USDA
United States Department of Agriculture

Foothills Landscape Project

Environmental Assessment

Forest Service
Chattahoochee-Oconee National Forests

December 2019

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Introduction

The Foothills Landscape Project (FLP) proposes a variety of integrated restoration activities to restore biologic integrity, resilience to disturbance, connectivity, and soil and water quality across 157,625 acres of National Forest System (NFS) lands. These actions are proposed to be implemented on the Conasauga, Blue Ridge, and Chattooga River Ranger Districts of the Chattahoochee-Oconee National Forests (CONF).

The Forest Service prepared this environmental assessment (EA) to determine whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI). This EA complies with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations.

Proposed Project Location

The project area is located in northern Georgia and encompasses the landscape where the mountains are visibly reduced to foothills. It includes portions of the Cohutta Wildlife Management Area and Dawson, Fannin, Gilmer, Habersham, Lumpkin, Murray, Rabun and White Counties. According to 2017 population estimates, almost a quarter-million people (est. 244,000) reside in the counties included across the Foothills Landscape, with the ninth largest metropolitan area in the country, Atlanta (est. 5.8 million), within a few hour drive of the project area.

Land within the project area boundary touches substantial portions of 48 sixth-level watersheds within the Southern Appalachian ecosystem. There are approximately 200 miles of various use trails and dozens of recreation sites in the project area. Elevation in the project area ranges from 740 feet to 3,697 feet (average 1,772 feet). The 157,625 acres of NFS lands accounts for about half (49%) of the land ownership acreage within the project boundary, delineated in purple (Figure 1) and as shown on the following map (Map 1). No activities are proposed on land outside of Forest Service jurisdiction.

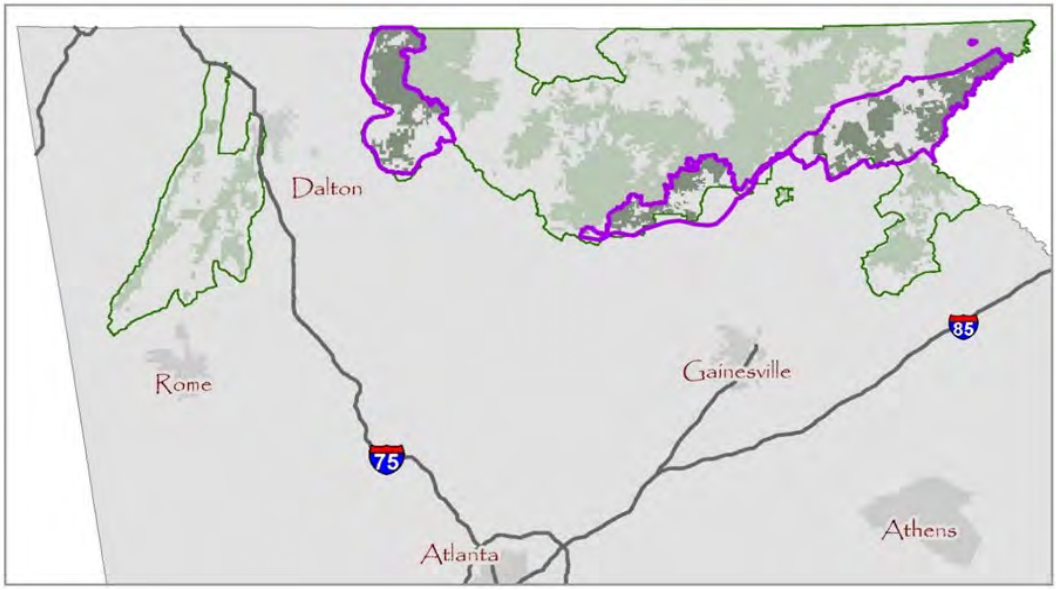
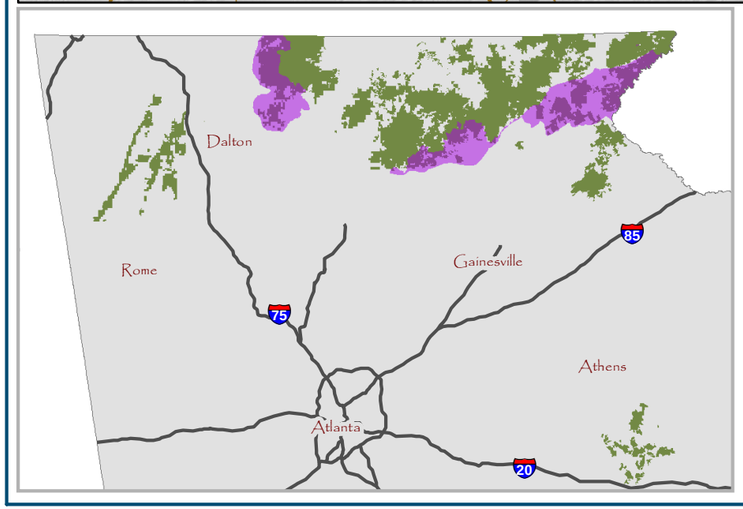


Figure 1 Foothills Landscape Project Boundary

Chattahoochee-Oconee National Forests

Map 1 Foothills Landscape Project

Big Frog Wilderness
Cottonwood Patch
Cohutta Check Station
Sumac Shooting Range
Murray's Lake
Cohutta Wilderness
Mill Creek Overlook
Hickey Gap
Mill Creek Overlook
Lake Conasauga
Holly Creek
Barnes Creek
Cohutta Overlook
Fort Mountain State Park
Peeples Lake
Dennis Mill
Ellijay
Rich Mountain Wilderness
Blue Ridge
Blairsville
Vogel State Park
Blood Mountain Wilderness
Desoto Falls
Boggs Creek
Waters Creek Day Use
Chestatee Overlook
Dockery Lake
Chestatee Check Station
Raven Cliffs Wilderness
Amicalola Falls State Park
Dahlonega
Brasstown Valley Resort State Park
Young Harris
Hiawassee
Brasstown Wilderness
Mark Trail Wilderness
Tray Mountain Wilderness
Unicoi State Park
Smithgall Woods-Dukes Creek CA
Helen
Cleveland
Southern Nantahala Wilderness
Moccasin Creek State Park
Oakey Mountain
Rabun Beach
Black Rock Mountain State Park
Sky Valley
Highlands
Willis Knob Horse Camp
Clayton
Warwoman Dell
Tallulah Gorge State Park
Tallulah Falls
Clarkesville
Buck Shoals State Park
Demorest
Toccoa
Cornelia
Mossy Creek State Park
64
76
19
411
515
129



- Foothills Landscape
- Boating Site
- Camping
- Climbing Area
- DNR Check Station
- Recreation Area
- Fishing Site
- Picnic Site
- Interpretive Site
- Obversation Site
- Picnic Site
- Target Range
- Trailhead
- US or State Highway
- County Road
- Wilderness
- Forest Service Land
- State Park
- Historic Site
- Conservation Area
- City

N W E S

0 5 10 20 30 40 Miles

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

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Project Area Description

The Foothills Landscape project area can be divided into ecological zones (Simon et al. 2005) that are specific plant communities or plant community groups based upon environmental factors such as temperature, moisture, fertility, and solar radiation that control vegetation distribution. These zones fall within five main groups: riparian, oak, hemlock, mesic hardwood, and pine. These zones are shown per district on Map 2, Map 3, and Map 4. Within these zones, the Foothills Landscape has a diversity of communities that provide a variety of habitats for terrestrial and aquatic species and plants. Table 1 shows the forest communities found within the project area. Detailed discussion regarding these forest communities can be found in the Vegetation Specialist Report in the project record.

Table 1 Summary of Major Forest Communities in the Project Area

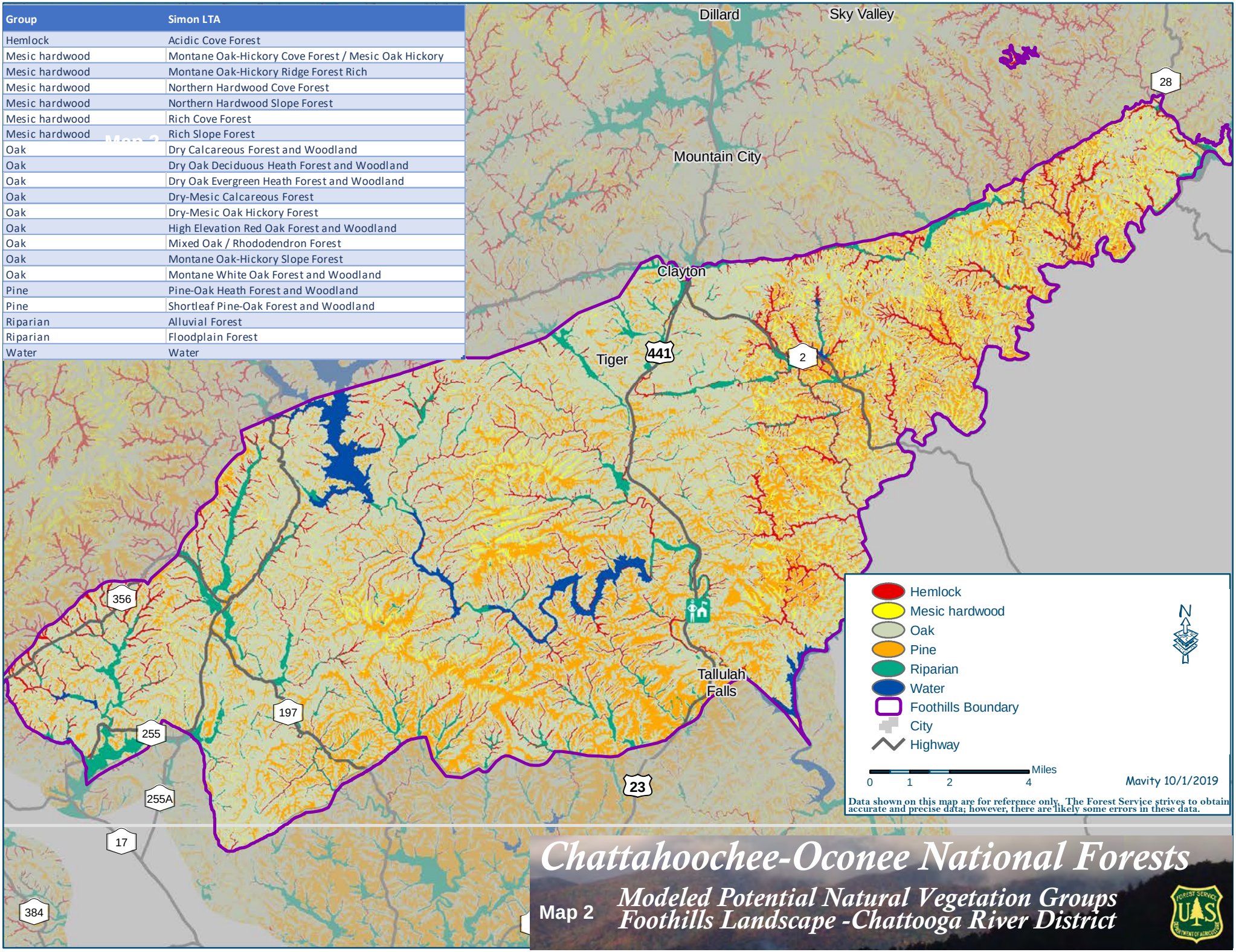
Forest Communities	Key Species	Location	Acres	% of Project Area	Importance	Concern
Southern Yellow Pine and Southern Yellow Pine-Oak Forests	Shortleaf, Pitch, Loblolly, Virginia, and table mountain Pines	Dry ridgetops and exposed aspects	65,000+	40%	Fire Resilient and Fire Adapted Ecosystems	Lack of Diversity in Age Classes (minimal young forest) Increasing Insect and Disease Declining Reproductive Potential Declining Fire-Adapted Species
Oak and Oak-Pine Forests	Chestnut, White, Black, Scarlet, Post, Southern Red and Northern Red Oaks	Dry ridgetops and exposed slopes to highly productive northern aspects and coves.	55,434	35%	Wildlife and Ecological Benefits	Understory Environment Lack of Diversity in Age Classes (minimal young forest) Declining Reproductive Potential
Mesic Deciduous (hardwood) Forest	Yellow Poplar, Sweet Birch, Basswood, Cucumber Tree, Northern Red Oak, and Ash	Highly productive northern aspects and coves	21,143	13%	Wildlife and Ecological Benefits	Lack of Structural Complexity Lack of Diversity in Age Classes (minimal young forest)

Forest Communities	Key Species	Location	Acres	% of Project Area	Importance	Concern
White Pine and Hemlock Forest	White Pine, Hemlock, Cove Hardwoods	Along stream-banks and sheltered coves and slopes.	7,275	5%	Riparian Health and Ecological Benefits	Increasing Insect and Disease Lack of Abundance of Hemlock Declining Reproductive Potential of Hemlock

Embedded within the major forest communities of the Foothills Landscape are approximately 28,678 acres of riparian habitat that support a variety of aquatic and terrestrial wildlife and plant species (see Terrestrial Wildlife Report, Aquatic Resources Report, and Botanical Resources Report). Riparian habitat within the project area is almost completely forested and the majority of the riparian habitat is late-successional stage forest. These forested riparian areas contain large diameter hemlock. The non-native invasive hemlock woolly adelgid (HWA) is found across the entire Chattahoochee National Forest where it has caused severe declines in hemlock.

The Foothills Landscape project area supports approximately 1,162 miles of streams that are classified by Georgia's Environmental Protection Division (EPD) for fishing or drinking water. Thirteen of those streams are currently showing impacts to water quality, fish, or macroinvertebrate biota. Sediment from nonpoint sources has been identified as one of the major impairments for sections of those creeks and rivers. Much of the sedimentation is occurring from the high percentage of poorly maintained roads located in riparian areas, and from the culverts, bridges or fords associated with stream crossings of those roads. There are sections (totaling approximately 81 miles) of 149 roads in the Foothills Landscape that occur within 300 feet of streams. Best available data estimates at least 225 stream crossings are present in the FLP which can impact watersheds through runoff, sedimentation, and fish passage barriers (see Hydrology and Aquatics Reports).

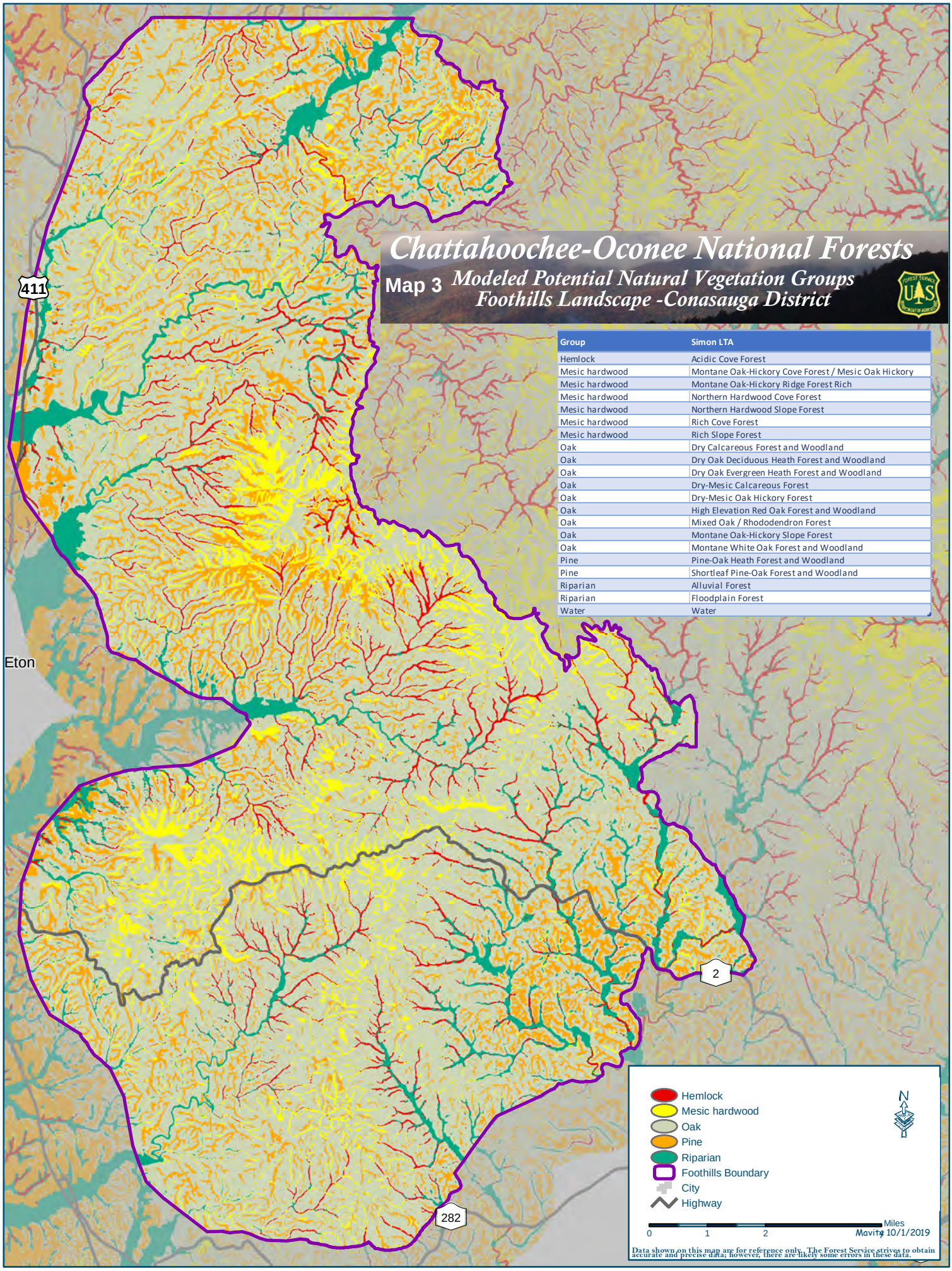
Group	Simon LTA
Hemlock	Acidic Cove Forest
Mesic hardwood	Montane Oak-Hickory Cove Forest / Mesic Oak Hickory
Mesic hardwood	Montane Oak-Hickory Ridge Forest Rich
Mesic hardwood	Northern Hardwood Cove Forest
Mesic hardwood	Northern Hardwood Slope Forest
Mesic hardwood	Rich Cove Forest
Mesic hardwood	Rich Slope Forest
Oak	Dry Calcareous Forest and Woodland
Oak	Dry Oak Deciduous Heath Forest and Woodland
Oak	Dry Oak Evergreen Heath Forest and Woodland
Oak	Dry-Mesic Calcareous Forest
Oak	Dry-Mesic Oak Hickory Forest
Oak	High Elevation Red Oak Forest and Woodland
Oak	Mixed Oak / Rhododendron Forest
Oak	Montane Oak-Hickory Slope Forest
Oak	Montane White Oak Forest and Woodland
Pine	Pine-Oak Heath Forest and Woodland
Pine	Shortleaf Pine-Oak Forest and Woodland
Riparian	Alluvial Forest
Riparian	Floodplain Forest
Water	Water



Chattahoochee-Oconee National Forests

Map 2

Modeled Potential Natural Vegetation Groups
Foothills Landscape -Chattooga River District



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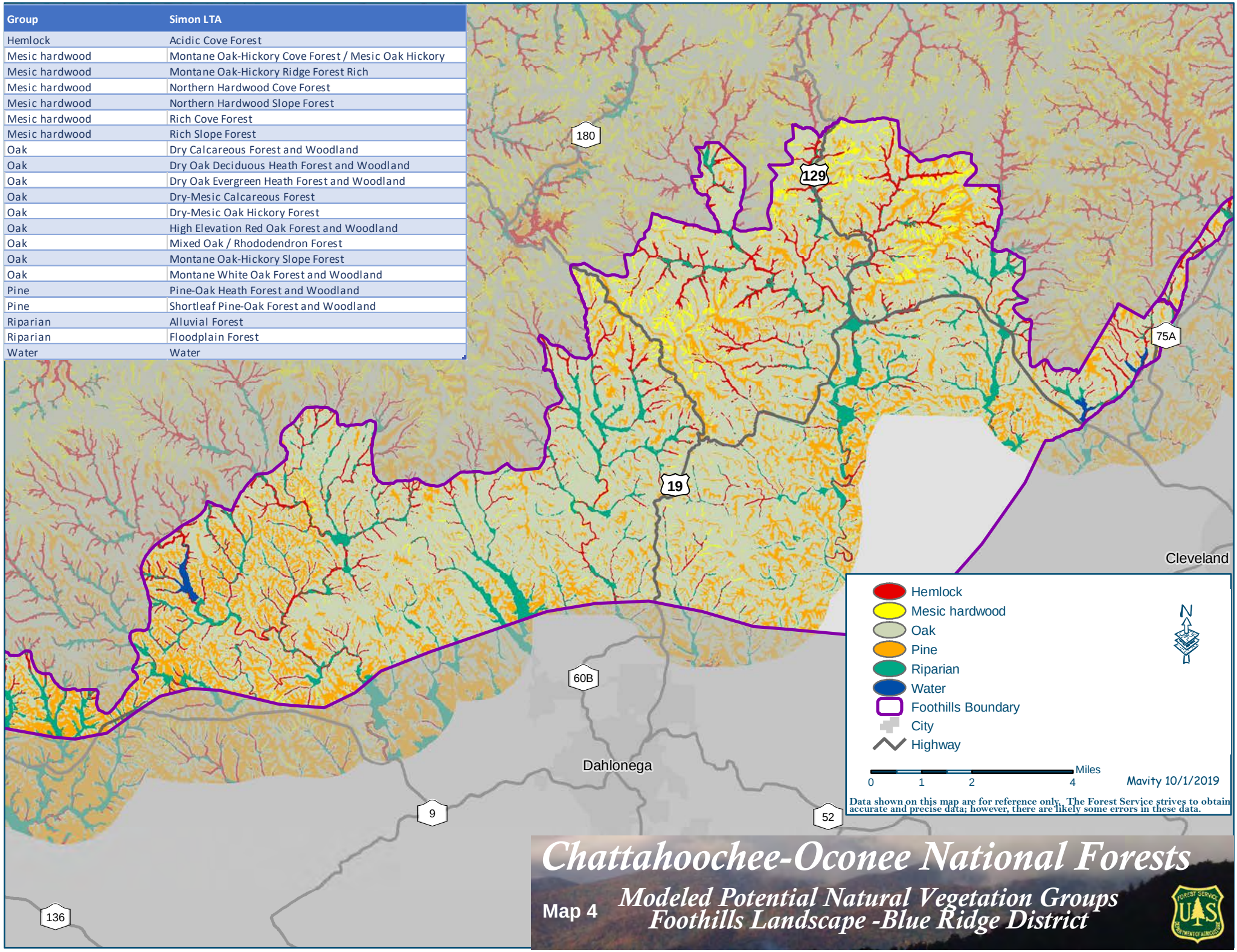
Riparian	Alluvial Forest
Riparian	Floodplain Forest
Water	Water



Chattahoochee-Oconee National Forests

Map 4

Modeled Potential Natural Vegetation Groups
Foothills Landscape -Blue Ridge District

Several rare communities such as mountain bogs, wetlands, canebrakes, caves, and rock outcrops are also found within the project area that provide crucial habitat for threatened, endangered, or rare plant and wildlife species and/or cultural significance.

Soils within the Foothills Landscape project area predominantly fall within 10 soils series (out of a total of 64 series found across the landscape), with the majority (53%) of the soils within the Foothills Landscape having an Erosion Hazard Rating (EHR) of moderate. A quarter of the landscape (25%) has a severe erosion hazard rating, which is based on slope and susceptibility of a soil to sheet and rill erosion by water (see Soil Resource Report).

Across the Foothills Landscape, scenic integrity objectives (SIOs) were identified based on physical and sociological characteristics of the area: very high, high, moderate, and low (Map 21). The majority of the landscape falls into the moderate (slightly altered) SIO (82,203 acres), followed by high (appears unaltered) SIO (44,105 acres). In addition, the FLP area has three Recreation Opportunity Spectrum (ROS) classifications (Table 2): Roaded Natural, Semi-primitive Motorized and Semi-primitive Non-Motorized. The ROS provides a snapshot of the type of recreational settings found across the forest (see Recreation Specialist Report for additional information).

Table 2 ROS Characteristics for the Foothills Landscape

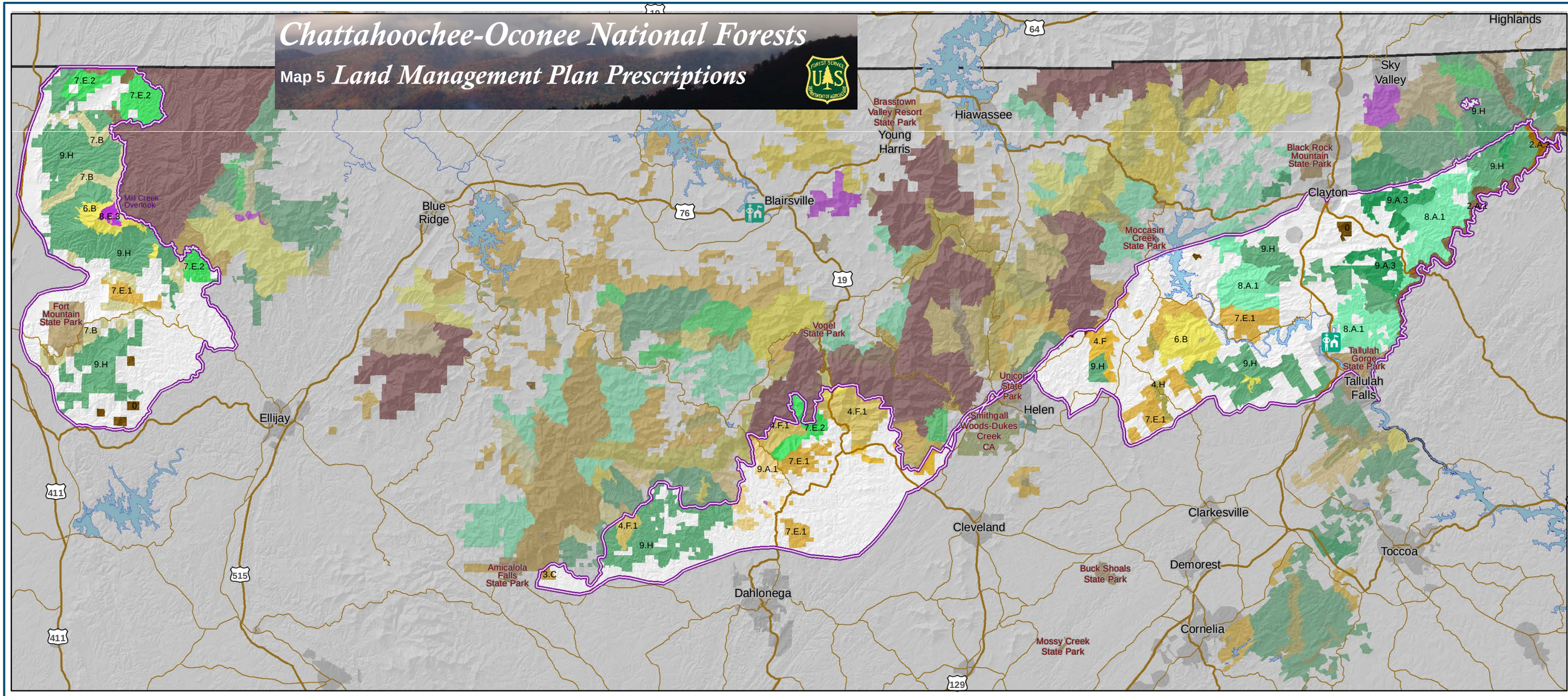
ROS Characteristics	Acres
Roaded Natural – natural-appearing settings with moderate sights and sounds of human activities and structures (IV-31)	133,149
Semi-primitive Motorized – natural-appearing landscapes, strong feeling of remoteness, ample opportunities to practice wildland skills and achieve feelings of self-reliance (IV-31)	1,084
Semi-primitive Non-Motorized – similar to above, however, the presence of roads may be present but closed to public use (IV-32)	22,875

Information from the FS ROS Users Guide (1986)

The CONF has identified 40 Land Management Plan prescriptions (MRx) within the Foothills Landscape project area, of which management is outlined within the Forest Plan. Maps of these management areas are shown on the project area-level map (CONF Land Management Plan Prescriptions, Map 5) and by district: Conasauga, Chattooga River, and Blue Ridge (Appendix A, Map 9, Map 10, Map 11). These management area prescriptions provide Forest Plan direction on the types of actions and activities that can occur in each of these areas.

Chattahoochee-Oconee National Forests

Map 5 Land Management Plan Prescriptions



- 0 Custodial Management
- 1.A Designated Wilderness
- 1.B Recommended Wilderness Study Areas
- 2.A.1 Designated Wild Rivers
- 2.A.2 Designated Scenic Rivers
- 2.B.1 Recommended Wild Rivers
- 2.B.2 Recommended Scenic Rivers
- 4.B.1 Research Natural Area
- 12.A Remote Backcountry Recreation Few Open Roads
- 2.A.3 Designated Recreational Rivers
- 2.B.3 Recommended Recreational Rivers
- 3.A National Scenic Areas
- 3.C National Recreation Areas
- 3.D Proposed National Recreation Areas
- 4.A Appalachian Trail Corridor
- 4.D Botanical and Zoological Areas
- 4.E.1 Cultural and Heritage Areas
- 4.F Scenic Areas
- 4.F.1 Scenic and Wildlife Management Areas
- 4.F.2 Regional Forester Scenic Areas
- 4.H Outstandingly Remarkable Streams
- 4.I Natural Areas with Few Open Roads
- 6.B Areas Managed to Restore or Maintain Old Growth Characteristics
- 6.D Old Growth Core Areas Surrounded by Extended Forest Rotations
- 7.A Scenic Byway Corridors
- 7.B Scenic Corridors and Sensitive Viewsheds
- 7.E.1 Dispersed Recreation Areas
- 8.A.2 Area Sensitive, Mid- to Late-Successional Forest Emphasis
- 9.A.1 Source Water Protection Watersheds
- 9.F Rare Communities
- 8.A.1 Mid- to Late-Successional Forest Emphasis
- 7.E.2 Dispersed Recreation Areas with Vegetation Management
- 8.D Red-cockaded Woodpecker Habitat Management Areas
- 9.A.3 Watershed Restoration Areas
- 9.H Management, Maintenance, and Restoration of Plant Associations
- 3.B Experimental Forests
- 5.B Communication Site
- 5.A Administrative Sites
- 8.D.1 Red-cockaded Woodpecker Subhabitat Management Areas
- 8.E.3 High Elevation Early Successional Habitat

- Foothills Landscape
- US or State Highway
- County Road
- State Park
- Historic Site
- Conservation Area
- City

N W E S

0 5 10 20 30 40 Miles

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

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Project Background

This project was developed with collaborative input beginning the fall of 2016 (see project website for additional background). The goal of the collaborative process was to provide an opportunity for the public, partners, and stakeholders to help the Forest Service identify potential issues, shape the purpose and need for the project, as well as suggest possible actions to reach desired outcomes before a formal proposal was made. Multiple rounds of community conversations, integrated workshops, small group meetings, and field trips were held over the course of the first year. The "Foothills" is the first landscape proposed for integrated restoration as outlined in the Chattahoochee-Oconee National Forests – Integrated Landscape Restoration Strategy (USDA 2017), which provides the conceptual framework for collaboration and landscape restoration plans. The outcome of these early conversations provided a foundation for the purpose and need of the project, documented in the Restoration Plan for the Foothills Landscape Project (USDA 2017), which served as an intermediate step in project development and detailed the logic used to generate a proposed action.

The proposed action was released for public scoping on October 30, 2017. A total of 72 letters containing over 300 comments were received and used to identify relevant issues. As a result of scoping and further scrutiny by the interdisciplinary team (IDT), the Forest Service modified the proposed action; the potential environmental effects of which are analyzed in detail as "Alternative 2" within this document. A record of these modifications to the proposed action can be found in the May 18, 2018, *Foothills Landscape Project Scoping Summary Report* (see project record).

It is recognized that there are discrepancies between the information shared in past documents to some of the information within this EA. For example, not all of the recommendations made in the *Foothills Restoration Plan* are included in the project alternative. The reasons for the differences are likely that recommendations were already authorized by an existing decision, inconsistent with other restoration activities, or provided little or no opportunity for successful implementation. Background information in the form of maps, supporting literature, and meeting notes document the evolution of the Foothills Landscape and can be found in the project record. Where there are differences, the information shared in this environmental assessment takes precedence.

Understanding the Planning Approach

The Foothills Landscape Project is using a planning approach which focuses on the condition of forested stands and sites known to occur at locations across the landscape for the majority of proposed activities. The proposed actions under Alternative 2 are summarized in the "Summary of Alternative 2 Actions" table located in Appendix B. This "flexible toolbox approach" allows land managers to choose the appropriate management activity for each specific location from a suite of potential treatment activities, or "tools," within the project area. The selected treatment activities have specified limitations, identified in the proposed action and project design features, and are only implemented if deemed appropriate upon evaluation of conditions on the ground. The units of measurement (i.e. number of acres, miles, and sites) for the various treatments represent the maximum amount proposed and analyzed to meet the purpose and need of the project.

Having a suite of tools available for landscape-scale restoration helps land managers account for imperfect information and provides the flexibility to select and adjust treatments that would best address the needs to help achieve desired outcomes. Planning projects in this way at the landscape-scale is believed to be a more efficient and effective way to accomplish restoration goals. This approach is consistent with the conclusions of Golladay et al. (2016). The authors concluded that management approaches based solely on historic or current traditions would have limited ability to restore ecosystem functions in an unpredictable future. Restoration should consider a range of future scenarios and include adaptive and dynamic solutions to restoration problems that might face our public lands.

In this approach to project-level planning, the condition of forest stands, and sites will be assessed prior to implementation to confirm the restoration needs align with the objectives identified and analyzed in this document. Site characteristics would be assessed to determine existing baseline conditions and understand any underlying causes of ecologic degradation. Examples of site characteristics may be stand composition, structure, stand health, age, slope, hydrologic or soil conditions. The existing conditions of a site are also evaluated in the larger context of desired pattern, composition, and structure of the landscape ecosystem (FSH 2020.5). Decision matrices (Appendices E) would be used to validate that the actions taken are most appropriate, according to best available science, to achieve the desired conditions of each stand or site. All actions taken would be consistent with the revised Chattahoochee-Oconee National Forests Land and Resource Management Plan (2004) (hereafter, LRMP or Forest Plan).

The locations and timing of treatments would continue to be selected and prioritized using a systematic process that evaluates restoration needs, determines appropriate treatments to address those needs (through use of decision matrices) and balances implementation of those activities with operational feasibility, agency capacity, and social considerations, to the extent possible. The interdisciplinary team subdivided the landscape into logical "implementation areas" (see Appendix A, Map 29, Implementation Area Map) that will be used to prioritize the sequence and staggering of proposed work across the landscape. Each implementation area is comprised of one or more watersheds. The local line officer (District Rangers) would be responsible for carrying out the proposed actions analyzed in the Foothills Landscape Project on their respective districts.

An "implementation plan" (Appendix E) will outline the process for how practical, social, and resource considerations will be made throughout the life of this project. This is a living document that is expected to evolve through this environmental review process and will be a key component of the decision to be made by the Responsible Official should the action alternative be selected. It will serve as an internal process guide to ensure management actions are carried out in alignment with the proposed action as analyzed within this document, communicate the reasoning behind the actions, and serve as a compliance check and planning tool during all phases of the project.

This type of proposal is adaptive in that it allows for flexibility of treatments. However, this is not the same as "adaptive management" as defined in 36 CFR 220.3. "Adaptive management" is a systematic approach used in the face of uncertainty for improving resource management by learning from management outcomes. The conditional approach assesses environmental conditions *before* implementation to determine the appropriate treatment option and is appropriate where similar management actions have been analyzed and carried out in the past, resulting in intended outcomes. Adaptive management relies on monitoring results post implementation to determine if the treatment is having the intended effects. The Foothills

Landscape contains elements of both conditional and adaptive management proposals, as well as some actions at known locations throughout the landscape. See Alternative 2, the proposed action, for more detail. Effects of the individual and cumulative actions for all aspects of the project would still be monitored in accordance with the Forest Plan and consistent with methodology outlined in the corresponding resource specialist reports, or as determined by current policy or professional judgement. If, as a result of monitoring, the effects of activities require management or maintenance treatments that fall outside of the treatment toolbox options assessed within this EA and the forthcoming decision, additional analyses could be warranted.

Purpose and Need for the Proposal

This proposal is needed because active restoration on a landscape scale is critical to moving existing conditions within the project area towards meeting desired, achievable future conditions.

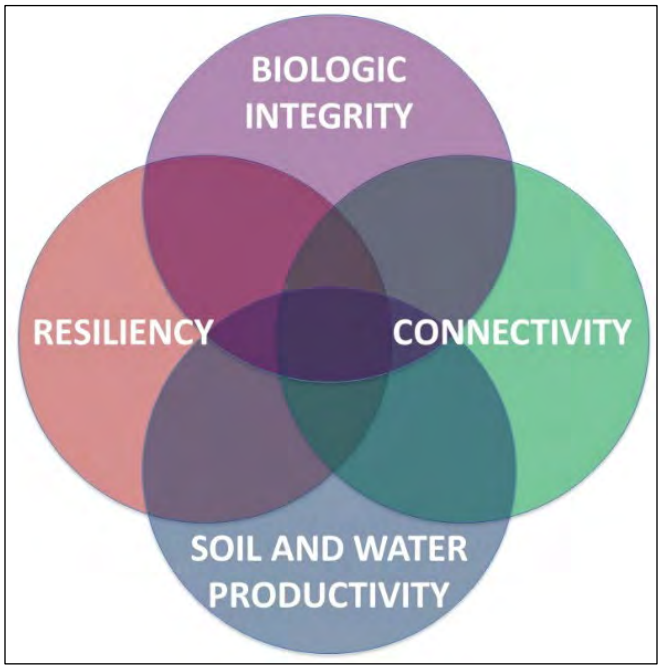


Figure 2 Integrated and Overarching Themes within the FLP That Support the Need for Ecological and Watershed Restoration

In addition to the desired conditions established by the Forest Plan, the project considers objectives identified in the U.S. Forest Service Watershed Condition Framework (2011), Georgia's State Water Regional Plans (2017), the Georgia State Wildlife Action Plan (2015), Georgia's Best Management Practices for Forestry (2009), Sustainable Recreation Framework (2010), Handbook for Scenery Management (1995), the Sustainable Recreation Financial Plan (2016), CONF Restoration Plan for the FLP (2017), Southern Appalachian Assessment (1996), Southern Wildfire Risk Assessment Portal (SouthWRAP) (2018), Community Wildfire Protection Plans, Georgia's Forest Action Plan (2008), Shortleaf Pine Restoration Plan (2016), Recovery Plans for Threatened and Endangered Species in the project area, and information provided through the collaborative effort.

The Foothills Landscape is an integrated, ecological landscape restoration project. Ecological restoration assists in the "recovery of an ecosystem that has been degraded, damaged, or destroyed. Ecological restoration focuses on reestablishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystems sustainability, resilience, and health under current and future conditions" (FSH 2020.5).

The need for the project is organized into four categories (Figure 2) required to maintain and improve watershed and ecological conditions: improving **biologic integrity,** increasing the ecosystem's **resilience to disturbance**, maintaining or restoring **connectivity**, and supporting high **water quality and soil productivity**. All these factors are consistent with the characteristics of a healthy watershed and work together to enhance the landscape's ability to provide ecosystem services essential to the surrounding communities and forest visitors (Williams et al. 1997). Existing and desired conditions under each of the need categories can be found in Table 3 that support the need for this project.

Table 3 Existing and Desired Conditions Supporting the Purpose and Need

Existing Condition	Desired Condition	How to Implement Change	Proposed Action
Forest Composition and Structure			
Within the Foothills Landscape Project Area, there are more than 30,000 acres of fire-dependent, mid-late successional southern yellow pine forests that are highly departed from the open forest environment necessary for these species to maintain dominance through self-replacement (i.e. regeneration)	Open stand environments and reduced duff layers that allow for these fire-dependent species to self-perpetuate on the site where they currently exist (Forest Plan Objective 8.1, 8.2, OBJ-9.F-04)	Maintain fire-dependent southern yellow pine stands by creating more open stand conditions. Treatments would include (1) Prescribed burning alone or (2) Prescribed burning in combination with commercial thinning stands (40-60 BA) and other midstory reduction treatments (herbicide and/or mechanical methods)	Up to 12,400 acres of Southern Yellow Pine Maintenance is proposed.
Nearly a century of fire suppression has resulted in the establishment of more than 21,000 acres Virginia and/or white pine on dry sites ecologically suitable for fire-dependent southern yellow pine species (shortleaf, pitch and table mountain pines) In addition, approximately 11,100 acres of off-site plantations exist within the project area.	Fire-dependent southern yellow pines (shortleaf, pitch, table mountain pines) are restored to ecologically appropriate sites and to sites where they once likely occurred (Forest Plan Objective 3.1 and 3.2, OBJ-9.F-03)	Restore 5,800 acres to site-appropriate species composition by removing mid/late successional Virginia and white pine and re-establishing shortleaf, pitch, or table mountain pine through planting or natural regeneration. Restore up to 1,700 acres of off-site loblolly pine or white pine plantations to site-appropriate species through removal of the off-site planted species and planting of shortleaf, pitch or table mountain pines.	Up to 7,500 acres of Southern Yellow Pine Restoration is proposed.

Existing Condition	Desired Condition	How to Implement Change	Proposed Action
Oak dominated forest types exist on more than 55,000 acres within the Foothills Landscape Project Area. Over 90 percent of the oak forest is in late successional stage habitats. There are 0 acres of young oak (less than 10 yrs. within the landscape). A general lack of disturbances in the oak forest community, including fire, has promoted the development of shade-tolerant, fire-sensitive species which are suppressing oak regeneration processes. This problem is most acute on the more productive oak sites but is evident in oaks stands growing on lower productivity sites in many locations as well.	Conditions within oak stands allow for and perpetuate natural oak regeneration processes to resume so that oak maintain dominance in the future (Forest Plan Objective 3.7)	Maintain oak on high productivity sites through midstory control treatments on 14,800 acres Intermediate thinning in combination with midstory control treatments (burning, herbicides, mechanical treatments), or burning only, on 9,200 acres of mid/late successional oak growing on low to moderately productive sites. In areas where prescribed burning cannot be used to maintain oak, 14,600 acres of expanding gap treatments to increase oak regeneration potential. To create young oak forest, regeneration cutting on up to 2,000 acres of mid/late successional oak growing on low to moderately productive sites where well-established oak seedlings exist 3,200 acres of crown-touching release in immature oak stands to improve species composition and growing conditions for existing oak trees.	Up to 43,800 acres Oak and Oak-Pine Maintenance is proposed.
Previous management in the Foothills Landscape Project Area resulted in establishment of over 11,000 acres of off-site pine plantations (loblolly and/or white pine). Some of these plantations exist on sites more ecologically appropriate for oak or mixed oak-pine forest.	Oak or oak-pine forest is restored to areas of the Foothills Landscape where it most likely existed or where it is ecologically appropriate (Forest Plan Objective 3.6)	Restore off-site loblolly pine or white pine plantations to site-appropriate species through removal of the off-site planted species.	Up to 1,700 acres Oak and Oak-Pine Restoration are proposed (acres overlap with SYP restoration above).
21,143 acres of mid-late successional mesic deciduous forest with closed canopy and low vertical structural complexity, lacking preferred conditions for breeding migratory songbirds	Multi-layered, patchy canopy structure with abundant ground-cover, shrub and midstory vegetation for nesting songbirds (Forest Plan Goal 7, Objective 7.1)	Create small (< 0.75 ac) canopy gaps and reduce stand density in mesic deciduous forest to improve community while retaining valuable canopy trees.	Up to 8,100 acres Canopy Gap Creation
Unique and Threatened and Endangered Species Habitat			

Existing Condition	Desired Condition	How to Implement Change	Proposed Action
Due to a lack of fire and active management, woodland communities have been invaded by off-site, shade tolerant species that are not fire adapted. Off-site species have resulted in a closed canopy and dense midstory, suppressing regeneration and shading out herbaceous ground cover. Shade tolerant species quickly occupy any canopy gaps and displace fire adapted, woodland species.	A thin canopy with 20 – 60% canopy cover consisting of fire dependent hardwoods and yellow pine with a well-developed and diverse herbaceous ground cover. (Forest Plan Objective 3.4)	Remove all shade tolerant species from the canopy and midstory. Thin the overstory of desired species to achieve an appropriate amount of sunlight to the ground to support ground cover. Use prescribed fire to restore and maintain the community.	Up to 7,400 acres of Woodland Community Restoration
Approximately 35 acres of known bog habitat occurs in the project area. This community is facing continued habitat loss and degradation due to dense vegetative canopy, fire exclusion, exotic species including hogs, off-site native species and in some cases altered hydrologic regimes. The current conditions preclude the development of sphagnum and rare desired species.	Open canopy with limited midstory and exotic species and restored hydrology. (Forest Plan MRx 9.F-001)	Remove off-site and encroaching woody vegetation species and restore hydrology to facilitate the reintroduction of rare species.	Wetland/Bog Restoration (up to 103 acres for restoration including 35 acre known bog site)
Cane is a common plant on the Forest, scattered in floodplain habitats. However, an overly dense canopy prevents a vigorous monoculture of cane from developing into a true canebrake.	Thin canopy with less than 40% canopy cover and a dense vigorous stand of cane that would provide true canebrake habitat. (Forest Plan MRx 9.F-001)	Working in floodplain habitats where cane is already present, remove overstory trees to achieve sufficient light to grow a well-developed canebrake	Canebrake Restoration (50 acres)

Existing Condition	Desired Condition	How to Implement Change	Proposed Action
Hemlock Woolly Adelgid (HWA) has caused severe decline and/or mortality to hemlock across the entire range of hemlock within the Foothills Landscape. There are 30 individual areas of hemlock conservation (HCAs) across the Landscape. Areas to expand hemlock conservation efforts would likely exist in or adjacent to these conservation areas where hemlock survival is greatest. Surviving understory hemlock trees in these or other areas may have a greater propensity to respond to treatments than canopy trees with low crown ratios or sparse foliage.	Capacity to conserve surviving hemlock trees is increased through continued suppression of HWA in or adjacent to HCAs or where lower canopy hemlock trees exist elsewhere in the project area.	Expansion of existing HCAs where surviving and responsive hemlock trees are present. Silvicultural manipulation of forest canopy and other treatments (pesticides, insectaries, hand-planting of HWA resistant trees) to improve growing conditions for understory/ suppressed hemlock trees, where viable sites are found within the 7,275 acres of hemlock associated forest types.	Hemlock Conservation (up to 600 acres)
Chestnut blight has removed all mature chestnuts, once an essential component of eastern forest, and important food source for wildlife species, from the landscape.	The project intends to create chestnut orchards to maintain a reliable source of chestnuts for experimentation on the species' resilience to the blight.	Working with the Georgia chapter of the American Chestnut Foundation up to 6 acres of American chestnut orchard would be established. These chestnuts would be $^{15}/_{16}$ American chestnut and $^{1}/_{16}$ Chinese chestnut.	Chestnut Orchard Designation (6 acres)
Small Whorled Pogonia can use a variety of habitats. There are three known occurrences, with additional occurrences likely to be found in the project area during implementation. All known occurrences on the Forest are declining, likely due to an overly dense midstory and overstory.	Viability of species on the forest as a result of increased amount of sunlight to the ground.	Anywhere this plant is found, reduce the midstory and canopy to increase the amount of sunlight to the ground.	Small Whorled Pogonia Conservation
Protecting Communities from Wildfire			
The vast majority of the Foothills Landscape is considered wildland-urban interface (WUI), with approximately 2,000 acres in the "very high" WUI Risk category according to a combination of SouthWRAP and USFS data.	Reduced risk and consequences associated with wildfire by restoring and/or maintaining conditions to fire regime Condition Class 1 to the extent possible. (Forest Plan Objectives 58.1 and 58.2)	Treat hazardous fuels contributing to very high-risk rating in order to create a defensible space within designated WUI zones.	Up to 2,000 acres of Hazardous Fuel Reduction in Wildland Urban Interface

Existing Condition	Desired Condition	How to Implement Change	Proposed Action
Expanding the Ecological Role of Fire			
Approx. 132,500 acres (84%) in Fire Condition Class (FCC) 3 (unhealthy, least resilient/ more susceptible to stand replacing wildfire; 9,463 acres (6%) in FCC 2; 15,587 acres (10%) in FCC 1 (healthiest, resilient) across project area. Additionally, the Watershed Condition Framework indicates that all watersheds have an impaired fire regime condition.	Expand the role of fire to recover and sustain healthy, fire-adapted ecosystems as much as possible, as a natural process (Forest Plan Goal 61).	Using prescribed fire on the Foothills Landscape (in conjunction with silvicultural treatments when appropriate) to trend vegetation toward FCC 2 or 1 and increase resiliency of forests and reduce susceptibility to insect & disease and/or stand-replacing wildfires.	Up to 50,000 acres of Prescribed Burning
Reducing Risks to Forest Health			
Within the Foothills Landscape Project Area, there are nearly 25,000 acres of immature pine plantations highly vulnerable to pine bark beetle infestations due to overstocked stand conditions (Basal Areas > 120 ft^2/acre)	Stocking/density in pine plantations are reduced to levels that make them more resilient to pine bark beetle infestations (Forest Plan Objective 40.1)	13,800 acres of commercial thinning in immature pine plantations to reduce stand stocking below 80 ft^2/acre An additional 3,500 acres of pre-commercial thinning in overstocked plantations where tree sizes are not yet merchantable for commercial harvests.	Up to 17,300 acres of Pine Plantation Treatments
There are over 66,000 acres of host-forest types vulnerable to pine bark beetle infestations within the Foothills Landscape and an estimated 24,725 acres currently at risk for ips or pine beetle infestation, 20,185 acres at risk to Gypsy moth, and all hemlock acres within the Hemlock Conservation Areas (3,232 acres) at risk for hemlock wooly adelgid.	Forested stands that have a diversity of age classes and are resistant to infestations and outbreaks. In cases of future pine bark beetle outbreaks, the Forest utilizes rapid spot detection and subsequent suppression activities to minimize spread of infestations and damage to NF resources (Forest Plan Goal 40, Goal 41).	Treatments would occur when and where infestations are significant, rapidly forming and spreading, and action is needed to manage outbreaks and suppress the movement of infestations to protect other vulnerable stands. Treatments would be site specific as identified and would be dependent on the insect or disease.	Response to Insect & Disease Outbreak
Forest Successional Diversity			

Existing Condition	Desired Condition	How to Implement Change	Proposed Action
Mid-late successional forest dominates the Foothills Landscape (99%) while valuable young forest habitat is extremely limited (less than 1%).	Improved successional stage diversity and distribution of young forest habitats across the landscape on a variety of slopes, elevations, aspects, and forest types (Forest Plan Goal 2). Young forest habitat is a high priority conservation need in Georgia and the Appalachian Mountains overall.	Young forest habitat would be created over the next 15 – 20 years by removing mid-late successional trees, allowing or promoting new growth of desired species in variable locations across the landscape. Up to 500 acres in mesic hardwoods suitable for grouse habitat; 500 acres of daylighting roads, and where treatments overlap from above restoration actions: 5,800 acres in Southern yellow pine, 1,700 acres in pine plantations, 2,000 acres in oak/oak-pine;	Create up to 10,500 acres of Young Forest
Old growth conservation goals are being met in all but 14 of the 6th level HUCs contained within the Foothills Landscape Project Area. These 14 deficit HUCs do not meet the 5% goal for old growth conservation (3,578 acres needed).	All applicable watersheds (6th Level HUCs) within the Foothills Landscape Project Area have a minimum of 5 percent of their lands set-aside for conservation of existing old growth or for the development of future old growth. (Forest Plan Objective 20.1)	Allocate 5,050 acres of small blocks for old growth conservation, primarily within the 14 deficit watersheds not meeting the 5% goal.	Designate up to 5,050 acres of Old-Growth Stands for Conservation
The Foothills Landscape is almost completely forested. There are currently 275 acres of permanent wildlife openings in the Foothills Landscape, plus a small amount of utility rights-of-way.	A diversity of habitat will be provided for the full range of native and other desired species (Forest Plan Goal 2). Permanent openings managed as grass/forb, shrub, or pollinator habitat would provide a valuable element of diversity.	Construction of new permanent openings and/or maintenance or expansion of existing openings on up to 1,400 acres in the Foothills Landscape (or up to 1% of each subwatershed).	Maintain, Expand, or Construct Permanent Openings
Aquatic Habitat Connectivity			

Existing Condition	Desired Condition	How to Implement Change	Proposed Action
There are well over 200 stream crossings (fords, culverts, bridges, etc.) with many already confirmed as either low, moderate or high priority barriers to AOP. Severe or significant AOP barriers are documented in 13 locations of the Etowah drainage, 14 in the Chattooga River, and 10 in the Mill Creek and holly Creek watersheds.	Decreased number of barriers to AOP in cold and warm water streams.	Replace existing culverts or improve structures at crossings such as fords limiting AOP or impacting stream function on up to 225 stream crossings.	Aquatic Organism Passage (AOP)
Enhance Recreation Opportunities (Human Connectivity)			
There are approximately 188 miles of existing trails, of which 56 miles were rated for low or very low resource protection and 70 miles for low visitor satisfaction. There are 15 developed recreation sites within the Foothills Landscape. Deferred maintenance costs (NRM corporate data) exceed our current budget operation and maintenance costs. 4 sites (1,243 acres) are identified as high priority sites to be maintained in fair condition The remaining sites (approximately 906 acres) are identified as low priority, unsustainable sites that are not currently providing high quality recreation experiences.	User conflicts are decreased, and satisfaction increased by adding or modifying section of trails that do not adversely affect soil and water resources. (LRMP goal 34) Provide a spectrum of high quality, nature-based recreation settings and opportunities that reflect the unique or exceptional resources of the Forest and the interests of the recreating public on an environmentally sustainable, financially sound, and operationally effective basis. Adapt management of recreation facilities and opportunities as needed to shift limited resources to those opportunities. (LRMP goal 31)	Construct up to 50 miles of new trail construction and re-route up to 111 miles of trail to reduce sedimentation and resource damage and improve visitors' experience. Convert sections (≈6 miles) of road to trail in areas of the Bear Creek and Pinhoti systems. Add up to 3 acres of additional parking at high-use trails. Review low ranked/ unsustainable sites for management options that will enhance visitor satisfaction and meet operation and maintenance costs that will include (individually or in combination) new partnerships, changes in site type and use, while maintaining high priority sites in fair condition	Improve Trail System and Enhance Developed Recreation

Existing Condition	Desired Condition	How to Implement Change	Proposed Action
Road density on Forest Service lands in the project area is high, ranging from 0 – 1.4 miles/mile^2 (mean = 0.3) in the watersheds. The CONF currently does not receive enough funding to maintain these roads at their current management classification.	A transportation system supplies the public, Forest Service, and other authorized users with safe, environmentally sustainable, equitable, financially sound, and operationally effective access to roaded portions of the project area. (LRMP Goal 47)	Implement change in motorized access to ML1 or ML2 Administrative Use Only on approximately 56 miles of roads and OHV trails and change seasonal access on approximately 22 miles of roads and 1 ATV trail	Motorized Access Changes
Reduction of Sediment Delivered to Streams			
28% of the total road length in the Foothills Landscape is located within 300 of stream channels. Most of the 305(b) and 303(d) listed streams within the Foothills Landscape have road segments encroaching the 300 ft. stream buffer.	Roads do not adversely affect soil and water resources. (LRMP Goal 48)	Road systems with transportation concerns requiring maintenance above and beyond normal levels would be identified and prioritized for activities to reduce sedimentation into streams. Upgrading culverts, widening curves or adding surface material to reduce sedimentation, improve water quality and ultimately benefit aquatic habitat.	Improve Existing Road System (above and beyond normal maintenance)
Average road density of 0.3 miles of road/ mi^2 on NFS land, with total average of 2.8 miles of road/ mi^2 (private and NFS) exist within the Foothills Landscape. Results from the Rapid Trails Assessment indicate 29 miles of motorized trail were rated as low or very low for resource protection and/or visitor satisfaction.	Provide a sustainable transportation and trail system that does not adversely affect soil and water resources that meets the needs of visitors and is financially viable. Unneeded roads and motorized trails are closed and restored. (LRMP goal 49)	Decommission approximately 15 miles of road and 5 miles motorized trail in the project area.	Decommission Forest Roads and Motorized Trails

Existing Condition	Desired Condition	How to Implement Change	Proposed Action
Unmanaged recreational use, user created trails, and dispersed camping areas are abundant within the Chattooga River Wild and Scenic Corridor deteriorating the natural-appearing settings and river resources. Low-use (unsustainable) trails and campgrounds (developed and dispersed) are present throughout the Foothills Landscape (see discussion in Table 6). Results from the Rapid Trails Assessment indicate a total of 56 miles of motorized and non-motorized trail as low or very low for resource protection and 70 miles of trails with low visitor satisfaction.	Provide outstanding opportunities for people to enjoy a wide variety of river-oriented recreation opportunities in an attractive natural setting (LRMP, 3-30). Protect and enhance outstandingly remarkable values for present and future generations. Outstanding remarkable qualities are for the river's unique biology, recreation, geology, scenery, and history.	Approximately 653 acres within the Chattooga River Wild and Scenic Corridor will be assessed to reduce unmanaged recreation of user created trails and dispersed camping areas in close proximity to the river. This work would be in accordance with the Wild and Scenic Rivers Act, LRMP, and existing forest supervisor order (No. FSM-13-01) and in partnership with North and South Carolina. Approximately 15 miles of low-use trails will be assessed for possible decommissioning due to increased deferred maintenance costs associated with unsustainable layout and design, and/or low visitor satisfaction.	Improve Sustainability of Recreation Experience

As outlined in the U.S. Forest Service Watershed Condition Framework (2011), the need for restoring the Foothills Landscape is further supported this agency's overarching goals to protect NFS watersheds by maintaining or improving watershed condition, which is the foundation for sustaining ecosystems and the production of renewable natural resources, values, and benefits (FSM 2520). Under each broad *need* category that is described below, *purpose* statements link to the relevant objectives of the Forest Plan which are proposed to address by taking action. The r*ange of actions* are described in further detail in the Proposed Action section.

