National Park Service
U.S. Department of the Interior

Obed Wild and Scenic River
Wartburg, Tennessee

Obed Wild and Scenic River

Draft Climbing Management Plan
and
Environmental Assessment

Public Review Draft
February 2002

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1.0 Purpose of and Need for Action

1.1 Project Location

Obed Wild and Scenic River (Obed WSR) is located on the Cumberland Plateau in Morgan and Cumberland Counties, Tennessee (Figure 1). The Obed WSR consists of sections of four streams: Daddys Creek, Clear Creek, Emory River and the Obed River. Forty-five river miles flow through some of the most rugged and undeveloped terrain in east Tennessee. The existing climbing area is located near the confluence of Clear Creek and the Obed River (see Figure 1).

1.2 Description of Proposed Action

The proposal is to protect the natural and cultural environment of the Obed WSR while providing climbing opportunities to park visitors.

1.3 Need for a Plan

Rock climbing has exploded in popularity in the United States over the last 15 years. Climbing at Obed WSR has followed this pattern (see Section 1.4 History of Rock Climbing at Obed WSR), which has had consequences for the climbing experience and the environment. Despite large numbers of climbers at Obed WSR, climbing has remained unmanaged and climbers are essentially self-regulated. Adverse impacts to the environment have occurred as a result of climbing, and questions have arisen about whether any sensitive, threatened, or endangered plant or animal communities have been harmed. A plan is therefore being prepared to:

- Meet the National Park Service (NPS) mandate to manage recreational use;
- Protect the natural and cultural environment;
- Provide rock climbing opportunities; and
- Protect the experiences of other park visitors.

1.4 History of Rock Climbing at Obed WSR

Rock climbing at the Obed WSR began in the mid-1970s, around the time that Congress amended the Wild and Scenic Rivers Act to include the Obed River system (1976). At that time, a group of climbers from the Knoxville, Tennessee area began exploring the Obed, bouldering and using traditional means[1] to climb the more obvious routes. In the 1980s, however, while many other areas of the country were seeing substantial growth of climbing activity due to an increase in popularity of the sport, the Obed lay in obscurity, with little or no climbing activity. Then, in the early 1990s, another group of Knoxville climbers began exploring the Obed River system. They found climbing route potential near the confluence of Clear Creek and the Obed River and began establishing traditional and sport routes. As the popularity of sport climbing exploded in the U.S. in the 1990s, more and more sport routes were established at Obed WSR. The park became known for quality routes and climbers flocked to the area. These climbs were popular because of the quality of the rock, the safety of the routes, and the overhanging nature of the cliff faces.

[1] Definitions of the various types of climbing practiced Obed Wild and Scenic River at Obed WSR are located in Section 6.0 Glossary of Climbing Terms.

Between 1993 and 1996, Obed WSR saw a 20% annual increase in its number of climbers. This increase tapered off and from 1996 to 2000 there was a 10% annual increase in the number of climbers using the area. Over the past several years there has been no significant increase in climbing taking place at the Obed (Turan, 2001). Today, most of the climbers coming to the Obed use the area to sport climb and only a handful of climbers are practicing traditional climbing. Articles on climbing at Obed WSR have appeared in a number of national magazines including *Rock and Ice* (3 articles), *Climbing* (3 articles), and *Boulderdash* (several short articles).

In the early years of Obed climbing only a small number of people participated in "bouldering" (see Section 6.0 Glossary of Climbing Terms). About five years ago bouldering began to increase in popularity nationwide and bouldering at Obed followed suit. Lilly Boulders has become a popular area and provides a wealth of high quality bouldering routes or "problems"[2] for all skill levels.

Currently there are approximately 300 sport routes and 40 traditional routes within the boundaries of Obed WSR. Many of these routes occur on land that is owned by The Nature Conservancy, a not-for-profit conservation organization. Visitors to the park established all climbing routes at Obed WSR; the NPS has no officially designated routes for rock climbing. It is estimated that Obed WSR has 2,600 climber use-days per year.

Even though climbing has been an established recreational activity at Obed WSR for twenty-five years, the NPS has done little to manage climbing in the park. In August 2000, the NPS placed a moratorium on establishing new fixed anchors at Obed WSR until park managers could gain an understanding of the impacts of climbing on natural and cultural resources and prepare a plan to manage future climbing activities.

1.5 Issues

1.5.1 Issues to be Addressed

The following list of issues was raised by the public through external scoping or by agency personnel during internal consultations. The issues include impact topics for analysis or concerns that must be addressed in the alternatives.

- Climber education
- Fixed anchors / bolts
- Safety
- Species of concern
- Sport climbing
- Traditional climbing
- Rappelling
- Resource protection
- Bouldering
- New climbing routes
- Recreational experiences
- Parking and access
- Visual resources

1.5.2 Issues Dismissed from Further Analysis

The following topics have been dismissed from further analysis because they either do not exist at Obed or they will not be impacted by any of the plan alternatives.

[2] A particular sequence of bouldering moves is called a boulder "problem".

- Wetlands and floodplains
- Prime or unique farmlands
- Wilderness
- Environmental Justice (per Executive Order 12898)
- Migratory birds
- Mineral resources
- Air Quality

1.6 Law, Regulation, and Policy

This Climbing Management Plan (CMP) and Environmental Assessment (EA) is being prepared in accordance with federal law, regulation, and policy. The EA complies with the National Environmental Policy Act (NEPA) of 1969, and the CMP complies with National Park Service policy for implementation planning, as described in *Director's Order #2, Park Planning*. The EA and CMP have been combined in this document to streamline the review process and facilitate understanding by the public. Should one of the alternatives in this plan be selected for implementation, the decision will be prepared as a separate, stand-alone document along with the Finding of No Significant Impact (FONSI) that is required under NEPA.

Laws, regulations, and policies that govern the management of Obed Wild and Scenic River contain few specific references to climbing. Pertinent citations follow:

- National Park Service Organic Act of 1916

  This act declares that the National Park Service is established to:

  …conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

- National Park Service Management Policies 2001

  Section 8.2. of the Management Policies states, in part:

  To provide for enjoyment of the parks, the National Park Service will encourage visitor activities that:
  - *Are appropriate to the purpose for which the park was established;*
  - *Are inspirational, educational, or healthful, and otherwise appropriate to the park environment;*
  - *Will foster an understanding of, and appreciation for, park resources and values, or will promote enjoyment through a direct association with, interaction with, or relation to park resources; and*
  - *Can be sustained without causing unacceptable impacts to park resources or values.*

  Unless mandated by statute, the Service will not allow visitors to conduct activities that:
  - *Would impair park resources or values;*
  - *Create an unsafe or unhealthful environment for other visitors or employees;*
  - *Are contrary to the purposes for which the park was established*

  Management controls must be imposed on all park uses to ensure that park resources and values are preserved and protected for the future.

Section 8.2.2 proceeds:

Examples of recreational activities that may be encouraged or allowed include, but are not limited to…mountain and rock climbing… However, not all of these activities will be appropriate or allowable in all parks; that determination must be made on the basis of park-specific planning.

Restrictions placed on recreational uses that have been found to be appropriate will be limited to the minimum necessary to protect park resources and values, and promote visitor safety and enjoyment.

- Wild and Scenic Rivers Act, Public Law 90-542 (enabling legislation for Obed Wild and Scenic River)

  It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.

- General Management Plan (GMP) for Obed Wild and Scenic River

  The selected alternative in the GMP includes the following list of recreational values and opportunities at Obed: "fishing, hunting, boating, climbing, hiking, swimming, picnicking, and camping." Other than that statement, the selected alternative is silent about climbing.

Other laws, regulations, and/or policies relevant to this plan are:

- Director's Order #12: Conservation Planning, Environmental Impact Analysis, and Decision Making
- Council on Environmental Quality Regulations, 40 C.F.R. 1500-1508
- Endangered Species act of 1973

1.7 Goal and Statement of Philosophy for this Plan

Based on the relevant legislation, policies, and planning documents, the following goal and statement of philosophy have been developed for the climbing management plan:

Philosophy - The NPS views rock climbing at Obed WSR as a recreational opportunity that must be managed in accordance with the NPS's fundamental purpose of protecting the environment and providing for the enjoyment of its visitors.

Goal – The NPS will protect the natural and cultural environment of Obed WSR, provide climbing opportunities, and protect the experiences of other visitors.

This plan serves as the blueprint to accomplish this goal.

1.8 Objectives

The following are the objectives of the climbing management plan and will help meet the goal stated above:

1. Protect natural resources, especially sensitive, threatened, or endangered ecological communities;
2. Provide for a diversity of recreational experiences, including climbing;
3. Engage the climbing community in cooperative stewardship of natural resources and the climbing experience;
4. Build a foundation of data (status of natural resources, climbing routes and use patterns, and visitor effects on resource values) as a basis for future decision making;
5. Provide a framework for a climber education program;
6. Provide a clear decision-making framework and action timetable;
7. Initiate a continuing planning process that responds to new data and changes over time; and
8. Assure regular monitoring of use and resources.

