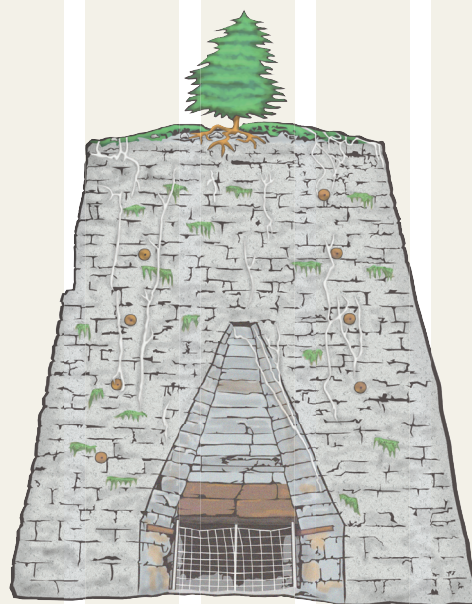




# Conservation Plan

## Blue Ridge Scout Reservation

2007-2010



BLUE RIDGE MOUNTAINS COUNCIL  
BOY SCOUTS OF AMERICA

The Conservation Plan for the Blue Ridge Scout Reservation is presented in three parts:

**I. Ecosystems Management Plan**

**II. Conservation Program Plan**

**III. A Guide to the Natural and Cultural Resources of the Blue Ridge Scout Reservation and their use**

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*The Ecosystem Management Plan* is designed to provide guidance in the management of the terrestrial and aquatic ecosystems present on the Blue Ridge Scout Reservation. In addition, it will provide guidance to manage the aerial and cultural resources inherent to the Reservation.

*The Conservation Program Plan* focuses on activities, advancement, awards, community and camp service and training that promote conservation goals. It will serve as a guide for Scouts and Scouters who desire to incorporate conservation as an integral part of their individual and unit program.

*The Guide to the Natural and Cultural Resources of the Blue Ridge Scout Reservation and their use* is designed for scouts, scouters and other users of the Reservation to identify the forms of vegetation, wildlife and other natural resources and the cultural resources present. In addition to identifying the resources present on the Reservation and where they can be found, it will highlight those of special concern (endangered, rare etc) and those that present specific hazards. The guide will also relate policies regarding consumptive uses (hunting, fishing, gathering wild edibles or other vegetation, etc) as well as the use of trails, camps, back country areas, and other reservation educational uses.

# Council Conservation Committee

(as of June 2007)

Dr. Bill Shiner, Scouter/Forester, Max Meadows, Committee Chairman

Greg Harmon, BRMC Staff, Committee Advisor

Dan Brown, Scouter, Blacksburg

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Jim Clark, DOF Area Forester, Christiansburg

Dr. Carol Croy, USFS—Forest Wildlife Biologist, Blacksburg

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Bob Garst, Scouter, Forester, Roanoke

Jim Zinck, Scouter, VA Office Plant & Pest Services—GM Specialist, Hardy

Russ McDaniel, Scouter, Geologist, Roanoke

# **Part I. Ecosystem Management Plan**

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## **I. Purpose and Policy**

The purpose of the Ecosystems Management Plan is to establish guidelines for the operation and maintenance of the Blue Ridge Scout Reservation commensurate with sound conservation practice and procedure, to enhance the health of its ecosystems, to insure its natural character and to support the program of the Blue Ridge Mountains Council, Boy Scouts of America.

Policies to implement the plan shall be established by the Executive Board of the Blue Ridge Mountains Council, Boy Scouts of America following consultation with conservation professionals concerning the impact and efficacy of the proposed policies.

**MANAGEMENT PHILOSOPHY.** The Ecosystems Management Plan for the Blue Ridge Scout Reservation is predicated upon a management philosophy that recognizes the inherent values of its natural and cultural resources. While it is deemed essential that any management scheme also recognize the inherent importance of managing for user safety and satisfaction, the importance of understanding the nature and complexities of the resource base is vital to the health and vitality of the Reservation's ecosystems.

The primary constant in natural systems is change. Natural systems are dynamic; stability is a rare and short-lived phenomena. Management of natural systems must be based on the recognition and accommodation of the challenges imposed by constant change.

While we tend to focus on the biological and geophysical processes as the principal agents of change, the influence of human activities is increasing in both magnitude and importance. Human induced changes can (and do) alter the natural changes occurring within an ecosystem. Many of these human induced changes are outside the control of the Reservation management and therefore require special attention to enable their accommodation.

It is important to realize that the accommodation of and adaptation to natural change is in some cases the "easiest, least costly, most effective and most appropriate response (1)" for resource management. It is also important to realize that responsible resource management will often require modification of natural change to guide ecosystem development in a desired direction. While non-interference with natural processes is often the surest course to follow in conserving amenity and environmental values, non-action may not enable reservation management to meet the goals of user safety, user satisfaction or resource management.

All too often when management activities are implemented in an effort to solve problems by resisting or attempting to alter natural processes, the result is numerous secondary problems that can be both difficult and costly to mitigate. While such action may be deemed necessary on occasion to assure user safety and/or aesthetic integrity, such actions should be carefully considered as to their potential concomitant liabilities.

"The measuring and monitoring of change is the keystone to resource management (1)" a process of establishing baseline data, coupled with ongoing monitoring activities is essential to establish and maintain viable resource management on the Reservation.

References: (1) Dolan, R., B. P. Hayden, and G. Soucie. 1978. Environmental dynamics and resource management in the U.S. National Parks. *Env. Mgt.* 2(3):249-258

(2) Leak, W.B., et.al. 1997. Applied ecosystem management on nonindustrial forest land. USDA-FS, GTR NE-239. 30p.

## **II. The Blue Ridge Scout Reservation**

### **A. Description and Location**

The Blue Ridge Scout Reservation is a 17,500 acre tract in the southeastern corner of Pulaski County, Virginia.

The Reservation encompasses the upper watersheds of Big Mack's Creek and Little Laurel Creek. Little Mack's Creek, Maple Branch, Chimney Branch, White Oak Camp Branch, Puncheon Camp Branch and Bark Camp Branch feed the two major creeks. Two lakes, one at Camp Powhatan (4.36 acres) and one at Camp Ottari (7.66 acres) provide for swimming, limited boating, and fishing. Big Mack's Creek is a native trout stream. Several intermittent streams and springs exist.