Improving Biologic Integrity

There is a need for the landscape to support a diversity of native and functional habitats that maintain or improve biologic integrity across the Foothills Landscape. Paul Angermeier and James Karr (1994) defined biologic integrity as terrestrial and aquatic habitats that support adaptive communities and reflect, as best as possible, natural processes. Many of the natural processes have been disrupted across the Southern Appalachian Mountains. The Southern Appalachian Assessment (1996) describes the undesired effect of changes in forest composition and condition of the forests due to past practices and exclusion of fire. Forest composition is being threatened by the current trend of oak decline and the reduction of native yellow pine forests. The Shortleaf Pine Initiative reports that shortleaf pine forest has been reduced by 53% throughout its range due to lack of appropriate fire disturbance, conversion of sites to loblolly pine, hybridization, southern pine beetles and littleleaf disease (SPI 2016). The Southern Appalachian Assessment (SAA) also outlines the need to restore rare communities, which include woodland habitats, as the key for conserving rare plant and animal species (SAA Terrestrial Technical Report, Chapter 4).

Forest Composition and Structure

A purpose of the Foothills Landscape is to enhance, restore, manage or create biodiverse habitats that are structurally productive within an ecological system. Many of the forest stands are overly dense, which means that open forest types with herbaceous understory, such as woodland communities, are on the decline. These communities are important to many wildlife species, including rare tree-roosting bats such as the endangered Indiana bat (see Terrestrial Wildlife Report). Factors that influence composition and structure include seedling recruitment and retention, species richness, diversity of age classes, within-stand complexity (understory, midstory, and overstory layers), and the ability of a habitat to adapt with natural disturbances.

BIOLOGIC INTEGRITY

Forest Plan Goals and Objectives in the FLP Purpose and Need:

Forest Composition

- Forest Plan Goal 1
- Forest Plan Goal 2
- Forest Plan Goal 3
- Forest Plan Goal 7
- Forest Plan Goal 8
- Forest Plan Goal 10

Unique and Threatened Endangered Species Habitat

- Forest Plan Goal 3
- Forest Plan Goal 15
- Forest Plan Goal 16
- Forest Plan Goal 17
- Forest Plan Goal 18
- Forest Plan Goal 19
- Forest Plan Goal 39
- Forest Plan Goal 40
- Forest Plan Goal 41
- Forest Plan Goal 43
- Forest Plan Objective 9.F-01

Aquatic Habitat

- Forest Plan Goal 26

Non-Native Invasive Species

- Forest Plan Goal 1

Photo 1 Table Mountain Pinecone Found in the Foothills Landscape Project Area. These Serotinous Cones Require Heat From Fire to Open and Release Their Seeds.

Habitats such as shortleaf pine, pitch pine, and table mountain pines (fire-adapted yellow pine communities) have declined (>50% decline) during the last half-century due to fire suppression, insect infestations and disease. These fire-adapted ecosystems are beneficial to both wildlife and habitat stability as they provide a high diversity and quantity of understory vegetation that recovers quickly after disturbance. The loss of periodic low-severity fire within these ecosystems has resulted in encroachment of closed-canopy species (Virginia and white pine or loblolly pine) that outcompete these fire-adapted species and suppress seedling development and self-replacement. Fires that occur within these closed-canopy systems are of higher severity and are unable to recover ecologically after a high-severity wildfire. In Georgia, the Shortleaf Pine Restoration Plan (SPI 2016) recommends the maintenance or improvement of existing shortleaf pine and shortleaf pine-oak woodland forest stands using appropriate site-based prescriptions such as thinning, reduction of understory vegetation and the use of prescribed fire.

Oak and oak-pine forest types provide essential habitat attributes for a wide variety of wildlife primarily in the form of hard mast (acorns) and large, durable cavity trees. Treatments would encourage a diversity in the age of oak stands as well as a diversity of oak species and contribute to the viability of wildlife species and quality of habitats. Oak and oak pine stands have a lack of age diversity with many of the stands reaching mid- to late-successional ages. Oak regeneration is lacking due to fire exclusion and the resulting shaded forest conditions. The Foothills Landscape would contribute to maintenance or restoration of these native tree species whose role in forest ecosystems have been reduced by past land use, insects and disease, fire exclusion, forest succession, or other factors.

Old growth or late-successional mesic deciduous forests in the eastern United States are characterized by a diverse mixture of mesophytic trees, shrubs, and ground cover which can provide habitat for very high densities of breeding birds, especially mature forest-dependent neotropical migrants (Partners in Flight 1999). Because of their sheltered sites, large scale disturbances are uncommon in cove stands, but tree fall gaps and windthrow do occur, producing uneven-age stands that are structurally complex and contain “canopy gaps” (Runkle 1982) or patches of multi-layered vegetation which develop when overstory trees die and fall. This structural diversity provides nesting and foraging habitat for forest songbirds (Wood et al. 2013). Younger and mid-successional mesic stands have a closed-canopy structure that inhibits the development of a structurally complex understory and midstory. These characteristics may develop over time, but this generally requires many decades or even centuries. Mesic deciduous forests within the FLP are ‘middle-aged’, and even at 80 – 100 years old, still closed-canopied, with minimal vertical structure or ground layer diversity. Improving the structural complexity in

presently closed-canopy, mid-late-successional stage mesic deciduous forest for the benefit of declining songbird populations is an important objective in the Forest Plan (Goal 7, Objective 7.1). This can be accomplished through canopy gap creation by selectively reducing stand density in a variable pattern or creating small gaps throughout the stand.

Unique and Threatened & Endangered Species Habitat

A purpose of the Foothills Landscape is to improve, maintain or restore unique habitats contributing to the recovery of threatened and endangered species or enhance unique and rare communities contributing to biologic diversity across the landscape. Many of these areas are threatened by encroachment of undesirable vegetation, non-native invasive species and past land uses, including fire exclusion. The Forest Service, Georgia Department of Natural Resource (GaDNR), U.S. Fish and Wildlife Service (USFWS), and the collaborative community identified the management activities needed to maintain or restore characteristic structure, composition, and function of rare communities found in the Foothills Landscape such as open woodlands, canebrakes, wetlands, and bogs. Working in collaboration with GaDNR and USFWS, opportunities to continue toward conservation of threatened, endangered, state-listed and locally rare species were identified and expected to continue. In addition, the Georgia SWAP and the Georgia State Forest Action Plan included biodiversity as a statewide issue and included the need to restore wetlands and protect riparian corridors and headwater streams.

Photo 2 Bogs Provide Unique Habitat for the Threatened Swamp Pink.

Open woodland forests are critical in providing habitat for a variety of rare and declining species. Historically these habitats would have been associated with sites where periodic fires occurred to maintain the open woodland structure with widely spaced overstory trees, little or no midstory and a well-developed herbaceous layer. In general, these would include upper slopes and ridge tops, south and west aspects, and often lower elevations. Vegetation in woodland habitats has been substantially altered by fire exclusion. In the absence of fire, fire-tolerant species lose their competitive advantage and are replaced by off-site species, resulting in a dense, closed canopy and midstory.

Canebrakes are typically found in bottomlands or stream terraces either as a monotypic stand of giant or switch cane or as an understory component. Canebrakes were once a widespread habitat that is especially important to butterflies and other insects, migratory birds, and small mammals (Edwards et al. 2013 and Chaffin 2011), but because of historic fire exclusion within the project area, there are no known functional canebrakes. Canebrakes are identified as a high priority habitat by the SWAP (GaDNR 2015). In addition to their unique ecological role, canebrakes were also an important cultural and economic resource for southeastern tribes throughout history. Working with cane is an important art form and restoring cane is important to efforts to revitalize traditional art forms. One estimate suggests that up to 98% of canebrake ecosystems have disappeared since colonial times (Noss 1995). Many floodplains have been converted to agriculture, and an invasion of exotic species have both worked to displace native cane.

Canebrake restoration would be focused in areas where there are small scattered patches of existing cane.

Eight mountain bogs, Georgia's rarest natural community (Edwards et al. 2013 and Chaffin 2011), occur within the project area and provide habitat for federally-listed swamp pink and white fringeless orchid, as well as two species from the Regional Forester's Sensitive Species (RFSS) list: the largeleaf grass-of parnassus and Cuthbert's turtlehead. Mountain bogs are also potential habitat for RFSS bog turtle. Mountain bogs are characterized by mats of sphagnum moss and by deep, peaty, acidic soils that are usually saturated year-round by rain, downslope seepage, beaver impoundment, and overbank stream flooding, and were historically kept free of shrubs and trees by occasional reflooding by beavers or by fire. Today, these bogs are densely vegetated and face continued habitat loss and degradation through changes in the hydraulic regime, vegetative canopy closure, invasive species, and collection and trampling.

Aquatic Habitat

A purpose of the project is to restore or maintain aquatic ecosystem components to support viable populations of all native and desired nonnative aquatic plants and animals. Most of the watersheds in in the Foothills Landscape are listed as being of "moderate", "high", or "highest" global significance by the SWAP, indicating the value to wildlife and level of conservation that should be provided (GaDNR 2015). Of the approximate 1,162 miles of perennial and intermittent streams in the project area, 1,058 miles (91%) are above 1,200 feet in elevation and considered cold-water streams, high gradient (2-5% slope) and very high gradient (>5%) (See Aquatics Report). In these streams, the diversity of fish species and number of individuals is low compared to warmer streams due to a smaller number of species adapted to cold-water temperatures, high flows, and specific water chemistry parameters (USDA Forest Service 2004). Below 1,200 feet in elevation, the diversity of aquatic fauna increases due to increased nutrients, warmer water, lower gradients, slower currents, and increased stream widths and depths creating more habitat niches and providing habitat for rare mussels, fish, and other species.

Photo 3 Streambank Erosion Cause Increased Sedimentation, Negatively Affecting Water Quality and Aquatic Wildlife Habitat. Example along Warwoman Creek Shown Here.

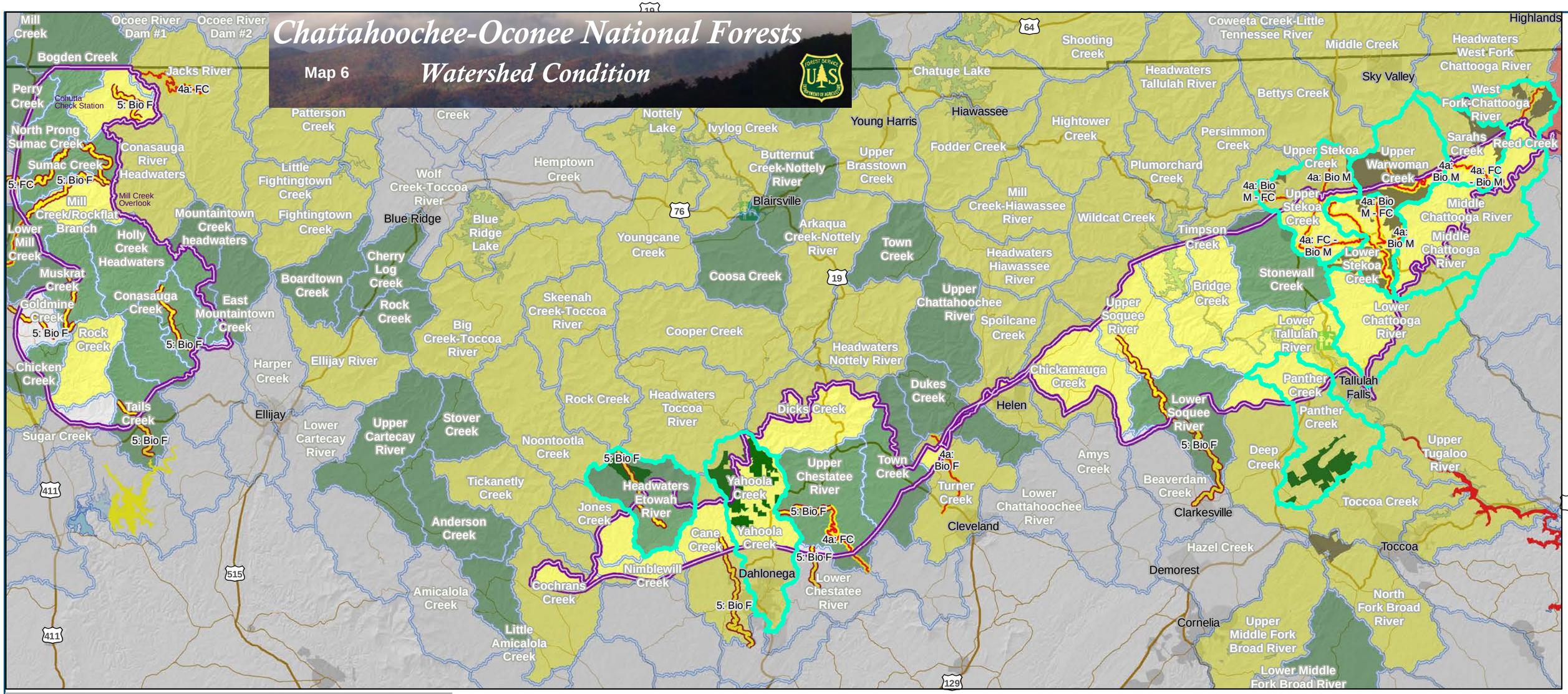
The stability of some aquatic habitats is at risk due to changes in stream morphology and embeddedness as a result of sediment delivery. Stream habitat inventories in the Chattahoochee National Forest were completed in 2014 – 2017 and results indicated that pool habitat is lacking for many streams, with the majority of streams having >35% of the streambed covered with fine sediments (Krause et al. 2015, unpublished CATT report 2017). When deposited in streambeds, fine sediment can dramatically alter ecosystems and reduce fish and other aquatic fauna survival and growth (Clinton and Vose 2003). Stream channel sediment may originate from upslope sources, natural or man-made, such as improperly maintained roads or road/stream crossings, or from in-channel sources such as bank instability. Several streams in the Foothills Landscape are identified by the Georgia EPD and listed as a 303(d) or 305(b)

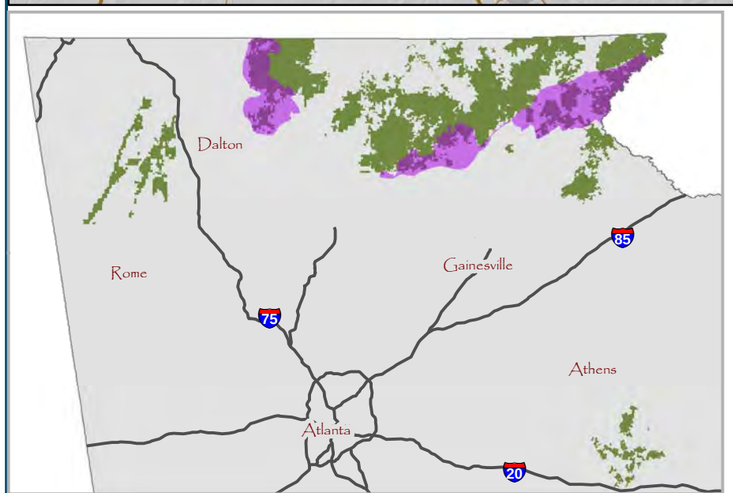
stream segment, impaired, or not meeting beneficial uses due at least in part to sediment (see Hydrology Resource Report).

The GaDNR lists the primary beneficial use of the majority of the streams and water bodies within the Foothills Landscape as "fishing" (Georgia EPD 2017). Conditions supporting this use include properly functioning stream channels, riparian corridors, and high-water quality. Map 6 shows the Watershed Condition for the Foothills Landscape. The Watershed Condition Framework defines the desired condition of a watershed as having large woody debris in the streams and appropriate stream geometry and bank stability. Wood of all sizes is an important component of streams in forested areas. Large woody debris (LWD) slows flow, traps sediments, is key to pool development, and supplies spawning substrate, and organic matter for macroinvertebrates (Webster and Jenkins 2005). CATT assessments revealed that many streams in the project area lacked large diameter wood (unpublished CATT report 2017).

Chattahoochee-Oconee National Forests

Map 6 — Watershed Condition





- Not Evaluated
- Functioning Properly
- Functioning at Risk
- Impaired Function

- 305b Water
- 303d Water

- Foothills Landscape
- US or State Highway
- County Road
- Forest Service Land
- City

- Functioning Properly with Land Designated in the Plan as:
  - Source Water Protection Watershed
  - Watershed Restoration Areas
- Functioning at Risk with Land Designated in the Plan as:
  - Source Water Protection Watershed

N W E S

0 5 10 20 30 40 Miles

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

Mavity
9/19/2019

Resilience to Disturbance

There is a need for the landscape to be resilient and recover rapidly from natural and human disturbances. A healthy forest has relatively low risk of tree mortality due to insects or disease outbreaks (USFS 2011). Epidemic levels of native pests and aggressive non-native invasive species are threatening the forests across the Southern Appalachians. The Southern Appalachian Assessment (1996) explains that fire has been a natural and human-caused disturbance for more than 10,000 years in the Southern Appalachian Mountains. The forests were shaped and evolved with this disturbance. In recent times, the last 80 years or so, fire has been excluded and suppressed from the landscape. This has led to an increase in fuel loading and changes to vegetation conditions that make the forests more susceptible to high intensity wildfire. For instance, fire exclusion results in an increased accumulation of duff (the organic and decaying leaf litter layer on the forest floor) overtime. Regularly low intensity fire is a natural process that controls the duff layer. Without it, however, the roots of trees eventually grow into this duff layer so when fire does occur and the duff is consumed, so too are the roots which can lead to extensive tree mortality. This combined with the mixture of residential neighborhoods with forested lands leads to reduced ability for the landscape to be resilient to wildfire (SAMAB 1996). Fire, both natural and prescribed, should be able to safely remain an effective disturbance in the watersheds.

RESILIENCY

Forest Plan Goals and Objectives in the FLP Purpose and Need:

Protecting Communities from Wildfire
- Forest Plan Goal 57
- Forest Plan Goal 58

Expanding Ecological Role of Fire
- Forest Plan Goal 8
- Forest Plan Goal 61

Reducing Risk to Forest Health
- Forest Plan Goal 12
- Forest Plan Goal 39
- Forest Plan Goal 40
- Forest Plan Goal 41
- Forest Plan Goal 43

Resilience to Climate Change
- Forest Plan Amendment #5

Protecting Communities from Wildfire

A purpose of the project is to reduce the risk of extreme wildfire behavior to the extent practicable to protect communities in the wildland urban interface, and to aid in keeping firefighters and the public safe in fire management operations. Practices in the last 80 years have led to a decrease in the use of prescribed fire treatments and immediate suppression of most wildland fires. This has resulted in approximately 84% of the Foothills Landscape falling within Fire Condition Class 3 (FCC3)[1] where there is a historic departure in fire regime and the risk of losing key ecosystem components is high (Map 8). Along with this departure has come an increase in human activity, population, and habitation in the Wildland Urban Interface (WUI). This increase in human activity, along with the

[1] Fire Condition Class is used to measure the degree of departure from reference conditions. FCC3 is “high” departure, FCC2 “moderate, and FCC1 “low”.

suppression of wildland fires and a reduction in prescribed fires, has resulted in changes to key ecosystem components such as changes in vegetation characteristics, fuel composition, fire frequency, and severity.

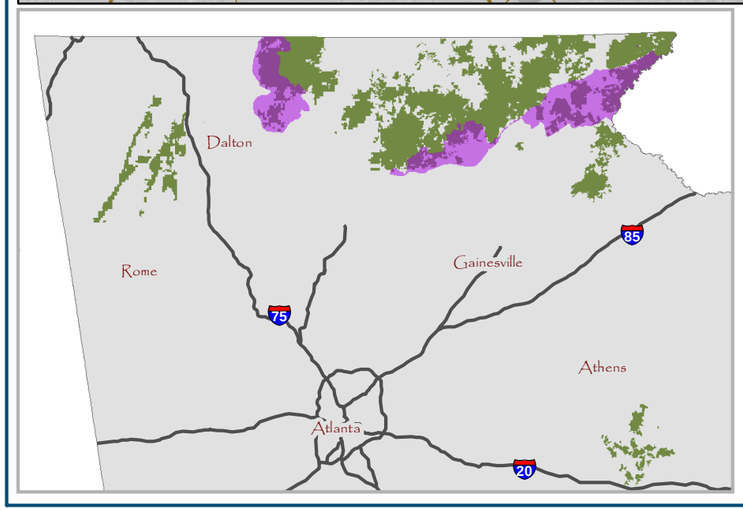
These departures from past fire regime and condition have the potential to impact communities, people, and infrastructure in the WUI. Under current conditions, about 2,034 acres of private land and 700 acres of USFS lands[2] are considered to be at high risk to a wildland fire within ¼ mile either side of the Foothills Landscape boundary (See Map 7 for WUI areas within the Foothills Landscape).

[2] SouthWRAP data was used in conjunction with USFS data to refine the risk acreage.

Chattahoochee-Oconee National Forests
Foothills Landscape Project
Wildland Urban Interface Risk

Map 7

Big Frog Wilderness
Cohutta Wilderness
Fort Mountain State Park
Rich Mountain Wilderness
Blue Ridge
Ellijay
Blairsville
Brasstown Valley Resort State Park
Young Harris
Hiawassee
Brasstown Wilderness
Mark Trail Wilderness
Vogel State Park
Blood Mountain Wilderness
Raven Cliffs Wilderness
Amicalola Falls State Park
Dahlonega
Unicoi State Park
Smithgall Woods-Dukes Creek CA
Helen
Cleveland
Southern Nantahala Wilderness
Tray Mountain Wilderness
Moccasin Creek State Park
Black Rock Mountain State Park
Clayton
Sky Valley
Highlands
Tallulah Gorge State Park
Tallulah Falls
Clarkesville
Demorest
Toccoa
Buck Shoals State Park
Cornelia
Mossy Creek State Park
64
76
19
411
515
129



- Foothills Landscape
- Major Risk
- Moderate Risk
- Minor Risk
- Very Low Risk
- US or State Highway
- County Road
- Wilderness
- Forest Service Land
- State Park
- Historic Site
- Conservation Area
- City

N W E S

0 5 10 20 30 40 Miles

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

Mavity
5/13/2019

Fuels reduction work within the Foothills Landscape would be prioritized based on fire management issues, protection needs, and potential effectiveness in the wildland urban interface. Georgia Forestry Commission's Forest Action Plan also calls for improved fire management. Efforts would focus on reducing the risk of wildfire to those communities with high and very high risk from wildfire.

Expanding the Ecological Role of Fire

A purpose of this project is to reintroduce the role of fire in fire-adapted ecosystems through the use of prescribed fire and managed ignition fires. Fire has been an essential natural process in the southern Appalachians for thousands of years. Fire scar analysis shows that fires occurred periodically every 4 – 12 years dating back to the 1600s (Lafon et al. 2017). With the lack of natural fire on the landscape during the last 80 years due to suppression activities, the Foothills Landscape has seen an increase in fuel loadings within the midstory and a denser overstory, with a change in fire regime with a departure of fire-return intervals. This fuel accumulation and loss of fire regime has contributed to a shift in FCC. Map 8 shows the current Fire Regime Condition Class for the Foothills Landscape.

Photo 4 Forest Condition Trending Toward Open Woodland After Using Only Prescribed Fire Treatments. Sunlight Beginning to Reach Forest Floor in Patches.

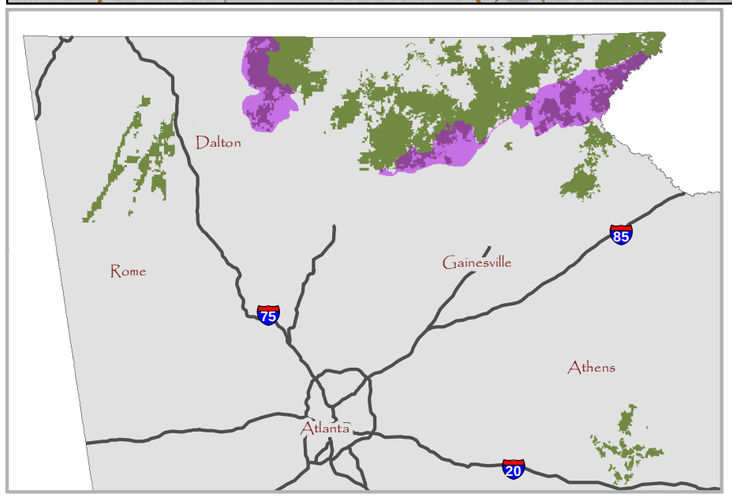
Forest management would contribute to the maintenance or restoration of forest ecosystems that are lacking on the landscape or threatened by insects, disease or fire exclusion, specifically shortleaf and pitch pine forests. Hazardous fuels in a watershed would be reduced and the fire

frequency, severity and pattern of fire across the landscape would be reestablished to produce desired effects from wildfire and prescribed fire (USFS 2011). The Georgia State Forest Action Plan also identifies the need to reintroduce fire into the landscapes. As these hazardous fuel loadings are manipulated, the overall FCC would trend towards lower levels. This trend would continue to improve as fire-return intervals are maintained and the use of fuels treatments are continued within these fire-dependent ecosystems.

Chattahoochee-Oconee National Forests

Fire Regime-Condition Class
Foothills Landscape Project

Map 8



Foothills Landscape

Fire Regime / Condition Class

- 1 -Within or Near an Historical Range
- 2 -Moderately Altered from Historical Range
- 3 -Significantly Altered from Historical Range

- **US or State Highway**
- **County Road**
- **Wilderness**
- **Forest Service Land**
- **State Park**
- **Historic Site**
- **Conservation Area**
- **City**

N W E S

0 5 10 20 30 40 Miles

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

Mavity
4/23/2019

Fire is also a major influence in shaping wildlife habitats in the southern Appalachians (Van Lear and Harlow 2000). Because fire was historically so prevalent and frequent across the landscape, wildlife became adapted to fire in order to survive. Depending on the frequency, intensity, and severity of fire, a shifting mosaic of habitats was maintained. The exclusion of fire has resulted in a homogenized landscape to the detriment of the wildlife associated with it.

Reducing Risk to Forest Health

Georgia's Forest Action Plan (Georgia Forestry Commission 2008) includes objectives to identify, manage, and reduce threats to forest and ecosystem health including insects, disease, and invasive plants. A purpose of the project is to reduce the effects of native and non-native forest pests and to enhance or protect forest health in stands that have been damaged or are in immediate danger from insects, disease or other catastrophic disturbances, specifically in yellow pine dominated stands.

The Watershed Condition Framework (USFS 2011) describes a properly functioning watershed as having adequate forest cover and invasive species at rates that do not affect watershed processes including soil productivity, vegetation, and water resources. One indicator for the Watershed Condition Framework describes a properly functioning watershed that has less than 20% of the area in imminent danger of abnormally high levels of tree mortality due to forest pests. Restoration would include collaboration with researchers and other experts to improve our understanding of the extent and severity of nonnative invasive species on forest health. This knowledge would help understand the appropriate management to reduce populations of native and non-native pests.

Within the Foothills Landscape, there are more than 24,000 acres of immature, even-aged pine plantations vulnerable to bark beetle infestations, including southern pine beetle. Southern pine beetle is considered the most destructive native insect pest in southern pine forests. The frequency and severity of southern pine beetle outbreaks have increased region-wide over the last four decades. Such events have been attributed to increases in acreage of pine growing stock, the presence of larger and older pine trees, and changes in forest structure (Belanger et al. 1993). While all yellow pine species are susceptible to southern pine beetle, loblolly and shortleaf pines are considered the most vulnerable.

Areas regenerated to shortleaf, loblolly and white pine account for 90% of the immature pine stands established in the Foothills Landscape through earlier pine-based even-aged management. Areas of other yellow pines, including pitch, table-mountain, and Virginia pines, are less abundant and account for the remaining acreage of even-aged pine stands established during the last 50 years. These even-aged pine stands have grown extremely crowded, often carrying more than 300 trees (or 150 ft^2 basal area) per acre. Over-crowded conditions increase competition among individual trees for limited site resources (water, soil nutrients and sunlight). Greater competition for site resources decreases the vigor of individual trees and reduces their resilience to insect and disease outbreaks, such as southern pine beetle and ips beetles.

Currently, hardwood dominated forest types (69,141 acres) within the Foothills Landscape account for more than 40% of the acreage within the landscape. Since gypsy moths' preferred species are oak, the most significant impacts from infestation would occur in the oak and oak-pine forest types. As the gypsy moth populations increase regionally, risk of outbreaks to the CONF increase (USDA Forest Service 2004a). When gypsy moth outbreaks occur, defoliation

may be extensive, and due to other environmental stressors, mortality may occur. Mortality rates have been found to be the highest among trees in the suppressed crown class and lowest among dominant trees. Trees described as being in good condition prior to heavy defoliation have been found to have lower mortality rates than those classified in poor condition, and tree mortality increased with the duration of defoliation (Davidson et al.1999). Due to a lack of hardwood management, poor site quality and lack of age-class diversity, the Foothills Landscape has substantial acreage meeting all the risk factors for oak decline.

Eastern hemlock is declining rapidly across its natural range due to the increased spread of hemlock wooly adelgid, a tiny sap-sucking insect related to aphids. Hemlock woolly adelgid attacks trees of all ages and sizes and threatens to widely eliminate eastern hemlock, particularly in the southern Appalachian Mountains. Hemlock trees are ecologically important, strongly influencing the types of animals, other organisms, and environmental conditions present in the areas where they grow. Hemlock Conservation Areas are spread throughout the Foothills Landscape in hopes of utilizing a variety of treatments to include silvicultural, chemical, and biological and to help stop the spread and infestation of hemlock wooly adelgid.

Connectivity

There is a need for habitats to be distributed but connected across the landscape. The field of landscape ecology includes theories, technologies, and research which point to the fact that the *landscape scale* is well suited for management decisions (Turner et al. 2001). Landscape ecology focuses on the spatial patterns of habitats and other elements; not only how much there is of a particular component, but how it is arranged.

Several elements of the Southern Appalachian National Forests' Forest Plans, including the Chattahoochee-Oconee's, are based on a spatially interconnected and well-distributed network of habitat patches at both ends of the successional spectrum: young forest and old-growth forest. The decision to distribute these habitat components at the landscape scale was based upon the concept that a highly diverse and widely distributed age-class or successional stage structure would benefit the greatest number of native plants and animals. The creation of well-distributed patches of young forest habitat and conserving additional small blocks of future old-growth habitat are important components of the Foothills Landscape.

Properly functioning watersheds exhibit a high degree of connectivity longitudinally along streams, laterally across floodplains and valley bottoms, and vertically between surface and subsurface flow (Williams et al. 1997). Watersheds that are functioning properly create and sustain functional terrestrial, riparian, aquatic, and wetland habitats that are capable of supporting diverse populations of native aquatic- and riparian-dependent species (USFS 2011).

Additionally, providing opportunities for forest users to connect to their public lands is an important component of land management. National forests and grasslands provide some of the greatest diversity of outdoor recreation opportunities in the world, connecting people with nature in an unmatched variety of settings, activities, and traditional beliefs. People hike, bike, ride horses, and drive off-highway vehicles. They picnic, camp, hunt, fish, enjoy recreational shooting and navigate waterways. They view wildlife and scenery and explore historic places (USFS 2010). Sustaining outdoor recreation opportunities to meet the environmental, social, and economic needs of present and future generations is a growing challenge that the Foothills Landscape aims to address.

CONNECTIVITY

Forest Plan Goals and Objectives in the FLP Purpose and Need:

Forest Structural Diversity

- Forest Plan Goal 1
- Forest Plan Goal 2
- Forest Plan Goal 3
- Forest Plan Goal 4
- Forest Plan Goal 10
- Forest Plan Goal 20
- Forest Plan Objective 20.1

Aquatic Habitat

- Forest Plan Goal 26

Enhance Recreation Opportunities

- Forest Plan Goal 31
- Forest Plan Goal 32
- Forest Plan Goal 47

Forest Successional Diversity

A purpose of this project is to maintain and restore communities in amounts, arrangements, and conditions capable of supporting viable populations of wildlife, plants, and fish. In meeting this purpose, the project would contribute to a well-distributed network of old-growth habitat blocks across the landscape, as well as improve successional stage diversity overall.

The majority (approximately 73%) of the forested habitat of the Foothills Landscape is in late-successional stage (Figure 3). In contrast, and due to the lack of forest management in the project area, young forest is scarce. Current stand-level data indicates there are 292 acres of early successional habitat or young forest in the analysis area (0.2% of the Foothills Landscape). The sapling/pole and mid-successional stage forests account for most of the remaining acreage in the analysis area (approximately 26%, combined). Permanent openings such as wildlife openings, utility rights-of-way, and roadside corridors also occur, but their acreage combined is <1% of the landscape.

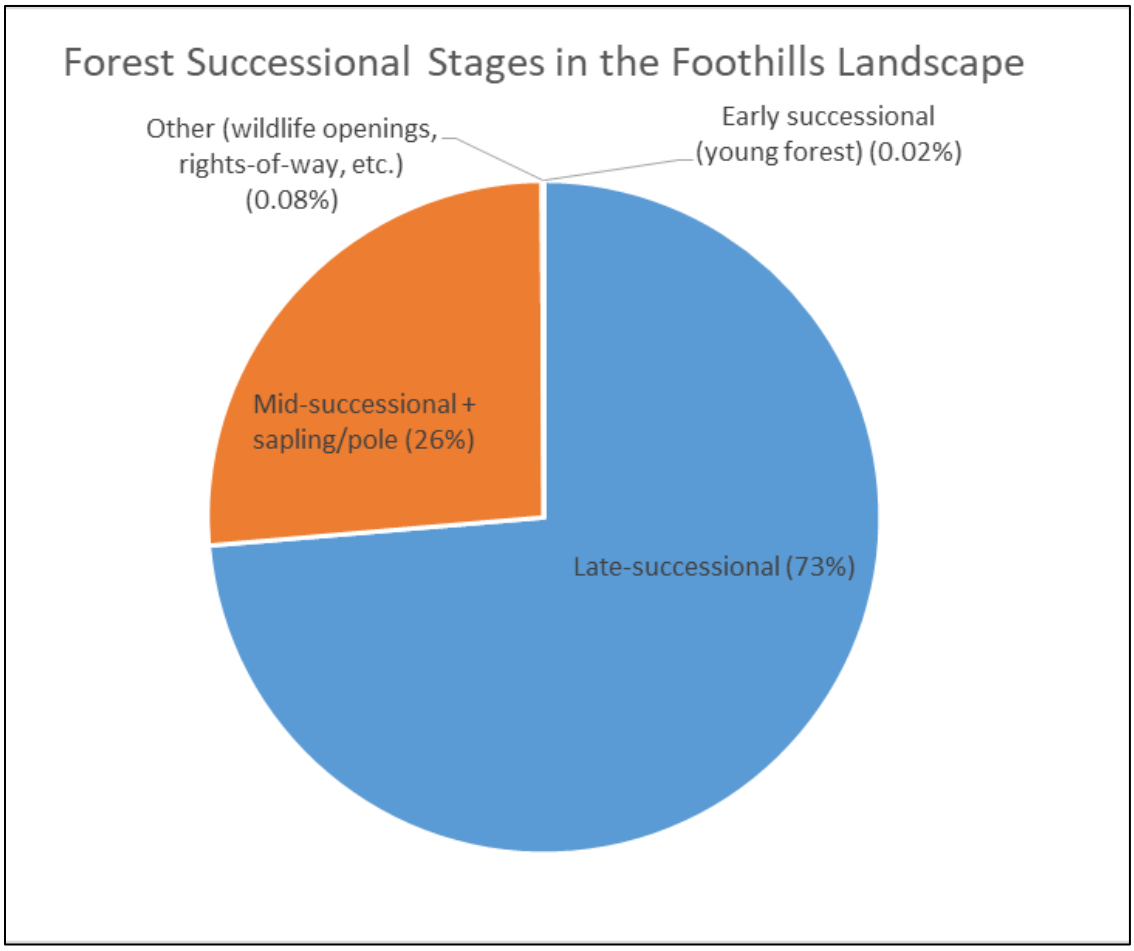


Figure 3 Forest Successional Stages in the Foothills Landscape

A variety of successional stages needs to be established across the landscape as part of a shifting mosaic of forest age structures, including adequate amounts of young forest habitat and old-growth forest habitats, in order to contribute to the viability and diversity of habitat of native and other desirable wildlife species. To ensure provision of the various successional stage habitats, the Forest Plan assigned different successional stage objectives across the forest based on

Management Prescription Areas (different emphasis zones within the forest to direct and inform management, see Map 5, Map 9, Map 10, and Map 11).

The need to improve the distribution of young forest across the Foothills Landscape would be achieved by creating this habitat stage on various sites, slopes, and aspects, and associated forest types. Young forest habitat is never static, so opportunities to create young forest habitat would be varied and dependent upon landscape and vegetation conditions for treatment. There is an opportunity to create up to 10,500 additional acres of young forest habitat in the Foothills Landscape.in this project, the majority of which would be as a result of other treatments previously mentioned.

At the other end of the successional spectrum, old growth conservation goals are currently being met in all but 14 of the watersheds within the Foothills Landscape. Old-growth conservation requirements per Forest Plan direction state: "within each 6th-level watershed with at least 1,000 acres of national forest lands, 5% of the land base would be allocated to old-growth conservation".

Permanent openings managed as grass/forb, shrub, or pollinator habitat also provide a valuable element of successional diversity. There is both a need to maintain the small percent of existing openings and opportunity to create new openings throughout the landscape.

Aquatic Organism Passage

A purpose of the Foothills Landscape would be to restore or maintain aquatic ecosystem components to support viable populations of desired aquatic plants and animals, including removing aquatic organism barriers. The Watershed Condition Framework defines the desired aquatic condition as having no artificial habitat barriers or fragmentation. The proposal is to provide for aquatic organism passage at road/stream crossings to restore habitat connectivity.

Photo 5 Example of Perched Culvert Prohibiting Fish Passage

Enhance Recreation Opportunities (Human Connectivity)

Photo 6 Failed Culverts Impact both Access and Streams

A purpose of the Foothills Landscape is to provide a wide range of high-quality recreational opportunities by adapting facilities as identified, shifting limited resources to high priority sites, and to respond to emerging recreational trends and needs. The current developed and dispersed recreation and trail programs have increase deferred maintenance costs, poor trail layouts, resource damage, and management constraints. Unmanaged recreation areas and dispersed camping areas exist along stream corridors and popular destinations, but have hardened surfaces, user created trails, and other impacts and conflicts that reduce the environmental integrity and visitor enjoyment. The recreation settings and opportunities within the Foothills Landscape should be economically, environmentally and socially sustainable for present and future generations, and the transportation system should be safe, environmentally sustainable, financially sound, and provide effective access to national forest lands.

System trails and developed sites (i.e. campgrounds and day-use areas) are areas that have been improved or developed for the purpose of recreation and often include associated facilities such as trailheads, parking lots and restrooms. At many sites throughout the landscape, there is a need for a variety of enhancements that would spread out visitor use, lessen visitor contact and conflict with other users, and reduce resource impacts to create more enjoyable opportunities for visitors to connect to their public land.

There is also a need to right size the road system in order to balance environmental impacts with access needs. The Travel Analysis Report (TAR), completed in 2016, identifies travel related concerns and management opportunities across the forest, including roads within the Foothills Landscape. The TAR provides the framework for comparing the risk of a road for environmental impacts to the benefit of the road for access.

The road system is failing to meet the needs of both the recreating and travelling public, and to provide for adequate resource access for forest management activities. Public use is increasing while the roads are becoming less usable by visitors.

Funding for road maintenance is often inadequate to meet the increasing need. The Forest receives less than 35% of the funding needed to maintain its current road system. Current road conditions range from good to poor depending on Maintenance Level (ML) and available funding. Priorities for road maintenance go to areas that access recreation sites.

Improving Soil and Water Quality

There is a need to maintain or improve water quality and soil productivity throughout the project area. The Southern Appalachian Assessment discusses the need to reduce the non-point source pollution that delivers sediment to the rivers and streams of the Southern Appalachian Mountains. Non-point sediment sources on Forest Service lands are primarily roads and trails but can include degraded recreation sites. Soil erosion from past practices and the change in nutrient cycling from vegetation deviations have led to compromised soil productivity.

The Watershed Condition Framework (USFS 2011) outlines the need for soil productivity and a reduction in soil erosion as essential for a properly functioning watershed. Soil productivity is the capacity of the soil to support appropriate site-specific biological resource management objectives, which includes the growth of specified plants, plant communities, or a sequence of plant communities to support multiple land uses. Areas where soil nutrient and hydrologic cycling processes are impaired, therefore hindering the ability of the soil to provide enough resources for vegetation to grow to adequate site potential levels, would be identified as restoration areas. The severity of these areas would be determined utilizing the Soil Disturbance Field Guide (USFS 2009).

Every aspect of this project would require activities known as project design features and/ or best management practices (BMPs) that could potentially improve soil quality and reduce sediment delivery to streams. For example: revegetating areas that do not meet Forest Plan standards for vegetative cover, decompacting of compacted areas, and/or recontouring unneeded landings or temporary roads could occur as needed. See “Project Design Features” section for a complete list.

SOIL AND WATER QUALITY

Forest Plan Goals and Objectives in the FLP Purpose and Need:

Sediment Reduction

- Forest Plan Goal 22
- Forest Plan Goal 24
- Forest Plan Goal 25
- Forest Plan Goal 34
- Forest Plan Goal 47
- Forest Plan Goal 48
- Forest Plan Goal 49

Aquatic Habitat

- Forest Plan Goal 26

Enhanced Recreation

- Forest Plan Goal 31
- Forest Plan Goal 32
- Forest Plan Goal 47

Reduce Sediment Delivery

A purpose of the project is to reduce sediment delivery to streams from forest management activities. The Watershed Condition Framework outlines the need to meet total maximum daily load requirements as set by Georgia EPD to manage other water quality problems in order to improve watershed condition. The total maximum daily load for sediment in all the river basins within the FLP indicate the

need to implement sediment reducing practices such as vegetation stream buffers, BMPs, and reducing sediment from unpaved roads.

Roads affect watershed condition because more sediment is contributed to streams from roads and road construction than any other land management activity (Elliot et al. 2009). Roads directly alter natural sediment and hydrologic regimes by changing streamflow patterns and amounts, sediment loading, transport, and deposition, channel morphology and stability, water quality, and riparian conditions within a watershed. Roads are also necessary, however, to provide access for recreation and management.

The transportation system should be safe, environmentally sustainable, financially sound, and provide effective access to national forest lands. There is a need to improve roads and trails identified as adversely affecting water or soil resources that is well-balanced with transportation system objectives. The Watershed Condition Classification technical guide indicates that no more than 10% of road length should be located within 300 feet of streams and water bodies. The Foothills Landscape has 149 NFS system roads that are within this 300-foot stream buffer totaling 81 miles. This would be approximately 29% of the total road length within 300 feet of a stream channel in the Foothills Landscape. Most of the 305(b) and 303(d) listed streams within the Foothills Landscape have road segments encroaching the 300-foot stream buffer.

Supporting Purpose and Need

While not a driving purpose and need for this project, it is important to note the Forest recognizes that non-native invasive plants threaten the biologic integrity of ecosystems by degrading natural habitats and decreasing biodiversity. The three Ranger Districts that manage all of the Foothills Landscape currently treat non-native invasive species and known forest pests with a combination of manual, mechanical, and herbicide treatments authorized under existing NEPA decisions:

- *Vegetation Control: Non-native Invasive Species and Shortleaf Pine Restoration Release project on the Chattooga River Ranger District* (2008);
- *Non-native Invasive Species Treatment project on the Blue Ridge and Conasauga Ranger Districts* (2008);
- *Conservation of Eastern Hemlock by Suppression of Hemlock Woolly Adelgid Infestations EA* (2005); and
- *Environmental Assessment for the Suppression of the Southern Pine Beetle on the Chattahoochee National Forest* (2003, reviewed in 2009)

Non-native invasive species treatments authorized under the existing NEPA decisions will continue within this project area. Refer to the Non-Native Invasive Species Report and Vegetation Specialist Report for further information.

The Foothills Landscape includes proposals that are intended to reduce the effects of other non-native invasive pests such as the hemlock woolly adelgid, the probable invasion of gypsy moths, and to a very small degree the chestnut blight. The Forest is working with researchers and experts to design silvicultural treatments to combat the hemlock woolly adelgid along with using insecticides and predator beetle releases in the hemlock conservation areas (see Hemlock Conservation section). Proposed actions such as oak and oak pine maintenance, woodland restoration and canopy gaps would indirectly decrease the vulnerability of hardwood stands to gypsy moth infestations by creating healthier, diverse, and more resilient stands. The project also intends to create chestnut orchards to maintain a reliable source of chestnuts for experimentation on the species' resilience to the blight.

In addition, a supporting purpose of this project, identified through the collaborative effort, is to maintain the forest's resilience to climate change. The project has incorporated resilience to climate change by including treatments intended to improve forest health and resilience to high severity wildfire, native pest outbreaks and invasive species. The Southern Forest Futures Project reports that the temperatures in the south are expected to increase with little change in precipitation. This is expected to change water use, carbon sequestration, and species composition. Climate change is a risk to the forests of Georgia because the warmer conditions could lead to an increased vulnerability to pests. There is a risk of higher mortality in plantations on drier sites (Wear and Greis 2013).

In north Georgia and the Blue Ridge Mountains, climate change models indicate significant increases in air temperatures from current levels. Precipitation patterns are predicted to be relatively stable, averaging slightly less to slightly above current conditions (Keyser et al. 2014). Forestlands across the region are experiencing increased threats from fire, insect and plant invasions, disease, extreme weather, and drought. Invasive and aggressive plant and insect

species may increasingly outcompete or negatively affect native species in the future. Heat stress may limit the growth of some southern pines and hardwood species. Stresses from drought and wide-scale pest outbreaks have the potential to cause large areas of forest dieback. Wildlife species would be affected in different ways. Amphibians may be most at risk, due to dependencies on moisture and cool temperatures that could be altered. A changing climate may be harmful to the endangered gray bat by impacting their food supply and the internal temperature of their roosting caves (USFS 2016).

