Cold Mountain Game Land Management Plan
2018 – 2027

NORTH CAROLINA Wildlife RESOURCES COMMISSION

NC WILDLIFE'S CROWN JEWELS

North Carolina's game land system is based on science-driven management practices and is an exceptional asset for the people of the State of North Carolina. The 2 million acres of NCWRC owned and managed land create HIGH Ecosystem value in flood protection with positive effects on property values and air and water quality, while helping to prevent additional restrictive environmental regulations.

The primary purpose of our game lands is the conservation of North Carolina wildlife species and the provision of public hunting, trapping and fishing opportunities. Our game lands are important players in the preservation of rare, threatened and endangered species. Prescribed burning and early successional habitat management allow for healthy habitats for thriving wildlife. Fields left fallow and disked on alternating years promote natural herbaceous regeneration. Water levels of impounded wetlands are drawn down at appropriate times to create conditions beneficial to waterfowl. Protection of stream buffers ensures that precious fish species are protected and encouraged along with thriving game fishes. Heritage forest land is worked and preserved and rare forestlands are protected.

The game lands also provide broad expanses of public recreational opportunities. North Carolina has more acreage of managed game lands than all states east of the Mississippi, with the exceptions of Florida and Michigan, both of which include lake and ocean frontage as managed land. There is overwhelming public endorsement of conserving the land along with documentation of the economic benefits of doing so. According to the outdoor recreation industry, over $3.3 billion is spent annually on wildlife related recreation in our state alone. As North Carolina transitions from a traditional economy based on tobacco, furniture and textiles to a global economy driven by knowledge-based enterprises, our managed public game lands help preserve our economy and our way of life.

Game lands include:

- A great treasure in the largest intact and least disturbed bottomland forest ecosystem in the mid-Atlantic Region and some of the oldest cypress-tupelo trees on the East Coast, many at least 800 years old;
- One of the largest, most intact remnants of longleaf pine ecosystems in North Carolina, a high priority wildlife habitat in the Lands Management program. Among the species dependent upon this type of habitat are bobwhite quail, a variety of songbirds, fox squirrels and the federally endangered red-cockaded woodpecker;
- The densest populations of black bear, white-tailed deer and turkey, and the highest density of nesting birds in the state. Most of our 32 black bear sanctuaries are on game lands;
- A system of floating waterfowl blinds, 19 public hunting blinds for disabled sportsmen, 32 public boating access areas, 33 public fishing areas, six wildlife observation platforms, four public WRC shooting ranges with plans to build and manage many more as opportunities occur;
- And some of the finest examples of multiple conservation collaborations in the country.

As in the past, it is anticipated that future projected expenditures will be funded by North Carolina's apportionment of Pittman Robertson Federal Assistance in Wildlife Restoration funding and license receipts, as well as from contributions from various conservation partners.

The opportunity provided by these managed public game lands to our mission of conserving North Carolina's wildlife and habitat for future generations is priceless.

North Carolina Wildlife Resources Commission staff contributed extensively to the development and preparation of this plan through their various fields of professional expertise. All content, management strategies, recommendations, goals, and needs for change were developed using the best available science and professional working knowledge of Cold Mountain Game Land, including its habitats, and terrestrial and aquatic species. Careful consideration has been given to all input received from the public, external agencies, and organizations that have an interest in or use the game land, to ensure that a comprehensive management program is administered. The successful implementation of the plan will depend on the continued feedback and support from all interested parties.

Cold Mountain Game Land
Management Plan Development Team

Tanner Baldwin- District 9, Division of Enforcement

Amanda Bushon- District 9 Fisheries Biologist, Division of Inland Fisheries

Derek Conley- Conservation Technician I, Balsam Depot, Land and Water Access Section

Brian Rau- Conservation Technician I, Balsam Depot, Land and Water Access Section

Jeff Ferguson- Engineer, Division of Engineering Services and Lands Management

Steve Fraley- Western Aquatic Nongame Coordinator, Division of Inland Fisheries

Brian Gillespie- District 9, Division of Enforcement

Kip Hollifield- Mountain Ecoregion Supervisor, Land and Water Access Section

Scott Loftis- Watershed Enhancement Coordinator, Division of Inland Fisheries

John Macemore- Southern Mountains Technician Supervisor, Land and Water Access Section

Jonathan McCall- Southern Mountains Forest Manager, Land and Water Access Section

Adrienne Paoletta- Conservation Technician I, Balsam Depot, Land and Water Access Section

Dean Simon- Mountain Ecoregion Wildlife Forest Manager, Land and Water Access Section (Retired)

David Stewart- Southern Mountains Land Management Biologist, Land and Water Access Section

Tony Wait- Conservation Technician I, Balsam Depot, Land and Water Access Section

Gordon Warburton- Mountain Ecoregion Supervisor, Land and Water Access Section (Retired)

Kendrick Weeks- Mountain Wildlife Diversity Supervisor, Division of Wildlife Management

Powell Wheeler- District 9 Fisheries Biologist, Division of Inland Fisheries

Mark Williams- Conservation Technician II, Balsam Depot, Land and Water Access Section

Executive Summary

Cold Mountain Game Land (CMGL) consists of over 3,600 acres lying along the Blue Ridge Escarpment in Haywood County and is owned by the State of North Carolina with the N.C. Wildlife Resources Commission (NCWRC) being the primary custodian. The game land is a popular destination for the public and is actively used by hunters, fishermen, and wildlife watchers. Popular game species occurring on the game land include deer and wild turkey. The game land is 89% forested with oak forests being the most predominant forest type (62%). Several endangered, threatened, or rare species are found on CMGL. Management goals for the game land include providing for a diversity of habitat types and forest age classes though science based land management that are properly interspersed and positioned across the landscape, conserve popular sport fish and game species at huntable/fishable levels, provide quality habitat for endangered, threatened, and rare species, and provide sufficient infrastructure and opportunity to allow all game lands users a quality experience while on the game land. To ensure these goals are met NCWRC will need to collect various types of information regarding wildlife species and game land users, secure funding to accomplish management goals, acquire additional properties as they become available, maintain and develop regulations that promote sustained use of natural resources, and develop relationships with conservation partners that help meet management goals.

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INTRODUCTION

GAME LAND PROGRAM MISSION STATEMENT

Consistent with the original establishment legislation (G.S. 143-239) for the North Carolina Wildlife Resources Commission (NCWRC), the mission of the game lands program is to enhance, facilitate, and augment delivery of comprehensive and sound wildlife conservation programs. Inherent in delivery of a land conservation program consistent with this mission is the feasibility and desirability of multiple uses on lands owned by the state within the game land system. In addition to hunting, fishing, trapping, and wildlife viewing as primary uses, we recognize the desirability of providing opportunities for other activities on state-owned game lands that are feasible and consistent with the agency's mission, and compatible with these traditional uses.

GAME LAND PROGRAM MANAGEMENT OBJECTIVES

- To provide, protect, and actively manage habitats and habitat conditions to benefit aquatic and terrestrial wildlife resources
- To provide public opportunities for hunting, fishing, trapping, and wildlife viewing
- To provide for other resource-based game land uses to the extent that such uses are compatible with the conservation of natural resources and can be employed without displacing primary users
- To provide an optimally sustainable yield of forest products where feasible and appropriate as directed by wildlife management objectives

GAME LAND PROGRAM HISTORY

Prior to 1971, public hunting areas in North Carolina were limited to designated and tightly controlled Wildlife Management Areas. The current Game Lands Program was established in 1971. This change involved expanding the area of game lands from about 700,000 acres to 1.5 million acres, changing regulations, and reducing fees for hunters and fishermen (Dean 1971). The old Wildlife Management Areas were incorporated into the new Game Lands Program, but the new program also allowed NCWRC to incorporate additional lands as game lands to expand the land base. Beginning in the 1980's, land owners (both corporate and private) realized they could lease their properties for higher rates to hunting clubs and private individuals and began to remove their properties from the Game Lands Program. Fortunately, the Natural Heritage Trust Fund (NHTF) was established in 1987 and the Clean Water Management Trust Fund (CWMTF) in 1996. These funds provided money for the fee simple acquisition of select properties, many of which have been incorporated into the Game Lands Program. These Funds greatly compensated

for the loss of game lands leased from the private sector and currently approximately 2 million acres are enrolled in the Game Lands Program.

While operating under the Management Area system, NCWRC staff was housed on each management area. These personnel were assigned both law enforcement and habitat management duties on their respective areas. Under the administration of the Game Lands Program, NCWRC depots were strategically established near all game lands in the state. These depots housed equipment and habitat development crews which were assigned to the management of multiple game lands. All law enforcement on these properties then became assigned to the new Division of Law Enforcement. With some minor organizational changes, this system remained intact until 2012. In 2012, land management staff in the Division of Wildlife Management and certain similar positions in the Division of Inland Fisheries were merged with Division of Engineering staff into the Division of Engineering and Lands Management. This organizational change was made to deliver a more comprehensive and efficient wildlife and fisheries management program on all public lands and waters in the state. Depots remained at former locations with the establishment of new depots/crews at certain remote locations to improve the efficiency of NCWRC programs.

PURPOSE AND NEED FOR PLAN

A comprehensive game land management plan is needed for Cold Mountain Game Land to implement the NCWRC Strategic Plan and accomplish game land program objectives in a timely and efficient manner. Another major driver for the development of this plan was the creation of the North Carolina Wildlife Action Plan (NCWAP) in 2005. The NCWAP is a comprehensive wildlife conservation plan that prioritizes species native to North Carolina for which there is a concern of population decline either due to known declines or suspected declines (i.e. Species of Greatest Conservation Need [SGCN]). Approval of this plan by the United States Fish and Wildlife Service makes the agency eligible for State Wildlife Grant funding to address SGCN species through inventory, monitoring, and/or research. For the purposes of this plan a ten- year planning horizon was used, with the need for review and amendments to the plan being made as needed.

REGIONAL CONTEXT

Cold Mountain Game Land lies within the NCWRC Mountain Ecoregion and the Southern Mountains work area (Appendix 1) includes 11 counties or portions of counties within the Blue Ridge Mountains. The work area contains portions or all the following river basins: French Broad (2800sq mi) Little Tennessee (1797sq mi) Hiwassee (641sq mi) and Savannah (172sq mi) (NC River Basins Website Retrieved 29 January 2014). Seven game lands containing approximately 781,000 acres are located within the work area. The game lands within the Southern Mountain Work Area are contained in the Blue Ridge physiographic province. (Griffith et al. 2002).

The State of North Carolina, with NCWRC as the primary custodian, owns in fee simple nearly 17,000 acres of game lands within the Southern Mountains work area. Approximately 750,000 acres of game lands within the work area are owned by the USDA Forest Service and managed as game lands under a cooperative agreement. The remaining14,281 acres of game lands are

leased from other governmental agencies or the private sector. The work area also contains 21 public boating access areas, 34 public fishing access areas, 1 education center, and 1 fish hatchery; with staff located strategically at 4 work depots throughout the Ecoregion. Seventeen permanent staff under the direction of an Ecoregion supervisor are stationed in the Southern Mountains work area.

REGIONAL CONSERVATION PARTNERSHIPS

The Game Lands Program is vital to many conservation efforts and partnerships within the Mountain Ecoregion. NCWRC enjoys a long-standing alliance with the USDA Forest Service as wildlife resources on forest service lands are cooperatively managed by both agencies. The Natural Heritage and Clean Water Management Trust Funds along with the Ecosystem Enhancement Program have all provided significant and critical funding for the acquisition of key properties that have been added to the Game Lands Program. Many of the properties acquired with these funding sources have been established as or have enhanced existing State Natural Heritage Areas and/or have been dedicated as Nature Preserves by the N.C. Natural Heritage Program. Many nonprofit land conservancies within the ecoregion have played vital roles to acquire properties that have been added to the Game Lands Program. Other conservation partnerships that are important to the game lands program include the United States Forest Service (USFS) Southern Research Station, North Carolina State University (NCSU), The University of Tennessee, Western Carolina University, Haywood Community College, the Ruffed Grouse Society, Quality Deer Management Association, National Wild Turkey Federation, Partners in Amphibian and Reptile Conservation, Partners in Flight, Appalachian Mountains Joint Venture, Eastern Brook Trout Joint Venture, The Nature Conservancy, Appalachian Landscape Conservation Cooperative, Southern Blue Ridge Fire Learning Network, and others. Other important conservation lands surrounding Cold Mountain Game Land are mapped in Appendix 10.

GOALS

- Restore a diversity of habitat types and forest age classes using science based land management practices that are properly interspersed and juxtaposed across the landscape to ensure that a wide variety of terrestrial and aquatic wildlife species are conserved on the game land.

- Manage popular game species and sport fish at huntable/fishable levels through science based land management and sound regulations.

- Provide quality habitat for endangered, threatened, and rare species located on the game land to ensure their continued existence and recovery.

- Provide sufficient infrastructure and opportunity to allow all game lands users a quality experience while on the game land with minimal habitat degradation and minimal conflict among user groups.

MEASURES OF SUCCESS

- Wildlife and fish inventories/surveys indicate that a wide variety of species are present at sustained levels and are properly managed for on the game land.
- Inventories of forest communities show progress towards accomplishing restoration goals.
- Monitoring and surveys of target sport fish and game species indicate that population levels of these species are being managed at sustained levels.
- Monitoring and surveys indicate that populations of endangered, threatened, and rare species found on the game land are stable or increasing.
- Monitoring and surveys indicate that previously unknown populations or previously unknown endangered, threatened, and rare species are found on the game land.
- Infrastructure is provided and maintained at a level that allows the public to reasonably access and enjoy the game land.
- Public use of the game land is managed so that minimal conflicts among game land users occur.
- Agreements with conservation partners are initiated that allow game land goals to be reached more expediently.
- Valid public complaints regarding management of the game land are minimal.
- Increased compliance with wildlife regulations and laws.

GENERAL GAME LAND INFORMATION

LOCATION

Cold Mountain Game Land consists of approximately 3,600 acres of state owned lands located in Haywood County, approximately 10 miles southeast of Waynesville, N.C. Cold Mountain Game Land is bordered by U.S. Forest Service land on three sides. A portion of the forest service land is part of the Shining Rock Wilderness Area. The game land also borders Boy Scouts of America Property, Camp Daniel Boone. Generally, the game land is accessed by Highway 215 (Lake Logan Road) and Little East Fork Road (Appendix 2). The game land is in the Southern Mountains work area and managed by staff located at the Balsam Depot. Game land boundary is marked on boundary line trees by a double orange stripe and the N.C.Game Lands sign.

PURPOSE OF GAME LAND

The purpose of CMGL is to manage habitats to benefit aquatic and terrestrial wildlife resources and flora on the property. Cold Mountain Game Land, combined with extensive holdings of the US Forest Service and the Blue Ridge Parkway, help protect the entire upper watershed of the Pigeon River. The cities of Canton, Clyde and a portion of Haywood County, as well as a major manufacturing plant in Canton, derive their primary water supply from the Pigeon River approximately fifteen miles below the game land. The game land provides opportunities for public hunting, fishing, trapping, wildlife viewing, and other wildlife based recreational activities. These are the primary public uses of the game land. The game land also provides other public outdoor recreational opportunities to the extent that these uses are compatible with the conservation and management of the resources located there and do not displace primary users. The game land also provides a sustainable yield of forest products as allowed by topography and other factors. All forestry activities conducted on the game land are directed by wildlife management objectives.

HISTORY OF GAME LAND

Cold Mountain Game Land was purchased from Campion Realty (Champion International Corporation). Funding came from a variety of sources, including Clean Water Management Trust Fund (CWMTF) and Natural Heritage Trust Fund (NHTF). Portions of the property were then dedicated as a nature preserve because of a requirement of the funding agreements with the Natural Heritage Trust Fund and the Clean Water Management Trust Fund. Dedication is used by NHTF and CWMTF to protect the conservation investments of these trust funds in perpetuity. (Natural Heritage Program 2013)

The dedication was completed in compliance with the Nature Preserves Act (G.S. 113A-164) through a signed agreement between the Department of Administration, the Department of Environment and Natural Resources (NCDENR) and the Wildlife Resources Commission.

LANDSCAPE CONTEXT

Cold Mountain Game Land is located within the Southern Blue Ridge (SBR) province. This province covers over 9.4 million acres and is one of the most biologically significant and diverse landscapes in the United States. Elevations of the province range from 1,500 to 6,684 feet and receive the highest rainfall amounts in the United States, east of the Cascade Mountains. The SBR province has a wide range of climate types from warm temperate to boreal, as well as approximately 4,000 species of plants, of which 400 species are listed as rare and over 250 being endemic. The SBR province has the second highest hardwood and conifer diversity in North America as well as the third highest number of endemic hardwood and conifer species. The area also has the world's highest salamander diversity, the highest number of snail species, and more than 400 endemic species, the most found in any other province in North America. More than 130 natural terrestrial communities have been defined within the SBR with over 90% of these occurring nowhere else. A total of 66 at-risk aquatic species occur in the SBR, 20 of which are federally-listed as threatened or endangered. Nearly 35% of the landscape is in public ownership,

with the largest public land management agency being the US Forest Service, which manages 26% of all public lands here. (LandScope America 2013)

SURROUNDING LAND USE

Land use in the region is approximately 89% forested, 5% urban/developed, and 6% pasture. Land ownership surrounding the game land is greater than 50% publicly owned with private lands adjacent to the game land being largely agricultural. Hay fields and pasturelands are the more dominant agricultural uses in the area. Non-industrial private forests also dominate the landscape surrounding the game land, with residential housing also being a growing use of the surrounding lands (North Carolina Wildlife Resources Commission 2005).

PHYSICAL ATTRIBUTES

Cold Mountain Game Land contains moderate to fairly-high elevation mountain lands lying along ridges of the Great Balsam Mountains Range, including the flanks of Cold Mountain and Lickstone Ridge and lower end of Fork Mountain. The area has typical mountainous terrain, consisting primarily of side slopes, narrow spur ridges, and narrow coves. Some high ridge tops and broader lower coves are also present. Rocks include schist, gneisses, and apparently substantial amounts of amphibolite (N.C. Dept. of Admin. 2006).

Cold Mountain Game Land supports sizeable areas of characteristic natural forest communities in good condition, along with small patches of several rare communities and several rare plant species. Mature High Elevation Red Oak Forest and Chestnut Oak Forest communities cover most of the higher ridges and slopes. Large parts of the High Elevation Red Oak Forest are unusually rich, with a diverse herb layer. These alternate with areas of typical acidic soils and moderate to dense heath thickets beneath. Some of the sharpest ridge tops and spur ridges have Pine-Oak/Heath communities. Some have been affected by pine beetles and have had substantial mortality of canopy pines. Conclave slopes, sheltered slopes, and cove bottoms support Rich Cove Forest communities, which are transitional to Northern Hardwood Forest at the highest elevations. Where not altered by heavy logging, these forests have a typically diverse canopy and herb layer, and show well the gradual transition in flora with elevation (N.C. Dept. of Admin. 2006).

Past logging and other land use has affected all the forests, with the effects usually more dramatic at lower elevation. Though not old-growth, all but patches of the forests within the dedicated primary area have natural composition and have matured enough to be good examples of their type. More altered areas within the buffer have canopies of successional species and reduced herb diversity. There are also significant areas planted in white pine (N.C. Dept. of Admin. 2006).

Several rare communities are associated with small rock outcrops. Broad expanses of massive rock with shallow soil and some outcrops support glade-like Low Elevation Rocky Summit communities with open canopies of small trees, extensive shrub or herb vegetation. One is acidic, with abundant heath shrubs. The other is influenced by basic seepage and supports a diverse herb layer of grasses and forbs. Two more rugged rock outcrops at different elevations support more typical Low Elevation Rocky Summit and High Elevation Rocky Summit communities. These communities are too small to be outstanding examples, but contribute to the diversity of the site (N.C. Dept. of Admin. 2006).

CLIMATE

Precipitation is plentiful and well distributed throughout the year. The average annual rainfall is approximately 41.75 inches. Fifty three percent of the rainfall occurs during the growing period in the months of April through September. Seasonal snowfall averages over eight inches per year, but the number of snowfall days varies greatly from year to year. Snow very rarely remains on the ground for long periods, except at the very highest elevations in some winters.

SOILS

Cold Mountain Game Land is comprised predominantly of three soil series: Plott, Edneyville, and Chestnut. These soils are found on strongly sloping to very steep landscapes and are very deep to moderately deep, well drained, loamy soils that are underlain by metamorphic and igneous rocks.

HYDROLOGY

Cold Mountain Game Land lies within the French Broad River Basin. The French Broad River Basin is characterized by a mountainous topography. The basin is 2,809 square miles in size (11% of the state) and contains the second largest number of stream miles - 4,113 miles. Water resources in this river basin support recreational-based businesses (whitewater rafting, canoeing, and trout fishing). Many streams are classified as High Quality or Outstanding Resource Waters because of the abundant trout populations (SERA43 2015). The topography of the Pigeon River watershed is similar, with high gradient headwaters, a relatively flat midsection, and a steep gorge near the Tennessee border (N.C. Wildlife Resources Commission 2005). The area in and around CMGL contains the eighty-eight acre Lake Logan, six acres of ponds, and twenty-two acres of the Pigeon River and associated riparian areas. Approximately twenty-two miles of excellent trout waters are in the area including the main Pigeon River corridor (3.1miles) and portions of major tributaries such as Little East Fork and Queen's Creek (18.8 miles).

HABITATS

Major habitats within Cold Mountain Game Land consist mainly of forested habitats. These forested habitats include: Oak Forests, Cove Forests, Northern Hardwood Forests, Floodplain Forests, Dry Coniferous Woodlands/Pine Forests, and Spruce/Fir Forests. The most abundant of these forest habitats are Oak Forests, which make up 62% (2,221 acres) of the game land.

UNIQUE VALUES AND DESIGNATIONS

Unique to the area is the Dix Creek-Cold Mountain Significant Natural Area. Other Natural Areas in the vicinity include Panther Branch Cove Natural Area and the Fork Mountain/Daniel Boone Scout Camp Natural Area.

Cold Mountain Game Land is dedicated as a State Nature Preserve. This dedication agreement is like a conservation easement in that it identifies specific activities that may or may not be allowed on the property (see Appendix 13).

Cold Mountain Game Land also serves as an important ecological reservoir for many endangered, threatened, or rare species. A table of rare species known to occur at Cold Mountain Game Land is listed below:

Taxonomic Group	Scientific Name	Common Name	NC Status	US Status	NC Ranking	US Ranking	Habitat Type
Mussel	*Alasmidonta raveneliana*	Appalachian elktoe	E	E	S1	G1	Clear, clean small to medium rivers
Mussel	*Lampsilis fasciola*	Wavy-rayed lampmussel	SC		S1	G5	Clear, clean small to medium rivers
Crayfish	*Cambarus carolinus*	Red burrowing crayfish	SGCN, NCNHP-W3		S1	G4	Seeps and wet areas in high elevations
Fish	*Etheostoma gutselli*	Tuckasegee darter	NCNHP-W2		S3	G3G4	Clear, clean small to medium rivers
Fish	*Percina squamata*	Olive darter	SGCN, SC	FSC	S2	G3	Clear, clean small to medium rivers

E= Endangered, T=Threatened, SC=Species of Concern, FSC=Federal Species of Concern, C=Candidate for Federal listing presently under review.

The NCWAP is a comprehensive wildlife conservation plan that prioritizes species of greatest conservation need (SGCN). Approval of this plan by the United State Fish and Wildlife Service makes NCWRC eligible for State Wildlife Grant funding to address SGCN through inventory, monitoring, research, and management. The list consists of rare and endangered species but also species that are not officially listed but in need of inventory, monitoring, and/or research.

HABITAT TYPES

Forested Habitats

Approximately 89% of Cold Mountain Game Land is forested. This area totals approximately 2943 acres and consists of 6 main habitat types. These include: Oak Forest, Cove Forest, Northern Hardwood Forest, Dry Coniferous Forest, and Spruce/Fir Forest.

Oak Forests

Oak forests account for the largest habitat type found on Cold Mountain Game Land. This type totals approximately 2,221 acres and encompasses approximately 62% of the game land. Oak forests on the game land are generally found on open side slopes, high ridgelines and exposed upper slopes (NatureServe 2007). On exposed high-ridges, this forest type is subject to ice storms in winter and high winds throughout the year. The most common oak species is northern red oak (*Quercus rubra*) and High Elevation Red Oak (HERO) forests and Chestnut Oak (*Quercus prinus)* Forest communities cover most of the higher ridges and slopes. White oak *(Quercus alba)* and scarlet oak (*Quercus coccinea*) occur in lesser quantities with varying amounts of hickory (*Carya* spp.), red maple (*Acer rubrum),* sugar maple (*Acer saccharinum),* black cherry (Prunus serotina), yellow birch (Betula alleghaniensis), yellow poplar (*Liriodendron tulipifera),* and other species (NatureServe 2007). At the highest elevations, many sites once dominated by northern red oak (*Quercus rubra*) and HERO forests are currently transitioning to other species common in this habitat type. American chestnut (*Castanea dentate)* was once a prominent species in many of these forests. The understory is generally open with a sparse to moderate herbaceous layer but sometimes contains dense thickets of mountain laurel (*Kalmia latifolia*) and in other places is quite diverse with a wide variety of species such as flowering dogwood (*Cornus florida*), blueberry (*Vaccinium spp*.) and huckleberry (*Gaylussacia baccata*) (N.C. Natural Heritage Program 2013). Oak forests are of great importance to wildlife across Cold Mountain Game Land because of its predominance, the variety of conditions in which it is found, and its overall mast (acorn) production capacity. This habitat type produces vast quantities of acorns, hickory nuts, and a wide variety of associated soft mast forage for wildlife and is often a critical habitat type for a variety of wildlife species (NCWRC 2005). Fire occurs fairly frequently in this type forest and is usually of low to moderate intensity that is typically non-catastrophic (Abrams 1992, Delcourt and Delcourt 1997). Fire is often an important factor for favoring oak dominance over more mesophytic (moisture adapted) tree species within these forests and can be expected to have a moderate effect on vegetation structure, producing a somewhat more open canopy and less dense understory and shrub layer. Past logging may have greatly affected these forests in many instances by changing canopies to a more even-aged, structure (NatureServe 2007).

- *Desired Future Condition (DFC)* – DFC's include oak woodlands on areas accessible and operable for timber harvest, oak savannah development on areas most accessible, operable, and appropriate for prescribed burning rotations, and, to a lesser extent by default, old growth oak stands on primary natural areas and/or areas inaccessible and/or inoperable for active management. Generally, oak woodlands will have a mix of age class and size distribution with advanced oak regeneration available to perpetuate a dominant oak component in the stand. Relative over-all abundance of mountain laurel and rhododendron (*Rhododendron spp*.) is reduced throughout areas managed as woodlands. Oak savannas generally have a much more open canopy dominated by oaks (as a goal, averaging a diameter at breast height (DBH) of 16 inches) but a very open understory with a native grass and forb component as the dominant ground cover. Old growth oak stands will have an all age class distribution with large, medium, and small trees dispersed throughout the stand. As a goal, HERO forests will be promoted as a restoration objective and all stand types will be well distributed across the game land to enhance landscape diversity.

- *Target Game Species*- Whitetail deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo*), black bear (*Ursus americanus*), Eastern gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), and Ruffed grouse (*Bonasa umbellus*)

- *Target Non-Game Species*- Southern pigmy salamander (Desmognathus wrighti), Ocoee salamander (Desmognathus ocoee), Southern red-backed salamander (Plethodon serratus), Southern Appalachian salamander (Plethodon teyahalee), coal skink (Plestiodon anthracinus), timber rattlesnake (Crotalus horridus), Northern long-eared bat (Myotis septentrionalis), Eastern wood pewee (Contopus virens), , blackburnian warbler (Setophaga fusca), wood thrush (Hylocichla mustelina), Northern flicker (Colaptes auratus), hairy woodpecker (Picoides villosus), rose-breasted grosbeak (Pheucticus ludovicianus), Canada warbler (Cardellina canadensis), and hooded warbler (Setophaga citrina).

- *Management Strategies and Needs*- Management strategies will be directed towards HERO restoration and will include increased timber harvest in suitable areas (primarily shelter-wood cutting but also some clear-cutting may be employed to achieve oak regeneration goals – see Forest Management section), natural regeneration (but also may include some planting, primarily of northern red oak), herbicide use to control competition with oak regeneration and to control non-native invasive species, and prescribed burning at appropriate locations and seasonality to promote oak regeneration (less frequent and less intense for oak woodland development and more frequent and intense on areas selected for oak savannah conditions). In general, oak woodlands will be emphasized on areas accessible and operable for timber harvest (primarily shelter-wood cutting), oak savannah development on areas most accessible, operable, and appropriate for prescribed burning rotations, and old growth oak stands by default in areas that are dedicated primary natural areas restricted from management and/or on areas inaccessible and/or inoperable for active management. Participation in American chestnut restoration efforts will occur as appropriate and feasible.

- *Infrastructure Needs*- Increased planning, identification, and development of fire lines and access to suitable stands and potential burn units. Temporary logging roads and landings.

- *Management Challenges* - Limited management allowed within Primary areas. Increased establishment and spread of non-native invasive species. Increased development, adjacent private/urban interface along game land boundary, and incompatible adjacent land uses. Limitations due to topography and access. Impacts from disease and insects such as: gypsy moth (*Lymantria dispar*), sudden oak death syndrome, and hypoxylon canker (*Hypoxylon spp*.). Regional oak decline, lack of adequate advanced oak reproduction, loss of HERO forests to successional change to birch-beech-maple stands due to lack of active management, and climate change.

Cove Forests

Cove forests make up approximately 18% of CMGL and encompass an area of approximately 595 acres. Cove forests typically occur on concave and topographically protected mixed-mesophytic slopes (NatureServe 2007) and have generally higher associations of herbs and forbs in the understory as compared to other forest types. Depending on soil acidity, cove forests may

contain a shrub layer consisting of mountain laurel and rhododendron. On richer sites, Spicebush (*Lindera benzoin*) is often a dominant shrub species forests (The Encyclopedia of Southern Appalachian Forest Ecosystems 2004). Cove forests in general, provide high amounts of herbaceous forage for wildlife, and often have high species diversity of both plants and animals. Small vertebrates, such as salamanders, birds, and small mammals, can be particularly abundant and diverse with in these forests (The Encyclopedia of Southern Appalachian Forest Ecosystems 2004).

Cove forests are typically closed canopy systems with very diverse canopies often consisting of Yellow Poplar (*Liriodendron tulipifera*), Carolina Silverbell (*Halesia carolina*), Northern Red Oak, Eastern Hemlock (*Tsuga canadensis*), Basswood (*Tilia americana*), White Ash (*Fraxinus americana*), and American Beech (*Fagus grandifolia*) (Clebsch and Busing 1989). Many of these forests exhibit a more un-even aged structure than other forest types and regeneration is commonly regulated through gap-phase dynamics and patch openings created by wind and ice. Although fire plays a lesser role in this habitat type, it may have occurred in these forests at low to moderate frequencies. Fire effects in these habitats were likely minimal as many of the species that occur in these type habitats are some of the most fire-intolerant in the region (NatureServe 2007).

- *Desired Future Condition (DFC)* - DFC includes ensuring a diverse species and age composition, protecting and promoting hemlock stands where possible, retaining streamside management zones/riparian buffers where needed, and providing appropriate levels of early successional wildlife habitat. In general, this forest type will be of an older age structure although a diversity of ages and species is an important DFC. Understories are extremely lush containing a wide diversity of herbs and forbs.