The topography of the Reservation consists primarily of steep mountain slopes interspersed with patches of level or near level ground along the water courses and on mountain tops. The elevation ranges from 1,900 feet along Big Mack's Creek at the northwest edge of the tract to the 3,348 foot Bullard Knob on the southern boundary. Eighteen "peaks" adorn the tract ranging from the 2,530 foot Point Camp Peak to Bullard Knob (3,348 feet).

Geologically, the Reservation lies in the Blue Ridge province. The base rocks consist primarily of sandstone, quartzite and acid shales. Five primary soil types make up most of the Reservation terrestrial surface.

### **B. History**

#### **1. Ownership**

The Reservation, previously known as the Old Radford Iron Company Tract, was purchased by the Blue Ridge Mountains Council, Boy Scouts of America in 1957 from Radford College (now Radford University) for \$56,000. Radford College had assumed ownership of the property by donation from the previous owner, Walter Wood (The Wood family had owned the Radford Iron Company).

#### **2. Resource, Use and Events**

Use of the area by American Indians consisted primarily of seasonal hunting and fishing activities. No permanent villages are known to have existed on the Reservation.

In the late 1700s and early and mid 1800s use of the area was primarily for subsistence farms. Little impact of this use remains. By the late 1800s and into the early 1900s the production of iron at the furnace located in the lower Mack's Creek area was the predominant use. Much of the forest was used to make charcoal for the furnace. A number of the "charcoal pits" are still present on the area. During this time, woods fires frequently erupted from the charcoal pits causing extensive burns over much of the area. This fire regime resulted in the forest cover on the reservation today.

Another event that significantly impacted the forest and wildlife of the area was the emergence of Chestnut Blight. Chestnut was a dominate tree species over much of the area and provided a major food source for native wildlife. Its demise brought significant changes in the forest environment which continues to this day.

### **C. Resource Inventory**

Steps are underway to develop a comprehensive inventory of the natural and cultural resources present on the Reservation. This will be accomplished by the Council Conservation Committee task groups, special events such as Resource Rambles (BioBlitz), and special arrangements with college and university faculty and environmental organizations.

#### **1. Cultural Resources**

##### **a) Historic and Archeological Resources**

##### **(1) Historic Resources**

Several historic resources are present on the Reservation. Notable among them are:

- (a) Charcoal Kilns**
- (b) Iron Furnace**
- (c) King Ranch Area**

- (d) Puncheon Camp
- (e) Mountain View Cabin
- (f) Puncheon Sawmill
- (g) Logging Camp

Efforts are underway to describe these sites as well as identify others that have historic value.

## **2. Archeological Resources**

Little is currently known about archaeological sites that may be present on the Reservation. Efforts are underway to secure an archaeological survey of the Reservation.

## **3. Natural Resources**

### **a) Vegetation**

In general, eight tree species or groups tend to dominate the Reservation

- (a) Red oak group (*Northern red oak, black oak, scarlet oak, bear oak*)
- (b) White oak group (*White oak, chestnut oak*)
- (c) Yellow poplar (*Liriodendron tulipifera*)
- (d) White pine (*Pinus strobus*)
- (e) Red maple (*Acer rubrum*)
- (f) Yellow pine group (*Virginia pine, pitch pine, table mountain pine*)
- (g) Hickory group (*Carya sp.*)

The understory vegetation present on the Reservation is typical of the region. Huckleberry (*Gaylusscia spp.*), galax (*Galax urceolata*), blackberry and raspberry (*Rubus spp.*), and rhododendron (*Rhododendron albiflorum*) are principle species.

Efforts are underway to develop a comprehensive inventory of vegetation existing on the Reservation. (Appendices D-1, D-2, and D-3)

### **b) Wildlife**

The Virginia Department of Game and inland Fisheries identifies 451 species of animals that live in the vicinity of the Reservation. These include 53 mammals, 174 birds, 20 reptiles, 30 amphibians, 56 fish and 124 invertebrates. Studies are currently underway to develop a more definitive list of species known to reside on the Reservation or are frequent transients.

Efforts are underway to inventory the wildlife existing on the reservation. (Appendices D-6, D-7, D-8, D-9, and D-10)

### **III Goals and Objectives**

The principle goals of this plan are:

- To create/preserve and maintain a quality environment within the Reservation.
- To provide quality learning, recreation and character building experiences for Scouts and other users in accordance with Boy Scouts of America policy and procedures.

#### **A. Management Objectives**

##### **1. Vegetation**

- a) Maintain/enhance native vegetation throughout the Reservation.
- b) Eradicate exotic and feral vegetation where such vegetation presents a threat to native species or Reservation users.
- c) Re-establish native vegetation regimes where appropriate.
- d) Re-establish historic native vegetation regimes in selected areas.
- e) Educate Scouts, Scouters and other users regarding the proper behavior when in contact with the Reservation vegetation.

##### **2. Wildlife**

- a) Maintain/stabilize/enhance existing native wildlife species.
- b) Manage native and exotic/feral nuisance species to minimize their impact on native ecosystems and Reservation users.
- c) Eradicate exotic species of concern to the health and safety of native ecosystems and/or Reservation users.
- d) Educate Scouts, Scouters and other users regarding proper behavior during encounters with Reservation wildlife and appropriate means to enhance wildlife habitat.

##### **3. Soils**

- a) Stabilize to prevent erosion and minimize negative impact in heavy use areas.
- b) Enrich to enhance soil usefulness as a medium for growing desired vegetation species.
- c) Educate Scouts, Scouters and other users regarding soils, soil uses, and soil conservation.

##### **4. Water**

- a) Maintain high quality water in all Reservation waterways and in Powhatan and Ottari Lakes.
- b) Maintain a vegetative buffer riparian zone adjacent to all waterways.
- c) Educate Scouts, Scouters, and other users regarding the proper behavior when using water resources.

##### **5. Air Quality**

- a) Maintain high air quality throughout the Reservation.
- b) Manage air pollutant sources (road dust, campfire smoke, etc) to minimize their impact on the Reservation's air quality.

##### **6. Archaeological/Historic Resources**

- a) Protect and prevent deterioration of existing resources.
- b) Enhance selected resources through interpretation, rehabilitation, restoration, or reconstruction.
- c) Educate Scouts, Scouters and other users regarding proper behavior during encounters with archaeological and historical resources.

##### **7. Aesthetic/Philosophic Resources**

- a) Preserve/protect the wildland character of areas so designated.
- b) Implement management activities in such a manner as to enhance the landscape/scenery value of the Reservation.
- c) Facilitate the removal of collectibles to assure minimal negative impact on the Reservation environment.