Some responses to climate change effects occurring on the Chattahoochee-Oconee National Forests could be:

- Managing tree densities through practices such as thinning and prescribed fire to maximize carbon sequestration and to reduce the vulnerability of forest stands to water stress, insect and disease outbreaks;
- Continually monitor for new invasive species moving into areas where they were not traditionally found, especially following events such as hurricanes and fire;
- Using prescribed fire as a management option for reducing the impacts of any future increases in wildfire potential emanating from climate change and drought;
- Restore and reinforce vegetation in headwater and marsh areas to help alleviate runoff of sediment during heavy rain; and
- Reduce climate-induced warming of water and decrease water sensitivity to changes in air temperature (USFS 2016).

Carbon sequestration is not a direct purpose of the Foothills Landscape, though benefits from carbon sequestration as a result of the project are likely. The Forest Futures Project predicts a slight decline in carbon storage by forests across the south over the next 50 years primarily due to the loss of forest by changing land uses (Wear and Greis 2013). Healthy trees have faster growth rates, accumulate greater biomass, and thus sequester more carbon than nutrient, water, or light limited trees under most climate conditions. Active management (including harvest) may reduce forest risk of carbon loss by disturbance such as insect outbreak and wildfire (McNulty et al. 2017).

Proposed Action and Alternatives

Alternative 1 – No Action

For the purpose of this environmental assessment, a No Action Alternative was considered and analyzed in detail to serve as a baseline for understanding and contrasting the existing condition and to forecast potential effects should the responsible official choose not to proceed with any management activities proposed for the Foothills Landscape. All current actions and management under this No Action Alternative would continue in its present state. The analysis of the No Action Alternative can be found in the discussion of the affected environment and environmental consequences of the corresponding specialist reports for each of the identified issues.

Alternative 2 – Proposed Action

Alternative 2 resulted from modifications made to the original proposed action which was published for public scoping in October 2017. See the *Foothills Landscape Project Scoping Summary Report* (2018) in the project record and on the website for more information. The Forest Service proposes to use a variety of management activities to meet the restoration needs within the project area as long as the goals and objectives of the Forest Plan are current. See Appendix B for a brief summary of all of the actions considered under this alternative and the type of planning approach associated with each.

The range of actions described below serve as the suite of treatment options (tools) which could be applied across the Foothills Landscape if conditions on the ground warrant a need for active management based on the aforementioned purpose and need. In this way, as landscape conditions vary within a given vegetation type, such as shortleaf pine, the appropriate tool would be applied to achieve the desired result. A tool that might be appropriate in one area may not be the right tool to use somewhere else.

The units of measurement reported (i.e. number of acres, miles, and sites) for the various treatment tools in the discussion below represents the maximum amount proposed and analyzed to meet the purpose and need of the project. For example, the maximum treatment proposed for vegetation management activities was determined using a variety of available data to estimate the extent of existing conditions, distance from the existing road system and the areas of operable ground (less than 35% slopes). Other treatment options proposed are more opportunistic or have specific types of features such as trails, recreation sites, or roads.

Project Design Features (PDFs) are sideboards, additional instructions, or limitations on treatments that would apply across applicable management activities. PDFs come from a variety of sources such as Georgia's Best Management Practices for Forestry Practices, USFS Southern Regional guidance or Foothills Landscape-specific design and are in addition to Forest Plan standards and BMPs. PDFs are incorporated into the Proposed Action Alternative and are found in Table 7 (Page 74).

In addition, decision matrices, found in Appendix E, have been created to serve as a guide for ensuring the proposed site-specific activities are implemented with the bounds of the analysis and the decision to be made. These matrices provide a step-by-step guide to show what conditions found on the ground warrant specific tools. The decision matrices, the PDFs, and the

activities that are discussed in the proposed action below, are all an integral part of the proposed action as a whole.

The implementation of management activities proposed in Alternative 2 would be accomplished in increments over time, prioritized and sequenced using a systematic process (implementation plan) that evaluates restoration needs, determines appropriate treatments to address those needs (through use of decision matrices) and balances implementation of those activities across the three ranger districts with operational feasibility, agency capacity, and social considerations, to the extent possible. See Understanding the Planning Approach on page 10, Appendix A - Maps, Implementation Areas, and the Implementation Plan and Decision Matrices in Appendix E for additional information regarding implementation.

Proposed Actions to Improve Biologic Integrity:

Southern Yellow Pine Maintenance

Southern Yellow Pine Maintenance is proposed for up to 12,400 acres (8% of Foothills Landscape). Treatment is recommended within existing mid to late-successional shortleaf pine stands and stands that contain pitch or table mountain pine where current stand conditions are departed from those needed by these species to maintain dominance through self-replacing processes. See Map 12, Map 15, and Map 18 in Appendix A – Vegetation Maps, for potential location of stands.

Stands selected for treatment would be mechanically thinned to about 40 – 60 square feet per acre (ft^2/ac) of basal area to establish a more open stand condition. Shortleaf, pitch and/or table mountain pines, and upland oaks and hickories would be given preference as leave trees during the thinning treatments. Following the thinning treatments, the areas would be evaluated on the ground to determine the degree and intensity of subsequent understory treatments in order to meet desired outcomes. For example, if shade tolerant, fire intolerant understory vegetation persists after the thinning, then it would be treated using a combination of herbicides and/or prescribed fire. In most cases, initial understory treatments would be conducted by using herbicides to control anticipated undesired hardwood brush and stump sprouting vegetation persisting on the sites. Initial herbicide treatments would be selectively applied to undesired understory vegetation using directed foliar, cut-stem or basal bark/streamline methods. The specific method of herbicide application would be based on the composition, size and density of the understory vegetation persisting on the sites. Details on herbicide treatments are described in the Connected Actions on page 82 of this document and in the Vegetation Specialist Report.

After the initial herbicide treatments, prescribed burning would be utilized to achieve site specific objectives. Site conditions would be evaluated for prescribed burning and the appropriate burning season (either dormant or growing season). Prescribed fire treatments would continue on a recurring interval (every 2 – 7 years) until the desired results are achieved, which include the reduction in the woody hardwood understory, diverse understories, and a restored and receptive seedbed. Upon achievement of the desired conditions, fire treatments would be applied less frequently. This would allow for pine seedling recruitment to be initiated in the understory.

In certain cases, mechanical mastication, followed by the above referenced herbicide and prescribed fire treatments would be used to reduce unwanted understory vegetation. This

treatment option would most likely be utilized where understories are occupied by dense shrubby vegetation (i.e. mountain laurel) that would make initial herbicide treatments infeasible. In these cases, mastication of the shrubby layer would be implemented first. Follow-up herbicide treatments for to control stump sprouting vegetation and/or prescribed fire (if possible) would be implemented following the mastication treatments to further control the undesired understory vegetation.

Photo 7 Shortleaf Pine Stands Post Thinning and Prescribed Fire

If fire cannot be regularly used in stands identified for Southern Yellow Pine Maintenance, the expanding-gap silvicultural method would be employed. The expanding-gap method is being proposed in collaboration with the Southern Research Station (SRS). Gaps would be created in the stands by removing overstory trees to create ½ acre up to 1-acre openings. Initial canopy gaps would be located where advanced shortleaf, pitch, or table mountain pine regeneration exists or where a need for structural diversity is determined and recruitment of southern yellow pine regeneration is anticipated. Scarification of ground surface layer may be needed to promote recruitment of additional natural regeneration of preferred southern yellow pine. Artificial regeneration may also be implemented planting on an 8-foot-by-8-foot or wider spacing, while also potentially clumping seedlings together in clusters of five to 15 seedlings.

After the seedlings are able to compete with surrounding vegetation in a free-to-grow condition (8 – 12 years), the gap would be ready to expand by another one to two tree lengths around the perimeter by removal of overstory. The surrounding stand would be thinned to a basal area of 50 – 70 ft^2/ac. to help control the light environment. The treatment areas would be treated with herbicides, mechanical mastication, or manual hand tool methods to reduce the competition with undesired species.

Southern Yellow Pine Restoration

Southern Yellow Pine Forest Restoration is proposed on up to 5,800 acres (3% of Foothills Landscape) within the landscape and would be implemented on dry sites currently dominated by mid to late-successional Virginia or white pine. This treatment would also be applied in mixed oak-pine stands where evidence of previous occupation by shortleaf/pitch/table mountain pine exist (presence of old pine stumps). Opportunities for restoration may also exist within pole-aged or sapling (11-40 years of age) stands of off-site loblolly or white pine. Up to 1,700 acres (1% of Foothills Landscape) of restoration in pole-aged off-site plantations could occur. See Map 12, Map 15, and Map 18 in Appendix A – Vegetation Maps, for potential location of stands. These

treatments would result in the creation of young forest habitats, which are generally lacking in the project area.

Restoration of southern yellow pine would be implemented using either artificial or natural regeneration methods. In stands where artificial regeneration methods are used, a two-aged regeneration harvest would be implemented to initiate the restoration process. Under this harvest method, the majority of the overstory trees in restoration areas would be removed. This would create large, continuous openings for restoration planting for regeneration. A portion of the trees (minimum of 15 ft^2 per acre) in restoration areas would be reserved from cutting to form the two-aged condition. These trees would be retained in a non-uniform and variable distribution and would remain on-site indefinitely. Long-lived species such as shortleaf or pitch pine, white oak, chestnut oak, or hickory would be selected as reserve trees to be retained. Virginia and white pines, and other less desirable hardwood species would be harvested from the sites.

Following the harvest, restoration areas would be prepared for planting by (1) directed herbicide methods (cut-stump and foliar) to selectively treat non-desirable species persisting on the sites, and (2) a growing season site preparation prescribed burn. Once sites are prepared, restoration areas would be planted with shortleaf or pitch pine seedlings on a wide spacing (8 x 8, 10 x 10, or 12 x 12 foot spacing). One to three years following planting, planted seedlings would be released from woody competition (individual tree) using hand tools, mechanical mastication, or a directed herbicide application (directed foliar, cut surface, or basal bark methods) depending on the species and degree of competition. Once the canopy of the restoration areas approach crown closure (approximately 7 – 10 years post planting), a thinning using manual hand tools (chainsaws or brush cutters) or mechanical mastication would be applied to reduce competition and maintain desired tree species composition.

In stands that have adequate shortleaf, pitch or table mountain pine in the existing stand for natural regeneration, a shelterwood harvest would reduce the basal area to 30 – 40 ft^2/ac of trees with high-crowns that are seed-producing pine species. Site preparation burning to coincide with seed fall and directed herbicide treatments (foliar, cut-stem and basal bark/streamline methods) would follow. In the event that natural regeneration fails, artificial regeneration described above would be implemented. A follow up harvest to remove the residual sheltering trees would occur once the site has been adequately regenerated to the target species and adequately stocked.

Oak and Oak-Pine Maintenance

Multiple treatments options are included under this proposal to meet oak maintenance objectives within the landscape - each designed with consideration for site productivity, presence of existing oak regeneration, stand age, and whether connected prescribed fire treatments could be feasibly implemented. The treatments are intended to either: (1) increase oak regeneration potential within existing mid-late successional oak-dominated stands, (2) establish areas of young oak forests to create a more balanced and resilient age-class distribution, or (3) increase the dominance of oak in existing immature oak stands. These conditions would all help to establish a buffer against mass oak decline and the potential for gypsy moth invasion.

Increase/Restore Oak Regeneration Potential

To increase/restore oak regeneration potential within existing oak stands, several treatment options are proposed (see below). These treatments are designed to alter the light environment on the forest floor to stimulate growth of oak seedlings while controlling oak competitors in the

understory. Treatments would result in development of larger and include more competitive oak seedlings, increasing the regeneration potential in existing mature oak stands. Stands with higher regeneration potential can maintain species dominance because adequate/competitive seedlings are available to replace parent overstory trees.

A field evaluation of current stand conditions would be conducted prior to treatment to determine specific cultural needs. If the evaluation of stand conditions indicates that the current oak regeneration potential is low because oak seedlings are small, infrequent, and/or are being suppressed by shade-tolerant competitors in the understory, one of the following treatments would be employed:

Increasing Oak Regeneration Potential with Midstory Reduction on Moderate to High Site Productivity, Mid-Late Successional Oak Sites

On moderate to highly productive oak sites within the landscape, midstory reduction treatments would be implemented on up to 14,800 acres (9% of FLP) of existing mature oak stands to increase oak regeneration potential and meet maintenance objectives. See Map 13, Map 16, and Map 19 in Appendix A – Vegetation Maps, for potential location of stands. These treatments would be carried out by mechanical mastication and/or targeted herbicide treatments applied to trees below the main canopy. Herbicide application methods would include directed tree injection and/or basal bark treatments. Oak and hickory species would not be treated with herbicides or during mastication treatments. Treatments would be tailored to the site based on site productivity, with the level or intensity of the midstory reduction decreasing as site productivity increases. This treatment would enhance the light environment in the understory, allowing small oak seedlings to slowly develop into more competitive size classes. Because the treatment is applied to trees below the main canopy, large gaps in canopy are not created, preventing the rapid establishment of shade-intolerant species like yellow poplar from invading and dominating the understory.

Increasing Oak Regeneration Potential with Intermediate Thinning and Midstory Reduction on Moderate to Lower Productivity Mid-Late Successional Oak Sites

On lower to moderate productivity oak sites, commercial thinning in combination with midstory reduction treatments would be implemented on up to 9,200 acres (6% of Foothills Landscape) of mid-late successional oak stands to increase oak regeneration potential. This treatment option would be implemented where conditions indicate that current oak regeneration potential is low (i.e. oak seedlings are small, infrequent, and/or are being outcompeted by shade-tolerant competitors in the understory). In areas selected for intermediate thinning, the thinning would reduce overstory trees to 40 – 60 ft^2/ac, favoring oaks, hickories, shortleaf and/or pitch pine. Following the commercial thinning, the areas would be evaluated for subsequent needs for midstory reduction treatments designed to reduce oak seedling competitors.

Treatment of the midstory/understory would be employed using a combination of direct herbicide treatments and/or prescribed burning. If unwanted vegetation persists on the sites after the thinning, then initial understory treatments would likely include herbicide applications to control this competition. Herbicide treatments could include directed foliar, cut-stem or basal bark/streamline methods. The composition, size, origin and density of understory competitors would dictate the herbicide method selected. Once herbicide treatments have been applied, prescribed burning treatments, where feasible, would be used to further reduce competition and

to maintain the desired understory environment. Initial prescribed burning would be conducted during the dormant season. Subsequent burn treatments would be applied during the growing season until the desired conditions have been achieved (development of oak reproduction). Periodic burn and/or mechanical mastication treatments would be applied using a combination of dormant and growing season treatments and frequency would be altered to allow oak seedling to gain height and prepare for canopy recruitment.

In certain cases, mechanical mastication, followed by the above referenced herbicide and prescribed fire treatments would be used to reduce unwanted understory vegetation. This treatment option would most likely be utilized where understories are occupied by dense shrubby vegetation (i.e. mountain laurel) that would make initial herbicide treatments infeasible. In these cases, mastication of the shrubby layer would be implemented first. Follow-up herbicide treatments to treat stump sprouting vegetation and/or prescribed fire (if possible) would be implemented following the mastication treatments to further control the undesired understory vegetation

Increasing Oak Regeneration Potential in Mid-Late Successional Oak Stands Where Prescribed Fire Cannot Be Implemented Using Expanding Gap Method

In oak and oak-pine stands where fire cannot be used regularly, an expanding gap silvicultural method would be used to improve oak regeneration potential in mature oak stands. This method would be implemented on up to 14,600 acres (9% of Foothills Landscape) of existing mid to late-successional oak stands within the project area. See Map 13, Map 16, and Map 19 in Appendix A – Vegetation Maps, for potential location of stands. The expanding gap method is being proposed in collaboration with the SRS. Gaps would be created in the stands by removing overstory trees to create up to ½ acre openings. Initial canopy gaps would be located where advanced oak regeneration exists or where a need for structural diversity is determined and recruitment of oak regeneration is anticipated. After the seedlings are able to compete with surrounding vegetation the gap would be ready to expand by another one to two tree lengths around the perimeter by removal of over story. The surrounding stand would be thinned to a basal area of 50 – 70 ft^2/ac. The treatment areas would be treated with herbicides, hand tools, or mechanical mastication to reduce the competition with undesired species.

Establish Areas of Young Oak Forests

To establish areas of young oak forests to create a more balanced and resilient age-class distribution, two-aged regeneration harvests would be implemented on up to 2,000 acres (1% of Foothills Landscape) of existing mid-late successional oak forests growing on moderate to lower productivity sites to establish areas of young oak forest, which is lacking. This treatment would be limited to sites where field surveys indicate an adequate population of competitive oak seedlings exist in the understory to successfully replace the current overstory proposed for removal. Under this regeneration harvest method, the majority of the current oak overstory would be removed from the selected areas. This would create large openings for natural oak regeneration to occur. A portion of the trees from the overstory would be reserved from cutting (15 – 25 ft^2 per acre) and would remain on-site indefinitely to form a two-aged stand structure. Trees reserved from cutting would be retained in a non-uniform and variable pattern. Long-lived oak species such as white oak or chestnut oak, hickories and shortleaf pine (where available) would be selected as reserve trees to be retained. Connected site preparation treatments, including directed herbicide methods (foliar and cut-stump) to selectively control undesirable

and persistent competition and growing-season prescribed burning, would be conducted either pre or post-harvest or in some combination of both periods to prepare the areas for natural regeneration. To supplement the natural oak regeneration, areas could be hand-planted with oak seedlings on a wide spacing. Planted and naturally regenerated oak seedlings would be released from undesired competition one to multiple times during the first 10 years of regeneration using manual methods or selectively and directed applications of herbicides (basal bark/streamline, foliar, or cut-stem methods) to ensure oaks remain competitive during early stand development.

Maintain or Increase the Dominance and Competitive Stature of Oak

To maintain or increase the dominance and competitive stature of oak in existing immature oak stands, individual crown-touching tree release treatments would be implemented on up to 3,200 acres (2% of Foothills Landscape). This treatment would occur where oaks are present but are being suppressed by non-oak competitors and where there is a high risk that oak species may drop out of the stand due to competition would be selected. See Map 13, Map 16, and Map 19 in Appendix A – Vegetation Maps, for potential location of stands. Under this treatment, individual non-oak competitors with crowns that touch selected oak trees would be slashed-down with chainsaws, mechanical mastication, or killed using directed herbicide applications (tree injection) to increase/maintain oak domination of the sites. Approximately 70 – 100 oak trees would be selected per acre for individual release within treatment areas.

Oak and Oak-Pine Restoration

Opportunities to increase oak abundance through restoration also exists within the Foothills Landscape. Restoration activities are intended to promote oak-dominated forests on sites currently dominated by other species. Oak and Oak-pine Restoration would occur on up to 1,700 acres (1% of Foothills Landscape) of off-site, pole-sized pine plantations (these are the same acres proposed for Southern Yellow Pine Restoration in off-site plantations, therefore restoration of these sites to either oak or southern yellow pine is implied). Restoration of these sites to oak would be emphasized in off-site plantations with low desired pine stocking and where adequate pre-existing oak, either in the canopy of the plantations or in the understory, is available to successfully restore the sites to an oak-dominated composition.

If oak is adequate in the overstory (canopy), the proposed treatment includes an intermediate thinning of off-site pine to a residual basal area of 40 – 70 ft^2/ac. The wide range of basal area would allow for the retention of all existing oaks and other desirable species, while removing most, to all off-site pine species. This treatment would not result in the creation of young forest habitat, but simply a change in forest-typing (from pine dominated to oak dominated).

On sites where oak restoration is elected and oak is abundant in the understory of the off-site plantations as seedlings, restoration would include a regeneration harvest to initiate the oak restoration process. Because these sites would likely contain an overstory dominated by an off-site pine species (loblolly or white pine), the regeneration harvest would remove all or most of the current overstory, reducing the potential for the off-site species to re-seed the harvested sites. This action would result in the creation of young forest habitat because the current overstory would be removed in its entirety. Upon removal of the off-site overstory through regeneration harvest, the areas would be prepared for natural regeneration to oak by applying a combination of directed herbicide treatments (foliar and cut-stump methods) followed by prescribed burning during the growing season, to reduce persisting undesired competition. To supplement the

natural oak regeneration, restoration areas could be hand-planted with oak seedlings on a wide spacing. Planted and naturally regenerating oak seedlings would be individually released from non-desirable competition one to multiple times during the first 10 years of regeneration using manual methods or directed herbicide treatments (basal bark/streamline or cut-stem) to ensure oak remains competitive during early stand development.

Canopy Gap Creation

To increase structural diversity in mid-late successional mesic deciduous forests, 8,100 acres (5% of the Foothills Landscape) of canopy gap treatments are proposed across the project area. Yellow poplar-dominated stands and high-productivity oak stands with closed canopies and little vertical structure would be targeted for this treatment. See Map 14, Map 17, and Map 20 in Appendix A – Vegetation Maps, for potential location of stands.

Gaps in the canopy of selected stands would be created by retaining variable tree densities. To provide for the desired diversity in vertical structure, trees would be selectively removed from all crown positions (upper, mid and understory levels) and tree sizes, resulting in a patchy, irregular canopy. Gaps in the canopy would be small (up to 0.75 acre) and implemented at relatively low intensities (less than 25% of the stand). Additional structural diversity would be obtained through intermediate thinning between gaps, retaining 70 – 80 ft^2/ac basal area in the thinned portion of the stand.

Woodland Community Restoration

There would be up to 7,400 acres (<5% of Foothills Landscape) of woodland community restoration in the project area based on the ecological conditions occurring and where efforts would be appropriate and effective. The presence of certain vegetative species indicate the probability of where woodland restoration would be most successful (Map 14, Map 17, and Map 20). Restoration efforts would focus on the potential an area has to be managed as a woodland. For example, areas consisting of shortleaf pine, table mountain pine, pitch pine, post oak, and blackjack oak, or other species such as dwarf chinquapin and sand hickory, serve as indicators for remnant or potential woodlands. For a more comprehensive list of woodland indicator species, see Appendix C. Restoration opportunities would be further narrowed upon field reconnaissance with a focus on finding these areas with the best fit of aspect, elevation, indicator species, and ability to use prescribed fire.

Photo 8 Intermediate Open Woodland Habitat 2-3 Years after Initial Mechanical Treatments. Woodlands Provide Ideal Habitat for Wildlife and Botanical Species Such as Coneflower.

Open woodland blocks of various sizes would likely require both partial overstory and midstory removal, with a residual basal area of 20 – 40 ft^2 per acre, as well as prescribed burning, to start the process of transitioning them from their current conditions to a desired open-habitat type. The need for fire to maintain

the woodland structure would necessitate that each woodland block is within a prescribed burning unit, and the site is able to be frequently burned, during both the growing season and dormant season over the life of the treatment. Herbicide application to control the woody vegetation may also be required if prescribed burning alone is not adequate. Herbicide applications would be directed at undesired woody vegetation and would include a combination of foliar, cut-stem, or basal bark/streamline methods.

Wetland/Bog Restoration

There is a total of approximately 35 acres of wetland/of bog habitat known to occur in the Foothills Landscape with surrounding footprints (up to 103 acres) that could benefit from restoration treatments. The proposed bog restoration work was incorporated into this project upon recommendations by the GaDNR – Wildlife Resources Division. If bogs have previously been modified prior to USFS management through ditching or trenching and natural processes no longer function, then hydrologic restoration of the bogs using on-site spoil piles to plug or fill those ditches to restore stream sinuosity and elevate the stream profile would occur. Stretches of existing ditches may be left open, when necessary, to provide enhancements for salamander habitat.

On sites determined to have appropriate hydrology and soils, cooperation with partners such as Georgia Plant Conservation Alliance, Atlanta Botanical Garden, State Botanical Garden, and GaDNR, would be facilitated to remove encroaching woody vegetation into existing bog habitat by using a combination of treatment methods including herbicides (with cut-stem and/or basal bark treatments) to get more sunlight to the ground in and around the bogs. Partners would grow plants that are rare bog endemics in greenhouses, and then planted on the site. Plant reintroduction would be considered depending on the wetland or bog site condition and characteristics.

Canebrake Restoration

A wide variety of treatments would be needed to restore canebrakes, and many treatments would be applied to see what canopy cover and fire regime works best. Both overstory and midstory trees would be reduced mechanically and through the use of herbicides to get sunlight to the cane. The density of canopy cover would be variable but would be reduced to less than 50% canopy with trees widely space or clustered in a mosaic pattern. In general, canebrakes would have very little canopy cover. Cane may be transplanted from a site within the project area to an area where it is sparse. In areas infested with exotic species, multiple treatments may be needed and would be completed using the existing decisions on non-native invasive species control. Prescribed fire may also be utilized, with a wide variety of fire regimes, which may include high-intensity or low-intensity fire.

A great example of an area with canebrake restoration potential is the area north of the Highway 28 bridge on the Chattooga River. This area contributed to the increase in project area acreage between scoping and the current proposal because treatment in that area would not only resolve concerns relating to non-native invasive plant species and environmental degradation resulting from high recreational use but would also be suitable for a canebrake restoration effort.

The USFS may authorize Revitalization of Traditional Cherokee Artisan Resources (RTCAR) to harvest cane from the project area for traditional cultural purposes. Cherokee artisans may use selective harvesting methods to take culms at least four years old and at least three- quarters of

an inch in diameter. Culms would be cut with hand tools and would be trimmed to ground level for safety. Harvesting would impact less than 25% of the existing cane and usually less than 10% would be harvested at one time.

Hemlock Conservation

The Foothills Landscape would expand the existing Hemlock Conservation Areas up to 600 acres[3]. If hemlock associated forest types occur immediately adjacent to existing hemlock conservation areas, then those sites would be considered for expansions and additional acreage would be added to the current hemlock conservation program. Field surveys and more local knowledge would be needed to determine if a hemlock component is still present in these areas. Vast mortality across much of the forest would likely reduce the potential for expanding our current hemlock conservation efforts. Treatment would only occur if viable hemlocks are present.

Within existing or expanded conservation areas, treatment would include soil injections of imidacloprid or other approved insecticides at the base of infested but responsive hemlock trees in neighboring areas to existing conservation areas or in other areas where hemlock survival is still fairly adequate and accessible. The same mitigations for stream/water protection from the insecticide used in our existing conservation areas would be employed for any additional areas added for soil injection treatments. Rates, timing, and other considerations currently used in our existing conservation areas would be adopted for the additional conservation areas established.

The Forest is currently working with the University of North Georgia (UNG), SRS, Georgia Forestry Commission (GFC), and other specialists to expand the Forest's ability to utilize specialized silvicultural treatments in the conservation of hemlock. Of particular interest is the SRS research that indicates a benefit to hemlocks using silvicultural practices. They are thinning around hemlocks to create conditions allowing varying amounts of sunlight to reach midstory or overtopped hemlock trees. In forested areas with existing hemlock trees, overstory and midstory thinning, expanding gap, or midstory treatments to create light environments conducive to healthier conditions for existing hemlock would be implemented. In addition to these silvicultural treatments, hemlock seedlings that are free of tip blight and other diseases before introduction would be planted throughout these treated locations to add structural and age diversity where needed. Planted seedlings would be treated initially after planting by soil injection with imidacloprid or other insecticide, and then retreated every three to seven years thereafter to suppress the hemlock woolly adelgid (HWA).

These treatments would be applied both within hemlock conservation areas and throughout the general forest[4] where hemlock trees exist. Biological control, predator beetles, or other future USDA approved bio-control options may be used throughout these locations also. Hand tool or herbicide applications would also be applied where necessary to silviculturally treated areas to

[3]In past documentation, this number was originally listed as 1,400 acres; however, due to a discovered mapping error, which included acreage in wilderness, the acreage is now accurately reflected.

[4] Treatments may occur in inventoried roadless areas (IRAs). Work in IRAs was not included in the Proposed Action at scoping, but as a result of the expanded boundary to include Boggs Creek Campground decommissioning (which was scoped) and desire heard from the collaborative community to explore more hemlock conservation opportunities, Boggs Creek and Miller Creek IRAs are now included within the Foothills Landscape project boundary and could provide opportunities to do Hemlock Conservation work.

control the invasion of non-native invasive species or species composition in favor of hemlock as needed.

In addition to the specialized silvicultural treatments, the Forest's work with GFC, UHG, and SRS has identified the need for insectaries strategically placed across the Foothills Landscape. Currently, UNG is rearing beetles indoors in laboratories; this is costly and infested hemlock foliage with HWA must be brought into the labs to feed the rearing beetles. Functional insectary locations must have healthy hemlock trees that have branches with foliage cascading down to ground level. Typically, these trees receive light conditions from the top to the bottom of the tree from various aspects.

Functional insectaries would be developed over time utilizing the silvicultural treatments described above and in collaboration with Georgia Forestry Commission, University of North Georgia, SRS, and other specialists. Insectaries would not be located within conservation areas where insecticides are utilized, rather dispersed throughout the Foothills Landscape where hemlock trees currently exist. The Forest intends to create sustainable insectaries varying across elevations and aspects to provide potential for a viable population of USDA approved hemlock wooly adelgid predator beetles now and into the restorable future of the currently declining hemlock trees.

Chestnut Orchard Designation

As part of its mission, Georgia chapter of the American Chestnut Foundation must establish orchards where trees (resulting from controlled crosses of American, Chinese, and hybrid chestnuts) can be cultivated, grown, inoculated and evaluated for their performance when challenged by chestnut blight and/or Phytophthora cinnamon Rands. Working with the Georgia chapter of the American Chestnut Foundation, up to 6 acres of American chestnut orchard would be established. These chestnuts would be $^{15}/_{16}$ American chestnut and $^{1}/_{16}$ Chinese chestnut. Sites selected for these orchards would be cleared of any existing vegetation and would be easy to access by existing roads and trails for regular monitoring and maintenance.

The major inputs and resources required to carry out these projects includes fencing for deer control, tree tubes for rodent control, irrigation supplies including drip irrigation and well digging and development, fertilizer, herbicides and pesticides, and ground cloth or plastic mulch.

Small Whorled Pogonia Conservation

The small whorled pogonia is currently federally-listed as threatened. Although the recovery plan from 1992 calls for limited disturbance, in the northern portion of its range, this species has shown a positive response to canopy manipulation that results in more sunlight on the ground. On the Chattahoochee National Forest, this species has been protected from disturbance and not been actively managed and has continued to decline. Both the number of extant populations and number of individuals in these populations have decreased. Cooperatively with the Georgia Plant Conservation Alliance and the Atlanta Botanical Garden, the Forest is working to determine what management activities would generate a positive response in this species. These actions may include thinning, midstory control using cut-stem or basal bark treatments with herbicides, invasive species control, and prescribed fire to reduce the canopy and midstory over extant and historic populations. Monitoring the response to management would be critical.

Stream Habitat Improvement

The addition of large woody debris to streams in the Foothills Landscape is proposed in order to increase structural complexity in streams where a lack of wood is impairing the hydrologic and biologic processes of the aquatic environment. Large woody debris is a critical element in pool formation and function by trapping sediment and decreasing rates of nutrient loss (Doloff 1994).

Maintenance and enhancement of existing stream structures is proposed to provide important cover for many species of amphibians, reptiles, invertebrates, and fish. In order to maintain their effectiveness, stream structures need to be repaired and upgraded occasionally. The project would improve brook trout habitat by constructing in-stream structures in order to improve riffle-pool ratios and other habitat components in brook trout streams. This type of treatment increases stream habitat complexity and provides more habitat for all life stages of brook trout.

Augmentation of spawning substrate for blue shiner was proposed by the GaDNR during collaboration. This work is already on-going as needed to meet the desired condition under an existing NEPA decision. .

Maintaining adequate amounts of vegetation in riparian areas helps filter sediment, maintain stream temperatures, aid in bank stabilization, provide vegetation and wood inputs to the stream, and has aesthetic value. The project would maintain adequate vegetation in riparian areas by following Georgia Best Management Practices and Forest Plan Standards during implementation. In areas where stream banks are not adequately vegetated and severe erosion is occurring (defined by the Georgia Soil and Water Conservation Commission as if the linear extent is greater than three times the bank height and is occurring at a rate unacceptable for safety, environmental, or economic reasons) the treatment would include the prevention of trampling of the area by people and vehicles using social engineering methods such as signing, education, and physical barriers. Stabilization would utilize native riparian vegetation and bioengineering practices where needed in order to decrease erosion rates, trap sediment, improve fish and wildlife habitat, improve shade, and improve aesthetics.

Lake Habitat Improvement[5]

Structures to improve fisheries in lakes and ponds in the project area would be installed. These structures could be as simple as dropping Christmas trees in the bodies of water to building more complex structures out of PVC piping or similar material and installing them.

There may also be opportunities to create vernal pool habitat by creating shallow depressions to allow for high groundwater to gather at the surface during the wet part of the year and immediately after substantial rain events. The potential location of these small pools would be focused in former agricultural areas where forest vegetation has recovered but small wetland habitats have not. Vernal or seasonal pools provide breeding habitat for Cope's gray tree frog, wood frog, chorus frogs (Eastern spadefoot toad), several Ambystoma species of salamander, and many invertebrates. Forest bats utilize small pools both as drinking water sources and insect foraging sites.

[5] The GaDNR proposed during collaboration efforts the continuation of the lake fertilization programs. This work is not included in this proposal because it is completed using a categorical exclusion category that does not require a decision memo and would be considered an on-going action.

Proposed Actions to Increase Resiliency to Disturbance:

Hazardous Fuels Reduction in the Wildland Urban Interface

Areas would be prioritized for fuels reduction by assessing conditions on the ground in conjunction with SouthWRAP to determine the highest probability of effectiveness for mitigation efforts. Another criterion for prioritization would be areas where the ecosystem has departed from a fire dependent or fire tolerant one, to an unhealthy forest with highly flammable and/or non-fire tolerant species. Additionally, private lands that meet the requirements of Ready Set Go, Firewise and other fire adapted community programs, and that have a desire to treat their lands would be considered. There would be up to 2,000 acres of hazardous fuels treatment targeted in the very high-risk areas of wildland urban interface throughout the implementation of the Foothills Landscape.

Treatments that create resilient forest conditions would have an indirect effect on reducing the risk of wildfire on communities. Hazardous fuels reduction and hazardous fuels mitigation (the act of altering fuel characteristics to a state that is more easily suppressible) are direct strategies that would be utilized to accomplish the desired outcome. The tools available for use would be prescribed fire and mechanical fuels treatments. Prescribed fire done in conjunction with mechanical treatments would be preferred. In areas where prescribed fire may not be an option for treating fuels, including but not limited to within close proximity of structures, steep slopes, the size of the area to be treated, or the type of vegetation in a given location, sole use of mechanical treatments may be used taking into consideration limitations such as topography, accessibility, and cost for each site area. For the purpose of this project, mechanical fuels treatments would typically refer to timber harvest and/or the use of machinery to conduct mulching and mastication operations. These actions would help reduce the risk of property damage and improve public and firefighter safety by reducing the risk of severe fire behavior due to fuel characteristics. In areas where herbicide can be used to treat stump sprouting, it would extend the time period between mechanical treatments. Mechanical fuels treatments have operability limitations that would be addressed in each site area.

Prescribed Burning

Existing burn units and areas that have potential for new burn units were reviewed across the Foothills Landscape to best achieve the project purpose and need. A maximum acreage of up to 50,000 acres ($^1/_3$ of Foothills Landscape) has been proposed for prescribed fire treatments in conjunction with silvicultural objectives designed to improve forest health, wildlife habitat, and to increase resiliency to disturbance. Within those 50,000 acres, 29 existing prescribed fire burn units totaling 22,270 acres have been incorporated into this project to help reach restoration goals. In addition to those existing units, new prescribed fire burn units may be incorporated into the Foothills Landscape based on proposed vegetation management activities.

Photo 9 Contrast of Open Understory/ Midstory after Prescribed Burn Treatment (Left Side of Road) with Untreated Vegetation Condition (Right Side of Road).

Prescribed fire plans would be prepared describing weather and fuel conditions needed to meet the desired site-specific objectives, fire intensities and ignition methods, and a risk evaluation to safely execute the prescribed fire while considering the effects of the fire on other resources, including smoke impacts. Containment lines would consist of natural barriers, existing roads, streams, or constructed firelines. Firelines would be rehabilitated as appropriate including installing water bars, revegetation, and blocking of the 'take offs' on roads to prevent illegal motor-vehicle use.

Pine Plantation Treatments

A total of 17,300 acres (10% of Foothills Landscape) of pine plantation thinning could be implemented within the project area. The project would improve forest health in overstocked pine stands, and would focus on young, overstocked, even-aged pine stands that were established during the last half-century. Due to high stocking rates, there are currently 24,724 acres of young, unmaintained pine plantations that are at risk for southern pine beetle or other bark beetle infestations. About 13,800 acres of pine plantations are proposed for commercial thinning to reduce the risk for bark beetle infestations. Thinning would reduce the basal area to less than 80 ft^2/ac. Using prescribed fire (previously discussed) in coordination with thinning treatments would be applied in these infested areas to best meet restoration objectives.

An estimated 3,500 acres of thinning is also proposed in pine plantations where trees sizes are small. Thinning could include crown-touching release or pre-commercial thinning. Treatments would reduce stocking to improve site resources, improving the health and vigor of residual trees. In these areas with smaller diameter trees, using fire for ecological purposes would be preferred, but not required, to achieve desired outcomes.

Response to Insect & Disease Outbreak

The project area is impacted by outbreaks of southern pine bark beetles, ips bark beetles, gypsy moths, and hemlock wooly adelgid. If isolated spots of tree mortality from insect or disease rapidly forms and spreads into significant infestations across a wide range of stands, then intervention to curtail the impacts of these invasive pests would occur when

The treatment required to mitigate the effects of an outbreak are pest specific. For example, if the project area becomes infested by bark beetles, these infested areas may receive suppression treatments followed by connected reforestation actions. Suppression of bark beetle infestation could include cut-and-leave operations, especially in areas without direct access. Infested areas with direct or logical points of access could be treated through cut-and-remove salvage harvests. These treatments would be implemented in a manner consistent with the Forest Plan while improving forest health and reducing hazards to visitors for safety or legal reasons. Follow-up connected reforestation actions may include site preparation activities (manual, herbicides and/or prescribed burning), artificial regeneration by planting of ecologically suitable tree species, and subsequent release treatments using manual methods or herbicides. In the event of an ips beetle outbreak, the treatment would be similar to southern pine beetle except the material must be removed from the site to be effective.

The work would be prioritized based on the specific issues related to the infestations. For example, if the infestation is along a private boundary, it may be a high priority to treat/suppress these areas to prevent spread onto non-FS lands. If the infestation is threatening a recreation site with large pine trees that are part of the visual appeal of the site, then the priority may be there. The most logical areas would be those that could be accessed for treatment. Actions to suppress the outbreak are time sensitive and would need to be able to respond as soon as possible to reduce threats to sensitive places and loss of timber. Most salvage contracts are short three-month windows.

The approach to mitigating the effects of the hemlock wooly adelgid are outlined in the Hemlock Conservation section (page 54) of the proposed action.

Proposed Actions to Maintain or Restore Connectivity:

Create Young Forest

Young forest habitat would be created primarily as a result of restoration treatments in pine and oak forests as described in the Biologic Integrity section above (page 46). Two-aged regeneration harvests used to restore declining southern yellow pine species (est. 5,800 acres), regeneration for the maintenance of oak /oak-pine forest to improve successional stage diversity in the oak community (est. 2,000 acres) and the restoration of off-site plantations to native oak or southern yellow pine forest types (est. 1,700 acres) would create a total of up to 9,500 acres of young forest. The proposal also includes up to 500 acres of young forest creation in more mesic hardwood stands. This would represent about 3% of the mesic deciduous forest in the Foothills Landscape. Young forest in more mesic sites differs from that created in drier sites (pine and oak) and provides habitat for a different suite of species (such as ruffed grouse).

Young forest creation in mesic hardwood stands (yellow poplar dominated) would be implemented through two-aged regeneration harvests, retaining an average residual basal area of 15 – 20 ft^2/acre. This would result in large continuous openings in the forest canopy for the

regeneration of a new age class to occur. Oaks and hickories would be preferred leave trees in harvest units. Trees reserved from cutting would be retained in a non-uniform pattern and retained indefinitely to form the two-aged condition. Following the commercial harvest, sites would be prepared for natural regeneration by treating small diameter stems that persisted through the commercial harvest. This vegetation would be treated using manual methods (slashed down). Sites regenerated under this treatment are expected to regenerate naturally to the pre-harvest composition (yellow poplar dominant). Individual oak trees, if present in the regenerating stands, would be managed through release treatments (manually). Release treatments may be applied one or more times during the first 10 – 15 years of regeneration.

There are also opportunities to create young forest by treating the boundaries of permanent openings such as wildlife openings, utility corridors, and selected road segments. This treatment (known as "daylighting") is the practice of removing the overstory tree canopy within a certain distance from the open area (road or utility corridor, wildlife opening) to create young forest and increase edge habitat for wildlife benefit. This type of treatment would occur in areas where opportunities for other young forest treatments are limited, but where the slopes are gentle enough to complete the work. Up to an additional 500 acres of young forest would be created by these treatments. The edges of permanent openings may be treated by removing most or all of the trees within a 25 to 50-foot buffer around or alongside the opening.

Designate Old-Growth

Achieving the old-growth conservation goals for the Foothills Landscape would be focused on the 14 applicable watersheds that do not meet the 5% minimum old growth objective from the Forest Plan. A minimum of 3,578 acres of small block old-growth allocations would be made in these watersheds. The allocations would be arranged in a mosaic across the landscape and be connected by other habitat types. Additionally, there are 720 acres within watersheds already meeting the 5% old-growth designation that are recommended for designation.

Overall, it is proposed to designate an additional 5,050 acres as old-growth in the Foothills Landscape. This treatment does not follow the condition-based or adaptive management approach outlined in the introduction of this document. Old-growth by forest stand has been determined for two reasons: first, information was incorporated from surveys completed by Georgia Forest Watch, and it is known that these areas contain old growth characteristics; and second, stands have been identified to ensure that other treatments not consistent with old-growth management do not occur in these areas while the projects are implemented. The stands proposed for designation are listed in Appendix D.

Maintain, Expand, or Construct Permanent Openings

There are currently 184 wildlife openings in the Foothills Landscape totaling approximately 275 acres. Maintaining these openings would be accomplished by a combination of mowing, disking, prescribed burning, and/or periodic replanting with a preferred seed mixture or plant. Herbicide use to reduce non-native invasive plant species in wildlife openings would be used as prescribed under the decision for both the *Vegetation Control: Non- native Invasive Species and Shortleaf Pine Restoration Release project on the Chattooga River Ranger District* and the *Non-native Invasive Species Treatment project on the Blue Ridge and Conasauga Ranger Districts.*

There is the potential to create/expand/maintain permanent openings on up to 1% of the area within each 6th level HUC unit (sub-watershed) in the Foothills Landscape. This is up to 1,400

acres. This would result in a well-distributed network of permanent openings across the landscape. The creation of new permanent openings would be primarily connected to timber harvest activities. New openings would range in size from one to three acres and could be managed in a variety of ways: as grass/forb habitat, either as "food plots" (high-quality clover mixes) or native grasses and forbs, shrub habitat, or as pollinator habitat, with specific plantings for birds and butterflies, such as monarch butterfly. It is anticipated that approximately 80 – 90% of the new openings would be managed as food plots, 10 – 20% as native grasses, shrubs, or pollinator habitat. The edges of the openings would be feathered into the adjacent forest stands for additional value as cover and a food source.

Replace Barriers to Aquatic Organism Passage

There are an estimated 225 stream crossings known to occur in the Foothills Landscape, with that number likely being much higher. Barriers to aquatic organism passage (mainly culverts) exist at many, but not all, of these locations along important Foothills Landscape streams. The replacement of barriers with appropriate structures (bottomless culverts, bridges, or low-water fords) is proposed in conjunction with other treatments, i.e. stream habitat and road improvement projects. This would involve removal of existing structures, installation of new structures (if warranted), and associated road reconstruction.

Improve Trail System and Enhance Developed Recreation

Several enhancements to existing developed recreation opportunities are proposed within the Foothills Landscape. All developed recreation site and trail improvements and activities would be evaluated for social, financial and environmental sustainability using the USFS Southern Region Sustainable Recreation Evaluation Tool called PACEit! (**P**ropose, **A**ssemble, **C**ollect, and **E**valuate), a four-step process used by the USFS Southern Region to evaluate recreation sites;[6] and the Natural Resource Management (NRM) corporate database where condition surveys are stored for developed recreation areas that highlight deferred maintenance needs per site. Trail construction and re-routes proposed would follow the guidance of the Trail Construction and Maintenance Notebook (USFS 2007), Equestrian Design Guidebook for Trails, Trailheads, and Campgrounds (Hancock et al. 2007), and IMBA Trail Solutions (http://www.imba.com/trail-solutions).A total of up to 50 miles of new trail construction and 111 miles of re-routes is proposed throughout the Foothills Landscape. Both construction and re-routing would include the removal of vegetation, construction of trail tread using manual and mechanical methods, and/or construction of structures such as turnpikes, causeways, retaining walls, climbing turns and switchbacks to increase the sustainability and longevity of the trails. It also includes installation and maintenance of drainage structures such as culverts, low-water crossings, bridges and water diversion devices.

[6] An example can be found on the project webpage at https://www.fs.usda.gov/project/?project=52509

Areas proposed for trail work, including creation of loop opportunities instead of out-and-back trails, include the Willis Knob, Bear Creek, Stonewall/White Twister, and Jake and Bull. This trail work would be considered new trail construction. Where system trails have been identified as being in poor condition or having low-visitor satisfaction[7], those trails would be proposed for trail re-routes. For example, sections of the Oakey Mountain OHV System would be re-routed to minimize conflicts of OHV vehicles accessing private property, reduce soil and water concerns, and minimize illegal off-trail use.

Converting roads to designated trails in areas of the Bear Creek and Pinhoti trail systems is proposed. Approximately six miles of road could be converted to trails in order to enhance existing use opportunities. This work would include changing the designated use type, narrowing segments of the existing road surface by excavating the road embankment, removing culverts or other infrastructure, and filling/ stabilizing to trail standard.

Photo 10 Horse Riding on the Jake and Bull Trail System

The project proposes to improve parking totaling approximately three acres at Pinhoti, Bear Creek, Jake and Bull, Willis Knob, Dicks Creek, Stonewall/White Twister Trailheads, and Holly Creek Day Use Area. Parking improvements and expansions would comply with Federal Highways Administration road specifications (Standard Specification for Construction of Roads and Bridges on Federal Highway Projects, https://flh.fhwa.dot.gov/resources/specs/). This may include the removal of vegetation, grading of the area, drainage improvements if necessary and the installation of parking or traffic barriers such as berms, rocks, or gates to restrict access.

The addition of accessible fishing piers at Holly Creek Day Use Area is also proposed. This would entail clearing areas for expansion and appropriate grade using mechanical equipment. Please refer to Map 23, Map 24, and Map 25 for the location of these recreation sites and trails.

Change Motorized Access Designations

The Forest is proposing changes to the maintenance levels or the season of use to the Forest Service road system that would restrict or change motorized access on some roads or trails (see Table 4). There are also roads and trails proposed for decommissioning (see Decommission Forest Roads and Trails in Soil and Water Quality section below, page 67). Please refer to Map 26, Map 27, and Map 28 for all proposed changes. To find out more about the difference between the Maintenance Levels, see the Guide for Road Maintenance Levels at https://www.fs.fed.us/t-d/pubs/pdf/11771811.pdf.

Seasonal closures would occur on roads as suggested by the Travel Analysis Report and Forest Service staff to reduce traffic therefore reducing erosion and sediment rates. Identifying and

[7] The Region 8 Trail Rapid Assessment tool provides a ranking of trails based on trail condition and visitor satisfaction.

implementing these changes on roads that are hydrologically connected to a waterbody (defined by Watershed Condition Framework as within 300 feet of a waterbody) would be a high priority.

The proposal includes converting 54.3 miles of road to Maintenance Level (ML) 1 or ML 2 – Administrative Use Only and upgrading 2.9 miles of the Tibbs ATV Trail to ML 2 – Administrative Use Only. These roads and trails, that are currently open to the public, would be closed to the public year-round.

There are also15.9 miles of road and 3.4 miles of the Rocky Flats full-sized jeep trail (ML1) currently open year-round proposed for seasonal closure (ML 2 – Seasonal Restriction). Seasonal changes would include an update to the Motorized Vehicle Use Maps, and would require barriers such as berms, rocks, or gates to restrict motorized access during the closure period.

There are discrepancies between road/trail segment lengths between two GIS databases used by the Forest Service. Where these differences were found, the greater segment lengths were recorded and rounded to the nearest one-tenth of a mile as presented in Table 4.