2.0 Alternatives

2.1 Alternative A - Preferred

The following alternative was developed with the assistance of a climbing working group that was convened on 21 February 2001. More information on this working group can be found in Section 5.0, Coordination and Public Involvement.

2.1.1 Research to Support the Plan

There is a recognized lack of information regarding rock climbing at Obed WSR. Specifically, little is known about rock climbing use levels or the plant and animal communities that are affected by climbing activities. The NPS knows generally where climbing and bouldering occur, and climbers have inventoried routes for the purpose of preparing guidebooks, but the NPS has never sponsored a detailed study of climbing routes, use levels, or impacts.

Inventory and Mapping of Climbing and Bouldering Routes

The most detailed information on climbing routes at Obed WSR is located in a climbing guidebook by Watford (1999). While informative, it is not known if this text is complete or represents the entirety of both sport and traditional climbing routes in the park. The NPS must have a complete inventory of all climbing and bouldering routes to effectively manage climbing and protect the natural environment. Therefore, this plan proposes an inventory and mapping of climbing routes and bouldering rocks. The study would be funded by the Access Fund, a non-profit organization working to maintain access to climbing areas and protect the climbing environment.

Inventory of Sensitive Habitats and Rare Species

In order to support this plan, a resource inventory is needed of ecological communities, especially sensitive and rare species, along the cliffline. A detailed inventory would allow the park to develop appropriate management prescriptions for the climbing areas.

In order to gain an improved understanding of the cliffline communities and species that occur in and adjacent to climbing areas, a detailed natural resources inventory is proposed. The inventory will dovetail with the vertebrate and vascular plant inventories funded by the NPS Inventory & Monitoring program, which will begin during fiscal year 2002. Because some clifflines are being used by climbers, a concentrated inventory, focusing on rare and sensitive resources, is necessary to adequately assess potential threats in the impacted area. A concentrated inventory is also practical in this case, because of the limited geographic area that is involved. The inventory will cover the roughly 2.2 miles of cliffline within Obed WSR that are currently being used for climbing and would include the NPS and Nature Conservancy-owned land.[3] The NPS has requested and been approved to receive funding for this project, which should start during fiscal year 2002.

[3] The NPS holds a scenic easement on The Nature Conservancy parcel that provides for joint management of the land and visitor use that occurs on this tract.

Rock Climbing Use Levels

The NPS would conduct research to determine the types, amount, frequency, and seasonality of rock climbing that occurs at Obed WSR, and socio-demographic information on rock climbers using the park. This information would assist in understanding the relationship of climbing to resource impacts, and would help guide future management prescriptions. The Access Fund would provide some or all of the funding necessary to complete this study.

2.1.2 Moratorium on New Fixed Anchors

In August 2000, the Unit Manager of Obed WSR issued a moratorium on new bolts and other fixed anchors in the park. The intent was to prevent any new impacts that would result from additional bolted sport routes until a climbing management plan could be developed and the issue further evaluated. Due to the lack of information about climbing use levels and sensitive resources, the NPS would extend the moratorium on new fixed anchors for the Obed WSR until results from the above prescribed studies are received (a period of 3-5 years). At that time, the NPS, in close coordination with the climbing working group described in Section 5.0 of this plan, would evaluate research results and make a determination about the ecological effects of the use of the climbing areas. The NPS would then be able to make a determination about the efficacy and appropriateness of new routes and fixed anchors. Based on the study results, the moratorium would be 1) implemented as a permanent management prescription for the park, or 2) lifted for some or all of the climbing areas within the park (see Section 2.1.3 Climbing Zone).

2.1.3 Climbing Zone

The definition of sport climbing provided by the Access Fund includes the following: "…sport climbing has allowed climbers to push their ability to very high standards… Previewing and practicing a climb is common, and the emphasis is on the technical difficulty of a climb" (see the glossary in Section 6.0 of this plan for a complete definition of sport climbing). Sport climbs are "protected exclusively with fixed protection, usually bolts" (Access Fund, 2001). With its emphasis on physical ability and technical difficulty, and the permanent nature of the requisite protection, sport climbing is less of a nature- and park-dependent activity than traditional or other types of climbing. Therefore, it is appropriate to place limits on the geographic scope of sport climbing at Obed WSR by defining a zone within which sport climbing may occur and outside of which the activity is not allowed.

Sport climbing would be allowed on established routes within existing climbing areas (hereafter known as the "climbing zone" [see Figure 2]). The climbing zone includes "Lilly Bluff", "Obed River", "North and South Clear Creek", and the "Y-12 Wall"; as defined and delineated on the attached map (Figure 2). Sport climbing outside this zone would be prohibited.

Replacement of Existing Fixed Anchors

Climbers would be responsible for replacing existing bolts and other fixed anchors after consultation with the NPS.

New Sport Climbing Routes

After the research that is prescribed in Section 2.1.1 of this plan is completed, the NPS would re-convene the climbing working group to review the results. The NPS would then decide, in general, whether new sport climbing routes are warranted and appropriate within the climbing

zone. The following criteria would guide and direct the decision on whether to allow new sport climbing routes (Figure 3 provides a summary of these criteria in flow chart format):

1. Are sensitive, threatened, or endangered plant or animal communities present within the climbing zone?
2. If present, are climbing activities likely having an adverse impact on these communities?[4]

   - ✓ If the answer to either question is "no", then further sport routes would be allowed by permit within the climbing zone.
   - ✓ If the answer to both questions is yes, the NPS and the working group would determine if the impacted resources can be avoided through climber education or temporary or permanent closures of selected climbing routes. If permanent closure is the selected option, appropriate restoration efforts would be conducted. In addition, new routes could be allowed by permit within the climbing zone in areas where the species of concern do not exist or are not being impacted.
   - ✓ If the answer to the first question is yes and the second question is unclear or indeterminate, the NPS would conduct further research to determine if climbing activities are having a detrimental effect on the species of concern. The moratorium on new fixed anchors would remain in effect until a determination is made.

The moratorium on new fixed anchors would be effectively rescinded for those areas where new sport routes are deemed appropriate. This would only include areas within the climbing zone described in Section 2.1.3 above and depicted on Figure 2. Climbers would then adhere to the following guidelines:

- *New Routes by Permit* – Bolts, fixed anchors, and new sport routes would be allowed by NPS permit. Climbers would notify the NPS of desired locations for new routes. The NPS would conduct necessary environmental compliance reviews and prepare a permit(s) for the new route(s) if appropriate. The decision to grant or not grant a permit for a new sport route would be based on whether sensitive natural or cultural features exist in the area, the quality of the climbing experience, and the density of the routes in the area.

- *Power Drills* – The Obed climbing working group feels that placing a bolt with a power drill has less overall auditory impact to park visitors and wildlife than placement by a hammer. Although power drilling is louder than hand drilling, the noise is shorter lived. Therefore, power drills would be allowed to establish new routes, but would be part of the NPS permit, which would establish limits on the amount and timing of their use.

Desired Future Conditions for the Climbing Zone

Within the climbing zone, rock climbing opportunities are available. Climbers and their equipment are often noticeable by the visiting public. Climbing is a dominant form of recreation, and some resource impacts could occur as a result of climbing, climbers, and climbing equipment. Sensitive, threatened, or endangered plant and animal communities are protected. The zone is managed to prevent significant impacts to natural resources and provide a quality climbing experience.

[4] If adverse impacts are found to be occurring to federally-listed threatened or endangered species, the NPS would consult with the U.S. Fish and Wildlife Service.

Carrying Capacity for the Climbing Zone

Carrying capacity is defined as the number of climbers that the climbing zone will accommodate given the desired natural resource conditions and visitor experiences (the desired conditions are outlined in the above "Desired Future Conditions" statement). Implementing the management actions described in section 2.1 Alternative A (Preferred) will keep the natural resource carrying capacity of the area from being exceeded. The social carrying capacity of the climbing zone, however, could be exceeded at some future point if demand for climbing opportunities in the Southeast increases substantially. Should this occur, this climbing management plan would be amended to prescribe management actions that would balance the demand for climbing opportunities with available resources.

2.1.4 Traditional Climbing

In traditional climbing, the focus is more on nature and the outdoor world than with sport climbing, and protection used in traditional climbing usually does not damage the rock (see the glossary for a complete definition). Impacts associated with traditional climbing are typically less than those of sport climbing (this is a generalization, however; each area must be assessed on a case-by-case basis). It is therefore appropriate to view traditional climbing like hiking, paddling, and other park-dependent activities at Obed WSR.