## **B. Management Policies**

To ensure the goals and objectives set forth in this plan are met, the policies related to resource management must be strictly enforced. Failure to do so will undermine efforts to establish/maintain the level of desired environmental and program quality.

Scouts, Scouters and other users of the Blue Ridge Scout Reservation are expected to take extraordinary measures to protect the Reservation's natural and cultural resources.

All users are prohibited from collection and removal of plants and wildlife from the Reservation except by permit or other authorization provided within this plan.

### **1. Native Species Introduction**

It shall be the policy of the Blue Ridge Scout Reservation that only native species be introduced on the Blue Ridge Scout Reservation unless compelling circumstances make it appropriate to introduce non-native species.

### **2. Exotic/feral species management**

It is the policy of the Blue Ridge Mountains Council to eradicate, prevent the spread of and prohibit the introduction of exotic species on the Blue Ridge Scout Reservation unless there are compelling reasons to do otherwise.

An ongoing survey will identify the type and location of exotic/feral species inhabiting the Blue Ridge Scout Reservation. Once identified and located, steps will be taken to ascertain their potential impact on ecosystems and on users. In the event the analysis shows a significant negative impact is or will occur if no action is taken, a resource project plan (see appendix) will be devised to control or eradicate the organism.

### **3. Resource Utilization/Harvest**

#### **a) General Policy**

- (1) It is the policy of the Blue Ridge Mountains Council to permit the use/harvest of specifically identified resources from the Blue Ridge Scout Reservation. The gathering of any resource not specifically identified may be permitted under a special permit. Species identified as rare or endangered shall not be used/harvested from the Blue Ridge Scout Reservation.
- (2) This policy shall not restrict the gathering of an individual plant or parts thereof for education purposes by Scouts or Scouters unless specifically prohibited (i.e. a rare or endangered species).
- (3) All use/harvest of resources on the Blue Ridge Scout Reservation shall be accomplished in such a manner as to reduce/eliminate any negative impact on the habitat/location of the resource.
- (4) Scouts and Scouters shall have priority on the use/harvest of Blue Ridge Scout Reservation resources.

#### **b) Timber/Pulp**

The harvest of timber/pulp resources will be allowed when such action is deemed to enhance the quality and health of the ecosystems within and adjacent to the Blue Ridge Scout Reservation. All such harvest shall be accomplished under a harvest plan prepared by the forestry task group and shall utilize sound sustainable forestry practices and adhere to the Virginia Best Management Practices to reduce impact on the ecosystem and surrounding areas.

#### **c) Firewood**

Scouts and other user groups are prohibited from bringing firewood on to the reservation (due to the potential to introduce tree pest and disease species).

The harvest of down and dead wood for firewood shall be permitted by special permit only.

All such harvest shall be accomplished under a harvest plan prepared by the Forestry task group and shall adhere to Virginia Best Management Practices to reduce negative impact on the ecosystem and surrounding areas.

The gathering of dead and down wood for camp or camp fires on the Blue Ridge Scout Reservation by Scouts and other users is permitted unless specifically prohibited.

- d) Edibles**  
The harvest of edible vegetation products by Scouts and Scouters for their consumption while using or in residence on the Blue Ridge Scout Reservation is permissible unless specifically prohibited. The term edible generally refers to fruits, berries, nuts, greens, roots, and mushrooms growing “wild” on the reservation.  
Such harvest shall be accomplished under appropriate guidelines to avoid undue negative impact on the edible resource or its habitat.
- e) Decoratives**  
The gathering of decoratives (ferns, club moss, mosses, grape vines, wildflower seed pods, Christmas greens, dead and down wood, weathered stumps, Galax, etc) shall be permitted only under a special permit except when such gathering is for limited use on the Blue Ridge Scout Reservation.  
The gathering of decoratives shall be accomplished so as to avoid undue negative impact on the resource or its habitat/location.
- f) Medicinals**  
The gathering of medicinal plants (see Appendix for a list of plants considered as medicinals under this policy) shall be permitted only under a special permit.  
The gathering of medicinals shall be accomplished under strict guidelines as specified in the permit and in such a manner as to minimize negative impact on the resource or its habitat/location.
- g) Native Plants**  
The gathering of native plants, other than those specifically mentioned here in, shall require a special permit. Such harvest shall be accomplished under guidelines designed to reduce undue negative impact on the plant or its habitat.
- h) Specialty Items**  
The gathering of any other plant material not previously identified shall be permitted.  
Care should be exercised to assure minimum negative impact on the plant species and its habitat/location.
- i) Wildlife**  
The hunting and trapping of wildlife shall be permitted only under a special permit on specifically designated areas and in accordance with the rules and regulations of the Virginia Department of Game and Inland Fisheries.  
Fishing shall be permitted within specifically designated waters in accordance with the rules and regulations of the Virginia Department of Game and Inland Fisheries.  
The trapping of nuisance species within the Reservation is permitted under a special permit by authorized individuals.  
Nuisance rodents or other wildlife deemed a hazard to the health of Reservation users may be trapped or otherwise eliminated and disposed of in accordance with health and safety guidelines.
- j) Minerals**  
(1) The extraction of rocks and mineral resources shall be permitted only under a special permit, which will specify:  
    (a) The material and quantity to be mined/removed.  
    (b) The specific location where mining/removal will be permitted.  
    (c) Any specific requirements to be imposed on the mining/removal operation.  
(2) The collection of small individual samples of rocks and minerals by Scouts as a part of advancement requirements or other approved Scouting activities is permitted.  
(3) The collection of rocks and minerals, as well as the large scale extraction of mineral resources shall be accomplished so as to minimize negative environmental impact.
- k) Archaeological/Historic Resources**  
The collection of archaeological/historic resources is permitted only under a special permit.  
Scouts and other users of the Blue Ridge Scout Reservation should avoid removing or otherwise altering any archaeological or historic resource.

**1) Use of Pesticides**

The use of pesticides or other chemicals for the control of undesirable species of animals or plants shall be discouraged except where such use is deemed essential by council officials for the health and safety of Reservation users or the natural environment.

Any use of such agents shall be in accordance with health and safety guidelines.

**IV. Management Approach**

**A. Management Zones**

The Blue Ridge Scout Reservation shall be divided into seven (7) management zones as soon as practical following completion of the resource inventory and an analysis of the management needs of the area.