- *Target Game Species*- Whitetail deer, Wild turkey, Black bear, Eastern Gray squirrel, Ruffed grouse, Raccoon, and American woodcock

- *Target Non-Game Species*- Ocoee salamander, Shovelnose salamander, Santeetlah dusky salamander, Southern red-backed salamander, Southern Appalachian salamander, Southern pigmy salamander, timber rattlesnake, water shrew (*Sorex palustris*), woodland jumping mouse (*Napaeozapus insignus*), blackburnian warbler, wood thrush, yellow-billed cuckoo (*Coccyzus americanus*), and hooded warbler.

- *Management Strategies and Needs*- Management strategies include identifying, protecting, and treating hemlock stands where possible to reduce loss of this species, retention of variable buffers along either side of creeks, streams, and seeps in this forest type, timber harvest using a mix of thinning (with attention to retaining a diverse mix of species beneficial to wildlife, including American Beech, persimmon, etc.) and clear-cutting techniques to create early successional wildlife habitat where feasible and appropriate, and natural regeneration. Old growth stands may be developed by default over time within streamside management zones/riparian buffers, dedicated primary natural areas restricted from management, and on areas inaccessible and/or inoperable for active management. As a goal, all stand types and conditions will be well distributed across the game land to promote landscape diversity.

- *Infrastructure Needs*- Increased planning, identification, and development of access to suitable stands. Temporary logging roads and landings.

- *Management Challenges* - Lack of management allowed within Primary areas. Increased establishment and spread of non-native invasive species. Increased development, adjacent private/urban interface along the game land boundary, and incompatible adjacent land uses. Limitations due to topography and access. Proliferation of Hemlock Wooly adelgid (*Adelges tsugae*) killing Eastern hemlock trees. Climate change.

Northern Hardwood Forest

Northern hardwood forests make up approximately 7 % of Cold Mountain Game Land and encompass an area of around 220 acres. Northern hardwood forests are found on high elevation sites (generally above 4000 feet, but more often above 4500 feet) throughout western North Carolina with abundant rainfall and cool climate. High elevation climate, slope, aspect and past disturbance are critical ecological determinants of the distribution of northern hardwood forests today (N.C. Wildlife Resources Commission 2005).

Northern hardwood forests can include several ecological sub-types such as boulder-field forests and beech gaps. Dominant tree species include yellow birch, American beech, yellow buckeye, and sugar maple. Understory vegetation varies from dense rhododendron to open sedge, with numerous potential combinations of herbaceous and shrub components (N.C. Natural Heritage Program 2013).

Northern Hardwood forests provide habitat for numerous wildlife species which also rely heavily on spruce-fir forests. Due to several similarities, northern hardwood forests are critical to maintaining many species of birds and mammals, dependent upon spruce-fir habitats. In addition, northern hardwood plant species may be critical components of spruce-fir habitats even in their dub-dominant role. For example, many spruce-fir dependent wildlife species are cavity nesters. Yellow birch, beech, sugar maple and buckeye often provide more abundant natural cavities and decaying wood than spruce or fir for species such as northern flying squirrels, yellow-bellied sapsuckers, black-capped chickadees, northern saw-whet owls, and other wildlife (N.C. Wildlife Resources Commission 2005).

- *Desired Future Condition (DFC)* - DFC includes ensuring a diverse species and age composition, retaining streamside management zones/riparian buffers where needed, and providing appropriate levels of early successional wildlife habitat. In general, this forest type will be of an older age structure although a diversity of ages and species is an important DFC.

- *Target Game Species*- Whitetail deer, Wild turkey, Black bear, Grey Squirrel, and Red Squirrel.

- *Target Non-Game Species*- Ocoee salamander, Southern red-backed salamander, Southern Appalachian salamander, Southern pigmy salamander, Northern long-eared bat, woodland jumping mouse, Veery (*Catharus fuscescens*), yellow-bellied sapsucker (*Sphyrapicus*

varius), blackburnian warbler, Canada warbler, and Northern saw whet owl (*Aegolius acadicus*).

- *Management Strategies and Needs*- Management strategies include retention of variable buffers along either side of creeks, streams, and seeps in this forest type, timber thinning (with attention to retaining a diverse mix of species beneficial to wildlife, including northern red oak, black cherry, American beech, persimmon, etc.), and clear-cutting techniques and/or cutting openings to create early successional wildlife habitat. Old growth stands may be developed over time by default within streamside management zones/riparian buffers, dedicated primary natural areas restricted from management, and on areas inaccessible and/or inoperable for active management. As a goal, all stand types and conditions will be well distributed across the game land to promote landscape diversity.

- *Infrastructure Needs*- - Increased planning, identification, and development of access to suitable stands.

- *Management Challenges*- Limited management allowed within designated Primary areas. Increased establishment and spread of non-native invasive species. Limitations due to topography, access, and stream side management zone buffers. Incompatible adjacent land uses and climate change.

Floodplain Forests

Floodplain forests of CMGL make up just over 1% of the area, for a total of 38 acres, and include river bank, small stream, and riparian forest communities. These forests occur along West Fork and Little East Fork Pigeon Rivers as well as creeks and streams where topography and alluvial processes have resulted in a well-developed floodplain as well as along small streams and floodplains with low to moderately high gradients (NatureServe 2007). Canopies in these forests vary greatly along topographical gradients and among various soil types which consist primarily of flood-carried sediments. Dominant tree species include a mixture of bottomland and mesophytic hardwoods such as: American sycamore (*Platanus occidentalis*), yellow poplar, American beech, white ash, American elm (*Ulmas americana*), river birch (*Betula nigra*), box elder (*Acer negundo*), red maple, and black walnut. Other common trees include; green ash (*Fraxinus pennsylvanica*), American holly (*Ilex opaca*), Southern hackberry (*Celtis laevigata*), American hornbeam (*Carpinus caroliniana*), and to a lesser extent some oaks and hickories. The herbaceous and shrub layers in these forests can be extremely diverse, with the density and abundance of species closely linked to the level of disturbance and soil type (NatureServe 2007). Understories can range from densely closed thickets to open woodlands and may consist of such species as, Spicebush (*Lindera benzoin*), River Cane (*Arundinaria gigantean*), Strawberry-bush (*Euonymus americanus*), Dog-hobble (*Leucothoe fontanesiana*), alder (*Alnus spp.*), and a variety of herbs and forbs. Vines are also particularly common in floodplain forests and typically include Virginia creeper (*Parthenocissus quinquefolia*), poison ivy (*Toxicodendron radicans*), and *Smilax* spp. (Schafale and Weakley 1990).

These forests are rarely impacted by fire except under extreme drought conditions, but are more commonly regulated and maintained by seasonal and annual flooding events. Not only do these flooding events effect soil movement and deposition, but they also play a major role in seed

dispersal, plant successional processes, and the creation of vernal pools. Beavers can also be an important disturbance factor in these forests, setting back succession, creating canopy gaps, and developing semi-permanent wetlands within these forests (Schafale and Weakley 1990). Floodplain forests are particularly important habitats for breeding amphibians and the American woodcock in the region, especially where there are inclusions of floodplain pools and semi-permanent impoundments. These temporarily flooded areas provide critical breeding habitat for many species of salamanders and frogs (NCWAP).

- *Desired Future Condition (DFC)* – Because most of the Floodplain forests located across the game land occur within Primary Natural Areas and streamside management zones, over-story of this forest type will remain comprised predominantly of closed canopy conditions. Natural disturbances such as flooding, sediment deposition, and beavers will continue to occur, dictating forest composition and structure. Natural hydrologic functions of these forests are maintained. Over-story and understory composition consists of a wide diversity of species suited to hydric soils. Where allowed, non-native exotic species are controlled. River cane breaks are restored and maintained.

- *Target Game Species*- Whitetail deer, Wild turkey, Black bear, American woodcock, beaver (*Castor canadensis*), River otter (*Lontra Canadensis*), Raccoon, and various waterfowl species

- *Target Non-Game Species*- Ocoee salamander, Southern red-backed salamander, spotted salamander (*Ambystoma maculata*), timber rattlesnake, Northern long-eared bat, hooded warbler.

- *Management Strategies and Needs*- Implement limited forestry activities where permitted to develop woodcock and other wildlife habitat. Implement appropriate applications of herbicide to sites where there is a need to control competitive vegetation and non-native invasive species.

- *Infrastructure Needs*- Increased planning, identification, and development of access to suitable stands.

- *Management Challenges* - Limited management allowed within designated Primary areas. Increased establishment and spread of non-native invasive species. Limitations due to topography, access, and stream side management zone buffers. Siltation.

Dry Coniferous Woodland/Pine Forests

Pine Forests include both pine plantations and Pine-Oak/Heath forest communities along certain ridge tops and spur ridges. These habitat types represent slightly more than ½ % of the total game land area, for about 23 acres, occupying the southern exposures, certain ridge tops, and areas of the lower elevations that were planted by the previous landowner. Most of the pine plantations are 50 to 60 years of age. The plantations are dominated by Eastern White pine (*Pinus strobus*). However, due to fire exclusion and white pine's shade tolerance, it has spread into other, less typical sites in some locations where it might not normally occur if historic

disturbance regimes had continued. Understory conditions in the pine plantations are typically absent of vegetative ground cover and shrubs but sometimes include a light amount of mountain laurel (*Kalmia latifolia*), a few mixed hardwood saplings, and/or scattered pine regeneration.

In the Pine-Oak/Heath forest communities, tree species typically include Table Mountain pine (*Pinus pungens*), Pitch pine (*Pinus rigida*), Virginia pine *(Pinus virginiana),* and occasionally Eastern White pine. On some sites, oaks and hickories may also occur in the over-story. Under natural fire regimes, where fire occurred more frequently, the Pine-Oak/Heath forest communities likely consisted of herbaceous (grassy) understories, with a relatively sparse woody shrub layer (Fryar 2004). However, acidic-tolerant shrubs such as blueberry and huckleberry may also be well developed in these forests. The number of herbs and shrubs is greatly linked to the frequency of fire, with stands that burn more frequently having a greater abundance of grasses and herbs and stands with less frequency of fire having a greater abundance of shrubs (NatureServe 2007). In the absence of fire, understory species are often fire-intolerant and shade-tolerant hardwoods such as dogwood, red maple, sassafras (*Sassafras albidum*), sourwood (*Oxydendrum arboreum*), Black gum, and others. Following over-story replacement events, Virginia pine, if previously a component or in adjacent stands, can quickly replace native pine communities (Frost 2005). Fire is clearly an important influence in these forests, and may be the sole factor determining the occurrence of this system rather than that of hardwood forests. Natural fires were likely frequent and of low intensity, or a mix of low and higher intensity. Settlement, logging, pine beetle outbreaks, and fire suppression have potentially altered the character and blurred the boundaries of these type forests more than most other systems in the region (NatureServe 2007).

- *Desired Future Condition (DFC)* - DFC in the current pine plantations includes pine woodlands that are open (thinned), more diverse (mixed with hardwoods), and more structurally beneficial to wildlife, consisting of a greater herbaceous, grass, and forb component in the understory. The goal will be to change any pine monoculture/plantation conditions to more diverse mixed pine-hardwood stands, which most likely occurred prior to plantation establishment. DFC in the Pine-Oak/Heath forest communities includes a mix of pine woodlands and pine savannahs. The goal will be to restore table-mountain/pitch pine stands where feasible. All sites will have a goal to create an open, diverse understory and herbaceous ground cover. Generally, pine woodlands will have a mix of age class and size distribution with advanced pine regeneration available to perpetuate the stand. Pine savannas generally have a much more open canopy but a very open understory with a native grass and forb component as the dominant ground cover. Composition consists predominantly of mountain yellow pine species but includes some dry oak species such as scarlet oak, chestnut oak, and white oak. Understories contain a diversity of herbs and forbs as well as an abundance of grasses. On drier sites, an abundance of Vaccinium species such as blueberry and huckleberry are found. Relative over-all abundance of mountain laurel and rhododendron is reduced.

- *Target Game Species*- Whitetail deer, Wild turkey, Black bear, Eastern Cottontail rabbit, and Mourning dove (*Zenaida macroura*)

- *Target Non-Game Species*- coal skink, timber rattlesnake, Northern long-eared bat, wood thrush, worm-eating warbler (*Helmitheros vermivorum).*

- *Management Strategies and Needs*- Management strategies in the current pine plantations will primarily involve timber harvest (primarily clear-cutting), as these stands are currently mature and merchantable for timber harvest. Natural regeneration of hardwoods will be a key to diversifying these stands and developing a desired future mixed pine-hardwood composition. Some planting of oaks and some herbicide use may be employed where needed to develop pine-oak stands. Where appropriate and needed, prescribed burning may also be used. Management strategies in the Pine-Oak/Heath forest communities will primarily involve repeated prescribed burning to reduce hardwood canopy trees, open the understory, and promote table-mountain and pitch pine regeneration (less frequent and intense fire will create pine woodland conditions and more frequent and intense fires will promote pine savannah conditions). In some cases, stand replacement fires, timber harvest or other forestry practices using thinning techniques may be used in suitable areas (see Forest Management section). Implementation of appropriate applications of herbicide where there is a need to control competitive vegetation and non-native invasive species will also be used.

- *Infrastructure Needs*- Increased planning, identification, and development of access and firebreaks in to suitable stands and potential burn units

- *Management Challenges*- Increased establishment and spread of non-native invasive species. Proliferation of Virginia pine and Eastern White pine regeneration. Increased development, adjacent private/urban interface along game land boundaries, and incompatible adjacent land uses. Limitations due to topography, access, and Primary natural area designations. Impacts from southern pine beetle infestations and climate change. And, specifically in the Pine-Oak/Heath forest communities, lack of fire, limited days when prescribed burning can be employed, successional change, and encroachment by hardwoods.

Spruce/Fir Forest

Spruce Forests on Cold Mountain Game Land include small remnants of plantations and represent about ¼ % of the total game land area, or about 8 acres total, primarily at lower elevations where red spruce (*Picea rubens*) was planted by the previous landowner in 1953. These stands are 62 years of age, becoming decadent, and have been severely impacted by prior southern pine beetle infestations. Understory conditions in the spruce plantations are typically absent of vegetative ground cover and shrubs but sometimes include a light amount of mountain laurel (*Kalmia latifolia*), a few mixed hardwood saplings, and/or scattered pine regeneration.

- *Desired Future Condition (DFC)*- DFC in these small remnant stands is primarily retention of existing spruce trees because of their potential benefit to Northern flying squirrel (*Glaucomys sabrinus*) habitat.

- *Target Game Species*- Whitetail deer, Wild turkey, and Black bear.

- *Target Non-Game Species*- Ocoee salamander, Southern pigmy salamander, Northern saw-whet owl (*Aegolius acadicus*), Canada warbler (*Cardellina canadensis*), blackburnian warbler, brown creeper (*Certhia americana*), Rock shrew (*Sorex dispar*)

- *Management Strategies and Needs*- Implement very limited forestry activities where needed to address safety and access issues related to tree fall, etc. Implement appropriate applications of herbicide to sites where there is a need to control non-native invasive species.

- *Infrastructure Needs*- Increased planning, identification, and development of game land access.

- *Management Challenges*- Limited management allowed within designated Primary areas. Increased establishment and spread of non-native invasive species. Limitations due to topography, access, and stream side management zone buffers. Impacts from southern pine beetle infestations and climate change.

Open Habitats

Open habitats on Cold Mountain Game Land are habitats that do not contain a developed, forested, overstory, and includes all areas of non-forested early succession habitat. Open habitats make up approximately 9% of the total area of game land (307 acres).

Open habitats consist of three main classifications which include: Herbaceous Early Succession (about ½ %), Shrub Early Succession (7 %), and Woody Early Succession (2 %) (Appendix 8). For this plan, early successional habitat is generally defined as areas that are between 0 - 20 years of age and located structurally between bare ground and young forests.

Within different types of Early Successional Habitat (ESH), structure and plant composition differ considerably, consisting of grasses, forbs, shrubs, woody stems and sprouts, or a mix of herbaceous and developing woody vegetation. However, between different types of ESH, there are two common factors. First, these habitats will have a well-developed ground cover layer that does not have a closed, mature tree canopy; and second, early successional habitats are created and or maintained by intense or recurring disturbances (Greenberg et al. 2011). These disturbances include varying types and intensities of natural disturbances such as wind, ice, disease, and fire; as well as human caused disturbances such as timber harvest, prescribed burns, land clearing, and cattle grazing. Topographic position, soil characteristics, and climate may also play an important role in the creation and maintenance of early successional areas (North Carolina Wildlife Resources Commission 2005). Depending on the type of disturbance and other ecological and environmental factors, the size and distribution of these type habitats may range from small canopy openings to large meadows and grasslands. Early successional plant composition consists primarily of herbaceous annuals and perennials immediately following disturbance, and then succeed in the absence of continued disturbance towards a composition of woody vegetation.

Early Successional Habitat is an extremely important habitat type as it is one of the most endangered types of ecosystems in the United States (Natural Resources Conservation Service 2007). It is a priority habitat for numerous birds and other wildlife species. In fact, over 120 bird species in the southeast have been recognized to be associated with grassland, shrub-scrub, and other early successional habitats (Hunter et al. 2001). These communities are highly ephemeral and are constantly changing in structure, composition, and location across the landscape. This is also true at Cold Mountain Game Land, where early successional habitats are continually

transitioning. Each year, areas of herbaceous early successional habitat succeed to shrub habitats, shrub habitats to woody habitats, and without management or disturbance, woody habitats to young forests. Therefore, frequent disturbances of these habitats are needed to "reset" or suppress succession and maintain open habitat conditions. Continued disturbances across the game land are critical not just for maintaining current early successional habitats, but for creating new areas of habitat to replace those that are transitioning to forested conditions.

Many of the wildlife species closely linked to this type of habitat are also disturbance-adapted wildlife species, and with the lack of disturbance, the attractiveness and productivity of these habitats decline (Natural Resources Conservation Service 2007). Many species of invertebrates, particularly butterflies and moths, are also dependent on specific hosts and forage plants that are often only found within early successional plant communities. These type habitats produce an abundance of seeds and attract assemblies of insects that are critical forage for birds and small mammals. The absence of a closed canopy is also important as it allows both light and heat to penetrate to ground level, an essential feature in this habitat for reptiles that depend on heat for temperature regulation (Natural Resources Conservation Service 2007). These habitats are also important areas for many interior forest bird species that use these areas for fledgling and migration habitats.

Herbaceous Early Succession

Herbaceous ESH covers approximately ½% of the total area of Cold Mountain Game Land and totals 14 acres. This habitat type includes areas with vegetation age classes between 0- 4 years and differs from shrub and woody early successional types by having a composition consisting predominantly of grasses, forbs, and other annual and perennial vegetation. Areas such as grasslands, meadows, fallow fields, and food plots are all included in this habitat type. Herbaceous ESH has the shortest fire return interval or frequency of disturbance of any habitat across the game land, occurring annually or biannually. Frequent prescribed fires, annual mowing, and agricultural planting are all tools commonly used for the creation and maintenance of this habitat type.

- *Desired Future Condition (DFC)* - Total amount of habitat occurring on the game land remains relatively stable to slightly decreasing, with some acres transitioning back and forth between shrub and woody type early succession. Fire adapted communities and plant associations have been restored to areas that are not maintained through agricultural practices (food plots). Overall abundance of non-native invasive species is reduced.

- *Target Game Species*- Whitetail deer, Wild turkey, Black bear, Eastern Cottontail rabbit, Mourning dove, and American woodcock

- *Target Non-Game Species*- timber rattlesnake, least shrew (*Cryptotis parva*), and golden-winged warbler (*Vermivora chrysoptera*)

- *Management Strategies and Needs*- Implement short interval prescribed burn rotations on all areas not maintained as wildlife food plots. Maintain existing food plots and planted areas using appropriate agricultural practices. Implement appropriate applications of herbicide to sites where there is a need to control unwanted vegetation and non-native invasive species.

- *Infrastructure Needs*- Increased planning, identification, and development of access and firebreaks in to suitable stands and potential burn units.

- *Management Challenges*- Increased establishment and spread of non-native invasive species. Increased development and adjacent private/ urban interface along game land boundary. Limitations due to topography and access.

Shrub Early Succession

Shrub ESH covers approximately 7% of the total area of Cold Mountain Game Land and totals 233 acres. This habitat type includes areas with vegetation age classes between 4- 10 years. It differs from herbaceous and woody early successional types by having a composition consisting predominantly of shrub type vegetation, but may also contain remnant components of grasses and forbs along with some woody regeneration beginning to establish. Areas such as hedge rows, old fields, and routinely maintained field borders are all included in this type of habitat. These areas have relatively short fire return intervals or frequencies of disturbance that occur every 3-5 years. Regular prescribed fires, infrequent mowing, and applications of herbicide are common tools used for the creation and maintenance for this type habitat. Also included in this habitat designation are power line and telephone rights-of-way.

- *Desired Future Condition (DFC)* - Total amount of habitat occurring on the game land is increased, with some acres transitioning back and forth between shrub and woody type early succession. Fire adapted communities and plant associations have been restored to all areas. Overall abundance of non-native invasive species is reduced.

- *Target Game Species*- Whitetail deer, Wild turkey, Black bear, Eastern Cottontail rabbit, and American woodcock

- *Target Non-Game Species*- chestnut-sided warbler (*Setophaga pensylvanica*) and golden-winged warbler

- *Management Strategies and Needs*- Implement short interval prescribed burn rotations on all areas. Implement appropriate applications of herbicide to sites where there is a need to control unwanted vegetation and non-native invasive species.

- *Infrastructure Needs*- Increased planning, identification, and development of access and firebreaks in to suitable stands and potential burn units.

- *Management Challenges*- Increased establishment and spread of non-native invasive species. Increased development and adjacent private/ urban interface along game land boundary. Limitations due to topography and access.

Woody Early Succession

Woody ESH covers approximately 2% of the total area of Cold Mountain Game Land and totals 60 acres. This habitat type includes areas with vegetation age classes between 11- 18 years. It differs from herbaceous and shrub early successional types by having a composition consisting predominantly of regenerative, woody vegetation with some assemblages of shrubs, and to a much lesser extent, remnant grasses and forbs. Areas such as abandoned fields and secondary successional areas such as clear-cuts are included in this type of habitat. These areas have fire return intervals or frequencies of disturbance that occur every 6-8 years to maintain. Often these areas are created by removing disturbances from and allowing other early successional areas to succeed.

- *Desired Future Condition (DFC):* Total amount of habitat occurring on the game land remains relatively stable to slightly decreasing, with some acres transitioning back and forth between shrub and woody type early succession. Tall fescue has been removed from all sites and fire adapted communities and plant associations have been restored to all areas. Overall abundance of non-native invasive species is reduced.

- *Target Game Species*- Whitetail deer, Wild turkey, Black bear, Eastern Cottontail rabbit, Ruffed grouse, and American woodcock

- *Target Non-Game Species*- golden-winged warbler

- *Management Strategies and Needs*- Implement short interval prescribed burn rotations on all areas. Implement appropriate applications of herbicide to sites where there is a need to control unwanted vegetation and non-native invasive species.

- *Infrastructure Needs*- Increased planning, identification, and development of access and firebreaks in to suitable stands and potential burn units.

- *Management Challenges*- Increased establishment and spread of non-native invasive species. Increased development and adjacent private/ urban interface along game land boundary. Limitations due to topography and access.

Aquatic Habitats

Aquatic habitats account for a small percentage of the total game land and include two classifications: Riverine and Aquatic Communities and Bogs and Associated Wetlands.

Riverine and Aquatic Communities

Riverine resources represent most aquatic habitats on Cold Mountain Game Land. This primarily consists of riparian areas adjacent to the West Fork Pigeon River, a short section of the Little East Fork River and numerous headwater first- and second-order tributary channels located on the game land. There are approximately 13 miles of stream channel on CMGL. These lotic

ecosystems consist of ephemeral, intermittent and perennial channels. The latter supports unique high elevation cold water fish and aquatic organism assemblages. There are no man made or natural lakes or ponds on the game land.

West Fork Pigeon River

Cold Mountain Game Land contains 2.3 river miles of the West Fork Pigeon River. The river is a popular recreation destination for anglers and wildlife viewers. The Delayed Harvest public mountain trout waters designation is applied to 1.8 miles; whereas, the remaining 0.5 mile of the West Fork Pigeon River, located downstream of Lake Logan dam, is designated Wild trout waters.

- *Desired Future Condition (DFC)* - Overall amount of fine sediment and other non-point source pollutants into the river are reduced and controlled. Diversity and productivity of aquatic communities are enhanced and restored. Repair and stabilize areas of active stream bank erosion and road and trail run-off contributing excessive amounts of sediment to stream channels. Improve road-stream crossings to facilitate aquatic organism passage and minimize hydrologic impedance during high flow events.

- *Target Game Species*- The target game fish species are Brook Trout (*Salvelinus fontinalis*), Brown Trout (*Salmo trutta*) and Rainbow Trout (*Oncorhynchus mykiss*). These species are stocked by the NCWRC in the Delayed Harvest section of the West Fork Pigeon River. In addition, there are fishable populations of wild Brown and Rainbow trout in the West Fork Pigeon River below Lake Logan, as well as Rainbow Trout in Queen Creek, and Brown Trout in Big Creek. These populations are designated Public Mountain Trout Water and managed under Wild trout regulations (Figure?).

- *Target Non-Game Species*- In particular, the Appalachian elktoe mussel occurs downstream and is sensitive to sediments and other alterations to instream habitats. The presence of Lake Logan between CMGL and the nearest occurrences of Appalachian elktoe is an effective buffer against most impacts to the species that might result from management activities on CMGL.

- *Management Strategies and Needs*- Sportfish populations are managed through lure, harvest and size restrictions under NCWRC regulations. Aquatic habitat and water quality necessary for target game and non-game species, alike, can be improved and protected by observing Forestry Best Management Practices on game land property and by working cooperatively with other governmental agencies, non-governmental organizations, and landowners to protect and improve riparian areas throughout the watershed. To the greatest extent possible, riparian vegetation management should balance the needs of aquatic and terrestrial communities. An assessment of significant erosion or other existing problems within the game land and opportunities for addressing them is needed. Two large areas of channel bank instability have been identified and corrective actions taken since obtaining the game land. Both areas were on the West Fork Pigeon River. The first bank sloughing area was across from the landing strip on the right bank of the river. The second, located just upstream from the steel bridge on the West Fork Pigeon River, was stabilized in the fall of 2014. Infrastructure needs with regards to game land access road, trails and stream crossings were assessed in April 2015, refer to the infrastructure section of the plan for additional details.

Numerous (12) road-stream crossing (culverts pipes) were identified that needed replaced (9) or some form of repair (3). Continued maintenance of the game land roads, road-banks and road-stream crossings as well as adequate riparian buffers will be essential to maintaining quality aquatic resources.

- *Infrastructure Needs*- The NCWRC has constructed three parking areas with angler trails to access the West Fork Pigeon River on the game land. In addition, there are informal roadside access points for wade anglers and other users. Therefore, we anticipate that future access needs will be minimal.

- *Management Challenges*- Fine sediment deposition and other non-point source pollution from erosion throughout the watershed. Maintenance of access areas, roads, trails and areas of channel bank instability.

Bogs and Associated Wetlands

Bogs and associated wetlands on Cold Mountain Game Land primarily consist of 16 large floodplain wetlands and fifty or more floodplain pools or seeps. Hydrology in these areas range from permanently saturated to intermittently dry to permanently flooded or pooled in the floodplain wetlands. The floodplain seeps are generally fed by seepage groundwater, whereas the floodplain pools and wetlands are fed through surface run off, groundwater or flooding events. Vegetation in these areas may range from dense shrub thickets to highly diverse herb and sedge dominated areas that may contain dense mats of Sphagnum moss (*Sphagnum flexuosum*). Tree species such as Red maple, Eastern white pine, and Eastern hemlock are commonly found along the edges.

Most bogs and wetlands in the area are being threatened by the succession of shrubs, trees, and invasive exotic species which alter natural water flows and act to dry out wetlands. The tendency for these areas to experience relatively quick plant succession may suggest that some form of periodic disturbance is needed to keep these areas open and functioning naturally. Such disturbances include flooding caused by beavers and storm events, grazing by herds of large mammals, fire, and clearing by Native Americans (Schafale and Weakley 1990). A complete survey of all bogs and associated wetlands has yet to be completed, and is necessary to assess habitat condition and species occupancy.

- *Desired Future Condition (DFC):* Natural hydrologic processes are restored on existing and other potential wetland areas. Relative abundance of non-native invasive species is reduced. Native plant, aquatic, and wildlife populations are maintained and restored.

- *Target Game Species*- Various waterfowl species, Raccoon

- *Target Non-Game Species*- spotted salamander, mole salamander (*Ambystoma talpoideum*), four-toed salamander (*Hemidactylium scutatum*), and bog turtles (*Glyptemys muhlenbergii*)
- *Management Strategies and Needs*- Identify, delineate, and map current, non-identified, and potential restoration areas.

- *Infrastructure Needs*- Currently none is known to occur, but will depend upon complete assessment of all bogs and other wetlands present on the game land. However, any infrastructure developments in these areas would be limited to include soft or hard engineered water control structures needed to facilitate the restoration of natural hydrologic processes and functions. Platforms or board walks to facilitate wildlife study and viewing.

- *Management Challenges*- Proliferation and encroachment of plant succession and the introduction of non-native invasive species. Limited management allowed within primary buffer areas.

Geologic Habitats

Low Elevation Cliffs and Rock Outcrops

These habitats on CMGL include very steep to near vertical, rock slopes of mafic, basic igneous or metamorphic origin. Hydrology of these habitats vary based on slope and aspect, with northern slopes creating cool, moist microclimates to increasingly dry microsites on southern slopes. On some sites, wet seepages occur. Vegetation is typically limited to non-existent due to the extreme slopes and rocky substrates, and in some cases, may be too dry to allow for growth of vegetation, particularly to a closed canopy condition. Plants that do occur in these areas are largely limited to crevices, small pockets of soil, margins between rock faces, and the cliffs, and bases. Disturbances within these habitats are common and routinely include landslides, falling rock, erosion from run-off, and undercutting by streams (Schafale and Weakley 1990). A complete survey of the cliffs and rock outcrops has yet to be completed, and is necessary to assess habitat condition and species occupancy in these areas.

- *Desired Future Condition (DFC):* Natural hydrologic and geologic functions associated with these type habitats are maintained and protected. Adjacent soils and waters surrounding these areas are preserved as well as adequate buffers are maintained.

- *Target Game Species*- Black bear, Gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*)

- *Target Non-Game Species*- timber rattlesnake, coal skink, Eastern small-footed bat (*Myotis leibeii*), rock vole (*Microtus chrotorrhinus*) and rock shrew

- *Management Strategies and Needs*- Identify, delineate, and map current, non-identified, and potential restoration areas. Protect areas from disturbance.

- *Infrastructure Needs*- None known to exist.

- *Management Challenges*- Potential disturbance from unwanted recreational use. Limited management allowed within primary natural areas.

Developed Habitats

This designation includes all areas on the game land that are unsuitable habitat for wildlife and have otherwise been developed. These include areas such as roads, rights-of way, and parking areas, and total 59 acres or 2 % of the total game land. Needs for developed habitats are included in the Infrastructure section of this document.