Table 4 Changes Proposed to the Forest Service System Roads and Trails System That Would Modify Motorized Access

Route No.	Route Name	Miles	Current Maintenance Level (ML)	Proposed Maintenance Level (ML)	Section (if applicable)/ Comments
Roads					
Conasauga Ranger District					
1	Doogan Mountain	1.2*	ML 3	ML 2 - Administrative Use Only	*MP 1.3 (USFS boundary) to MP 2.5***
1A	Doogan Mountain Branch A	2.3	ML 2	ML 2 - Administrative Use Only**	
148	Rymer	0.4	ML 2	ML 1	*MP 0.8 (USFS boundary) to MP 1.2 end of road***
148A	Rymer Branch A	0.7	ML 2	ML 1	*MP 0.4 (USFS boundary) to MP 1.1 end of road***
18*	Holly Creek	1.2	ML 3	ML 5	*MP 0.0 (Dill Creek) to MP 1.2 (Emory Creek Trailhead)* *Pave section of road and replace bridge over Holly Creek*
218	Muskrat Creek	2.9	ML 3	ML 2 - Seasonal Restriction	*From Windy Gap Trailhead to end of road*

Route No.	Route Name	Miles	Current Maintenance Level (ML)	Proposed Maintenance Level (ML)	Section (if applicable)/ Comments
218A*	Muskrat Creek Branch A	0.9	ML 3	ML 1	
218B*	Cohorn Branch	1.0	ML 3	ML 1	
279	Wiggins Camp	2.2	ML 2	ML 2 - Administrative Use Only**	
51C*	Ken Mountain	1.4	ML 2	ML 2 - Administrative Use Only **	*MP 0.0 to MP 1.4*
51D	Horseshoe Bend Camp	0.9	ML 2	ML 2 - Administrative Use Only **	*MP 0.1 to MP 1.0*
630A	Mill Creek Branch A	0.8	ML 2	ML 2 - Seasonal Restriction	
630B	Hickory Ridge	2.8	ML 2	ML 2 -Seasonal Restriction	*MP 0.7 to MP 3.5*
630H	Muddy Branch	1.0	ML 2	ML 2 - Administrative Use Only **	*Existing gate already ML 2 Admin Use Only*
78A*	Dill Creek	0.8	ML 2	ML 2 - Administrative Use Only	*Was not accessible as ML 2 because the road to access was OHV Trail*
78C*	Lower Emory Creek	5.0	ML 2	ML 2 - Administrative Use Only	*Was not accessible as ML 2 because the road to access was OHV Trail*
78E*	Upper Emory Creek	2.8	ML 2	ML 2 - Administrative Use Only	*Was not accessible as ML 2 because the road to access was OHV Trail*
78F*	Raccoon Branch	2.1	ML 2	ML 2 - Administrative Use Only	*Was not accessible as ML 2 because the road to access was OHV Trail*
90A	Stillhouse	2.3	ML 3	ML 1	*Road is drivable for 2.25 miles all along the Pinhoti Trail +/- 0.6 miles to Trailhead*

Route No.	Route Name	Miles	Current Maintenance Level (ML)	Proposed Maintenance Level (ML)	Section (if applicable)/ Comments
Blue Ridge Ranger District					
135	Three Sisters	2.4	ML 2	ML 2 - Administrative Use Only	*MP 0.0 to MP 2.4*
450	Ash Bridge	0.9	ML 2	ML 1	
83	Bull Mountain	1.8	ML 2	ML 2 - Administrative Use Only	*MP 1.8 to MP 3.6*
98	Dunn Branch	1.1	ML 2	ML 1	
Chattooga River Ranger District					
14	Stroud Mountain	0.7	ML 2	ML 1	
157	Gold Mine (Willis Knob)	0.4	ML 2	ML 1	*From intersection of FR 157.B to end of road*
157B	Holden Cemetery	0.9	ML 2	ML 2 - Administrative Use Only	
159	Pollywah Knob	3.0	ML 2	ML 2 - Seasonal Restriction	
258	Whispering Pine	0.2	ML 2	ML2 - Administrative Use Only	*MP 0.1 to MP 0.23***
266	Long Branch	0.6	ML 2	ML1	
267	Oakey Mountain	1.5	ML 2	ML 1	
27	Crow Creek	1.7	ML 2	ML 2 – Seasonal Restriction	
321	Raper Mountain	1.0	ML 2	ML 1	
376	Raper Creek	1.0	ML 3	ML 2	*MP 0.0 to MP 1.0*
376	Raper Creek	1.1	ML 2	ML 2 - Administrative Use Only	*MP 1.0 to MP 2.1*

Route No.	Route Name	Miles	Current Maintenance Level (ML)	Proposed Maintenance Level (ML)	Section (if applicable)/ Comments
376A*	Chastain Branch	1.5	ML 2	ML 2 - Administrative Use Only	
410	Ann Gap	2.9	ML 2	ML 2 - Administrative Use Only	*MP 0.0 to MP 2.9*
416	Stonewall Knob	1.7	ML 2	ML 2 -Seasonal Restriction	
417	Pigpen Gap	1.6	ML 2	ML 2 -Seasonal Restriction	
429	Upper Bad Creek	0.9	ML 2	ML 1	
517	Muscadine	0.6	ML 2	ML 1	
60	Nester Creek	4.5	ML 2	ML 2 – Administrative Use only	*POWER COMPANY ROW; they will still require access*
60A	Nester Creek Branch	1.1	ML 2	ML 2 – Administrative Use only**	*POWER COMPANY ROW; they will still require access*
8	Upper Cliff Creek	1.4	ML 2	ML 2 - Seasonal Restriction	
825A	Hollifield Place	0.5	ML 2	ML 1	
825B	Timber West Spur	0.8	ML 2	ML 1	
84	Sockem Dog	0.8	ML 2	ML 1	
844	Mack Mountain	1.6	ML 2	ML 2 – Administrative Use Only	*POWER COMPANY ROW; they will still require access*
977A	Rile Bend	1.5	ML 2	ML 1	
Trails					
630D	Rocky Flats (CRD)	3.4	ML1/ full size trail	ML2 - Seasonal Restriction	

Route No.	Route Name	Miles	Current Maintenance Level (ML)	Proposed Maintenance Level (ML)	Section (if applicable)/ Comments
OHV TRAIL 78G (78)	Tibbs ATV Trail (CRD)	2.9	OHV Trail < 50”	ML 2 - Administrative Use Only	

*Not included in proposed action at scoping

Proposed Actions to Improve Soil and Water Quality:

Improve Existing Road System

It is proposed to improve the condition of existing roads including culverts, stream crossings, surface material, and configuration using recommendations in the Riparian Restoration, Roads Field Guide (USFS 2005) and Georgia’s Better Backroads Field Manual (Georgia Resource Conservation and Development Council, Inc. 2009). Priority considerations for road improvements would be given to roads contributing excess sediment to waterways, where access needs and or safety hazards are greatest. Road improvements in other watersheds are expected to take place by implementation area schedule or as conditions warrant. Please see Road Related Actions in the Connected Actions section on page 80 for additional information regarding proposed road work.

Decommission Forest Roads and Motorized Trails

Decommissioning Forest Service System roads and motorized trails is proposed to reduce the risks to water quality where sediment is being delivered to stream channels. Non-motorized, low-use, and user-created trails are also proposed for decommissioning, but discussed in the Improve Sustainability of Recreation Experience section (page 70). This proposal includes decommissioning of known roads and trails listed in Table 5 where the current conditions are currently impacting soil and water quality and the roads are no longer needed. Decommissioning would result in roads currently open to the public be closed and removed from Forest Service System road inventory. See Map 26, Map 27, and Map 28 for all proposed changes to the roads and trails in the Foothills Landscape.

Photo 11 Forest Road Damage that is Impacting Soil and Water Resources and Visitor Safety and Enjoyment

Decommissioning of roads includes a range of potential activities such as complete removal of all stream crossing fills and culverts; crushing and burying inlets (and/or removal) of cross-drain culverts; construction of waterbars and leadoff ditches; restoration of stream channels; partial removal of fill material from swales; outsloping of the road surface; excavation and/or stabilization of road cut and fill failures; seeding and mulching disturbed areas; and obliterating take-offs. This work may also include temporary diverting of live streams, pumping, bailing, draining, sheeting, bracing and miscellaneous items required for execution of the work.

All actions would follow Georgia BMPs and methods for the varying conditions. One option, as an example, would be to fill ditches and restore the roadway to the approximate original ground contour or shape to blend with the terrain. The roadbed would be loosened by ripping or scarifying to the depth of 12 inches. All embankments would be pulled, and the material applied to contour or fill ditches and/or haul it to designated areas. Construction of waterbars and the scattering of any available slash on the obliterated roadway would provide erosion control and seedbed protection.

Another method would be to shape the roadway to drain water, construct waterbars, fill ditches, outslope the roadbed and loosen the roadbed by ripping or scarifying to the depth of 12 inches to provide a seedbed and promote establishment of vegetation. Scattering of any available slash on the obliterated roadway would occur for seedbed protection. Finally, the roadbed would be loosened by scarifying to the depth of 12 inches. Construction of waterbars and eliminate all ruts and low spots that could hold water. Scatter any available slash on obliterated roadway.

Table 5 shows all roads and trails proposed for decommissioning and removal from the system.

Table 5 National Forest System Roads and Trails Proposed for Removal from the System and Decommissioning[8]

Route No.	Route Name	Miles	Current Maintenance Level (ML)	Proposed Access Change
Roads				
Conasauga Ranger District				
1*	Doogan Mountain	1.3	ML 2	*Decommission road from MP 1.3 to MP 2.6*
10	Rock Creek	0.4	ML 2	*Decommission road from MP 1.6 to MP 2.0*
51C	Ken Mountain	0.4	ML 2	*Decommission Road from MP 1.4 to MP 1.8, last 0.4 miles*
630F	Mill Creek Spur	0.7	ML 1	*Decommission entire road*
Blue Ridge Ranger District				
135	Three Sisters	0.8	ML 2	*Decommission road from MP 2.4 to MP 3.2 at existing tank trap to end of road*
135A	Three Sisters Br A	0.7	ML 2	*Decommission entire road*
262	S. Bryant Creek	1.6	ML 2	*Decommission entire road*
288	Cochran Falls	0.3	ML 2	*Decommission road from MP 0.45 to MP 0.75*
365	W. Jones Spur	0.5	ML 2	*Decommission entire road*
Chattooga River Ranger District				
25B	Dads Ridge	1.6	ML 1	*Decommission entire road.*
290B	Lucy Gap	0.6	ML 2	*Decommission entire road*
318	Adams	1.1	ML 1	*Decommission entire road*
319A	Shoal Branch	1.0	ML 1	*Decommission entire road*
319B	Crow Mountain	0.6	ML 1	*Decommission entire road*

[8] There are discrepancies between road/trail segment lengths between databases. The road lengths in Table 5 are the greater segment lengths recorded and were rounded to the nearest one-tenth of a mile.

Route No.	Route Name	Miles	Current Maintenance Level (ML)	Proposed Access Change
511B	Raven Rock	0.5	ML 1	*Decommission road from MP 0.9 to MP 1.4, last 0.5 miles*
720	Reynolds	1.1	ML 1	*Decommission entire road*
Trails				
OHV Trail 631	Tatum Lead OHV Trail	1.8	OHV Trail < 50”	*Decommission last 1.8 miles beyond junction with Rock Creek trail*
OHV Trail 176 (78B)	Milma Creek ATV	3.5	OHV Trail < 50”	*Decommission OHV Trail segment between OHV Trail 78.G - Tibbs ATV trail and OHV Trail 154 -Windy Gap*

*not included in proposed action

Improve Sustainability of Recreation Experience

Additional recreation improvements designed to reduce sediment delivery to streams while also improving the sustainability of recreation opportunities are proposed[9]. Many of the previous activities proposed, such as trail re-routes, and access changes would also benefit soil and water quality. Approximately 15 miles of trail in low-use areas, such as Murrys Lake Trail, Peeples Lake Trail is proposed for decommissioning. Work would include scarifying the existing trail section, modifying tread for proper drainage, removing stream crossings and/or cross drains.

Development of an official designated trail system adjacent to Chattooga River is also proposed and is included as part of the proposed new trail construction. It is intended to engage with local boaters, fly fishermen, Trout Unlimited and the Chattooga Conservancy to evaluate existing trails, determine access needs, and add or decommission trails as needed to create a network of pathways and access areas that meet the needs of the visitors, while providing for long-term protection and stabilization of the riverbank ecosystem along the Chattooga River in the areas adjacent to the Highway 28 bridge. This assessment may result in adding additional trail miles (estimated miles of which were included in the 50 miles of new trail construction previously proposed) and/or decommissioning user created trails and dispersed campsites. User created trails and dispersed campsites within 50 feet of the Chattooga River corridor would be decommissioned unless posted with an official sign (36 CFR 261.50(e)(6)). Decommissioning the existing trail section would include modifying tread for proper drainage, scarifying, revegetating areas as needed, and preventing trampling of vegetation using social engineering. This proposal to rehabilitate and address the currently unmanaged recreation in the area was introduced by the Chattooga Conservancy during collaboration and would complement the canebrake restoration that is proposed in the same area.

[9] Most of the recommendations from the Whissenhunt OHV Trail Assessment have been initiated and are not included in this proposal because the decision on the Whissenhunt OHV Trail System Improvement authorizes the work.

Boggs Creek Campground and Oakey Mountain Campground are proposed to be officially decommissioned for overnight visitation. Campground decommissioning would include closing the access roads with physical barriers and removing all infrastructure and facilities. A site assessment would be conducted at Boggs Creek to see the feasibility of reducing the services and converting to a day-use area. Some roads within the recreation area may be decommissioned and seeded with native or non-perpetuating vegetation. The majority of the amenities, including the picnic tables, fire rings, kiosks, and signage would be removed. If the assessment results with removal of the vault toilet, all material would be properly disposed and the remaining hole backfilled. All decommissioning projects would be thoughtfully planned out and every effort would be made to notify visitors of changes.

The developed recreation sites ranked by the Regional Sustainable Recreation Site model as moderate or low financial sustainability are listed in Table 6. These sites are known recreation sites that have been prioritized for more immediate action. A complete assessment would be conducted to determine the amount of investment the Forest can incur to maintain a site affected by a triggering event. The occurrence of any of these factors may trigger a change in site management. Each site would be evaluated to determine existing funding sources, potential partnership opportunities, availability of alternative funding sources, and the potential for reducing services or partial decommissioning. If none of these alternatives are found to be viable, the site would be considered unsustainable and may be fully decommissioned. Decommissioning work includes closure of the access roads using physical barriers and removal of all infrastructure and facilities. Throughout this process, the public would be notified of proposed changes and would have opportunities to comment (refer to the sustainable recreation evaluation and matrices in Appendix E). In the event that a change in condition occurs on other sites within the Foothills Landscape, the priority of these sites would be reassessed or may change.

Photo 12 Photo of Dispersed Campsite on the Banks of the Chattooga River. Note Bare, Compacted Ground in Close Proximity to Surface Water.

Dispersed camping opportunities exist throughout the Foothills Landscape area. Sites would be assessed individually for environmental and social impacts as indicated in the dispersed recreation matrix (see Appendix E). Dispersed camping sites would remain open in areas officially signed within 50 feet of perennial stream channels. If a site is not officially signed opened, camping is prohibited to protect soil and water quality and enhance wildlife habitat. Site decommissioning would include scarification, construction of physical barriers, installation of signs to inform users of closure, and monitoring.

Table 6: Recreation Sites Identified in the Foothills Landscape with Moderate or Low Financial Sustainability

Recreation Site Name	Site Type	Current Conditions/ Known Concerns
Willis Knob Horse Camp, Chattooga River Ranger District	Campground	Interest in more connecting trails and loops that offer varying distances
Dicks Creek Dispersed Camping Area, Blue Ridge Ranger District	Dispersed camping area	No fees, minimal amenities, day use area, evidence of resource damage
Dockery Lake Recreation Area, Blue Ridge Ranger District	Campground	11 sites with amenities, water, flush toilet
Dockery Lake Day Use Area, Blue Ridge Ranger District	Group picnic area	Picnic tables, grills, vault toilet
Chestatee Overlook, Blue Ridge Ranger District	Observation site	No amenities, paved pull through
Hickey Gap, Conasauga Ranger District	Campground	Five sites, picnic tables, grills, no fees, single vault toilet
Sumac Creek Shooting Range, Conasauga Ranger District	Shooting range	Routine maintenance needed every 3-4 years. Road and drainage at trailhead need addressed. Restore ADA access. Two picnic tables, shelter, double vault toilets
Holly Creek Day Use, Conasauga Ranger District	Picnic area	Swimming holes, trash issues, high sense of place for surrounding communities, sedimentation issues from the road, bridge repairs needed, wooden steps and viewing platform need maintenance. Three grills & picnic tables
Cottonwood Patch, Conasauga Ranger District	Campground	Nine sites, handpump, troughs, double vault toilet. Monthly water testing required
Cohutta Overlook, Conasauga Ranger District	Observation deck	Repairs needed along stairway and viewing platform
Ball Field Dispersed Camping Area, Conasauga Ranger District	Dispersed camping area	Group camping area. Access road and trailhead (Emery Creek Trail) need gravel and barriers. No facilities on site
Lake Conasauga Overflow Camping Area, Conasauga Ranger District	Group camping area	Six sites, double vault

Recreation Site Name	Site Type	Current Conditions/ Known Concerns
Murrays Lake, Conasauga Ranger District	Day use only	Trail and access issues identified. Consider removing bridge and making improvements to boat launch. No facilities on site
Mill Creek Overlook, Conasauga Ranger District	Observation deck	Graffiti, some dumping, wooden, decked structure
Barnes Creek Picnic, Conasauga Ranger District	Picnic area	One table, no grill, railed path and catwalk over falls. Cascading waterfall

Project Design Features

Table 7 Project Design Features for Alternative 2 of the Foothills Landscape Project

Project Design Feature, Best Management Practices, and Standards	Triggering Activities	Origin
Soil and Water		
Watershed total impervious area (TIA) should not exceed 10%. Impervious surfaces are those that prohibit the movement of water from the land surface into the underlying soil (ex. Roads, trails, and other compacted areas).	All	Project Specific
Soil loss should not exceed the allowable soil loss (T-factor) for any given soil as estimated through NRCS.	All	Regional soil standard
At least 85% of an activity area is left in a condition of acceptable potential soil productivity following land management activities.	All	Regional soil standard
Operators should drive, operate, and store heavy equipment only within the proposed development footprint or the disturbed corridors of the surrounding roads and parking areas, so as to limit soil compaction and vegetation cover loss in the surrounding area. Additionally, bulldozer debris and excavated material from grading and digging operations should not be pushed into the surrounding natural forest areas. Construction should be designed and completed with no additional impacts to the riparian area.	All heavy mechanical equipment use in parking lot expansion activities	Project specific
Soil rutting should be kept to a minimum.	All heavy mechanical equipment uses	Regional soil standard
Compaction in an activity area should not exceed a 15% increase in bulk density in the upper 8 inches of the soil.	All heavy mechanical equipment uses	Regional soil standard
Skidding would not occur within riparian corridors, except for at designated crossings.	All mechanical vegetation management	GA BMP 2009 p. 39
No heavy equipment, other than mechanical fellers, would be allowed to operate within the riparian corridors during harvest activities. The exception to this would be at designated crossings.	All mechanical vegetation management	GA BMP 2009 p. 42
Once the temporary roads, log landings, and skid trails are no longer needed, they would be closed to normal vehicle traffic so that illegal use is discouraged. The closures may include installation of an earthen barrier, re-contouring, decompaction, placement of logging debris along the road surface, seeding or placement of boulders.	All mechanical vegetation management	Standard contract Language

Project Design Feature, Best Management Practices, and Standards	Triggering Activities	Origin
Log landings and skid trail locations would be evaluated and approved by the Forest Service prior to harvesting in order to ensure that they are placed in locations with adequate drainage and away from sensitive soils or riparian areas as per the Georgia State Best Management Practices recommendations.	All mechanical vegetation management	Project specific
Skidding and decking would be limited to designated and approved routes along ridges and gentle slopes to protect sensitive soils. Skidding would not be allowed on sustained slopes over 35%. Coordination will be completed when skid trails and decking coincide with system trails.	All mechanical vegetation management	Project specific
Locate and construct firelines to minimize mineral soil exposure by utilizing natural barriers, installing firebreaks along the contour, and using gradual grades as outlined in the Forest Plan and Georgia's Best Management Practices Handbook.	Fire/fuels treatments	GA BMP 2009 pp. 49-50
The operator should try to move in a straight direction. Pivot turns should be kept to a minimum and turns should be conducted in a broad arc as the surrounding terrain and timber would allow in order to minimize soil disturbance. Care should be taken to avoid moving over the same piece of ground more than three times or use areas that have already been compacted through other activities.	Mastication activities	Project specific
Temporary roads would follow the general contour as practical and would generally not exceed sustained grades over 10%.	Temporary road construction	GA BMP 2009 p. 26
The travel way of temporary roads would generally not exceed 14-16 feet except at turnouts and landings.	Temporary road construction	GA BMP 2009 p.27
Drainage structures, such as outsloping and waterbars, would be installed along temporary roads when the use of the road is no longer needed.	Temporary road construction	GA BMP 2009 p. 37
Temporary roads would be constructed on previous existing routes (old woods roads, skid trails, system trails) where possible to minimize the need for new temporary road construction.	Temporary road construction	Project specific
Non-Native Invasive Species (NNIS)		
All activities should be evaluated for their potential to affect NNIS. A risk assessment (Example in Appendix A of NNIS report) should be utilized prior to implementation of any activity to determine the risks and consequences of the action on NNIS and the necessary mitigations included as part of the activity.	All	Project specific
Logging equipment must be inspected and found to be clean (free of vegetative debris) seed soils, etc. upon arrival to timber sale areas.	Any mechanical vegetation management, fire/fuels treatments	Standard timber contract

Project Design Feature, Best Management Practices, and Standards	Triggering Activities	Origin
Known NNIS infestations must be shown on timber sale area maps. Ensure that equipment washing clauses are included in all ground-disturbing contracts and sales documents, and that clauses are discussed in pre-work conferences.	Any mechanical vegetation management, fire/fuels treatments	Standard contract language
When possible, significant infestations of NNIS along planned access routes would be pre-treated systematically within timber sale areas in order to prevent the spread of NNIS into new areas.	Any mechanical vegetation management, fire/fuels treatments	Project specific
Skidding through known populations of NNIS should be avoided to reduce the potential for spread.	Any mechanical vegetation management, fire/fuels treatments	Project specific
Terrestrial and Aquatic Wildlife		
No tree removal may occur within 0.25 mile of a known NLEB hibernacula at any time of the year (NLEB 4d rule) unless agreed to during consultation with Fish & Wildlife Service	Any mechanical vegetation management	Project specific (ESA Consultation)
No tree removal may occur within a 150-foot radius of known, occupied NLEB roost trees during June or July each year (NLEB 4d rule) unless agreed to during consultation with Fish & Wildlife Service	Any mechanical vegetation management	Project specific (ESA Consultation)
Milkweed species would be avoided during herbicide spraying.	Herbicide use	Project specific
Within individual project areas to be implemented within the Foothills Landscape area, an assessment of existing acres of permanent openings would be completed prior to implementation to determine the maximum allowable acreage of new openings (up to 1% of the National Forest acreage in each 6th level watershed). Permanent openings would be managed as traditional grass/forb (food plots), shrub, native grass/forb, or pollinator habitat as appropriate for the site.	Any mechanical vegetation management	Project specific
When feasible, native plants that support pollinators would be planted on the forest where appropriate i.e. including logging decks, wildlife openings, powerline, and road rights-of-way. This would specifically include planting milkweed for monarch butterflies. (Work with interested non-profits and organizations to determine the correct plants to consider and the proper locations to conserve and enhance the pollinator habitat across the landscape.)	Any mechanical vegetation management	Project specific
Vegetation Management		

Project Design Feature, Best Management Practices, and Standards	Triggering Activities	Origin
Within individual project areas to be implemented within the Foothills Landscape area, an assessment of existing acres of young forest habitats (stands less than 11 years old) would be made prior to implementation to determine the maximum amount of young forest that could be created. Such assessments would be tiered to the applicable Management Prescription allowances contained within each individual project implementation area. Young forest habitats would not be created in excess of the maximum amounts allowed by each Management Prescription singly or combined.	All vegetation treatments that create young forest habitats (10,500 acres)	Project specific (MRx compliance)
For the mesic hardwood regeneration proposed on 500 acres to create young forest habitats, regeneration treatments would be limited to yellow poplar dominated stands or stands dominated by other non-oak cove hardwood associates. This would include Forest Types 50, 56, 58, and/or 41.	All vegetation treatments in mesic hardwood regeneration (500 acres)	Project Specific
Soil injection treatments of Imidacloprid or Dinotefuran would not be applied in areas of highly permeable soils (gravelly or sandy soils).	Herbicide/Pesticide Use	Project Specific
Soil injection treatments of Imidacloprid or Dinotefuran would not be applied in areas of where there is a presence of surface or standing water.	Herbicide/Pesticide Use	Project Specific
Soil injection treatments of Imidacloprid or Dinotefuran would not be applied to hemlock trees whose roots are in direct contact with streams or standing water.	Herbicide/Pesticide Use	Project Specific
Herbicides are applied according to labeling information and the site-specific analysis done for projects. This labeling and analysis are used to choose the herbicide, rate, and application method for the site. They are also used to select measures to protect human and wildlife health, non-target vegetation, water, soil, and threatened, endangered, proposed, and sensitive species. Site conditions may require stricter constraints than those on the label, but labeling standards are never relaxed	Herbicide/Pesticide Use	VMEIS-AM
Only herbicide formulations (active and inert ingredients) and additives registered by EPA and approved by the Forest Service for use on national forests are applied.	Herbicide/Pesticide Use	VMEIS-AM
Public safety during such uses as viewing, hiking, berry picking, and fuelwood gathering is a priority concern. Method and timing of application are chosen to achieve project objectives while minimizing effects on non-target vegetation and other environmental elements. Selective treatment is preferred over broadcast treatment.	Herbicide/Pesticide Use	VMEIS-AM
Notice signs will be clearly posted, with special care taken in areas of anticipated visitor use.	Herbicide/Pesticide Use	VMEIS-AM

Project Design Feature, Best Management Practices, and Standards	Triggering Activities	Origin
Each Contracting Officer's Representative (COR), who must ensure compliance on contracted herbicide projects are a certified pesticide applicator. Contract inspectors are trained in herbicide use, handling, and application.	Herbicide/Pesticide Use	VMEIS-AM
Contractors ensure that their workers use proper protective clothing and safety equipment required by labeling for the herbicide and application method.	Herbicide/ Pesticide Use	VMEIS-AM
During use, equipment to store, transport, mix, or apply herbicides is inspected daily for leaks.	Herbicide/ Pesticide Use	VMEIS-AM
Botanical Resources		
Known populations of Threatened & Endangered, Sensitive and Locally Rare plants would be protected by placement of a buffer zone around them where possible. The appropriate measures would be determined in coordination with U.S. Fish and Wildlife Service and Georgia Department of Natural Resources.	All	Project Specific
Botanical surveys would be completed in accordance with Forest risk assessments in suitable habitats for T&E and Sensitive species prior to any ground disturbing activities.	Any ground-disturbing activities	Project Specific
Heritage Resources		
Cultural Resources sties with an eligible or undetermined National Register of Historic Places status will be avoided and protected from project effects. The standard avoidance method will consist of a 100-foot protective buffer around each site, or as determined through consultation with the Georgia State Historic Preservation Officer and interested Tribes.	All activities	Project Specific
Recreation (Including Scenic Integrity)		
Vegetation management activities would not utilize existing trails as access routes without a review by recreation staff. Trails used would be restored to the original trail width and characteristics if determined appropriate per sustainable recreation objectives. Blaze trees that define the trail corridor would not be cut unless to mitigate safety concerns.	Any mechanical vegetation management	Project specific
Coordinate with district recreation staff to post advance notices when trails or recreation sites are to be closed during harvest operations and prescribed burning.	Any mechanical, fire or fuels treatments	Project Specific
Trails treads, roads, or facilities would be rehabilitated to pre-existing condition if damaged during project operations, in coordination with district recreation staff.	Any mechanical, fire or fuels treatments	Project Specific

Project Design Feature, Best Management Practices, and Standards	Triggering Activities	Origin
Vegetation treatments that occur within or adjacent to developed sites, dispersed sites, or trails would be coordinated with local recreation /facility staff to protect facility and lessen impacts to visitors to the extent possible. Project activities that occur within or adjacent to developed sites, dispersed sites, or trails would be conducted outside the major use season whenever possible, with the understanding that most facilities are open year-round. Developed sites will be temporarily closed for visitor protection during active operations. Portions of sites and trails may be temporarily closed for visitor protection or possible restrictions placed on silvicultural activities during times of high use.	Any mechanical, fire or fuels treatments	Project specific
Where possible, while implementing proposed treatments, make improvements within recreation sites and along system trails. Examples include cleaning up logs and debris from past projects, removing hazard trees surrounding developed sites, and/or cutting existing stumps to less than six inches.	Any mechanical, fire or fuels treatments	Project specific
Harvest facilities such as temporary roads and landings, and fireline construction will be assessed for continued use to meet other resource needs (i.e. additional trailhead parking, loop trails, wildlife openings, etc.)	Any mechanical, fire or fuels treatments	Project Specific
Layout of regeneration areas would incorporate a no-harvest zone between unit boundaries and open Forest system roads that have a HIGH scenic integrity objective.	Any mechanical vegetation management	Project Specific
Layout of regeneration areas by design would leave areas un-harvested along prominent ridge-lines and/or sites of higher elevation that have a HIGH or MODERATE scenic integrity objectives to reduce “sky-lighting” effects and to obscure areas of lower elevation in regeneration.	Any mechanical vegetation management	Project Specific
Air Quality		
Minimize the amount and concentration of smoke entering populated areas; prevent/ minimize public health and safety hazards, including impacts to sensitive sites (schools, hospitals, etc.), visual impacts on highways, airports, etc. (both day and night); avoid exceedances of the National Ambient Air Quality Standards (NAAQS); and protect visibility in Class 1 areas	Fire/ Fuels treatments	USDA Forest Service Southern Region’s Smoke Management Guidelines

Connected Actions

Road Related Actions

Temporary road construction would occur to provide access for the timber harvest and could include removal of vegetation, brushing of roadside vegetation, surface blading, spot placement of gravel, improvement or installation of drainage structures, and erosion control (including reclamation of sites). Temporary roads would be rehabilitated to restore to original condition once all connected actions where road access is needed are completed.

Road reconstruction activities could include curve widening or realignment to accommodate timber hauling activities, removal of vegetation in roadbed surface, replacement of existing culverts and drainage structures to address present and future resource needs and BMPs, spot surface placement of gravel, and erosion control. An assumption of 142 – 213 miles of reconstruction is estimated over the life of the project based on average of historic needs associated w/ timber harvest (CCF).

Road maintenance activities would be conducted on segments of the existing miles of Forest Service System roads in the project area that could be utilized for the vegetation management activities included in this proposal. More than 260 total miles of system road exist in the project area. Activities could include surface blading, brushing of roadside vegetation, spot placement of gravel, maintenance or improvement of drainage structures, and erosion control.

A fully functioning Forest Service System Road is properly graded (insloped or outsloped between 3% and 5%) allowing surface water to quickly and efficiently be directed off the road (see Figure 4 for a typical road cross section). Road drainage structures (culverts, drain dips and/or waterbars) are installed at appropriate spacing and sizes to allow road surface water to be directed off road in a manner to minimize or prevent sediment transport and erosion of road surface and road fill slopes. Rule of thumb recommendations for the appropriate spacing of drainage features are a function of road longitudinal grade and can be found in the Georgia Better Back Roads Field Manual, page 36.

Roads that do not meet desired condition do not allow for surface water to be directed off of road. This can be the result of the road not having adequate drainage features installed, the road being fully entrenched, an outsloped road shoulder having a berm or an insloped road not having an adequate drainage ditch.

Fully entrenched roads have berms or cut slopes on both the left and right side of the travel way. This results in storm runoff being trapped on the road and leads to road surface being heavily eroded parallel to the road centerline. Outsloped roads with a shoulder berm prevents runoff from being shed uniformly across the fill slope and concentrates runoff on the outsloped berm edge again resulting in erosion of the road traveled way. Insloped roads without adequate drainage ditching and properly spaced drainage features prevents runoff from being collected in the drainage ditch and results in the erosion of the road. In general storm runoff that is not properly directed off a road results in road surfacing sediment transport, erosion of the road and erosion of the road fill slope.

Options for dealing with existing roads that are not effectively handling storm runoff should be evaluated utilizing a cost-benefit analysis including proximity of road to streams and amount of sedimentation and erosion from road.

Option 1: Existing roads can be graded (grader or dozer) to a smooth and uniform road surface correcting any existing road erosion removing existing traveled way rills and or gullies. This option would not correct existing road entrenchment or shoulder berms on outsloping cross slopes. On insloping roads with an existing drainage ditch, the ditch could be cleaned. Existing drainage features could be cleared and maintained to increase functionality.

Option 2: Existing roads can be graded (grader or dozer) to a smooth and uniform road surface correcting any existing road erosion removing existing traveled way rills and or gullies. Roads that are fully entrenched or have outsloped shoulder berms present could have drainage features installed at appropriate spacing. This would require installation of drainage features with lead out ditches installed through areas of fill to allow storm runoff to exit the road traveled way. Insloped roads could have drainage ditch improved or installed with associated drainage features improved or installed to convey storm runoff off the road traveled way.

Option 3: Existing roads can be reconstructed to remove entrenchment and allow for effective and efficient storm runoff conveyance from road traveled way. Roads should be outsloped at 3% to 5% where appropriate to allow for uniform storm runoff to exit road traveled way uniformly over the road fill slope. Sections of insloped roads should have a fully functional drainage ditch with appropriately sized and spaced drainage features to convey storm runoff across road traveled way. Drainage features should be constructed at the appropriate size and spacing along entire road alignment ensuring storm runoff is conveyed effectively and efficiently from road traveled way. Road surfacing can be installed to prevent or minimize any sediment transport from road traveled way.

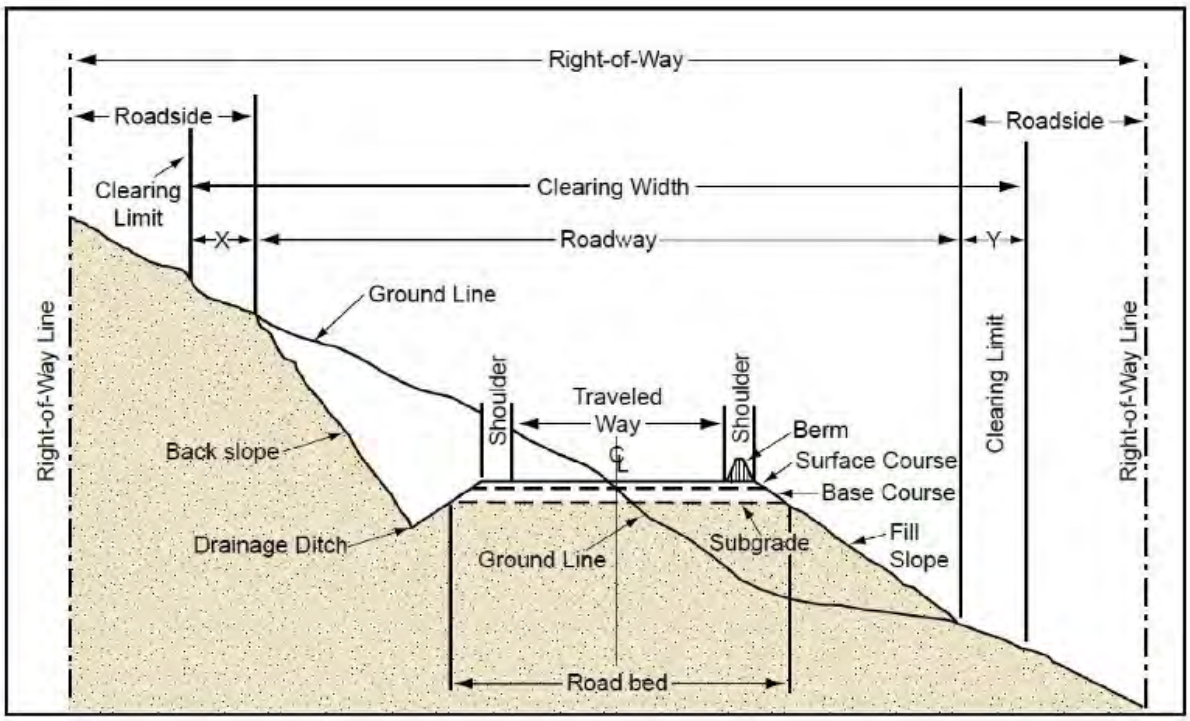


Figure 4 Diagram of a Typical Road Cross-Section

Landing Construction or Re-opening

Log landings used for ground-based harvest units would be located near existing Forest Service system roads where suitable sites can be identified, or along temporary roads a short distance from permanent roads if needed. Landings would be developed at least 100 feet from riparian corridors to provide adequate buffer distance between ground disturbance and streams. Landings would be typically cleared of vegetation and maintained as openings during operation periods, with periodic clearing to maintain proper drainage for overland flow and help maintain dry soils during use periods. Landings generally would be subjected to compaction during the equipment use periods. Locations of landings would be carefully evaluated with consideration and review from other resource areas to include the possibility of conversion to permanent developed sites, such as trailheads and/or wildlife openings.

Fireline Construction

Fireline would be constructed to contain prescribed burning and includes the use of hand tools and/or mechanical equipment such as bulldozers. The fireline would be between 3 feet and 16 feet wide depending on the terrain and expected flame lengths of the fire. Existing roads or trails may be used if they meet requirements for location and firefighter safety. The vegetation and leaf litter would be cleared from the line using chainsaws, hand tools, leaf blowers, or other equipment necessary to meet desired conditions. It is estimated that there would be possibly up to 520 miles of new fireline needed for the implementation of the treatments.

Herbicide Use

The Proposed Action includes the use of herbicides for connected site preparation, release and midstory control treatments in certain restoration and maintenance treatment areas (See Vegetation Specialist Report). Herbicides would be directed at targeted vegetation using backpack sprayers or other hand tools; no aerial or broadcast applications would be prescribed. Table 8 shows the estimated rates of herbicides that could be applied.

Site preparation: In areas proposed for southern yellow pine and oak restoration, chestnut orchard establishment, and oak regeneration, harvested areas would be site prepared for regeneration using a combination of foliar and/or cut-stump methods through directed applications of herbicides. Treatments would be directed at non-desirable woody vegetation remaining on site following the thinning - typically stump sprouting vegetation less than 6 feet tall (foliar method) or standing trees from 1 inch to 8 inches dbh (cut-stump method).

Release: Connected release treatments would be employed in areas proposed for southern yellow pine and oak restoration, chestnut orchard and oak regeneration to promote growth of planted or naturally regenerating seedlings. Planted and/or naturally regenerated seedlings would be released one or more times by directly applying herbicides to competing vegetation within a 3 to 4-foot radius of seedlings using basal bark/streamline, cut-stem or foliar spray methods. Selection of treatment methods for release would be informed by the degree, type and size of competing vegetation, risk to non-target vegetation and preferred season of application (dormant versus growing season).

Midstory Control: In areas proposed for open woodland restoration and shortleaf pine and Oak Maintenance, midstory vegetation would be treated with herbicides to create a more open understory environment. Midstory vegetation would be treated using a combination of foliar,

basal bark/streamline, cut-stump, and/or tree injection methods through directed applications of herbicides. Foliar methods would be employed to treat stump sprouting vegetation and other woody vegetation less than 6 feet in height as a connected action following proposed thinning treatments (Oak Maintenance, Woodland Restoration, and Southern Yellow Pine Maintenance). Cut-surface methods (cut-stump or tree injection) and basal bark methods would be used for taller vegetation or as an alternative to foliar applications for shorter vegetation as a connected action following proposed thinning treatments (Oak Maintenance, Woodland Restoration, Southern Yellow Pine Maintenance) or the primary action for oak mid- story treatments or oak crown-touching release.

Rare community/species areas (wetlands/bogs/canebrakes/small whorled pogonia/smooth coneflower/other species of concern): To provide a competitive advantage for rare species or communities, over-story and midstory vegetation would be treated with herbicides. Woody vegetation would be treated using a combination of basal bark/streamline, cut-stump, and/or tree injection methods through directed applications of herbicides. Cut-surface methods (cut-stump or tree injection) and basal bark methods would be used to achieve desired conditions.

Wildlife openings: To control unwanted woody and herbaceous vegetation, foliar application of glyphosate and/or imazapic would be used. Herbicide would be applied with back-pack sprayers or boom sprayers.

Estimated herbicide rates to be applied under the proposed herbicide treatments are shown in in the table below (Table 8).

Table 8 Estimated Rates of Herbicide to Be Applied for Site Preparation, Release and Midstory Control Treatments[10]

Pesticide	Application Method	Pounds (Lbs.) Active Ingredient (Ai)/Gallon	% (Fraction) in Solution	Gallon of Solution/Acre	Lbs. Ai/Acre
Imazapic	Foliar	2	0.5%	10	0.1
Glyphosate	Foliar	4	2%	20	1.6
Glyphosate	Foliar	4	7%	15	4.2
Triclopyr (amine)	Cut-Surface (cut stump and tree injection	3	50%	1.0	1.5
Triclopyr (amine)	Foliar	3	4%	15	1.8
Triclopyr (ester)	Streamline/basal	4	20%	1.5	1.2
Triclopyr (ester)	Foliar	4	2%	15	1.2

[10] From the Vegetation Specialist Report, Appendix B.

Pesticide	Application Method	Pounds (Lbs.) Active Ingredient (Ai)/Gallon	% (Fraction) in Solution	Gallon of Solution/Acre	Lbs. Ai/Acre
Imazapyr	Foliar	4	0.5%	20	0.45

Risk analysis of imidacloprid soil injection applications were done at 0.4 lbs./acre (active ingredient).
Risk analysis for dinotefuran soil injection were done at 0.54 lbs./acre (active ingredient).
*This application is related to release of chestnut seedlings in an orchard setting

Alternatives Considered but Eliminated from Detailed Study

There were 11 recommendations for alternatives that were considered but not analyzed in detail. One was already authorized under existing decisions, three included treatments already proposed in the proposed action, and seven that would either not meet the purpose and need of the project or forest plan or other law, regulation, or policy. See the Foothills Landscape Project Scoping Summary Report (2018) in the project record for more information regarding how and why each alternative was considered.

Environmental Impacts

An interdisciplinary team of professional resource specialists assessed two alternatives, a no-action alternative (Alternative 1) and the proposed action (Alternative 2), to determine the potential for significant impacts in terms of context and intensity. Each resource was analyzed in relation to these alternatives using *indicators* and *measures* to evaluate the change in conditions which would result as they relate to applicable law, policy, Forest Plan standards, applicable issues, and/or purpose and need. The projected changes are expressed as direct, indirect, or cumulative effects, summarized briefly in the "impacts" section below. For full detailed analyses, technical reports can be found in the project record and on the project website.

Issues

As a result of scoping, the Forest received 72 letters from interested and affected parties and agencies that contained about 310 comments. Individual comments from each document were considered and categorized to help focus the analysis. "Relevant Issues" were identified as a result of public scoping. These issues were addressed by modification of the proposed action or development of alternatives. Other issues were carried through analysis as determined by internal discussions and public scoping. All issues identified as relevant or used to focus analysis were those that could have potential impacts from the proposed action and considered alternatives, potential significance, or the ability to meet the need of the project. A thorough description of issues and concerns identified as a result of scoping can be found in the *Foothills Landscape Project Scoping Summary Report* (2018).

Impacts

This section discloses the environmental impacts of Alternative 1 (No Action) and Alternative 2 (Proposed Action) on issues, and/or the intensity factors as they relate to potential significance, or ability to meet the purpose and need of the project. Analysis indicators and measures, as well as temporal and spatial scales, were variable and dependent upon the issues discussed. These parameters were determined by best available science, available GIS data, and professional opinion. Air quality and cultural resources were reviewed for sufficiency and for supporting resource information in corresponding specialist reports that can be found in the project record, but were not carried forward in this EA.

Aquatic Resources

For specific and complete information regarding aquatic resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Aquatic Resources Specialist Report. Table 9 shows the parameters used in the specialist report for analysis.

Table 9 Aquatic Resource Parameters Used for Analysis

Parameter	Description
Spatial Bounds	For aquatic habitat and species analyzed: the riparian corridors of cold and cool-water streams and impoundments on National Forest lands within the Foothills Landscape Project boundary, plus 1 mile downstream of the project area boundary. For designated critical habitat (CH): portion of the CH that occurs in the Foothills Landscape Project boundary, and within 1 mile downstream of the furthest Forest Service boundary.
Temporal Bounds of Effects	10 years following each treatment
Indicators	Effects on the lake, stream, or riparian habitats and the effects on aquatic habitat quality, connectivity, and designated critical habitats for Threatened and Endangered Species, Regional Forester Sensitive Species, Locally Rare species, and Management Indicator Species.
Measures	• Change in percent canopy cover within the riparian corridor. • Change in the amount of impervious surface in each 6th-level watershed. • Change in aquatic habitat connectivity. • Acres of potential ground disturbing activities in riparian corridors in the Foothills Landscape Project.

Alternative 1 Direct, Indirect and Cumulative Effects

- Restoration actions that reduce sedimentation in aquatic habitats would not be implemented and would therefore result in continued degradation of aquatic biota habitat.
- In areas where hemlocks in riparian areas provide canopy cover, Alternative 1 would not attempt to conserve those trees from the loss of hemlock woolly adelgid, and consequently, could result in canopy cover reduction in the long term.
- Under Alternative 1, small scale projects with limited timber harvest or prescribed fire would continue to be planned and occur, and conditions in the project area would be expected to continue towards recovery from past land use but at a slower rate than Alternative 2.
- Alternative 1 is expected to have a very limited change to percent canopy cover, the amount of impervious surface, the amount of aquatic connectivity or acres of ground disturbing activities.
- Cumulatively, any effects on riparian canopy cover would be short term and small scale and would have a very low level of effects on riparian canopy cover. Any effects to impervious surfaces would be a very small percentage of the analysis area and not expected to exceed 10% of any watershed and would not appreciably increase the level of effects on aquatic resources.

- Cumulatively, Alternative 1 would not improve aquatic habitat connectivity to the desired level and the current aquatic habitat connectivity is likely to persist until connectivity is improved for watersheds with barriers. In addition, any cumulative increase in ground disturbing activities under Alternative 1 would be short term and small scale and would not appreciably increase the level of effects on aquatic resources.
- Alternative 1 will have **no effect** on the finelined pocketbook, Alabama moccasinshell, Coosa moccasinshell, southern clubshell, southern pigtoe, Georgia pigtoe, ovate clubshell, or triangular kidneyshell.
- Alternative 1 will have **no effect** on blue shiner, Etowah darter, or Conasauga logperch.
- Alternative 1 will have **no effect** on Designated Critical Habitat Unit GP1; Conasauga River or Unit 25: Oostanaula River/Coosawatte River/Conasauga River/Holly Creek, Floyd, Gordon, Whitfield, Murray Counties Georgia; Bradley, Polk Counties Tennessee.
- Alternative 1 will not affect the viability of the Brook Floater, the Alabama creekmussel, or the Alabama rainbow.
- Alternative 1 will not affect the viability of the lined chub, bridled darter, holiday darter, or coldwater darter.
- Alternative 1 will not affect the viability of the dwarf black-bellied salamander or patch-nosed salamander.
- Alternative 1 will not affect the viability of the Georgia beloneurian stonefly or the Edmund's snaketail.
- Alternative 1 will not affect Management Indicator Species or its habitat since there are no aquatic MIS. The Chattahoochee-Oconee National Forests' Land Resource and Management Plan does not list any aquatic species as a MIS.
- Alternative 1 is consistent with Forest Plan goal 19 for Locally Rare Species.

Alternative 2 Direct, Indirect and Cumulative Effects

- Most activities proposed under Alternative 2 would occur in upland habitats that are not directly connected to riparian corridors and therefore would not pose a significant risk or affect aquatic resources.
- Activities proposed under Alternative 2 that would occur in riparian corridors could result in a change in acres of ground disturbance, change in percent canopy cover, change in amount of aquatic habitat connectivity, and a change in the amount of impervious surface. Activities that would occur in riparian corridors would be canopy gap creation in mesic hardwoods, young forest creation in mesic hardwoods, pine plantation maintenance, hemlock conservation activities, permanent opening improvement activities; stream improvement projects (aquatic passage projects, stream structure maintenance, adding large woody debris to streams, streambank stabilization), road and trail projects (decommissioning roads, ORV trails, other trails, dispersed sites; new trails, trail reroutes, improvements to parking), and improvements to canebrakes, bogs, and small-whorled pogonia sites,

- Cumulatively, any activities affecting canopy cover in riparian corridors (see Appendix F) would have short-term, low-level, and small-scale effects on riparian canopy cover. Any effects to the change in the amount of impervious surface in the watershed would be a very small percentage of the analysis area and not expected to exceed 10% of any watershed and would not increase the level of effect on aquatic resources.
- Cumulatively, any effects from ground disturbing activities would be short term and small scale and would result in a low level of effects on aquatic resources. In addition, any effects on the change in aquatic habitat connectivity would be long term and small scale where barriers are resolved (AOP) but would benefit aquatic resources for watersheds.
- Alternative 2 **may affect, not likely to adversely affect** finelined pocketbook, Alabama moccasinshell, Coosa moccasinshell, Southern clubshell, Southern pigtoe, Georgia pigtoe, ovate clubshell, Triangular kidneyshell.
- Alternative 2 **may affect, not likely to adversely affect** Blue shiner, Etowah darter, and the Conasauga logperch.
- Alternative 2 **may affect, not likely to adversely affect** on Designated Critical Habitat Unit GP1; Conasauga River or Unit 25: Oostanaula River/Coosawatte River/Conasauga River/Holly Creek, Floyd, Gordon, Whitfield, Murray Counties Georgia; Bradley, Polk Counties Tennessee.
- Alternative 2 may impact individuals but is not likely to cause a trend towards federal listing or loss of viability of the Brook Floater, the Alabama creekmussel or the Alabama rainbow.
- Alternative 2 may impact individuals but is not likely to cause a trend towards federal listing or loss of viability of the lined chub, bridled darter, holiday darter or the coldwater darter.
- Alternative 2 may impact individuals but is not likely to cause a trend towards federal listing or loss of viability of the Dwarf black-bellied salamander or the patch-nosed salamander.
- Alternative 2 may impact individuals but is not likely to cause a trend towards federal listing or loss of viability of the Georgia beloneurian stonefly or the Edmund's snaketail
- Alternative 2 will not affect MIS or its' habitat since there are no aquatic MIS. The Chattahoochee-Oconee National Forests' Land Resource and Management Plan does not list any aquatic species as a MIS.
- Alternative 2 is consistent with Forest Plan goal 19 (similar to Alternative 1) by determining whether project design or project design features would conserve these species. Although Alternative 2 does not specifically attribute project design features to locally rare species, many of the other resource areas (e.g. soil and hydrology) indirectly conserve several LR aquatic species.
- Alternative 2 is compliant with the ESA requirement that the Forest Service manage for the recovery of T&E species and the ecosystems upon which they depend.

Botanical Resources

For specific and complete information regarding botanical resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Botanical Resources Specialist Report. Table 10 shows the parameters used in the specialist report for analysis.

Table 10 Botanical Resource Parameters Used for Analysis

Parameter	Description
Spatial Bounds	Direct and Indirect: National Forest Lands with the Foothills Landscape Project Boundary Cumulative: All lands (including private) within the Foothills Landscape Project Boundary
Temporal Bounds of Effects	15 years
Indicators	Effects on the abundance, distribution, and quality of preferred habitat and communities for Threatened and Endangered, Regional Forester Sensitive Species, Management Indicator Species, and Locally Rare species.
Measures	• Change in acres of rare communities. • Change in acres of Threatened and Endangered, Regional Forester Sensitive Species, Management Indicator Species, and Locally rare habitat elements. • Change in the determination effect from proposed actions.

Alternative 1 Direct, Indirect and Cumulative Effects

- Rare communities such as Bogs, Fens, Seeps, and Seasonal Ponds; Highland Riverine Vegetation; Table Mountain Pine Forest and Woodland; Basic Mesic Forest; and Canebrakes exhibit the composition, structure, and function necessary to support the vigorous population of species characteristic of the community, but natural processes are not sufficient to maintain these conditions. Alternative 1 would not contribute to the conservation of species occurring in the Foothills Landscape and would not be consistent with the forest plan direction for these rare communities.

- No management under Alternative 1 would be consistent with the forest plan direction for rare communities such as Cliffs and Rocks and Outcrop; Forested Boulderfields; Cliffs and Bluffs; Rock Outcrops; and Rocky Summits. Natural processes are sufficient to maintain these conditions.

- The habitat element Bogs, Fens, Seeps, and Seasonal Ponds and Mature Oak Forest; is expected to maintain or decrease in distribution and abundance as a result of Alternative 1.

- The habitat element Mature Mesic Hardwood Forests, Early Successional Forest, Canopy Gaps; and Woodlands, Savannas, and Grasslands would be maintained at approximately current distribution and abundance, though location of elements may shift over time as a

result of management action or inaction from the implementation of Alternative 1. Opportunity for decreasing risk to associated species is primarily through increasing rates of restoration where possible.

- Abundance and distribution of the habitat elements River Channels, Late-Successional Riparian, and Basic Mesic Forest under Alternative 1 is maintained or improved by providing optimal protection, maintenance, and restoration to all occurrences (with limited exceptions in some cases). Little additional opportunity exists to decrease risk to viability of associated species because management is at or near optimal.

- Implementation of Alternative 1 **may affect and is not likely to adversely affect swamp pink.**

- Implementation of Alternative 1 **may affect and is not likely to adversely affect small whorled pogonia**.

- Implementation of Alternative 1 **may affect and is not likely to adversely affect white fringeless orchid**.

- Implementation of Alternative 1 **may affect and is not likely to adversely affect smooth coneflower.**

- Alternative 1 does not include actions that contribute toward meeting Forest Plan goals and objectives.

- There are no anticipated effects under Alternative 1 that would jeopardize the continued existence of any Threatened and Endangered (T&E) species or would cause a trend toward federal listing or reduce species viability of any Regional Forester Sensitive Species. Alternative 1 does not include any actions for the benefit of T&E species or does not include actions which may positively or negatively affect RFSS.

- Habitat for Forest MIS would continue to be available under Alternative 1 and there are no effects that would contribute to a local or regional change in population status of these species.

- There are no proposed actions which could combine with past, present, and reasonably foreseeable future actions (cumulative) to affect botanical species, their habitats; and habitat elements; therefore, no cumulative effects are predicted.

Alternative 2 Direct, Indirect and Cumulative Effects

- Rare communities such as Bogs, Fens, Seeps, and Seasonal Ponds; Highland Riverine Vegetation; Table Mountain Pine Forest and Woodland; Basic Mesic Forest; and Canebrakes exhibit the composition, structure, and function necessary to support the vigorous population of species characteristic of the community, but natural processes are not sufficient to maintain these conditions. Active management under Alternative 2 would contribute to the conservation of species occurring in the Foothills Landscape and would

be consistent with the forest plan direction. Project design features would be protective of this habitat.