The management zones are intended to provide over-all direction for the best use of each zone. It is understood, however, that unforeseen, natural and man-caused events may necessitate these zones or portions thereof be altered.

The seven management zones include:

**1. Administrative Areas Zone (symbol: A) (Appendix B-1)**

- a) Description: Includes maintenance, storage and rangers residence areas, paved or improved roads (primarily for vehicular traffic) and their buffer areas, and other areas designated as “administrative”.

Zone A-1: Main reservation storage and maintenance area and ranger residence

Zone A-2: Camp Powhatan road and buffer

Zone A-3: Camp Ottari maintenance area and ranger residence

Zone A-4: Camp Ottari road and buffer

Zone A-5: Communications Tower and Access Road

- b) Directive: Modification of the area to facilitate the area’s administrative purpose is permitted. Care should be exercised to keep negative environmental impact to the minimum necessary during development activities and operational use.

- c) Monitoring Recommendations:

A process of continuous monitoring of environmental impact within administration areas shall be implemented to assure the timely identification of problems or potential problems and rapid action to correct or mitigate the impact.

- d) Management Recommendations:

Administrative areas shall be managed to create and or maintain:

(1) A safe environment for users

(2) A functional environment commensurate with the administrative functions assigned to the site.

(3) To the extent possible, an appearance that blends with the natural environment.

**2. Developed Camp Zone (Symbol: D) (Appendix B-2)**

- a) Description: Includes the areas used for developed camping including adjacent program areas and other support areas.

D-1: Camp Powhatan Area

D-2: Camp Ottari Area

D-3: “King Ranch” Area

D-4: Huff Farm Area

- b) Directive: Modification of the environment required to support the camp mission and assure camper safety is permitted. Care shall be exercised to keep negative environmental impact to a minimum during development activities and operational use.

- c) Monitoring Recommendations:

A process of continuous monitoring of environmental impact shall be implemented to assure the timely identification of problems or potential problems and rapid action during periods of active camp use to correct or mitigate the impact on safety to camp users.

- d) Management Recommendations:  
Developed camp areas shall be managed to assure:
  - (1) A safe environment for users
  - (2) A functional environment commensurate with this program's function assigned to the site.
  - (3) To the extent possible, an appearance that blends with the natural environment.

### **3. Backcountry Program Zones (Symbol: B) (Appendix B-3)**

- a) Description: Includes backcountry trails and their corridors, backcountry outposts, and backcountry program areas and their buffer areas.
- b) Directive: Modification of the natural environment for backcountry trails, outposts and program areas is permitted only to the extent necessary to facilitate their designated use and the safety of their users. Any development within this zone must blend with the natural environment and cause minimum negative impact on the environment and visual character of the area.
- c) Monitoring Recommendations:  
A process of periodic monitoring shall be implemented to assure identification of problems or potential problems and actions to correct or mitigate the impact.
- d) Management Recommendations:  
Backcountry program areas will be managed to create or maintain:
  - (1) A safe environment for users
  - (2) A functional environment commensurate with the program functions assigned.
  - (3) An appearance that blends with the natural environment.

### **4. Resource Zone (Symbol: R) (Appendix B-4)**

- a) Description: Includes those areas of the Reservation that are designated for wildlife or forest management activities such as hunting, trapping, timber and non-timber forest products harvesting, and similar extractive activities.
- b) Directive: Modification commensurate with the resource management objectives of the activity is permitted. Care will be exercised to assure minimum negative impact during resource management activities.
- c) Monitoring Recommendations:  
A process of periodic monitoring shall be established to gain and maintain an understanding of the ecological situation within the area and any developing problems in need of action.
- d) Management Recommendations:  
The resource zone shall be managed to:
  - (1) Maximize wildlife and forest values within the context of natural ecological capacity.
  - (2) Create and maintain a safe environment for users.

### **5. Backcountry Conservation Zone (Symbol: C) (Appendix B-5)**

- a) Description: Includes those areas of the Reservation exhibiting a natural regime that are not a part of any other zone and where only latent evidence of human use remains.
- b) Directive: Only ecological changes are permitted. Activity use is restricted to those of a "Leave No Trace" nature.
- c) Monitoring Recommendations:  
A process of periodic monitoring shall be established to gain and maintain an understanding of the ecological situation and any problems in need of action.
- d) Management Recommendations: Management within the backcountry conservation zones shall be oriented to the maintenance of natural processes. Overt management activities shall be restricted to those deemed essential to:
  - (1) Maintain/enhance habitat for a threatened, rare or endangered species.
  - (2) Recreate an historic ecosystem that was native to the area.

## **6. Riparian Zone (Symbol: S) (Appendix B-6)**

- a) Description: Includes the permanent and primary wet intermittent streams, and springs and their terrestrial buffers lying outside zones A and D.  
The primary ecosystems include:
  - S-1 Big Mack's Creek
  - S-1.1 Maple Branch
  - S-1.2 Chimney branch
  - S-1.3 Little Mack's Creek
  - S-1.4 Bark Camp Branch
  - S-1.5 Puncheon Camp Branch
  - S-2 Burke's Run
  - S-2.1 White Oak Camp Branch
  - S-3 Little Laurel Creek
- b) Directive: Care shall be taken to assure the maintenance and enhancement of high quality water within the streams and the maintenance of their aquatic integrity; stream buffer areas shall adhere to DOF Guidelines (Appendix K-2) or exceed such guidelines when conditions require.
- c) Monitoring Recommendations:  
A process of periodic monitoring shall be established to gain and maintain an understanding of the ecological situation and problems in need of action.
- d) Management Recommendations:  
The Riparian Zone shall be managed to:
  - (1) Maintain high water quality within the riparian streams.
  - (2) Maintain vegetated corridors along streams.
  - (3) Maintain protected stream crossings for trails and roads to assure bank and stream bottom stabilization.
  - (4) Provide and maintain stream bank stabilization in highly erodible areas.

## **7. Inviolate Zone (Zone I) (Appendix B-7)**

- a) Description: Includes areas of the Reservation that contain a population of rare or endangered species; an ecosystem of special concern or areas in need of special protection due to the resources present or safety of the Reservation users.
- b) Directive: Areas zoned I shall be "off limits" to any use except for that deemed essential to maintain the integrity of the area.
- c) Monitoring: A monitoring program shall be established to assure regular periodic surveillance of the areas. The program will monitor evidence of unauthorized intrusion into the area, the status of the special resource(s) and any other specified information.
- d) Management: Management of these areas shall be oriented to assure the continuance or enhancement of conditions conducive to the retention and enhancement of the special resource.