Traditional climbing would be allowed throughout the entire Obed WSR (provided that the routes do not require fixed anchors), but would be monitored and subject to route-specific closures if the activity results in resource damage (similar to what would occur with other recreational activities that are causing unacceptable impacts). Any traditional routes that require fixed anchors would be subject to the same conditions that apply to sport routes. These conditions are discussed in Section 2.1.3 Climbing Zone.

2.1.5 Rappelling

Rappelling is the method by which a climber descends a rope, usually by using a mechanical friction device (see Section 6.0 Glossary for more information). At Obed WSR, rappelling is usually practiced by the following users or for the following reasons: 1) search and rescue training by groups such as local police and the NPS; 2) climbers wishing to access the bottom of the cliff; 3) groups practicing climbing and rappelling techniques (i.e., climbing clubs, Boy Scouts), and 4) as a purely recreational activity. At Obed WSR, as in much of the Eastern United States, fragile vegetation communities grow on the edge of the cliff. People wishing to rappel often have to use trees for safety anchors, and staging at the top of the cliff can impact sensitive vegetation and erode thin soils. Therefore, under this alternative, rappelling would be restricted to two designated areas that are depicted on Figure 2. It is understood that within these rappelling areas, visitors may have to use trees as rappel anchors. The NPS would develop a list of recommended procedures to be followed to protect trees that may be used as anchors.

2.1.6 Other Areas and Activities

Areas outside the climbing zone (see Figure 2) would remain free of bolts and other fixed anchors. In addition to traditional climbing (see Section 2.1.4 above), bouldering and rock scrambling would be permitted throughout the entire Obed WSR (except in those areas that have been closed to protect natural and cultural environments – see Section 2.1.12 Closures).

2.1.7 Prohibited Activities

The following activities would be prohibited:

- Climbing or bouldering on, under or within 100 feet of a bridge, a named feature (i.e., the Arch and Lilly Bluff Overlook), or a designated, developed overlook.
- Climbing or bouldering on, under or within 100 feet of a known archeological resource
- Chipping or gluing
- "Gardening" or the intentional removal of vegetation to "clean" a route
- Using trees as climbing anchors (however, using trees as rappelling anchors is acceptable in some cases; see Section 2.1.5 Rappelling)
- Using trees for climbing
- Leaving fixed ropes for extended periods for the purpose of ascending and descending (rappelling) rock walls

2.1.8 Climbing Hardware and Chalk

Climbing hardware (slings, carabiners, quick draws, etc.) left on the walls would not be permitted unless absolutely necessary for safety reasons. The NPS encourages all bolts and other fixed anchors, slings, quick draws, and any other piece of equipment that would be left on the wall for an extended period to be of a color that blends with the rock in the area.

The NPS would work with climbers and climbing groups to coordinate chalk clean-ups for high-visibility climbing walls and bouldering areas. The NPS encourages climbers to use the minimum amount of chalk necessary to climb safely.

2.1.9 Lilly Boulders

Bouldering would be permitted at the Lilly Boulders (see Figure 2), as in the rest of Obed WSR. Due to the scenic nature of the Lilly Boulders area, no fixed anchors would be allowed there. Fires and camping would be prohibited at Lilly Boulders. There is private land in the immediate vicinity; climbers are encouraged to respect private land, private property rights, and NPS boundaries.

Access to and parking at Lilly Boulders is an issue. For more information on this topic, please see Section 2.1.11 Trails, Parking, and Access.

2.1.10 Route "Top-Outs"

Most of the climbing and bouldering routes at Obed WSR do not "top-out" (i.e., the routes stop below the cliff or boulder rim, which provides a degree of protection for the rim ecosystem). The NPS encourages climbers to continue this environmentally sensitive practice. Should routes in the future top-out, the NPS may prohibit the practice to protect the cliffline ecosystem.

2.1.11 Trails, Parking, and Access

Many trails that access climbing areas at Obed WSR are social trails that have been developed without input or design from the NPS. The NPS would maintain, upgrade, and in some cases re-route these trails to make them safe and environmentally sensitive. The NPS would eliminate duplicate, braided, or unnecessary trails.

The NPS discourages parking, crossing, camping, climbing, or bouldering on private land. Use of private land for these or any other activity must be with the express permission of the landowner. Climbers are encouraged to respect private land, private property rights, and NPS boundaries.

Parking and access for the popular climbing and bouldering areas is depicted on Figure 2:

- *Lilly Boulders* - climbers would access Lilly Boulders by parking at the Lilly Bluff parking area and using the designated the NPS trail that goes to the boulder field. The small parking area at Lilly Boulders has been closed due to impacts on private land.

- *Lilly Bluff* - climbers would access this area by leaving vehicles at the Lilly Bridge parking area and using the designated the NPS trail that goes to the cliff.[5] Alternatively, climbers would leave vehicles at the Lilly Bluff parking area and use the trail from the overlook to access the climbing areas below the bluff.

- *Obed River and Y-12 Wall* – Climbers would access these areas by leaving vehicles at the Lilly Bluff parking area and using the Point Trail.

- *North and South Clear Creek* – All known climbing routes at North and South Clear Creek are located entirely on land owned by The Nature Conservancy. Since The Nature Conservancy property is located within the boundary of Obed WSR, this land is managed cooperatively by The Nature Conservancy and the NPS. In addition, parking at Clear Creek is currently provided by a private landowner, and it is within his rights to eliminate this use at any time. Climbers are encouraged to respect private property rights. At this time, the NPS has no plans to purchase land that would provide official parking for the Clear Creek climbing area.

2.1.12 Closures

The NPS discourages multiple social trails and heavily impacted zones at the base of climbs and would employ signs, barriers, revegetation, and possible specific route closure as a means to prevent these impacts. The NPS reserves the right to close any area, rock feature, or climbing route to protect wildlife, natural or cultural resources, and visitor experiences. Permanent closures would result in site restoration by the NPS. NPS authority for closures is granted at 36 C.F.R. 1.5.

2.1.13 Cliff Nesting Raptors

No new sport or traditional climbing routes would be established in the vicinity of cliff nesting raptors. Existing routes that could harm these birds would be closed during nesting season.

2.1.14 Safety

Using the park is not a risk-free experience, and climbing is an inherently dangerous activity. The NPS and The Nature Conservancy cannot guarantee the safety of climbers or other park visitors. The NPS and The Nature Conservancy will not maintain any climbing routes or associated climbing hardware and software, nor will they provide supervision to climbers or

[5] The NPS is seeking funding to expand the Lilly Bridge parking area.

climbing instruction. The NPS and The Nature Conservancy will not assume responsibility for the condition of climbing terrain, routes, or the acts or omissions of climbers. The NPS and The Nature Conservancy explicitly disclaim all responsibility for the safety of equipment, bolts, or other anchor systems in the park. While the courts have ruled that public land managers have no "duty to rescue" climbers or other visitors who are lost, injured, or killed through engagement in their activity (see *Johnson v. United States*, Department of Interior, 949 F.2d 332, 335, 10th Circuit 1991 and *Kiehn v. United States*, 984 F.2d 1100, 1108, 10th Circuit 1993), the NPS will attempt to respond to all search and rescue incidents and take appropriate action given limited staff and resources.

2.1.15 Climber Education Program

The NPS would promote responsible, ethical, and environmentally responsible climbing and espouse the National Outdoor Leadership School's "Leave No Trace" program for climbing. The NPS would work with climber groups such as the Access Fund to educate the park's climbing community. The Access Fund would provide funding for educational materials such as signs, maps, and brochures that promote safe and ethical climbing.

2.1.16 Pets

In accordance with the NPS regulations at 36 C.F.R. 2.15, pets must be kept on a leash of less than six feet in length at all times. Pets may not be left unattended.

2.1.17 Litter

The NPS regulations at 36 C.F.R. 2.14 state that trash must be disposed of in a refuse receptacle (i.e., trash can or dumpster). This includes athletic tape, food wrappers and another types of refuse typically found at climbing areas. The NPS would encourage climbers to continue the practice of holding regular "clean-up" days at the climbing areas.

2.1.18 Human Waste Disposal

The NPS regulations at 36 C.F.R. 2.14 guide human waste disposal. In developed areas, the disposal of human body waste except at designated locations is prohibited. In non-developed areas, the disposal of human body waste within 100 feet of a water source, high water mark of a body of water, at a campsite, or within sight of a trail is prohibited. The NPS recommends burying human waste at least 6-8 inches and carrying out all toilet paper.

2.1.19 Guide Services

Commercial guide services may only be conducted under an incidental business permit issued by the NPS (see 36 C.F.R. 5.3).