- Implementation of Alternative 2 **may affect and is not likely to adversely affect swamp pink.** Alternative 2 is likely to be beneficial to the viability of this species because of the protective measures for individuals and sites of federally listed species and control of exotic species threatening federally-listed species, active management would improve the bog habitat that this species depends on.

- Implementation of Alternative 2 **may affect and is not likely to adversely affect small whorled pogonia**. Alternative 2 is likely to be beneficial to the viability of this species because of the protective measures for individuals and sites of federally-listed species and control of exotic species threatening federally-listed species, active management would improve the habitat conditions for this species.

- Implementation of Alternative 2 **may affect and is not likely to adversely affect white fringeless orchid**. Because of the protective measures for individuals and sites of federally-listed species and control of exotic species threatening federally-listed species, active management would improve the bog habitat that this species depends on.

- Implementation of Alternative 2 **may affect and is not likely to adversely affect smooth coneflower**. Alternative 2 is likely to be beneficial to the viability of this species because of the protective measures for individuals and sites of federally-listed species and control of exotic species threatening federally-listed species, active management would improve the woodland habitat that this species depends on.

- Active management proposed under Alternative 2 and implemented with project design features would provide long-term benefits to rare communities and would contribute to the conservation of species occurring in the Foothills Landscape.

- Alternative 2 includes actions which are designed to meet Forest Plan goals and objectives and are consistent with all Forest Plan standards.

- There are no anticipated effects under Alternative 2 that would jeopardize the continued existence of any T&E species or would cause a trend toward federal listing or reduce species viability of any RFSS.

- Alternative 2 includes actions designed to improve habitats for some RFSS, project design features to protect or minimize adverse effects to RFSS habitats, and is consistent with the USFS manual requirement to analyze, if impacts cannot be avoided, the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole.

- Alternative 2 is compliant with the ESA requirement that the USFS manage for the recovery of T&E species and the ecosystems upon which they depend.

- Alternative 2 is consistent with the National Forest Management Act (NFMA) in that it includes actions with the purpose of maintaining viable populations of all native and desired non-native botanical resources and conserving all listed T&E populations.

- Alternative 2, when combined with past, present, and reasonably foreseeable actions, would cumulatively benefit botanical species and their habitats by increasing the quality and diversity of the habitats that benefit botanical species.

Climate Change

For specific and complete information regarding climate change, the resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Climate Change Specialist Report. Table 11 shows the parameters used in the specialist report for analysis.

Table 11 Climate Change Parameters Used for Analysis

Parameter	Description
Spatial Bounds	Climate Change: The Foothills Landscape Project Boundary
Temporal Bounds of Effects	Short Term: Within 10-15 years following treatment. Long Term: Occurring over several decades.
Indicators	Effects from climate change
Measures	Change in the resources affected by climate change

Alternative 1 Direct, Indirect and Cumulative Effects

- The Alternative 1 (No Action) would result in no change to the current trend for carbon storage or release. Forested stands are expected to become less resilient to possible climate change impacts, such as changes in productivity or insect and disease.

- Under Alternative 1, not acting to improve forest health or to restore hardwoods and southern yellow pine ecological systems would likely result in lower carbon sequestration. Consequent results are an increase in carbon emissions in the future as the result of forest decline, wildfires and increased insects and disease activity in the project area.

- Under Alternative 1, CO_2 releases would be minimal, short-term and offset by long-term forest management practices that absorb and store CO_2 away from the atmosphere. However, CO_2 releases or sequestration from this alternative would not be measurable at the global scale.

- Cumulatively, increased risks of wildfires and insect and disease outbreaks in the larger geographic area are unlikely even with a warmer and drier climate.

Alternative 2 Direct, Indirect and Cumulative Effects

- Alternative 2 would increase the amount of early successional habitat adding to structural and habitat diversity. These management actions would provide stand and forest conditions that are more resilient to dryer and hotter conditions that are predicted to occur with climate change.

- Higher release of carbon over the short-term, with increased carbon storage over the long term as forest stands become more diverse and resilient would occur under Alternative 2.

- Thinning and restoration of southern yellow pine under Alternative 2 would increase the amount of available water and other nutrients necessary to sustain growth and help stands withstand stress from climate changes.

- Under Alternative 2, treatments that favor retention of desirable hardwoods and shortleaf pine coupled with prescribed fire (under an existing decision) would result in less loblolly pine trees in the future. Shortleaf would be better adapted to the drier sites and stocking control would keep these stands healthy. Restoring shortleaf pine on stands now occupied by loblolly pine would increase habitat diversity and result in new stand compositions that are better able to withstand extreme weather events along with dryer conditions.

- The potential for insect and disease damage would be reduced because uniform stand conditions would be broken up by treatments under Alternative 2.

- Alternative 2 would initially release carbon, leave fewer trees to store carbon, but would also create and maintain an herbaceous layer with a capacity for carbon storage and which may be more resistant to long-term climate change.

- Cumulatively, greenhouse gas emissions and storage or release of carbon from forests in and around the Foothills Landscape and the geographic area is unlikely to have measurable cumulative impacts on global climate or the rate of change. Continued management of NFS lands would result in forests that are more resilient to climate variability.

Fire and Fuels

For specific and complete information regarding fire and fuels, the resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Fire and Fuels Specialist Report. Table 12 shows the parameters used in the specialist report for analysis.

Table 12 Fire and Fuels Parameters Used for Analysis

Parameter	Description
Spatial Bounds	Expanding Ecological Role of Fire (50,000 acres): Foothills Landscape Project Boundary Protecting Communities from Wildfire (2,000 acres): Wildland Urban Interface Area within the Foothills Landscape Project Boundary

Parameter	Description
Temporal Bounds of Effects	Protecting Communities from Wildfire • Short-term: Less than 7 years. • Long-term: As long as treatments are being maintained (project specific). Expanding Ecological Role of Fire • Short-term: Less than 10 years. • Long-term: 10-80 years or more.
Indicators	Effects on the WUI Risk Index and Fire Condition Class.
Measures	• Change in the ability to protect communities from wildfire. • Change in the amount of acreage moving from a higher condition class to a lower condition class.

Alternative 1 Direct, Indirect and Cumulative Effects

Alternative 1 would provide for continued degradation of current forest conditions outside of current treatment units and would result in a continual increase or maintenance of acres within FCC3. This would result in an increased level of risk of an unwanted wildland fire both in and out of the WUI across the Foothills Landscape.

- The No Action Alternative (Alternative 1) would continue to result in more intense wildland fires in both the short and long-term duration of the project. This continued degradation of current forest conditions would increase fuel growth and fuel loadings that result in fires that are more severe, increasing overall fire size, duration, and suppression costs. Fires would be more likely to move into the WUI and affect communities at risk.
- Cumulatively, while prescribed burns across the project area would continue to be implemented under a variety of separate NEPA documentation under Alternative 1, they would have limited coordination with other treatments, which would lead to slower results with reduced influence across the landscape.

Alternative 2 Direct, Indirect and Cumulative Effects

Alternative 2 would expand the ecological role of fire and would also include hazardous fuels reduction and mitigation in the Wildland Urban Interface (WUI) to provide protection to communities from wildfire. For specific information regarding fire and fuel resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Fire and Fuels Specialist Report.

Photo 13 Pheasant Branch Prescribed Burn

- Alternative 2 would result in the creation of vertical fuel breaks and a direct reduction or modification of the ground, midstory, and ladder fuels creating defensible space and a reduction in extreme fire behavior.

- Alternative 2 would result indirectly in lowered flame lengths, decrease in spotting distances, and a decrease in fireline intensities, thereby increasing success of fire suppression.

- Alternative 2 would support both actions protecting communities from wildfire and expanding the role of fire through prescribed fire is often seen as most the most practical way to reduce hazardous fuels accumulation

- Alternative 2 would trend fire condition classes (FCC) towards a FCC1 on 32% of the Foothills Landscape Project area.

- Alternative 2 would reduce the risk level from high to moderate on up to 2,000 acres.

- Cumulative with other actions, Alternative 2 would reduce catastrophic fire behavior, facilitate fire suppression activities, and increase the likelihood of suppression success within adjacent WUI areas that range from a moderate to high risk.

Hydrology

For specific and complete information regarding hydrology, the resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Hydrology Specialist Report. Table 13 shows the parameters used in the specialist report for analysis.

Table 13 Hydrology Parameters Used for Analysis

Parameter	Description
Spatial Bounds	12-digit HUCs (6th-field) within the Foothills Landscape Project Area

Parameter	Description
Temporal Bounds of Effects	Short-term: Less than 10 years. Long-term: Greater than 10 years.
Indicators	Effects on the risk to water beneficial uses
Measures	• Change in the risk of sediment loading • Change in the percentage of impervious surfaces • Change in the risk of affecting beneficial uses

Alternative 1 Direct, Indirect and Cumulative Effects

- Alternative 1 is not expected to produce direct effects to the risk of sediment in the short or long term. No vegetation treatments, prescribed fire, decommissioning of roads, trails, or campgrounds, or AOP or other aquatic habitat improvements would be implemented and thus no direct effects are expected.
- Indirect adverse effects to water quality may be expected in the short and long term under Alternative 1. Roads, trails, campgrounds, dispersed campsites and user-created trails that impact water quality would not be restored and the risk of sediment is expected to persist in the short and long term.
- Overall, the direct and indirect effects of Alternative 1 plus the cumulative effects resulting from other projects is likely to result in a "low risk" to beneficial uses because the combination of project design, project design features, and best management practices are designed to minimize sedimentation and effects to water quality; and the foreseeable future actions are not anticipated to result in total impervious area (TIA) to rise above 10%.

Alternative 2 Direct, Indirect and Cumulative Effects

The potential project effects to hydrologic function and water quality were analyzed assessing existing watershed conditions and the potential effects in the context of applicable law, regulation, and policy. For specific information regarding hydrology resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Hydrology Specialist Report.

- The risk of increased sediment loading for vegetation treatments is low due to a brief increase of sediment movement during and immediately after mechanical activities in areas local to the treatments. However, risk is not expected to increase over the entirety of the short term, or into the long term at the scale of 6th-field watersheds.
- Prescribed fire is planned and implemented so that burning does not result in high soil burn severity or increased sediment production. Prescribed fire under Alternative 2 may increase the risk of sediment loading if storm events impact burned areas directly after

treatments. However, through the short and long term, an increased risk of sediment loading from prescribed fire is expected to be low at the 6th-field watershed scale.

- Road decommissioning is not likely to appreciably contribute sediment to the waterway over the short or long term. There could be an increased risk of localized sediment loading to surface waters during and immediately after restoration if storm events damage erosion and sediment control measures. However, this increased risk is not expected to persist beyond the time it takes for restoration activities to be completed and this treatment would ultimately result in a decrease in total impervious area.

- Access changes can reduce risk of damage such as rutting, which in turn reduces risk of sediment loading to waterbodies. Decommissioning and access changes are expected to have a low risk of increasing sediment during completion of the activity or immediately after road decommissioning but will ultimately reduce sediment loading in the short and long term.

- Decommissioning of camping and trail areas located in close proximity to water is expected to have a low risk of increased sediment loading through completion of activities but would ultimately reduce the sediment loading over the short and long term as soil infiltration capacity and vegetative and litter cover is improved.

- Aquatic organism passage and stream habitat restoration projects could have a low risk of increasing sediment loading during and immediately after implementation, but these project activities are expected to reduce the sediment loading in the short and long term.

- Alternative 2 would result in a “low risk” to beneficial uses due to the combination of project design, project design features, and best management practices as these planning efforts are designed to minimize the effects to water quality including sediment loading.

- Overall, the direct and indirect effects of Alternative 2 plus the cumulative effects resulting from other projects is likely to result in a “low risk” to beneficial uses because the combination of project design, project design features, and best management practices are designed to minimize the effects to water quality; TIA is not anticipated to rise above 10% for the majority of the watersheds; and multiple activities are proposed to reduce sediment movement to streams and to reduce impervious area, which would lower TIA in the respective watershed.

Inventoried Roadless

For specific and complete information regarding Inventoried Roadless, the resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Inventoried Roadless Specialist Report. Table 14 shows the parameters used in the specialist report for analysis.

Table 14 Inventoried Roadless Parameters Used for Analysis

Parameter	Description
Spatial Bounds	Lands designated as IRAs within the Foothills Landscape boundary.
Temporal Bounds of Effects	Limited only by any future modifications of the 2001 Roadless Area Conservation Rule which may change boundaries or temporal scales.
Indicators	Impacts to Roadless characteristics as identified by the 2001 Roadless Rule (Roadless Area Conservation FEIS (FEIS Vol. 1, 3-3 to 3-7, November 2000).
Measures	Trending direction (Improving, Stable, or Downward)

Alternative 1 Direct, Indirect and Cumulative Effects

- Under Alternative 1, Inventoried Roadless Areas (IRAs) would be managed according to the 2001 Roadless Area Conservation Rule (Roadless Rule) and the Chattahoochee-Oconee National Forest Land and Resource Management Plan and would be maintained in the short term. Over the long term, effects to water quality within the IRAs would occur from dispersed recreation sites continuing or increasing sediment delivery to streams. Forest health would continue to decline from insect and disease, and habitats for TES would be slightly degraded over time from inaction.

Alternative 2 Direct, Indirect and Cumulative Effects

- The overall soil, water and air resources will be improved through the implementation of the Watershed Condition Framework to restore watershed processes. Long term effects to water quality would be improved by any road, trail, or maintenance activities aimed at reducing sediment delivery to streams. Short term effects to air quality from prescribed burning activities could occur.

- Sources of public drinking water would be maintained or improved as a result of Alternative 2 decreasing sediment delivery to streams from forest management activities and the forest roads system.

- The focus of treatments in the IRAs is to conserve eastern hemlocks and/or respond to the forest pests and other natural disturbances in order to improve or maintain forest health. If left untreated, the potential effect of forest pests, including southern pine beetle and hemlock wooly adelgid could result in loss of diversity.

- The treatments proposed under Alternative 2 in the IRAs are designed to improve biologic integrity, connectivity, resiliency from disturbance and to improve soil and water quality. All of these effects will benefit for Threatened & Endangered Species and species dependent on large, undisturbed areas of lands.

- Alternative 2 is designed to improve the sustainability of the recreational experience on the landscape including enhancing the recreational experience and reducing the resource impacts from forest visitors. The treatments including reducing sediment delivery to

streams by improving or maintaining trails, recreation facilities and forest service roads positively contribute to this IRA characteristic directly.

- While some immediate changes to the environment would be made under Alternative 2 as a result of daylighting hemlocks and/or associated reforestation activities (i.e. prescribed burning), the scenic integrity objectives would be met, and overall landscape character and integrity would remain stable.

Terrestrial Wildlife

For specific and complete information regarding terrestrial wildlife, the resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Terrestrial Wildlife Specialist Report. Table 15 shows the parameters used in the specialist report for analysis.

Table 15 Terrestrial Wildlife Parameters Used for Analysis

Parameter	Description
Spatial Bounds	Direct and Indirect: National Forest Lands with the Foothills Landscape Project Boundary Cumulative: All lands (including private) within the Foothills Landscape Project Boundary
Temporal Bounds of Effects	15 years Short-term: Less than 3 years Long-term: Greater than 3 years
Indicators	Effects on the abundance, distribution, and quality of preferred habitat and communities for individual Threatened and Endangered, Regional Forester Sensitive Species, Management Indicator Species, and Locally Rare species.
Measures	• Acres of habitats affected by project activities. • Total acres treated to create forest habitat. • Total acres of community maintained or restored. • Changes in road densities. • Changes in determination effects for species from proposed actions.

Alternative 1 Direct, Indirect and Cumulative Effects

- Riparian habitat would be maintained or increase as foraging habitat for gray bat, eastern small-footed bat, tri-colored bat, and as preferred breeding habitat for Acadian flycatcher under Alternative 1. No changes to local populations would be anticipated.

- Summer roosting/maternity habitat under Alternative 1 would continue to decline for Indiana bat. Local populations would be maintained or decrease due to white-nose syndrome.

- Cave and mine habitat would continue to decline (due to white-nose syndrome) for northern long-eared bat and tri-colored bat. Local populations would be maintained or decrease. Roost tree habitat would be maintained or increase under Alternative 1. No changes to local populations would be anticipated.
- Under Alternative 1, oak habitat would be maintained or increase for Rafinesque's big-eared bat, scarlet tanager, black bear, and white-tailed deer. No changes to local populations anticipated.
- Rock outcrop and cliff habitat would be maintained for eastern small-footed bat and green salamander under Alternative 1. No change in local populations anticipated.
- Bog habitat would continue to decline, and local populations of bog turtle would be maintained or decrease under Alternative 1.
- Under Alternative 1, mid-late successional yellow pine community habitat would continue to decline. Local populations of northern pine snake and pine warbler would be maintained or decrease.
- Monarch butterfly and white-tailed deer habitat would continue to decline. Local populations would be maintained or decrease.
- Woodland habitats would continue to decline for monarch butterfly, northern pine snake, and field sparrow. Local populations would be maintained or decrease.
- Young forest habitat for monarch butterfly, prairie warbler, chestnut-sided warbler, white-tailed deer, black bear, and ruffed grouse would continue to decline. Local populations would be maintained or decrease.
- Snags, dens, downed wood (late-successional forest) habitat would be maintained or increase under Alternative 1. No changes to local populations anticipated for pileated woodpecker.
- Under Alternative 1, remote habitat for black bear would be maintained or increase. No changes to local populations anticipated.
- Habitat for ovenbird would be maintained or increase under Alternative 1. No changes to local populations anticipated.
- Mesic deciduous forest with canopy gaps would continue to decline. Local populations of hooded warbler would be maintained or decrease.
- Alternative 1 includes no actions which could combine with past, present, or reasonably foreseeable actions to affect terrestrial wildlife species or their habitats.

Alternative 2 Direct, Indirect and Cumulative Effects

Photo 14 Testing for Whitenose Syndrome in Bats

- Alternative 2 may cause minor effects to late-successional riparian habitat, affecting 1.6% of riparian habitat each year for the life of the project while complying with project design features, and therefore may affect, but is **not likely to adversely affect gray bat** foraging habitat; may impact individuals, but is **not likely to cause a trend toward federal listing or loss of viability for eastern small-footed or tricolored bat**; and would maintain abundant preferred habitat for **Acadian flycatcher**.

- Alternative 2 may improve roosting and foraging habitat by creating more open canopy conditions, potentially affecting 8,057 acres of 'suitable' Indiana bat habitat, but **may affect, is likely to adversely affect individual Indiana bats** due to potential loss of occupied roost trees; however, Alternative 2 includes project design features for bat conservation, is consistent with Forest Plan, the biological opinion and incidental take statement and this satisfies the Endangered Species Act, Section 7(a)2 requirements for this species.

- Alternative 2 would have **no effects** to caves and mines and tree removal would be prohibited within 0.25 mile of cave or mine portals. A more comprehensive list of activities is prohibited within the first 200 feet of the portal.

- Alternative 2 may positively affect northern long-eared bat populations by improving foraging habitat, but **may affect, is likely to adversely affect NLEB** due to potential loss of unknown, occupied roost trees. Known, occupied roost trees and a 150-foot buffer would be protected during June and July; however, beyond this protection and the cave protection listed above, Alternative 2 is exempt from prohibitions under ESA section 4(d) and this satisfies requirements for this species.

- Alternative 2 would maintain and improve oak dominance on approximately 45,500 acres but would also result in a minor decrease (2.1%) in late-successional oak community. This **may impact individual Rafinesque's big-eared bats** but is not likely to cause a trend toward federal listing or loss of viability. **Scarlet tanager** habitat would decrease slightly in the short term but maintained and potentially increased over the life of the project and beyond; and **black bear and white-tailed deer** may experience minor, short-term decreases in hard mast availability, but a long-term increase due to maintenance activities.

- Alternative 2 would protect rock outcrops or cliffs and their immediate vicinity, however, this alternative combined with cumulative effects of other projects **may impact individual small-footed bats or green salamanders** but is not likely to cause a trend towards federal listing or loss of viability.

- Alternative 2 would improve up to 35 acres of bog habitats and **may impact individual bog turtles but** is not likely to cause a trend towards federal listing or loss of viability.

- Alternative 2 would restore 7,500 acres and maintain 12,400 acres of fire-adapted yellow pine, create open-canopied woodland stands on 7,400 acres, and decrease the acreage of non-fire-adapted yellow pine in the landscape, greatly improving potential pine snake habitat. **This may impact individual pine snakes** but is not likely to cause a trend towards federal listing or loss of viability. **Pine warbler habitat** would be increased and maintained by this Alternative.

- Alternative 2 would create, expand, or improve up to 1,400 acres of permanent openings, benefiting **white-tailed deer.** Approximately 10% of this would be managed as pollinator habitat; this would benefit but **may impact individual monarch butterflies** but is not likely to cause a trend towards federal listing or loss of viability.

Photo 15 Canebrake Rattlesnake

- Alternative 2 would increase the acreage of woodland habitats by 7,400 acres, benefiting **field sparrow, monarch butterfly, and northern pine snake.** Individual **monarch butterflies and pine snakes may be impacted** but the project is not likely to cause a trend towards federal listing or loss of viability for these species.

- Alternative 2 would create patches of young forest on 10,500 acres across the landscape over the life of the project; these habitats would increase from less than 1% to approximately 6% of the area would benefit and increase potential habitat for **prairie warbler, chestnut-sided warbler, white-tailed deer, ruffed grouse, and black bear;** this would also benefit but **may impact individual monarch butterflies,** but is not likely to cause a trend towards federal listing or loss of viability.

- Alternative 2 would reduce the late-successional habitat acreage by 6,037 acres or 4% in the project area. Late successional stage habitats would still account for 69% of the habitats, well above the Forest Plan desired minimum range for this habitat stage, providing abundant resources for **pileated woodpecker**.

- Alternative 2 would slightly decrease open-road density within the Foothills Landscape which would potentially benefit **black bear** by increasing remoteness.

- Alternative 2 would decrease the percent forest cover by less than 1%, maintaining a high percentage (97%) of forested habitat for forest interior birds such as **ovenbird.**

- Alternative 2 would improve structural diversity on 8,100 acres of mesic forests, **improving breeding conditions for hooded warbler**. This alternative would also create 500 acres of young forest in mesic habitats; this is a minor decrease in mature forest.

Photo 16 Bats Roosting in a Cave found in the Foothills Landscape

- Cumulatively with other actions on the Foothills Landscape, Alternative 2 would have some affect in the short term to Threatened and Endangered, Sensitive, Regional Forester Sensitive Species, Management Indicator Species, and Locally Rare species. However, these impacts would be temporary and over the long term, many of these species and their habitats would benefit from improved water quality, reduced sedimentation, and increased diversity and quality of habitats.

Recreation

For specific and complete information regarding recreation, the resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Recreation Specialist Report. Table 16 shows the parameters used in the specialist report for analysis.

Table 16 Recreation Parameters Used for Analysis

Parameter	Description
Spatial Bounds	National Forest System Lands within the Foothills Landscape Project Area that contain recreational opportunities.
Temporal Bounds of Effects	Short-term: Less than 5 years. Long-term: Greater than 5 years.
Indicators	Effect on environmental, financial, and social factors for developed recreation, dispersed recreation, and trails and related facilities.
Measures	• Change in conditions or setting of existing opportunities • Change in funding, partnership, and personnel resources • Change of visitor satisfaction, visuals, and use patterns

Alternative 1 Direct, Indirect and Cumulative Effects

Photo 17 Damage to a Forest Road after a Culvert was Blocked with Debris during a Storm Event

- Under Alternative 1, recreation activities would be managed with existing resources in compliance with the Land and Resource Management Plan in high-priority sites. Non-priority site structures would continue to degrade; resource damage would likely increase in non-priority sites.
- Conditions in dispersed areas would likely continue to degrade under Alternative 1. Deferred maintenance would increase. Trash, sanitation, and resource damage would likely increase. There would be a likely increase in cost to rehabilitate dispersed areas, create new partnerships, and/or close areas due to health and safety concerns.
- Under Alternative 1, trail conditions are likely to continue to deteriorate and may result in an increase in soil and water issues. There is likely to be an increase in cost to repair deteriorating trails. Trails may deteriorate to the point that volunteer labor forces can no longer fix or maintain them, thereby making it necessary to contract out trail work at much higher costs or may lead to temporary or permanent trail closures for visitor safety.
- Under Alternative 1, deferred maintenance costs would continue to increase for campgrounds.
- Visitor safety, experience, and satisfaction are likely to decrease over time due to increase of deferred maintenance. Visitors may see an increase in trash, or amenities in need of repair, that may lead to temporary or permanent site closures for visitor safety.
- Visitors experience may be decreased due to unmanaged site conditions
- Visitor safety, satisfaction, and trail usage are likely to decrease as trail conditions worsen. Temporary closures may be necessary, and the loss of an opportunity long-term is possible.
- Implementation of Alternative 1, considered with past, present and reasonably foreseeable future activities, is expected to have a negative cumulative effect on developed recreation. In developed areas where deferred maintenance is high, damage to the resource cannot be mitigated with this alternative. If this alternative is implemented, then limited resources may be spent on non-priority areas to maintain health and safety of the Forest visitor or services to the public would be reduced, and sites may be temporarily

and/or permanently closed. With implementation of this alternative there can be no definitive shift of limited resources from non-priority sites to high-priority developed recreation sites.

- Implementation of this alternative considered with past, present and reasonably foreseeable future actions is expected to have a negative effect on dispersed recreation areas and surrounding resources. In dispersed recreation areas along perennial streams, impacts from trash, sanitation and bare soil are likely to decrease soil and water quality. Resources needed to maintain and manage these recreation sites would likely not be available because they are low priority when managing the district and forest recreation programs. It is likely that additional funding and support would be needed to maintain these areas. Visitors would likely be unsatisfied with the condition of these unmanaged sites.
- Implementation of Alternative 1, considered with past, present and reasonably foreseeable future actions, is expected to have a negative effect on trails, their related facilities and the surrounding environment. Limited activities related to trails would be ongoing in order to provide for visitor safety and protect soil and water resources. Routine maintenance of drainage structures and manual vegetation trimming of non-motor trails within the FLP would continue to occur at the level that can be accomplished with current volunteer crews and partnerships.

Alternative 2 Direct, Indirect and Cumulative Effects

Actions proposed include additions, enhancements, and decommissioning projects for trails, developed recreation, and dispersed recreation areas. These actions have the potential to affect environmental, financial, and social factors (indicators) in both beneficial and adverse ways. For specific information regarding recreational resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Recreation Specialist Report.

- For developed recreation, visuals may be temporarily affected by vegetation treatments. Long-term effects would be improved watershed condition and forest health, and ultimately an increase in visitor experience due to management of the resources.
- For developed recreation resources, visitors may notice an increase in openings in the landscape immediately after vegetation treatments, and until regrowth begins. Increase in mechanical noise may be heard during (3-6 months) active treatments. There may be decreased access to developed recreation sites due to temporary closures. Recreation opportunities would be decreased if temporary closures are in place. Over the long term, since access roads would be improved for the timber removal, it is expected that recreation opportunities would increase. Improved access related to treatment implementation could mean better access for passenger vehicles to the developed site, thus increasing visitor use numbers in the long-term. Long-term effects for most areas would increase dispersed recreation opportunities by improving the setting to restore health, diversity, and productivity of the watersheds.

- For trails and related facilities, trail users would temporarily be impacted by treatments that may result in displacement. Long-term effects for use on most trails would increase by properly locating trails, constructing enhancements and maintaining scenic visual integrity and settings.

- Under Alternative 2, long term deferred maintenance costs would decrease for overall developed recreation program as a shift in financial resources is made to high-priority sites.

- For trails and related facilities, additional opportunities to share funding and resources internally and externally to accomplish multiple objectives within the same geographical area would be available through shared stewardship.

- Alternative 2 would have a long-term benefit of reduced sedimentation, improved water quality, and enhanced recreational experience in the Chattooga Wild & Scenic River Corridor from revegetation, decommissioning user-created trails, and restoration of dispersed campsites not consistent with current policy and/or Forest Orders, etc. In the short term, there may be effects to scenic qualities, but they would be minimized by the implementation of the project design features and the constraints of the Forest Plan.

- A temporary effect on visuals and access for developed sites as treatments are implemented. However, long-term visitation to developed sites would increase and would be likely due to improved visuals and road access. Decommissioning campgrounds may cause some displacement of visitors to nearby dispersed areas.

- The proposed treatments would likely increase the LRMP desired condition for creating a "visually-appealing landscape" and "park-like stands" (LRMP, 3-123). Visitors' satisfaction may decrease on a short-term basis (one to two growing seasons) to address safety concerns and temporary closures during treatments however forest health would increase over the long term (future generations). Visitors' satisfaction may decrease due to noise, smells, and visual effects near treatment areas. Visitors may be displaced and have to relocate to another dispersed or developed recreation site.

- Vegetation treatments, wildlife projects, prescribed fire activities, and trail-specific projects such as rerouting or new trail construction may temporarily reduce or eliminate visitor access to a particular trail, section of trail, or trailhead area. Trail usage may decrease temporarily, however, the addition or enhancement of trail opportunities is very likely to increase both visitor usage and satisfaction over the long term.

- Implementation of Alternative 2 considered with past, present and reasonably foreseeable future actions is expected to have minimal negative effects on the developed recreation environment due to minimal proposed actions within and surrounding developed areas within the Foothills analysis area. These effects would likely not have a significant impact on developed recreation and should increase desirable opportunities in the future. Resources needed to maintain and manage these recreation areas would likely be

available because they are high or forest priority areas requiring user fees that help support maintenance actions.

- Implementation of this alternative considered with past, present and reasonably foreseeable future actions is expected to have a short-term negative effect on dispersed recreation areas and surrounding environmental settings. However, the long-term benefits of managing a healthy forest far outweigh the short-term inconveniences of having to move to another location. These effects would likely not have a significant impact on dispersed recreation and should increase desirable opportunities in the future. Resources needed to maintain and manage these recreation areas would likely be available because they are in active management areas. It is likely that additional funding and support would available to maintain these areas and obtained through shared stewardship.

- Implementation of Alternative 2 considered with past, present and reasonably foreseeable future actions is expected to have minimal short-term effects on the trail environment due to increased disturbance of the ground and vegetation, minimal short term effects on the social aspect of trails due to the potential for displacement of users during project implementation, and short-term effects to the financial component due to the increase in funding needed to complete projects and the possibility of lost revenue if trails with fees are temporarily closed for use. However, the long-term benefits of cooperating with other divisions to implement actions that improve soil and water conditions, while helping us move towards a right-sized system of environmentally and financially sustainable trails that meet the needs of the recreating public far outweigh these insignificant short-term effects.

Soils

For specific and complete information regarding soils, the resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Soil Specialist Report. Although there is the potential that these activities will be occurring over the same piece of ground, for the purpose of this analysis, all the activities were analyzed separately as if they were occurring on separate pieces of ground. Table 17 shows the parameters used in the specialist report for the analysis.

Table 17 Soil Parameters Used for Analysis

Parameter	Description
Spatial Bounds	The Foothills Landscape Project Area.
Temporal Bounds of Effects	Short-term: Less than 10 years. Long-term: Greater than 10 years.
Indicators	Effects to soil stability, soil structure, soil strength, and soil burn severity
Measures	Change in the intensity, context, and duration of the indicators, and the significance of that change for the proposed activities associated with treatment

Alternative 1 Direct, Indirect and Cumulative Effects

- Alternative 1 will have no direct effects on the soils, as soil disturbing project activities would not take place. For any areas in the project area that may be experiencing soil erosion, this alternative will not take action to reduce the erosion. Therefore, the current soil stability condition would remain the same or potentially decrease as erosion and surface flow over any bare soils is likely to remain the same or potentially increase existing sediment load in streams.
- Mechanical harvest would not occur under Alternative 1 resulting in no new impacts to soil stability, structure, or strength from equipment. However, indirect effects of the No Action Alternative would include the lack of benefits to the soil resource from vegetation treatments.
- Indirect effects of Alternative 1 would also include increased degradation of the existing unsustainable trails, camp sites, and roads. In their current state, continued use of these areas would increase erosion, increase compaction, decrease water infiltration, and increase puddling.
- The lack of management actions under Alternative 1 would result in no direct change in the analysis indicators for soil stability, soil structure, soil strength, or soil burn severity. The current conditions would continue to persist without improvement from the actions proposed in Alternative 2, so any negative effects on soil stability, structure, strength, or soil burn severity are likely to continue or even increase until the time when natural processes may change those conditions.
- Implementation of Alternative 1 considered together with past, present, and reasonably foreseeable future activities would be expected to have a minimal long-term (751 acres or 0.5% of the Foothills Landscape) cumulative effect on soil quality

Alternative 2 Direct, Indirect and Cumulative Effects

All the activities associated with proposed treatments in Alternative 2 have been analyzed separately as if they were occurring on separate pieces of ground. Although there is the potential that these activities will be occurring over the same piece of ground, there are numerous combinations as to when treatments may overlap or exactly where. However, the combination of activities on the same piece of ground would occur subject to Project Design Features (page 74) and would not compound the effects on soils. For specific information regarding soil resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Soil Specialist Report.

- The largest negative effects to soil quality from Alternative 2 would be impacts to soil structure and strength mostly resulting from use of mechanical equipment (harvest activities, mastication, fire line construction/maintenance, wildlife opening creation/maintenance).
- Alternative 2 would also result in some direct benefits to soil quality through activities. Short-term benefits would include increases in soil cover from mastication and increased plant growth within wildlife openings through restoration and maintenance. Long-term beneficial effects would be achieved through activities that moved the soil structure or

strength back towards natural conditions. These activities would result in achieving the purpose and need to restore soil and water quality across the watersheds within the Foothills Landscape.

- Other activities proposed under Alternative 2 would enhance soil quality in areas considered as necessary infrastructure. Re-routing trails that have poor resource conditions or creating new trails to provide a more sustainable trail system would ultimately increase soil stability reducing the amount of erosion. Decommissioning developed or dispersed camp sites would improve soil stability, structure, and strength. Decreasing maintenance levels of roads or implementing seasonal closures would reduce the amount of traffic ultimately increasing soil stability. These activities would also result in achieving the purpose and need to restore soil and water quality across the watersheds within the Foothills Landscape.

- The cumulative effects along with the proposed actions in Alternative 2 would have some adverse effects but would be a small portion of the Foothills Landscape (4.6%). The Region 8 soil quality standards are expected to be met within each activity area. Therefore, the majority of the Foothills Landscape is expected to be left in acceptable potential soil productivity following land management activities.

Vegetation

For specific and complete information regarding vegetation, the resources considered, the determined indicators, the affected environment, and the methodology of the analysis, please refer to the Vegetation Specialist Report. Table 18 shows the parameters used in the specialist reports for analysis.

Table 18 Vegetation Parameters Used for Analysis

Parameter	Description
Spatial Bounds	The Foothills Landscape Project Area
Temporal Bounds of Effects	Successional Stage Habitats: 10 years All Other Vegetative Resource Conditions: 15 years Short-term: Less than 3 years. Long-term: Greater than 3 years.
Indicators	Effects on stand structure and function, forest types, abundance of specific vegetation species, identified conservation areas or rare habitats, and resiliency to disturbance for forest vegetation.
Measures	• Changes in acres of forest restored, reduced, or maintained • Change in the vulnerability of a species or forest type to insect, disease, or disturbance

Alternative 1 Direct, Indirect and Cumulative Effects

- Under Alternative 1, current conditions to vegetation resources would be perpetuated as no action or management would occur to any of the forest types. The observed decline of fire-adapted species in the project area is likely to continue, because no actions to restore or maintain these communities and their associated woodlands habitats would be undertaken. Seedling recruitment and survival would continue to decrease because of the closed canopy and dense understory conditions that are currently present.

- Alternative 1 would perpetuate the departed conditions associated with FCC3 and the dominance of FCC3 on the Foothills Landscape. In addition to the continuation of the risk of increased wildfires there would be no treatments to influence conditions to promote the desired shade-intolerant, fire-tolerant species.

- Alternative 1 would perpetuate the current conditions in susceptible pine communities. High risk of frequency and severity of southern pine beetle outbreaks would be likely to continue because no actions to maintain these vulnerable stands would be undertaken. Tree vigor in overstocked pine stands would continue to be poor since conditions would not be managed to reduce the stress caused by competition for limited resources.

- Under Alternative 1, gypsy moth infestations and oak decline would be likely because no actions would address overstocked stand conditions to reduce stress.

- Alternative 1 would also prevent the expansion of existing Hemlock Conservation Areas (HCAs) and prevent hemlocks from receiving needed silvicultural treatments that, overtime, were perpetuate hemlock decline throughout the landscape. Lack of these actions would not benefit structural diversity, enhance hemlocks position in forest composition, preserve genetic diversity, nor promote the species dominance in riparian corridors where they assist with stream flow and temperatures.

- Cumulatively under Alternative 1, continued lack of action would not meet the Forest Plan goals and objectives for managing forest health and maintaining or restoring vegetation communities, nor the project's purpose and need

Alternative 2 Direct, Indirect and Cumulative Effects

- There would be a 7,500-acre change/increase of fire-adapted yellow pine within the project area (shortleaf, pitch and/or table mountain pine).

- There would be a 4,060-acre reduction in fire-sensitive Virginia pine, and an 850-acre reduction in off-site loblolly pine resulting in a reduction of the abundance of fire-sensitive or off-site yellow pine within the project area.

- A change in stand structure and function to improve the reproductive potential of shortleaf, pitch and table mountain pine would occur within existing mid to late-successional shortleaf, pitch and table mountain pine stands (12,400 acres) to improve structure/function to improve reproductive potential.

- Open woodland habitats would be created/restored with changes in stand structure and function within yellow pine-dominated forests (5,262 acres).
- Oak reproduction potential would increase by changes in stand structure and function within existing mid to late-successional oak (38,600 acres).
- Competitive status of existing oaks would be improved or maintained on 3,200 acres in existing immature oak stands.
- Open woodland habitats within oak-dominated forests would be created/restored with changes in stand structure and function within existing oak-dominated stands (2,138 acres).
- Oak forests would be increased on up to 1,700 acres as a result of restoration of off-site pine plantations to oak dominated forest types.
- Stand structure and function within existing mid to late-successional mesic deciduous stands (8,100 acres) would be improved by the creation of canopy gaps.
- An 850-acre reduction in off-site immature white pine plantations as a result of restoring native forest types (fire-adapted yellow pine or oak) would occur.
- A 1,740-acre reduction of mid to late-successional stage white pine stands as result of restoring native forest types (fire-adapted yellow pine or oak) would occur.
- Hemlock conservation areas would expand by 600 acres. Alternative 2 would also reduce the vulnerability of hemlock-dominated forests to hemlock wooly adelgid by the treatment of up to 7,275 acres to enhance the understory light environment for improving growth of understory/suppressed hemlocks and improve growth of understory or suppressed hemlock trees.
- Alternative 2 would result in changes in the abundance of fire-adapted forest types in Fire Condition Class I (increased to 75,050 acres), II (45,700 acres), and Fire Condition Class III (36,875 acres).
- Alternative 2 would result in 29,700 acres of pine host forest types thinned, thereby reducing vulnerability to bark beetle infestations.
- Alternative 2 would decrease the vulnerability of existing mid to late-successional oak forest to oak decline by the thinning and reduced stocking of 43,938 acres of existing oak stands, and 2,000 acres of mature oak forest regenerated to improve age class distribution.
- Alternative 2 would increase resiliency of existing hardwood stands to gypsy moth infestations by the implementation of thinning and regeneration treatments within hardwood-dominated stands, reducing stocking, and the creation of young resilient forest (total of 54,538 acres).

- Alternative 2 would result in a 10,500 acre increase in young forest habitats over the life of the project. This would also result in changes of young forest habitat across a diverse range of sites with up to 7,500 acres created in pine-dominated forest types, 3,700 acres created in oak forest types, 500 acres created in mesic hardwood forest types, and 500 acres of young forest habitat created as corridors.
- Late-successional stage habitats would be reduced on 6,037 acres, and mid-successional stage habitats would be reduced by 4,463 acres as a result of young forest creation treatments in Alternative 2.
- Alternative 2 would set aside for conservation small blocks totaling 5,054 acres of old growth. Alternative 2 would not affect any acres of non-conserved possible old growth.
- The implementation of Alternative 2 and past, present and reasonably foreseeable actions would have positive effects on the pine and pine-oak community due to restoration and maintenance of fire-adapted yellow pine forest, improvement to forest health in overstocked pine stands, and restoration of open woodlands in the Foothills Landscape analysis area.
- The implementation of Alternative 2 and past, present, and reasonably foreseeable actions would have positive effects by managing forest health and maintaining or restoring oak and oak-pine communities.
- Incremental increases and decreases in young forest in the foreseeable future as new areas are created over the next 10-15 years under Alterative 2 and existing areas (and early areas created under Alternative 2) progress out of the young forest condition would occur from the proposed action and cumulative actions resulting in a diversity of habitat conditions across the Foothills Landscape.
- The presence of I-Rank (Invasive Species Impact Rank) species with a greater tendency to spread (High Risk) would be considered when proposed activities are planned under Alternative 2 to minimize impacts from ground-disturbing activities.
- Proposed actions which would have little effect on non-native invasive plant species include old growth designations, changes in road or trail maintenance levels, and other actions where the activity is administrative or small in scope and scale.
- Many of the Foothills Landscape proposed actions could potentially affect existing non-native invasive species or introduce new species as a result of ground disturbance by heavy equipment or increased light conditions; silvicultural activities, prescribed burning, creation or expansion of wildlife openings, road or trail construction, or maintenance activities have the potential to create these conditions
- Authorized herbicides have already been established and environmental effects considered under previous Forest NEPA decisions: Environmental Assessment -Non-native Invasive Species Treatment, Blue Ridge and Conasauga Ranger Districts (2008), the Environmental Assessment –Vegetation Control: Non-native Invasive Species and

Shortleaf Pine Restoration Release on the Chattooga River Ranger District (2008), and the Vegetation Specialist Report (Appendix C) for the Foothills Landscape Project.

- All proposed activities and their mitigations would be evaluated for their potential to affect non-native invasive species on a case-by-case basis. All action under Alternative 2 would be implemented with Project Design Features and be subject to Forest Plan Standards and Best Management Practices.

Agencies or Persons Consulted

Agencies consulted on this EA include Georgia Department of Natural Resources (DNR), Georgia Forestry Commission (GFC), U.S. Fish & Wildlife Service (USFWS), U.S. Geological Survey (USGS), U.S. Environmental Protection Agency (EPA), U.S. Forest Service Southern Research Station, Cherokee Nation, Eastern Band of Cherokee Indians, United Keetoowah Band of Cherokee Indians, Muscogee (Creek) Nation, Poarch Band of Creek Indians, Thlopthlocco Tribal Town, Kialegee Tribal Town, Coushatta Tribe of Louisiana, Georgia State Historic Preservation Office (SHPO), Advisory Council on Historic Preservations (ACHP), and Georgia Council of Professional Archaeologists.

Collaborators on project development included hundreds of individuals, including residents of the eight counties that are part of the Foothills Landscape and neighboring areas, and representatives who identified affiliation with the following organizations and groups (including but not limited to): American Chestnut Society, Atlanta Botanical Garden, Backcountry Horsemen, Benton MacKaye Trail Association, Chattahoochee RiverKeeper, Chattahoochee Trail Horse Association, The Chattooga Conservancy, Chestatee-Chattahoochee RC&D Council, CoTrails, Georgia Appalachian Trail Club, Georgia ForestWatch, Georgia Outdoor News, Logging/local businesses, Lumpkin Coalition, National Wild Turkey Federation, The Nature Conservancy, Recreation services/local businesses, Ruffed Grouse Society, Save Georgia's Hemlocks, Sierra Club – Georgia Chapter, Southern Off-Road Bicycle Association/International Mountain Bike Association, Southern Environmental Law Center, Southern Four-Wheel Drive Association, The State Botanical Garden of Georgia, Team Conasauga, Trout Unlimited, University of North Georgia.

References

All literature cited for this EA can be found in the project record.

Appendix A - Maps

Maps – Landscape Management Prescriptions

- 0 Custodial Management
- 1.A Designated Wilderness
- 1.B Recommended Wilderness Study Areas
- 2.A.1 Designated Wild Rivers
- 2.A.2 Designated Scenic Rivers
- 12.A Remote Backcountry Recreation Few Open Roads
- 2.A.3 Designated Recreational Rivers
- 4.A Appalachian Trail Corridor
- 4.D Botanical and Zoological Areas
- 4.F Scenic Areas
- 4.F.1 Scenic and Wildlife Management Areas
- 4.F.2 Regional Forester Scenic Areas
- 4.H Outstandingly Remarkable Streams
- 4.I Natural Areas with Few Open Roads
- 6.B Areas Managed to Restore or Maintain Old Growth Characteristics
- 7.A Scenic Byway Corridors
- 7.E.1 Dispersed Recreation Areas
- 8.A.2 Area Sensitive, Mid- to Late-Successional Forest Emphasis
- 9.A.1 Source Water Protection Watersheds
- 9.F Rare Communities
- 8.A.1 Mid- to Late-Successional Forest Emphasis
- 7.E.2 Dispersed Recreation Areas with Vegetation Management
- 9.A.3 Watershed Restoration Areas
- 9.H Management, Maintenance, and Restoration of Plant Associations
- 5.A Administrative Sites
- 8.E.3 High Elevation Early Successional Habitat

Chattahoochee-Oconee National Forests

Map 9 Land Management Plan Prescriptions
Chattooga River District

Black Rock Mountain State Park
Clayton
Moccasin Creek State Park
Tiger
Unicoi State Park
Helen
Tallulah Gorge State Park
Tallulah Falls

9.H
2.A.3
28
9.A.3
2.A.1
8.A.1
0
2
9.H
9.A.3
8.A.1
23
7.E.1
8.A.1
356
4.F
6.B
9.H
9.H
15
4.H
255
197
441
7.E.1
87
75

- Foothills Landscape
- US or State Highway
- County Road
- State Park
- Historic Site
- Conservation Area
- City

N W E S

0 1 2 4 6 Miles

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

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0 Custodial Management
1.A Designated Wilderness
1.B Recommended Wilderness Study Areas
2.B.1 Recommended Wild Rivers
2.B.2 Recommended Scenic Rivers
12.A Remote Backcountry Recreation Few Open Roads
2.B.3 Recommended Recreational Rivers
4.D Botanical and Zoological Areas
6.B Areas Managed to Restore or Maintain Old Growth Characteristics
7.B Scenic Corridors and Sensitive Viewsheds
7.E.1 Dispersed Recreation Areas
9.F Rare Communities
7.E.2 Dispersed Recreation Areas with Vegetation Management
9.H Management, Maintenance, and Restoration of Plant Associations
5.A Administrative Sites
8.E.3 High Elevation Early Successional Habitat

Chattahoochee-Oconee National Forests

Map 10 Land Management Plan Prescriptions
Conasauga District

7.E.2
7.E.2
9.H
7.B
9.H
6.B
8.E.3
Mill Creek Overlook
9.H
7.E.2
7.B
7.B
7.E.1
Fort Mountain State Park
7.B
4.D
9.H
0
Eton
Chatsworth
Ellijay
East Ellijay
64
2
411
225
286
76
52
411
76

Foothills Landscape
US or State Highway
County Road
State Park
City

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W
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Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

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Chattahoochee-Oconee National Forests

Map 11 Land Management Plan Prescriptions
Blue Ridge District

- 0 Custodial Management
- 1.A Designated Wilderness
- 1.B Recommended Wilderness Study Areas
- 2.B.1 Recommended Wild Rivers
- 2.B.3 Recommended Recreational Rivers
- 3.A National Scenic Areas
- 3.C National Recreation Areas
- 3.D Proposed National Recreation Areas
- 4.A Appalachian Trail Corridor
- 4.D Botanical and Zoological Areas
- 4.F Scenic Areas
- 4.F.1 Scenic and Wildlife Management Areas
- 4.F.2 Regional Forester Scenic Areas
- 4.H Outstandingly Remarkable Streams
- 6.B Areas Managed to Restore or Maintain Old Growth Characteristics
- 7.A Scenic Byway Corridors
- 7.B Scenic Corridors and Sensitive Viewsheds
- 7.E.1 Dispersed Recreation Areas
- 9.A.1 Source Water Protection Watersheds
- 8.A.1 Mid- to Late-Successional Forest Emphasis
- 7.E.2 Dispersed Recreation Areas with Vegetation Management
- 9.H Management, Maintenance, and Restoration of Plant Associations
- 5.A Administrative Sites

Vogel State Park
Unicoi State Park
Helen
Smithgall Woods-Dukes Creek CA
Hardman Farm
Dahlonega
4.F.1
7.E.2
7.E.1
9.A.1
4.F
9.H
3.C
60
180
19
348
17
356
75
129
255
52
342
9

- Foothills Landscape
- US or State Highway
- County Road
- State Park
- Historic Site
- Conservation Area
- City