## **B. Baseline Reference**

Studies are underway or in the planning stage to ascertain a comprehensive baseline reference of the Reservation's natural and cultural resources. It is anticipated the baseline studies will be completed by 2010.

## **C. Analysis of existing conditions versus Baseline Reference**

An analysis of changes in the Reservation's natural and cultural resources will occur on a regular basis as baseline reference data and monitoring of current conditions data become available.

These analyses will be used to ascertain the need for changes in the management of the Reservation's natural and/or cultural resources.

#### **D. Resource Monitoring Program**

An ongoing monitoring program will be established to initially establish baseline data with follow-up to ascertain the condition of the Reservations' areas and ecosystems and the direction of change. (Appendix C)

The overall Reservation monitoring program will consist of established permanent plots and/or sample sites throughout the Reservation and along its streams.

The monitoring program will measure:

1. Forest composition and health
2. Wildlife presence, abundance and health
3. Soil conditions
4. Water quality
5. Trail conditions
6. Camp and program area conditions

#### **V. Management and Restoration of Healthy Ecosystems**

##### **A. Causes of Ecosystem Degradation**

###### **1. Air Pollution**

Air pollutants within the Reservation are primarily derived from campfire smoke, vehicle exhaust and dust (primarily due to vehicular traffic).

###### **2. Water Pollution**

The principle source of water pollution within the Reservation is soil erosion. Minor pollution occurs from human wastes and human activities in or adjacent to surface water.

###### **3. Soil Erosion**

Due to the nature of soil and the topography within the Reservation, soil erosion is a primary form of environmental degradation and a principal water pollutant. The loss of vegetation cover due to human use activities exacerbates this problem.

###### **4. Noise**

The principle source of noise within the Reservation results from human use that includes loud vocalizations and the use of motorized equipment.

###### **5. Exotic and Feral Organisms**

The principle exotic and feral organisms impacting the Reservation are coyote (coy dog) and tree-of-heaven (*Ailanthus altissima*)

###### **6. Pest Organisms**

The principle pest organisms that provide significant environmental degradation or impact user safety include the southern pine beetle, the hemlock woolly adelgid and gypsy moth.

###### **7. Aesthetic Degradation**

The principle forms of aesthetic degradation of the Reservation include litter, soil erosion, and non-blending camp equipment and structures.

###### **8. Wildfire**

The threat of wildfire is generally considered to be a significant potential source of environmental degradation. The nature of the Reservation woodlands and topography provides significant susceptibility to wildfire.

###### **9. Resource Extraction**

Resource extraction necessarily involves a degree of environmental degradation. Depending upon the nature of the extraction, impact may be minor or severe.

## **10. Human Use**

The principle causes of environmental degradation due to human use of the Reservation includes vandalism, litter, solid wastes, human and animal wastes, encroachments, user safety measures, user satisfaction measures, Reservation operations activities and wildlife harassment.

## **11. Community Concerns**

The principle causes of environmental degradation resulting from community influences include adjacent landowner activities, encroachment and poaching (wildlife and plants).

## **B. Threshold of Concern**

Threshold of concern (TOC) is a process by which a benchmark is established to mark the point at which concern about a particular resource or value will lead to management action.

A TOC shall be established in relation to each of the identified causes of environmental degradation to determine when management action may be appropriate to mitigate the impact. (Appendix A-3)

## **C. Measures to Reduce Environmental Degradation**

### **1. Air Pollution**

#### **a) Preparation**

- (1) All users shall be made aware of vehicle speed limits while using dirt surface roads.
- (2) All users shall be made aware of the open fire policies regarding smoke production.
- (3) All users shall be made aware of the policies regarding vehicle use within the Reservation.

#### **b) Monitoring**

Leaders and staff shall monitor user behavior to assure compliance with policies and procedures that prevent air pollution (Appendix C-3).

#### **c) Suppression**

- (1) The speed limit for vehicles on dirt surface roads shall be set at 15 mph or lower to reduce dust.
- (2) Open fires shall be restricted to meal preparation time and for evening campfire, or other program activities. Users shall use small fires sufficient for the fire purpose and shall use fuel commensurate with reduced smoke. Fires shall be totally extinguished following their intended purpose.
- (3) Vehicular travel within the Reservation shall be restricted to essential movement to facilitate the proper operation of the camp and program activities. Maximum use of walking and authorized non-polluting vehicles shall be encouraged.

### **2. Water Pollution**

#### **a) Preparation**

All users shall be cautioned regarding behavior and/or activities that may cause the degradation of water resources within the Reservation, in particular those relating to the use of stream riparian and lakeshore zones and stream crossings located on trails and roads.

#### **b) Monitoring**

A process of periodic monitoring of the streams and lakes within the Reservation shall be established in accordance with Appendix C-2.

#### **c) Suppression**

- (1) Activities within stream riparian zones and lakeshores shall be restricted to those deemed essential for program use.
- (2) Stream and lakeshore areas frequently used for program activities shall be "hardened" to accommodate such use in an effort to reduce soil erosion.
- (3) Leave no trace guidelines regarding waste disposal in relation to streams and lakes shall be strictly enforced.

### **3. Soil Erosion**

- a) Preparation  
All users shall be cautioned regarding behavior and/or activities that may cause soil erosion within the Reservation.
- b) Monitoring  
A process of continuous monitoring of areas prone to soil erosion shall be established to identify existing and potential erosion concerns (Appendix C-1).
- c) Suppression
  - (1) Efforts shall be undertaken to stabilize areas within the Reservation prone to soil erosion.
  - (2) Areas prone to severe soil erosion shall be placed “off limits” for camp and program activities unless suitably stabilized.

### **4. Noise**

- a) Preparation  
All users shall be cautioned regarding behavior and/or activities that generate excessive noise within the Reservation.
- b) Monitoring  
A process of continuous monitoring shall be established to identify any existing and potential sources of excessive noise (Appendix C-3).
- c) Suppression
  - (1) The use of tools, machinery and noise producing vehicles that emit a decided level in excess of 100 shall be prohibited except in circumstances where the health and safety of users would be compromised (Appendix K-3).
  - (2) Trail users shall be cautioned regarding loud talking and other behavior that generates excessive noise while on the trails or in campsites or program areas.