2.2 Alternative B

Alternative B would be identical to Alternative A (Preferred), with the following exceptions:

Climbing Zone. Like in Alternative A, sport climbing would be allowed on existing routes within the climbing zone (see Figure 2), but no new sport routes would be established under any circumstances. The number of sport climbing routes that exist at the time of the signing of this plan would be the maximum allowable at Obed WSR.

Traditional Climbing. Traditional climbing would be restricted to the climbing zone only (see Figure 2). Traditional climbing could occur anywhere within this area, but would not occur outside the zone.

Rappelling. Rappelling would not be allowed at Obed WSR.

2.3 Alternative C

Alternative C would be identical to Alternative A (Preferred), with the following exceptions:

Climbing Zone. Sport climbing would be allowed on existing routes within established areas. In addition, all of Obed Wild and Scenic River would be zoned for sport climbing, which means that new sport routes, bolts, and fixed anchors would be allowed, with restrictions, throughout the park by the NPS permit. Climbers would notify the NPS of desired locations for new routes. The NPS would conduct necessary environmental compliance reviews and prepare a permit(s) for the new route(s) if appropriate. Compliance reviews would include an assessment of rare or sensitive plants and animals that may inhabit the vicinity of the proposed new route. If the new route would adversely impact the rare or sensitive resource, the permit for the new route would be denied. If data were not available to determine if the proposed route would impact a rare or sensitive resource, the NPS would schedule a resource study in support of the permit application. The resource study would be conducted when possible as staff and budgetary resources are limited.

Rappelling. Rappelling would be allowed to occur anywhere within the climbing zone, but would not be allowed outside the climbing zone.

2.4 Alternative D - No Action

Under the No Action Alternative, the agency would continue its current type and level of management of climbing at Obed WSR. Facets of this management include:

- A low-level, self-regulated management of climbing
- Sport climbing limited to existing routes and a moratorium on new fixed anchors
- Traditional climbing allowed throughout the park
- Rappelling allowed throughout the park
- Minimal climber education (no signage; a one-page handout)
- Minimal cooperative stewardship or shared resources with local climber groups or the Access Fund
- One clean-up day per year sponsored by local climbers and the Access Fund
- No studies on climbers, climbing routes, or natural resources within the climbing areas

2.5 Summary of Alternatives

Table 1. Summary of Management Actions for the Four Alternatives

Management Action	Alternative A - Preferred	Alternative B	Alternative C	Alternative D – No Action
Research on climbing and biota	Yes	Yes	Yes	No
Designated sport climbing zone	Yes	Yes	No (sport climbing throughout WSR)	No
New sport routes	Yes, within climbing zone, by permit	No	Yes, entire WSR, by permit	No
Traditional climbing	Entire WSR	Restricted to climbing zone	Entire WSR	Entire WSR
Rappelling	Restricted to certain areas	Not allowed at Obed WSR	Restricted to climbing zone	Entire WSR
Bouldering	Entire WSR	Entire WSR	Entire WSR	Entire WSR
Climber education program / coop. stewardship	Yes	Yes	Yes	No

2.6 Environmentally Preferred Alternative

The environmentally preferred alternative is the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources. Of the alternatives described above, Alternative B is likely environmentally preferred. All three action alternatives prescribe the same social and resource studies, climber education, and climbing community stewardship, but Alternative B allows for the fewest number of overall climbing routes. Under this alternative, no new sport routes would be permitted, and traditional climbing would be restricted to the climbing zone. Rappelling would not be allowed.

It is likely that in the case of climbing routes at the Obed WSR, the fewest number of climbing routes equates to the least amount of environmental impact.[6] Research suggests that new sites (e.g., climbing route, belay area) are likely to deteriorate rapidly with only moderate amounts of use, whereas on frequently used sites, increasing use is not likely to have a substantial effect on the amount of impact (see Hammitt and Cole, 1998, for a complete discussion of the relationship between use and impact).

2.7 Alternatives Considered, but Dismissed

One alternative discussed by the climbing working group (see Section 5.0, Coordination and Public Involvement, for more information on the working group) was to designate potential climbing zones around developed areas at Obed Wild and Scenic River. These climbing zones would be:

- ½-mile radius around Nemo Bridge[7]
- ½-mile radius around Jett Bridge
- ½-mile radius around Barnett Bridge

[6] This statement is not true for social impacts or user conflicts.
[7] There was some question as to whether the distance should be linear (e.g., radius) or a “river ½-mile”.

- ½-mile radius around Norris Ford
- ½-mile radius around Obed Junction
- ½-mile radius around Devil's Breakfast Table
- ½-mile radius around Potter's Ford
- ½-mile radius around Lilly Bridge, plus those areas where climbing currently occurs

Field investigations by the NPS personnel and the climbing community have revealed that no substantial climbing resources exist at any of these locations, except Lilly Bridge. Therefore, they have been eliminated as potential climbing areas and this is not a viable alternative.

3.0 Affected Environment

All information on the affected environment was gained through 1) literature reviews; 2) informal surveys conducted by the NPS staff; 3) information from the U.S. Fish and Wildlife Service regarding threatened and endangered species; and 4) formal surveys conducted by the NPS biologists and private environmental consultants.

3.1 General Environmental Setting

Recognized for its free-flowing condition, rugged terrain, and pristine waters, the Obed River was included into the Wild and Scenic Rivers System in 1976 and established as a unit of the National Park Service. The Obed is one of only nine Wild and Scenic Rivers authorized in the Southeastern United States. The Obed River and its tributaries flow over 45 miles through some of the most rugged and undeveloped terrain in eastern Tennessee. It offers an array of both cultural and natural resources. A complex network of streams drain park and adjacent lands and support diverse eastern flora and fauna.

3.2 Soils

The soils of the Cumberland Plateau are predominately Ultisols, mostly Hapludults and Paleudults, and Inceptisols, primarily Dystrochrepts (Soil Survey Staff, 1975). Soils within the gorges of the Obed River and its tributaries are derived from sandstone and shale colluvium or mixtures of colluvium (Elder and Springer, 1978; Springer and Elder, 1980). The upland soils, derived from sandstone and shale, are acid, highly leached and nutrient-poor (Francis and Loftus, 1977). Within the gorges, the soils derived from sandstone and shale are generally acid and nutrient-poor while those derived in part from limestone or calcareous shale are higher in pH and nutrients (Hinkle, 1978; Schmalzer, 1978).

The soils of the Obed WSR gorge slopes are complex and varied. Hubbard et al. (1950) classified them as rough stony land, Muskingum soil material which was described as "areas of steep and broken land in which sandstone boulders and outcrops are numerous over the surface." The land is steeply sloping and the soil among the rocks is Muskingum fine sandy loam.

Existing Impacts to Soils from Climbing

Obed WSR has approximately 2.2 miles of cliffline on which the popular climbing routes are located. Impacts to soils in these areas include compaction and minor erosion. Most soil compaction and erosion occurs at the base of the cliff rather than the top because most climbing routes at Obed WSR do not top-out (see Section 2.1.10). Soil compaction occurs from climbers hiking the base of the cliff, staging, and belaying. In areas of the most serious compaction and vegetation loss, some erosion has occurred, but not enough to cause siltation in streams. A total of approximately 2.8 acres of soils have been compacted along the base of the clifflines where sport climbing occurs.[8] Information from field rangers suggests that much of this impact can be attributed to climbing, but not all. Experience on the Cumberland Plateau shows that the base of scenic cliffs is often a popular destination and hiking corridor for climbers and other

[8] This figure is derived by multiplying the linear distance of climbed cliffline (12,000 feet) by an average width of compacted zone at the base of the cliff (10 feet wide), and then dividing by the number of square feet in an acre (43,560).

recreationists. Until further studied, it is impossible to tell what contributing effect other recreational activities have on soil compaction in the climbing areas.

Soil compaction also occurs along trails that access popular bouldering and climbing areas. The NPS has managed this disturbance through route delineation and regular trail maintenance. Approximately ½-acre of soil compaction has occurred at the Lilly Boulders from bouldering activity.