FOREST MANAGEMENT

Forest management practices are probably the most cost-effective method available for affecting and achieving desired habitat conditions and creating diversity across the landscape of this game land. Forestry practices are key to restoring communities to diverse compositions and structures. Forestry tools, including timber harvest, herbicides, prescribed burning, tree planting, and other silvicultural techniques will be used to achieve wildlife habitat goals and objectives. Additionally, these forestry tools and combinations of techniques are important and vital to restoration of certain habitat types and forest communities, improving wildlife habitat diversity within forest stands and across the game land, reducing the risk of catastrophic wildfire, keeping forests healthy, and providing sustainable forest resources.

Forest Land Class, Types, and Conditions

Approximately 89% of the total area of CMGL is forested. As with much of the southern Appalachian region, the most abundant forest type on CMGL is oak forest, occupying approximately 62% of the land base (Table 1). Cove forests are found on about 18% of the game land and northern hardwood forests occupy about 7% of the land base. Closely associated with the cove forests are hemlock stands, although many have died or are dying because of infestation by Hemlock Wooly adelgids (*Adelges tsugae*). Floodplain forests are limited to just over 1% of the game land and pine forests are also limited, occurring on just over ½ % of the land base. Spruce forests occupy about ¼% of the game land. Shrub/scrub habitat occupies about 7% of the game land, early successional woody habitat occurs on about 2%, and just under ½ % of the land base is classified as herbaceous openings. As timber harvests occur, prescribed burning is implemented, pine forests are removed, and new wildlife openings are created on log landings, haul roads, and skid trails, additions to early successional wildlife habitat will occur. Conversely, as areas feasible, operable, accessible, and appropriate for restoration of HERO forests are developed, changes in percentages of forest types, land classes, and habitat conditions will occur. Two percent (2%) of the game land is classified as developed. A detailed description of the species composition, condition, structure, and extent of occurrence of these forest types and land classifications is presented and discussed previously in the Habitat Types section of this management plan.

TABLE 1: Forest Land Class/Types on Cold Mountain Game Land

Forest Land Class/Type	Acres	Percent
Oak Forests	2,221	62
Cove Forests	595	18
Northern Hardwood Forests	383	7
Floodplain Forests	38	1
Pine Forests	23	½
Spruce Forests	8	¼
Herbaceous	14	½
Shrub/Scrub	233	7
Early Successional Woody	60	2
Developed	59	2
Total	3,634	100

Based on the last complete forest inventory and updates made for this management plan, the age class distribution is clumped between 71 and 90 years of age, which is typical for the Southern Appalachian Mountains (see Table 2 - Note that the data presented in this table has been adjusted to reflect current year age of these forest stands as of 2015). However, older growth stands are generally not present on CMGL because of previous forest management and timber harvests by the prior landowner, Champion International Corporation, who managed this area very actively as an industrial forest. Younger and early successional forests constitute a relatively small portion of the game land. Site indexes (a measure of productivity) on this game land are generally high but tend to be lower on the rocky ridges and dry sites.

TABLE 2: Forest Age Class Distribution on Cold Mountain Game Land

Forest Age Class (years)	Acres	Percent
0 - 10	247	8
11 - 20	95	2
21 - 30	0	0
31 - 40	92	3
41 - 50	60	2
51 - 60	317	9
61 - 70	319	9
71 - 80	1597	44
81 - 90	848	21
91 +	0	0
Developed	59	2
Total	3,634	100

Forest Resource Needs

Desired future conditions and management strategies and needs are discussed previously in the Habitat Types section of this management plan. Given the high percentage of oak stands on CMGL, the importance of oak mast (acorns) to a variety of wildlife species, the threat to oak forests from pathogens, inadequate advanced oak regeneration, and the threat of invasive species, forest management will focus primarily on oak forests and restoration of HERO stands. Timber harvest (primarily shelter-wood cutting and/or thinning), herbicide use (to control competition with oak regeneration), prescribed burning (to enhance forest stand structure and promote oak reproduction), and planting of northern red oaks on some sites will be emphasized to promote healthy and diverse oak forests, although natural oak regeneration will be key.

Active management of forest stands will be emphasized, especially in areas in need of timber harvest due to old age and decay, storm damage (ice, snow, and wind throw), and other factors. Most of the pine stands (which are generally shorter lived than the hardwood forests) are mature and in need of harvest due to past insect damage and will generally be harvested as they reach merchantability. There is also a need to change the pine monoculture/plantation conditions in these pine stands to more diverse mixed pine-hardwood stands to improve wildlife habitat across the game land and provide greater habitat diversity on the landscape. Timber harvest in pine stands (initially thinning and eventually clear-cutting) will be emphasized. These harvested areas will provide early successional wildlife habitat on the game land. Efforts will be made to distribute variable stand age classes and forest conditions across the game land, provide greater habitat diversity on the landscape, and add to the amount of early successional wildlife habitat.

There is also an immediate need to conduct an accurate, complete, and updated forest resources inventory and stand mapping for CMGL. Although some updates were made for this management plan, the only existing forest resources inventory and stand maps are from the prior landowner, Champion International Corporation, and are nearly 20 years old and incomplete for certain data. A new, accurate, complete, and updated forest resources inventory and stand maps will provide important information for planning and directing forestry and wildlife habitat management on CMGL. Additionally, opportunities for forest management and wildlife habitat research have and should continue to be encouraged on this game land including oak management studies, fire ecology research, and HERO restoration monitoring with the Southern Blue Ridge Fire Learning Network and other entities.

Timber Harvest

Future timber harvests on CMGL are planned and will be needed to meet restoration and wildlife habitat objectives. Implemented timber harvests will improve stand age class distribution on this game land and will provide opportunities for continued productive forest stands in the future. Harvest methods employed will involve a variety of techniques including shelter-wood and selection type harvests, clear-cutting, and various thinning regimes. Non-commercial thinning (mechanical and by herbicide use) will also be utilized to meet stand needs and wildlife habitat management objectives.

Some general guidelines used for timber harvest on CMGL include:

1. Shelter-wood, selection type harvests, and various thinning regimes generally select leave trees that are beneficial to wildlife (mast producers, etc.), although in some cases may include conifer species (hemlock, spruce, table-mountain pine, etc.) where restoration is the goal.

2. Clear-cut units will be less than 25 acres in size and will be distributed across the game land to provide habitat diversity and early successional habitat needs on the landscape.

3. Sites of proposed clear-cutting will be reviewed for significant cultural resources and all sites of proposed timber harvest will be reviewed with appropriate staff regarding issues of protected plants, animals, significant natural and cultural resources, non-game species, potential management conflicts, etc.

4. Firewood harvests will be administered through the sale of firewood permits on designated sites (usually along roads and at log landings where personal fuel wood is easily available).

5. Riparian buffer zones will be left at widths of no less than those recommended by North Carolina Forest Service Forestry Best Management Practices and all North Carolina Forest Practices Guidelines will be applied where applicable.

Tree Planting and Reforestation

Natural regeneration has and will continue to be the major tool for reforestation on CMGL. However, future timber sale areas may include tree planting where natural regeneration is insufficient or where restoration to site specific species is needed to meet restoration and habitat management goals. Generally, oak and other hardwood stands that are clear-cut will be planted back to oak species if existing oak regeneration is not adequate and/or needs to be supplemented, especially on HERO forest restoration sites, where planting northern red oak may occur. In some situations, clear-cut sites may be planted back in varying arrangements of oak and shortleaf pine, with shortleaf pine being planted on the ridges and drier sites of the harvested areas. In rare situations and where appropriate white pine may be planted on clear-cut white pine sites. In these situations, white pines are planted to provide cover and roosting places, but they also provide small pockets of high value timber in the future. In many instances incorporating these high valued white pine stands into timber sales provide loggers with an additional incentive to harvest stands of less valuable timber that need harvest to implement important forest restoration management activities across the game land. Additionally, if needed to clear slash, sites to be planted will be site prepared by prescribed burning which will generally occur in summer months following the nesting season. In some cases, herbicide use, mechanical release, and prescribed burning will be used to enhance both natural and planted regeneration (both pre-harvest and post-harvest) as needed.

Sites planted back with oaks and/or shortleaf pines will generally be planted on a spacing of 14 feet by 14 feet and white pine will generally be planted on a spacing of 12 feet by 12 feet. On sites planted with pines this spacing will encourage development of mixed pine/hardwood stands

which provide better habitat diversity than pure pine stands. In the future plantings of American chestnut and Eastern hemlock may also occur to restore areas impacted by exotic pests.

Prescribed Burning

Prescribed burning is an effective and efficient tool used on game lands to improve wildlife habitat conditions, restore fire dependent and fire adapted ecosystems, and manage fields and other wildlife openings. The use of prescribed fire is vitally important for restoring and maintaining ecosystem and habitat diversity across CMGL and is the primary forest management tool used by NCWRC to manage game lands. Many of the habitats across CMGL require periodic fire for propagation, enhancement, and maintenance. These include such habitats as oak and mountain yellow pine communities as well as the early successional habitats that are critical for wildlife.

Prescribed burning also helps reduce hazardous forest fuel loads and minimize the potential for catastrophic wildfires that have the potential to carry across the game land to the many surrounding private lands, houses, and developments that border the property and continue to increase in number. Burning is also an important forest management tool for site preparation of timber harvested sites prior to regenerative forest plantings and natural regeneration. Prescribed fire also serves to reduce competition from less desirable tree species such as yellow poplar, white pine, and red maple as well as to control establishment of mountain laurel and rhododendron. The use of prescribed fire also helps to control the spread and establishment of many of the non-native, invasive species that have proliferated across the game land.

Generally, understory burning is conducted during the winter and early spring and to a limited extent in the fall months. Understory burns are typically implemented every 3 to 5 years depending upon goals and objectives. In stands which include timber harvest (primarily shelter-wood cutting) where development of oak woodland conditions is desired, application of prescribed fire will be less frequent and less intense. On areas selected for development of oak savannah conditions, application of prescribed fire will be more frequent and more intense. On sites selected for maintenance of wildlife openings and management of grass/forb, herbaceous, and shrub/scrub habitat, prescribed burning may occur annually and/or every other year.

Currently there are 12 prescribed burning units set up across the game land totaling approximately 453 acres (Appendix 12). This puts approximately 14 % of the game land in a prescribed fire rotation. Two adjoining units, totaling 170 acres, serve as a Southern Blue Ridge Fire Learning Network (SBR-FLN) demonstration site for the Nantahala and Balsam Mountains Landscape and receive special funding through the SBR-FLN to conduct fuels and vegetation monitoring. Also, six units, totaling 222 acres, are part of a U. S. Forest Service Southern Research Station Regional Oak Study looking at fire effects and silvicultural impacts to wildlife, fuels, vegetation, and oak regeneration.

Because of the value and cost benefit of prescribed burning to develop, improve, and manage wildlife habitat, prescribed fire will remain a primary management tool on CMGL. These burn units are implemented in both forested and open habitats for restoration and maintenance of fire dependent and fire adapted ecosystems and to reduce hazardous forest fuel loads, as well as the many other benefits that have been discussed. Additional burn units and the merging of existing burn units are planned and will be developed in the future.

Herbicide Treatments

Applications of herbicide for forest management are another tool that is regularly implemented on CMGL. Large scale herbicide projects are generally carried out through contracts with the North Carolina Forest Service for control of understory competition affecting oak regeneration and site preparation prior to tree planting. The use of herbicide for forest management purposes is particularly important with regards to controlling the wide variety and excessive amounts of non-native invasive species that are found throughout the game land. Controlling invasive species is a critical component of habitat restoration and a pivotal step in ensuring the success of reforestation plantings following timber harvest. Herbicide treatments are also beneficial in helping to control competition to planted seedlings from fast growing tree species such as yellow poplar and maple following timber harvests. These applications to control competition are typically carried out following reforestation plantings, but are also being implemented prior to timber harvest as well.

KG Blading and Mechanical Mulching

Currently there has not been any KG blade or mechanical mulching work conducted at CMGL. Due to NC Natural Heritage designations and steep topography, the use of a KG blade has not been available; however, opportunities to implement some mechanical mulching projects across the game land do exist and would prove beneficial for restoring habitat conditions and resetting succession in some stands. A mechanical mulching machine would also provide a means for creating firebreaks and could be used in conjunction with prescribed fire to help enhance burn effects.

Annual Forest Management Planning

Generally, an annual forest management plan will be developed for forestry and prescribed burning projects on CMGL as part of the overall annual planning process for Mountain Eco-Region Game Lands. The annual planning for CMGL will be directed by this management plan and will address specific wildlife habitat and forestry projects including the game lands' forest management prescriptions, estimated project acreages (timber harvest, herbicide use, prescribed burning, tree planting, etc. used to achieve wildlife habitat goals and objectives), costs, and forest product receipts (from the sale of timber, pulpwood, firewood, etc.).

GAME LAND INFRASTRUCTURE

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Assessments of existing infrastructure throughout the CMGL were conducted by Engineering & Lands Management staff in April of 2015. The infrastructure map included in Appendix 11 of this document show the locations of existing public roads, administrative access roads, trails, parking areas and gates within CMGL. The results of the assessments along with recommendations for maintenance and improvements are discussed by category below.

ROADS

The tracts that make up the CMGL abut either Lake Logan Road (NC-215) or Little East Fork Road (SR1129) in Haywood County. There are approximately 32 miles of NCWRC maintained access roads, unimproved road beds and fire lines traversing the game land. Many of these roads and road beds were originally built and maintained by Champion Paper Co. or U.S. Forest Service before the tracts were acquired by NCWRC and added to the game land system.

The infrastructure map shows the locations of all NCWRC maintained and other existing roads that have been identified within the boundaries of the CMGL. The majority of these are unimproved logging roads. Approximately 13.5 miles of those roads are regularly maintained by NCWRC staff for management purposes. The maintained roads are used by NCWRC staff to access the game land for maintenance and conservation work, and are also used by the public as pedestrian pathways for access to hunting, fishing, wildlife viewing and other activities. Some of these roads provide seasonal access for public vehicles. Others connect to adjoining tracts owned by U.S. Forest Service, Boy Scouts of America or the Episcopal Church. U.S. Forest Service staff and vehicles regularly use these roads for access to survey areas.

Access to the game land is controlled by gates located at the entrances and at points along six NCWRC maintained roads detailed below.

Existing Road Conditions

Cold Mountain Game Land is located on steep rugged terrain in the mountains of western North Carolina. Many of the existing roads on the game land were established before NCWRC acquired the tracts.

Most of the NCWRC maintained access roads on the CMGL have been minimally improved for a level of service limited to maintenance and conservation access for staff and pedestrian access for public users. Hard surfacing and other improvements have been avoided or limited in keeping their locations in managed linear wildlife or designated buffer areas. Some were recently maintained or improved following timber harvesting. The major NCWRC maintained access roads run through the following areas:

Dam Field

The Dam Field road begins at Lake Logan Road just north of a bridge crossing the West Fork Pigeon River. A steel tube gate is located near the entrance at (N35.427331°,

W82.919784°). A kiosk identifying the game land and parking for three vehicles is located before the first gate. From the gate, the road continues for 0.26 miles along the river to a fork at where the lower and upper Dam Field roads split.

The lower road continues along the river for an additional 0.25 miles to a dead end near the Lake Logan dam. Anglers regularly use the lower road to access the river. The upper road switches back to the right where a second steel tube gate is located, and continues to climb for another 1.4 miles. At this point, the road splits into several different unimproved roads running in different directions.

The road to the west continues for 0.3 miles onto U.S. Forest Service land. The road to the east follows the ridge line for approximately 0.5 miles until it turns into a foot path leading to an existing gazebo structure on a peak at (N35.42282°, W82.93027°). This gazebo will be discussed in further detail in the Structures section of this report.

The lower sections of the Dam Field roads are generally in good condition. The relatively flat and open terrain makes it easier to maintain these sections. As the road climbs, it becomes rougher and narrower. These roads are kept clear as they are regularly used by NCWRC and U.S. Forest Service staff.

The section of road near the top that leads to the gazebo is referred to as the gazebo road. It is unimproved and somewhat rocky. It is regularly used by hikers from the Episcopal Center to access the gazebo viewpoint. There is a recurring problem with encroachment at a point along the gazebo road where the game land boundary meets the ridge (N35.41999°, W82.93587°). A berm with boulders is maintained along this ridge, but someone with heavy equipment regularly climbs to the ridge from the opposite side (McClure Creek area) and removes the barriers. This is done supposedly to gain access for ATVs to the gazebo overlook.

Poison Cove

The entrance to Poison Cove is located along Lake Logan Road approximately 0.5 miles south of the bridge crossing at the lake. The first gate (N35.402964°, W82.935377°) is opened to allow seasonal access for public vehicles to the lower management areas. The seasonal access section continues for 0.6 miles up to the next steel tube gate. There is also a side gate (N35.40523°, W82.93657°) that limits access to a 0.25 mile-long unimproved spur road that runs for 0.25 miles and ends near the Episcopal Center boundary.

Beyond the gate at the end of the seasonal access section, Poison Cove road continues for an additional 0.4 miles where it then crosses the NCWRC & USFS boundary several times before doubling back and ending at a managed clearing on the game land.

The section open to seasonal public vehicle access is well maintained with a good gravel base. Ditches are marginal, but there are no signs of erosion. There is insufficient parking at the entrance when the first gate is closed. Game land users either park in front of the gate or along Lake Logan Road. There is a flat area just beyond this gate that could be developed to provide parking for several vehicles. That would require either relocating the existing gate or installing additional gate just beyond the parking area. A

switch back and small clearing is located just before the gate at the end of the seasonal access section. This area currently provides space to park two to three vehicles. There is limited potential to improve this area and add some additional parking.

Beyond the gate at the end of the seasonal access section, the road is in good to fair condition. The areas that run through managed clearings have a good stone base, but grass can grow through. These roads are adequately maintained for public foot traffic and management access.

Spike Gate

The Spike Gate road begins along the east side of Lake Logan Road directly across from the lake. The road is named for the Champion Paper era gate fashioned with rebar spikes attached to the bottom of the pipe. This road is not open to public vehicles. It does provide access to a large area of the game land for NCWRC and USFS management and survey activities.

There is very limited parking available at the entrance. Game land users typically park in front of the gate or along Lake Logan Road. There is a large clearing just beyond the gate. Part of that area could be improved to provide parking for at least four to six vehicles. This would require relocating the existing gate or adding a second gate beyond the parking area. Due to the size of the clearing, it will be difficult to prevent people from bypassing the gate with vehicles or ATVs. Another option would be to improve smaller parking areas at each of the gates along this section of Lake Logan Road that connect to the Spike Gate road. This would better disperse game land users in this area.

This road winds for approximately 4 miles along the west face of Fork Mountain. The first 2 miles up to Hickory Flat Cove are in good condition. Broad base dips are maintained to turn water off the road along with ditches and culverts at bends and stream crossings. Gravel coverage is good up to Hickory Flat, but begins to thin out beyond this point. It takes considerable time and effort to haul gravel farther in. From Hickory Flat to Curtis Cove, the road gets rough and muddy in places. The road fords Curtis Cove Creek before reaching a dead-end turn-around.

To shorten the distance required to maintain the far section of Spike Gate road, it may be possible to improve one of several existing skid roads that could be accessed through the Episcopal Center property.

A landslide occurred on a section of the Spike Gate road that runs above Curtis Cove Creek. This slide was repaired by NCWRC staff. There is some evidence of settlement of the steep fill slope. Additional fill appears to have been added recently to build up the shoulder. Recommend monitoring this area regularly for continued signs of settlement, and make extra effort to divert runoff away from the slide area.

Amy Gate

An unimproved road bed can be accessed from Lake Logan Road through an existing gate located at (N35.42147°, W82.92253°). There is currently no public vehicle access and limited parking at the gate. The road continues for 0.6 miles where it intersects with the Spike Gate road. NCWRC staff occasionally mows this road bed.

There currently is sufficient space to park 2 to 3 vehicles before the gate with the potential to remove trees and add parking for an additional 2 vehicles. Another gate located along Lake Logan Road at (N35.41695°, W82.92525°) also has potential for added parking for public access by foot to the Spike Gate area. This development would require relocating or adding a second gate.

A dirt road abuts Lake Logan Road near (N35.42238°, W82.92226°) across from a commercial fish hatchery. The hatchery uses this road to access right of way for about 300 yards onto the game land where it ends at a water supply reservoir. ATV riders have found a way to use this road to bypass the Amy Gate and gain access to the Spike Gate area. This illegal encroachment could be minimized by installing a new gate at the entrance to this dirt road and providing a key to the hatchery staff.

Ensley Road

The Ensley Road section of the CMGL is accessed from Little East Fork Road. 300 feet of gravel road is shared with private landowners before reaching the first gate at (N35.40552°, W82.92358°). NCWRC staff has been maintaining this shared section of road. This gate is opened for seasonal access by public vehicles. When the gate is closed, there is parking for up to two vehicles without blocking the gate.

The seasonal access section of road continues for 0.4 miles to the second gate. A large parking area is maintained at a location just before the second gate. The seasonal access section is maintained in good condition for its level of service. Some steep sections show minor washing.

Beyond the second gate, the road continues for 0.2 miles before reaching the boundary where the game land meets the Boy Scouts property (Camp Daniel Boone). The road continues through the Boy Scout property for approximately 1.4 miles before reentering the game land. Once back on the game land, the road becomes a very steep climb for 1.2 miles to the summit of High Top Mountain. This summit (at 5263’ in elevation) was formerly the site of a lookout tower. It is now used as an emergency communications base for the Lake Logan Fire Department. Terrain impedes radio and cellular communication from at the fire station. The fire department keeps a metal storage container at the summit (N35.38466°, W82.91617°) for use as a communications base in the event of a large fire or other emergency in the area. NCWRC staff performs some maintenance on the section of this road beyond the BSA boundary to have access where it turns back onto the game land. This section appeared in good condition. The section that ascends to High Top is very steep, rocky and overgrown. Downed trees currently block access to the top. This road is not used for any wildlife management activities, and is too steep and infrequently used to make maintaining a gravel surface impractical.

Before the main access road crosses the boundary between the game land and BSA, a gate at (N35.39976°, W82.90427°) leads to a side road through Deep Gap Cove for 1.2 miles to Deep Gap. At this point the road forks in three directions with unimproved logging roads which eventually connect to other game land roads on the Lake Logan side of Fork Mountain. This road is not open to seasonal public vehicle traffic. It is in fair-good condition for management vehicle traffic. NCWRC staff maintains a combination of water breaks and ditches with culverts along this road.

Murray Cove

The access road through the Murray Cove section of the CMGL begins at Little East Fork Road. The Murray Cove section is a ruffed grouse habitat project. The access road is a linear wildlife opening. No public vehicle access is permitted. There is limited parking before the steel tube gate at (N35.40303°, W82.89806°). Other parking areas are located nearby on Little East Fork Road which can be used to access the Murray Cove area.

Beyond the gate, the access road climbs alongside Murray Branch which is a bold tributary to the Little East Fork. The first grade beyond the gate is steep, and haul vehicles frequently loose traction and spin wheels on the grave surface. From there, the gravel surface thins, and the road turns to a dirt & grass corridor. There are muddy sections of road associated with broad base dips at (N35.40191°, W82.89587°) and at (N35.40327°, W82.89420°). The road is also very rocky in places. The road condition is poor near the upper end. The road is essentially dirt and rock with high dips and eroding cut banks left after recent logging activities. Slash from logging is piled along the roadside and is blocking ditches in places. Runoff is cutting across the road and bypassing vernal pools constructed for habitat.

At the upper end, the road splits into several directions as unimproved road beds. One of these connects to the Schoolhouse Branch road. NCWRC occasionally mow this connecting path, but it is currently blocked by fallen trees and limbs.

Schoolhouse Branch

The Schoolhouse Branch section of the CMGL currently can only be reached by maintenance staff via an administrative right of way. The right of way is a rough dirt road that runs for 0.8 miles through private property. A Champion Paper era spiked, steel tube gate is in place at the game land boundary. The public does not have access without special permission from property owners, and there is no parking at the gate.

The road beyond the gate is not regularly maintained as there are no managed clearings or other public uses. The road surface is rough dirt and rock. The road runs through a stand of white pines, and is blocked by fallen trees at points. A local resident uses this road to maintain a spring head and reservoir that is located on the game land. This water supply source was in use before NCWRC acquired the tract.

Future Road Improvements

Areas requiring maintenance and improvements have been identified on existing access roads. The recommendations in this section do not include culvert replacements which are covered in the subsequent culverts section. The recommendations for improvements to existing maintained roads and for the development of new access roads are discussed in this section and are grouped by priority as follows:

High Priority

Based on assessments of the current condition, level of use and anticipated use of existing roads on the CMGL; the following should be considered the highest priority for upgrade over the next ten years:

- Poison Cove - Added Parking
- Spike Gate - Add Parking
- Spike Gate - Improve Skid Road to Shorten Maintenance Access
- Amy Gate - Encroachment
- Murray Cove - Stabilization of Logged Area

Poison Cove - Add Parking

There is currently no parking at this without blocking the gate. The shoulder along Lake Logan Road is narrow, and there is no pull-off wide enough to serve as parking nearby. A level area just beyond the existing gate could be cleared and improved to provide parking for approximately 4 vehicles. This would require relocating the existing steel tube gate or installing a second gate beyond the proposed parking area. The estimated cost for road improvements is $5,000.

Spike Gate – Add Parking

The Spike Gate road runs through one of the larger contiguous management areas in the CMGL. There is currently no seasonal public vehicle access permitted on this road, and a steel tube gate restricts access to maintenance and survey vehicles. There is insufficient parking space between the gate and Lake Logan Road. Game Land users must either park directly in front of the gate or at sporadic pull-offs along Lake Logan Road.

A large clearing is maintained just past the gate. At this clearing, there is potential to develop as much parking as NCWRC management staff determine is appropriate for the needs of the game land users in this area. Since the parking would be in a large clearing, it will be difficult to establish a choke point where a gate and barriers could be installed to restrict vehicle access to the game land beyond. There is also a concern that concentrating the parking at a single location will promote user conflicts or that hunters may be deterred from using the area if they see too many vehicles parked there. An option may be to create a number of smaller parking areas at each of the access points along Lake Logan Road that lead to this section of the game land. There is potential to

add small amounts of additional parking at the Amy gate and at another gate located along Lake Logan Road about 0.25 miles to the south of the main Spike gate.

In any case, these parking expansions will require some clearing, grading, applying gravel and installing new gates and barriers. Estimated cost to improve parking at or near the Spike gate is $5,000-$10,000.

Spike Gate – Improve Skid Road to Shorten Maintenance Access

The length of the Spike Gate road makes it difficult to haul or have large quantities of gravel delivered and to walk heavy equipment to the areas at the far end. For this reason, it is prohibitive to the regular maintenance of roads and areas beyond Hickory Flat Cove and into Curtis Cove. NCWRC management staff have identified an existing skid road that begins on the Episcopal Center property then runs through the game land to connect to the Spike Gate road near (N35.39489°, W82.93380°).

Approximately 0.6 miles of existing and new road bed would need to be improved or built to be suitable for access by tandem dump truck. This access would tie in at point on the Spike Gate road that is approximately 3 miles from the existing entrance. The number of water breaks and tight turns on this 3-mile section of game land road makes in and out trips for dump trucks and equipment a very time-consuming process.

NCWRC has an agreement with the Episcopal Center to allow administrative access through to the new road connection. It is unlikely that public access would be permitted at this point. Estimated cost for upgrading the existing skid road and developing new road suitable for maintenance access is $50,000.

Amy Gate - Encroachment

The existing dirt road used by a commercial fish hatchery to access their right of way through the game land to a water supply reservoir needs to be secured to prevent encroachment. ATV riders have found a way to use this road to bypass the Amy gate and gain access to the Spike Gate area. This is an illegal encroachment onto a large section of the CMGL. Installing a secure gate at the entrance to the dirt access road would deter this encroachment. A key to the gate would need to be provided to the hatchery operators. The estimated cost for this improvement is $1,000.

Murray Cove – Stabilization of Logged Area

Approximately 0.5 miles along the upper section of the Murray Cove access road needs improvement and stabilization. This area was logged in recent years, and the road and surrounding area was left in poor condition. Some steep sections may need to be re-graded and surfaced. Ditches and water breaks are in poor condition. Some ditches are plugged by slash piles that were left along the roadside causing runoff to jump the ditch

and scour the road. Steep cut banks from road widening were left un-vegetated, and are actively eroding.

The slash material that is either blocking ditches or preventing flow from reaching constructed habitat features should be cleared and burned on site. Steep cut banks should be graded to a gentler slope and/or hydro seeded to quickly establish vegetative cover. Steep road grades could be rerouted and poorly functioning ditches and water breaks reworked. Finally, the improved sections should be surfaced with gravel. The estimated cost for these improvements is $40,000.

Medium Priority

The following roads should be considered as medium priority for upgrade after completion of improvements to the listed high priority road projects:

- Dam Field - Gazebo Encroachment
- Amy Gate - Add parking
- Murray Cove - Pave at Entrance
- Murray Cove - Repair Muddy Dips
- Murray Cove - Improve Connection to Schoolhouse Branch Area
- Ensley - Clear High-Top Access Road

Dam Field – Gazebo Encroachment

A short section of the spur road that connects the main Dam Field road to the overlook gazebo (N35.42294°, W82.93013°) runs along the crest of a ridge. The game land boundary runs along the top of this ridge with the McClure Creek valley to the north, and Lake Logan to the south. A recurring encroachment problem exists near location (N35.41999°, W82.93596°) at the boundary along this ridge. NCWRC has set boulders and other barriers along the boundary in this location to prevent encroachment by motorized vehicles. These barriers have been repeatedly removed to reopen the encroachment route. This effort would require walking heavy equipment up a slope from the McClure Creek area.

If this pattern continues, and it is clear that this encroachment is used for motor vehicle access to restricted sections of the game land, then the matter should be referred to enforcement. An investigation immediately following the removal of barriers should reveal the source of the problem. This matter may also be the result of a boundary dispute. It is important that any work by NCWRC staff to secure this area be done on what is inarguably the game land side of the boundary. Since most of the traffic on this section of road is by foot from visitors at the Episcopal Center to the gazebo, it may be better to focus efforts on blocking access to the game land at a point along this road that is easier to control. It may be more effective if the barriers are moved further away from the boundary. Estimated cost to secure this section of the boundary from encroachment is $5,000.

Amy Gate – Add Parking

Current parking in front of the Amy gate is limited to 2 to 3 vehicles. It should be possible to expand this parking area by removing several trees, leveling and adding stone. This could increase the capacity to 4 to 6 vehicles at this location without the need to add a second gate. Improving parking at any of the gated road entrances that lead to the Spike Gate area would help to disperse game land users and reduce parking pressure at the entrance to the main Spike Gate road. Estimated cost for this parking expansion is $2,000.

Murray Cove – Pave at Entrance

Beyond the entrance gate, the beginning of the Murray Cove road climbs a steady grade exceeding 10% for approximately 100 feet. This short but steep section has been a problem for loaded dump trucks to climb without spinning and destabilizing the road surface. Paving this section with asphalt or concrete could reduce maintenance needs and prevent large trucks from either getting stuck or making the road impassible for smaller vehicles.

This section of road is considered a linear wildlife opening for the ruffed grouse habitat project. It will be necessary to confirm that surfacing this section of road would not conflict with that designation. Estimated Cost for paving this section is $6,000.