### **5. Exotic and Feral Organisms**

- a) Preparation  
All users shall be made aware of the presence of exotic and feral organisms present on the Reservation, particularly any that may impact the health and safety of the users.
- b) Monitoring  
A process of continuous monitoring shall be established to identify and locate the presence of exotic and feral organisms on the Reservation (Appendix C-1 and C-2).
- c) Suppression  
Efforts to prevent the introduction of and action to eliminate or mitigate the impact of feral and exotic organisms on the Reservation shall be taken in accordance with the feral and exotic organisms plans (Appendix I).

### **6. Pest Organisms**

- a) Preparation  
All users shall be made aware of pest organisms present on the Reservation, particularly those of a nuisance nature or those providing a threat to the health and safety of the users.
- b) Monitoring  
A process of continuous monitoring shall be established to identify and locate pest organisms on the Reservation (Appendix C-1 and C-2).
- c) Suppression
  - (1) Efforts shall be undertaken to reduce pest organisms on the Reservation in accordance with the pest management plans (Appendix I)
  - (2) To reduce user encounters with nuisance and harmful pests while on the Reservation, pest repellents and other protective measures shall be recommended (Appendix I).

## **7. Aesthetic Degradation**

- a) Preparation  
All users shall be made aware of actions that may cause the aesthetic degradation of the Reservation and means to prevent or mitigate their impact.
- b) Monitoring  
A process of continuous monitoring shall be established to prevent or quickly correct actions resulting in the aesthetic degradation of the Reservation (Appendix N).
- c) Suppression
  - (1) Efforts shall be undertaken to provide an adequate number of trash containers strategically located throughout camp and program areas and establish a pick up schedule commensurate with usage (Appendix N).
  - (2) Efforts will be made to maintain travel corridors, camps and program areas within the Reservation free of unsightly and offensive visual intrusions.
  - (3) Each camp and program area will be supplied with “Do Not Litter” signs for posting in conspicuous locations.
  - (4) Each user group will be encouraged to “police” the area(s) used to clean up trash or other debris located thereon.

## **8. Wildfire**

- a) Preparation  
All users and staff shall be made aware of the current fire danger rating on the Reservation and their role should a wildfire ignite within the Reservation or adjacent property.
- b) Monitoring  
A process of continuous monitoring of fire conditions within the Reservation shall be established in accordance with the Wildfire Management Plan (Appendix H).
- c) Suppression
  - (1) Wildfires on the Reservation shall be suppressed as rapidly and as completely as possible following discovery under the provisions of the Wildfire Management Plan (Appendix-H).
  - (2) A fire danger sign shall be installed at the Reservation entry points to Camp Powhatan and Ottari and, during the summer camp season, at a prominent location at each camp’s dining facility to notify users of the current fire danger rating.
  - (3) maximum use of stoves for cooking shall be encouraged by groups using the Reservation.
  - (4) Open campfires shall be restricted to designated campfire sites except when used as a part of a wilderness/backcountry cooking or other program activity.
  - (5) The smoking of tobacco products is restricted to designated smoking areas within the developed camps and program areas. Smoking is not permitted in backcountry areas.
  - (6) “Be Careful With Fire” signs shall be posted prominently in camp and program areas.

## **9. Resource Extraction**

- a) Preparation  
Users of the Reservation shall be informed of any ongoing resource extraction activities that they may encounter during their visit to the Reservation.
- b) Monitoring  
A process of periodic monitoring shall be established during resource extraction activities on the Reservation as identified in the resource extraction management plans (Appendix-M).
- c) Suppression  
Any potential environmental degradation resulting from resource extraction activities shall be identified with required measures to be taken to eliminate or mitigate their impact in the Harvest/Extraction Plan prepared under the Resource Extraction Management Plan (Appendix-M).

## **10. Human Use**

- a) Preparation  
All users will be educated to recognize their potential impact on the environment and measures they may take to reduce negative impact.
  - (1) Bear Aware Program
  - (2) Leave No Trace Program
  - (3) Environmental Briefings (see Appendix E-6.3).
- b) Monitoring  
Leaders and staff shall monitor user behavior to assure compliance with policies and procedures that prevent environmental degradation.
- c) Suppression
  - (1) Policies (rules and regulations) will be established to discourage inappropriate user behavior that could lead to environmental degradation.
  - (2) Areas of special environmental concern will be set off and marked as inviolate zones to discourage use (Appendix B-7).
  - (3) A permit system shall be implemented to restrict use of certain areas or harvest of resources (Appendix E-1).

## **11. Community Concerns**

The following measures shall be undertaken to reduce environmental degradation due to community concerns.

- a) Preparation  
Establish good relations with scout leaders, adjoining landowners and others having a relationship with Reservation and resources.
- b) Monitoring  
A process of continuous monitoring of community concerns shall be established to foster appropriate community relations.
- c) Suppression
  - (1) Concerns expressed by scout leaders, adjoining landowners or others who use the Reservation for non-scout related activities shall be addressed in a timely manner by the BSA official who has the authority to do so. Concerns that relate to a resource management on conservation matters shall be referred to the Council Conservation Committee for information and, if appropriate, a recommendation for solution.
  - (2) Actions and/or activities undertaken on the Reservation that may generate community concerns shall be addressed prior to implementation through notification of individuals or groups likely to be concerned via mail, meetings, and mass media.

## **D. Environmental Impact Analysis**

Any project undertaken on the Blue Ridge Scout Reservation which has the potential to impact the existing environment requires the preparation of an Environmental Impact Analysis (EIA).

Major development projects, following approval by the BRMC Properties Committee shall be referred to the Council Conservation Committee for review and EIA preparation.

Minor projects which do not need BRMC Properties Committee approval (e.g. trail work, "Conservation" projects, "maintenance" projects, etc.) shall be analyzed for environmental impact by informal or formal means as described in Appendix E-3, EIA Guidelines. Such analysis shall be completed prior to the initiation of any on-site actions required by the project.

If the EIA shows any area of concern (i.e., negative impact), the project shall be modified to eliminate or mitigate the concern.

If the EIA shows any long term negative impact, the project shall be placed on hold until reviewed by the Council Conservation Committee.