3.3 Vegetation

Vegetation information is taken from Schmalzer 1982, Final Report - *Vegetation, Endangered and Threatened Plans, Critical Plan Habitats and Vascular Flora of the Obed Wild and Scenic River*. Schmalzer states:

> In most cases, the cliff edges above the gorges in the Obed River system are occupied by open stands of Virginia pine. In some cases, however, areas of exposed sandstone bedrock occur. The most extensive one of these is on Clear Creek on the bluffs above Lilly Bridge. On the bare rock only crustose lichens occurred. Small pockets of soil supported sandwort *(Arenaria glabra)* and round-leaf flame flower *(Talinum teretifolium)*. Dwarfed Virginia pine occurred in the deeper pockets of soil which often had ground cover of lichens; some grasses and herbs also occurred in these sites. Shrubs occurring on these sites included mountain laurel *(Kalmia latifolia)*, purple chokeberry *(Sorbus arbutifolia)*, and early low bush blueberry *(Vaccinium vacillans)*. Farther back from the cliff edge the soil is deeper, the pine cover becomes more continuous, and species restricted to the outcrop are no longer present.
>
> Most of the sandstone cliffs are bare of vascular plants and have only lichens and mosses on their vertical surfaces. Sometimes shrubs such as *Kalmia latifolia* or sparkle berry *(Vaccinum arboreum)* root in cracks in the rock surface as do many grasses and ferns. The base of the sandstone cliffs and the undercut rockhouses sometimes contain more plants. Round-leaved catchfly *(Silene rotundifolia)* and Rugel's heuchera *(Heuchera parviflora)*, which are limited to these cliffs… may occur here. Panicled bellflower *(Campanula divaricata)* is also frequent in these sites. Some ferns, such as mountain spleenwort *(Asplenium montanum)* and maidenhair *(Asplenium trichomanes)* are generally restricted to these sites.

Recent studies have revealed that numerous bryophytes (mosses and lichens) are found along the bottoms and faces of cliffs. Many of these have not been reported in other areas of the Cumberland Plateau (Risk, 1998). A species of lichen new to science was discovered at Obed WSR in 1997 (Heiman and Elix, 1999). *Canoparmelia amablilis* was found in two locations: one on a sandstone boulder along the trail to Lilly Boulders and one on the bark of a fallen tree in the cascade area of Mill Creek. The geographic extent of this species is not known at this time, but another specimen has been found in North Carolina (Heiman and Elix, 1999).

Several tree individuals that are of an exceptional age have been discovered within the climbing area. Four red cedars (*Juniperus virginiana*) were cored to determine age. These trees ranged in age from 287 years to 381 years (Heiman, draft report, 1999). These trees are likely older than the surrounding forest because Juniperus virginiana has a shape and form that is not

marketable, so individuals of this species were not cut during 20th century logging activities. Also, the difficulty of access precluded any desire to cut cliff-face trees (Bakaletz, 2001).

Existing Impacts to Vegetation from Climbing

Climbing activity affects vegetation through trampling and dislodgment of the soil medium, which may then become susceptible to erosion. These effects occur on staging and belaying areas and trails. Using the formula applied to soils, approximately 2.8 acres of vegetation has been trampled and effectively removed along the base of the clifflines where sport climbing occurs.

On the climb itself, climbers may traverse important plant habitat on the cliff face. Effects include dislodgment of organic matter from cracks, or direct contact with plants by climbing shoes, hands, or equipment. Ferns, mosses, and lichens may be of particular concern. Impacts to the vertical biotic community are occurring on approximately 2.8 percent of the total cliff faces within Obed WSR.[9] Further quantification of impacts to cliff face habitat is not possible at this time, but the vertical biotic community would be studied in the research prescribed in Section 2.1.1 of this plan.

At the cliff rim, vegetation is particularly susceptible to trampling due to its exposed position and thin soils. In some locations, trees that are used for rappel anchors are damaged or destabilized. Due to the small number of routes that top-out at Obed WSR and the relatively few rappel stations, cliff rim impacts are negligible and of minimal concern.

At Lilly Boulders, dense path networks between boulders and vegetation trampling adjacent to the boulders is apparent. Complete removal of vegetation has occurred at the base of boulders where visitor use is most heavily concentrated. There is approximately ½-acre of vegetation disturbance and loss in this area.

3.4 Wildlife

Many species of wildlife are known to occur within the boundaries of Obed WSR. However, relatively few vertebrate studies have been undertaken in the gorges of the park. Forty-one mammals and 138 species of birds have been observed with in the Obed WSR. Common species include white-tailed deer (*Odocoileus virginianus*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes fulva*), gray squirrel (*Sciurus caroliniensis*), raccoon (*Procyon lotor*), cottontail rabbit (*Citrus unshiu*), and wood duck (*Anas platyrhynchos*). Raptors including osprey have been spotted in the area, but at this time there is no evidence of any nesting within the existing climbing area.

3.5 Threatened, Endangered, and Sensitive Species

Threatened and Endangered

There are three federally listed threatened or endangered plants found within the boundary of Obed WSR: American chaffseed (*Schwalbea americana*), Virginia spiraea (*Spiraea virginiana*), and Cumberland rosemary (*Conradina verticillata*). At this time, no federally threatened or endangered species have been found within the current climbing zone, and climbing activities are not known to have impacted any of these species. Cumberland sandwort (*Arenaria*

[9] This figure is derived by dividing the linear distance of climbed cliffline (12,000 feet), by the approximate number of miles of cliffline at Obed WSR (80 miles).

cumberlandensis) has not been found in the Obed, but it does occur in nearby watersheds, and there is habitat along the cliff faces at Obed WSR that would provide the right environment for this federally listed endangered species.

Other Species of Concern

There are 21 plants that can be found at Obed WSR that are protected in the State of Tennessee. State threatened climbing fumatory (*Adlumia fungosa*) was found growing on rocks at Lilly Boulders. Another unusual species, walking fern (*Asplenium rhizophyllum*) was also found in the boulder field.

3.6 Cultural Resources

The NPS cultural resource specialist responsible for Obed WSR has surveyed the areas that are currently climbed. No cultural resources within the vicinity of the climbing areas have been found.

3.7 Aesthetic Values

Obed WSR was set aside as a Wild and Scenic River in part for its outstanding scenic and aesthetic values. Spectacular views of high bluffs, waterfalls, and unique geologic features are common. Its rugged terrain has allowed the river corridor to remain relatively uninhabited and free of man's imprint. The park's "wild" character and steep terrain offer visitors a rare opportunity to experience a taste of primitive America. The cliffs at Obed WSR are a key resource, and they are of visual interest to the average park visitor. Numerous climbing routes are located on the cliffs at Lilly Bluff and along Clear Creek; sometimes climbers are visible from the river or from scenic overlooks, especially during the winter when trees provide less screening.

Existing Impacts to Aesthetic Values from Climbing

Visual Effects of Climbing Activity. In some areas, climbing can be one of the most conspicuous recreational activities. Some non-climbing visitors enjoy the presence of climbers in the natural landscape, while for others it will detract from their experience. At climbing areas such as Yosemite and Zion national parks, watching climbers has become a popular activity in itself. Devil's Tower National Monument provides an outdoor interpretative display about climbing to help the general public understand this prominent recreation activity.

Climbing equipment can sometimes be discerned from the ground. Brightly colored sling material at belay and rappel stations may be visible from considerable distances. At popular sport climbing areas, including Obed WSR, climbers often leave quick draws and even fixed ropes for future use. While this equipment does detract from the natural scene, visual intrusion is difficult to assess, since non-climbing users of the area will display a range of positive and negative responses.

Chalk. Visitors may also notice the white marks left on the rock by the gymnastic chalk (magnesium carbonate) that climbers use on their hands. Chalk is a hand-drying agent widely used by gymnasts and rock climbers. It is possible to climb without chalk, but almost all climbers use it because it improves friction between skin and rock. Sweaty hands are slippery, so despite chalk's visual effects, climbers are highly resistant to "no-chalk" policies.

Chalk can be expected to accumulate wherever popular routes are found, though its white color is more visible on dark rocks such as basalt than on other lighter colored rocks such as the sandstone of the Obed River gorge. Although chalk is soluble and removed by rainfall, chalk marks will persist on rock faces that are very steep or not directly exposed to weathering. Many routes at Obed WSR fall into this category.

"Earth-tone" chalks were developed in the 1980s in response to calls from some parks to match chalk marks to the native rock colors. It was found, however, that adding dyes to chalk left longer-lasting stains on the rock and introduced chemicals (dye components) into the cliff environment. Today, colored chalk is not widely available, and in the absence of further research and product development this plan does not encourage its use.

Noise. Noise is seldom reported as a climbing-related management issue. Nevertheless, noise associated with climbing activity may affect the experience of other visitors and also cause disturbance to wildlife. Climbing requires occasional voice communication between members of the climbing party. Factors such as the distance between climbers, topographic features, and strong winds may force climbers to yell in order to be understood. Although voice communication is part of the climber's safety system, climbers are expected to keep noise to a minimum.

Bolts, a form of fixed anchor, require hammering and drilling in their placement, and such activity also generates noise. Bolting is not part of the everyday climbing experience and is only carried out by a very small percentage of the climbing population.[10] Bolt holes can be drilled with a simple hand drill, but will often be bored with a mechanical, battery-powered drill. In the case of general concerns over noise, where power-tool prohibition is not an issue, it is worth noting that although power drilling is louder than hand drilling, the noise will be shorter lived. With a power drill, a bolt placement will take only 30 to 60 seconds, while hand drilling the same hole might take 15 to 30 minutes.