Murray Cove – Repair Muddy Dips

The condition of the Murray Cove road deteriorates as it approaches the logged area. There are problems with mud at broad base dips located along the road near (N35.40191°, W82.89587°) and (N35.40327°, W82.89420°). These areas should be stabilized to improve the condition of the access for maintenance vehicles and public foot traffic. Efforts to stabilize these problem areas could include applying 3” stone or possibly reshaping or relocating the water breaks. Estimated cost of repairs is $4,000.

Murray Cove – Improve Connection to Schoolhouse Branch Area

The Schoolhouse Branch area of the CMGL is not directly accessible to the public. An existing 1.2 mile-long road bed connects the upper Murray Cove road to the Schoolhouse Branch area. Future timber management in the Schoolhouse Branch area may provide opportunities to add wildlife habitat. Clearing and maintaining this road bed would provide improved public access to these areas. Estimated cost for clearing and minimal improvements suitable for pedestrian traffic is $10,000.

Ensley – Clear High-Top Access Road

An existing but essentially unimproved road climbs for 1.2 miles from the game land boundary to the summit of High Top Mountain. This summit (at 5263’ in elevation) was formerly the site of a lookout tower. It is now used as an emergency communications

base for the Lake Logan Fire Department. Terrain impedes radio and cellular communication from at the fire station. The fire department keeps a metal storage container at the summit (N35.38466°, W82.91617°) for use as a communications base in the event of a large fire or other emergency in the area.

The section that ascends to High Top is very steep, rocky and overgrown. Downed trees currently block access to the top. This road is not used for any wildlife management activities, and is too steep and infrequently used to make maintaining a gravel surface impractical. Upon inspection, it was evident that the road is effectively blocked by fallen trees and limbs. The road surface is ungraded and quite rough due to the presence of large embedded rocks. In its current condition, it would require a considerable amount of clearing and cutting and a suitable 4WD vehicle to reach the summit if emergency access were required. It should be decided whether this maintaining this access should be the responsibility of NCWRC staff or Lake Logan VFD staff. Estimated cost for initial clearing and improving the road bed is $25,000.

Low Priority

The remaining unimproved road beds and fire lines throughout the CMGL should be considered low priorities for improvement. Maintenance of most of these access roads involves grading, bush hogging and occasional placement of stone where needed to stabilize soft areas. This maintenance approach is adequate for current management and conservation practices where public access is limited to foot traffic. If management practices or intended public uses change in certain areas, additional maintenance or improvements to these roads may be required. NCWRC management staff should routinely inspect the condition of these access roads for indications of surface stability or drainage problems. Engineering staff should be notified if problem areas are identified that may change the prioritization these access roads.

New Road Construction

There are numerous existing improved and unimproved roads throughout the CMGL. These improved roads are used primarily for management vehicle access and for game land user access by foot. When moved and cut back, the unimproved road beds also serve as foot access to more isolated areas of the game land.

With the exceptions of the Schoolhouse Branch public access issue and the proposed maintenance access shortcut to the Spike Gate road, the existing network of roads and paths provide sufficient access the managed areas of the game land.

Road Maintenance

All roads require inspection and maintenance to function well and avoid damage and deterioration. Maintenance should be performed regularly, as the longer the delay in needed maintenance, the more damage will occur and the more-costly the repairs will be.

Typical Road Maintenance Practices

- Inspect Roads regularly, especially before the winter season and following heavy rains.
- Keep ditches and culverts free from debris (see also Culvert Maintenance Section of this Management Plan).
- Remove sediment from the road or ditches where it blocks normal drainage.

- Re-grade and shape the road surface periodically to maintain proper surface drainage.
    - Typical road should be crowned at approximately 4%, or ½" per foot.
    - Some roads may not require a crown, but should have a constant cross slope (super-elevation).
    - Gravel should be distributed at an even depth across the road.
    - Gravel should have an even distribution of fine and course materials.
    - Keep downhill side of the road free of berms, unless intentionally placed to control drainage.
    - Proper maintenance and grading of the road will require a motor grader and a roller.
- Avoid disturbing soil and vegetation in ditches, shoulders, and cut/fill slopes to minimize erosion.
- Maintain shoulders on both sides of the road to ensure oncoming vehicles have enough room to pass. Shoulders should be relatively flat, with a mowed grass surface.
- Maintain an erosion-resistant surfacing such as grass or rip rap in ditches.
- If it is determined that a road needs major repairs or upgrade, contact Regional Supervisor and Design Services to schedule an assessment.

PARKING AREAS

There are currently eight designated parking areas maintained by NCWRC on the CMGL. The locations of these areas are shown on the infrastructure map included in Appendix 11 of this report. The coordinates and a brief description of each are provided as follows:

Upper Pigeon Parking Area

This parking area is located along Lake Logan Road at (N35.38252°, W82.93975°) across from the entrance to the shooting range. This area was added in 2012 to provide additional bank and fly fishing access to the trout waters of the West Fork Pigeon River. At 60'x90', this gravel surface lot has capacity for up to 10 vehicles.

Steel Bridge Parking Area

This parking area is directly adjacent to Lake Logan Road at (N35.39549°, W82.93846°) just to the south of the intersection with Steel Bridge Road. This area was added in 2014 as part of the Steel Bridge bank stabilization project along the West Fork Pigeon River. All public parking at the trailhead on the opposite side of the steel bridge from Lake

Logan Road has been prohibited. The new area provides parking for hunter access to the trailhead after crossing the steel bridge and angler access to a popular trout fishing section of the river. At 60'x90', this gravel surfaced area provides parking for 8 to 10 vehicles.

Construction of the new Steel Bridge parking area coincided with a river bank stabilization project along a section of the right bank of the West Fork Pigeon River immediately upstream of the steel bridge crossing. Approximately 200LF of the high river bank was scoured during the floods following hurricanes in 2004. The bank had been actively eroding since that event, and that erosion was beginning to undermine an existing foot path that had been used by the public to access a portion of the Spike Gate section of the CMGL. Before the stabilization plan was developed, there was very limited parking at the trailhead on the right bank side of the steel bridge. To secure a needed easement for construction access for the river bank and trail stabilization project, it was agreed that parking would be relocated to the reclaimed staging area established on the left bank. This new parking area can accommodate a greater number of visitors to the area.

The river bank stabilization project included sloping, matting and planting of the eroding bank. Routine inspection of this work by NCWRC will be necessary to ensure the long-term success of the project. NCWRC staff should look for any disturbance or unravelling of the matting material (particularly following high water events). It is also important to assess the condition of grass, shrub and tree plantings over the stabilization area. Establishing a healthy stand of riparian vegetation is an essential component of the plan. Any signs of problems at the site should be documented and reported to NCWRC engineering staff.

Airstrip Parking Area

This parking area was developed to provide public fishing access to the West Fork Pigeon River shortly after NCWRC acquired the property. The game land boundary crosses the old airstrip formerly used by Champion Paper. The southern end of the airstrip was located on the game land. A short but steep road was constructed by NCWRC staff for public access to this site form Lake Logan Road. The deteriorated asphalt surface of the retired airstrip was removed and replaced with crushed stone to create a 50'x200' parking area at (N35.39878°, W82.93483°). This parking area has capacity for up to 20 vehicles, and is adequately sized for its purpose. Due to site constraints, the entrance road was built at a steep grade exceeding 10%. Two-wheel drive vehicles may spin wheels on the gravel surface when exiting the site which increases the need for regular grading of the road surface. Paving the entrance road may reduce routine maintenance and improve access for public vehicles.

Wayne E, Smith Shooting Range

The gravel parking area at the shooting range on the CMGL is approximately 70'x80' with capacity for up to 12 vehicles located at (N35.38061°, W82.93975°). During busy periods at the range, the parking area is sometimes filled. Shooters waiting to use the

range may also park along the side of the entrance road. There is potential to expand this parking area which will be necessary if other facilities such as alternative shooting areas, restroom or supervision facilities are added.

Ensley Parking Area

This gravel surfaced parking area is located at the end of the seasonal access section of the Ensley road at (N35.40103°, W82.90720°). At 60'x90', the area has capacity for up to 10 vehicles. The area is in good condition, and is only used by the public during periods when the first Ensley gate is open allowing seasonal access for public vehicles. There may be limited potential to expand this parking area and add space for another 2 to 3 vehicles. At present, this area is sufficient for the public demand at this section of the game land.

Little East Fork – Main Parking Area

The largest of three parking areas along Little East Fork Road is located at (N35.40488°, W82.89904°). This area is used by the public primarily for access to the Murray Cove section of the game land. It is also used by NCWRC staff for offloading heavy equipment used for maintaining this section of the game land. The gravel area measures 60'x80' with capacity for 8 to 10 vehicles, and is in good condition.

Little East Fork – Bridge Parking Area

This parking area is maintained along Little East Fork Road at (N35.40621°, W82.90221°) alongside a new bridge crossing the Little East Fork Pigeon River. There is parking for up to 3 vehicles in front of a gate at the head of several unimproved road beds leading to managed wildlife openings. There is no potential to expand this area without developing additional parking beyond the existing gate.

Little East Fork – Small Parking Area

This small, gravel pull-off parking area is located along Little East Fork Road at (N35.40826°, W82.90329°). This area provides some additional space for game land users to park and access the Murray Cove section of the game land. It also provides anglers with access to the Little East Fork Pigeon. There is currently enough improved space to park 2 to 3 vehicles. There may be room to expand this area and provide additional parking for another 2 to 3 vehicles.

Potential and need for new parking or expanded parking areas exist in conjunction with the gates at entrances to the Spike Gate, Amy Gate and Poison Cove areas of the game land. These have been addressed in the Road Assessment – Priorities section of this report. The estimated cost for development of new parking areas at these sites is $12,000 to $17,000.

GATES

Lockable gates are installed at or near the entrance of each NCWRC maintained access road. These gates limit access in these areas to maintenance and conservation staff except for those areas where seasonal public vehicle access is permitted.

Locations of all gates are shown on the infrastructure map in Appendix 11 of this document. All gates are constructed of steel pipe with concealed locks, and are in good condition. Some of these gates were already installed by Champion Paper Company before NCWRC acquired the game land. These heavy-duty gates are fabricated from steel pipe and are at least equal to the standard gates installed by NCWRC with regard to their security.

There are several locations discussed where there may be potential to provide additional public parking at points just beyond existing gates. These sites are at the entrances to Poison Cove, Spike Gate and at another gate along Lake Logan Road which leads to the Spike Gate area. If these areas are developed, it may be necessary to relocate existing gates beyond the new parking sites or install a second gate to restrict vehicle access.

STRUCTURES

Existing structures within the CMGL have been identified and are described as follows:

Dam Field Gazebo

A 10'x10' roofed gazebo structure was already built on a summit (N35.42282°, W82.93027°) overlooking Lake Logan before NCWRC acquired the game land. The structure is of rustic construction with the roof supported at each of the four corners by locust posts and a ground level planked deck beneath. The roof is moss covered, and there are signs of deterioration on all the timbers and lumber used. Many deck boards are loose, and the roof structure wobbles when the supports are pushed.

The overlook is frequently visited by hikers from the Episcopal Center. It is not known if anyone from the center has been maintaining the structure.

Considering that no camping is allowed within the game land, this structure only serves to provide a dry place to sit if hikers are caught by rain or shade while at the overlook. Without regular maintenance, this structure is a potential hazard and liability. The overlook can still be enjoyed by visitors without the presence of this gazebo, and its demolition and removal should be considered.

Shooting Range Shelter

A 40'x16' pole shed structure was engineered and built by NCWRC staff during the initial construction of the Wayne E. Smith shooting range on the CMGL. The roof structure is located at (N35.38074°, W82.939847°), and covers a concrete pad and benches at the firing line of the range. The pole shed receives routine maintenance from

NCWRC management staff which includes replacing or repairing damaged boards and metal roof panels.

The roof was designed with 10' of clearance beneath to allow dump trucks and maintenance equipment access to the backstop and berms for necessary maintenance. Subsequent designs for firing line shelters at other ranges use a lowered front eave to discourage shooters from firing over the range backstop. NCWRC staff have since graded a service road that allows maintenance access to the backstop from above. If it becomes necessary to overhaul the existing roof structure, it should be modified with a similar safety feature.

High Top Metal Shipping Container

A metal shipping container was hauled to the summit of High Top (N35.38466°, W82.91617°), on the Ensley section of the CMGL, by members of the Lake Logan Volunteer Fire Department at some time after NCWRC acquired the tract. The container is used for storage or as a base to set up a communication relay during times of emergency of severe fire in the Lake Logan Area. Radio and cellular communications are limited by terrain at the fire station. It is not known whether the fire department regularly visits or maintains this facility, but the access road to the summit is currently blocked by fallen trees.

DRAINAGE STRUCTURES

Dams

There are no dams located within the CMGL. The dam at Lake Logan and the lake itself are owned and maintained by the Evergreen Paper Company.

Impoundments

There are no impoundments, ponds or lakes located within the CMGL. The game land boundary runs close to the western edge of Lake Logan at the bottom of the Dam Field area. The lake is the private property of the Episcopal Center, and public access to Lake Logan is prohibited.

Culverts

Forty-four culverts located within the boundaries of the CMGL were identified and inspected. An additional eight culverts were located on sections of game land access roads that run outside of the boundaries, but are still maintained by NCWRC.

Many of the culverts were in place when NCWRC acquired the game land tracts. Some of these have been replaced due to failure or because they were undersized for the drainage. Several old steel steam pipe culverts installed during the Champion Paper era are still in place.

Most of the culverts are adequately sized and are functioning properly. Problem culverts are tagged for repair or replacement for any of the following reasons:

- either damaged or blocked at the inlet or outlet
- set with insufficient cover to protect the pipes
- have hanging outlets which are causing scour or inhibiting passage of aquatic organisms
- undersized for the drainage area
- show evidence of overtopping
- pipes are corroded or made from materials susceptible to corrosion or fire damage

The following culverts are recommended for repair or replacement based on these criteria:

Poison Cove

- 12" Ø x 20'L CMP @ (N35.40500°, W82.93770°) - Replace

Dam Field

- 12" Ø x 20'L CMP @ (N35.42371°, W82.92796°) - Replace
- 15" Ø x 30'L CMP @ (N35.42379°, W82.92799°) - Replace

Spike Gate

- 15" Ø x 20'L CMP @ (N35.40922°, W82.92236°) - Replace
- 24" Ø x 20'L CMP @ (N35.40918°, W82.92217°) - Repair
- 18" Ø x 20'L CMP @ (N35.39751°, W82.92427°) - Repair
- 18" Ø x 20'L CMP @ (N35.39017°, W82.92810°) - Repair
- 12" Ø x 20'L HDPE @ (N35.38858°, W82.93030°) - Replace

Ensley

- 6" Ø x 40'L Steel @ (N35.39822°, W82.91020°) - Replace
- Unknown @ (N35.39756°, W82.91377°) – Replace

Murray Cove

- 24" Ø x 20'L CMP @ (N35.40687°, W82.88954°) – Replace
- 15" Ø x 20'L Steel @ (N35.40725°, W82.88868°) - Replace

The estimated cost for replacement and repair of existing culverts including removal & disposal, channel restoration design, permitting and construction is $10,000.

Culvert Maintenance

Culvert maintenance is performed to extend the life and ensure proper function of the installed drainage structure. The accumulation of sediment and/or debris at the inlet or outlet of a culvert or damage such as crimping of the pipe effectively reduces the diameter and flow capacity of the pipe.

Culvert maintenance includes removal of accumulated sediment and/or debris that prevents passage of water (and organisms) through culvert inlets, outlets and connected drainage ways. It may also include reinforcement of eroding inlets and outlets by installing riprap or other erosion control measures. Damaged culverts and culverts requiring frequent repeat maintenance should be considered for future remediation via redesign and reinstallation.

The following items should be checked for and addressed as part of routine maintenance inspections:

- partial or complete blockage of the inlet or outlet of the pipe with sediment, stone, leaves, woody debris, refuse or any other items that could affect flow through the culvert
- evidence of scour, bank or channel bed erosion near the inlet or outlet of the culvert
- evidence of flow overtopping the road at the culvert location
- damage to the pipe including crimping of the inlet or outlet, crushing or piercing of the pipe
- severe corrosion of the pipe
- damage to headwalls

Staff should inspect ditches and culverts as part of their regular road maintenance activities. This inspection is especially important during leaf fall and following periods of heavy rain. Staff should consider the location of the culvert before performing maintenance using heavy equipment. Culverts located in active stream channels, dedicated or critical habitat areas may require special permission or installation of erosion control measures before maintenance can commence.

Leaves and woody debris that have accumulated in or around the inlet of the culvert should be removed immediately using hand tools if possible. Removal of accumulated silt and/or gravel from ditches approaching the culvert inlet should be performed using a small excavator, backhoe or a tractor equipped with a scrape blade. Sediment in or around the immediate vicinity of the pipe inlet or outlet should be removed using hand tools to prevent damaging the culvert. Cleaned out material is to be pulled away from the culvert then hauled and spread at a site where it cannot be washed back to the culvert area.

Repeat problems with sediment collecting around the inlet may indicate the existence of an erosion problem originating from the slopes, streams or ditch lines near the culvert. Identification and stabilization of these problem areas through practices such as seeding or matting could improve performance of the culvert and reduce maintenance requirements.

Flow overtopping the road at the culvert location generally indicates that the pipe is undersized and could warrant resizing and replacement. Any damage to the culvert, as described above, may also necessitate replacement of the pipe. If maintenance staff identifies any culverts that may need replacement, they should contact engineering staff to calculate the peak flow capacity and diameter of the new pipe.

RECREATION FACILITIES

Cold Mountain Game Land provides a variety of opportunities for public recreation. This section will review existing recreation facilities and describe sites identified for potential new development.

Boating Access Areas

There are no boating access areas within CMGL. The creeks and rivers within or bordering the game land are not suitable for motor boat navigation.

Opportunities for recreational paddling or float fishing access on West Fork Pigeon River and Little East Fork Pigeon River are limited within the game land boundary.

Fishing Piers

There are currently no public fishing piers or platforms located on streams or rivers within the CMGL. The three parking areas adjacent to were built to facilitate bank and fly fishing access on sections of West Fork Pigeon River and Lake Logan Road within the game land. These areas are all well maintained with adequate parking for the demand at these locations. Pathways have been constructed to provide connectivity between the parking area and the river.

At some time before NCWRC acquired the game land tracts, a 3'-4' high berm was built along the left bank of the river to protect the airstrip from flooding. At a point near the parking area, the berm has been lowered by about 2 feet where anglers cross to reach the river. Concerns have been expressed by nearby property owners (in low lying areas between the former airstrip and Lake Logan Road) that this low berm height will lead to more frequent flooding of their property.

It is recommended that NCWRC staff assess the condition of this berm and develop a plan to raise the lowered section to match the normal height. A pathway could be built that ramps up the outside face of the berm to a level crossing at the normal berm height. Estimated cost for this repair is $5,000.

Shooting Ranges

The Wayne E. Smith shooting range was designed by NCWRC staff and built on the CMGL in 2006. The entrance to the shooting range is located on Lake Logan Road at (N35.382037°, W82.939899°). A steel tube gate is located at the entrance, and it is closed when the range is closed. The operating hours for the range are from 10:00 A.M. to 5:30 P.M. Tuesday through Saturday. No shooting is permitted at any time after the range closes.

The range is 100 yards long by 40 feet wide. Target lines are maintained at 100 yards, 50 yards and 25 yards from the firing line. Five wooden firing benches are secured to a concrete slab under a pole shed type roof structure that covers the firing stations. A concrete van accessible pad is connected directly to the firing area, and all benches can be adjusted to accommodate shooters with disabilities. A concrete path with spurs at each target line provides ADA access to the targets. A large kiosk has been installed beside the firing area which includes range rules and emergency contact information. All firing is directed toward a 20' high earthen backstop at the far end. The backstop is built into a mountain side. 8' high berms run the length of the range on both sides. The boundary line between the game land and USFS land runs across the face of this mountain at about 350 yards behind and above the backstop.

The range is used frequently by shooters, and stays busy during all times that the range is open. There were incidents of firing on the range after dark and on Sundays before the range was manned. There were also incidents of vandalism to the facility, use of weapons with excessive firepower and use of tracer ammunition, which are all prohibited, before the range was manned.

The shooting range operates on a first come first served basis, and there are no specific time limits for shooters posted. There is no designated pistol or trap shooting area at the site. Pistol shooters have set low targets near the 25-yard line, and the volume of fire routinely damages the range field.

The high number of visitors to the shooting range makes ongoing maintenance difficult. It is occasionally necessary to close the range to the public for periods of several consecutive days to mow, pick up litter, repair damage and replenish the backstop. NCWRC is currently working with consultants to develop and implement plans to contain and abate lead accumulation at all NCWRC operated range sites in the state.

Sound generated from the firing activities is another environmental impact that needs to be considered at all shooting range facilities. This shooting range site was selected because of its remote location. There are no residences, schools or churches within a 0.5-mile radius of the range. There are a small number of residences and one church within a 1.0-mile radius of the site. Sound transmission from firing activities at the range can be affected by factors such as topography, vegetative cover and distance from the source. High power hunting rifles and shotguns will generate more sound that other types of firearms. The persistent sound of gunfire from the range can be a nuisance to residents near the site and to others using the game land. NCWRC should employ any reasonable sound abatement measures at this firing range. Trees have been planted along the side berms to provide a sound buffer. Currently, firing tubes have been installed on three shooting lanes. Additional sound abatement practices and technologies that should be researched and/or implemented may include sound barriers, and baffles. and firing tubes. Site supervision and enforcement of range hours has helped to eliminate any sound resulting from illegal use of the range after dark and on Sundays.

There have been public requests to expand the facilities at the range to provide additional opportunities for separate pistol shooting and trap shooting. NCWRC is investigating potential areas to install a 25-yard pistol range at 90° to the existing range and connected to the same parking area. Due to the proximity of trout streams (Queen Creek adjacent to the range site feeding directly into West Fork Pigeon River) and the difficulties associated with controlling and

containing the distribution of lead shot, it is recommended that a different site should be found in the area for trap shooting facilities.

The following issues have been identified by NCWRC staff as needs or recommendations to improve management and safety at the shooting range:

1. Continue to man the range. The range supervisor is able to ensure that shooters are using safe and legal practices. The supervisor is alsoable to close and reopen the gate to prevent unauthorized range use.
2. Investigate the intensity and frequency of sound transmission from the site at points of concern within the vicinity. Research and implement appropriate sound abatement practices at the range site.
3. Require shooters to present a game land use permit or pay a range use fee. This would help to regulate the volume of range users and generate revenue to help fund supervision and maintenance of the shooting range.
4. Provide and maintain permanent restroom facilities. Range users frequently visit the site in groups and stay for hours either firing or waiting for their turn at the range. Concerns about vandalism have been expressed when discussing the need for restroom facilities.
5. Continue to close the range for one two days per week for regular maintenance. This more frequent maintenance regimen would help NCWRC staff better manage the range maintenance needs without sporadic or unannounced closures.
6. Refurbish or replace all bench rests. The current shooting benches have been in place for almost twelve years. They are all showing excessive wear and should either be replaced or re-decked.
7. Increase the NCWRC enforcement presence at the range during and after operating hours.
8. The existing roof shelter at the range was designed and built with 10’ of clearance to allow equipment access through for maintenance of the backstop and berms. NCWRC staff have since constructed a maintenance road which provides equipment access above the berm. Best practices for outdoor shooting ranges suggest using blue-sky elimination techniques which restrict a shooter’s ability to aim and fire over the backstop from sitting or standing positions at the firing line. This could be achieved by lowering the existing roof or by adding a lower eave or baffle along the front of the existing roof structure.

The infrastructure improvements mentioned above including adding a permanent vault toilet, adding a separate 25-yard pistol range, research and implementation of sound abatement practices, refurbishing or replacing bench rests and implementing blue-sky elimination practices have an estimated total cost of $30,000 to $60,000. Further assessment of this shooting range site is needed to determine the feasibility of any or all of these recommendations.

Camping Areas

There are currently no designated camping areas on CMGL. No potential sites for development of primitive camping facilities have been identified.

Recreational Facilities Maintenance

Maintenance of recreational facilities is critical to the overall operation of the game land program. Typical use of the game lands is dispersed; however, recreational facilities concentrates users on a specific area or feature. This concentration of users, whether it is a boating access, fishing access, shooting range, or other use, results in a need to ensure the facility is safe and functional. Routine site visits for inspection and maintenance will accomplish this goal. Site visits should consist of two actions: (1) Inspection for safety issues and functionality; (2) Actual maintenance activities.

1. Inspections should examine the following items
   a. Safety inspection items:

      Facility components
      - Decking
      - Handrails
      - Structural supports (piles, substructure, and floats)
      - Fasteners (bolts, screws, and nails)

      Slip or trip hazards
      - Uneven walking surfaces
      - Mud on walking surfaces
      - Ponded water on walking surfaces
      - Drop offs

      Overhead
      - Dead trees or limbs
      - Overhead utilities

   b. Functionality Inspection Items

      Parking
      - Surface condition (ruts, potholes, gravel)
      - Delineation (wheel stops, paint)

      Ramp
      - Blockages (sediment, wood)
      - Surface condition

      Pier/Dock
      - Bollards
      - Wooden components
      - Bumpers

      Shooting range
      - Berms
      - Target area
      - Benches
      - Shelter (roof, structure, and floor)

      Signage
      - Kiosk (entrance, regulation and information)

- ADA
- No Parking
- Keep Ramp Clear

2. Maintenance activities should include routine and corrective activities
   a. Routine Activities include:
      - Litter and debris removal
      - Grass mowing
      - Woody vegetative growth control
   b. Corrective activities can include but not be limited to:
      - Lumber replacement
      - Sign replacement
      - Minor grading
      - Tree or limb removal

Over time, recreational facilities degrade to the point that routine maintenance activities cannot provide corrective action. Examples of this level of degradation include but are not limited to: structural problems, persistent and/or severe erosion issues, and broken/or severely degraded concrete. Once this level of degradation is reached, supervisory personnel should inspect the facility and determine the scope of the needed repairs. If major repairs are required supervisor personnel should contact an engineer for assistance.

Game Land Use and Development

PUBLIC USE

Hunting/ Trapping

Hunters and trappers are a primary user group for CMGL, with white-tailed deer and wild turkey (*Meleagris gallopavo*) being the two primary hunted game species. Deer harvested between the 2010 and 2016 hunting seasons have averaged approximately 6 deer. Turkeys are also found across the game land and have had an average harvest of 2.6 gobblers over the same time. Black bear have increased their range over the past 20 years in North Carolina and are present on CMGL. Since 2008, over 30 bears have been harvested on the game land. Limited trapping does occur on CMGL, and the last several years have seen an increase in interest from trappers using the game land, in particularly, those trappers who are pursuing predator species such as coyotes and bobcats. Small game and furbearer species such as gray squirrel, Eastern cottontail rabbit, racoon and Virginia opossum (*Didelphis virginiana*) are all found across the game land and are actively hunted and trapped.

Management strategies directed towards hunting and trapping should include those that help to maintain or increase the current numbers of hunters and trappers using the game land. Acquisition of properties or easements that provide for better access to remote areas of the game land would be a primary means to help increase the available use of the game land by hunters

and trappers. There are several recommended actions within this management plan which would help increase access to the game land. In addition, locations that will enhance disabled hunter opportunities will also be a primary focus of game land development, and strategies to improve disabled access will be considered when implementing infrastructure improvement and development projects across the game land. A focus on active habitat management will ensure that adequate numbers of game and furbearer species are present to help keep hunter and trapper interest high. Challenges to a quality hunting or trapping experience include conflicts with other game land users as well as low numbers of game species that can be managed for on the game land.

Fishing

Anglers are a primary user group of CMGL. The majority of existing angling use occurs along the Pigeon River for smallmouth bass and trout. In addition, Little East Fork Creek is designated as Public Mountain Trout Waters and classified as Hatchery Supported and managed with monthly stockings of catchable-sized brook trout, brown trout, and rainbow trout from March to July. Finally, other small tributaries on the game land contain wild trout but are not formally designated as Public Mountain Trout Waters.

Wildlife Viewing

Wildlife viewing includes activities such as birding, wildlife photography, and general wildlife viewing. Many wildlife viewing enthusiasts come to CMGL to view and to study birds, butterflies, and other wildlife species associated with the game land. Wildlife viewers are a primary user group at CMGL, and management strategies to increase the number of wildlife viewers utilizing the game land will be implemented. Strategies to increase and enhance wildlife viewing opportunities include: continue to maintain and to develop partnerships with wildlife viewing groups and the general public, establish directional signage along roads that provide access to the game land, establish informational signage regarding wildlife viewing opportunities at key access locations (i.e. parking areas), increase efforts using all media outlets to better publicize CMGL as an birding destination, and identify key waypoints along birding routes as a means to educate and enhance the viewing experiences. Infrastructure improvements needed to better facilitate wildlife viewers include signage as noted above, development of parking areas (see Infrastructure section), and the establishment of additional kiosks at key access locations. The continuation of active habitat management will ensure that adequate numbers and a high diversity of wildlife species are present on the game land and will serve to keep viewer interest high. Efforts to provide viewing opportunities near public access will also greatly help to build this new constituency. Some challenges to a quality wildlife viewing experience include conflicts with other user groups on the game land, overcrowding, and potential loss of popular viewing areas to succession.

Other Outdoor Recreation

Water related recreation such as canoeing, kayaking and swimming are limited activities on the game land. Possible conflicts include usage of public fishing access areas by commercial outfitters. This could cause conflicts with recreational users from the public. Also, commercial activities are prohibited in the Cold Mountain Dedication Agreement.

Hiking is also a popular activity on the game land and occurs year-round. There are no designated hiking trails currently located at CMGL. However, there are several miles of maintained paths, roads, and linear wildlife openings available for hiking. Although there are restrictions by Natural Heritage Program, that limit new trail construction, opportunities to upgrade unmaintained, existing paths and roads to a maintained status will be explored to provide increased walking and hiking opportunities to the public. Other strategies to increase and enhance hiking opportunities include: adding directional signage along roads that provide access to the game land, providing informational signage regarding maintained paths at key access locations (i.e. parking areas), publicizing trails in local outlets and other media sources, and adding user information at kiosks that indicate the best times of the year for hiking. Infrastructure improvements that will be provided to encourage this user group includes: upgrading selected paths and log roads, developing signage as noted above, establishing parking areas (see infrastructure section), and the establishing additional kiosks at key access locations. Conflicts among hunters and hikers may occasionally occur, but increasing game land information available to the public through online resources and kiosks at key access locations may help reduce this source of conflict among user groups.

Mountain biking currently occurs at CMGL, but at low levels. The current level of mountain biking is not causing any immediate resource issues but should not be intentionally increased. Based on an intensive staff review, there have been no suitable trail locations identified. The creation of new biking trails on the game land could also potentially create conflicts with hikers, hunters, and wildlife watchers, as well as degrade wildlife habitat improvements especially in sensitive areas. Additionally, trail development restrictions within primary buffer areas further limit available options to provide for these users. Ample opportunities for mountain biking can be found on the nearby Pisgah National Forest and this activity should not be featured on CMGL.

There are currently no designated horseback riding areas on CMGL. The development of opportunities for horseback riders to use the game land were reviewed and discussed by NCWRC staff. The review of the CMGL revealed a lack of suitable roads of sufficient length and character (i.e. gravel surface, loop opportunities, etc.) for horse trails. Additionally, stream buffer restrictions placed on the game land by Natural Heritage prohibit trails and activities causing erosion in these areas which further reduce potential opportunities for establishing horse trails. Allowing horseback riding on maintained trails would create additional erosion issues, damage to linear wildlife openings, and conflicts with hikers, hunters, and wildlife viewers. Horseback riding also increases the probability of introducing additional exotic species on the game land. Therefore, due to the lack of suitable trails, trail development restrictions and the potential negative impacts, horseback trails will not be developed on CMGL. Ample opportunities for horseback riding on the nearby Pisgah National Forest and other public lands in the region offset the lack of opportunities on CMGL.