N W E S

0 1 2 4 6 Miles

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

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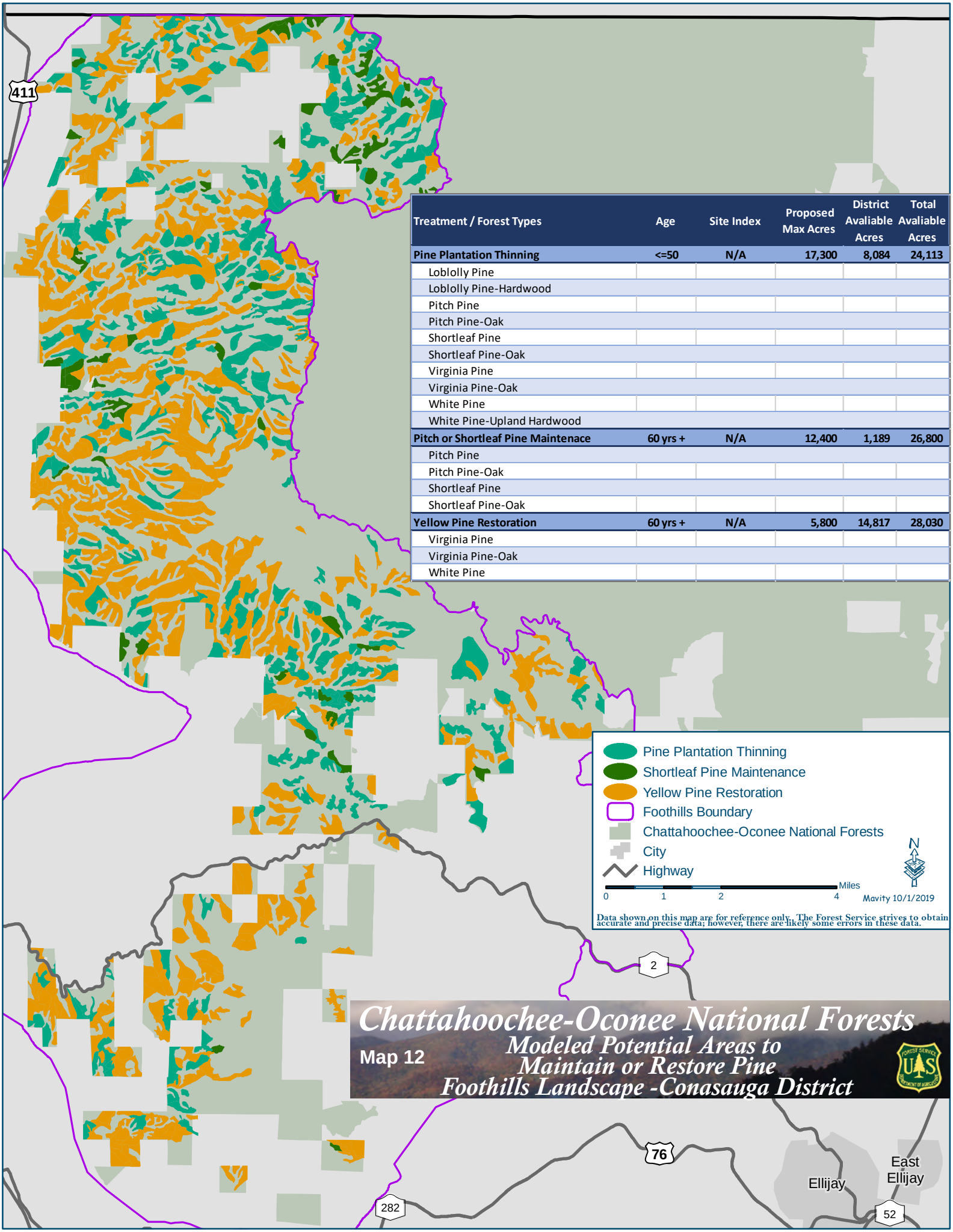
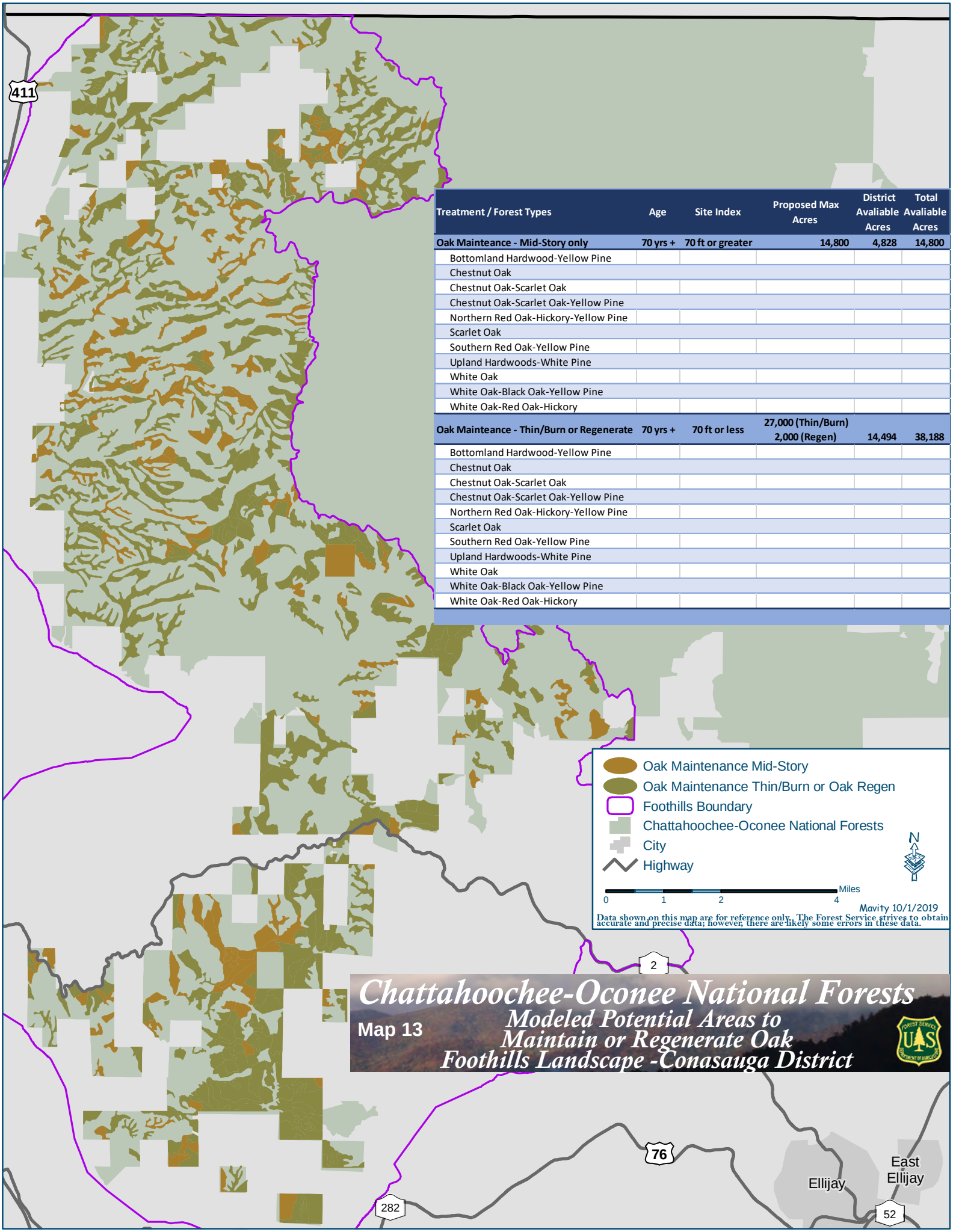
Maps – Vegetation

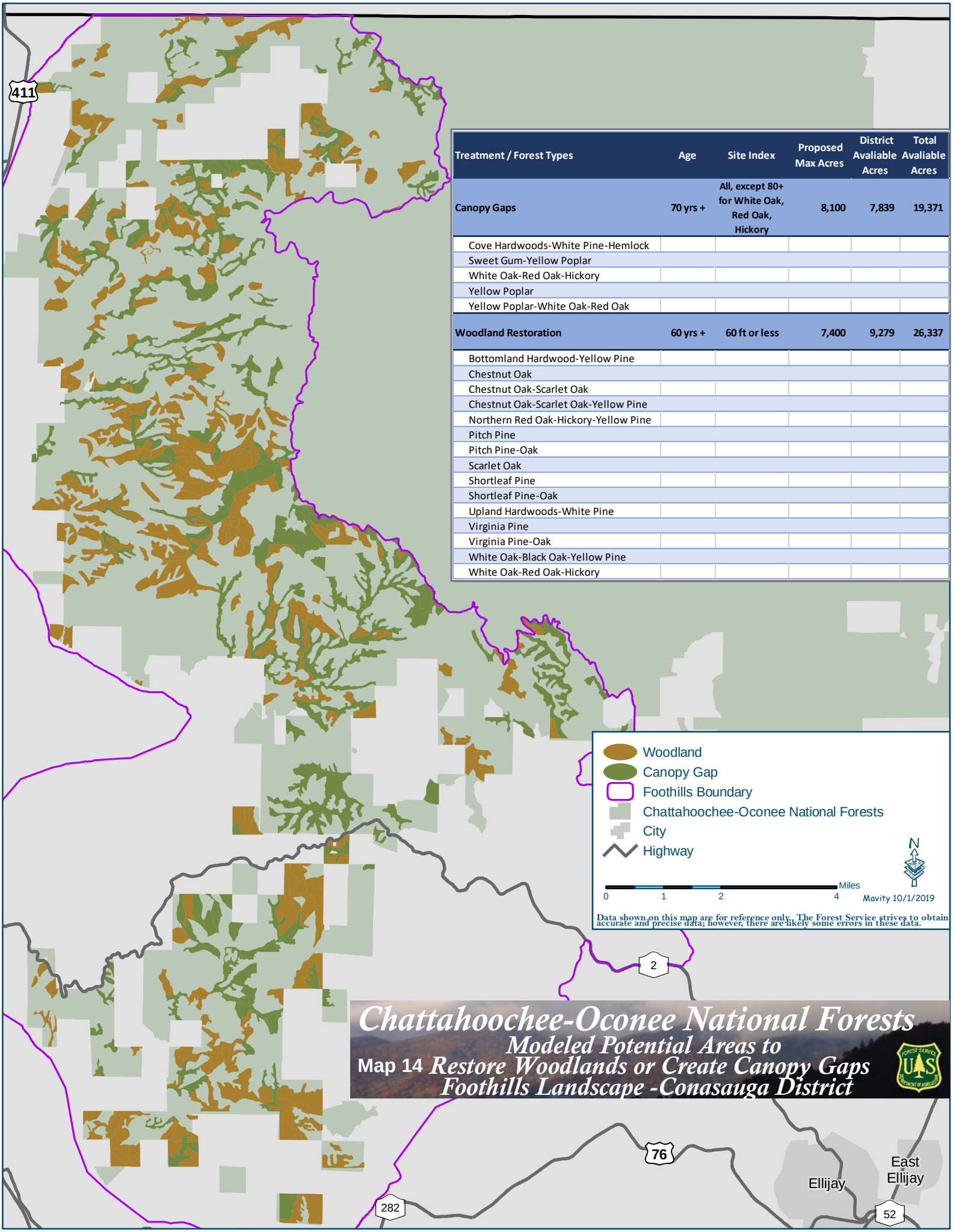
Conasauga Ranger District



Treatment / Forest Types	Age	Site Index	Proposed Max Acres	District Avaliable Acres	Total Avaliable Acres
Pine Plantation Thinning	**<=50**	**N/A**	**17,300**	**8,084**	**24,113**
Loblolly Pine					
Loblolly Pine-Hardwood					
Pitch Pine					
Pitch Pine-Oak					
Shortleaf Pine					
Shortleaf Pine-Oak					
Virginia Pine					
Virginia Pine-Oak					
White Pine					
White Pine-Upland Hardwood					
Pitch or Shortleaf Pine Maintenace	**60 yrs +**	**N/A**	**12,400**	**1,189**	**26,800**
Pitch Pine					
Pitch Pine-Oak					
Shortleaf Pine					
Shortleaf Pine-Oak					
Yellow Pine Restoration	**60 yrs +**	**N/A**	**5,800**	**14,817**	**28,030**
Virginia Pine					
Virginia Pine-Oak					
White Pine					



Treatment / Forest Types	Age	Site Index	Proposed Max Acres	District Avaliable Acres	Total Avaliable Acres
Oak Mainteance - Mid-Story only	**70 yrs +**	**70 ft or greater**	**14,800**	**4,828**	**14,800**
Bottomland Hardwood-Yellow Pine					
Chestnut Oak					
Chestnut Oak-Scarlet Oak					
Chestnut Oak-Scarlet Oak-Yellow Pine					
Northern Red Oak-Hickory-Yellow Pine					
Scarlet Oak					
Southern Red Oak-Yellow Pine					
Upland Hardwoods-White Pine					
White Oak					
White Oak-Black Oak-Yellow Pine					
White Oak-Red Oak-Hickory					
Oak Mainteance - Thin/Burn or Regenerate	**70 yrs +**	**70 ft or less**	**27,000 (Thin/Burn) 2,000 (Regen)**	**14,494**	**38,188**
Bottomland Hardwood-Yellow Pine					
Chestnut Oak					
Chestnut Oak-Scarlet Oak					
Chestnut Oak-Scarlet Oak-Yellow Pine					
Northern Red Oak-Hickory-Yellow Pine					
Scarlet Oak					
Southern Red Oak-Yellow Pine					
Upland Hardwoods-White Pine					
White Oak					
White Oak-Black Oak-Yellow Pine					
White Oak-Red Oak-Hickory					



Treatment / Forest Types	Age	Site Index	Proposed Max Acres	District Avaliable Acres	Total Avaliable Acres
Canopy Gaps	**70 yrs +**	**All, except 80+ for White Oak, Red Oak, Hickory**	**8,100**	**7,839**	**19,371**
Cove Hardwoods-White Pine-Hemlock					
Sweet Gum-Yellow Poplar					
White Oak-Red Oak-Hickory					
Yellow Poplar					
Yellow Poplar-White Oak-Red Oak					
Woodland Restoration	**60 yrs +**	**60 ft or less**	**7,400**	**9,279**	**26,337**
Bottomland Hardwood-Yellow Pine					
Chestnut Oak					
Chestnut Oak-Scarlet Oak					
Chestnut Oak-Scarlet Oak-Yellow Pine					
Northern Red Oak-Hickory-Yellow Pine					
Pitch Pine					
Pitch Pine-Oak					
Scarlet Oak					
Shortleaf Pine					
Shortleaf Pine-Oak					
Upland Hardwoods-White Pine					
Virginia Pine					
Virginia Pine-Oak					
White Oak-Black Oak-Yellow Pine					
White Oak-Red Oak-Hickory					

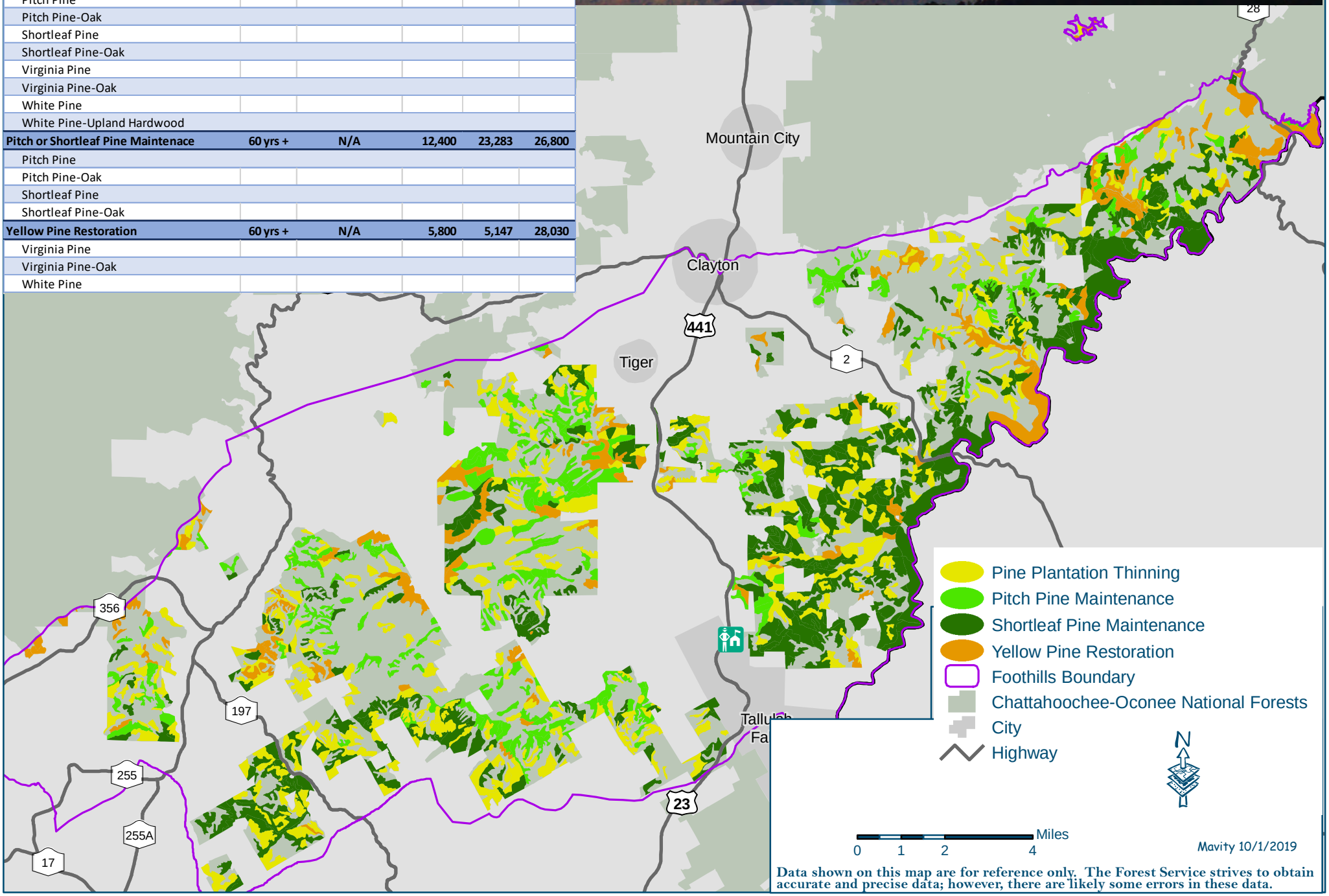
Chattooga River Ranger District

Chattahoochee-Oconee National Forests

Modeled Potential Areas to Maintain or Restore Pine Foothills Landscape -Chattooga River District

Map 15

Treatment / Forest Types	Age	Site Index	Proposed Max Acres	District Avaliable Acres	Total Avaliable Acres
Pine Plantation Thinning	**<=50**	**N/A**	**17,300**	**11,683**	**24,113**
Loblolly Pine					
Loblolly Pine-Hardwood					
Pitch Pine					
Pitch Pine-Oak					
Shortleaf Pine					
Shortleaf Pine-Oak					
Virginia Pine					
Virginia Pine-Oak					
White Pine					
White Pine-Upland Hardwood					
Pitch or Shortleaf Pine Maintenace	**60 yrs +**	**N/A**	**12,400**	**23,283**	**26,800**
Pitch Pine					
Pitch Pine-Oak					
Shortleaf Pine					
Shortleaf Pine-Oak					
Yellow Pine Restoration	**60 yrs +**	**N/A**	**5,800**	**5,147**	**28,030**
Virginia Pine					
Virginia Pine-Oak					
White Pine					



Mavity 10/1/2019

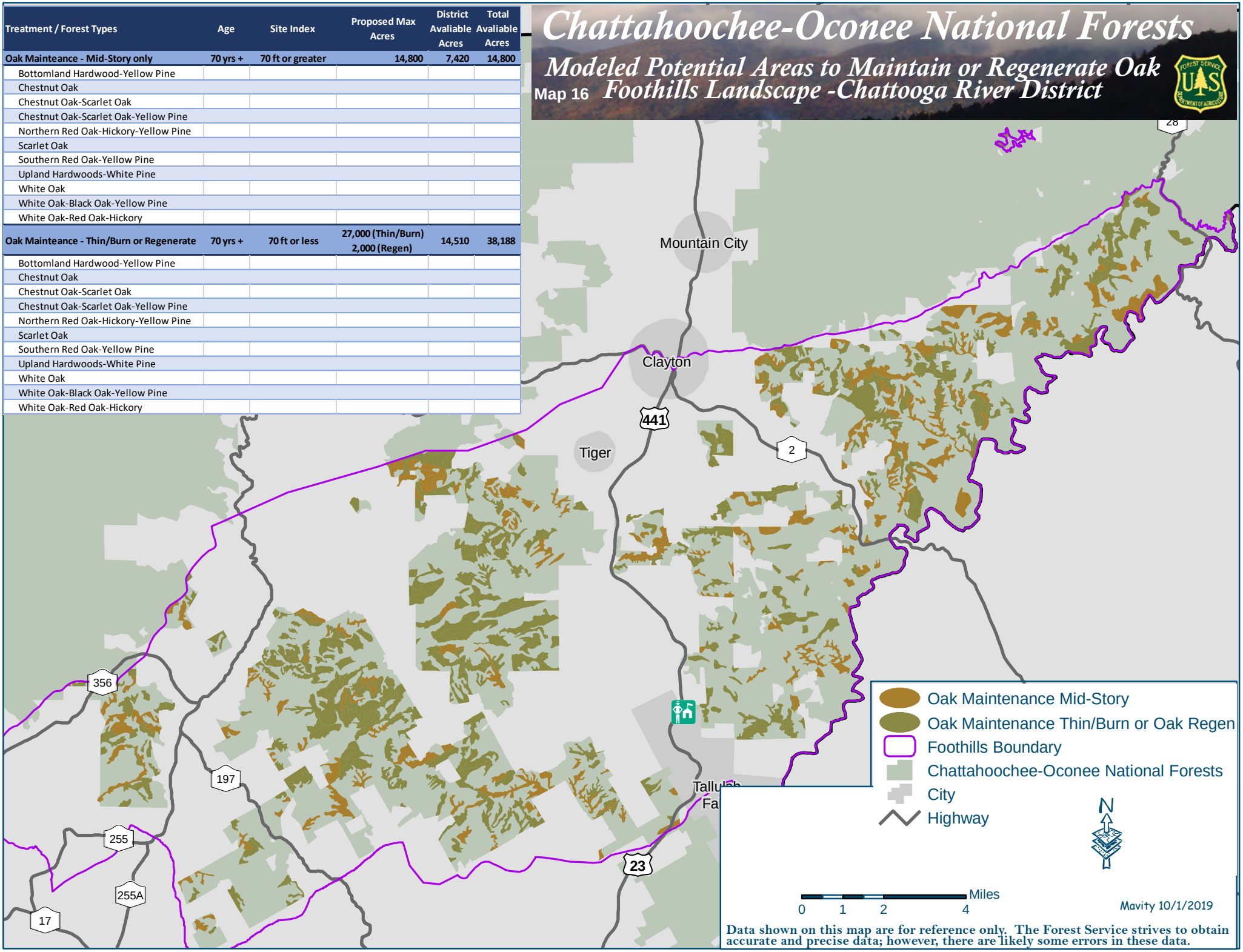
Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

Chattahoochee-Oconee National Forests

Modeled Potential Areas to Maintain or Regenerate Oak

Map 16 Foothills Landscape -Chattooga River District

Treatment / Forest Types	Age	Site Index	Proposed Max Acres	District Avaliable Acres	Total Avaliable Acres
Oak Mainteance - Mid-Story only	**70 yrs +**	**70 ft or greater**	**14,800**	**7,420**	**14,800**
Bottomland Hardwood-Yellow Pine					
Chestnut Oak					
Chestnut Oak-Scarlet Oak					
Chestnut Oak-Scarlet Oak-Yellow Pine					
Northern Red Oak-Hickory-Yellow Pine					
Scarlet Oak					
Southern Red Oak-Yellow Pine					
Upland Hardwoods-White Pine					
White Oak					
White Oak-Black Oak-Yellow Pine					
White Oak-Red Oak-Hickory					
Oak Mainteance - Thin/Burn or Regenerate	**70 yrs +**	**70 ft or less**	**27,000 (Thin/Burn) 2,000 (Regen)**	**14,510**	**38,188**
Bottomland Hardwood-Yellow Pine					
Chestnut Oak					
Chestnut Oak-Scarlet Oak					
Chestnut Oak-Scarlet Oak-Yellow Pine					
Northern Red Oak-Hickory-Yellow Pine					
Scarlet Oak					
Southern Red Oak-Yellow Pine					
Upland Hardwoods-White Pine					
White Oak					
White Oak-Black Oak-Yellow Pine					
White Oak-Red Oak-Hickory					



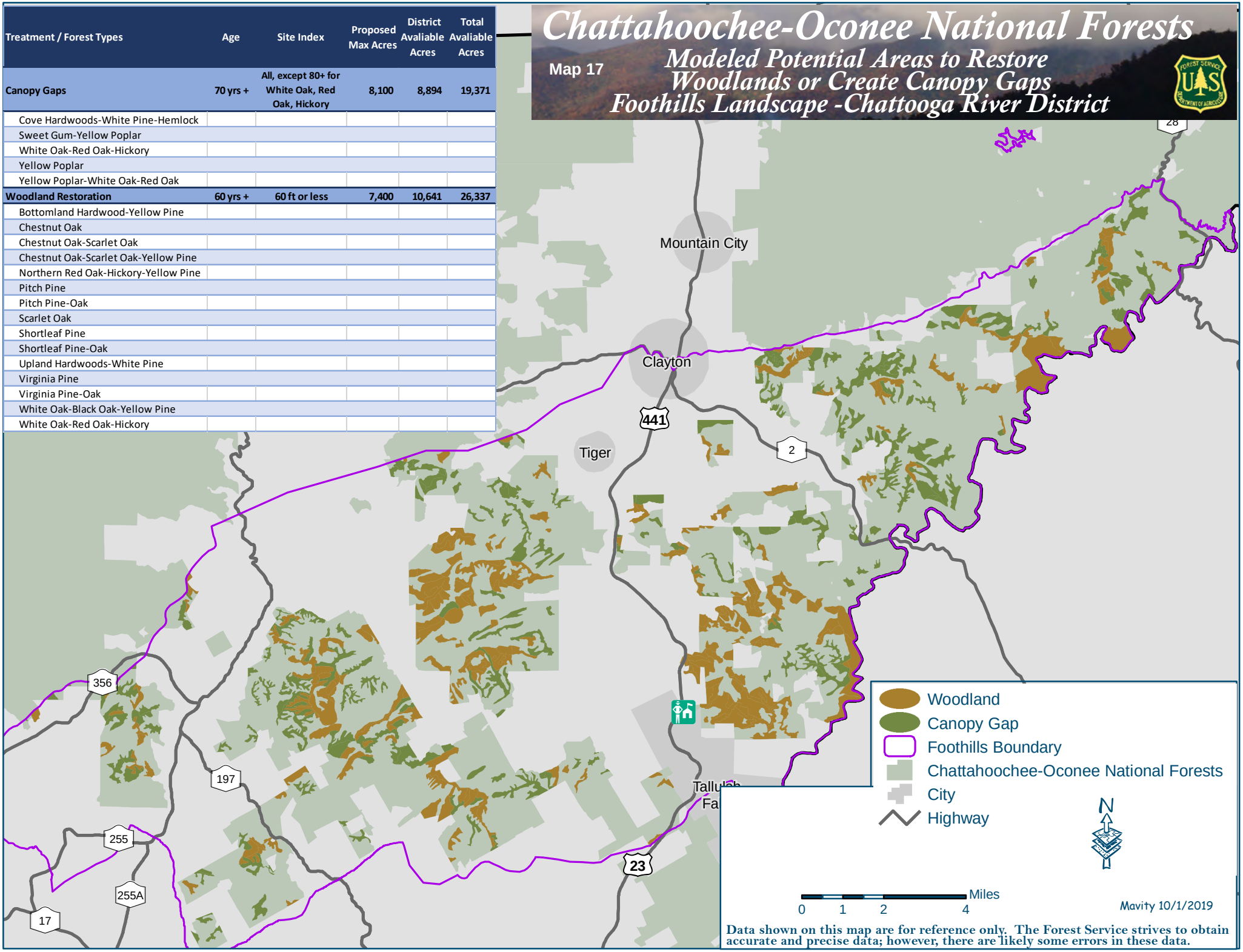
Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

Chattahoochee-Oconee National Forests

Map 17

Modeled Potential Areas to Restore Woodlands or Create Canopy Gaps
Foothills Landscape -Chattooga River District

Treatment / Forest Types	Age	Site Index	Proposed Max Acres	District Avaliable Acres	Total Avaliable Acres
Canopy Gaps	**70 yrs +**	**All, except 80+ for White Oak, Red Oak, Hickory**	**8,100**	**8,894**	**19,371**
Cove Hardwoods-White Pine-Hemlock					
Sweet Gum-Yellow Poplar					
White Oak-Red Oak-Hickory					
Yellow Poplar					
Yellow Poplar-White Oak-Red Oak					
Woodland Restoration	**60 yrs +**	**60 ft or less**	**7,400**	**10,641**	**26,337**
Bottomland Hardwood-Yellow Pine					
Chestnut Oak					
Chestnut Oak-Scarlet Oak					
Chestnut Oak-Scarlet Oak-Yellow Pine					
Northern Red Oak-Hickory-Yellow Pine					
Pitch Pine					
Pitch Pine-Oak					
Scarlet Oak					
Shortleaf Pine					
Shortleaf Pine-Oak					
Upland Hardwoods-White Pine					
Virginia Pine					
Virginia Pine-Oak					
White Oak-Black Oak-Yellow Pine					
White Oak-Red Oak-Hickory					



Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

Blue Ridge Ranger District

Treatment / Forest Types	Age	Site Index	Proposed Max Acres	District Avaliable Acres	Total Avaliable Acres
Pine Plantation Thinning	**<=50**	**N/A**	**17,300**	**4,366**	**24,113**
Loblolly Pine					
Loblolly Pine-Hardwood					
Pitch Pine					
Pitch Pine-Oak					
Shortleaf Pine					
Shortleaf Pine-Oak					
Virginia Pine					
Virginia Pine-Oak					
White Pine					
White Pine-Upland Hardwood					
Pitch or Shortleaf Pine Maintenace	**60 yrs +**	**N/A**	**12,400**	**2,208**	**26,800**
Pitch Pine					
Pitch Pine-Oak					
Shortleaf Pine					
Shortleaf Pine-Oak					
Yellow Pine Restoration	**60 yrs +**	**N/A**	**5,800**	**8,067**	**28,030**
Virginia Pine					
Virginia Pine-Oak					
White Pine					

Pine Plantation Thinning
Pitch Pine Maintenance
Shortleaf Pine Maintenance
Yellow Pine Restoration
Foothills Boundary
Chattahoochee-Oconee National Forests
City
Highway

N

0 1 2 4 Miles

Mavity 10/1/2019

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

180

19

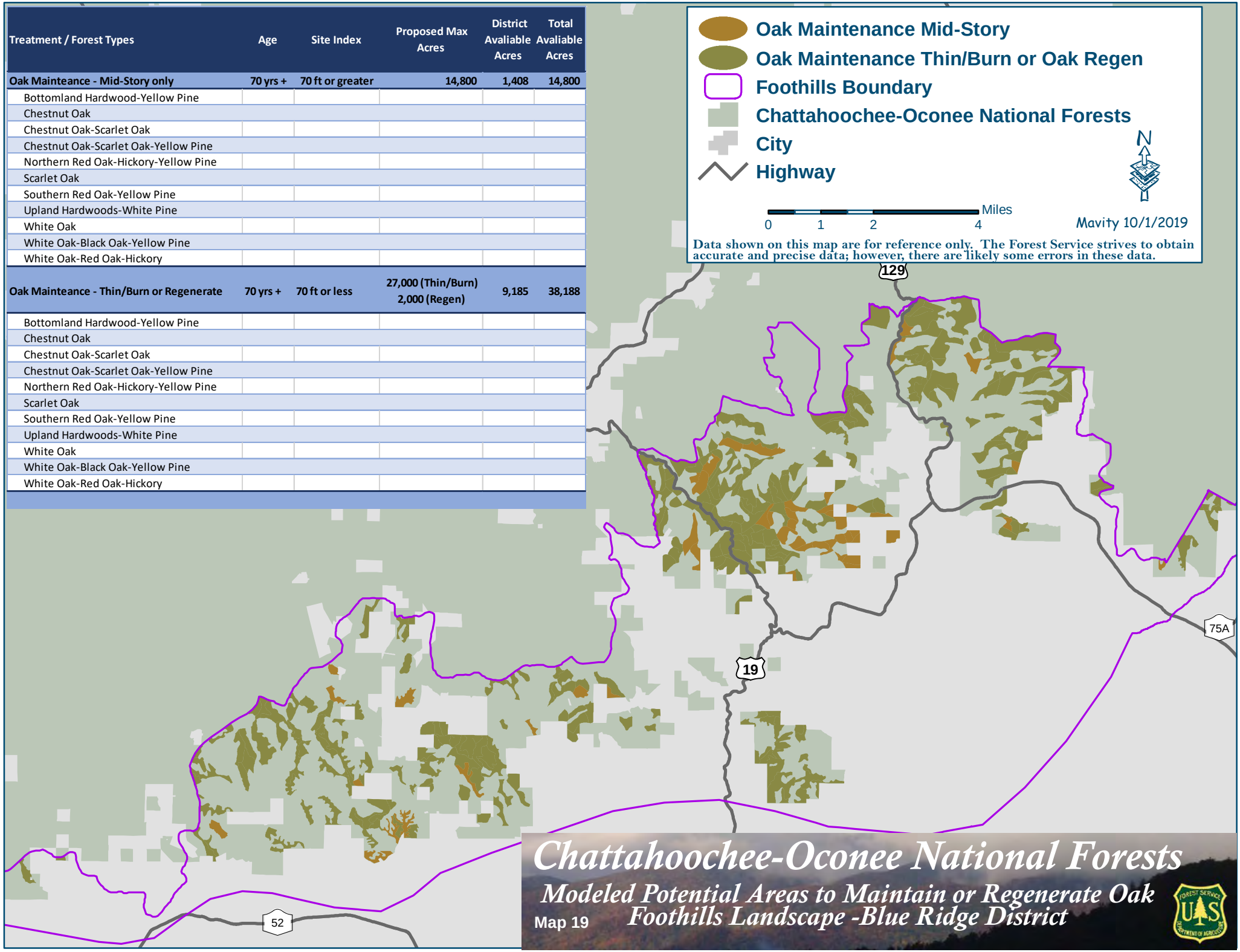
75A

Chattahoochee-Oconee National Forests

Modeled Potential Areas to Maintain or Restore Pine Foothills Landscape -Blue Ridge District

Map 18

Treatment / Forest Types	Age	Site Index	Proposed Max Acres	District Avaliable Acres	Total Avaliable Acres
Oak Mainteance - Mid-Story only	**70 yrs +**	**70 ft or greater**	**14,800**	**1,408**	**14,800**
Bottomland Hardwood-Yellow Pine					
Chestnut Oak					
Chestnut Oak-Scarlet Oak					
Chestnut Oak-Scarlet Oak-Yellow Pine					
Northern Red Oak-Hickory-Yellow Pine					
Scarlet Oak					
Southern Red Oak-Yellow Pine					
Upland Hardwoods-White Pine					
White Oak					
White Oak-Black Oak-Yellow Pine					
White Oak-Red Oak-Hickory					
Oak Mainteance - Thin/Burn or Regenerate	**70 yrs +**	**70 ft or less**	**27,000 (Thin/Burn) 2,000 (Regen)**	**9,185**	**38,188**
Bottomland Hardwood-Yellow Pine					
Chestnut Oak					
Chestnut Oak-Scarlet Oak					
Chestnut Oak-Scarlet Oak-Yellow Pine					
Northern Red Oak-Hickory-Yellow Pine					
Scarlet Oak					
Southern Red Oak-Yellow Pine					
Upland Hardwoods-White Pine					
White Oak					
White Oak-Black Oak-Yellow Pine					
White Oak-Red Oak-Hickory					

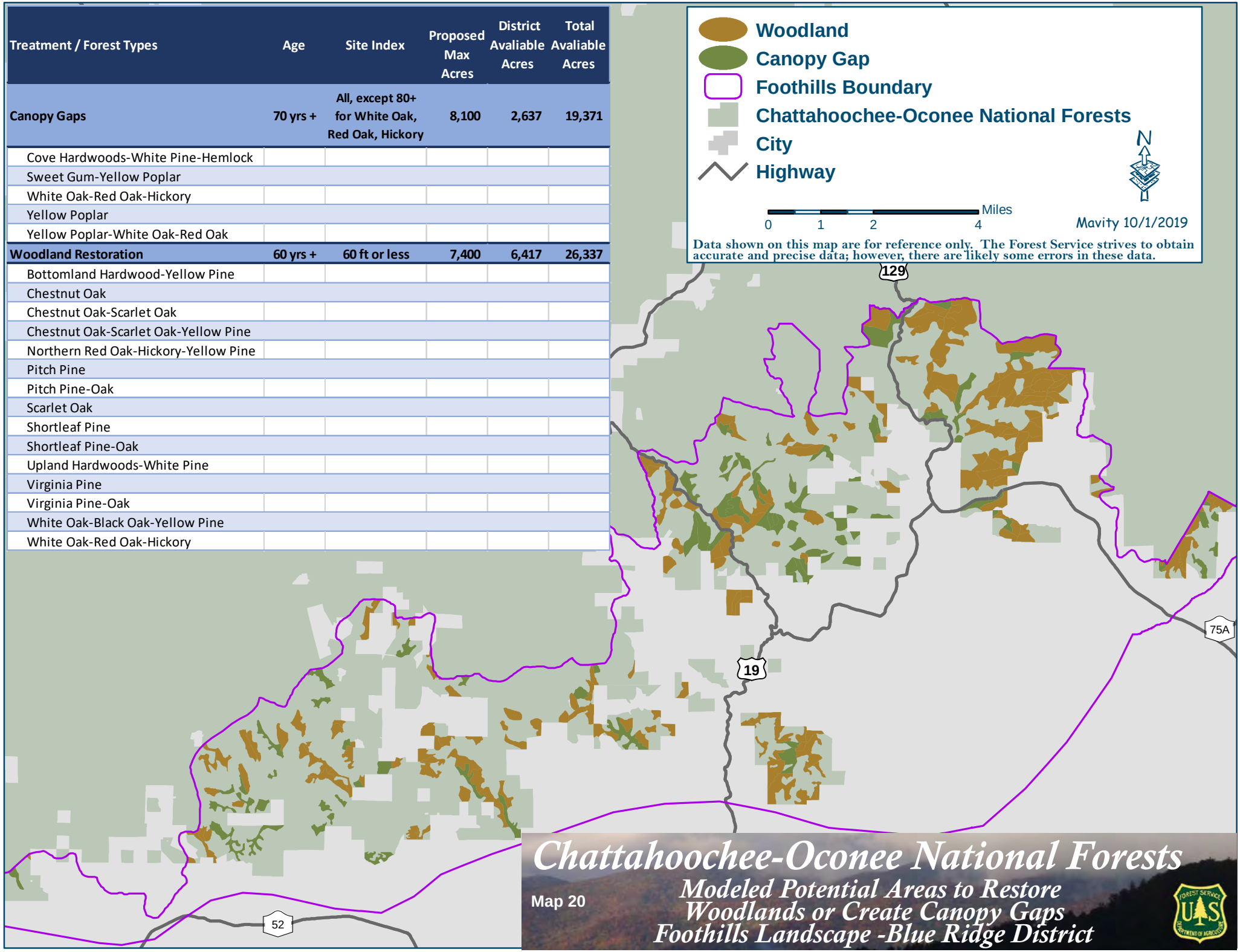


Chattahoochee-Oconee National Forests

Modeled Potential Areas to Maintain or Regenerate Oak
Foothills Landscape -Blue Ridge District

Map 19

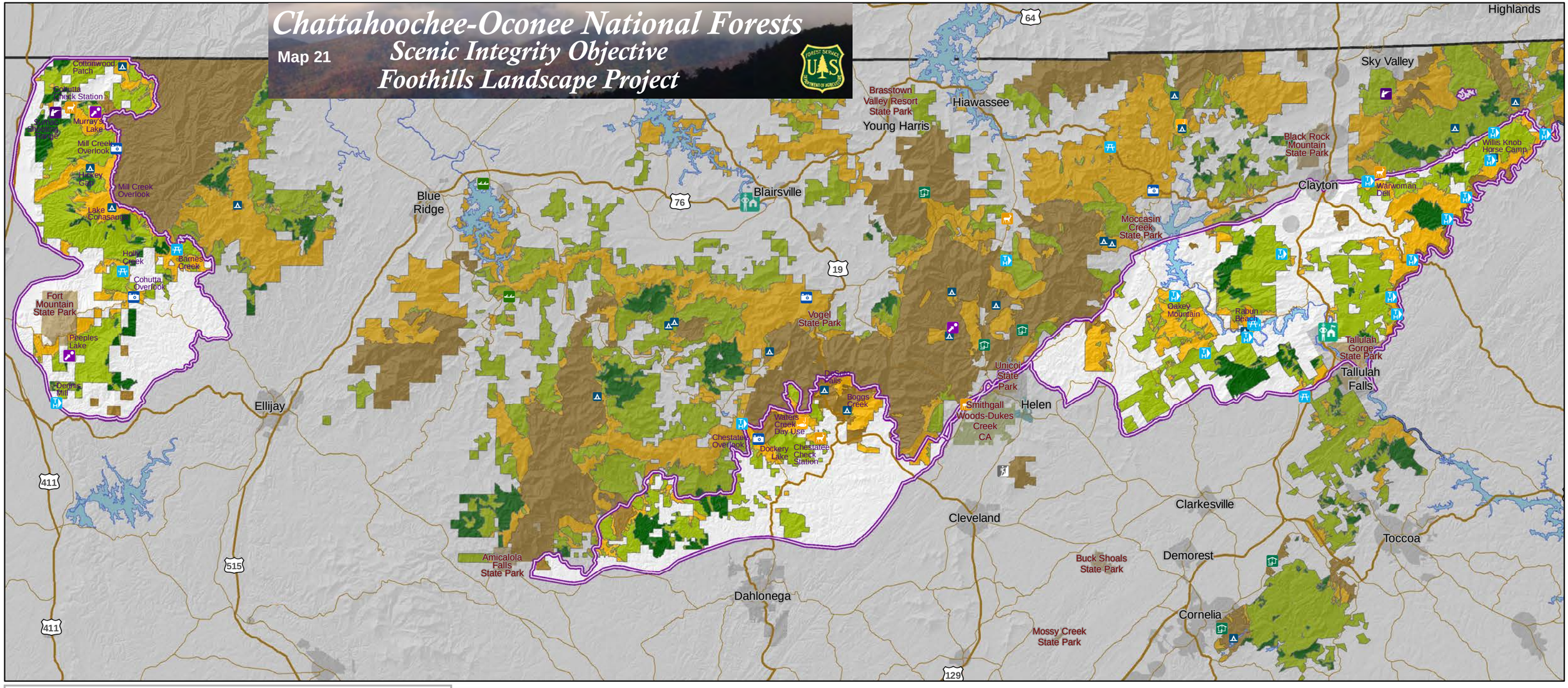
Treatment / Forest Types	Age	Site Index	Proposed Max Acres	District Avaliable Acres	Total Avaliable Acres
Canopy Gaps	**70 yrs +**	**All, except 80+ for White Oak, Red Oak, Hickory**	**8,100**	**2,637**	**19,371**
Cove Hardwoods-White Pine-Hemlock					
Sweet Gum-Yellow Poplar					
White Oak-Red Oak-Hickory					
Yellow Poplar					
Yellow Poplar-White Oak-Red Oak					
Woodland Restoration	**60 yrs +**	**60 ft or less**	**7,400**	**6,417**	**26,337**
Bottomland Hardwood-Yellow Pine					
Chestnut Oak					
Chestnut Oak-Scarlet Oak					
Chestnut Oak-Scarlet Oak-Yellow Pine					
Northern Red Oak-Hickory-Yellow Pine					
Pitch Pine					
Pitch Pine-Oak					
Scarlet Oak					
Shortleaf Pine					
Shortleaf Pine-Oak					
Upland Hardwoods-White Pine					
Virginia Pine					
Virginia Pine-Oak					
White Oak-Black Oak-Yellow Pine					
White Oak-Red Oak-Hickory					

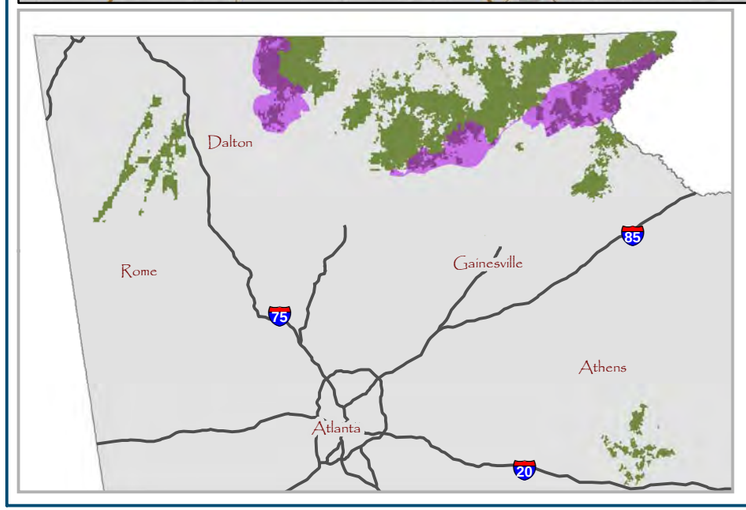


Maps – Recreation

Chattahoochee-Oconee National Forests

Map 21 — Scenic Integrity Objective
Foothills Landscape Project





Foothills Landscape

Scenic Integrity Objective

- Very High
- High
- Medium
- Low

- Boating Site
- Camping
- Climbing Area
- DNR Check Station
- Recreation Area
- Fishing Site
- Picnic Site
- Interpretive Site
- Obversation Site
- Picnic Site
- Target Range
- Trailhead

- US or State Highway
- County Road
- State Park
- Historic Site
- Conservation Area
- City

N W E S

0 5 10 20 30 40 Miles

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

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10/1/2019

Chattahoochee-Oconee National Forests

Wild and Scenic River
Chattooga River District

Map 22

Whiteside Mountain
Highlands
Bob Padgett Poplar
Scaly Mountain
Chinquapin
Glen Falls Trailhead
Osage Mountain Overlook
Blue Valley Scenic Overlook
Glen Falls
Satulah Falls Overlook
Ammons Branch Camp
Ellicott Rock Wilderness East
Blue Valley Camp
North Carolina
Glade Trail
Chattooga Acces
Fork Mountain Trail
Georgia
Cha
East Fork Trail
Sky Valley
Holcomb Creek
Rabun Bald
Three Forks
Burrell's Ford
Foothills Trail
South Carolina
Big Bend
Cherry Hill
Sarah's Creek Campground
Hwy 28/Bartram Trailhead
Chattooga River
Rose Bud
Winding Stairs Trail
Willis Knob Trail
Willis Knob Horse Camp
Long Bottom Ford
Hwy 28 Chattooga River Access
Earl'S Ford
Hidden Falls
Rocky Gap Horse Trail
Bartram
Whetstone
Rocky Gap Trailhead
Grapevine
Hwy 76 Chattooga River Access
Woodall Shoals
Cassidy Bridge
Opposum Creek Trail

Foothills Landscape

Chattooga Wild and Scenic River Corridor

- Recreation
- Scenic
- Wild
- Camping
- Horse Camp
- Boating Site
- Obversation Site
- Picnic Site
- Recreation Area
- Target Range
- Trailhead
- Hiking Trail
- Horse Trail
- Bike Trail
- Wilderness
- Forest Service Land
- City

N W E S

0 1 2 4 Miles

Mavity
4/22/2019

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River
Cottonwood Patch
Big Frog Wilderness
Rice Camp
Murray's Lake
Conasauga River
Sumac Shooting Range
Sumac Creek
Mill Creek Overlook
Hickory Creek
Hickey Gap
Songbird
Lake Conasauga
Emery Creek
Windy Gap
Tibbs OHV
Holly Creek
Barnes Creek
Bear Creek Dispersed Camping Area
Cohutta Overlook
Pinhoti
Rock Creek
Peeples Lake
Dennis Mill
411
2
76

- Foothills
- Boating Site
- DNR Check Station
- Camping
- Fishing Site
- Obversation Site
- Picnic Site
- Recreation Area
- Target Range
- Trailhead
- Trail
- Potential Decommission Trail
- Potential Re-routes
- Developed Recreation Site
- Dispersed Recreation Site
- Wilderness
- National Forests Land
- Open FS Roads
- Seasonally Open Roads
- Gated FS Road
- State or County Road

N

0 1 2 4 Miles

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

Mavity
10/1/2019

Chattahoochee-Oconee National Forests

Map 23 Recreation Opportunities

Foothills Landscape -Conasauga District

Foothills
Boating Site
DNR Check Station
Shelter
Camping
Fishing Site
Picnic Site
Obversation Site
Picnic Site
Trailhead
Trail
Potential Decommission Trail
Potential Re-routes

Developed Recreation Site
Dispersed Recreation Site
Wilderness
National Forests Land
Open FS Roads
Seasonally Open Roads
Gated FS Road
State or County Road

N

Miles
0 1 2 4

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

Mavity
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Gap Shelter
Overflow Campground
Sarah'S Creek
Willis Knob Day Use
Willis Knob Horse Camp
Hwy 28/ Bartram
Warwoman Check Station
Warwoman Dell
Bartram
Bartram
Chattooga River
Licklog Trailhead
Hemlock Falls
Stonewall Mountain Bike
Sutton Hole
Rabun Beach
Rabun Beach
Angel Falls Picnic
Minihaha
Oakey Mountain
Low Gap Trailhead

197
441
2
28
23

Chattahoochee-Oconee National Forests

Map 24 *Recreation Opportunities*

Foothills Landscape -Chattooga River District

- Foothills
- DNR Check Station
- Shelter
- Camping
- Fishing Site
- Obversation Site
- Recreation Area
- Trailhead
- Trail
- Potential Decommission Trail
- Potential Re-routes
- Developed Recreation Site
- Dispersed Recreation Site
- Wilderness
- National Forests Land
- Open FS Roads
- Seasonally Open Roads
- Gated FS Road
- State or County Road

N

0 1 2 4 Miles

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

Mavity
10/1/2019

Deep Hole

Mark Trail Wilderness

Raven Cliffs Wilderness

Hog Pen Gap

Blood Mountain Wilderness

DeSoto Falls

Boggs Creek

Dicks Creek

Dockery Lake

Waters Creek Day Use

Chestatee Overlook

Chestatee Check Station

Woody Gap

Adventure Trail Shelter

Stover Creek Shelter

Gooch Mountain Shelter

Springer Mountain

Big Stamp

Springer Mountain Shelter

Black Gap Shelter

Jones Creek Dispersed Area

Nimberwill Dispersed Area

Jake--Bull Mountain Complex

Jake Mountain

Whissenhunt OHV Area

180

60

129

19

60B

52

Chattahoochee-Oconee National Forests

Map 25 *Recreation Opportunities*

Foothills Landscape -Blue Ridge District

Chattahoochee-Oconee National Forests

Map 26

Changes in Mainenance Level
Foothills Landscape -Conasauga District

Roads to be Decommissioned

Proposed Access
- Admin Only
- Seasonal
- Open Year Round

Proposed Maintenance Level
- 1 -Custodial Care (Closed)
- 2 -High Clearance Vehicles
- 5 -High Degree of User Comfort

Original Maintenance Level
- 1 -Custodial Care (Closed)
- 2 -High Clearance Vehicles
- 3 -Suitable for Passenger Cars
- Foothills Landscape
- Wilderness
- Forest Service Land
- State Park
- City

Miles: 0 1 2

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

Mavity 6/20/2019

Proposed changes to the Maintenance Levels or the season of use(Proposed Access) to the Forest Service road system that would restrict or change motorized access. Guide for Road Maintenance Levels at https://www.fs.fed.us/t-d/pubs/pdf/11771811.pdf.

Jacks River

Iron Mountain

Sumac Creek

Rocky Flats

Grassy Mtn Tower

Windy Gap

Milma Creek

Tibbs

Emery Creek

Bear Creek

Fort Mountain State Park

151 411 1A 1 16 51C 51D 51 51B 392 169 391 148A 148 17B 17 279 17A 630H 630C 630F 630E 630 630A 630B 218B 218A 218 27 78B 78E 78F 78A 78C 78 68A 49 68 304 299 18 90 90A 241 301 25 65 64 631 10 2

Roads to be Decommissioned

Proposed Access

- Admin Only
- Seasonal
- Open Year Round

Proposed Maintenance Level

- 1 -Custodial Care (Closed)
- 2 -High Clearance Vehicles
- 5 -High Degree of User Comfort

Original Maintenance Level

- 1 -Custodial Care (Closed)
- 2 -High Clearance Vehicles
- 3 -Suitable for Passenger Cars
- Foothills Landscape
- Wilderness
- Forest Service Land
- State Park
- City

N W E S

0 1 2 Miles

Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.

Mavity
10/1/2019

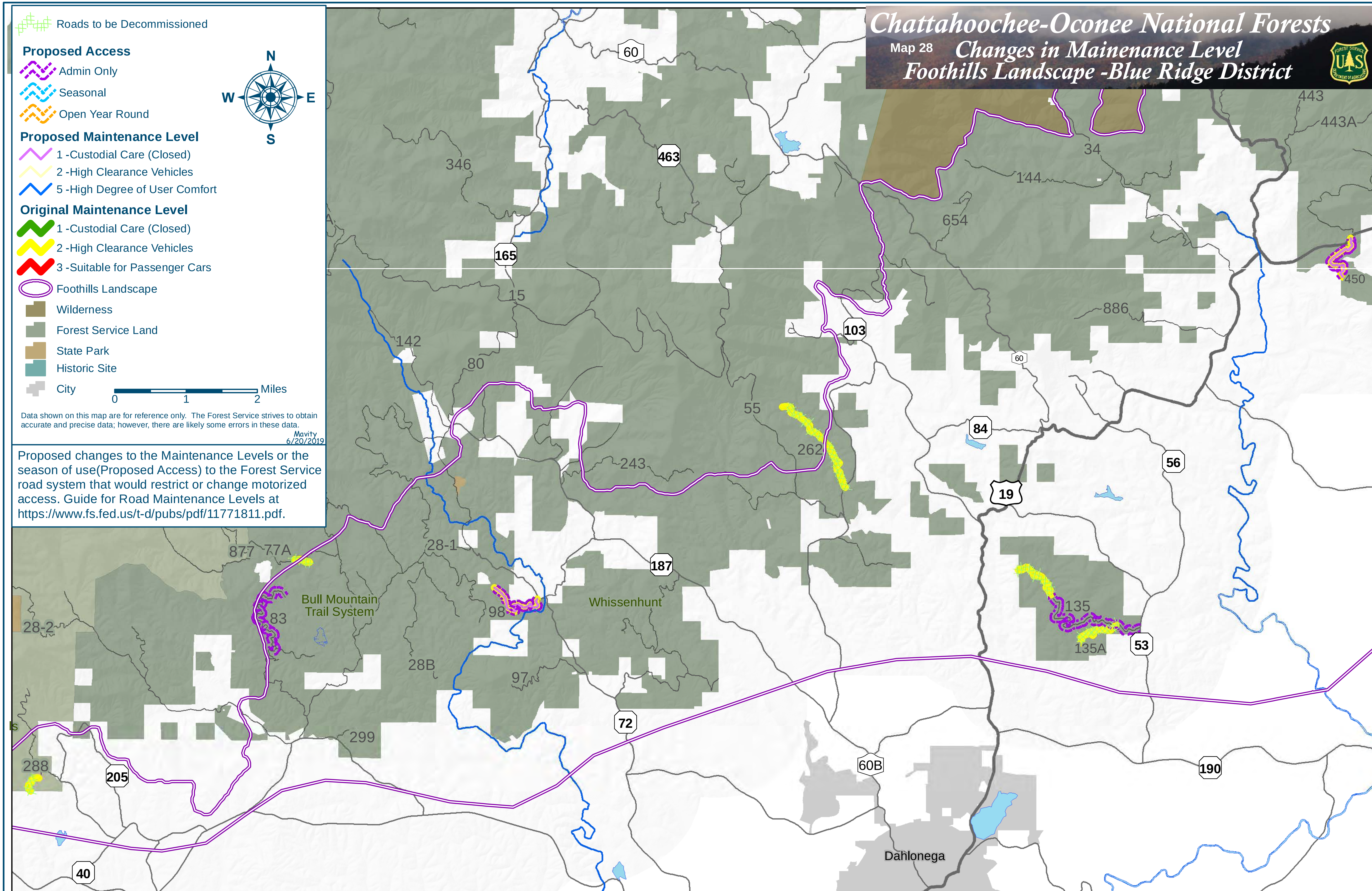
Proposed changes to the Maintenance Levels or the season of use(Proposed Access) to the Forest Service road system that would restrict or change motorized access. Guide for Road Maintenance Levels at https://www.fs.fed.us/t-d/pubs/pdf/11771811.pdf.