3.8 Recreation

Whitewater boating remains one of the most popular recreational activities at Obed WSR. Canoeing and kayaking bring many people to the park to experience some of the best and most difficult whitewater in the eastern United States. Interactions between climbers and boaters is limited to shared parking areas around Lilly Bridge, and boaters will occasionally catch a glimpse of climbers along South Clear Creek.

Hiking has become increasingly popular at Obed WSR. Hikers frequently share many of the trails used by climbers to access climbing areas. The NPS recently developed a trail to a point above the confluence of Obed River and Clear Creek. The "Point Trail" provides access to climbing areas as well as providing hikers with spectacular views of the gorge and a small stone arch. Climbers and hikers also use trails within Nature Conservancy-owned land. Hikers find views of the Clear Creek gorge, while climbers use the same trails to access North and South Clear Creek climbing areas.

[10] This activity has not occurred at Obed WSR since the moratorium on new fixed anchors was issued in August 2000.

Fishing and swimming[11] are also popular activities in the summer months at Obed WSR. There is the potential to catch as many as fifteen different species of fish within the boundaries of the park. Local visitors have traditionally used the area as a place to picnic and swim during the summer. These activities normally take place near access points, and with the exception of limited contact at the Lilly Bridge parking area, there would be little interaction between river users and climbers.

[11] The NPS does not encourage swimmers or promote swimming at Obed WSR, nor is the NPS responsible for the health and safety of park visitors who choose to swim.

4.0 Environmental Consequences

4.1 General

This section of the document analyzes the anticipated environmental consequences to the resources identified in the previous section that may result from implementation of the plan alternatives.

4.1.1 Impact Measurement

Since Obed WSR has nearly 350 climbing routes and is a popular destination for climbers, many environmental impacts associated with climbing have already occurred and are observable and measurable. Observing impacts as they currently exist provides great insight into potential future impacts. All information on environmental consequences in this document was gained through: 1) field observation and measurement by NPS staff and private consultants; 2) literature reviews, 3) information from the U.S. Fish and Wildlife Service regarding threatened and endangered species; and 4) best professional judgement of NPS staff specialists. *Climbing Management: A Guide to Climbing Issues and the Production of a Climbing Management Plan* (Access Fund, 2001) contains excellent information about general impacts associated with different types of climbing activities. Some of the verbiage in this section is taken from the Access Fund's document.

Intensity - the intensity of effects is defined as follows:

Negligible: An action that may cause a change to a resource, but the change would be so small that it would not be of any measurable consequence to the resource. Negligible impacts would not cause impairment of a resource.

Minor: An action that may cause a change to a resource but the change would be small and if measurable, it would cause a small and localized consequence. Minor impacts would not cause impairment of a resource.

Moderate: An action that would cause some change to a resource and the change would have a definite and measurable consequence, but is localized. Moderate impacts would not constitute impairment.

Major: An action that would cause a definite change to a resource. The change would be readily measurable and would have a substantial consequence to the resource. Major impacts may be significant, and might constitute impairment.

Duration - the duration of the impacts is defined as follows:

Short term: Impacts that last less than one year.

Long term: Impacts that last one year or longer.

4.1.2 Cumulative Impacts

"Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions

regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 C.F.R. 1508.7). To adequately assess cumulative impacts, then, one must analyze the impacts associated with implementing the climbing management plan, and then determine if they combine with other past, present, or reasonably foreseeable future actions to create a cumulative effect.

Non-climbing activities do not interact with climbing to create cumulative effects at Obed WSR. Impacts from climbing are localized to specific areas, and the climbing locales are virtually free of other uses. Therefore, the only past or future actions that would have an interactive effect with these plan alternatives would be past or future climbing activities.

4.1.3 Impairment

"Impairment" as defined in Section 1.4.5 of the NPS *Management Policies 2001* is "an impact that, in the professional judgment of the responsible NPS manger, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values." An impact is more likely to constitute impairment "to the extent that it affects a resource or value whose conservation is…key to the natural or cultural integrity of the park." NPS managers are enjoined by these policies and by the Organic Act of 1916 to prevent impairment to park resources.

Rock climbing as a recreational pursuit at Obed WSR currently impacts about 2.8 percent of the cliffline within the park (McDade, 2001), and a smaller percentage of the known boulders. Under the various action alternatives described in this plan, the areal extent of these environmental effects would increase only slightly, and in some cases, not at all. Even under the least restrictive alternative, limitations and oversight would be placed on the development of new sport climbing routes. No resources or values that are key to the natural or cultural integrity of Obed WSR have been adversely affected by climbing at Obed WSR, nor would they be under any of the alternatives described in this plan. Therefore, no impairment of park resources would occur as a result of the implementation of any of the plan alternatives.

4.2 Impacts to Soils

4.2.1 Alternative A - Preferred

Under Alternative A (Section 2.1), the acreage of soil compaction would not be expected to increase substantially over what currently exists because the areal extent of sport climbing would be limited by the climbing zone (see Section 2.1.3 and Figure 2). A maximum of about 1.2 acres of soil compaction would occur as a result of implementing Alternative A.

Soils impacts associated with access trails would decrease because the NPS would take a more active role in managing and maintaining these trails.

At Lilly Boulders, soil compaction would increase only slightly in the future because all the boulders in the area have already been "discovered". In other words, there are no known boulders in the vicinity that remain unclimbed, so the impact area would not increase substantially.

Under Alternative A, it is conceivable that soil compaction could be caused outside the climbing zone by traditional climbing. The geology and rock formations at Obed WSR, however, place

limitations on traditional climbing opportunities. Regular monitoring and corrective management should keep this type of disturbance to less than an acre throughout the entire park.

Cumulative Impacts. Currently, about 2.8 acres of soils have been compacted along clifflines within the proposed climbing zone; the maximum amount of expected soil compaction within the climbing zone would be approximately four acres, plus there could be one acre of disturbance associated with traditional climbing.

Conclusion. Past effects of climbing combined with implementing Alternative A would have moderate, long-term impacts to soils at Obed WSR.

4.2.2 Alternative B

Under alternative B (described in Section 2.2), no new sport routes would be permitted at Obed WSR. This prohibition, however, would not have a substantial effect on soil compaction within the climbing zone because it is not expected that fewer routes in the future would equate to fewer climbers. It is even possible that fewer routes could lead to greater soils impacts because climbing activities would be more heavily concentrated on fewer locations. This could lead to greater potential for soil erosion.

Since traditional climbing would be limited to the climbing zone under this alternative, no soil impacts would occur outside the climbing zone.

All other soils impacts under Alternative B would be the same as those of Alternative A.

Cumulative Impacts. Currently, about 2.8 acres of soils have been compacted along clifflines within the proposed climbing zone; the maximum amount of expected soil compaction within the climbing zone under this alternative would be approximately 3.5 acres.

Conclusion. Past effects of climbing combined with implementing Alternative B would have moderate, long-term impacts to soils at Obed WSR.

4.2.3 Alternative C

Under Alternative C, all of Obed WSR would be open to both sport and traditional climbing, with restrictions (see Section 2.3). Therefore, soil impacts – compaction and erosion – would be greater than the preferred alternative. The amount of soil impacts that would occur, however, cannot be quantified because: 1) it is difficult to predict the future growth of climbing and interest in climbing new routes at Obed WSR, and 2) the NPS does not know the extent of the potential for future sport climbing routes outside of the climbing zone.

Conclusion. Past effects of climbing combined with implementing Alternative C would have long-term effects to soils, and the impacts would be moderate or major.

4.2.4 Alternative D – No Action

Soils impacts under this alternative would be essentially the same or slightly less than those under Alternative A, the preferred alternative. There would be no new sport routes under the No Action Alternative, and therefore no additional soils impacts.

4.3 Impacts to Vegetation

4.3.1 Alternative A – Preferred

Impacts to vegetation on the ground are similar to soils impacts. Under Alternative A, the acreage of vegetation disturbance would not be expected to increase substantially over what currently exists because the areal extent of sport climbing would be limited by the climbing zone (see Section 2.1.3 and Figure 2). A maximum of about 1.2 acres of vegetation loss would occur as a result of implementing Alternative A.

Under Alternative A, further sport routes could be allowed by permit. New sport routes could have detrimental effects to the vertical biotic community. The extent and severity of these impacts, and whether these routes could impact sensitive communities, would be studied under the research prescribed in this plan. The decision process for new sport routes within the climbing zone (see Figure 3) is designed to protect species of concern. NPS managers would not authorize new sport routes that could negatively impact species of concern. Alternative A, then, is designed so that future sport climbing routes would not affect threatened, endangered, or sensitive plant communities.