## **VI. Appendices**

- A Management Schedules/Threshold of Concern
- B Management Zones
- C Monitoring Guidelines
- D Resource Inventory
- E Conservation Needs and Projects
- F Trail Plan
- G Campsite Plan
- H Wildfire MP
- I Pest MPs
- J Feral and Exotic Organisms MPs
- K Pollution Abatement MPs
- L Soil Resources MP
- M Resource Extraction MPs
- N Aesthetic Improvement MPs
- O Cultural Resources MPs

### **Appendix A Management Schedules/Threshold of Concern**

- A-1 Matrix of Management Activities
- A-2 Matrix of Conservation Activities
- A-3 Threshold of Concern

### **Appendix B Management Zones**

- B-1 Administrative Areas Zone
- B-2 Developed Camp Zone
- B-3 Backcountry Zone
- B-4 Resource Zone
- B-5 Backcountry Conservation Zone
- B-6 Riparian Zone
- B-7 Inviolate Zone

### **Appendix C Monitoring Guidelines**

- C-1 Terrestrial
- C-2 Aquatic
- C-3 Aerial
- C-4 Cultural

### **Appendix D Resource Inventory**

- D-1 Tree and shrub species
- D-2 Herbaceous species
- D-3 Ferns, mosses, lycopods
- D-4 Lichens
- D-5 Fungi
- D-6 Mammals
- D-7 Birds
- D-8 Reptiles
- D-9 Amphibians
- D-10 Fish
- D-11 Invertebrates
- D-12 Species of special conservation concern; rare and endangered species
- D-13 Medicinal plants

D-14 Hazard plants and animals

D-15 Invasive species

## **Appendix E–Conservation Needs and Projects**

E-1 Special Permits

E-2 Resource Project Plans

E-3 Environmental Impact Analysis Guidelines

E-4 Environmental Area Adoption

E-5 Conservation Projects

E-6 Educational Activities and Materials

### **Appendix E-1 Special Permits**

Individuals or groups desirous of using the Reservation, or parts thereof, or of harvesting a resource from the Reservation must secure a special permit unless the use or harvesting is specifically permitted by Reservation policy.

To request a special permit, a letter outlining the details of the desired use or harvest activity shall be sent to the Council Service Center for processing.

The Council Service Center will forward the request to the appropriate Council Executives or Council Committee(s) for review and recommendations.

In the event the request lies within the parameters of existing policy and the review by council personnel is positive, the Council Service Center shall issue the permit.

In the event the request lies within the parameters of council policy, but is not recommended by council reviewers, the issue shall be forwarded to the Council Scout Executive for review and approval/disapproval.

In the event the request lies outside the parameters of council policy and is not recommended by the council reviews, the permit request shall be denied.

The procedures currently in effect for the reservation of areas and facilities on the reservation or for the issuance of hunting and fishing permits will remain in effect.

### **Appendix E-2. Resource Project Plans (RPP)**

Management activities taken to enhance the health, safety or value of Reservation resources shall be initially proposed as a Reservation project plan. The plan shall indicate:

1. Identification and location of resource need and problem.
2. Recommended measure(s) to deal with the need or problem.
3. Results of an EIA regarding the project (See Appendix E-3). Note: Append EIA to Project Plan.
4. Resources needed to implement the recommended measures to include supplies, tools, other equipment, manpower and costs.
5. A time line identifying the proposed schedule of work and completion date.
6. Personnel to be used to accomplish the project and individual(s) who will supervise the project.
7. Name, address, phone numbers and email address of the project coordinator.

The RPP shall be prepared in writing and submitted to the designated person. Following approval the RPP shall be returned to the initiator for implementation.

Upon completion of the project, the project coordinator shall notify the Council liaison for the project (Ranger, Council Professional, Conservation Committee Member) so that appropriate recognition may be provided.

## **Appendix E-3 Environmental Impact Analysis Guidelines**

### **A. Informal EIA**

An informal EIA is acceptable when “minor” projects are considered to present only minimal negative impact to the environment and where a significant positive impact is anticipated.

The informal EIA consists of a written statement (a paragraph or two) acknowledging a review of the project to ascertain potential negative environmental impact and a statement of the positive results anticipated has been accomplished.

The informal EIA may be accomplished by a knowledgeable adult or junior leader who is providing leadership for the project.

The informal EIA statement shall be attached to the Resource Project Plan (Appendix E-2).

### **B. Formal EIA**

A formal EIA shall be required whenever a project is felt to present significant negative impact on the environment or when an informal EIA tends to show potential significant negative environmental impact.

The formal EIA consists of an analysis matrix and a statement of findings.

An analysis matrix (see figure E-3.1 below) shall be prepared to show:

1. The name of the project
2. A description of the project
3. Who will complete the project
4. Who prepared the EIA
5. The date of the EIA
6. A matrix showing interaction blocks for resources and project actions.
7. The type of impact on the resource anticipated during the construction/activity phase and long range.
8. An analysis of the impact
9. A statement regarding the mitigation of any negative impacts.

Impacts shall be identified as either + (positive impact) or - (negative). If no impact is anticipated, use 0. Initial impact anticipated to resources during project implementation shall be located in the upper left of the interaction box; anticipated long-term impact in the lower right corner (as shown in figure E-3.1).

For some projects, it maybe important to include impacts anticipated to specific resources rather than simply to groups (e.g. vegetation or wildlife). If a significant impact is expected to occur relating to a specific type of vegetation or wildlife (e.g. a rare or endangered species, species of special concern, or otherwise of special interest) then an interaction block should show the EIA for that specific resource (See Table E-3.1).

If the project is anticipated to impact aesthetic or cultural (archeological or historic) resources, then an interaction box (or boxes) should be included to identify the anticipated impact.

A copy of the EIA should be attached to the Resource Project Plan (Appendix E-2).

Figure E-3.1: Sample EIA

EIA-Trail crossing of Big Mack's Creek

**Project:** Stabilize banks of BMC and placement of stepping stones on creek bottom.

**Project to be completed by:** OA

**EIA prepared by:** R.J. Snarf    **Date:** 2/15/07

Resource	Project Actions		Comments
	Rock Ledge on Creek Banks	Stepping Stones in Creek	
Vegetation	0/0	0/0	No discernible impact
Wildlife	0/0	0/+	No discernible impact initially, fish and aquatic life improved after
Soils	-/+	-/+	Soil erosion at site during construction. Soil stabilization after construction
Water	-/+	-/+	Water quality deterioration during construction. Water quality improved after construction
Air	0/0	0/0	No discernible impact
<p><b>Analysis:</b> While there will be initial negative impact on the soils and water quality, the long term impact will be positive for soils, water quality and wildlife.</p>			
<p><b>Mitigation of Negative Impacts:</b> Care shall be exercised to minimize initial impact on the soils and water quality during construction.</p>			