Currently there no known geocache locations on CMGL. When administered in appropriate areas, geocaching is a great outdoor activity that could be used to promote and educate the public about management activities occurring on game lands. Currently NCWRC is developing a statewide policy to regulate geocaching on game lands, and CMGL will follow these guidelines.

Wildlife/Habitat Inventory and Monitoring Needs

White-tailed deer and wild turkey are featured big game species on CMGL. Big game harvest records are an important tool utilized to monitor population levels and trends and make management decisions. However, additional surveys (camera traps, hunter surveys.) would augment current information and help NCWRC staff better manage and make more informed decisions about appropriate harvest levels for both species.

We currently lack adequate information regarding small mammals, amphibians and reptiles on CMGL. General Surveys to inventory and monitor these species and their habitats are warranted. With basic inventory information on these species, we can develop target population levels and develop habitat management strategies to achieve those levels where feasible.

Monitoring land use and community planning efforts adjacent CMGL is needed. These include local government land use, long range transportation plans, zoning changes, and new commercial and residential development. To the extent that these uses and plans may affect the success of game land management goals and objectives, appropriate bodies should be informed how to minimize impacts to the game land where possible. Monitoring of local development and transportation plans and proposed projects in terms of how they may affect important wildlife corridors between regional conservation lands is also important.

Wildlife/Habitat Management Needs

Habitat management needs are summarized within each habitat section and goals described in the "desired future conditions" subsection. The overall management objective for CMGL will focus on restoration and enhancement of critical habitats and communities (oak forests, early successional, aquatic, rock outcrops, etc.). Researching areas for development of critical habitat types and monitoring the success and impacts of habitat and community restoration activities will be needed. Species specific management focus will continue to be on popular game species (trout, white-tailed deer, wild turkey, black bear, gray squirrel, cottontail rabbit, mourning dove, etc.), NCWAP priority species, and threatened and endangered plants.

User Group Needs

Listed below are key needs identified to address public use of CMGL:

- Construct kiosks with relevant game land information
- Provide additional signage to address the needs of a variety of user groups
- Implement and promote opportunities for disabled sportsmen
- Develop clear, understandable, and enforceable regulations

Enforcement and Regulations

Currently there are 2 primary assigned Wildlife Enforcement Officers to work CMGL. These 2 officers are not dedicated to CMGL, however.

As with most game lands, the major enforcement problems on CMGL pertain to littering, regulations violations, and adjoining landowner issues and conflicts. Common issues include: illegal dumping and illegal hunting, vandalism to kiosks and parking areas, and the blocking of access gates that prevent research and management activities. Adjoining landowner issues such as encroachments also occur. The complexity of the game land boundary makes this problem more difficult to deal with. Surveys are needed to help lessen this problem. Examples of encroachments include unauthorized use of game land roads and posting of game land property.

The following is a list of regulations specifically related to CMGL:

- Designated as a six day per week game land
- Gun Either-Sex Season: (introductory season)
- Horseback riding is prohibited except on designated trails

No new regulation changes have been identified on CMGL to address user conflicts, conserve wildlife populations, or provide additional game user opportunities.

Partnerships and Collaborations

Partnerships and collaborations among various conservation groups, universities, state and federal agencies, non- governmental agencies, non-profit groups, national organizations, clubs, and private citizens are and will continue to be an important aspect of management at CMGL. Newly created and continued partnerships between the NCWRC and these groups will be essential for meeting the goals and needs outlined in this document. Current and potential partnerships for CMGL are listed below:

- Carolina Bird Club
- Local Sportsmen Club
- Local Shooting Clubs
- The Audubon Society
- Haywood Community College
- Local birding groups
- Local conservation organizations
- Local fire departments
- Local hiking clubs
- Local landowners
- National Wild Turkey Federation
- N.C. Bow Hunters Association
- N.C. Ecosystem Enhancement Program
- N.C. Forestry Association
- N.C. Forest Service

- NC State University
- Quail Unlimited
- Quality Deer Management Association
- Regional Land Trusts
- Ruffed Grouse Society
- Shortleaf Pine Restoration Initiative
- Eastern Band of Cherokee Indians
- Southern Appalachian Raptor Research
- Trout Unlimited
- Southern Appalachian Highlands Conservancy
- USFS- Southern Research Station
- Western Carolina University

Research and Surveys

Research and surveys provide critical information necessary for the management and conservation of fish and wildlife resources at CMGL. Research and survey projects are needed to make sound scientific decisions, prescriptions, and assessments of these resources across the game land to meet the goals and objectives of this plan. A large component of research and surveys on all game lands is to provide information for adaptive management, where monitoring is used to evaluate the effects of management to improve future actions for target species.

Below is a list of current research and survey projects occurring on CMGL:

- Oak Research
- Fire Learning Network Prescribed Burn Monitoring
- Hard Mast Surveys
- Songbird Surveys
- Camera Trap Surveys
- Hemlock Research

Although there have been several studies conducted and numerous surveys and projects implemented, there is still a need to continue to improve inventories and monitoring as well as continue to gather knowledge and information regarding wildlife and aquatic resources across the game land. Bat surveys are needed and could be accomplished through establishing a North Carolina Bat Acoustic Monitoring Program route, monitoring bat roosts (including installation of bat houses), and mist-netting. Although some salamander surveys have been conducted in localized areas, more wide-ranging surveys are needed to document important breeding areas and provide baseline data prior to management. Reptile surveys have not been conducted across the game land and are needed. Aquatic turtle nesting habitat should be identified and protected, rock outcrops surveyed, and cover board transects need to be established. Continued aquatic surveys of the streams, at intervals, across CMGL will be needed to monitor aquatic habitat quality, aquatic communities, and the potential for restoration of priority aquatic species. Surveys and inventories of unique habitats such as wetlands, rock outcrops, and cliffs are also key lacking areas of knowledge that need to be addressed.

A list of research and survey needs for CMGL is listed below:

- Additional and continued inventory of small mammals, reptiles, and amphibians
- Monitor establishment and restoration of shortleaf pine community types and their impacts on wildlife populations
- Monitoring of important game species
- Implement additional camera trap surveys to evaluate wildlife populations
- Inventory and delineate wetland habitats
- Inventory and delineate rock outcrops
- Survey and identify aquatic turtle nesting habitat
- Implement American woodcock surveys
- Initiate a MAPS (Monitoring Avian Productivity and Survivorship) station
- Initiate bat survey routes
- Inventory, identify, and monitor invasive species
- Implement research and monitoring of wildlife openings
- Expand research and knowledge of critical habitat types (vernal pools, early successional, etc.)
- Continue and expand surveys and monitoring of user group numbers and activities
- Develop accurate forest wide stand maps and inventories for all forested systems

Acquisition Plan

Due to the continual expansion of urbanized areas in the proximity the game land, increasing demand for public use areas, and in keeping with the objectives of the NCWRC's Game Lands Program to provide, protect, and actively manage habitats to benefit aquatic and terrestrial wildlife resources, there is a need to expand CMGL. A total of 45 tracts totaling 2052 acres have been identified as priority property acquisitions on CMGL (Appendix 9). These tracts range in size from 2 acres to 439 acres.

Priority property acquisitions have been identified and categorized based upon the potential to improve game land access, enhance connectivity of the game land and other conservation areas, and or contain critical habitats. Tracts identified as Level 1 acquisitions are the highest priority. These tracts are generally inholdings or adjacent tracts that provide key game land access or that enhance connectivity of current holdings. Level 2 tracts are those that provide additional game land access and enhance connectivity to existing holdings, but aren't considered as high priority as Level 1 tracts. Level 3 tracts are large tracts immediately adjacent to the game land that provide important additional acreage, but do not provide key access to or enhance connectivity of existing holdings. Sixteen tracts have been identified as level 1 priority tracts, 24 as level 2 priorities, and 5 as level 3 (Appendix 9). Tracts adjacent the game land that are not identified on the map and are offered for acquisition should be evaluated on a case by case basis to determine if they address a significant game land and/or conservation need. In a broader sense, any property that may be offered for acquisition should be evaluated in terms of its ability to provide connectivity or corridors between the game land and other regional conservation lands and/or its ability to provide critical habitat for threatened or endangered species. It should be noted that

NCWRC only acquires property from willing sellers and does not pursue property condemnation. Additional properties can only be acquired when sufficient funds are available for land acquisition.

Assets

While it is important to note that no NCWRC staff are solely assigned to CMGL, the current level of staff needed to meet the objectives of the plan are deemed to be adequate. Current NCWRC staff which have CMGL assigned to their work area include:

- 1 Eco Region Supervisor
- 1 Wildlife Forester
- 1 Land Management Biologist
- 1 Conservation Technician Supervisor
- 4 Conservation Technicians
- 1 District Fish Biologist
- 1 Fisheries Bio I
- 1 Aquatic Nongame Coordinator
- 1 Aquatic Nongame Biologist
- 4 Wildlife Diversity Staff
- 2 Wildlife Enforcement Officers
- 1 Field Engineer

Additional asset and funding needs necessary to meet the goals and objectives of this plan are listed below:

- Mower/mulcher (i.e. Fecon mower for early successional habitat development and maintenance)
- Funds needed to replace aging equipment as needed
- Kiosks and signage as needed to direct and inform game land users
- Educational materials for kiosks
- Funds to repair and stabilize roads and trails
- Construction/upgrades to public parking areas
- Funds to purchase gravel, culverts, gates (for routine maintenance and new construction)
- Additional and ongoing training of employees (equipment operation, forestry practices, habitat work, etc.)
- Funding for land acquisition
- Funding for contract boundary maintenance
- Funding for research and surveys
- Funding for forest inventory and stand mapping

Funding Needs

Current and future estimated expenditures for managing CMGL through 2024 are presented in the table below.

Cold Mountain Game Land

Financial Summary of Activities

Habitat Activities

Project	Description	Activity	Quantity	Unit	Unit Cost	2017-18	2018-19	2019-20	2020-21	2021-22	2023-24	2024-25	2025-26	2026-27	2027-28	Total
H	Firebreaks	Maintain firebreaks	0.5	mi	$ 525	$ 263	$ 269	$ 276	$ 283	$ 290	$ 297	$ 304	$ 312	$ 319	$ 327	$ 2,938
H	Herbaceous Seeding	Seed or maintain	15	ac	$ 175	$ 2,625	$ 2,690	$ 2,757	$ 2,825	$ 2,895	$ 2,967	$ 3,041	$ 3,116	$ 3,193	$ 3,273	$ 29,382
H	Vegetation Control	Prescribe burning	100	ac	$ 150	$ 15,000	$ 15,372	$ 15,753	$ 16,144	$ 16,544	$ 16,955	$ 17,375	$ 17,806	$ 18,248	$ 18,700	$ 167,897
H	Develop Clearings	develop openings	1	ac	$ 3,000	$ 3,000	$ 3,074	$ 3,151	$ 3,229	$ 3,309	$ 3,391	$ 3,475	$ 3,561	$ 3,650	$ 3,740	$ 33,579
H	Develop Clearings	maintain openings	5	ac	$ 200	$ 1,000	$ 1,025	$ 1,050	$ 1,076	$ 1,103	$ 1,130	$ 1,158	$ 1,187	$ 1,217	$ 1,247	$ 11,193
															Subtotal	$ 244,989

Operation and Maintenance Activities

Project	Description	Activity	Quantity	Unit	Unit Cost	2017-18	2018-19	2019-20	2020-21	2021-22	2023-24	2024-25	2025-26	2026-27	2027-28	Total
O & M	Bridges	Replace Culvert	1	culvert	$ 2,500	$ 2,500	$ 2,562	$ 2,626	$ 2,691	$ 2,757	$ 2,826	$ 2,896	$ 2,968	$ 3,041	$ 3,117	$ 27,983
O & M	Signs and Boundaries	Maintain boundary	2	mi	$ 135	$ 270	$ 277	$ 284	$ 291	$ 298	$ 305	$ 313	$ 321	$ 328	$ 337	$ 3,022
O & M	Public Use Facilities	Maintain parking areas	8	each	$ 225	$ 1,800	$ 1,845	$ 1,890	$ 1,937	$ 1,985	$ 2,035	$ 2,085	$ 2,137	$ 2,190	$ 2,244	$ 20,148
O & M	Road and Trails	Maintain gates	5	each	$ 100	$ 500	$ 512	$ 525	$ 538	$ 551	$ 565	$ 579	$ 594	$ 608	$ 623	$ 5,597
O & M	Road and Trails	Maintain roads and trails	2	mi	$ 2,500	$ 5,000	$ 5,124	$ 5,251	$ 5,381	$ 5,515	$ 5,652	$ 5,792	$ 5,935	$ 6,083	$ 6,233	$ 55,966
															Subtotal	$ 112,714.57

Development Activities

Project	Description	Activity	Quantity	Unit	Unit Cost	2017-18	2018-19	2019-20	2020-21	2021-22	2023-24	2024-25	2025-26	2026-27	2027-28	Total
D	Road Upgrade	Murray Cove	0.5	mi	$ 40,000		$ 40,000									$ 40,000.00
D	Road Upgrade	New section of Spike Gate Rd	0.6	mi	$ 50,000			$ 50,000								$ 50,000.00
D	Parking Areas	New Poison Cove parking	1	each	$ 5,000	$ 5,000										$ 5,000.00
D	Parking Areas	New Spike Gate parking	1	each	$ 5,000	$ 5,000										$ 5,000.00
D	Parking Areas	New Amy Gate Parking	1	each	$ 2,000			$ 2,000								$ 2,000.00
D	Road Upgrade	Pave Murray Cove Entrance	1	each	$ 6,000		$ 6,000									$ 6,000.00
D	Road Upgrade	Murray Cove Water Dip Repair	1	each	$ 4,000	$ 4,000										$ 4,000.00
D	Road Upgrade	Murray Cove to Schoolhouse	1.2	mi	$ 10,000				$ 10,000							$ 10,000.00
D	Road Upgrade	Ensley Rd/High Top Access	1.2	mi	$ 25,000			$ 25,000								$ 25,000.00
D	Public Use Facilities	Upgrades to Shooting Range	1	each	$ 50,000		$ 50,000									$ 50,000.00
															Subtotal	$ 197,000.00
														Grand Total		**$ 554,703.66**

Inflation rate is calculated from the Consumer Price Index (CPI-U) which is compiled by the U.S. Bureau of Labor Statistics

2013	2.07%
2012	3.16%
2010	1.64%
2009	-0.34%
2008	3.85%
2007	2.85%
2006	3.24%
2005	3.39%
2004	2.68%
2003	2.27%
10 yr Av	2.48%

PUBLIC COMMENT

As part of the CMGL Management Plan development process NCWRC sought to gather information and comments from the public. This public input provided valuable information about different user groups and user group needs for CMGL. To gather this input, a public meeting was held in Clyde, NC, and was advertised to individuals, groups, and businesses through various news outlets and prominent businesses where potential game land users were likely to visit. A list of locations where the meeting was advertised is included below:

- S and S Dog Supply
- Bethel Grocery
- Franks Convenient Store
- Jukebox Junction Restaurant
- Dollar General in Bethel
- Waynesville Fly Shop
- Hunter Banks Outfitters
- Bowed Up Archery Shop
- Hazelwood Gun and Tactical
- Gun Store in Clyde
- Guns and Gear
- Wal-Mart
- Access points on CMGL

SUMMARY OF PUBLIC INPUT

The public input meeting was held at Haywood Community College in Clyde, NC at 6:30 PM on March 9th, 2015. Approximately 55 people were in attendance. During the meeting, this group of interested public was given a presentation that provided information about the game land and the management activities which occur there. Following the initial presentation, the audience was given a list of questions to answer. Individuals were then divided into small groups and asked to discuss their answers among the group and provided with an opportunity to ask any questions they might have. The public was also given the opportunity to write down any additional comments or questions they may have on the questionnaire. In total, 49 comment sheets were received by NCWRC at the meeting. For those who were not able to attend the public input meeting, a website was created that allowed the public to provide input online. The plan development team later reviewed all questions and comments, and all relevant comments were considered. A summary of all comments received from the public are outlined as follows:

1. **What habitats do you think are most important to protect and/or improve on the Cold Mountain Game Land?**

Comment	Plan Team Response
Early successional habitat	Noted
Grouse Habitat	Noted
White-Tail habitat	Noted
Deer	Noted
Grouse habitat, Deer habitat, Bear habitat	Noted
Deer habitat - Grouse	Noted
Deer and Turkey Also Bear	Noted
Old growth	Noted
early succession	Noted
Open fields, food plots, cutovers.	Noted
Protect sensitive wetlands and unique forest types. Improve the range of forest stand ages. Increase early successional habitat component.	Noted
Definitely white-tailed deer habitat - need more food plots, tree clearing.	Noted
Early successional	Noted
Early successional needed	Noted
early mid successional/mountain oak/hickory stands. Trout/riparian zones	Noted
Improve on early succession, create more early succession. Also protect old hardwood forests.	Noted
early successional	Noted
All types of habitats are important. If there is a lack of a certain habitat, focus should be on protecting it or creating more of that lacking habitat.	Noted
trout habitat and spruce fir.	Noted
early successional habitats and old growth	Noted
trout habitat/bear early succession.	Noted
early successional	Noted
create early successional habitat such as impoundments for waterfowl	Noted
early successional habitat	Noted
early successional habitat	Noted

early successional habitats, streams (riparian habitat)	Noted
habitat for wood thrush and cerulean warbler	Noted
All. How can one habitat be most important if diversity is the key to a healthy ecosystem?	Noted
early successional or edge habitat	Noted
early successional/oak-hickory stands mid-successional habitats	Noted
I think it would be best to encourage early successional habitat with soft edges. Also, lower basal area to 70-90	Noted
early successional habitat for rabbits, fowl, and various species of songbirds. Brook trout. Spotted salamanders	Noted
streams, oak stands, eastern hemlock	Noted
early successional / mid succession	Noted
early successional habitat, and the improving of such	Noted
early successional habitat	Noted
mid-succession	Noted
early successional habitat	Noted
early succession habitat benefits more species of wildlife. Especially small game and deer.	Noted
early successional	Noted
most of WNC are mature hardwood. I believe there need to be an increase in early successional habitat in order to support multiple species including white tail deer, ruffed grouse, songbirds, etc…..	Noted
early succession/deer/turkey	Noted
early successional habitats need to be improved and created	Noted
every living thing using all habitats	Noted
create early successional habitat!!! Focus on mast	Noted
spruce fire forests, for the northern flying squirrel	Noted
early successional habitats need to be improved and created	Noted
early successional-open forest canopy	Noted

2. Considering those that live on land and in water, what species do you think are most important to protect and/or improve on Cold Mountain Game Land?

Comment	Plan Team Response
Ruffed Grouse	Noted
Grouse	Noted
Deer population is poor, elimination of either sex days until population increases	A minimal number of either sex firearms hunting days, as currently occurs, has little impact on the deer population. Habitat improvement is key.
Whitetail	Noted
Grouse, Deer, Bear. Protecting the Bald Eagle nesting sites.	No confirmed nests on Cold Mt GL
Trout Deer and Turkey, Bear Habitats	Noted
Whitetail Deer, Turkey, Fungi	Noted
Deer Turkey	Noted
Wild trout, deer, elk.	Noted
Deer, grouse and turkey. Bobwhite (if possible at all) Songbirds, Salamanders also.	Noted
Blank	Noted
WT Deer	Noted
As many as possible	Noted
Hawks, accipiters, owls, song birds, bats, bog turtles and box turtles	Noted
WTD, WITU, AMWO, no FLSQ. Elk, salamanders, grouse, black bear,	Noted
White tail deer. Wild turkey. Ruffed grouse. Brook trout	Noted
Brook trout and deer. (so many other species thrive on same habitat. i.e. grouse, quail as well as woodland plants. Spruce fir also.	Trout distribution work to be done at CMGL
Anything endangered or at risk of becoming endangered. Raptors, amphibians, brook trout, elk, etc.	Noted
wild trout, white tailed deer	Noted
if your able to manage for bobwhite quail, most animals will benefit and thrive off of.	Noted
wild trout (important) grouse	Noted
deer/endangered species	Noted
ALL: waterfowl, small game, and large game	Noted
white tail deer, trout	Noted
grouse, white-tailed deer	Noted

brook trout, white tailed deer, black bear, ruffed grouse, song birds, wild turkey, salamanders, bob white quail	Noted
stream ecosystems for salamander's bald eagles/wood thrush	Noted
Again, all are equal.	Noted
grouse, deer, turkey, and brook trout	Noted
grouse/brook trout/wild turkey	Noted
I can't really say that there is one which is more important than the rest. I think that diversity is paramount. That said I think we need to manage for early successional species.	Noted
grouse, deer, turkey, songbirds, amphibians, brook trout, wood cock/snipe	Noted
eastern hellbender, ruffed grouse, eastern brook trout, woodcock	Noted
grouse hellbender Salamander	Noted
all those which population is suffering. Such as cerulean warbler, deer (in Haywood County), hellbenders, bald eagle, n. Flying squirrel, wood thrush	Noted
ruffed grouse, elk, American woodcock, NSWO, raptors	Noted
ruffed grouse, brook trout	Noted
avian species as well as green salamanders. Most early successional critters	Noted
waterfowl, deer, small game, and game birds.	Noted
ruffed grouse/wild turkey	Noted
whitetail deer, ruffed grouse, brook trout and species requiring early successional habitat	Noted
native trout/deer/turkey/ruffed grouse	Trout distribution work to be done at CMGL
ruffed grouse and white-tailed deer	Noted
grouse and deer	Noted
ALL	Noted
green salamanders, whitetail deer, and ruffed grouse	Noted
all of them	Noted
quail, golden winged warbler, chestnut sided warbler, WT deer, grouse, wildflower (native), butterflies/bees, wild turkey, herps, s app brook trout, scarlet tanagers, moths/insects, elk,	Noted

3. How do you use Cold Mountain Game Land?

Comment	Plan Team Response
Hunt, Fish, Hike	Noted
Hunting Grouse	Noted
hunting - deer and turkey	Noted
Hunt and Hike	Noted
Hunt	Noted
To hunt - fish and trap	Noted
Hunt	Noted
Hunting, Hiking, Harvesting Mushrooms	Noted
Hunting, Hiking, Wildlife viewing	Noted
Trout fishing, turkey hunting.	Noted
Hunting, fishing, hiking, nature watching/solitude	Noted
blank	Noted
hunting, hiking, fishing, and bird watching	Noted
Hiking and general recreation	Noted
Recreationally to observe wildlife. Photographically birding	Noted
hunt, fish, hike, photog. Dogs, birding, mushroom hunting, envo education	Noted
Hunt squirrel and Ruffed grouse	Noted
viewing, wildlife, hiking	Noted
hiking, observing nature	Noted
fly fishing, hiking, photography, hunting	Noted
Squirrel hunting after deer season	Noted
trout fishing	Noted
camera trapping/hunting/fishing	Noted
hunting and fishing, waterfowl	Noted
To walk, love to hunting on if the habitat gets better.	Noted
hiking/animal observation	Noted
mountain biking, hiking, fishing, birding, herping	Noted
hiking/photography/naturalistic knowledge	Noted
for hiking, hunting, trapping, camping, and fishing.	Camping is not permitted on CMGL
grouse hunting and trout fishing	Noted
hiking/hunting/fishing	Noted
I use gamelands for hunting, fishing, and hiking	Noted
hunting, fishing, nature observing	Noted
fly fishing, birding turkey hunting, small game hunting	Noted
hiking, camping	Camping is not permitted on CMGL
wildlife viewing	Noted

hike, birding, fish, small game hunting	Noted
hunting, fishing, shooting	Noted
I personally use gameland for walking	Noted
a public place to hunt game	Noted
hunting	Noted
hunting, fishing, camping, backpacking	Camping is not permitted on CMGL
fishing/camping	Noted
hunting	Noted
hunting	Noted
use for hunting, fishing, and other recreation/education	Noted
mainly for fishing and grouse hunting	Noted
hunting, fishing, recreation, education, hiking, nature study	Noted
hiking, fishing(trout), birding, herping, nature study	Noted

4. Please explain why you think the current level of access is, or is not, satisfactory on Cold Mountain Game Land?

Comment	Plan Team Response
Need adequate access for management purposes but restrict public access where feasible	Noted
Access is horrible - no access to land across river on 215 and limited access along Little East Fork Road. Backside of game land is inaccessible.	Will address in plan
unsatisfactory access to property and dangerous to cross river to access	River crossing to be discussed in plan
Need more handicap	Will be discussed. Difficult due to terrain.
It is too accessible if anything (littering and poaching).	Noted
Increase access opportunities for disable citizens.	Noted
Too crowed at current accesses	Noted
Not real knowledgeable about access but generally feel that access should be primarily for management purposes not public access.	Noted
I've only ever parked in one section and never had issue, so I think its satisfactory.	Noted
River access (hwy 215), more parking/directional signs &/or maps	Noted
I think it is ok but it could be better. All gates should have informational signs at the gate.	Kiosks will be strategically placed in designated locations

It has improved and satisfactory in my opinion.	Noted
Continue not allowing ATV use - Disruptive, destructive, possibly adding pollutants (gas, oil, etc.)	Noted
Access is perfect, due to the amount of abuse that some members of the public could do to it.	Noted
Parking areas are very limited. I like hunting with several people when I hunt for squirrels, due to the lack of parking its harder to do.	Noted
Parking limited	Noted
Not enough trails off of 215	25+ miles of access roads on CMGL
Not satisfactory, all gates are locked.	Some gates are open seasonally. Must limit access to protect resources
It's plenty fine, but more parking off road access would be better.	Noted
I believe the current level of access is satisfactory because there isn't too much disturbance.	Noted
More signs towards access points with include maps of the area	Noted
I think the access to the game lands are fine as is. A reliable network of roads and trails already exists	Noted
K/ limited access prevents disruption, erosion etc.	Noted
I believe accessibility is as good as can be expected due to inability to create access in most locations	Noted
Not enough diverse habitat. Needs more edge affect. Diverse stand ages!	Noted
Access is satisfactory to me; less access means less habitat loss due to the development	Noted
Not enough	Noted
Is satisfactory, less car access is better for conservancy. More maps at access points.	Noted
It is satisfactory because gates keep people off in cars and keep the land safe	Noted
Prevents tracking and visibility	Noted
Have gates open more they are locked all the time. It would help people want to access the land more.	Gates are locked or seasonally locked for the protection of the resources.
The access is fine the lack of early successional habitat is what is lacking.	Noted
From my experience, the level of access is sufficient	Noted
Access is good.	Noted

Open gates during hunting seasons	Two gates are opened during certain hunting seasons.
Slightly under, hard to park	If additional parking areas are created, need to be small to help prevent spinning up parking area. Also encourage dispersed recreation.
Make accessibility easier for scouting out of season. Also for other recreation	Noted
I'm satisfied	Noted
Not satisfactory need to open gates for better access such as vehicles.	Gates are locked or seasonally locked for the protection of the resources.
More access to public-roads, handicap easier access, maps @ signs, better parking	Will address disabled access in plan. Discuss further.

5. What suggestions, if any, do you have for changing how the Cold Mountain Game Land is managed and maintained?

Comment	Plan Team Response
More timber harvesting to create ESH	NCWRC plans on creating or improving habitat through timber harvest as well as other means
More timber harvesting	
Creation of more habitat for white tail deer. Higher fees for game land permits to create more green fields.	WRC plans on creating or improving habitat. Fees will have to be addressed at the Raleigh level.
more wildlife openings	Restricted by terrain and equipment. create openings when and where possible.