At Lilly Boulders, vegetation disturbance would increase only slightly in the future because all the boulders in the area have already been “discovered”. In other words, there are no known boulders in the vicinity that remain unclimbed, so the impact area should not increase substantially.

Under Alternative A, it is conceivable that vegetation would be disturbed outside the climbing zone by traditional climbing. The geology of the area, however, places limitations on traditional climbing opportunities. Regular monitoring and corrective management should keep this type of disturbance to less than an acre throughout the park.

Cumulative Impacts. Currently, about 2.8 acres of vegetation have been disturbed along clifflines within the proposed climbing zone; the maximum amount of expected disturbance within the climbing zone would be approximately four acres, plus an acre of disturbance associated with traditional climbing.

Conclusion. Past effects of climbing combined with implementing Alternative A would have moderate, long-term impacts to vegetation at Obed WSR.

4.3.2 Alternative B

Under Alternative B, the prohibition on new sport routes would likely mean that further vegetation disturbance would be minimized, particularly with regard to the vertical biotic community. If climbing increases in popularity at Obed WSR, the disturbed areas at the base of some of the climbs would increase in size, but impacted zones at the base of new climbs would not occur.

Since traditional climbing would be limited to the climbing zone under this alternative, no vegetation impacts would occur outside the climbing zone.

All other vegetation impacts under Alternative B would be the same as those of Alternative A.

Cumulative Impacts. Currently, about 2.8 acres of vegetation have been disturbed along clifflines within the proposed climbing zone; the maximum amount of expected disturbance within the climbing zone would be approximately three acres.

Conclusion. Alternative B itself would have negligible impacts to vegetation, but past effects of climbing combined with implementing Alternative B would have moderate, long-term impacts to vegetation at Obed WSR.

4.3.3 Alternative C

Under Alternative C, all of Obed WSR would be open to both sport and traditional climbing, with restrictions. Therefore, vegetation impacts – trampling and removal – would be greater than under the preferred alternative. The amount of vegetation impacts that would occur, however, cannot be quantified because: 1) it is difficult to predict the future growth of climbing and interest in climbing new routes at Obed WSR, and 2) the NPS does not know the extent of the potential for future climbing routes outside of the climbing zone.

Conclusion. Past effects of climbing combined with implementing Alternative C would have long-term effects to vegetation, and the impacts would be moderate to major.

4.3.4 Alternative D – No Action

Vegetation impacts under this alternative would be essentially the same or slightly less than those under Alternative A, the preferred alternative. Since there would be no new sport routes if the agency takes “no action,” there would be no associated vegetation impacts.

4.4 Impacts to Wildlife

Climbing activity can affect wildlife in ways including attraction, habituation, and avoidance. Human presence can affect the reproductive success of wildlife by causing disturbance during breeding, feeding, or resting, or by disruption of habitat. Cliff nesting raptors are particularly susceptible to climbing activities, but there are no documented occurrences of cliff nesting raptors on the cliff faces that are currently used by climbers. According to NPS biologists, climbing at Obed WSR currently has no adverse effects to any bird species or populations.

4.4.1 Alternative A – Preferred

Under alternative A, some slight increases in wildlife harassment may be associated with the development of future sport routes, but a careful consideration of the appropriateness and specific siting of the route during the NPS permitting process would mitigate this. No routes would be permitted in the vicinity of cliff nesting raptors, and existing routes that could harm these birds would be closed during nesting season.

Conclusion. Impacts to wildlife would be long-term and minor.

4.4.2 Alternative B

Impacts to wildlife under Alternative B would be somewhat less than under Alternative A because the areal extent of climbing activities would be limited to the climbing zone.

Conclusion. Impacts to wildlife would be long-term and minor.

4.4.3 Alternative C

Impacts to wildlife under Alternative C would be somewhat greater than under Alternative A because sport climbing would be permitted throughout the entire park.

Conclusion. Impacts to wildlife would be long-term and moderate.

4.4.4 Alternative D – No Action

Impacts to wildlife under the No Action Alternative would be greater than under Alternative A because rappelling would be allowed throughout the entire WSR and this activity has the potential to impact bird habitat and possible nesting sites on sensitive areas. Also, there would be no education program developed to sensitize the climbing community about wildlife issues.

Conclusion. Impacts to wildlife would be long-term and moderate.

4.5 Impacts to Threatened, Endangered, and Sensitive Species

4.5.1 All Alternatives

Sport Climbing – Future sport routes at Obed WSR would not impact threatened or endangered species due to the methodology that has been outlined to study the climbing zone, screen areas for sensitive resources, and permit new routes only in areas where they are appropriate.

Traditional Climbing – Traditional Climbing occurs at Obed WSR on a very limited basis. Traditional climbs are repeated far less often than sport climbs, and traditional climbers rarely leave evidence of their passing. At its current level, traditional climbing would not have an adverse effect on any threatened or endangered species. If traditional climbing increases substantially in the future, the NPS may have to implement route-specific closures or other means to protect threatened and endangered species.

Conclusion: This plan is designed to be protective of species of concern. The study of sensitive species prescribed in this plan will guide future management of climbing at Obed WSR. Therefore, effects to threatened, endangered, and sensitive species would be negligible.

4.6 Impacts to Cultural Resources

The NPS cultural resource specialist responsible for Obed WSR has surveyed the areas that are currently climbed. No evidence of adverse effects to cultural resources resulting from climbing activities was found.

4.6.1 All Alternatives

No activities that would occur under any of the alternatives in this plan would cause adverse effects to cultural resources.

Conclusion. No effects to cultural resources.

4.7 Impacts to Aesthetic Values

4.7.1 Alternative A – Preferred

Under Alternative A, there could be an increase in impacts to aesthetic values because new sport routes would be allowed, but the areal extent of these impacts would continue to be focused on the climbing zone. Few if any aesthetic impacts would occur as a result of traditional climbing because this activity is fairly dispersed at Obed WSR and traditional climbers rarely leave evidence of their passing. An emphasis of the climber education program would be on reduction of aesthetic effects to the environment. If effective, this program could actually serve to reduce these effects over the long-term.

Conclusion. Impacts to aesthetic values would be long-term, but would be minor.

4.7.2 Alternative B

Impacts to the aesthetic environment under Alternative B would be essentially the same or slightly less than those of Alternative A.

4.7.3 Alternative C

Impacts to the aesthetic environment under Alternative C would be essentially the same or slightly greater than those of Alternative A.

4.7.4 Alternative D – No Action

Aesthetic impacts resulting from the No Action Alternative would in the long-term be expected to be greater than the three action alternatives because no climber education program would be implemented and no low-impact message would reach climbers visiting Obed WSR.

Conclusion. Impacts to aesthetic values under Alternative D would be long-term and minor to moderate.

4.8 Impacts to Recreation

4.8.1 All Alternatives

Due to the topography of Obed WSR and the nature of the climbing there (e.g., routes do not top-out), little interaction occurs between climbers and other recreationists. Hikers, fishermen, paddlers, swimmers, campers, hunters, and picnickers rarely see climbers and boulderers and even less often come into direct contact with them. Park Rangers at Obed WSR report receiving no complaints from other recreational users about climbers. As such, impacts rarely occur to other forms of recreation, nor are frequent impacts expected under any of the described alternatives.

Conclusion. There would be negligible impacts to recreation as a result of the implementation of any of the alternatives.

5.0 Coordination and Public Involvement

5.1 Preparers

- Ron Cornelius, Geographic Information Systems Specialist, Big South Fork National River and Recreation Area
- Kristin Stoehr, Unit Manager, Obed Wild and Scenic River
- Christopher J. Stubbs, Community Planner, Obed Wild and Scenic River

5.2 Scoping

A 60-day public scoping period was held during November and December of 2000. During that time, scoping comments were received in writing from 41 groups and organizations, all of which were carefully analyzed by NPS personnel preparing the plan. A public scoping meeting to discuss the plan was held on 7 December 2000 at the Obed WSR Visitor Center. Approximately 25 members of the public attended this meeting. All remarks and questions were recorded and have been evaluated. All substantive comments and concerns raised during the scoping period have been addressed in this document.

5.3 Climbing Working Group

The NPS convened a climbing working group to provide information on climbing, climbing impacts, and other recreational uses of Obed WSR. This group met on 21 February 2001 to discuss alternative strategies for managing climbing. Group members and their affiliations are listed below:

- Frank Harvey, representing local climbers and the Access Fund
- Kim Campbell, National Parks and Conservation Association
- David Luinstra, Tennessee Scenic Rivers Association
- William Ades, The Nature Conservancy
- Jimmy Groton, Tennessee Citizens for Wilderness Planning
- Liane B. Russell, Tennessee Citizens for Wilderness Planning
- Jill Miller, Access Fund
- Ralph Harvey, Tennessee Paddle

The NPS continues to consult with the climbing working group during the preparation of this plan. The group may meet again to discuss the draft CMP.