Figure E-3.1

<b>Potential Resource Components and Project Activities for the EIA Matrix</b>	
<b>A. Resource Components</b>	
Soils	<ul style="list-style-type: none"> <li>• Surface Soils • Soil Quality • Soil Erodibility • Land Form</li> <li>• Unique Soil Resources • Unique Physical Feature</li> </ul>
Water	<ul style="list-style-type: none"> <li>• Surface Water • Subsurface Water • Water Quality • Water Temperature</li> </ul>
Air	<ul style="list-style-type: none"> <li>• Air Quality (particulates , gases) • Micro/Macro Climate • Air Temperature</li> </ul>
Vegetation	<ul style="list-style-type: none"> <li>• Trees • Shrubs • Herbaceous Plants • Aquatic Plants • Rare/Endangered Plants</li> </ul>
Wildlife	<ul style="list-style-type: none"> <li>• Land Animals • Birds • Fish and Shellfish • Benthic Organisms</li> <li>• Insects/arthropods • Microfauna • Rare/Endangered Species</li> </ul>
Aesthetics	<ul style="list-style-type: none"> <li>• Scenic Views (immediate, long range) • Wilderness/Backcountry Qualities</li> <li>• Unique Landforms or Physical Features • Rare/Endangered Species</li> </ul>
Cultural	<ul style="list-style-type: none"> <li>• Historic • Archeological</li> </ul>
<b>B. Project Actions</b>	
<ul style="list-style-type: none"> <li>• Introduction of exotic plants or animals</li> <li>• Modification of habitat</li> <li>• Alteration of ground cover</li> <li>• Alteration of drainage</li> <li>• Modification of stream flow or control</li> <li>• Burning of site or debris</li> <li>• Surface alteration or paving</li> <li>• Excessive noise generation</li> <li>• Landscaping activities</li> <li>• Road/trail construction</li> <li>• Structure construction activities</li> <li>• Cut and fill activities</li> <li>• Erosion control activities</li> <li>• Terracing</li> <li>• Reforestation activities</li> <li>• Wildlife habitat modification</li> <li>• Wildlife stocking activities</li> <li>• Landscaping activities</li> <li>• Fertilization</li> <li>• Chemical pest control</li> <li>• Weed control</li> </ul>	

## **Appendix E–4 Environmental Area Adoption**

Scout units will be encouraged to “adopt” environmental areas within the Reservation. Adoption commits a unit to monitor and maintain the area in accordance with the adoption agreement between the unit and the Blue Ridge Scout Reservation.

Units may “adopt”:

1. Trails or trail segments
2. Campsites
3. Roads or road segments
4. Streams or stream segments
5. Program areas
6. Conservation demonstration areas
7. Other areas

## **Appendix E–5 Conservation Projects**

### **a. Conservation Demonstration Areas**

Several conservation demonstration areas will be established at selected sites within the Blue Ridge Scout Reservation. These areas will showcase appropriate enhanced resource conservation on the Reservation.

These areas will focus on specific needs the Reservation resources have to include:

Ecosystem enhancement

Stream enhancement

Wildlife enhancement

Trail enhancement

Campsite enhancement

Soil enhancement

Program area enhancement

### **b. Chestnut Project**

An effort will be made to reintroduce the American Chestnut (*Castanea dentata*) as a principle species on selected sites within the Blue Ridge Scout Reservation.

### **c. Wild Plum Project**

An effort will be made to reintroduce wild plums (*Prunus americana*) as a shrub species on selected sites within the Blue Ridge Scout Reservation.

### **d. Box Turtle Project**

In cooperation with VDGIF. An effort will be made to enhance the habitat for and population of common box turtles (*Terrapene carolina*) on the Blue Ridge Scout Reservation.

## **Appendix E–6 Education Activities and materials**

E–5.1 Bear Aware Materials

E–5.2 Leave No Trace Materials

E–6.3 Environmental Briefing

Unit (Group) leaders and staff are responsible for providing an environmental briefing for users:

- a. At the start of each day to briefly cover safety and environmental concerns relative to the day’s activities.
- b. At the start of each activity to reiterate safety and environmental concerns relative to the activity and activity program area.

Environmental briefings should cover (as a minimum):

- a. General safety hazards in the program area, including the current fire danger rating.
- b. Specific safety hazards in the program area.
- c. Any environmental concerns relative to special species or habitats
- d. Actions to be taken should one encounter safety hazards or environmental concerns.

### **Appendix F Trail Plan**

*(Completed)*

### **Appendix G Campsite Plan**

*(To Be Developed)*

### **Appendix H Fire MP**

*(To Be Developed)*

### **Appendix I Pest MP**

I-1 Gypsy Moth MP

*(completed)*

I-2 Hemlock Woolly Adelgid MP

*(under development)*

I-3 Southern Pine Beetle MP

*(to be developed)*

### **Appendix J Feral and Exotic Organisms MPs**

J-1 Ailanthus MP

J-2 Coyote MP

J-3 Autumn Olive MP

J-4 Wild Dog MP

### **Appendix K Pollution Abatement MPs**

K-1 Air Pollution MP

*(to be developed)*

K-2 Water Pollution MP

*(to be developed)*

K-3 Noise Pollution MP

*(to be developed)*

K-4 Light Pollution MP

*(to be developed)*

### **Appendix L Soil Resources MPs**

*(To Be Developed)*

### **Appendix M Resource Extraction MP**

M-1 Timber Harvest

*(to be developed)*

M-2 Non-timber forest products MP

*(under development)*

M-3 Geologic Resources MP

*(to be developed)*

### **Appendix N Aesthetic Improvement MPs**

- N-1 Visual Corridor MP  
*(to be developed)*
- N-2 Litter MP  
*(to be developed)*
- N-3 Landscape Resources MP  
*(to be developed)*

### **Appendix O Cultural Resource MPs**

- O-1 Historic Resource MP  
*(to be developed)*
- O-2 Archaeological Resource MP  
*(to be developed)*

### **Appendix P Roads**

*(to be developed)*

### **Appendix Q Best Conservation Practices (BCP)**

- Q-1 Water Conservation  
*(to be developed)*
- Q-2 Energy Conservation  
*(to be developed)*
- Q-3 Construction Best Practices  
*(to be developed)*
- Q-4 Reduce, Reuse, Recycle  
*(to be developed)*

## **VII. Maps**

### **A. Location Map**

### **B. BRSR Map**

### **C. Ecosystem Map**

### **D. Management Zone Map**

## **VIII. References**

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