There should be no bicycle riders on allowed on game lands during hunting season, period.	Noted
5 yr. moratorium on doe harvest. Min 3 prongs (antler) on 1 side buck harvest	Habitat improvement is key to increasing deer numbers. Current regulations provide for a minimal doe harvest on the game land.
Tighter regulations. No doe harvest, bigger antler requirements	Noted
Stock deer!	Noted
Cut timber, manage for a mosaic of stand ages. Reduce white pine component. Increase oak component.	Noted
Need more info to public on current projects	Noted
Would prefer management that would provide a diversity of structure both in age and height/spatial aspects.	Noted
I think more thinning need to happen to create early successional habitat.	Noted
More silvicultural treatments (burning, thinning, clear cut, crop tree release, etc.) streambank restoration buffer zones. Food plots	Noted
Early successional habitat.	Noted
I'd like to see more best management practices used on clears and burns.	Noted
More controlled burns, timber harvest to open up canopies to allow growth on the forest floor. Stream bank restoration.	Noted
Stream restorations, more burns, more cutting.	Noted
Need more mixed aged stands from early successional stages to old growth. CMGL's has little early successional habitat.	Noted
None	Noted
Food plots/wildlife openings/ more stream cleaning	Noted
Create early successional habitat, ax, cow, match plow. Waterfowl habitat.	Noted
More sections put on early succession habitat on.	Noted
I believe there needs to be more supervision to make sure no one is disturbing the game land more than they should be, more stream bank restoration and preservation and habitat protection/diversity.	Noted
Early succession--allowing management for snags of cavity nesters	Noted
manage for all successions of habitat, and all species. Not just the habitats and species of concern at this time.	Noted
blank	Noted
create more early successional/maintain access areas	Noted
I feel that if the money is there it would be better to simply do more intensive management, like question #1	Noted

More parking access	Noted
Stream bank restoration. Fix the road above sunburst	Noted
Decrease w.pine habitat	Noted
More burning, stream bank restoration. More habitat diversity, harvest timber, reduce white pine	Noted
Prescribed burn	Noted
Promote early successional habitat so bobwhite quail may prosper	Noted
Axe, cow, match, plow	Noted
Do a selective harvest, prescribed burn	Noted
A diversity in native woody plants and vegetation to create stands of rare early and mid-successional forest in order to create habitat for many game and non-game species	Noted
Clear cut/burn/food plots/ mature oak stands	Noted
More clear cuts and roads for hunter access. Timber harvesting	Noted
See more sustainable use	Noted
Axe, cow, match, plow	Noted
More early successional, food plots, burns, better habitat for songbirds, deer and turkey etc. Timber cuts.	Noted

6. What would encourage you to start using Cold Mountain Game Land, or to continue using it more actively?

Comment	Plan Team Response
More ESH	Will be addressed
Habitat Improvement	Will be addressed
Better / more access and better population of deer	Will be addressed
Better access	Will be addressed
Have Deer stocked see more deer during the hunting season	Habitat improvement is key. Stocking would have little impact on deer density on the game land.
blank	Noted
More Access	Noted
Increase in fauna of all kinds. Enforcing liter laws. Control of domestic animals present (dogs).	Noted
Domestic dogs are a problem	enforcement
Much larger deer herd.	Noted
Improve/Increase deer habitat.	Noted
More game. Deer and Turkey	Noted

Better/more habitat for game species. More designated areas for horseback riding.	There are no designated areas for horseback riding at CMGL. Sufficient opportunities for horseback riding exist on the adjacent national forest.
Increased availability of a diversity of habitats, particularly an availability of soft edges.	Noted
If there would be more song birds in easier to walk to areas where they can be heard and seen more.	Noted
Habitat diversity & public access, deer carrying capacity	Noted
Put more informational signs at the gates, signs should say; what entrance it is, species hunted and trapped there and season dates, contact info, map showing other entrances to game land.	Noted
Better/more hiking trails.	Noted
Skeet shooting area	Has been discussed, is not feasible at this time
Park access, no bicycles, higher deer carrying capacity	Noted
More enforcement of laws and regulations	Noted
Higher population of deer/youth hunts	Noted
Introducing more game, waterfowl habitat	Noted
More available fields and clearings at higher elevations. Burn up the higher places.	Noted
More advertisement and/or educational programs with wildlife and forestry information and activities.	Refer to ncwildife.org
Knowing of them through websites or flyers--possible public events.	Refer to ncwildife.org -Social Media
Probably more trails and camping areas, however, I believe there is already enough trails.	Noted
More access roads, and easier access.	Noted
Better broadcasting of potential of game lands to produce harvestable animals (maps/kiosks)	Noted
I would be more encouraged to use it if I could see more diversity of wildlife	Noted
More access, plant and species diversity	Noted
Stream bank restoration more along the west fork of the pigeon river. Lots of yards of stream bank receding.	Noted
Increase vehicle access	Noted
Maps, season info, access to trapping	Noted
Better management for game, population growth.	Noted
More trails, as well as more recreational activities	Noted
More abundance of game and easier access.	Noted
If there were more food lots and game activity on the game lands	Noted

An increase in management for select species of wildlife-managements including herbicides for invasive species, controlled burns timber harvest etc....	Noted
More game	Noted
More ruffed grouse habitat. Higher number of grouse	Noted
More burning and more productive game and non-game	Noted
More game	Noted
More abundance of game species. Waterfowl hunting opportunities.	Noted
Introduce limited access with ATV's	NCWRC restricts ATV use for the protection of the resources
More access, more diversity, signs/maps	Will be addressed

7. What additional comments do you have about Cold Mountain Game Land?

Comment	Plan Team Response
More ESH	Noted
And I think clear cutting works better than logging. But we need deer stocked or something to help improve the herd population. And the bicycle riders have to go during hunting season on game lands.	We will address improving habitat rather than stocking.
Any chance of reintroduction of American Chestnut. Can we get schedule of gate openings and closings? Volunteering Available.	Chestnut seedlings will be planted if/when disease resistant stock becomes available. Seasonal gates are open during hunting seasons.
More law enforcement. Willing to volunteer	Noted
Stock white tailed deer. Close gun either-sex season	See above response regarding stocking. Either sex firearms hunts are currently minimal and have little impact on the deer population
Glad we have it! I'd like to see more active management via fire, saw and herbicide. Great work so far! All of above while maintaining/improving water quality!	Noted
Let sportsman groups and conservation help plant the food plots and tree planting.	Noted
_Support gameland fees for all users - volunteer program @ Cold Mt. Gamelands.	Noted
Need to market the projects and the species that they are intended to increase/decrease or impact in general.	Noted

Increase volunteer programs directly connected to HCC as well as other local universities and high school, which is also marketing.	Noted
More mgmt. for early successional habitat to increase diversity of both flora & fauna, more equestrian access. Volunteer opportunities!	Noted
It was suggested that a herd of around 300 elk are eating everyone out and ruining things. This is crazy talk. Properly managed land can support all current creatures and more.	Noted
Leave any elk on the game lands alone since elk are supposed to be here. Their number are still too few and are probably having less of a negative impact than people think.	Noted
Make it able to use ATV's, waterfowl habitat	NCWRC restricts ATV use for the protection of the resources. Opportunities for creating waterfowl habitat at CMGL are minimal.
Game lands are fine for now. Maybe so no deer hunting so populations can rise and then limit hunting of them more.	Current levels of deer hunting on CMGL have little impact on the population. Better habitat at the landscape level is key to increasing deer density in the area.
I don't think there needs to be too much vehicle access and above all, there needs to be more information available on wildlife, locations, etc.	Noted
N/A	Noted
Do not focus only on key game species, but on every aspect of the ecosystem.	Noted
Continuing to fall back to an early successional habitat will allow for more wildlife	Noted
The game lands are in good condition but the amount of game is low. Increasing the amount of game is essential.	Noted
Cold Mountain is one the game lands that really could use some change to improve hunting species activity.	Noted
May be irrelevant due to funds but I believe MORE management could be beneficial. More employees for NCWRC in order to achieve access for thousands of acres for wildlife.	Noted
All native species should be managed before reintroduced.	Noted
Need more clear cutting to provide a wider variety of habitat	Noted

I would like to see the land used the way it was meant to be by sustaining all life that lives on the land.	Noted
Keep up your good work!!!! No chance for bikers and hikers unless your removing something from that area or have a small fee or even tag/place card.	Noted
Let's have More gameland in Haywood county if possible!!We love Cold MT GL. Chestnuts. Hemlocks.	Noted

ON-LINE COMMENT	PLAN TEAM RESPONSE
While many species will benefit from the management of the Cold Mountain Gamelands, it seems unlikely that Golden-winged Warbler will be one of them. Perhaps projects in Cold Mountain should not be designated as Golden-winged Warbler restoration.	Cold Mountain Game Land is within GWWA Focal Area 17 for the Appalachians (A-17) as determined by the GWWA working group in the GWWA Status Assessment and Conservation Plan. In the Conservation Plan, "Not all parts of a focal area are appropriate for habitat management. Places within focal areas where applying the management guidelines from this plan should be avoided include: 1) places where management and protection of other rare or imperiled resources are higher priority (e.g., national forest wilderness areas) or have conflicting management needs, and 2) places where Blue-winged Warbler populations co-occur and management for Golden-winged Warbler might hasten Blue-winged Warbler invasion of Golden-winged Warbler territories, increasing the probability for hybridization." The areas where number 1 applies will not be managed for GWWA. And, number 2 does not apply to Cold Mountain Game Land. Any habitat improvements made to benefit GWWA will also benefit a good number of species that need Early Successional Habitats.
My primary recommendation is that the Gameland should be designated as a Dedicated Nature Preserve, which provides greater protection.	Cold Mountain Game Land is a Dedicated Nature Preserve.

It is my understanding that Cold Mtn Game Lands is a Dedicated Nature Preserve: with the intention to protect and preserve the biodiversity and natural character of the land. With that mission it is important for the NC Wildlife Commission to maintain the intent of that Preserve. The land has great biodiversity and should be maintained as a natural area as best as possible. Improve habitats for plant and animal species. Minimize activities such as logging, dirt bike and horseback riding that disturb the land to reduce soil sediment into the waterways. Those clear clean streams bring significant fishing revenues to the region.	The NCWRC works closely with the Natural Heritage Trust Fund and the Clean Water Management Trust Fund to ensure that we are following all rules and regulations that apply to the Dedicated Nature Preserve. The objectives of any management activity on the game land are to improve wildlife habitat. Timber harvest is at times used to accomplish this in appropriate locations. There are no designated bike or horse trails on the game land. Clean streams do bring significant fishing revenues to the region. In addition, bird watching and hunting bring in revenue too. Habitat improvements will help the hunting and wildlife/bird watching communities.
As an active member of the Asheville Chapter of Audubon, marking a trail system and producing a bird list for the area will bring additional users to the game lands. This is a mid- to high- elevation forested area and very little is known regarding passerine birds nesting there. Work with field biologist to establish an appropriate tree canopy and tree types to enhance nesting sites for song birds.	There are many old logging roads and gated game land roads that can be used for hiking/access. There are no marked trails on Cold Mountain Game Land. NCWRC encourages "dispersed" use of the game land. This has less impact on resources. Noted on the bird list. Land management staff works with NCWRC Wildlife Diversity staff regarding songbirds. Wildlife Diversity staff conducts bird surveys to gain a better understanding of species on the game land and to plan management activities.
In the not so distant future it is likely that the area just north of these game lands will be prime development areas. Please work to ensure that adequate buffers exist between developed areas and the game lands in order to maintain the diversity of species found there.	There is an "Acquisition Plan" section in the management plan. Tracts have been identified that would be good additions to the game land. NCWRC is actively working with partners on acquisition projects and will continue to do so.
Regarding the Cold Mountain Draft Game Land Plans, I would like to voice my support for managing forests wherever is appropriate to support migratory and non-game birds, particularly threatened species like the Golden-winged Warbler and Veery. As a birder concerned with conservation of declining species, managing for these birds is of the utmost importance. I also support reaching out to birding groups to publicize the game lands as a place where birders are welcome.	Noted. Thank you for your support.

Any logging should be off limits in any Cove Forest habitats due to the important role that Cove Forests play in providing habitat for a diverse array of flora and fauna. I am opposed to clear cutting anywhere in the game lands or to building new logging roads.	NCWRC staff will evaluate any area considered for timber harvest to determine benefits and potential effects on biodiversity. We require our loggers to follow NCFS Forest Practice Guidelines. Clearcutting is a useful tool for creating early and mid-successional habitat which is gravely lacking on public lands.
I have reviewed the Cold Mountain Game Land Plan and fully concur. All different forest types address key features of wildlife habitat needed in our region. I am particularly interested in ruffed grouse habitat since their numbers on USFS are declining to the point of non-existence.	Noted. Thank you for your support.

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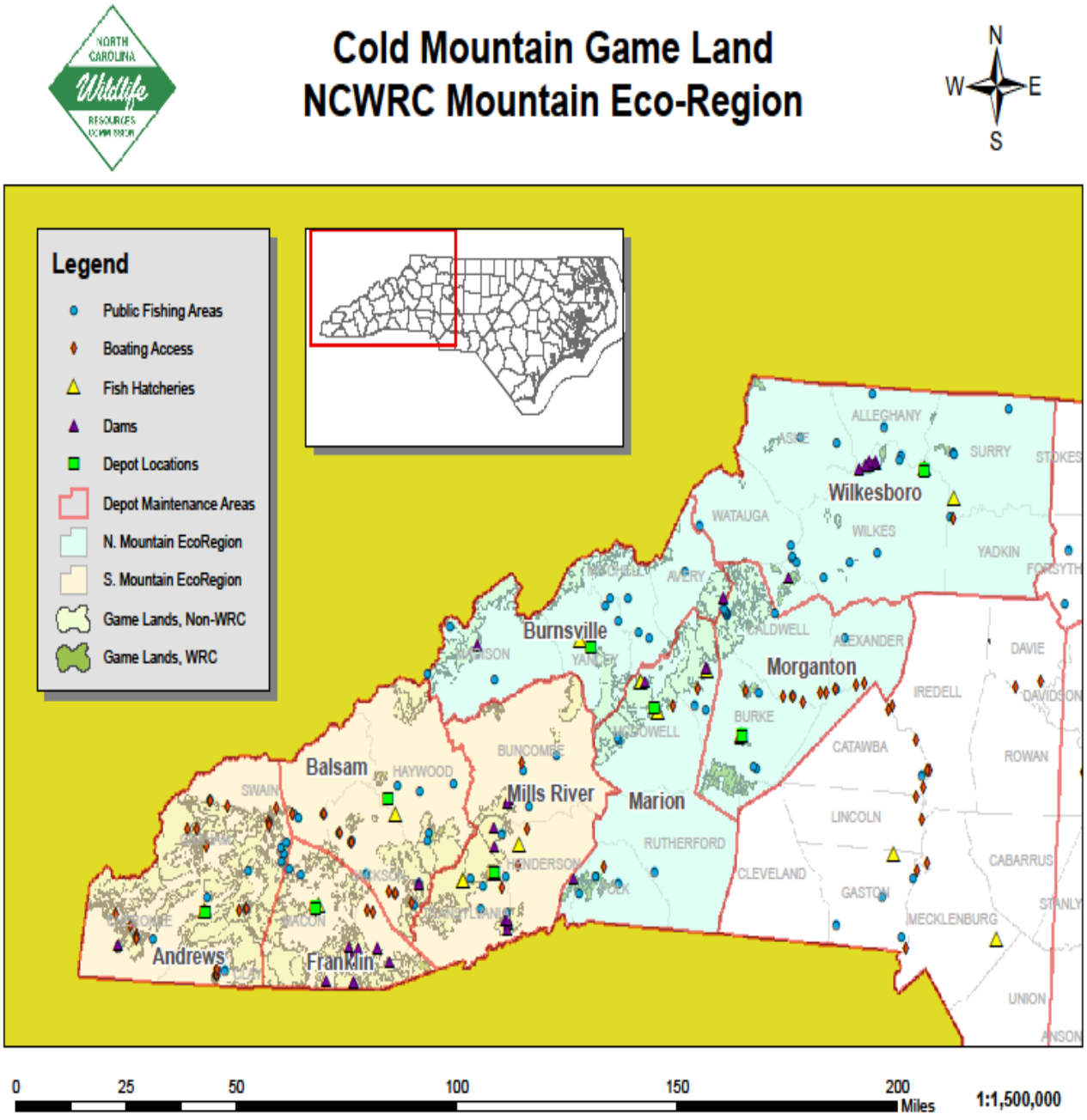
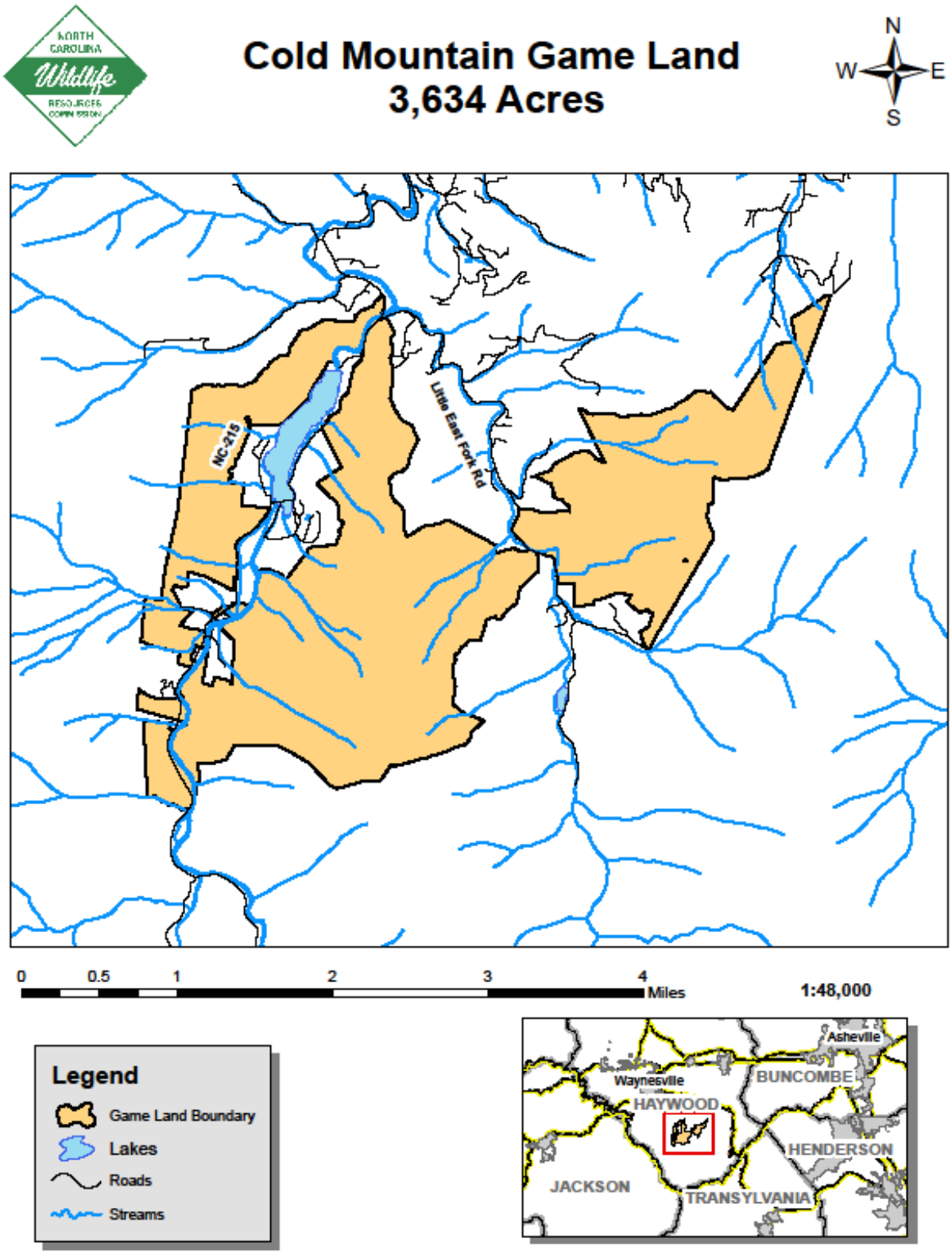
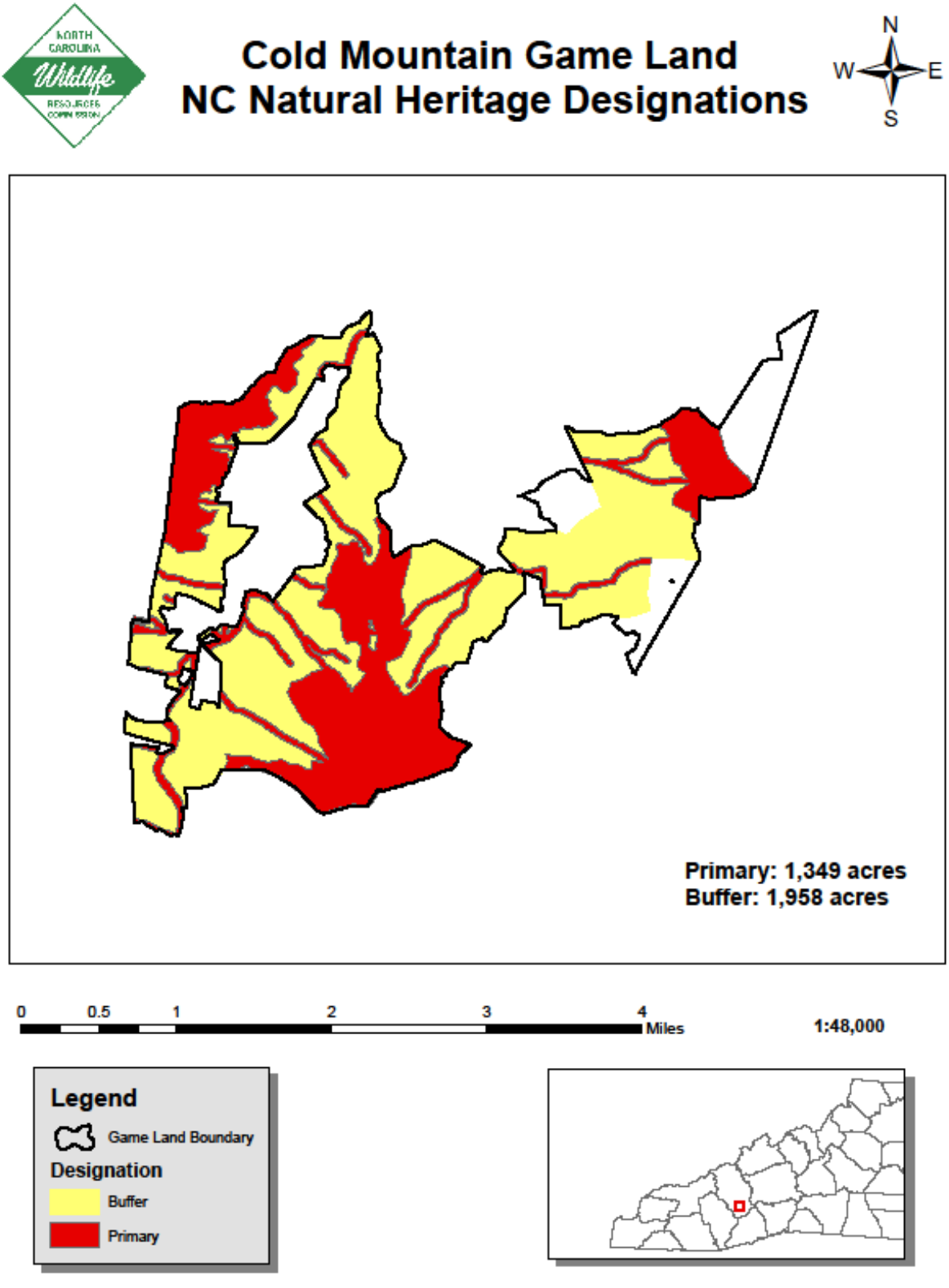
Appendix 1


Cold Mountain Game Land
NCWRC Mountain Eco-Region
N
W
E
S
Legend
Public Fishing Areas
Boating Access
Fish Hatcheries
Dams
Depot Locations
Depot Maintenance Areas
N. Mountain EcoRegion
S. Mountain EcoRegion
Game Lands, Non-WRC
Game Lands, WRC
Wilkesboro
Burnsville
Morganton
Balsam
Mills River
Marion
Andrews
Franklin
ALLEGHANY
SURRY
STOKES
WATAUGA
WILKES
YADKIN
FORSYTH
AVERY
CALDWELL
ALEXANDER
DAVIE
IREDELL
DAVIDSON
BURKE
CATAWBA
ROWAN
BUNCOMBE
HAYWOOD
SWAIN
RUTHERFORD
LINCOLN
CLEVELAND
CABARRUS
GASTON
STANLY
MECKLENBURG
UNION
ANSON
0
25
50
100
150
200
Miles
1:1,500,000

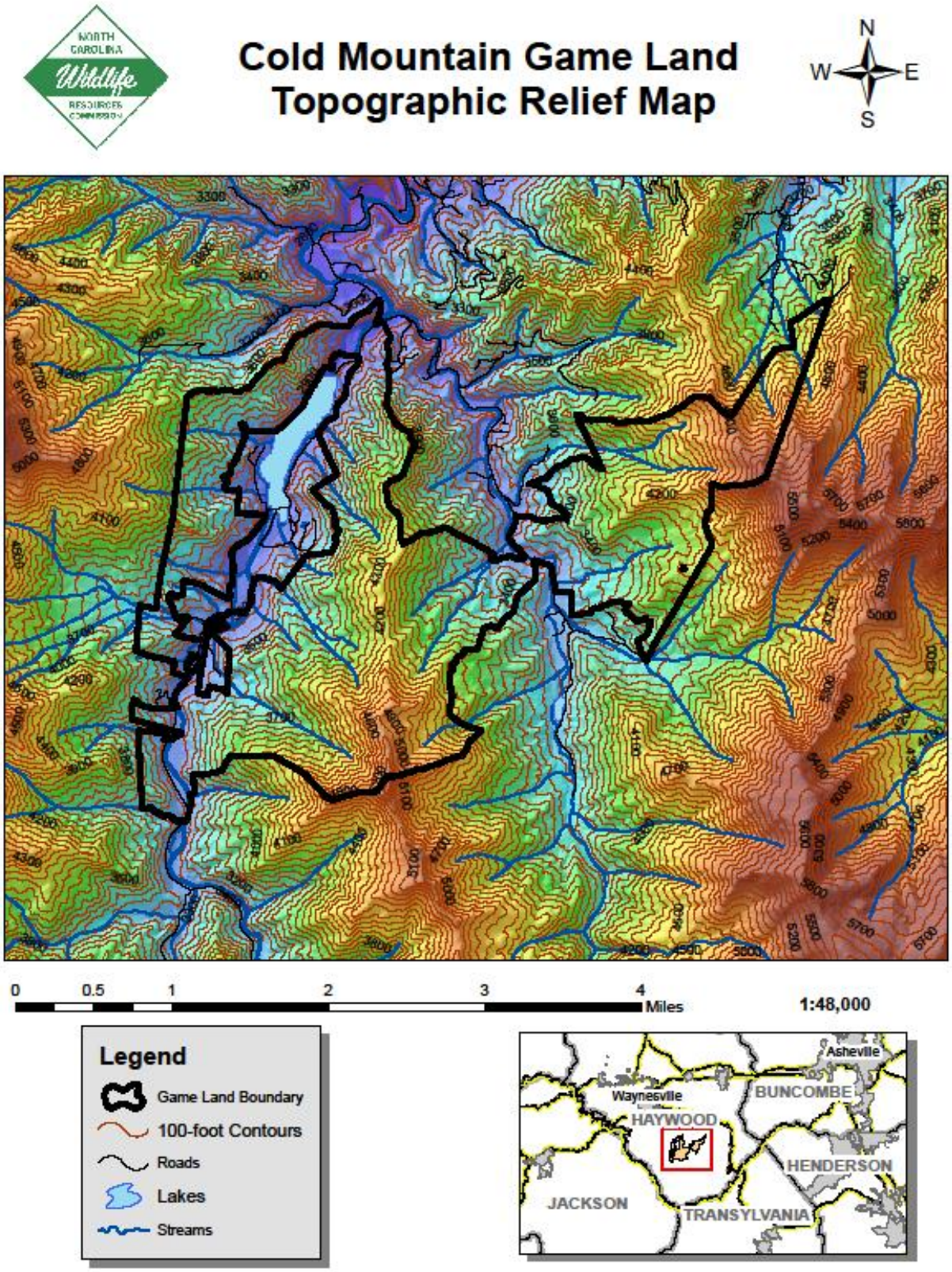
Appendix 2


Cold Mountain Game Land
3,634 Acres
N
W
E
S
NC-215
Little East Fork Rd
0
0.5
1
2
3
4
Miles
1:48,000
Legend
Game Land Boundary
Lakes
Roads
Streams
Asheville
Waynesville
BUNCOMBE
HAYWOOD
HENDERSON
JACKSON
TRANSYLVANIA

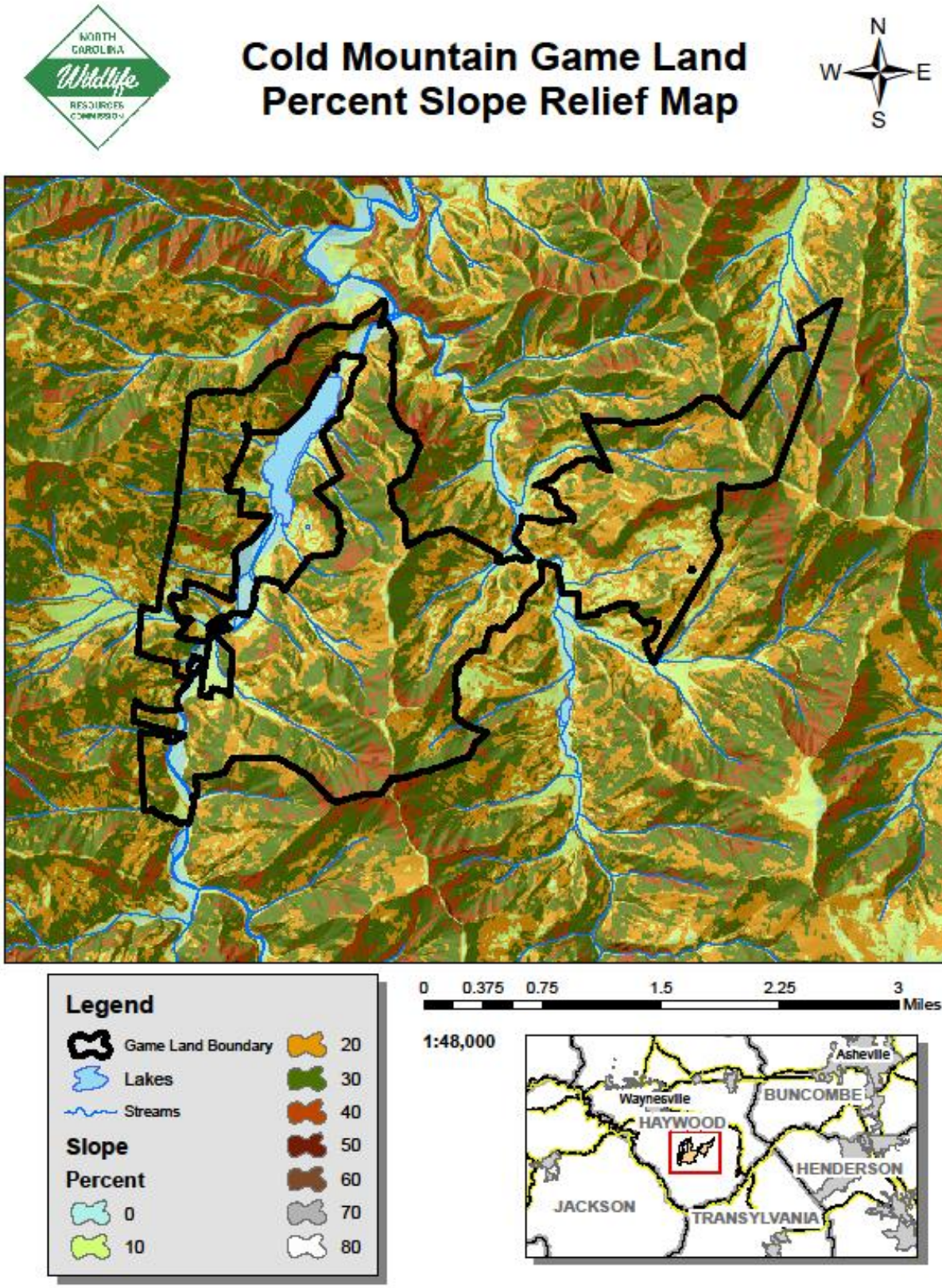
Appendix 3


Cold Mountain Game Land
NC Natural Heritage Designations
N
W
E
S
Primary: 1,349 acres
Buffer: 1,958 acres
0
0.5
1
2
3
4
Miles
1:48,000
Legend
Game Land Boundary
Designation
Buffer
Primary