5.4 Consultation and Coordination

National Park Service, Obed Wild and Scenic River
- Arthur McDade, Park Ranger
- Rob Turan, Park Ranger

National Park Service, Big South Fork National River and Recreation Area
- Reed Detring, Superintendent
- Tom Blount, Chief of Resource Management
- Tom Des Jean, Cultural Resource Specialist
- Frank Graham, Chief Ranger

National Park Service, Southeast Regional Office
- Jami Hammond, NEPA Coordinator
- John Fischer, Park Planner

U.S. Fish and Wildlife Service:
- Lee Barclay, Field Supervisor

Tennessee Department of Environment and Conservation, Historical Commission:
- Herbert Harper, Deputy State Historic Preservation Officer

The Nature Conservancy
- William Ades, Director of Science and Stewardship

The Access Fund
- Sam Davidson, Executive Director

6.0 Glossary of Climbing Terms

Most of the text of the following glossary is taken directly from *Climbing Management: A Guide to Climbing Issues and the Production of a Climbing Management Plan* (Access Fund, 2001).

Anchor: Any piece of protection used to secure climbers to a cliff face for belaying or rappelling. Most are removable. “Fixed anchors” are left in place for all climbers to use.

Belay or belaying: The method by which one climber secures the rope to safeguard the other climber in the event of a fall. Typically one climber (the belayer) remains on the ground and belays the other climber (the leader) while he or she ascends the rock and places protection. Once the leader reaches the top, or an intermediate ledge, that person then belays the other climber up. The rope, which serves as a safety line while climbing, is usually fed through a device controlled by the belayer. These friction-creating "belay devices" attach to climbers’ harnesses and allow small climbers, even children, to stop the falls of much larger climbers.

Bolt: Bolts are small devices (usually 3/8” diameter by about 3” length) used to protect climbers where there are no cracks for other types of protection. They are placed by drilling a hole, using either a hand-turned or battery-powered drill, and then driving in the device, which is designed to hold through mechanical expansion, forced compression, or (rarely) an epoxy adhesive. The placement of bolts allows climbers to attempt extremely difficult and previously unprotected rock faces, and to place fixed anchors for descent via rappel. The term "fixed" means they are permanently placed in the rock, although deterioration will occur over time, depending on the bolt specification and local weathering processes.

Bouldering: Bouldering is the term given to climbing that concentrates on short, sequential moves on rock usually no more than 15 feet off the ground. Typically, falls are very short (a few feet) and inconsequential. Each climbable sequence of moves is called a "boulder problem." Boulder problems vary in difficulty, and are usually given difficulty grades. Climbers typically will try difficult moves many times before succeeding on a given boulder problem. Some climbers use bouldering as practice for bigger climbs, while others pursue it as a sport in its own right. Since it takes place near the ground, bouldering can be a very social form of climbing, and requires relatively little equipment other than rock shoes. Use of a bouldering "crash pad" is common. These are placed below climbs to soften falls.

Carabiners: These are snap-links, generally of aluminum alloy, used to connect a climber's rope to intermediate protection and anchors.

Chains: Short lengths of metal chain are sometimes used instead of slings at a rappel or belay station. Chains are left in place at anchor bolts and are used for climbers to descend from the top of a route.

Chalk: This is the common name for magnesium carbonate powder, which climbers carry in a pouch (chalk bag) at the waist. It dries the hands and is used in rock climbing in the same way it is used in gymnastics, to improve grip.

Climb (or "Route"): As a noun, this is any independent line of ascent on a rock face. A climb may follow a crack system or other natural features, or it may strike out across a "blank" face. A climb is considered to be created when it is first ascended, and is usually given a name by the

first ascensionist. The climb is typically recorded and described in a guidebook so that other climbers can identify and climb the route.

Climbing shoes: Snug-fitting shoes with high-friction rubber soles and carefully designed edges that allow climbers to stand on tiny footholds.

Fixed anchors: see **Anchors** and **Bolt**

Gear: Equipment used for protection (see **Anchors** and **Hardware**).

Harness: Nylon straps and sewn fittings, buckled around the waist and thighs, providing a safe, comfortable way to tie into the rope for climbing, rappelling, and belaying.

Hardware: Climbing equipment placed in cracks or on faces to protect climbers from falling, including wired nuts, camming devices, hexes (hexcentric-shaped metal wedges), pitons and bolts.

Multi-pitch: A climb of two or more roped pitches (see **Pitch**) in length.

Natural gear: Removable, non-hammered protection equipment. In addition to sharing the broad definition of **Gear**, natural gear placement can also include slings around trees, horns of rock, or rock chockstones in cracks.

Pitch: The distance a lead climber ascends before he or she stops to belay the second climber's ascent. The distance of a pitch is limited by the length of rope and the location of ledges and belay stations. Typically a 50- or 60-meter rope length constitutes one pitch. Some climbs are single-pitch, others have many pitches.

Piton: These are small metal spikes, generally two to four inches long, that are placed by hammering them into existing cracks in the rock. Once the only form of climbing safety protection, pitons have been supplanted by easily removable protection such as nuts. Today, pitons are used only when no other form of protection is available, and are typically left in place for other climbers to use.

Protection: Any form of anchor used between belays to protect a climber. It can be removable or fixed.

Quick Draw: Two carabiners connected to one another by a sling. Often used in sport climbing to connect the climbing rope to the bolt.

Rappel: The method by which a climber descends a rope, usually by using a mechanical friction device. The descent is made on either a doubled rope, or two ropes tied together, looped through a fixed anchor. After the rappel is finished, the rope is retrieved by pulling on one end.

Rating: A numerical value assigned to indicate the difficulty of the climbing on a particular route. The rating is typically estimated by the first ascensionists, then revised by subsequent parties if necessary. The most commonly used rating index for free climbing ranges from 5.0 to a current maximum of 5.14. (The "5" is a constant in most of the difficulty ratings used in rock climbing, and indicates that the type of climbing is technical free climbing rather than easier scrambling - class 3 or class 4 climbing.) Virtually any able-bodied person can climb 5.0 with little practice,

but only extremely fit climbers can climb 5.12 or above. Aid climbs are typically rated A1 through A5.

Route: see **Climb**.

Scramble: the activity of a person who is not a trained climber, and is not using climbing equipment for protection on a cliff.

Slings: Knotted or sewn loops of nylon webbing that have many climbing uses. Slings are occasionally left behind when a climber descends from the top of a route by rappelling. At high-use sites, metal chains may be used instead of slings because they are easier to use once in place, last longer, and are less conspicuous.

Sport climbing: Climbs that are protected exclusively with fixed protection, usually bolts, are called sport climbs. Sport climbs are typically short – generally a single rope-length (50 to 60 meters) or less. They rarely continue to summits, but end at fixed anchors where the sustained difficulty of the climb diminishes, the character of the rock changes, or simply at the half-rope point to allow the climber to descend by being lowered. Sport climbing is relatively easy to learn, and requires less equipment than traditional climbing. Due to the fixed bolted protection and limited height, it provides an apparently safer climbing environment than that found in a traditional climbing venue. These qualities have made sport climbing very popular. Another important and attractive factor is that sport climbing has also allowed climbers to push their ability to very high standards with little fear from repeated falls. Previewing and practicing a climb is common, and the emphasis is on the technical difficulty of a climb.

Top rope: Technique of practice climbing where the rope is anchored above the climber.

Traditional climbing: Traditional climbing (sometimes also referred to as free climbing), is how the sport of rock climbing has been practiced since its inception, and has strong historic associations. It is the foundation for the development of the different types of climbing activity that we see today. The term applies to a style of climbing where protection is placed by the ascending climber and removed by the seconding partner. Value is placed on unpracticed ascents. Traditional climbers progress up the rock face using natural hand-and footholds, with the rope and technical climbing equipment used only for safety in case of a fall. Typically, traditional climbs are protected by climbing equipment that is removable and does not damage the rock surface. Traditional climbing can be practiced on small cliffs or in remote mountaineering or alpine locations. It generally involves multi-pitch climbs with the summits as common objectives, and is still what most climbers do most of the time. Many traditional climbs may have an occasional fixed piton or bolt, and they often have fixed anchors for rappels or belays. On a traditional route, however, climbers are always prepared to arrange most of their own protection, which distinguishes this type of climbing from sport climbing.

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8.0 Figures

These figures may be downloaded separately as PDF file by going to the Obed Wild and Scenic River web site at www.nps.gov/obed/pphtml/facts.html .

Figure 1. Obed Wild and Scenic River Vicinity

Figure 2. Agency Preferred Alternative (Alternative A)

Figure 3. Decision Tree for New Sport Routes within Climbing Zone