Mountain City
Black Rock Mountain State Park
Clayton
Tiger
Twister
Stonewall
Bartrum
Willis Knob
Sutton Hole
Raven Rock
Chattooga River Trail
Chattooga River Office
Tallulla Falls State Park
Tallulah Falls
Oakey Mountain Trail

Chattahoochee-Oconee National Forests

Map 27 *Changes in Mainenance Level*

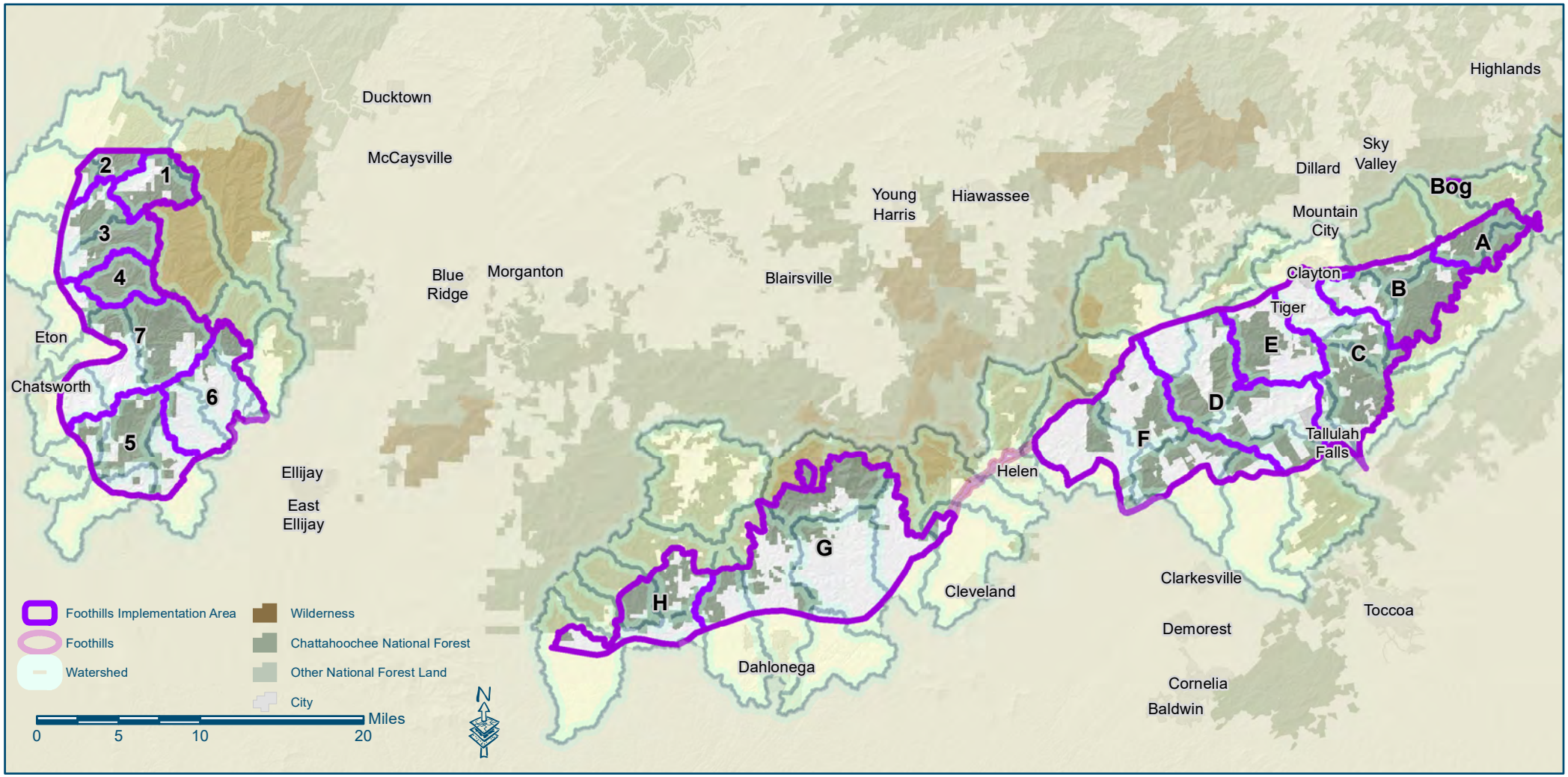
Foothills Landscape -Chattooga River District



Chattahoochee-Oconee National Forests
Map 28
Changes in Mainenance Level
Foothills Landscape -Blue Ridge District
Roads to be Decommissioned
Proposed Access
Admin Only
Seasonal
Open Year Round
Proposed Maintenance Level
1 -Custodial Care (Closed)
2 -High Clearance Vehicles
5 -High Degree of User Comfort
Original Maintenance Level
1 -Custodial Care (Closed)
2 -High Clearance Vehicles
3 -Suitable for Passenger Cars
Foothills Landscape
Wilderness
Forest Service Land
State Park
Historic Site
City
N
S
W
E
0
1
2
Miles
Data shown on this map are for reference only. The Forest Service strives to obtain accurate and precise data; however, there are likely some errors in these data.
Mavity
6/20/2019
Proposed changes to the Maintenance Levels or the season of use(Proposed Access) to the Forest Service road system that would restrict or change motorized access. Guide for Road Maintenance Levels at https://www.fs.fed.us/t-d/pubs/pdf/11771811.pdf.
Bull Mountain Trail System
Whissenhunt
Dahlonega
60
463
165
103
84
19
56
187
72
60B
190
205
40
53
346
15
142
80
55
262
243
28-1
877
77A
83
98
28-2
28B
97
299
288
34
144
654
886
443
443A
450
135
135A

Maps – Implementation Areas

Map 29 Foothills Landscape Project Implementation Areas

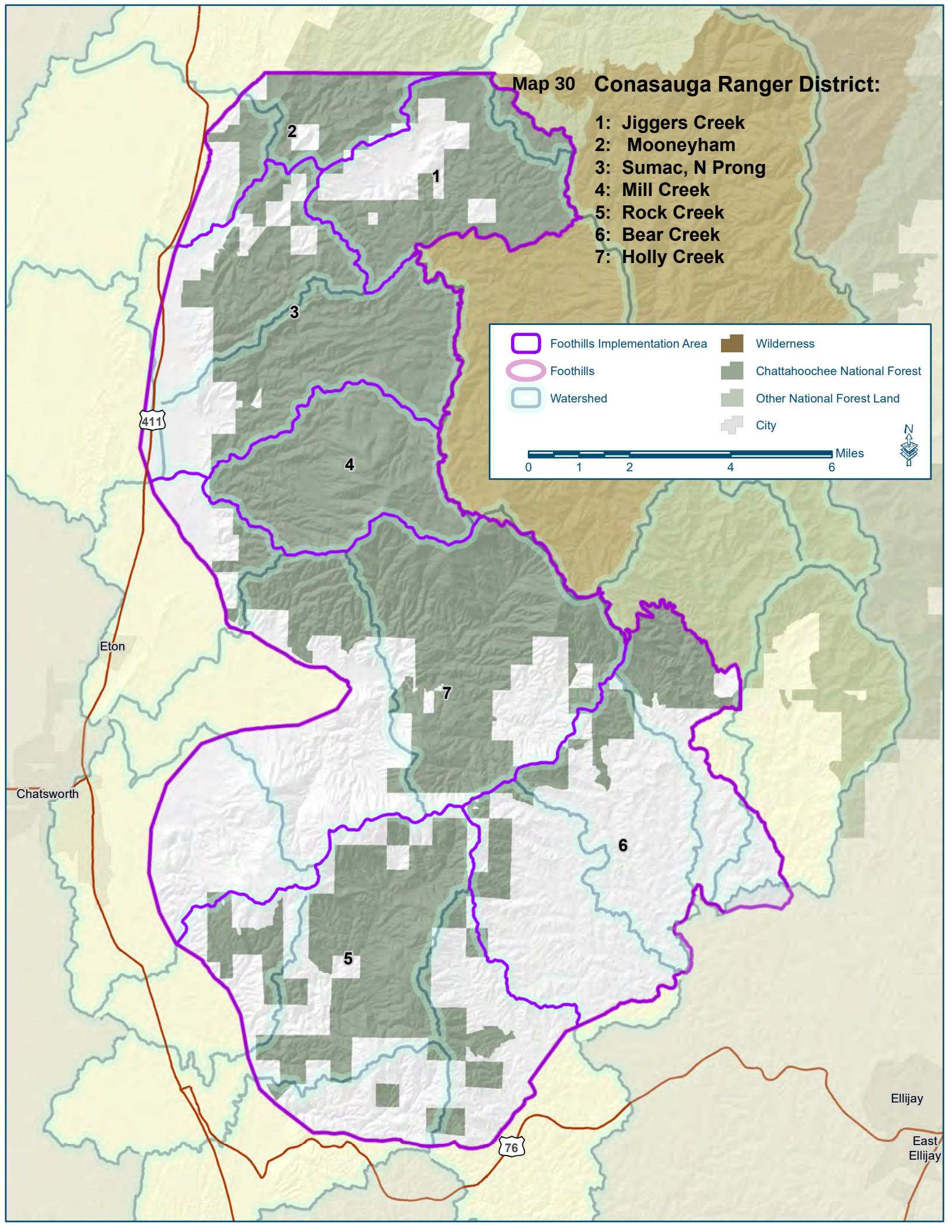


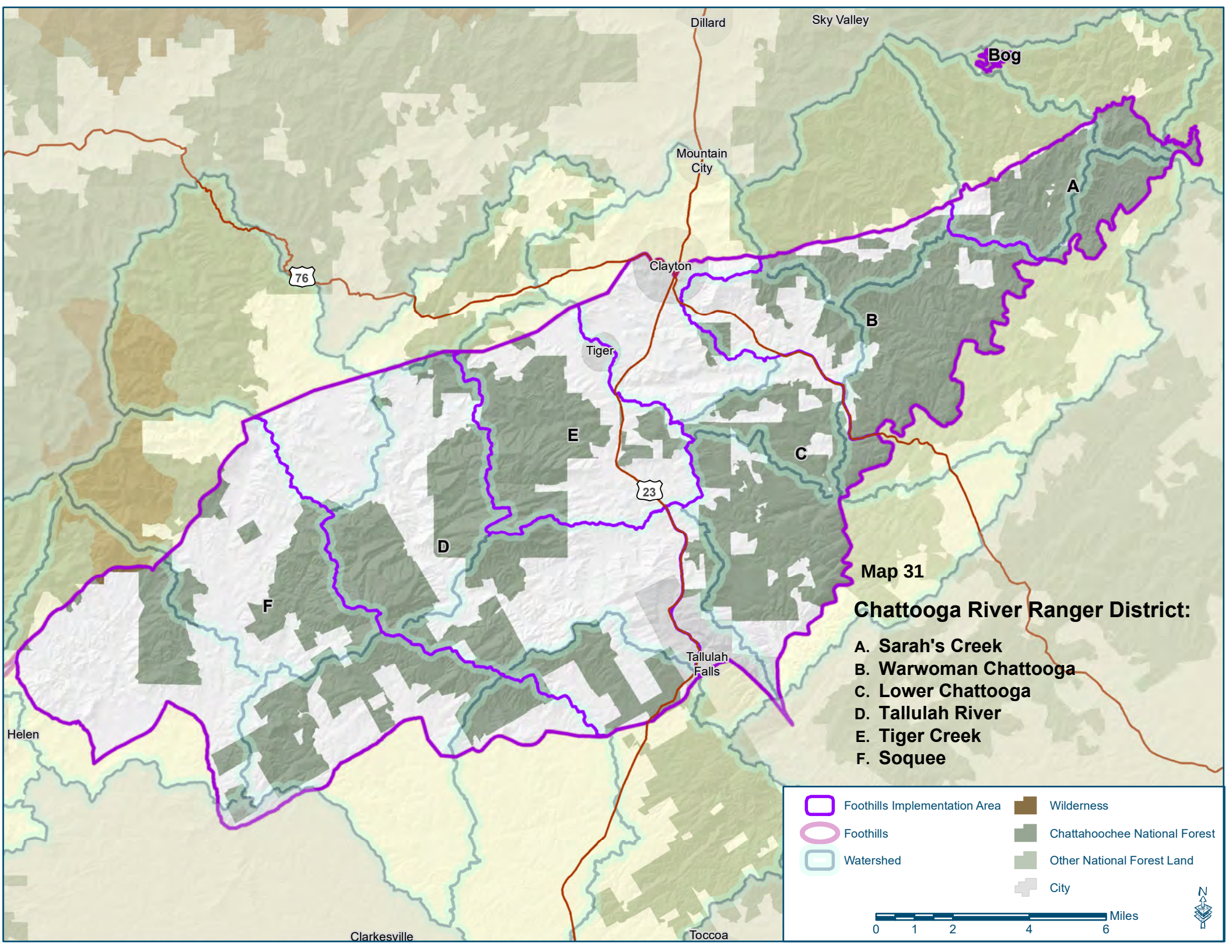
Conasauga Ranger District:

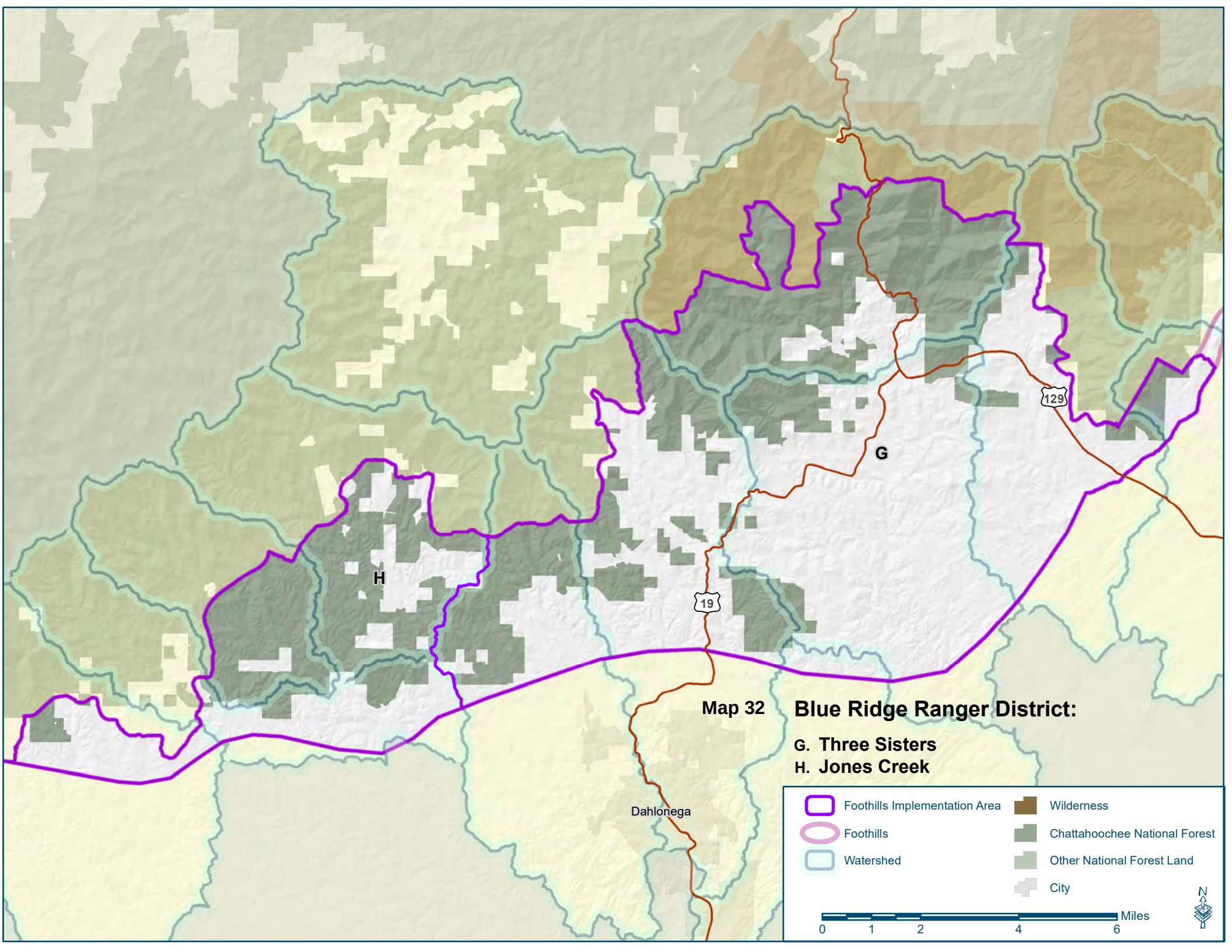
1: Jiggers Creek
2: Mooneyham
3: Sumac, N Prong
4: Mill Creek
5: Rock Creek
6: Bear Creek
7: Holly Creek

Blue Ridge and Chattooga River Ranger District:

A: Sarah's Creek
B: Warwoman Chattooga
C: Lower Chattooga
D: Tallulah River
E Tiger Creek
F: Soquee
G: Three Sisters
H: Jones Creek


Map 30
Conasauga Ranger District:
1: Jiggers Creek
2: Mooneyham
3: Sumac, N Prong
4: Mill Creek
5: Rock Creek
6: Bear Creek
7: Holly Creek
Foothills Implementation Area
Foothills
Watershed
Wilderness
Chattahoochee National Forest
Other National Forest Land
City
N
Miles
0 1 2 4 6
411
Eton
Chatsworth
Ellijay
East Ellijay
76


Dillard
Sky Valley
Bog
Mountain City
A
Clayton
76
B
Tiger
E
C
23
D
F
Tallulah Falls
Helen
Clarkesville
Toccoa
Map 31
Chattooga River Ranger District:
A. Sarah's Creek
B. Warwoman Chattooga
C. Lower Chattooga
D. Tallulah River
E. Tiger Creek
F. Soquee
Foothills Implementation Area
Foothills
Watershed
Wilderness
Chattahoochee National Forest
Other National Forest Land
City
Miles
0 1 2 4 6
N


G
H
129
19
Dahlonega
Map 32
Blue Ridge Ranger District:
G. Three Sisters
H. Jones Creek
Foothills Implementation Area
Foothills
Watershed
Wilderness
Chattahoochee National Forest
Other National Forest Land
City
Miles
0
1
2
4
6
N

Appendix B – Summary of Alternative 2 Actions

Foothills Landscape Project - Proposed Action (Alternative 2) Overview

BIOLOGIC INTEGRITY						
WHAT	HOW			SIZE (max. extent)	WHERE (conditions or known locations)	Remarks
	Activities	RX Fire	Commercial			
Forest Composition and Structure *(Forest Plan Goals: 1,2,3,7, 8,10)*						
Southern Yellow Pine Maintenance	Ground-based thinning, herbicides, mastication; possible scarification, hand-planting	Yes - *Required* immediately post-treatment and intermittently thereafter; or *preferred* for site-preparation if expanding gap treatments used	Yes	12,400 acres	Condition: mid to late successional shortleaf pine stands and/or stands that contain pitch or table mountain pine, where midstory conditions are prohibiting natural regeneration	
Southern Yellow Pine Restoration	Ground-based harvest, herbicides, mastication, scarification, hand-planting	Yes - *Required* site-prep and after 10+ years	Yes	5,800 acres**	Condition: dry sites dominated by mid to late successional Virginia or white pine	
		Yes - *Required* initially and for site-prep, *preferre* d over-time	Yes	1,700 acres**	Condition: off-site pine plantations of pole-sized white pine or loblolly where regeneration to suitable southern yellow pine is desired	
Oak and Oak-Pine Maintenance	Mid-story reduction; herbicide, mastication	Maybe - *Preferred*	No	14,800 acres	Condition: where mid to late successional oak exists on m*oderate to high* productivity sites	
	Intermediate thinning and mid-story reduction; ground-based harvest, herbicide, mastication	Yes - *Required*	Yes	9,200 acres	Condition: where mid to late successional oak exist on l*ow to moderate* productivity sites	
	Expanding gap treatments (ground-based harvest, herbicide, mastication, scarification, hand-planting)	No	Yes	14,600 acres	Condition: where mid to late successional oak exist but where Rx fire cannot be used regularly to achieve desired outcomes	
	Crown-touching release (slashed down w/ chainsaws, mastication, herbicide)	Maybe - *Preferred* over time (long-term as needed)	No	3,200 acres	Condition: where immature oak exists in competition with itself or less-desired species	
	Shelterwood regeneration harvests (ground-based harvest, herbicide, mastication; potential scarification/hand-planting)	*Yes - Required* pre and post harvest, then *potentially* after 10 years	Yes	2,000 acres**	Condition: *low to moderate* productivity sites where adequate population of oak seedlings (~greater than 4 feet height) exist in understory to naturally replace current overstory	
43,800 total acres of Oak/ Oak-Pine Maint						

Oak and Oak-Pine Restoration	Ground-based harvest, herbicides, mastication, scarification, hand-planting	Yes - *Required* initially and for site-prep, *preferre* d over-time	Yes	1,700 acres (same as above in SYP restoration)	Condition: off-site pole-sized pine plantations with low pine stocking where adequate oak exists in either the understory or overstory	
Create Canopy Gaps	Overstory and midstory reduction w/ variable tree density retention; gaps implemented at <25% of stands up to 3/4 acre size; mechanical ground based harvest, mastication	No	Yes	8,100 acres	Condition: mid to late successional mesic deciduous stands of yellow poplar dominated stands and more mesic oak forests, not suitable for grouse habitat	
Unique and Threatened & Endangered (Rare) Habitat *(Forest Plan Goals: 3, 15, 16, 17, 18, 19, 39, 40, 43)*						
Restore Woodland Habitat (Pine and Oak)	Ground-based harvest, herbicide, mastication	Yes - *Required, on* going	Yes	7,400 acres	Condition = where woodland species persist (long-lived canopy trees serve as indicators for relic woodland) and combine w/ desired aspect, elevation and ability to use Rx fire	*For purpose of effects analysis: 5,262 acres are in SYP forest; 2,138 in oak forest*
Restore Wetlands/ Bogs	Raise stream profiles by filling or plugging ditches and removing encroaching vegetation; herbicides, planting rare species	Maybe	Maybe	1 known bog footprint: 35 acres/ Surrounding restoration area: 103 acres	Condition = where mountain bog habitat exists and natural processes no longer function, contributing to threatened/ endangered species decline	With Atlanta Botanical Garden, Georgia Plant Conservation Alliance, University of Georgia, and Georgia DNR
Restore Canebrakes	Potential ground-based harvest, herbicide, mastication, scarification, hand-planting, possibly transplant existing cane	Yes - *Required in areas* with variable intensity	Maybe	50 acres	Condition = where small scattered patches exist, i.e. north of Hwy 28 bridge	
Expand Hemlock Conservation Areas (HCA)*	Soil injections of insecticides	No	No	600 additional acres	Known locations: where areas of hemlock associated forest types are adjacent to existing HCAs and viable trees are present	Pesticides analyzed in "Conservation of Eastern Hemlock by Suppression of Hemlock Woolly Adelgid Infestations EA" (2005)
	Ground-based harvest, herbicide, mastication, scarification, hand-planting, pesticides, insectaries	No	Maybe	where feasible/ applicable	Adaptive Management/ Research: where additional areas with existing hemlock trees, may or may not be adjacent to existing HCA	In partnership with University of North Georgia, Southern Research Station, Georgia Forestry Commission, etc.
Designate Chestnut Orchards	Plant chestnuts; install deer fencing, tree tubes (rodent control), irrigation systems, fertilizer, herbicides and pesticides, and ground cloth/plastic mulch	No	Maybe	Estimate 6 acres	Adaptive Management/Research: where trees can be cultivated, grown, inoculated and regularly evaluated for their performance when challenged by chestnut blight and/or Phytophthora cinnamon Rands	In partnership with the Georgia Chapter of the American Chestnut Foundation and Southern Research Station
Conserve Small Whorled Pogonia	Possible thinning w/ chainsaws, mid-story control, herbicides, invasive species control	Yes	No	Where feasible/ applicable	Adaptive Management/ Research: where SWP are extant or historic and management could generate a positive response	In partnership with Georgia Plant Conservation Alliance and Atlanta Botanical Garden
Aquatic Habitat Improvement for Biologic Integrity *(Forest Plan Goal 26)*						

Improve Stream Habitats	Add large woody debris to stream channels through cut and leave operations, maintain and enhance existing in-stream structures; stabilize streambanks	No	No	Variable locations along 1,162 miles of project area streams	Condition: perennial and intermittent streams with multiple stream crossings & decreased connectivity where lack of wood is impairing hydrologic and biologic processes; structure is lacking; severe erosion occurring	
Improve Lake Habitats	Install structures in lakes/ ponds to improve fisheries (i.e. Christmas trees); create vernal pools; fertilize and lime lakes at desired time	No	No	120 acres	Known locations: where lakes are lacking sufficient structure for vernal pool creation; lower than desired fish abundance (Jones Creek, Murrays, Peeples and Tails Lake)	
Non-Native Invasive Species *(Forest Plan Goals 1, 12, 39, 40)*						
Non-native invasive species (NNIS) of plants and pests threaten the biologic integrity of ecosystems by degrading natural habitats and decreasing biodiversity. Addressing the existing risks and mitigating for potential spread of NNIS is a connected purpose of the project, but already authorized under existing NEPA decisions. The ongoing NNIS treatments (manual, mechanical, and herbicide) would continue to occur under both alternatives of the FLP.						
RESILIENCY						
Protect Communities from Wildfire *(Forest Plan Goals 57, 58)*						
Reduce Hazardous Fuels in Wildland Urban Interface (WUI)	RX fire; Mechanical treatments including mastication, mechanical ground bases harvest, construction of fire lines	Yes	Maybe	2,000 acres (overlap with areas above)	Condition: in areas of highest risk where NFS lands are downslope of private land and with high probability of successful mitigation, where vegetation condition most "departed" and fuels are highly flammable and/or non-fire tolerant species	
Expand Ecological Role of Fire *(Forest Plan Goals 8, 61)*						
Prescribe (Rx) Burning	Establish new and/or re-align existing Rx burn blocks to achieve controlled burn and silvicultural objectives	Yes	Yes and No	50,000 acres (overlap w/ areas above)	Condition: where Rx burning is required or preferred to meet silvicultural objectives. (i.e., advanced regen recruitment) and can be accomplished safely	
Reduce Risks to Forest Health *(Forest Plan Goals 12, 39, 40, 41, 43)*						
Pine Plantation Treatments	13,800 acres of thinning <80 BA using ground-based harvest and RX fire; 3,500 acres of thinning to <80 BA of smaller trees using ground-based harvest, herbicide, mastication, handtools, and Rx fire	Yes - *Required* as needed	13,800 acres - YES 3,500 acres - NO	17,300 total	Condition: young, overstocked, even-aged pine stands susceptible to forest pest (i.e. ips, bark beetle, gypsy moth) outbreaks	
Insect & Disease Outbreak Response	Site and pest-specific (i.e. bark beetle = cut and leave operations or salvage/ reforestation if access allows); herbicides, Rx fire, planting if appropriate; rapid response required for effectiveness	Maybe - for site prep following salvage	Maybe - salvage	Treatments will occur when needed	Condition: when and where infestations are significant, rapidly forming and spreading (Est. 24,725 acres currently at risk for ips or bark beetle infestation and 20,185 acres at risk to Gypsy moth).	SPB analyzed in "The Suppression of Southern Pine Beetle on the Chattahoochee-Oconee National Forest" Decision Notice (2018)
Maintain Resilience to Climate Change *(Forest Plan Amendment #5)*						
Addressing climate change is incorporated into the purpose of this project as an overarching risk to the forests of Georgia. Forestlands across the region are experiencing increased threats from fire, insect and plant invasions, disease, extreme weather, and drought. The need to increase the forests' resiliency to these forthcoming threats is woven through the many integrated efforts aimed at improving overall forest health across the foothills landscape.						

CONNECTIVITY						
Forest Successional Diversity *(Forest Plan Goal 1,2,3,4,10,20)*						
Create Young Forest (ESH)	Ground-based harvest, herbicides, mastication, scarification, Rx fire (site-prep), hand-planting	Maybe - as needed	Yes	10,500 total acres	Conditions: 500 acres in mesic hardwoods suitable for grouse habitat; 500 acres of daylighting roads, and where restoration needs overlap from above treatments: 5,800 acres in SYP, 1,700 acres in pine plantations, 2,000 acres in oak/oak-pine	
Designate Old-Growth	Allocate small blocks of old-growth, arranged in mosaic connected by other habitat types	Maybe - if possible	No	5,050 acres	Known locations: 3,578 acres in 14 applicable watersheds not meeting the 5% minimum; 720 acres additional in watersheds already meeting standard; see old-growth stands proposed in Appendix D	
Maintain, Expand or Construct Permanent Wildlife Openings	Mowing, disking, Rx fire, planting, herbicides in existing open areas to maintain as wildlife openings (food plots, native grasses, shrubs, or pollinator habitat)	Maybe - as needed	Maybe	1,400 acres (275 acres existing)	Condition: where opportunities exist to maintain, expand or create new openings. Approx. 1-3 acres/ ea. primarily connected to harvest activities	
Aquatic Habitat Improvement for Connectivity *(Forest Plan Goal 26)*						
Replace Barriers to Aquatic Organism Passage	Remove structures (mainly culverts), install new (bottomless culverts, bridges, or low-water fords), reconstruct road if necessary	No	No	Where necessary and feasible; ≈ 225 stream crossings	Condition: where existing culverts are limiting aquatic organism passage and/ or in need of repair. There are an estimated minimum of 225 stream crossings on FS lands in FLP	
Enhance Recreation Opportunities (Human Connectivity) *(Forest Plan Goals 31, 32, 47)*						
Trail Construction and Re-routes	Manual and/or mechanical veg removal and tread construction, installation of drainage structures (i.e. culverts, waterbars, bridges, etc.), signs/ markers, and structure construction (turnpikes, causeways, retaining walls, etc.)	No	No	50 miles (12 acres) of new construction; 111 miles (27 acres) of re-routes	Known locations: Hiking, horse, bike, and OHV use trails (i.e. sections of Willis Knob, Bear Creek, Jake and Bull systems, Pinhoti, Rocky Flats, Tatum Lead, Murray's Lake, Peeples Lake, Sumac Creek, Oakey Mountain, Tibbs and Milma trails); and Chattooga W&SR Corridor	
Convert Roads to Trails	Narrow road surface mechanically (excavate road embankment/ landing fill, stabilize to trail standard)	No	No	≈ 6 miles	Known locations: areas of Bear Creek, Pinhoti trails	
Improve Parking Areas	Comply w/ FHA specs; possible veg removal, grading, barrier installation	No	No	3 acres	Known locations: Holly Creek Day Use Area and Pinhoti, Bear Creek, Jake and Bull, Willis Knob, Dicks Creek, Stonewall/White Twister Trailheads	
Install Accessible Fishing Piers	Clear area for expansion and grade using mechanical equipment	No	No	≈ 1 acre	Known location: Holly Creek Day Use Area	

Improve Trail System and Enhance Developed Rec Sites

Motorized Access Changes	Convert Roads and Motorized trails to ML 1 or ML 2 - Admin Use Only	Administratively change/ update MVUM; install barriers such as berms, rocks, or gates to restrict access	No	No	≈ 57 miles total: 54.3 miles of ML2/ ML1 road; 2.9 miles of Tibbs ATV Trail	Known locations: see Table 4	
	Implement Seasonal Closure on roads and motorized trails	Administratively change to ML 2 - Seasonal Restriction/ update MVUM; Install gates	No	No	≈ 20 miles total	Known locations: see Table 4	
	IMPROVE SOIL AND WATER QUALITY						
	Reduction of Sediment Delivered to Streams (Forest Plan Goals 22, 24, 25, 34, 47, 48, 49)						
	Improve Existing Roads System *(above and beyond normal maintenance)*	Curve widening, upgrade culverts, stream crossings, upgrade or reconstruct drainage features, spot reconstruction if needed, upgrade surface material and configuration using Georgia BMPs	No	No	Where applicable across ≈ 260 miles	Condition: Where system roads are in need of repair to address soil and water quality and/or in watersheds with 303 (d) or 305 (b) listed streams or streams with Threatened and Endangered species habitat;	https://www.fs.fed.us/rm/pubs/rmrs_gtr102_1.pdf
	Decommission Forest Roads and Motorized Trails	Close road/ trail to public; may include full obliteration of roadbed, removal of stream crossing fills/ culverts, crushing and burying inlets, restoring stream channels, seeding, fertilizing, mulching, scarifying, waterbar installation, scattering slash, etc.	No	No	≈ 20 miles total: Roads: 8.3 miles of ML2; 6.5 miles of ML1; Trails: 5.3 miles total *(1.8 miles of OHV (Tatum); 3.5 miles of ATV (Milma))*	Known locations: See Table 5	
	Improve Sustainability of Recreational Experience	Decommission low use trails and user=created trails, decom dispersed camping areas and developed (2) campgrounds; develop official trail system and improve recreation adjacent to Chattooga River; improve sites where feasible	No	No	≈ 15 miles (4 acres) of low-use trails; 300 acres of developed campgrounds; 653 acres of undesired dispersed campsites across FLP (including WSR Corridor); unknown amount of user-created trails	Known locations (some): low use trails in areas such as Murray's Lake Trail, Peeples Lake Trail, Sumac Creek Trail; Boggs Creek (280 acres) and Oakey Mountain Campgrounds (20 acres) and various unwanted dispersed sites throughout the project area; user-created trails or areas contributing to resource damage in the Chattooga River Corridor	

= colors identify multiple purpose and needs met

**Treatments may occur in Inventoried Roadless Areas*

*** Treatments create "young forest" aka early successional habitat (ESH)*

Appendix C – Woodland Species List

Fire exclusion is a profound disturbance of natural processes and has resulted in a significant decline of woodland species on the landscape. Without fire on the landscape off site woody trees and shrubs become prolific creating a dense canopy and midstory which competes for resources. In the absence of fire woodland species lose their competitive advantage and are replaced by off-site species. However, where woodland species persist on the landscape would provide a strong indicator of where the Forest would like to manage for woodlands. Long lived canopy trees are likely the best indicator species of relic woodlands. The composition and distribution of vegetation in woodlands might include some combination of canopy species dominated by shortleaf pine (*Pinus echinata*), table mountain pine (*Pinus pungens*), pitch pine (*Pinus rigida*) post oak (*Quercus stellate*), and blackjack oak (*Quercus marilandica*) (each contributing 25-75% to the total canopy coverage). Other species may include southern red oak (*Quercus falcate*), scarlet oak (*Quercus coccinea*), dwarf chinquapin (*Quercus prinoides*), sand hickory (*Carya pallida*). The absences of fire can lead to a significant change in species composition.

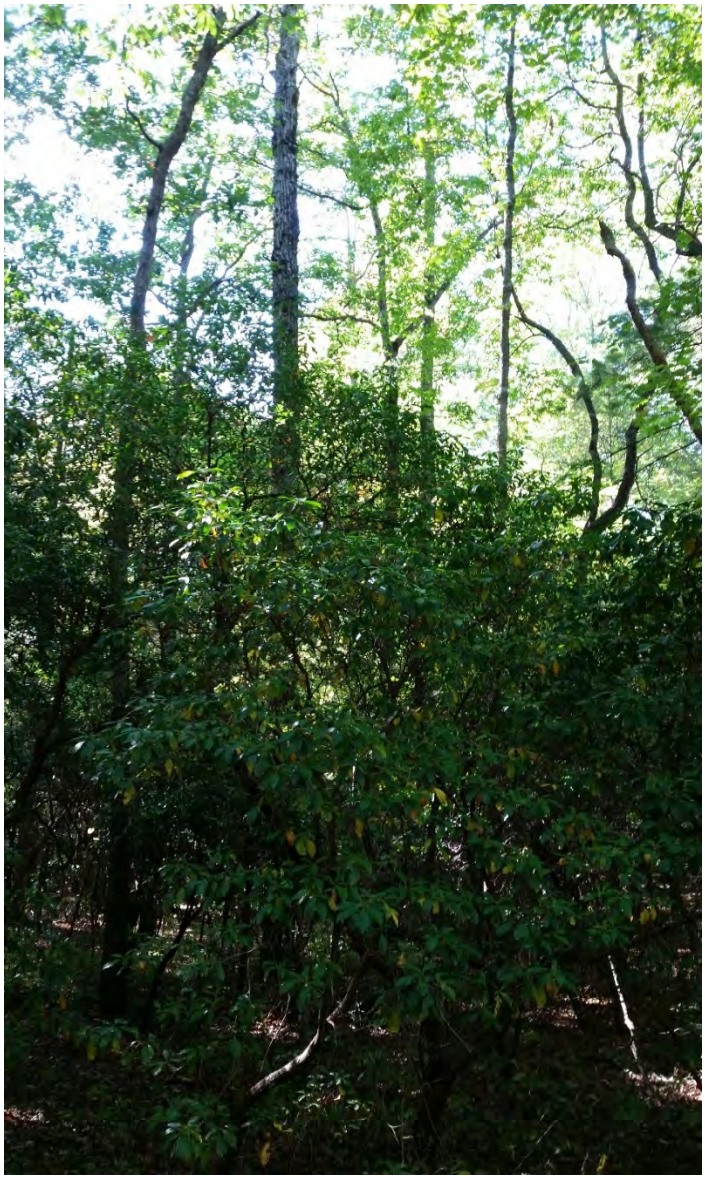


Photo 18 Mountain Laurel is a Shrub Species Typically Found in Woodlands.

The shrub strata vary in composition and density, but Blue Ridge blueberry (*Vaccinium pallidum*) and other ericaceous species such as deerberry (*Vaccinium stamineum*), bear huckleberry (*Gaylussacia ursina*), black huckleberry (*Gaylussacia baccata*), and mountain laurel (*Kalmia latifolia*) are typical. Herbaceous plants suffer the greatest decline in the shortest period of time as a result of fire exclusion. Herbs found in these woodlands might include but are not limited to: horseflyweed (*Baptisia tinctoria*), partridge pea (*Chamaecrista fasciculate*) (= *Cassia fasciculata*), wild sensitive plant (*Chamaecrista nictitans*) (= *Cassia nictitans*), New Jersey tea (*Ceanothus americanus*),

Maryland goldenaster (*Chrysopsis mariana*), Clitoria mariana, Honesty weed (*Baptisia tinctoria*), Butterfly pea (*Clitoria mariana*), Woodland Coreopsis (*Coreopsis major*), Poverty oat-grass (*Danthonia spicata*), Trailing arbutus (*Epigaea repens*), Eastern flowering spurge (*Euphorbia corollata*), Appalachian sunflower (*Helianthus atrorubens*), Small-headed sunflower (*Helianthus microcephalus*), Quaker ladies (*Houstonia caerulea*), Common stargrass (*Hypoxis hirsute*), Upland dwarf Iris (*Iris verna*), Carolina lily (*Lilium machauxii*), Eastern sensitive-briar (*Mimosa microphylla*), Eastern needlegrass (*Piptochaetium avenaceum*), Silkgrass (*Pityopsis graminifolia*), Bracken fern (*Pteridium aquilinum*), Black-eyed susan (*Rudbeckia hirta*), Common little bluestem (*Schizachyrium scoparium*), Licorice goldenrod (*Solidago odora*), Yellow indiangrass (*Sorghastrum nutans*), Pencil flower (*Stylosanthes biflora*), and Virginia goat's-rue (*Tesphrosia virginiana*).

Rare woodland elements such as turkey-beard (*Xerophyllum asphodeloides*), Georgia aster (*Symphyotrichum georgianum*), largeflower skullcap (*Scutellaria montana*), and smooth purple coneflower (*Echinacea laevigata*) will receive stronger consideration in management prescriptions.

A more comprehensive list of indicator species can be found in the Forest Plan EIS and may developed in coordination with professional botanical organizations such as the Georgia Plant Conservation Alliance or by using peer reviewed science.

Appendix D – Stands Proposed for Old-Growth Designation

Subwatershed HUC	Subwatershed Name	Compartment	Stand	Acres
031501020301	Upper Mountaintown Creek	770	2	22
		770	3	22
		770	4	28
		770	5	28
		770	6	23
		770	33	19
		770	36	15
		770	43	22
		770	44	12
		770	59	22
		771	10	26
		771	41	12
		771	46	15
		776	8	14
		776	9	40
		776	26	11
		778	13	7
		778	18	22
		778	27	59
031501020303	Conasauga Creek	774	26	27
		774	27	21
		774	29	15
031501010402	Mill Creek-Holly Creek	756	35	86
		754	7	25
		756	14	45
031501010405	Rock Creek	784	5	120
		789	3	43
		789	5	30
		789	25	40
		789	27	15
		789	32	15
		789	33	40

Subwatershed HUC	Subwatershed Name	Compartment	Stand	Acres
		789	35	36
		789	76	19
		789	77	15
031501010203	North Prong Sumac Creek	719	4	18
		719	7	31
		719	3	61
		720	21	102
030601020107	Stonewall Creek	85	11	32
		82	7	58
		88	41	77
		65	22	15
		65	11	4
		85	14	21
		83	10	17
		65	34	31
		65	32	30
		87	21	13
		84	23	91
		84	22	12
030601020108	Lower Tallulah River	71	15	29
		71	21	124
030601020205	Upper Warwoman Creek	35	22	21
		36	14	201
		37	2	117
		36	17	72
		37	12	370
		42	1	48
		52	36	35
030601020206	Sarahs Creek	29	45	23
		29	56	51
		47	37	69
		29	27	26
		29	44	37
		47	30	20
		47	32	12
		32	26	37

Subwatershed HUC	Subwatershed Name	Compartment	Stand	Acres
		32	8	25
		33	6	79
031300010202	Lower Soquee River	240	33	85
		239	16	16
		239	14	40
031300010502	Upper Chestatee River	554	15	30
		554	24	18
		554	23	22
		554	13	9
		554	11	31
		554	10	20
		554	4	15
031300010602	Yahoola Creek	527	9	34
		558	23	84
031501040102	Jones Creek	577	167	71
		577	168	45
		577	162	53
		577	161	27
		577	121	37
		577	120	19
		577	181	49
		577	154	33
		577	152	56
		577	184	43
		577	151	34
031501040103	Nimblewill Creek	577	77	67
		577	91	60
		577	88	64
		577	92	40
		577	93	32

Table 19 Stands That Are Currently Being Proposed For Designation as Old-Growth in Subwatersheds That Currently Meet the Forest Plan Minimum for Designation

Subwatershed HUC	Subwatershed Name	Compartment	Stand	Acres
031501010206	Upper Mill Creek	752	10	45
		752	11	26
		752	12	43
		752	13	35
		753	10	20
		753	29	27
		753	30	26
		753	31	23
		754	5	27
		754	6	34
		754	8	40
		758	22	37
		759	23	32
		759	25	30
		759	26	33
		759	27	54
		759	28	33
		759	29	47
031501040101	Headwaters Etowah River	564	15	53
		564	11	26
		78	1	54
		56	2	45
		28	28	81
		48	3	10
		48	2	19

There are portions of stands in Emery Creek-Holly Creek subwatershed (031501010401) that possess old-growth characteristics. The stands need to be remapped before final designation would occur. These stands are 765-3, 766-19, 766-31, 766-35, 766-37, and 772-15.

Appendix E – Implementation Plan and Decision Matrices

Draft Implementation Plan

Introduction

This document outlines the processes for implementing the Foothills Landscape Project (FLP). The known-condition action items within the FLP are proposed as a range of available options, only to be implemented upon further review of on-the-ground characteristics that meet site-specific conditions described and analyzed in the environmental assessment (EA). Under this planning approach, more than 30 management actions (or "tools", see Appendix B) are proposed to meet the restoration needs throughout the landscape. This integral guide will help ensure the activities selected for implementation are consistent with, and within the potential maximum effects of, the proposed action, project design criteria, and best management practices analyzed and disclosed in the EA and serves as an intermediate link between the EA and implementation.

The Conasauga, Blue Ridge, and Chattooga River Ranger Districts are responsible for implementing the FLP management activities that fall within their respective administrative boundaries across the Foothills Landscape. This document is designed to aid each district-level interdisciplinary team (IDT) with consistent and strategic methods for developing the "what, when, where, and how" to accomplish the integrated ecological restoration work outlined in the project decision.

Implementation Plan Summary

This document serves as:

1. A *process guide* for collecting data, assessing the existing conditions on the ground and determining which restoration activities (or "tools") to apply in order to most effectively meet desired conditions across the Foothills Landscape. (See decision matrices.)
2. A *compliance check* for ensuring all actions dictated by law, regulation, or policy are met (i.e. ESA, NHPA, FSM/FSH standards, etc.) (See checklists[11]).
3. A *communication tool* that documents the out-year planning activities to be shared with our partners and collaborative community, while also providing a framework for future and ongoing opportunities for public involvement throughout the life of the project.
4. A *tracking mechanism* for ensuring the activities do not exceed the potential maximum effects analyzed and forecasted in the environmental assessment. This will also serve as a foundation for subsequent monitoring efforts and accomplishment reporting within the agency.

[11] Under development

Understanding Scale

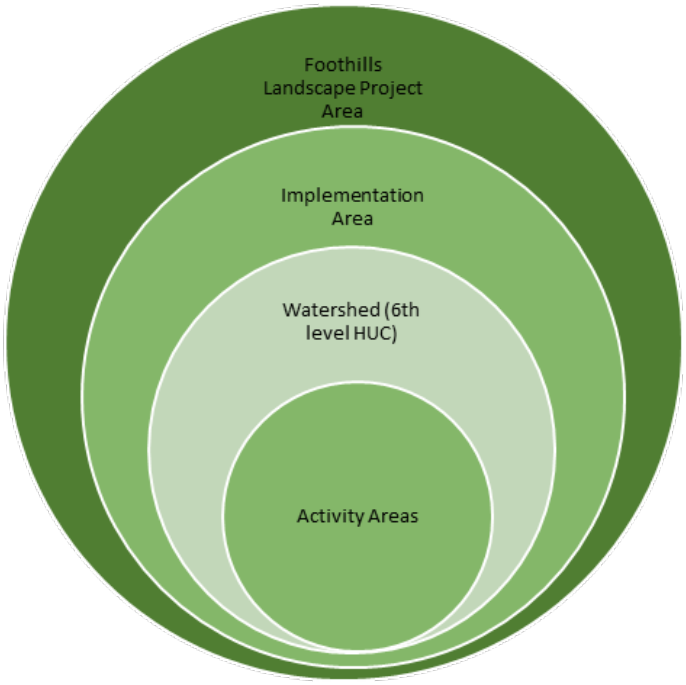


Figure 5 Spatial Boundaries of the Foothills Landscape

In order to efficiently plan and implement landscape restoration, the project considers the following spatial boundaries as shown in and as described below.

Project Area

The area within the FLP *(*~157,625 acres) located in northern Georgia where the mountains are visibly reduced to foothills.

Implementation Areas

Implementation areas are project-specific administrative boundaries established by the IDT throughout the project area within each ranger district. These areas were identified for logical and operational functionality in order to strategically plan the sequence of work across the landscape. There are 15 implementation areas within the project area (see Figure *6*). Concentrating implementation efforts at these smaller scales within the greater context of the Foothills Landscape logistically allows for efficient planning and distribution of time and resources driven by need and operational feasibility (agency capacity, etc.)

Each implementation area encompasses portions of multiple watersheds (HUC6). In addition to the overarching restoration goals and objectives in the Forest Plan, the purpose and need of the FLP specifically aligns with the characteristics of a healthy watershed as defined within the 2011 USDA Forest Service Watershed Condition Framework (WCF). Focusing restoration at a watershed scale provides strategic, integrated, long-term changes in landscape conditions that cannot be duplicated at a project-level scale. A modified version of the WCF's *Watershed Restoration Action Plan* is being created to assist districts in aligning management activities with requirements in the EA.

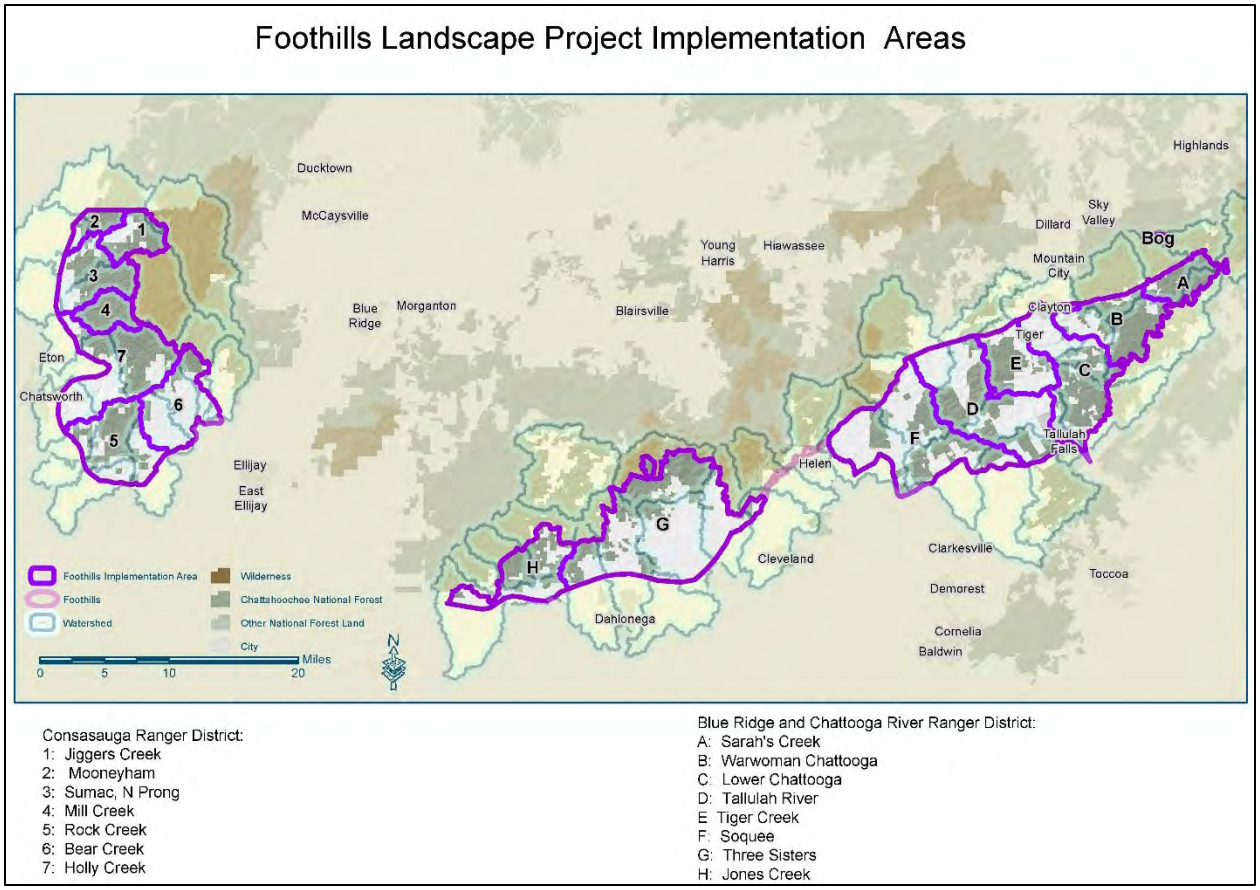


Figure 6 Foothills Landscape Implementation Areas

Watershed (6th level HUC)

Land area extending from the topographic high points where water collects (ridges) down to the low points where it drains into a creek, river, or other waterbody. There are substantial portions of 48 sixth-level watersheds within the project area. (See Map 6).