Appendix 4

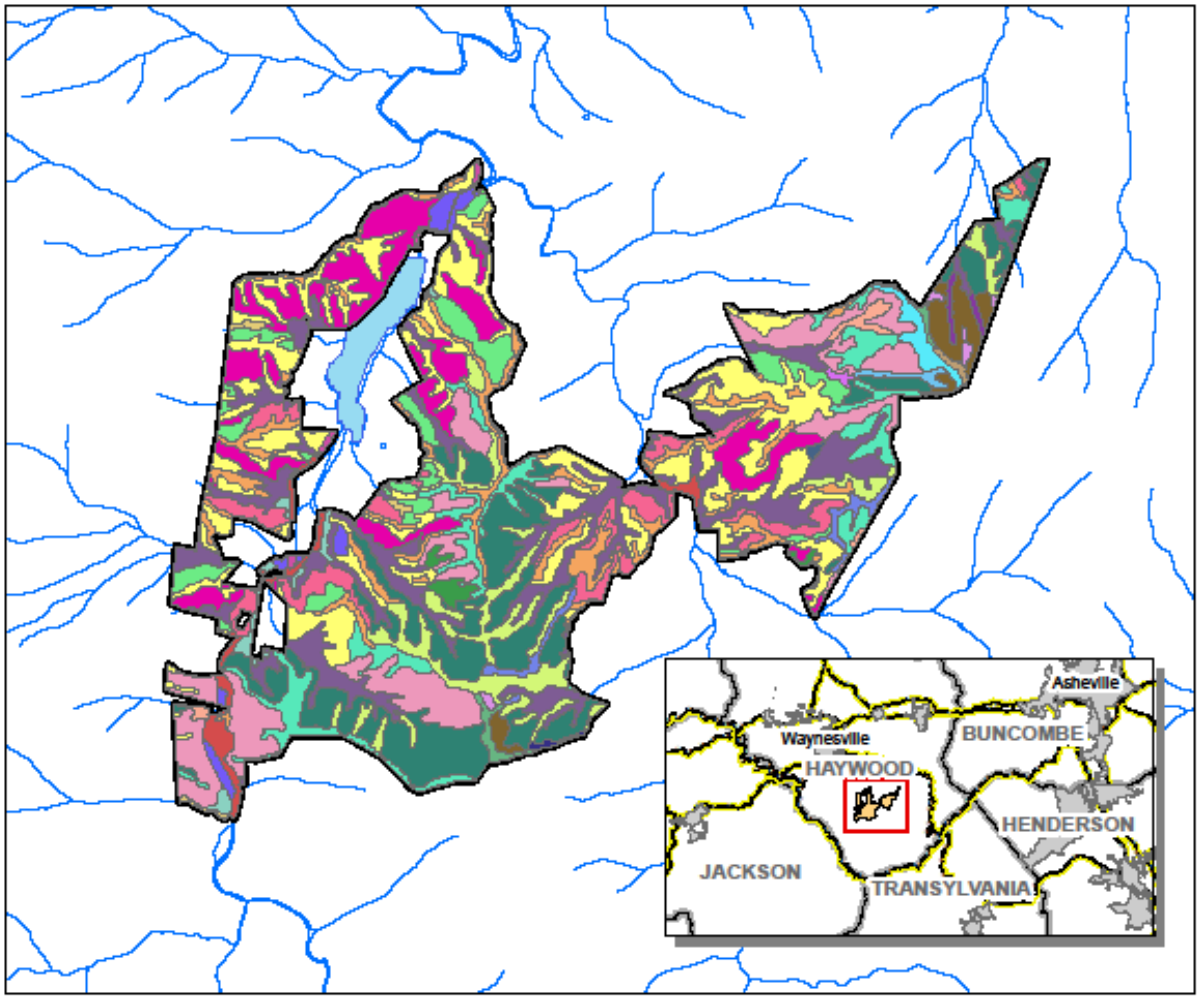

NORTH CAROLINA Wildlife RESOURCES COMMISSION
Cold Mountain Game Land
Topographic Relief Map
N
W
E
S
0
0.5
1
2
3
4
Miles
1:48,000
Legend
Game Land Boundary
100-foot Contours
Roads
Lakes
Streams
Asheville
Waynesville
BUNCOMBE
HAYWOOD
HENDERSON
JACKSON
TRANSYLVANIA

Appendix 5


Cold Mountain Game Land
Percent Slope Relief Map
N
W
E
S
Legend
Game Land Boundary
Lakes
Streams
Slope
Percent
0
10
20
30
40
50
60
70
80
0 0.375 0.75 1.5 2.25 3
Miles
1:48,000
Asheville
Waynesville
BUNCOMBE
HAYWOOD
HENDERSON
JACKSON
TRANSYLVANIA

Appendix 6

Cold Mountain Game Land Soils Map



0 0.5 1 2 3 4 Miles

1:48,000

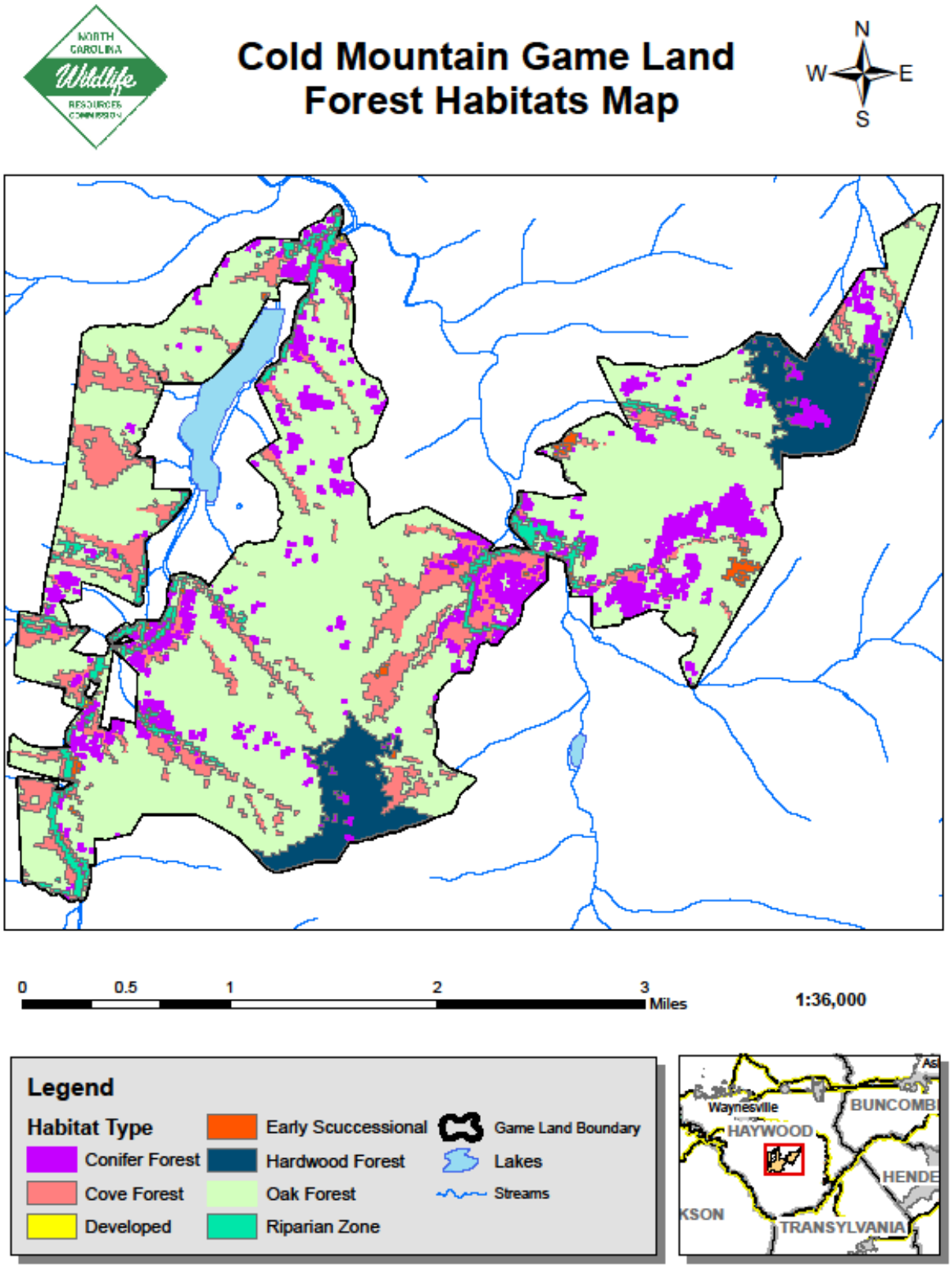
Legend

Game Land Boundary
Lakes
Streams

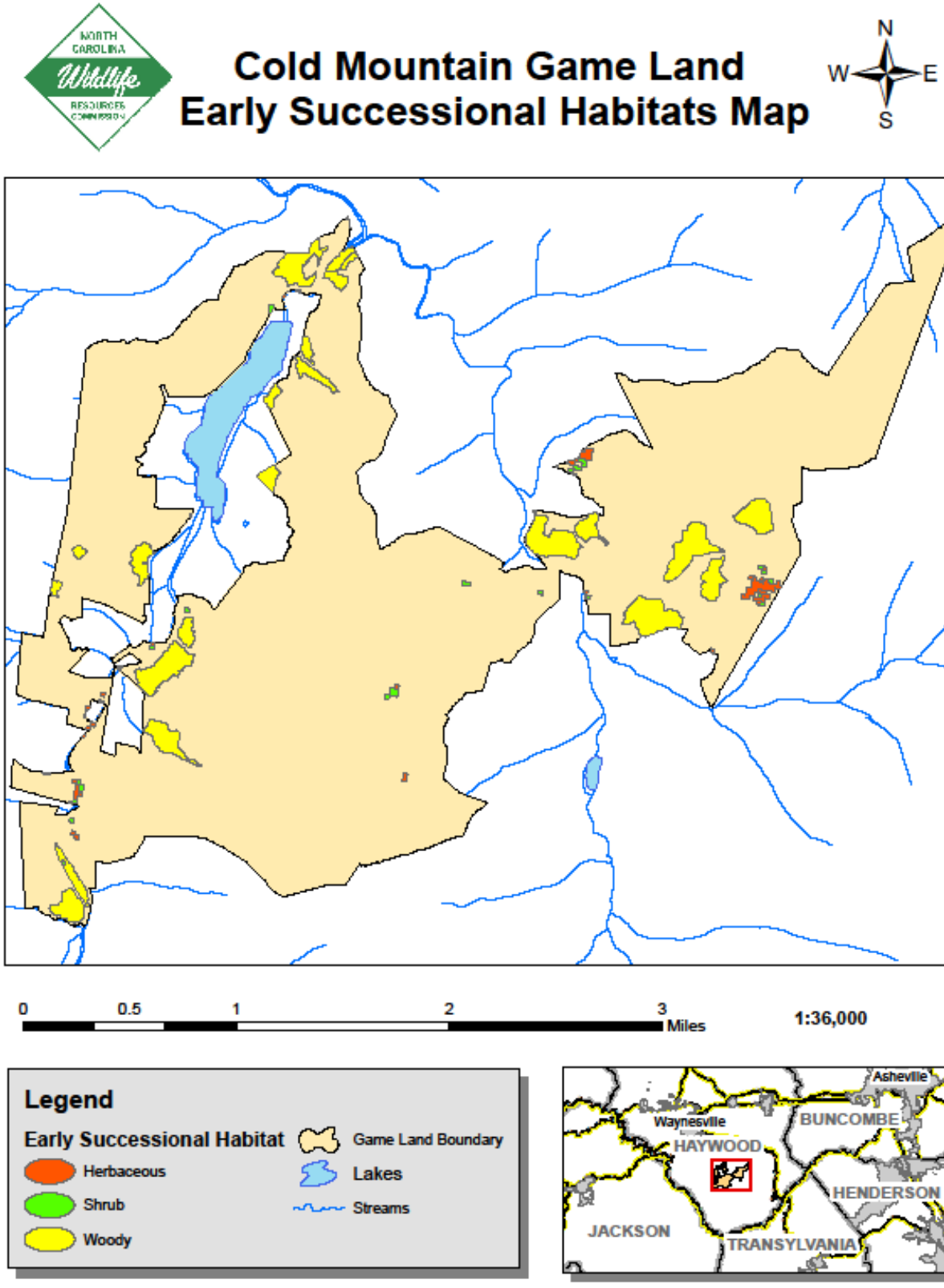
Soil Types

BoD2, CtD, CtE, DeA, DsB, EdD, EdE, EdF, EvD, EvE, EwF, PwD, PwE, PwF, RoA, ScB, SdC, SdD, SeE, TcD, TrE, TrF, TuD, TvE, Ud, W, WaE, WaF, WeD, WeE, WhE2

Appendix 7


Cold Mountain Game Land
Forest Habitats Map
N
W
E
S
0
0.5
1
2
3
Miles
1:36,000
Legend
Habitat Type
Conifer Forest
Cove Forest
Developed
Early Succcessional
Hardwood Forest
Oak Forest
Riparian Zone
Game Land Boundary
Lakes
Streams
Waynesville
HAYWOOD
BUNCOMBE
HENDE
KSON
TRANSYLVANIA

Appendix 8


Cold Mountain Game Land
Early Successional Habitats Map
N
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0.5
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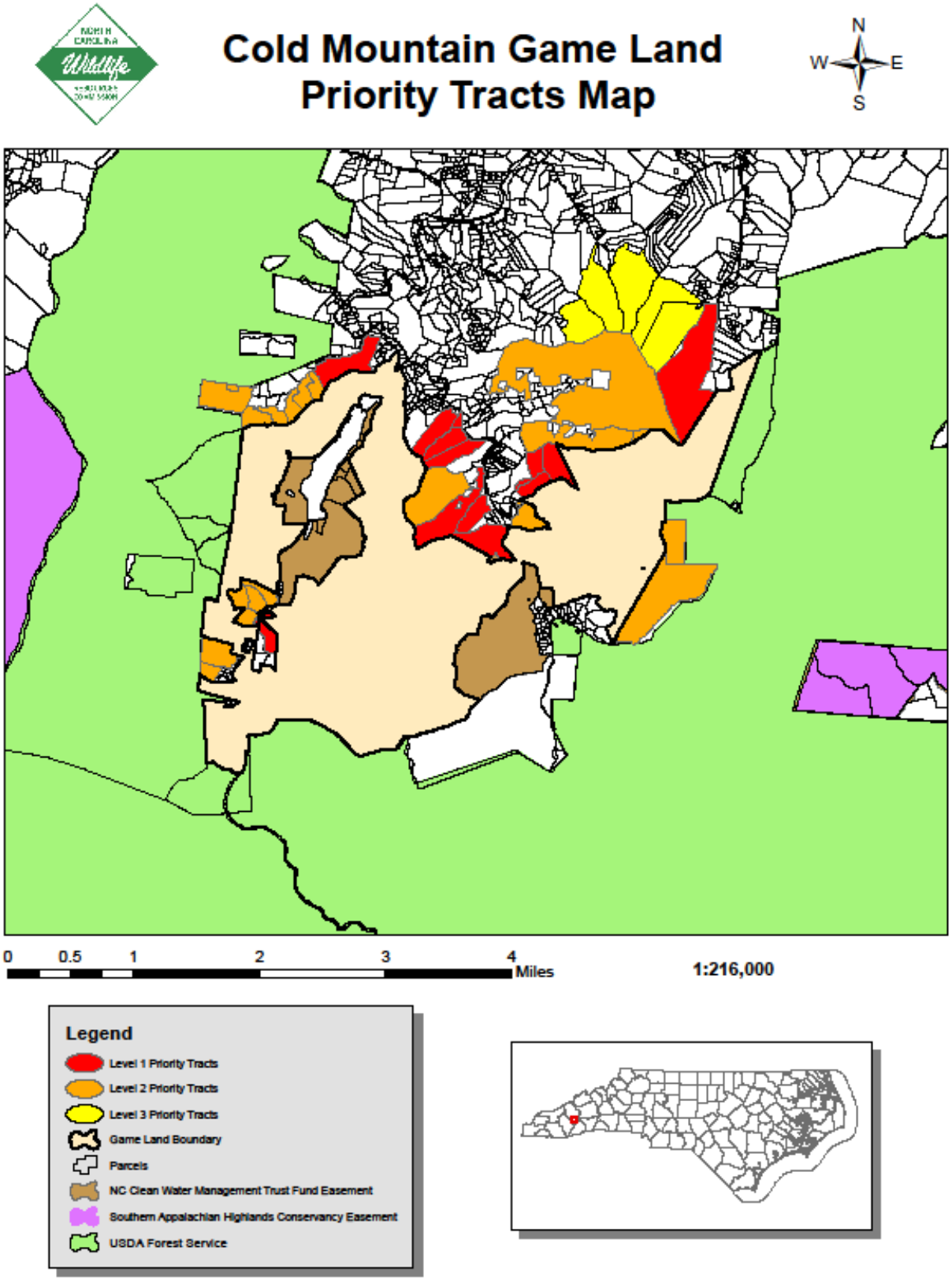
3
Miles
1:36,000
Legend
Early Successional Habitat
Herbaceous
Shrub
Woody
Game Land Boundary
Lakes
Streams
Asheville
Waynesville
BUNCOMBE
HAYWOOD
HENDERSON
JACKSON
TRANSYLVANIA

Appendix 9


Cold Mountain Game Land
Priority Tracts Map
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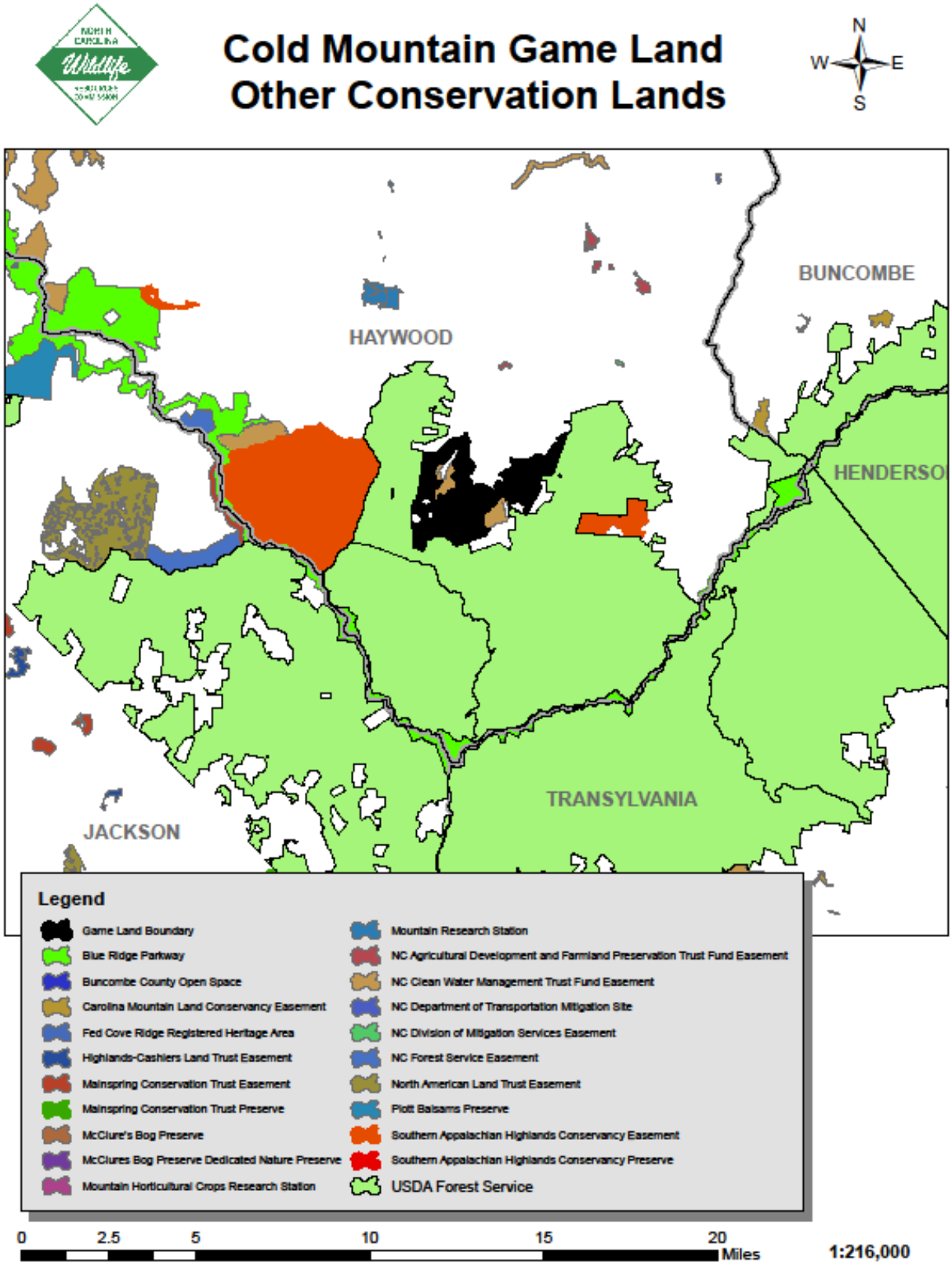
Miles
1:216,000
Legend
Level 1 Priority Tracts
Level 2 Priority Tracts
Level 3 Priority Tracts
Game Land Boundary
Parcels
NC Clean Water Management Trust Fund Easement
Southern Appalachian Highlands Conservancy Easement
USDA Forest Service

Appendix 10


Cold Mountain Game Land
Other Conservation Lands
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BUNCOMBE
HAYWOOD
HENDERSO
TRANSYLVANIA
JACKSON
Legend
Game Land Boundary
Blue Ridge Parkway
Buncombe County Open Space
Carolina Mountain Land Conservancy Easement
Fed Cove Ridge Registered Heritage Area
Highlands-Cashiers Land Trust Easement
Mainspring Conservation Trust Easement
Mainspring Conservation Trust Preserve
McClure's Bog Preserve
McClures Bog Preserve Dedicated Nature Preserve
Mountain Horticultural Crops Research Station
Mountain Research Station
NC Agricultural Development and Farmland Preservation Trust Fund Easement
NC Clean Water Management Trust Fund Easement
NC Department of Transportation Mitigation Site
NC Division of Mitigation Services Easement
NC Forest Service Easement
North American Land Trust Easement
Plott Balsams Preserve
Southern Appalachian Highlands Conservancy Easement
Southern Appalachian Highlands Conservancy Preserve
USDA Forest Service
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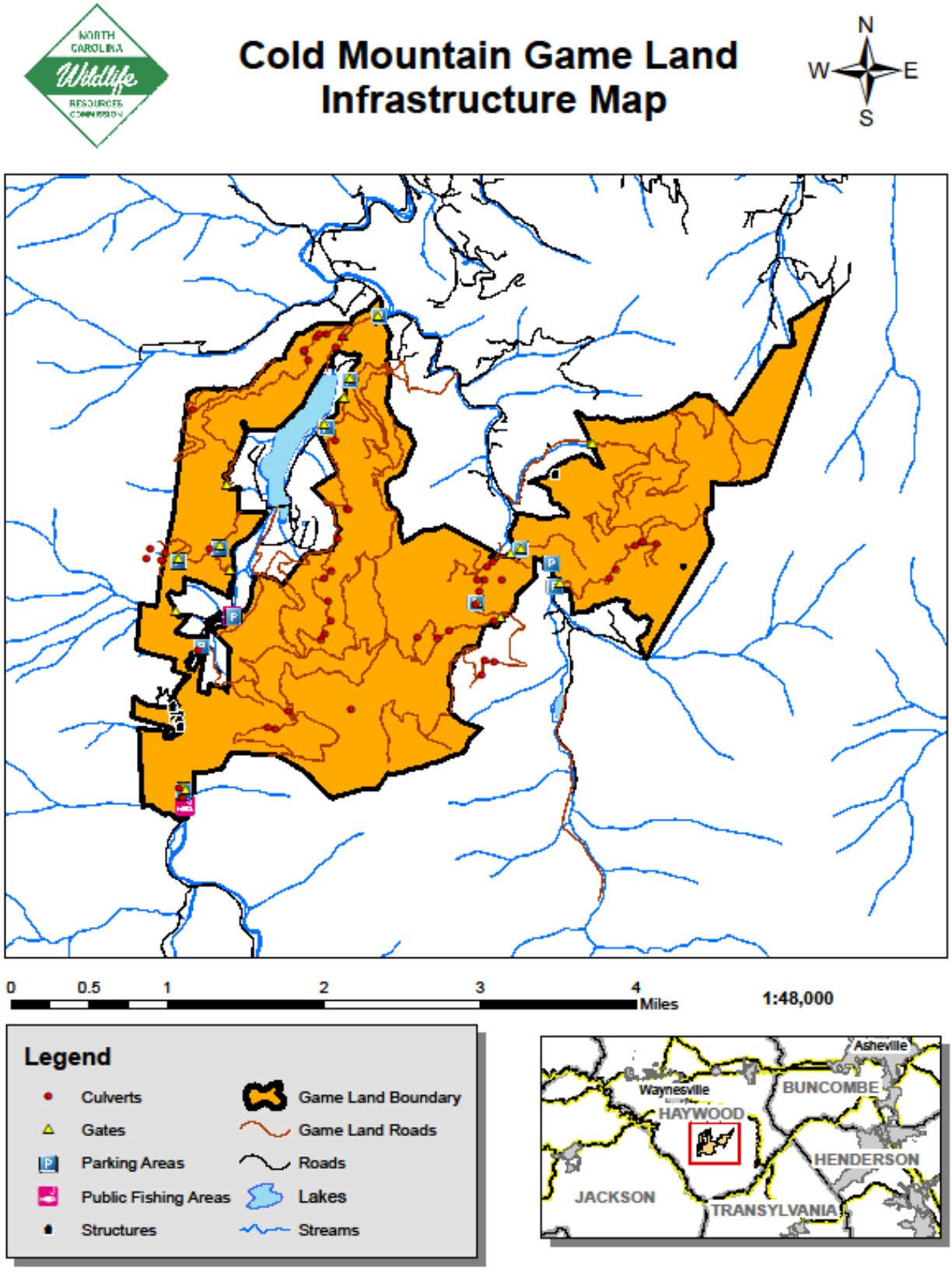
Miles
1:216,000

Appendix 11


Cold Mountain Game Land
Infrastructure Map
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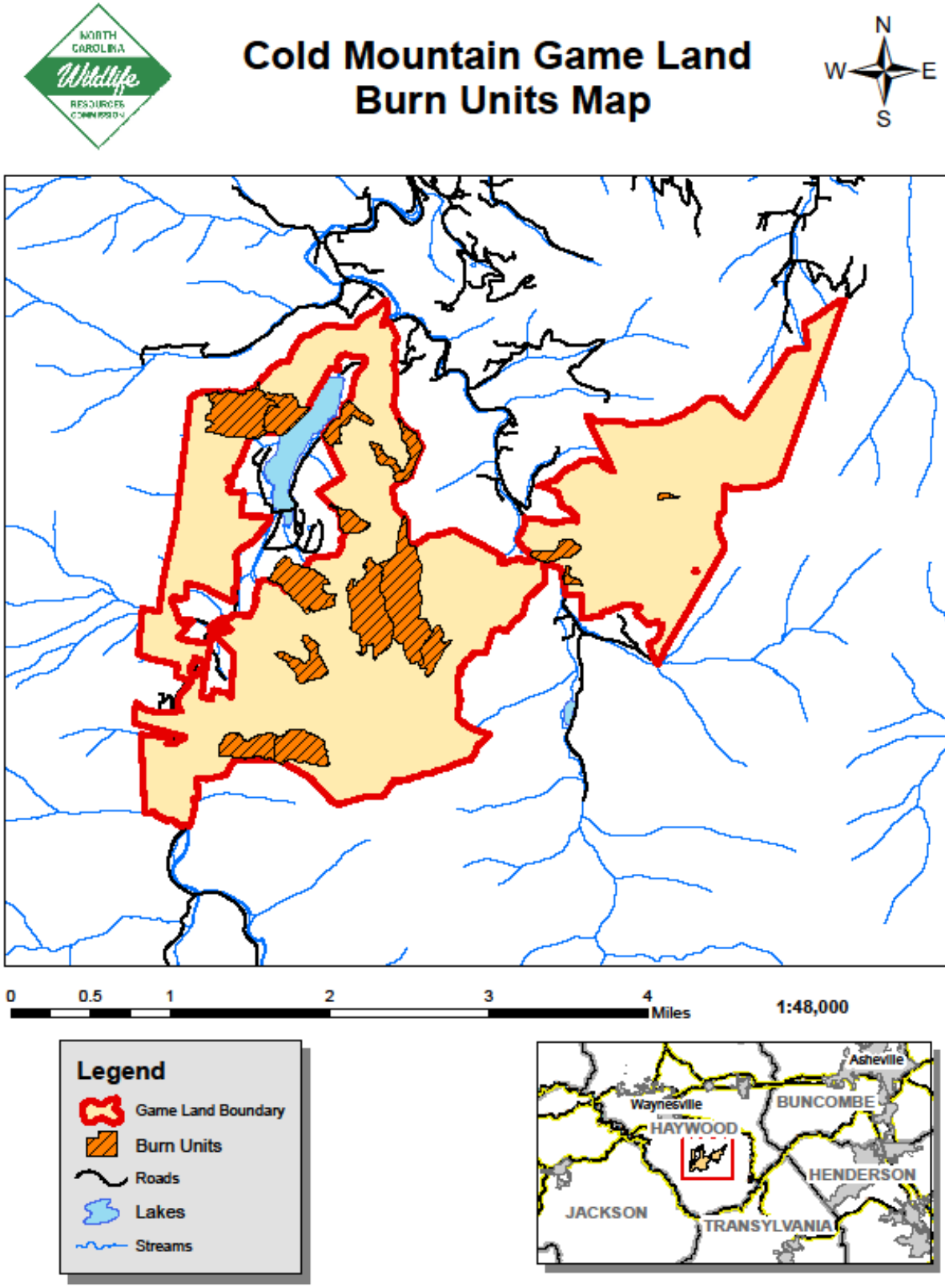
Miles
1:48,000
Legend
Culverts
Gates
Parking Areas
Public Fishing Areas
Structures
Game Land Boundary
Game Land Roads
Roads
Lakes
Streams
Asheville
Waynesville
BUNCOMBE
HAYWOOD
HENDERSON
JACKSON
TRANSYLVANIA

Appendix 12


Cold Mountain Game Land
Burn Units Map
N
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3
4
Miles
1:48,000
Legend
Game Land Boundary
Burn Units
Roads
Lakes
Streams
Asheville
Waynesville
BUNCOMBE
HAYWOOD
HENDERSON
JACKSON
TRANSYLVANIA

Appendix 13

Cold Mountain Game Land Natural Heritage Articles of Dedication

North Carolina
Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

April 5, 2006

Secretary William G. Ross, Jr.
Department of Environment and Natural Resources
1615 Mail Service Center
Raleigh, North Carolina 27699-1615

Mr. Richard B. Hamilton, Executive Director
North Carolina Wildlife Resources Commission
1701 Mail Service Center
Raleigh, North Carolina 27699-1701

Re: Dedication of Portions of the **Cold Mountain Game Land**, Haywood County

Dear Secretary Ross and Mr. Hamilton:

Pursuant to Article 9A, Chapter 113A of the North Carolina General Statutes, this letter of allocation is executed for the purpose of dedicating the State-owned lands hereinafter described as a North Carolina Nature Preserve

This real property is currently administered by the North Carolina Wildlife Resources Commission as a portion of the **Cold Mountain Game Land** and consists of approximately 3,399 acres located in Haywood County and composed of:

1. Cold Mountain tract (Primary Area)	1,349 acres
2. Cold Mountain tract (Buffer Area)	2,050 acres

which are specifically described in Exhibit A, attached hereto and by reference made a part hereof. The dedicated land shall be known collectively as the Cold Mountain Game Land Nature Preserve.

Dedication of the qualified portions of the tract fulfills the terms of any prior grant agreements, including those of the Natural Heritage Trust Fund and Clean Water Management Trust Fund.

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919) 807-2425
Fax (919) 733-9571
State Courier #51-01-00
e-mail Britt.Cobb@ncmail.net
An Equal Opportunity/Affirmative Action Employer

Location Address:
116 West Jones Street
Raleigh, North Carolina

The Governor and Council of State have approved the dedication of the State-owned lands hereinabove described as the Cold Mountain Game Land Nature Preserve to be held in trust by the Custodian for the uses and purposes expressed in the Nature Preserves Act at a meeting held in the City of Raleigh, North Carolina, on the 7th day of February, 2006.

