River. The Bitterroot's east-west canyons have for centuries been important travel routes used by the Bitterroot Salish, Kootenai, Nez Perce and other tribes accessing the fish and game-rich Clearwater River country to the west and the buffalo country of the Yellowstone and Missouri Rivers to the east. The Bitterroot Salish used these canyon trails to access seasonal hunting and gathering grounds. Evidence of tribal use remains in the canyons in the form of trails, cambium-peeled trees, talus-pit hunting blinds, rock hearths, pictographs and lithic sites.

With Euro-American settlement of the Bitterroot Valley during the second half of the nineteenth century, the canyons became popular for hunting, prospecting and, eventually, for recreational purposes. Although the canyons themselves were too steep and rocky for logging or agriculture and in most places proved mineral-poor, the lower slopes of the mountains' east face were logged off by the early 1900s and their east-flowing streams were tapped for irrigation water. The expansion of irrigated farming in the late 19th and early 20th century led to the construction of dams on many of the small natural high-elevation lakes at the streams' headwaters. By expanding the lakes' storage capacities, irrigators sought to achieve both greater water supply and a longer irrigation season. Many of these historic dams continue to serve that function today. Along with their associated ditches, flumes, trails and cabins, the dams are considered important cultural resources on the Bitterroot National Forest, and many are eligible for the National Register of Historic Places.

Environmental Consequences

Alternative 1, 2, 3 Effects

Direct, Indirect, and Cumulative

Desired cultural resource inventory of the project area has been completed. Fred Burr Lake Dam (24RA0822) has been recorded and evaluated. Continued maintenance of the dam will protect it from degradation, provided there are no significant modification in its design, materials, workmanship, or setting.

Only one cultural site – the dam itself – is known to exist within the Fred Burr Lake Dam Access project area of potential effect. The Forest's Heritage Progam Manager has recorded and evaluated the dam, and determined that it is Eligible for the National Register of Historic Places. She also has determined that the proposed access to the dam will constitute No Adverse Effect on the dam. Concurrence in these determinations was received from the Montana State Historic Preservation Office on March 10, 2011, thereby fulfilling compliance with National Historic Preservation Act Sec. 106.

Alternative 2 Only Effects

Direct, Indirect, and Cumulative

Helicopter access to Fred Burr Lake dam would constitute only a temporary visual and auditory adverse effect on the dam's setting, provided there is no landscape modification (excavation) necessary to accommodate the helicopter or slingload delivery.

Consistency with the Forest Plan and Laws and Regulations

Fred Burr Lake dam (24RA0822) was recorded and evaluated as Eligible for the National Register of Historic Places. On March 10, 2011 the Montana State Historic Preservation Office (SHPO) concurred with the determination that the dam is Eligible for the National Register, and that the proposed access will have No Adverse Effect on this historic property.

The Bitterroot Forest Plan tiers to the laws and regulations, cited on page 52, as do Forest-wide Management Standards calling for the preservation of significant cultural resources in place wherever possible, cultural resource inventory for most ground-disturbing activities, and consultation with tribal religious leaders on spiritual sites.

The Confederated Salish and Kootenai Tribes of the Flathead Reservation regard the entire Bitterroot National Forest as an area of cultural concern. The tribes exercise treaty rights on the Forest under the 1855 Hellgate Treaty, and are consulted on all Forest undertakings. Consultation with the Tribes regarding this project was initiated through the Tribal Preservation Department in 2009 and completed on November 30, 2010, with no Tribal cultural concerns identified.

AGENCIES AND PERSONS CONSULTED

The Forest Service consulted the following individuals, Federal, State, and local agencies, Tribes and non-Forest Service persons during the development of this environmental assessment:

INTERDISCIPLINARY TEAM MEMBERS

Zac Hiedeman – Engineering
Deb Gale – Wilderness/Recreation/Trails
Bill Goslin- Wilderness/Recreation/Trails
Robin Taylor-Davenport – Botanist
Dave Lockman – Wildlife
Rob Brassfield – Fisheries
Ed Snook – Hydrology
Mary Williams – Heritage Resource
Elizabeth Ballard – Interdisciplinary Team Leader

FEDERAL, STATE, AND LOCAL AGENCIES*:*

Montana State Historic Preservation Officer
Montana Department of Environmental Quality
The Confederated Salish and Kootenai Tribes of the Flathead Reservation (November 2010)
Native American Tribal members were consulted as required by the National Historic Preservation Act, the National Environmental Policy Act, and the American Indian Religious Freedom Act.
U.S. Fish and Wildlife Service
Mack Long - Montana Fish Wildlife and Parks