Sincerely,

Britt Cobb

Britt Cobb

BC

CONSENTED AND AGREED TO:

Secretary William G. Ross, Jr.
Department of Environment and Natural Resources

Richard B. Hamilton

Richard B. Hamilton, Executive Director
Wildlife Resources Commission

EXHIBIT A

COLD MOUNTAIN GAME LAND DEDICATED NATURE PRESERVE

COUNTIES: Haywood TOPOGRAPHIC QUAD: Waynesville

PHYSIOGRAPHIC PROVINCE: Blue Ridge

SIZE OF AREA: ca. 3, 399 acres (primary area ca. 1,349 acres; buffer area ca. 2,050 acres)

OWNER/ADMINISTRATOR: State of North Carolina/Wildlife Resources Commission

DESCRIPTION: The Cold Mountain Game Land contains moderate to fairly high elevation mountain lands lying along ridges of the Great Balsam Mountains range, including the flanks of Cold Mountain and Lickstone Ridge and lower end of Fork Mountain. The area has typical mountainous terrain, consisting primarily of side slopes, narrow spur ridges, and narrow coves. Some high ridge tops and broader lower coves are also present. Rocks include schists, gneisses, and apparently substantial amounts of amphibolite. The site supports sizeable areas of characteristic natural forest communities in good condition, along with small patches of several rare communities and several rare plant species. Mature High Elevation Red Oak Forest and Chestnut Oak Forest communities cover most of the higher ridges and slopes. Large parts of the High Elevation Red Oak Forest are unusually rich, with a diverse herb layer. These alternate with areas of typical acidic soils with moderate to dense heath thickets beneath. Some of the sharpest ridge tops and spur ridges have Pine--Oak/Heath communities. Some have recently been affected by pine beetles and have had substantial mortality of canopy pines. Concave slopes, sheltered slopes, and cove bottoms support Rich Cove Forest communities, which are transitional to Northern Hardwood Forest at the highest elevations. Where not altered by heavy logging, these forests have a typically diverse canopy and herb layer, and show well the gradual transition in flora with elevation.

Past logging and other land use has affected all of the forests, with the effects usually more dramatic at lower elevation. Though not old-growth, all but patches of the forests with the primary boundary have natural composition and have matured enough to be good examples of their type. More altered areas within the buffer have canopies of successional species and reduced herb diversity. There are also significant areas planted in white pine.

Several rare communities are associated with small rock outcrops. Broad expanses of massive rock with shallow soil and some outcrops support glade-like Low Elevation Rocky Summit communities with open canopies of small trees and extensive shrub or herb vegetation. One is acidic, with abundant heath shrubs. The other is influenced by basic seepage and supports a diverse herb layer of grasses and forbs. Two more rugged rock outcrops at different elevations support more typical Low Elevation Rocky Summit and High Elevation Rocky Summit communities. These communities are too small to be outstanding examples, but contribute to the diversity of the site.

Two rare plant species are known from the site. A sizeable population of divided-leaf groundsel (*Packera millefolium*) occurs on the basic glade. A small population of granite dome bluet (*Houstonia longifolia* var. *glabra*) occurs on the High Elevation Rocky Summit. Several additional watch list species are present, including ginseng (*Panax quinquefolius*), bigtooth aspen (*Populus grandidentata*), and several populations of Aaron's rod (*Thermopsis villosa*).

BOUNDARY JUSTIFICATION: The primary boundary represents core areas with larger contiguous areas of mature forest communities of natural composition, as well as containing the rare communities and rare plants. More altered forests are included only as small patches within the primary areas. Also included in the primary area are areas along primary and some intermittent streams which protect water quality. The buffer areas contain smaller patches of mature forest, more altered forests, and pine plantations.

MANAGEMENT AND USE: The dedicated nature preserve will be managed as the Cold Mountain Game Land, for preservation of natural areas, protection of wildlife habitat, public hunting, and in the buffer portion, for more intensive wildlife and forest management. Prescribed burning is supported in the drier portions of the primary areas as well as in buffer areas.

THIS DEDICATION OF THE COLD MOUNTAIN GAME LAND NATURE PRESERVE IS MADE SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS:

1. As used in this Letter, the terms "natural area" and "nature preserve" shall have the same meaning as contained in North Carolina General Statutes, section 113A-164.3.

2. Pursuant to North Carolina General Statutes 113-164.8, all State-owned lands lying within the above designated area(s) are hereby dedicated as a nature preserve to be known collectively as the Cold Mountain Game Land Nature Preserve (hereinafter "preserve") for the purposes provided in the North Carolina Nature Preserves Act, as amended, and other applicable law, and said State-owned land, shall be held, maintained, and used exclusively for said purposes.

3. **Primary Custodian**: The primary custodian of the preserve will be the North Carolina Wildlife Resources Commission, which will be responsible for managing the preserve in accordance with State Administrative Code 15 NCAC 12H.300.

4. **Primary Classification**: The primary classifications and purposes of the preserve will be conservation, nature education, wildlife management, hunting, fishing, trapping, and other recreational uses authorized by the Primary Custodian. The ecological significance of the preserve is described in Exhibit A.

5. **Management Areas:** For the purposes of management, the preserve shall be considered to consist of a Primary Area (approximately 1,349 acres) and a Buffer Area (approximately 2,050 acres), as more particularly described in Exhibit A, attached thereto and by this reference made a part hereof. The Primary Area consists essentially of the High Elevation Red Oak Forest, Chestnut Oak Forest, Pine-Oak/Heath, Rich Cove Forest, and Northern Hardwood Forest communities, as well as two rare communities: Low Elevation Rocky Summit and High Elevation Rocky Summit. The Primary Area also includes associated rare species populations.

   The Primary Area is deemed by the Secretary of the North Carolina Department of Environment and Natural Resources to qualify as an outstanding natural area under statutory criteria for nature preserve dedication (G.S. 113A-164.6) and further serves all of the public purposes for a dedicated preserve as stated in Administrative Rules 15 NCAC 12H.0301(b).

   The Buffer Area, which contributes to the management and protection of the Primary Area, consists of less mature, lower quality hardwood forests downslope from the Primary Area.

6. **Rules for Management of the Primary Area(s)**:

   A. Character of Visitor Activity: The principal visitor activities in the preserve shall be hunting, fishing, boating, trapping, walking, research, and observation. These activities shall be regulated by the Custodian to prevent significant disturbance of

the preserve. These activities may specifically be regulated by the Custodian to protect and conserve the natural values of the preserve.

Activities and uses unrelated to those listed above are prohibited except as otherwise provided in these Articles or unless necessary to carry out the purposes of the preserve. Prohibited activities include, but are not limited to: construction; commercial activities and development; commercial silviculture; agriculture and grazing; gathering of native species of plants or plant products; the removal, disturbance, molestation, or defacement of minerals, archaeological and natural resources, except for research purposes as approved by the Custodian; and those activities specifically restricted in these Articles.

There shall be no fires, except as necessary for ecological management of the preserve or in conjunction with supervised educational activities of the Custodian, or further excepted as herein provided or otherwise expressly permitted.

B. Consumptive Wildlife Uses: Hunting, fishing, and trapping shall be permitted on the preserve subject to regulations and management by the North Carolina Wildlife Resources Commission.

C. Orientation and Guidance of Visitors: The Custodian reserves the right to orient and guide visitors for educational programs, hunting and fishing uses, scientific research, and for preserve management. Exhibits, programs, and printed materials may be provided by the Custodian in service areas. The Custodian may restrict access to visitors in those instances or in such areas that restrictions may be determined necessary to safeguard sensitive environmental resources in the preserve.

D. Disturbance of Natural Resources: The cutting or removal of trees, dead or alive, or the disturbance of other natural resources is prohibited except as necessary for removal of hazards to visitors, control of disease that would damage or reduce the significance of the preserve, restoration after severe storm damage, trail clearance and maintenance, or for purposes of maintenance or restoration of natural communities or rare species populations as stipulated in the preserve management plan and that which is consistent with the purposes of these Articles. If needed to maintain the presence of the High Elevation Red Oak Forest, silvicultural practices (e.g., prescribed burning, thinning, two-age methods) may be employed. Plans for maintenance of this community type will be submitted to the Natural Heritage Program for review. Salvage timber cuts which may be necessary due to natural catastrophe will be allowed in both Primary and Buffer Areas, but in a manner that will contribute to the recovery of the prevailing natural conditions of the forest and in consultation with the North Carolina Natural Heritage Program.

E. Wild Fire Control/Prescribed Burning: Wild fires may mimic natural processes historically occurring in an ecosystem on a landscape level. When the extent of a wild fire does not threaten human life or structures, it may be allowed to burn with minimal control. If wild fire control is necessary, firebreaks may need to be estab-

lished. When possible, existing roads and firebreaks will be utilized for wild fire control. When new firebreaks need to be established, environmentally sensitive areas will be avoided when possible. Old firebreaks which affect the natural hydrology of wetlands will be filled and allowed to revegetate. Planning of firebreak restoration should occur in consultation with the North Carolina Natural Heritage Program.

F. Water Control: The purpose of water control shall be to maintain the preserve's natural water regime. Water levels that have been altered by man may be changed if necessary to restore the preserve to its natural condition. In a preserve with a long history of managed hydrology, water levels may be managed to perpetuate the ecosystems that have evolved around the hydrology or may be restored to natural condition. This decision should be made in consultation with the Natural Heritage Program. Millponds are an example of situations in which water levels have been historically managed.

G. Pollution and Dumping: There will be no storage or dumping of ashes, trash, garbage, hazardous substances, toxic waste, other unsightly or offensive material, or fill material, including dredge spoil in, on, or under the preserve. No underground storage tanks may be placed within the preserve. No surface or ground waters of the preserve may have pollutants added within the preserve.

H. Control of Vegetational Succession: Control of vegetational succession may be undertaken if necessary to maintain or restore a particular natural ecosystem type or to preserve endangered, threatened, rare, or other unusual species. Controls will be done in the manner that best imitates the natural forces believed responsible for maintaining the natural ecosystem type, or that minimizes unnatural effects on non-target portions of the ecosystem. Prescribed burning is particularly essential to ecosystems where natural wild fire historically suppressed woody vegetation and promoted herbaceous diversity.

I. Control of Populations: Any control of animal or plant populations on the preserve shall be for the purpose of correcting those situations where those populations are significantly affecting natural conditions on the preserve, and in accordance with the Custodian's established regulations for hunting, trapping, or fishing of designated game animals. The Custodian may, in consultation with the North Carolina Natural Heritage Program, apply biological controls, herbicides and pesticides, and other means deemed necessary or appropriate to control or eradicate exotic or native species of plant or animal that are degrading the natural character of the preserve. Because of potential impacts on native species, no exotic flora or fauna shall be introduced into the preserve.

J. Research and Collecting Permits: Any person wishing to engage in scientific research requiring collecting or otherwise affecting anything within the preserve shall first secure written permission from the Custodian.

K. Roads and Trails: New roads shall not be constructed in the Primary Area. When necessary, the Custodian may construct and maintain access limited to staff use for management purposes, such as service paths (single lane vegetated paths) for patrol, right-of-way maintenance, and other management activities, within the Primary Area. Number and width of new paths will be minimized, and sensitive areas avoided when possible. Existing roads that occur within or form a boundary of the Primary Area may be maintained by grading of the roadbed, replacing culverts, or adding stone as needed in order to maintain the integrity of the road for vehicular use. Daylighting of roads within the Primary Area should be minimized, but may be used if necessary to maintain the condition of the road. Access management and construction will be part of the overall management planning process and will include consultation with the North Carolina Natural Heritage Program.

L. Other Structures and Improvements: Structures or facilities shall not be erected by the Custodian within a preserve, except as may be consistent with the purposes of the preserve as stated in this dedication. Site selection shall be consistent with this dedication.

M. Management Plan: The Wildlife Resources Commission, as Primary Custodian of the preserve, shall be required to prepare and submit for approval to the Secretary of the Department of Environment and Natural Resources a management plan for the preserve. The management plan will be part of the larger management plan developed for the gamelands. This plan shall be subject to all the provisions of this dedication and shall additionally be consistent with the management principles set forth in the North Carolina Administrative Code 15 NCAC 12H.0300 and such other regulations as may be established from time to time by the Secretary of the Department of Environment and Natural Resources. In any case where contradictions may arise between this instrument of dedication and other management regulations, the terms of this dedication shall take precedence.

7. **Rules for Management of the Buffer Area(s)**: Primary area rules also apply except that additional forestry and wildlife management activities may be planned and carried out as needed. Construction and maintenance of roads, trails, and other access structures within buffer area(s) of the preserve will be limited to the level necessary to appropriately manage the preserve. These activities will be conducted in accordance with policy of the N.C. Wildlife Resources Commission and general management philosophy as outlined in Commission planning documents, in addition to providing for the buffer functions in relation to the primary area(s). WRC rules and guidelines require the protection and enhancement of wildlife populations and habitat so that hunting, fishing, trapping and other wildlife recreational opportunities are available to citizens of this State. Forest management is primarily conducted to enhance wildlife habitat.

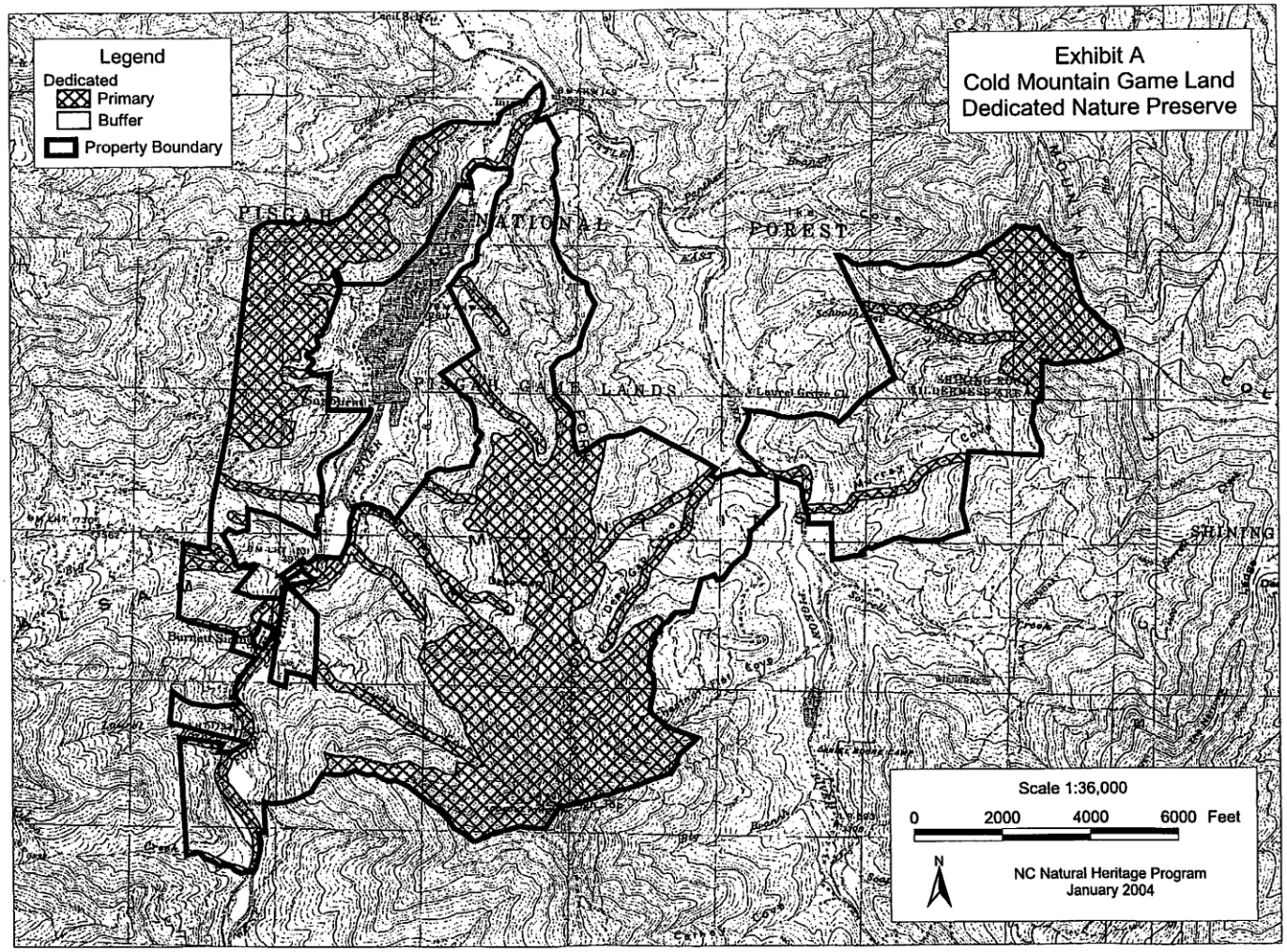
Buffer functions within the dedicated area may include protecting the primary area(s) from indirect detrimental ecological effects, providing additional area for species and ecological processes that require larger areas, and providing important successional stages and dis-

turbance regimes and other habitat diversity for wildlife. Based on these general objectives, the following buffer functions will be addressed in the management plan.

1) Landscape level function of community type and structure. (Buffer area management may involve timber harvest and other forms of stand manipulation, but will not involve forest canopy type conversion over more than limited areas, other than to restore stands to types suited for the site. Introduction of exotic species known to be invasive in natural communities will be avoided.)
2) Maintenance of habitat connectivity and continuity among primary areas.
3) Providing for habitat diversity.
4) Management needs of rare animal and plant species populations occurring within the buffer area; and
5) Protection of soil and hydrologic resources and processes within the primary area and extending into the buffer. (Buffers will be retained along streams, and watersheds of primary areas will be protected from hydrologic alteration.)

8. **Amendment and Modification**: The terms and conditions of this dedication may be amended or modified upon agreement of the Wildlife Resources Commission and Secretary of the Department of Environment and Natural Resources, and approved by the Council of State. Any portion of the tract dedicated pursuant to this instrument may be removed from dedication in accordance with the provisions of North Carolina General Statutes 113A-164.8.

9. **Permanent Plaque**: The Custodian should erect and maintain a permanent plaque or other appropriate marker at a prominent location within the preserve bearing the following statement: "This Area is Dedicated as a State Nature Preserve."


Legend
Dedicated
Primary
Buffer
Property Boundary
Exhibit A
Cold Mountain Game Land
Dedicated Nature Preserve
PISGAH NATIONAL FOREST
PISGAH GAME LANDS
SHINING ROCK WILDERNESS AREA
SHINING
Scale 1:36,000
0 2000 4000 6000 Feet
N
NC Natural Heritage Program
January 2004

Appendix 14

North Carolina Wildlife Resources Commission
Game Lands Use Evaluation Procedure

I. PURPOSE

The North Carolina Wildlife Resources Commission (NCWRC) is the principal advocate for and steward of the wildlife resources of North Carolina and is the primary custodian of numerous tracts of state-owned lands in the Game Lands Program. As the human population of North Carolina continues to grow at a rapid rate, state-owned Game Lands will be subject to increasing pressure to provide public outdoor recreation opportunities. These uses will include traditional activities such as hunting, fishing, trapping, and wildlife viewing, as well as other outdoor recreation pursuits. While hunting, fishing, trapping and wildlife viewing are the primary public uses of state-owned Game Lands, the NCWRC has always allowed and supported other dispersed and non-developed recreational activities. The funding sources of the NCWRC, however, are focused on natural resources management rather than recreational development and there is no on-site staff stationed at each Game Land. Because of this, the NCWRC must exercise care in providing for recreational activities that may not be compatible with the natural resources for which the lands are valued and the primary management objectives of those lands. This document will establish a process to evaluate such activities as they are considered by NCWRC staff, or are requested by the public, on state-owned Game Lands where NCWRC is the primary custodian. These activities will first be evaluated to determine if they are "appropriate" and second to determine whether they are "compatible" with respect to the following management objectives of the Game Lands program:

1. To provide, protect, and actively manage habitats and habitat conditions to benefit aquatic and terrestrial wildlife resources,
2. To provide public opportunities for hunting, fishing, trapping, and wildlife viewing,
3. To provide for other resource-based game land uses to the extent that such uses are compatible with the conservation of natural resources and can be employed without displacing primary users,
4. To provide an optimally sustainable yield of forest products where feasible and appropriate and as directed by wildlife management objectives.

This document provides a statewide framework for determining appropriate uses of NCWRC-owned or controlled Game Land properties (NCWRC Game Lands). In addition, it provides the procedure for determining if appropriate uses are compatible on a particular property.

II. ENABLING LEGISLATION

Statement of Purpose NCGS § 143-239. The purpose of this article is to create a separate State agency to be known as the North Carolina Wildlife Resources Commission, the function, purpose, and duty of which shall be to manage, restore, develop, cultivate, conserve, protect, and regulate the wildlife resources of the State of North Carolina, and to administer the laws relating to game, game and freshwater fishes, and other wildlife enacted by the General Assembly to the end that there may be provided a sound, constructive, comprehensive, continuing, and economical game, game fish, and wildlife program directed by qualified, competent, and representative citizens, who shall have knowledge of or training

in the protection, restoration, proper use and management of wildlife resources. (1947, c. 263, s. 3; 1965, c. 957, s. 13)

III. APPLICATION OF PROCEDURE

This procedure must be considered within the context of the Game Lands Program Mission Statement (GLPMS):

> "Consistent with the original establishment legislation for the WRC, the mission of the game lands program is to enhance, facilitate, and augment delivery of comprehensive and sound wildlife conservation programs. Inherent in delivery of a lands program consistent with this mission is the feasibility and desirability of multiple uses on lands owned by the state within the system. In addition to hunting, fishing, trapping, and wildlife viewing as primary uses, we recognize the desirability of providing opportunities for other activities on state-owned game lands that are feasible and consistent with the agency's mission, and compatible with these traditional uses." (*From motion made December 5, 2007 by Doug Parsons, Chairman, WRC Use and Lands Committee and unanimously approved).*

This procedure applies to all proposed and existing recreational uses of NCWRC Game Lands. It does not apply to the following circumstances:

A. **Situations where reserved rights or legal mandates provide that certain uses must, or must not, be allowed**. For example, there may be prescriptive purposes or other uses that are specifically required or not allowed in the deed or grant that conveyed the property to the state.

B. **Property management activities**. Property management activities are specified in Federal Assistance Work Plans for lands NCWRC purchases or manages with federal assistance, and are updated every five years. These plans specify wildlife, fish, and forest management activities that are not subject to this procedure when conducted by NCWRC staff or an approved cooperator.

C. **Emergencies**. The Director (or a designee) may temporarily suspend, allow or initiate any use of a property if it is determined necessary to immediately act in order to protect the health and safety of the public or any plant, fish or wildlife population.

D. **Specialized uses**. There are many uses (most of them non-recreational) that require specific authorization from NCWRC in the form of a special use permit, letter of authorization or other permit document. Some of the specialized uses that may be considered include scientific research or collections, educational pursuits, field trial use, use of buildings or other facilities, rights-of-way and other encroachments, telecommunications facilities, military, national defense uses, and public safety training. Requests for specialized uses are covered by other NCWRC policies, procedures, or rule, and are subject to separate review procedures. (*See NC Administrative Code, Title 15A, Chapter 10, Subchapter 10D - Game Land Regulations, Rule .0102; General Statutes 113-264*).

E. **Other NCWRC properties.** The NCWRC owns and/or manages lands outside of the Game Land program (e.g., boat ramps and Wildlife Conservation Areas). The use and

management of those properties are covered by other NCWRC policies, procedures, or rule and are subject to separate review procedures. (*See NC Administrative Code, Title 15A Chapter 10, Subchapter 10E - Fishing and Boating Access Areas, Rule .0104; NC Administrative Code, Title 15A Chapter 10, Subchapter 10J - Wildlife Conservation Area Regulations, Rule .0102; General Statues 113-264*).

If a proposed use falls under one of the above five circumstances, it is exempt from review under this procedure. Any other Game Land use requests, whether originating from the public or from NCWRC staff, must be reviewed under this procedure and with consideration of the following guidance:

- **Natural resources-dependent recreational uses** (see definitions below), when compatible with each other, should be considered the priority general public uses of Game Land properties.
- **Other general public uses** that are not natural resources-dependent recreational uses as described herein, and do not contribute to the fulfillment of property purposes or goals or objectives, as described in the GLPMS, are lower priorities for consideration. These uses may conflict with priority general public uses, and may divert property management resources away from priority general public uses or from the responsibility of the NCWRC to protect and manage fish, wildlife, plants and their habitats. Therefore, procedure and practice have a general presumption against allowing such uses on Game Land properties. Regardless of how often they occur or how long they last, appropriateness and compatibility determinations for each use request must be made, as defined in Section V and VI of this procedure.

IV. DEFINITIONS

A. **Natural resources-dependent recreational use** is a use of a property involving: (1) hunting; (2) fishing; (3) trapping; (4) wildlife or other natural resource observation/ education.

B. **Property managers** are the officials employed by NCWRC who direct the management of a property, or the authorized representatives of such officials.

C. **Professional judgment** is a finding, determination or decision that is consistent with the principles of fish and wildlife management and administration, and that makes use of all available science and resources.

V. DETERMINING APPROPRIATE USE

A property use is appropriate if it meets Criterion A ***or*** if it meets all of Criteria B – F (and G, when applicable).

A. It is a natural resources-dependent recreational use of a property. These are: (1) hunting; (2) fishing; (3) trapping; (4) wildlife or other natural resource observation/education.

B. The NCWRC has jurisdiction over the use and, therefore, authority to allow or not allow the use.

C. The use complies with all laws and regulations (federal, state and local).

D. The use is consistent with NCWRC policies and objectives.

E. The use is consistent with public safety. *If the use creates an unreasonable level of risk to visitors or NCWRC staff, or if the use requires NCWRC staff to take unusual safety precautions to assure the safety of the public or other NCWRC staff, the use is not appropriate.*

F. Proceeds of revenue generating uses, by for-profit entities, will be provided to the NCWRC.

G. The use was evaluated under previous administrative review, was deemed inappropriate, and conditions have changed that would now make the use appropriate.

Property managers and other NCWRC staff shall consider the above criteria and complete Exhibit 1 (appended to this document) for each use subjected to the appropriateness test. The findings shall be forwarded to Regional Supervisors and through the chain of supervision to the Director (or a designee) for concurrence. This will serve to promote consistency in determining appropriate uses of NCWRC Game Lands.

VI. DETERMINING COMPATIBILITY

Uses that are determined to be appropriate for Game Land properties will then be evaluated for compatibility to determine if the use will be allowed, and under what conditions the use will be allowed on a specified property. Property managers are required to exercise professional judgment in making these determinations. Compatibility determinations are inherently complex and require the property manager to use field experience and knowledge of land management and of the property's resources, particularly its biological resources. When a property manager is exercising professional judgment, the property manager will use available information that may include consulting with others inside and/or outside the NCWRC. At a minimum, the property manager should consider the following questions.

A. Can the use be accommodated without substantially interfering with or detracting from the fulfillment of Game Lands program management objectives (see page 1, section I)?

B. Is the use compatible with the physical and natural resource characteristics of the property (e.g., topography, soils, plant communities, endangered species concerns)? *The use is generally incompatible if it has a high probability of causing erosion, or sedimentation, or disturbance of plant or animal resources.*

C. Is the use compatible with Natural Heritage Articles of Dedication, Clean Water Management Trust Fund (CWMTF) designations, and/or any deed restrictions or other legal limitations placed upon the property, including those specified for land purchased with Pittman-Robertson Wildlife Restoration Act funds?

D. Is there infrastructure present on the property to support the requested use (e.g., graveled

roads, parking areas, facilities)?

E. Is the requested activity not adequately provided for on other nearby public lands? *If a proposed use is available on other nearby lands, the NCWRC may not feel as strong an obligation to consider that use on Game Lands. Even if a use is not adequately provided for on other nearby public lands, the NCWRC still may not feel such an obligation, but should consider the unique nature of the request.*

F. Will the use necessitate facility, infrastructure development or maintenance and is this use manageable within available budget and staff? *If a proposed use diverts management efforts away from the proper and reasonable management of a property or natural resources-dependent recreational use, the use is generally incompatible.*

G. Will the use be manageable in the future within existing resources? *If the use would lead to recurring requests for the same or similar activities that will be difficult to manage in the future, then the use is generally incompatible. If the use can be managed so that impacts to natural and cultural resources are minimal or inconsequential, or if clearly defined limits can be established, then the use may be compatible.*

H. Is the requesting entity capable of providing any funding, labor, or materials for the development of, and maintenance support for, the activity, if applicable (e.g., trail or road maintenance, rehabilitation to areas that may be damaged by the activity)?

I. If a use is not compatible as initially proposed, can it be made compatible by implementing stipulations that avoid or minimize potential adverse impacts?

Property managers shall consider the above questions, and any other information or issues deemed necessary to make a determination based on professional judgment, and complete Exhibit 2 (appended to this document) for each property use subjected to a compatibility determination. The findings shall be forwarded to the Regional Supervisor and through the chain of supervision to the Director (or a designee) for concurrence. This will serve to promote consistency in determining compatible uses of NCWRC Game Lands.

VII. EVALUATION

The Director (or a designee) shall consider each request and the derived appropriateness and compatibility, and then make a determination as to whether the request will be approved or denied. The Director will forward use requests deemed significant in scope to the Commission's Use and Lands Committee, such as those involving: a) rule change, b) revenue generation, c) expenditure of NCWRC funds, or d) substantial alteration to infrastructure or natural resources.

All approved uses will be evaluated periodically by NCWRC field staff to determine whether such activities remain appropriate and compatible. All efforts will be made by field staff to inform participants of approved uses that issues of incompatibility will be grounds for immediate termination of the approved activity.

This is a living document that may be modified and updated as needed.

EXHIBIT 1

APPROPRIATE USE DETERMINATION

Property Name: _____

Requested or Considered Use: _____

DECISION CRITERIA *(refer to section V)*	YES	NO
A. Is the use a natural resource-dependent recreational use of a property?		
If 'NO' above, then consider the following criteria.		
B. Does the NCWRC have jurisdiction over the use?		
C. Does the use comply with laws and regulations (federal, state or local)?		
D. Is the use consistent with NCWRC policies and objectives?		
E. Is the use consistent with public safety?		
F(i). Is the requesting entity a non-profit? F(ii). If NO to F(i), will any proceeds of the use be provided to the NCWRC? (*Describe for-profit entity and supply information on proceeds to be provided to the NCWRC in the Comments section below*)		
G. If the use was evaluated under previous administrative review and deemed inappropriate, have circumstances changed that would now make the use appropriate? (*leave blank if not applicable*)		

To be found appropriate, answers to Criterion A **OR** Criteria B – F (and G, if applicable) must be YES.

Determination (check one below):

_____ Appropriate _____ Not Appropriate

Comments:

Property Manager: _____ Date: _____

Regional Supervisor: _____ Date: _____

EXHIBIT 2

COMPATIBILITY DETERMINATION

(*Use as much space as needed*)

Property Name: _____

Requested or Considered Use: _____

DECISION CRITERIA *(refer to section VI)*	YES	NO	Comments
A. Use will not interfere with or detract from fulfillment of Game Land program management objectives?			
B. Use is compatible with the physical and natural resource characteristics of the property?			
C. Use is compatible with Natural Heritage Articles of Dedication, CWMTF designations, and/or any deed restrictions or other legal limitations placed upon the property? **OR** (in the absence of the above) do acquisition funding partners otherwise agree to the proposed use?			
D. Infrastructure is present on the property to support the requested use?			
E. Requested activity is not adequately provided for on other nearby public lands?			
F. Use is manageable within available budget & staff?			
G. Will the use be manageable in the future within existing resources?			
H. Is the requesting entity capable of providing any maintenance support for the activity, if applicable?			
I. If the use is not compatible as initially proposed, can it be modified with stipulations that avoid or minimize potential adverse impacts and make the use compatible?			
Other (*insert*):			

To be found compatible, answers to ALL of the above questions must be YES.

Determination (Check one below):

_____ Compatible _____ Not Compatible

Stipulations necessary to ensure compatibility (*e.g., Memorandum of Agreement; performance bond; time, space, or size limitations*):

Justification/Comments:

Property Manager: _____ Date: _____

Regional Supervisor: _____ Date: _____