Activity Area

Where specific conditions exist within watershed(s) and active management would occur. The acres of activity areas vary by proposed action and are designed to not exceed the maximum bounds proposed for each treatment.

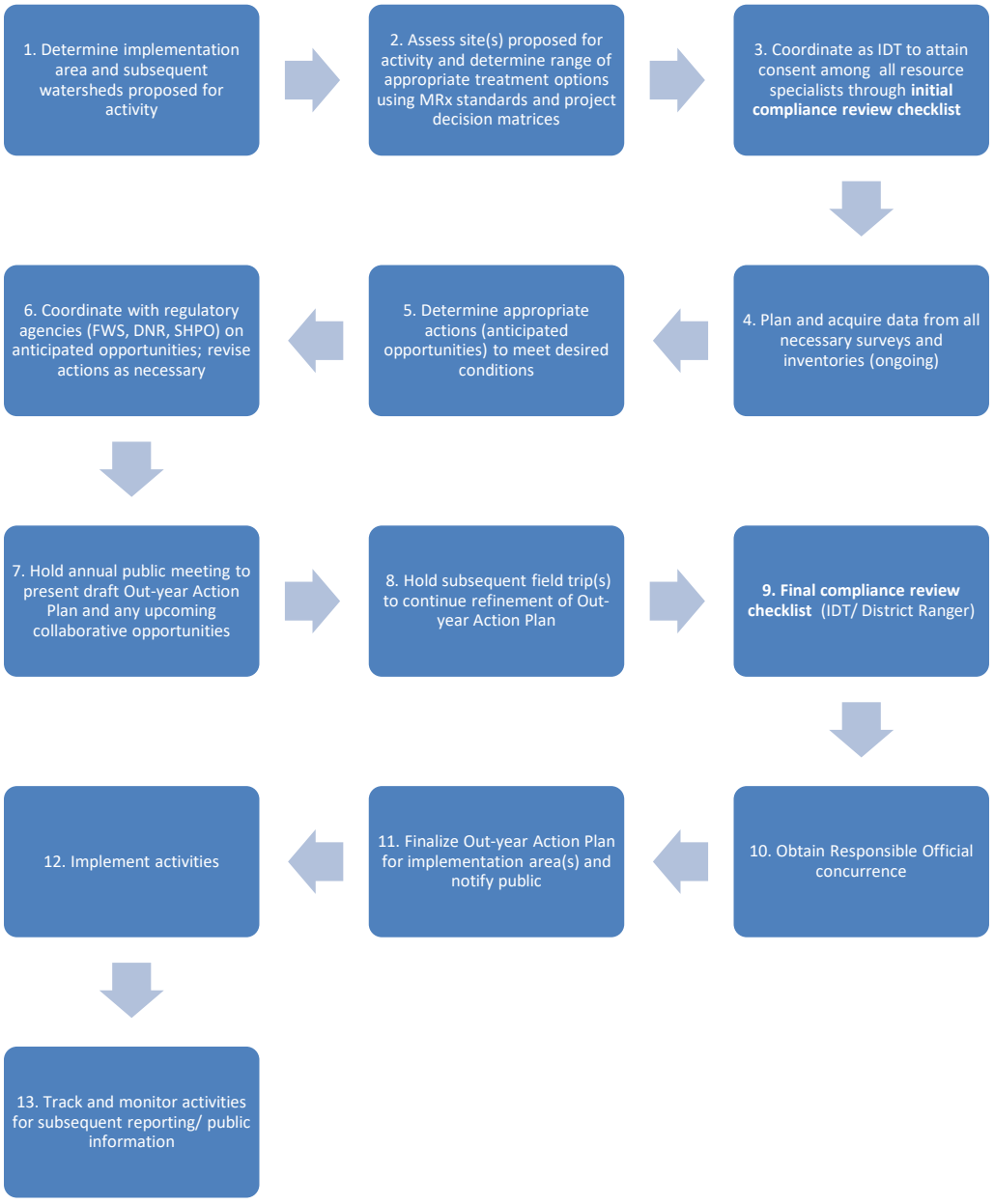
Forest Type or Habitat

Vegetation or habitats (Southern Yellow Pine, Old Growth, Oak, Woodland, etc.) that have a similarity of composition and development due to corresponding physical and biological factors. The trend towards desired conditions for these forest types and habitats (see purpose and need of the EA) are the measures by which this project is reviewed. These areas occur at variable sizes, patterns, and extent throughout the entire project area and are depicted on maps found in Appendix A of the EA.

Implementation Plan Components

A Process Guide

For those unfamiliar with, or new to, a Forest Service IDT approach to project-level work—this section outlines the necessary steps for collecting and sharing data, assessing the existing conditions on the ground, and deciding the appropriate restoration activities (or "tools") to apply in order to most effectively meet desired conditions within any given watershed. "Decision matrices" are the road map for determining what particular type of management activity to apply in order to achieve desired conditions. These matrices (starting on page AP51) provide clear guidance for how land managers would assess the conditions on-the-ground and determine the appropriate management tool for any given activity area. The following shows the overarching process steps for implementation.



A Compliance Check

Resource compliance checklists will be used by land managers to provide a consistent format for process and documentation of any activities implemented in the FLP to ensure activities implemented are reviewed against the necessary requirements dictated by law, policy, and regulation such as:

- National Heritage Preservation Act (Heritage Surveys)
- Endangered Species Act (Botany/ Wildlife Surveys)
- Clean Water Act (Section 404 permits)
- Clean Air Act (Air Quality Standards)
- Other agency directives (Forest Service Manuals, Forest Service Handbooks, Regional Policy, etc.)

Additionally, the compliance check will outline the methods for land managers to determine:

- Will the activities align to meet the desired conditions identified in the purpose and need for the project, in accordance with the goals and objectives identified in the Forest Plan?
- Are the activities within the bounds of the maximum treatments proposed?
- Do the activities exceed the direct, indirect, or cumulative effects disclosed in the environmental assessment?

A Communication Tool

This implementation plan serves as a format for communicating the planning, review, and monitoring cycles inherent to landscape restoration. Components of the Out-year Action Plan could include maps, a Priority Watershed Action Plan (if applicable), the final Project Design Features, including the NNIS Risk Assessment (found in the NNIS specialist report, Appendix A) and a timeline of activities expected for the public, partners, and stakeholders.

There will be continued opportunities for public involvement throughout the life of the project. Each Ranger District would be expected to hold a minimum of one public meeting to rollout a draft out=year action plan and offer at least one follow-up field trip to explore areas of interest where discussion and public input would be valuable. District Rangers will then consider public input, determine which treatments activities to implement and finalize the Out-year Action Plan and notify public.

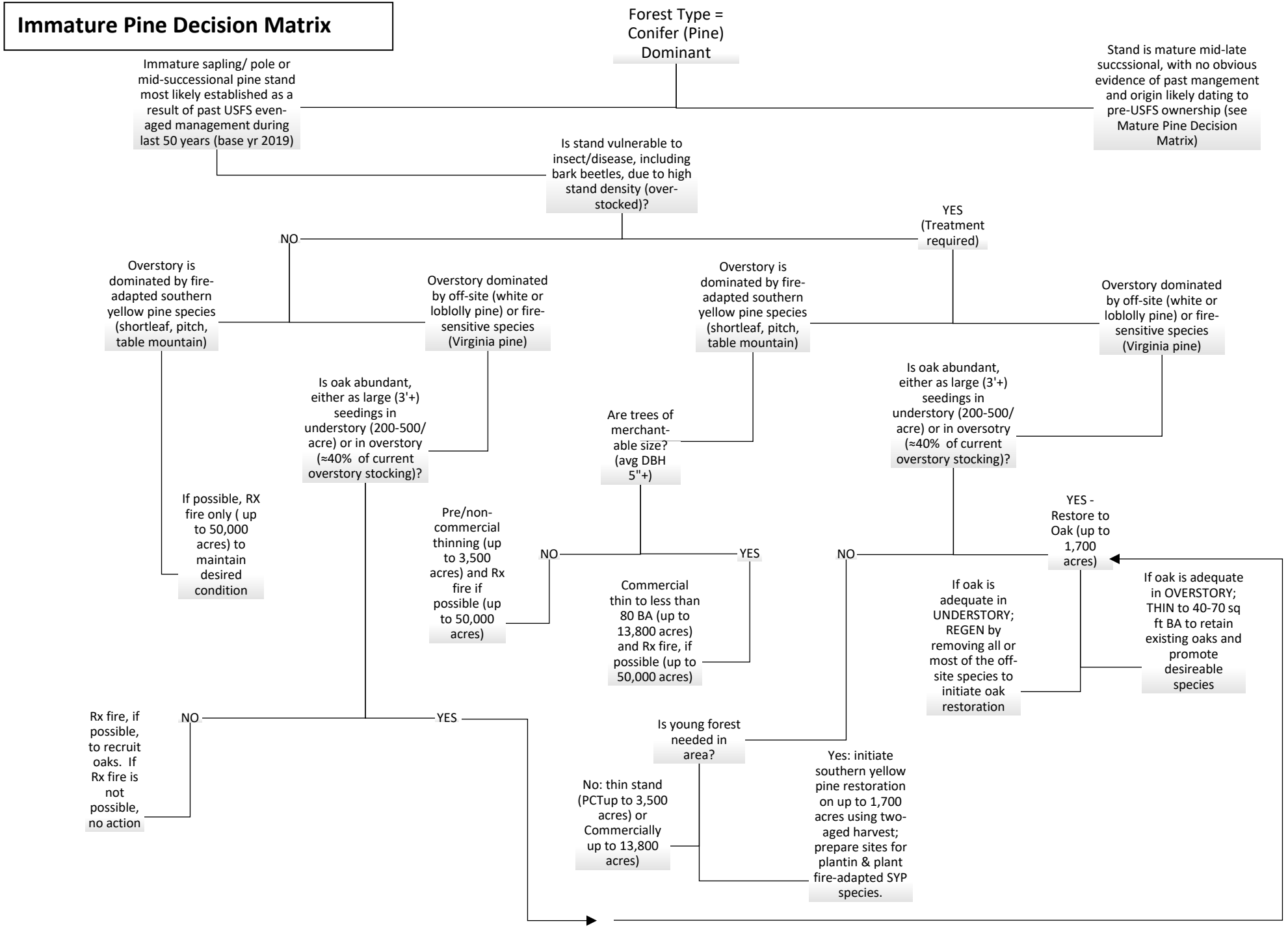
A Tracking Mechanism

This plan will outline the process for recording annual accomplishments and link to any monitoring completed. The Forest Service Activity Tracking Systems (FACTS) and other existing agency-wide tools will be used for efficiency and consistency, but a project-specific tracking mechanism will provide clear directions for ensuring activities implemented within the FLP do not exceed the maximum bounds proposed and analyzed in the EA.

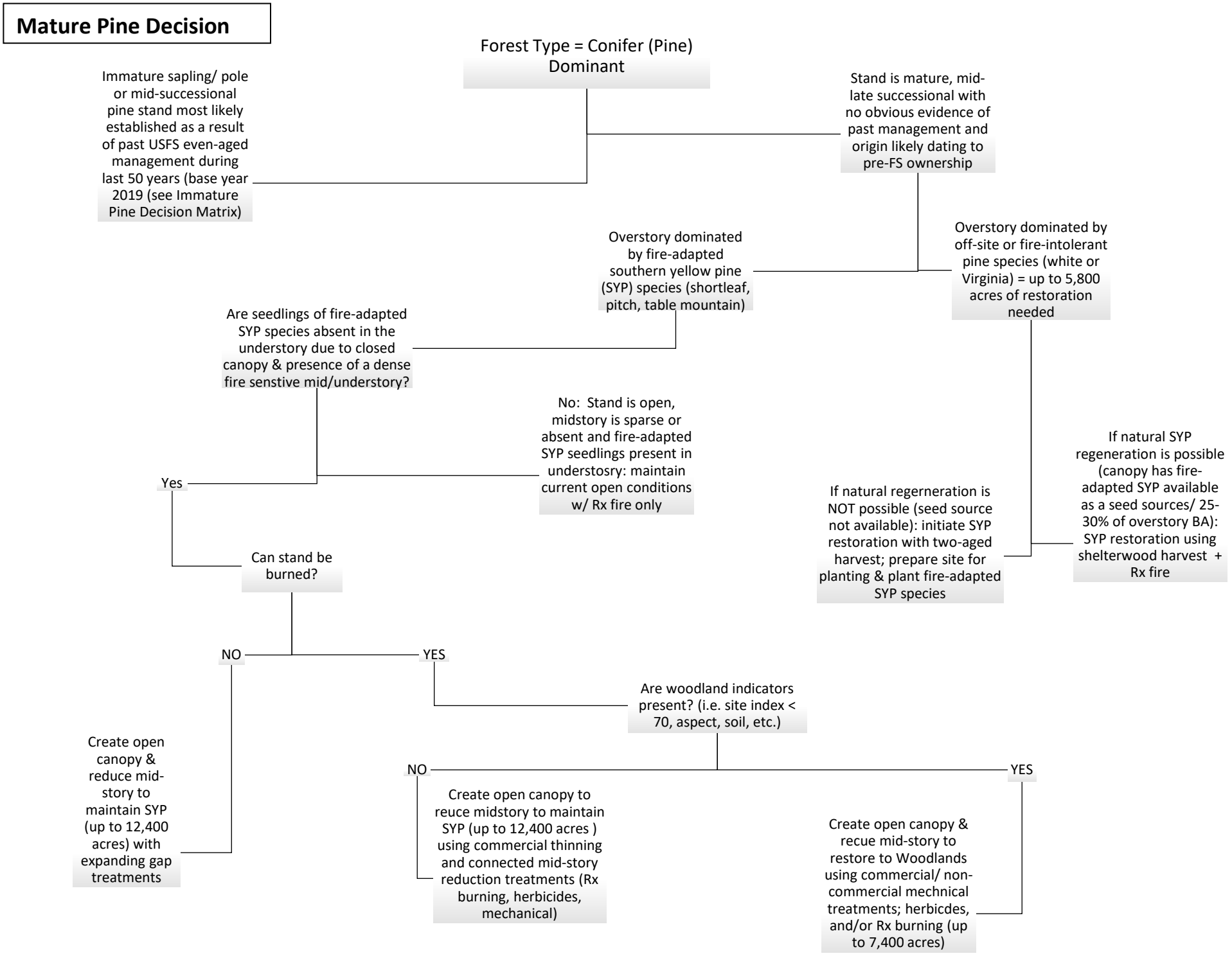
Decision Matrices

Vegetation Decision Matrices

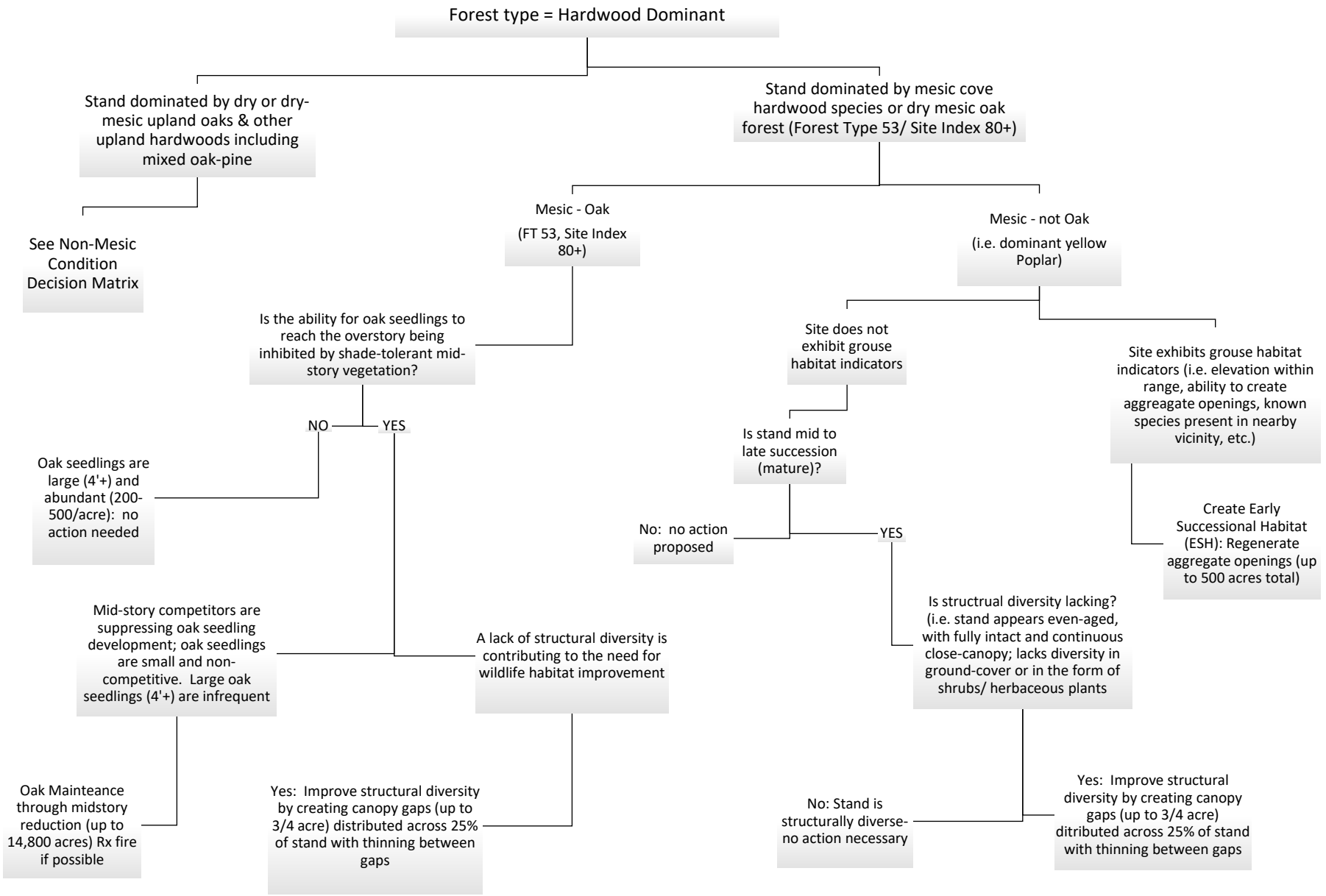
Immature Pine Decision Matrix



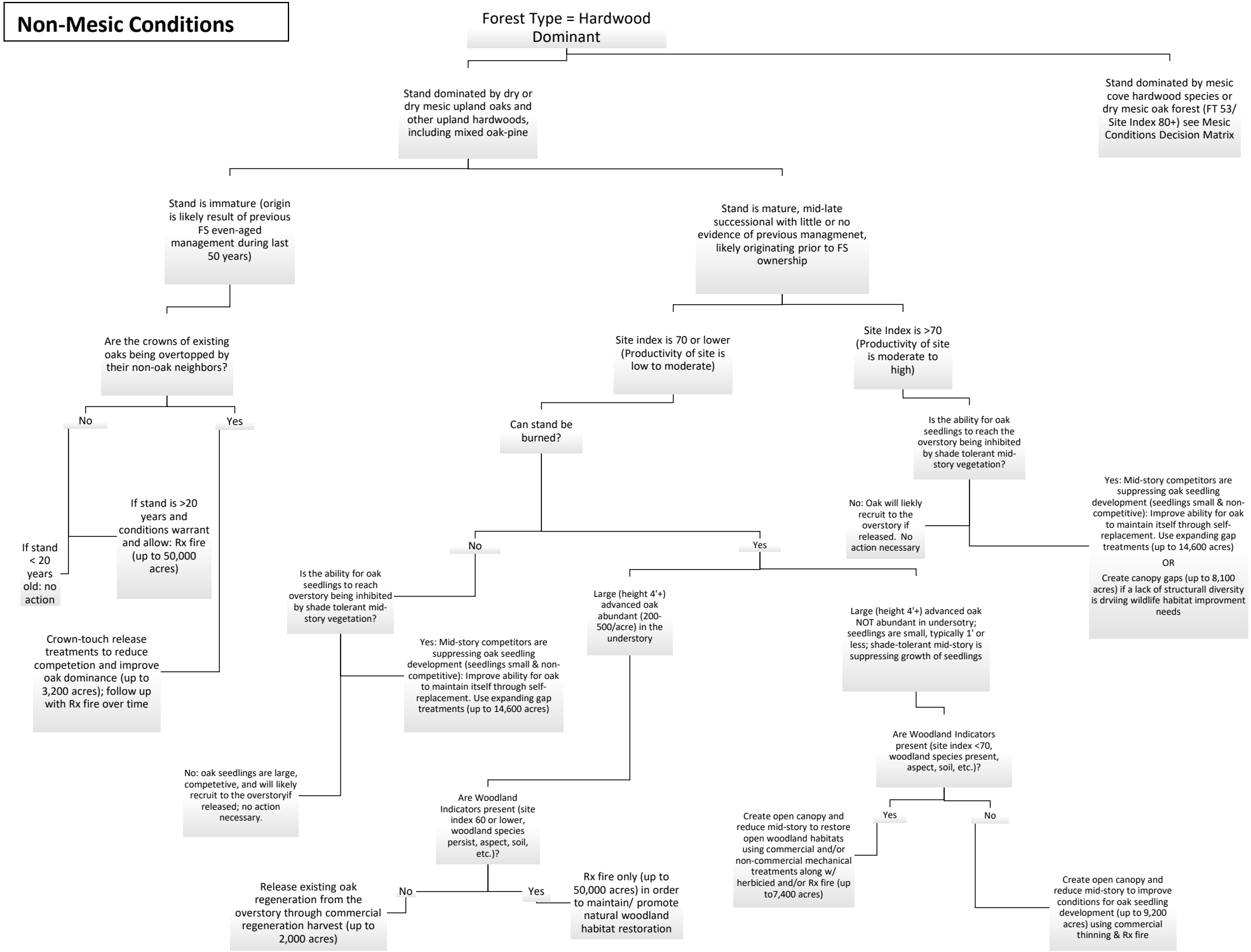
Mature Pine Decision



Mesic Condition Decision Matrix

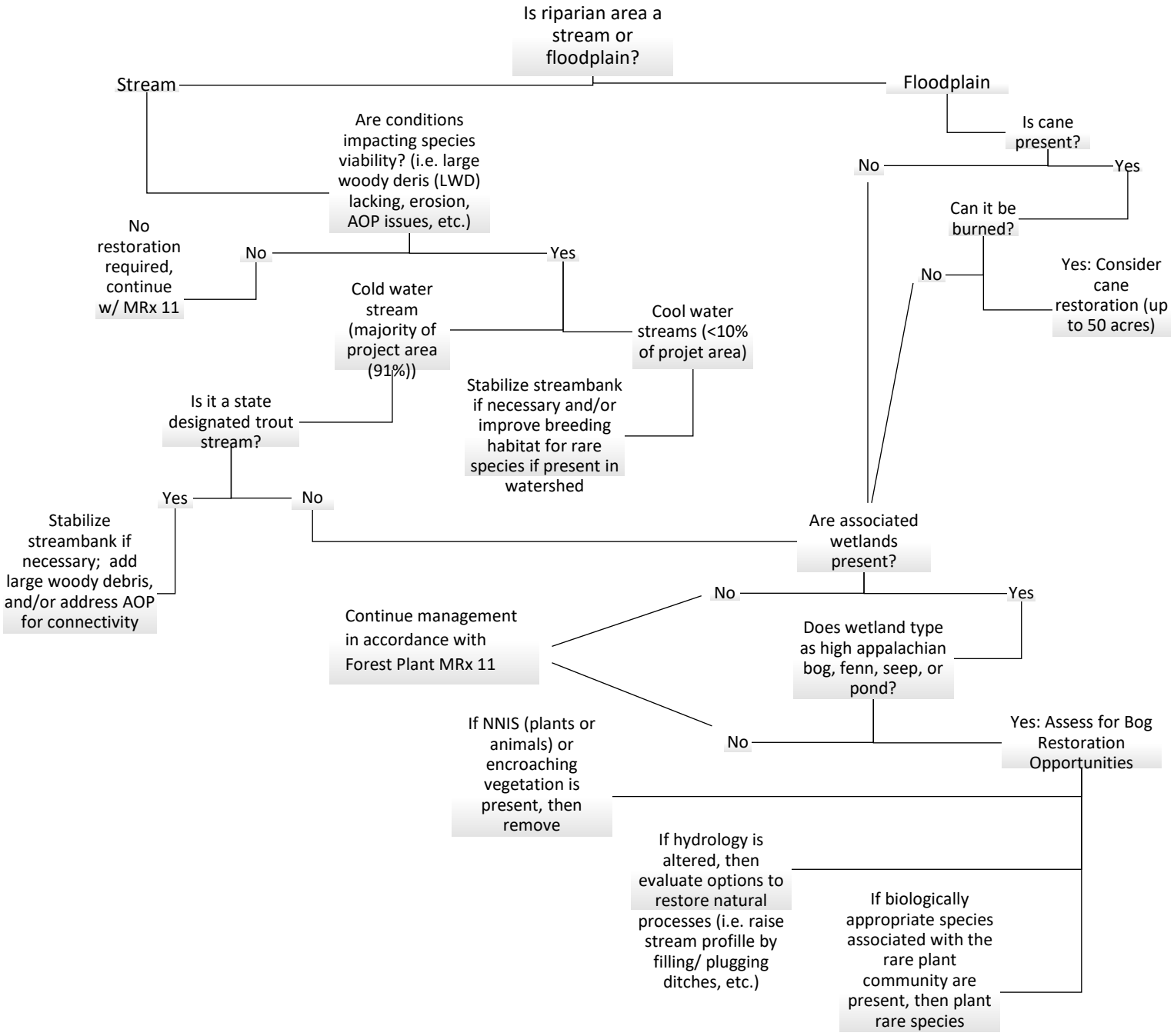


Non-Mesic Conditions



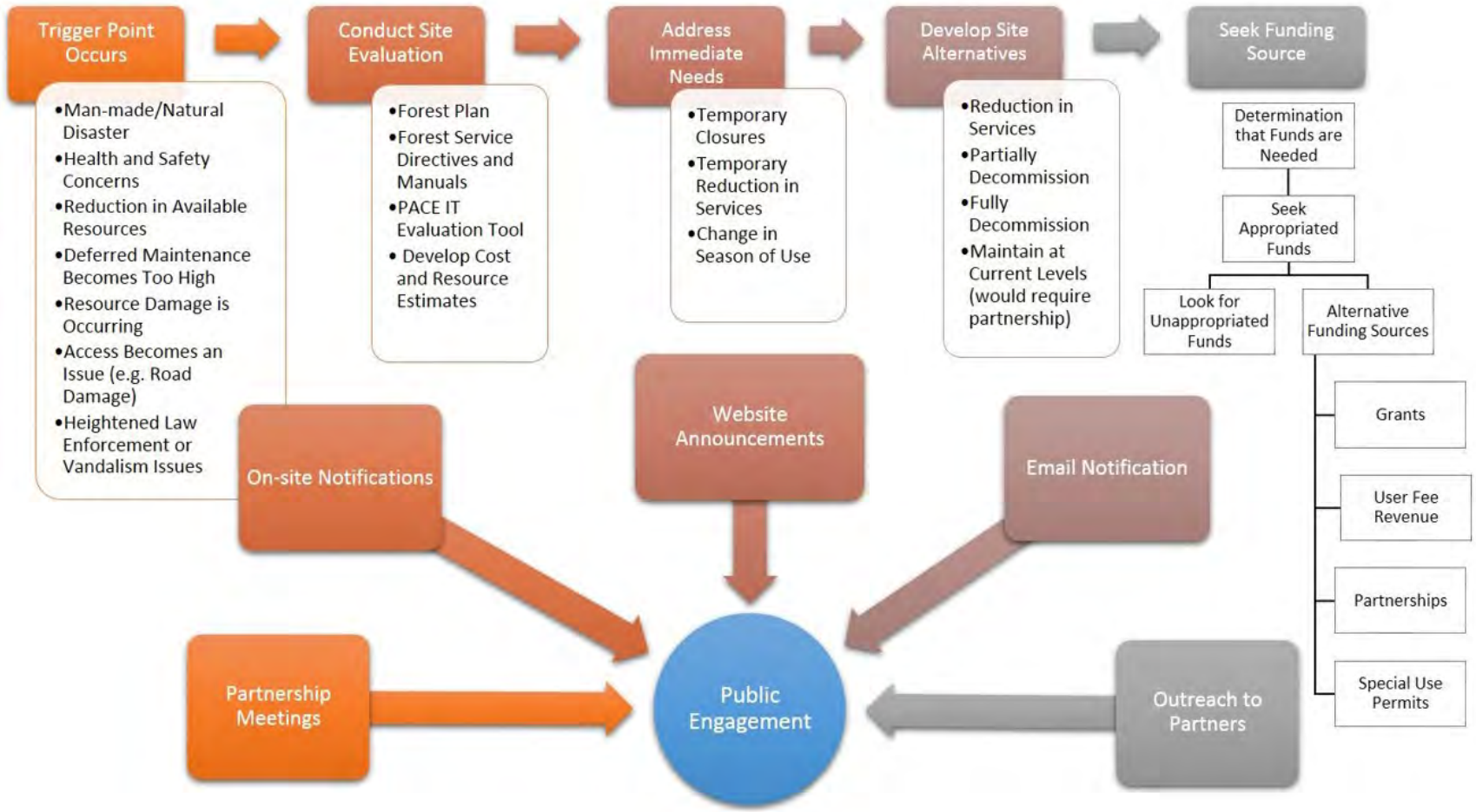
Aquatics Decision Matrices

Aquatic Activities



Sustainable Recreation Evaluation Criteria and Decision Matrices

Evaluation Criteria for Decommissioning Developed Recreation Sites



Developed Recreation Decision Matrix

Trigger	Indicator	Management Toolbox
Environmental		
Man-made/Natural Disaster	Resource damage Erosion Change in recreation opportunities Displacement Loss/damage to amenities Landslides Flooding	Develop a communication plan with specialists to inform forest visitors of site changes. Sign each site and have a transition plan in place. Implement site specific camping prohibitions, mitigate potential health and safety hazards, repair, replace in kind and complete PACE IT! to assess the alignment and sustainability of proposal. Seek funding opportunities and potential partners, relocate site, change site type, partial/full decommissioning
Non-Native Invasive Species (NNIS)	Decline in native plant and animal populations Increase in NNIS	Work with our partners and local, state and national plant and wildlife specialists to develop a plan to reduce impacts. Plan may include site relocation, rehab (herbicide, seeding, pulling) or site-specific camping prohibitions.
Access issues such as road damage, fords, crossings	Rutting Drainage structure failure Erosion Visitor complaints Hazards Failures to infrastructure Bank undercutting	Develop a communication plan with specialists to inform forest visitors of site changes. Mitigate hazards. Complete PACE IT! to assess the alignment and sustainability of proposal, seek funding opportunities and potential partners, consider change in season of use, improvements, hardening, bank stabilization, repair, maintenance contracts, new agreements, realignment, reconstruction, temporary/permanent closures, partial/full decommissioning
Impacts to cultural and historical resources	Loss or damage to known cultural and historical resources Vandalism High deferred maintenance costs	Develop a communication plan with specialists inform forest visitors of site changes. Work with local, state and national archeologists to conduct assessments and mitigation measures to reduce impacts to cultural resources. Work with specialists and partners to implement measures
Financial		

Trigger	Indicator	Management Toolbox
Health and Safety Concerns	Deferred maintenance No longer meets public interest Displacement Heightened Law Enforcement Vandalism issues Sanitation Emergencies Infrastructure Emergencies	Mitigate health and safety concern. Implement site specific prohibitions. Conduct costs estimates to determine long term desired outcomes. Work with law enforcement to develop a plan to mitigate vandalism. Sign changes on site, reduce services, seek funding and partnership opportunities, change site designation, partial/full decommissioning. Develop a communication plan with specialists to inform forest visitors of site changes.
Increase in funding	More revenue generated at site New revenue sources	Review operation and maintenance plans. Work with partners, specialists and campers to determine additional needs. Conduct PACE IT! Assessment and develop a long-term strategy to right size. Bring to standard, consider additional amenities, services, adding site to the reservation system, and/or consider concessionaire. Prioritize projects and plans. Work with engineers to design proposals. Invest in durable, sustainable products that will last.
Decrease in funding	Low use site Decreased revenue Decline in obligated funding Theft of fee tubes	Conduct costs estimates to determine long term desired outcomes and financial sustainability. Conduct PACE IT! to assess current and future site needs, change season of use, reduce services, improve security, change use type, redesign site to meet interests of public, seek partnerships, concessionaires, special use permits, decrease amenities, partial/full decommissioning. Implement site specific prohibitions. Develop a communication plan with specialists to inform forest visitors of site changes.
Unplanned cyclic maintenance and replacement of amenities and infrastructure	Infrastructure failure (e.g., 30-year-old water system, sewer system, field line failure) Increase in repair costs Aging infrastructure Obsolete parts and equipment Undocumented infrastructure	Secure funding for costs associated with maintaining infrastructure and on-site amenities. Complete a site analysis (PACE IT!) to determine the need to replace, upgrade or decommission infrastructure/amenities. Work with engineering to develop a site plan and keep plans for perpetuity. Seek alternative funding sources and new partnerships to leverage resources. If resources are not available consider temporary closures, reduced services, change in site type, partial/full decommissioning of site. Develop a communication plan with specialists to inform forest visitors of site changes.

Trigger	Indicator	Management Toolbox
Increase of operation and maintenance costs	Non-paying use Dumping Increase in toilet pumping costs and maintenance supplies Aging infrastructure Equipment and fuel costs	Develop a communication plan to inform non- paying visitors that use of facilities are for paying guests only. Complete a site analysis (PACE IT!) to determine the need to replace, upgrade or decommission infrastructure/amenities. Seek additional revenue sources, consider new partnerships, fee increases, adjust services, change site type, consider temporary closures, reduce services, change in site type, partial/full decommissioning of site. Implement a dispersed camping restriction for sites within ¼ mile of developed campgrounds. Increase presence with additional patrols, campground hosts, or new partnerships (adopt a campground).
Social		
Increase in visitor use, request for new sites	Visitor complaints Overuse of established sites Requests for amenities Request for more sites Requests for larger sites Displacement	Work with visitors, partners and communities to develop a list of current and future amenities and site operation and maintenance needs. Complete a financial review and site analysis (PACE IT!) to determine the long-term desired outcomes. Consider all alternatives, including campsite reservations systems, relocation, enlarging, changing use type, partnerships, volunteers, concessionaires, special use permits. Work with engineers to design a site plan that depicts needs. Redirect resources to meet public desire to improve their experience. Seek alternative funding sources and new partnerships to leverage resources for long term sustainability.
Decrease in visitor use	Decrease in revenue Overgrown vegetation Trash/vandalism Security Request for LEO (Law Enforcement Officers) presence Displacement Change of recreation trends	Develop a communication plan with specialists to inform forest visitors of site changes. Sign each site and have a transition plan in place. Complete a financial review and site analysis (PACE IT!) to determine the long-term desired outcomes. Implement site specific camping prohibitions, mitigate potential health and safety hazards, redesign site to meet needs/wants of recreating public, reduce amenities and/or change in season of use and type of use, partial/full decommission. Work with Forest Service LEO's and local law enforcement to address security concerns.

Trigger	Indicator	Management Toolbox
Accessibility	Lack of ADA compliant opportunities Increase demand of user requests	Assess opportunities to increase accessibility, seek partnership/grant opportunities for project funding and to secure future maintenance funding for the development of opportunities in our campgrounds. Work with regional and national program managers to develop a plan to provide additional opportunities.

Dispersed Recreation Decision Matrix

Trigger	Indicator	Management Toolbox
Environmental		
Campsite is located adjacent to the road	Visual Impacts Resource Damage	Conduct site specific rapid campsite assessments that may result in site relocation, retention, closure, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding planting) or implement site specific camping prohibitions. If assessment indicates restrict dispersed camping to 50' from roads, trails and water. Sign and post changes. Implement vehicle parking restriction to one vehicle length from system road. Sign and post changes
Campsite is located along water	Sedimentation Erosion Impacts to wildlife Impacts to aquatic species Visual impacts Flooding	Conduct site specific rapid campsite assessments that may result in site relocation, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding planting) or implement site specific camping prohibitions. Restrict dispersed camping to 50' from roads, trails and water. Sign and post changes
Size of exposed bare ground exceeds average campsite size of 15x15	Exposed bare ground Erosion Vegetation loss	Conduct site specific rapid campsite assessments that may result in site relocation, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding, planting). Conduct a large-scale plan to identify dispersed campsites using natural boundaries to concentrate use. Consider adding infrastructure and amenities to reduce impacts. Educate and inform campers of ways to minimize camping impacts and encourage responsible use. Sign and post changes

Trigger	Indicator	Management Toolbox
Size of exposed bare ground has several average sites (15x15) resulting in a camping area	Exposed bare ground Erosion Vegetation loss	Conduct site specific rapid campsite assessments that may result in site relocation, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding, planting, roping). Conduct analysis to determine if there is a need to designate a group camping area or construct new campground. Educate and inform campers of campgrounds nearby. Sign and post changes
Multiple user created trails	Erosion Vegetation loss	Assess user created routes. Designate, construct, and maintain sustainable trails to provide access to dispersed campsite and nearby recreation opportunities. Decommission and rehab user created trails (falling trees, seeding, planting, roping). Sign and post changes.
Resource damage	Tree damage (ax, nails, falling, carving, etc.) Erosion Vegetation loss	Conduct site specific rapid campsite assessments that may result in site relocation, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding, planting) or implement site specific camping prohibitions. Increase presence and work with local Forest Service Law Enforcement Officers (LEO). Educate and inform campers of ways to minimize camping impacts. Sign and post changes.
Health and safety	Human waste	Bury and/or remove human waste present. Educate and inform campers of ways to minimize camping impacts. Require human waste pack out. Conduct site specific rapid campsite assessments that may result in site relocation, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding, planting) or implement site specific camping prohibitions.
Threatened and endangered species	Decline in native plant and animal populations Increase in NNIS	Work with our partners and local, state and national plant and wildlife specialists to develop a plan to reduce impacts. Plan may include site relocation, rehab (herbicide, seeding, pulling) or site-specific camping prohibitions.

Trigger	Indicator	Management Toolbox
Undesirable camping sites	On slopes >10% Wet areas Low resilient sites Wildlife nesting/feeding grounds Cultural and Historical sites	Conduct site specific rapid campsite assessments that may result in site relocation, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding planting), obliterate or site-specific camping prohibitions. Work with specialists to develop a plan to reduce impacts, rehab and decommission sites. Sign and post changes
Non-Native Invasive Species (NNIS)	Decline in native plant and animal populations	Work with specialists to develop and implement a plan to reduce NNIS. Plan may include site relocation, rehab (herbicide, seeding, pulling) or site-specific camping prohibitions.
Impacts to cultural and historical resources	Loss or damage to known cultural and historical resources	Work with local, state and national archeologists and historical societies to conduct assessments and mitigation measures to reduce impacts to cultural and historical resources. Work with specialists and partners to implement measures. Develop a communication plan with public affairs specialist to inform forest visitors of site changes.
Financial		
Trash/vandalism	Costs associated with cleaning and disposing trash	Form new partnerships with state/private entities to assist with monitoring and cleaning known dumping locations to help offset the costs associated with cleaning and disposing waste while providing more field presence. Work with law enforcement to develop a plan to mitigate trash and vandalism. Encourage pack it in, pack it out camping principle.
Deferred Maintenance	Cost associated with replacing, maintaining, or decommissioning amenities	Complete a site analysis (PACE IT!) to determine the need to replace, maintain or decommission amenities. Develop new partnerships with state and private entities to assist with managing site infrastructure to reduce costs.

Trigger	Indicator	Management Toolbox
Social		
Visitor conflicts	Low satisfaction Undesirable activity High use Complaints Displacement Exceeding length of camping limit	Reduce visitor conflicts by providing high quality dispersed camping opportunities that reduce resource damage, provide solitude and low impact camping experiences. Monitor dispersed recreation experiences by working closely with law enforcement, making visitor contacts, and recording complaints. Review and update regulations as needed to reduce conflicts and provide quality recreation opportunities while protecting resources.
Strong Community Connection	High satisfaction Generational use	Work with the community to identify dispersed sites that are highly valued. Foster relationships to understand why these areas are important and work with specialists and the community to protect experiences. Partner with state, private and local entities to continue to manage and monitor these treasured sites.
High impact camping	Degradation of water quality Resource damage Impacts to plants and animals Visitor conflicts Vandalism Trash & human waste Noise	Educate and inform visitors of ways to minimize impacts while dispersed camping. Develop partnerships to patrol general forest areas to help monitor and promote leave no trace camping principles. Work with specialists, other agencies, partners, outdoor retail stores to develop consistent messaging to reduce camping impacts

Trails Decision Matrix

Trigger	Indicator	Management Toolbox
Environmental		
Man-made/Natural Disasters	Tree mortality Landslides Loss of trail structures Damage to signs Damage to structures Debris Flooding	Complete a trail assessment and prioritize needs to repair, relocate, reconstruct or decommission trails. Develop a communication plan with specialists to inform forest visitors of trail changes. Sign and inform trail users of hazards on site. Implement site specific prohibitions, temporary and permanent closures. Complete cost assessments to determine extent of damage and resources needed to clear route. Seek alternative funding sources and partners to leverage resources.
Resource damage	Unsustainable trail layout Erosion/soil loss Increased maintenance intervals Complaints	Complete a trail assessment and repair, relocate, reconstruct or decommission. Seek alternative route, construct mitigation structures (drainage structures, hardening, armoring, retaining walls, bridges, etc.), and/or decommission (sign, boulder, falling trees, debris, fencing, gates, rehab and seed). Develop a communication plan with specialists to inform forest visitors of trail changes.
Non-Native Invasive Species (NNIS)	Decline in native plant and animal populations Increase in NNIS	Work with local, state and national plant and wildlife specialists to develop a plan to reduce impacts.
New trail construction, re-routes	Rutting Drainage structure failure Erosion Hazards Poor trail design	Complete a trail assessment and prioritize needs to repair, relocate, reconstruct, or decommission trails. Complete PACE IT! to assess the alignment and sustainability of route. Seek funding opportunities, potential partners, and long-term maintenance needs of each proposal. Decommission unsustainable trail (sign, boulder, falling trees, debris, fencing, gates, rehab and seed).
Health and safety	Trash/vandalism Human waste present	Bury and/or remove human waste present. Educate and inform hikers of ways to minimize impacts. Encourage human waste pack out with leave no trace messaging and increase presence with volunteers and partners.

Trigger	Indicator	Management Toolbox
Impacts to cultural and historical resources	Loss or damage to known cultural and historical resources	Work with local, state and national archeologists to conduct assessments and mitigation measures to reduce impacts to cultural and historical resources. Work with specialists and partners to implement measures. Measures may include trail closures, section re-routes and/or interpretive displays to protect sites. Develop a communication plan with specialists to inform forest visitors of changes.
Financial		
High annual and deferred maintenance costs	Deferred maintenance No longer meets public interest Displacement Unsustainable trail design	Mitigate health and safety concern. Implement site specific prohibitions. Conduct costs estimates to determine long term desired outcomes. Sign changes on site, seek funding and partnership opportunities, change maintenance intervals, change trail class, partial/full decommissioning. Develop a communication plan with specialists to inform forest visitors of trail changes.
Unplanned maintenance and/or replacement of amenities and infrastructure	Bridges Causeways Hardened trails (gravel, pavement) Culverts Interpretive displays/kiosks Loading ramps/gates/handrails Fencing Toilets/drinking fountains Picnic tables/grills/trash cans Trail signs	Complete condition assessments on the structures. Sign and inform trail users of hazard. Complete a trail assessment (PACE IT!) to determine the need to replace, maintain or decommission infrastructure/amenities. Coordinate with engineering staff to design structures that last. Seek alternative funding sources and new partnerships to leverage resources. If resources are not available consider temporary closures, reduced services, change in trail type and class, partial/full decommissioning of site. Develop a communication plan with specialists to inform forest visitors of site changes.
Social		

Trigger	Indicator	Management Toolbox
Increase in trail use	Social Trails Shortcutting Tread widening Parking occurring beyond designated trailheads New trail proposals	Complete a trail assessment (PACE IT!) to determine the need to maintain, harden, relocate, or increase current trail system and parking locations. Coordinate with engineering staff to design structures that last. Seek alternative funding sources and new partnerships to leverage resources. Consider charging fees, develop a permit system, increasing patrols, installing directional signs, rehab social trails (debris, fallen trees, brush, etc.), and leave no trace messaging. Develop a communication plan with specialists to inform forest visitors of site changes, trail etiquette, and ways to reduce impacts when hiking.
Decrease in trail use	No visible signs of consistent use Overgrown vegetation Fallen trees/blowdowns	Complete a trail assessment (PACE IT!) to determine the need to maintain at current condition, reduce trail class, trail type, reduce maintenance cycle, and/or decommission. Decommissioning methods may include, but are not limited to; signing, iceberging, falling trees, debris, fencing, gates, rehab and seeding. Develop a communication plan with specialists to inform forest visitors of trail changes.
Use by “undesignated” user	Visitor complaints Evidence of use (hoof prints, bike tracks, etc.) Law enforcement actions Illegal firearm use	Work with trail partners and recreation technicians to evaluate current trail use patterns. Enhance trail signs and communication efforts to inform users of designated uses and encourage appropriate behavior. Assess trail for capacity to sustain new and potential use. Conduct a PACE IT! and cost analysis for upgrades that may need to be made to maintain to standard. Analysis may include site specific prohibitions, change in trail type and use, trail improvements, right sizing trail system, increase of signs, and overall presence (adopt a trail program, new partnerships, etc.)

Trigger	Indicator	Management Toolbox
Inadequate trail system	User created trails not associated with designated trails Out and back trails Level of difficulty Partner proposal Social trail network Waterfall trails Lack of challenge levels	Coordinate with trail partners and recreation technicians to identify why use is occurring (waterfall, viewpoint, dispersed campsites, private land access etc.). Conduct a PACE IT! analysis to determine the sustainability of these non-system trails. Possible management actions may include future maintenance of these trails, add interconnected loops, add more trail miles, add beginner, intermediate and advanced difficulty levels, change in trail type and use, rehab, and/or decommissioning (signing, iceberging, falling trees, debris, fencing, gates, rehab and seeding).
Trail events (Special Use Permits)	Increase in requests Non-permitted events occurring Non-compliance with permits	Coordinate with special use permit administrators and permittee to evaluate all new proposals for appropriateness, timing, use conflicts and cumulative effects on trail resources to mitigate conflicts and resource damage on the trail system. Monitor social media to identify non-permitted events and reach out to these groups to inform of special use permitting process. Identify trail system that are compatible for these activities. Develop criteria for mitigating user conflicts, resource damage and use capacity on trail systems.
Accessibility	Lack of ADA compliant opportunities User requests	Assess opportunities to increase accessibility, seek partnership/grant opportunities for project funding and to secure future maintenance funding for the development of opportunities in our trail system. Work with regional and national program managers to develop a plan to provide additional opportunities.

Wild and Scenic River Decision Matrix

Trigger	Indicator	Management Toolbox
Environmental		
Campsite is located within ¼ mile of a road	Map shows locations/distances Visual Impacts Resource Damage Impacts to Outstanding Remarkable Values (ORVs) (biology, recreation, geology, scenery and history)	Conduct area assessments within the 1/4-mile area of roads and within 50' of the river or its tributaries to identify sites that are not compliant with the forest order/plan. This will result in site relocation, closure, rehab (iceberging, shrinking, removing fire rings, falling trees, seeding or planting) Officially designate allowable campsites. Sign and post changes.
Campsite is located within 50’ of the river or its tributaries	Map shows locations/distances Sedimentation Impacts to aquatic species Visual impacts Flooding Impacts to Outstanding Remarkable Values (ORVs) (biology, recreation, geology, scenery and history)	Conduct area assessments within the 1/4-mile area of roads and within 50' of the river or its tributaries to identify sites that are not compliant with the forest order/plan. This will result in site relocation, closure, rehab (iceberging, shrinking, removing fire rings, falling trees, seeding or planting, canebrake restoration) Officially designate allowable campsites. Sign and post changes.
Size of exposed bare ground exceeds average campsite size of 15x15	Soil Compaction Erosion Vegetative damage Impacts to Outstanding Remarkable Values (ORVs) (biology, recreation, geology, scenery and history)	Conduct campsite location, size and condition assessments that may result in site relocation, retention, closure, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding planting, canebrake restoration) or implement site specific camping prohibitions. Sign and post changes
Size of exposed bare ground has several average sites (15x15) resulting in a camping area	Exposed bare ground Erosion Vegetation loss Impacts to Outstanding Remarkable Values (ORVs) (biology, recreation, geology, scenery and history)	Conduct campsite location, size and condition assessments that may result in site relocation, retention, closure, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding planting) or implement site specific camping prohibitions. Sign and post changes

Trigger	Indicator	Management Toolbox
Multiple user created trails	Erosion Vegetation loss Impacts to ORVs	Assess user created routes. Decommission and rehab excessive user created trails (falling trees, seeding, planting, roping). Sign and post changes.
Resource damage	Tree damage (ax, nails, falling, carving, etc.) Erosion Vegetation loss Impacts to ORVs	Conduct site assessments that may result in site relocation, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding, planting, canebrake restoration) or implement site specific camping prohibitions. Increase presence and work with local Forest Service Law Enforcement Officers (LEO). Educate and inform campers of ways to minimize camping impacts. Sign and post changes
Health and safety	Human waste Impacts to ORVs	Bury and/or remove human waste present. Educate and inform campers of ways to minimize camping impacts. Require human waste pack out. Conduct site specific campsite assessments that may result in site relocation, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding, planting) or implement site specific camping prohibitions. Designate allowable campsites. Sign and post changes.
Threatened and endangered species in area	Decline in native plant and animal populations Increase in NNIS	Work with our partners and local, state and national plant and wildlife specialists to develop a plan to reduce impacts. Plan may include site relocation, rehab (herbicide, seeding, pulling) or site-specific camping prohibitions.
Undesirable camping sites	On slopes >10% Wet areas Low resilient sites Wildlife nesting/feeding grounds Impacts to ORVs	Conduct site specific campsite assessments that may result in site relocation, site rehab (iceberging, shrinking, removing campfire rings, hardening, falling trees, seeding planting), obliterate or site-specific camping prohibitions. Work with specialists to develop a plan to reduce impacts, rehab and decommission sites. Sign and post changes
Non-Native Invasive Species (NNIS)	Decline in native plant and animal populations Impacts to ORVs	Work with specialists to develop and implement a plan to reduce NNIS. Plan may include site relocation, rehab (herbicide, seeding, pulling) or site-specific camping prohibitions.

Trigger	Indicator	Management Toolbox
Impacts to cultural and historical resources	Loss or damage to known cultural and historical resources Impacts to ORVs	Work with local, state and national archeologists and historical societies to conduct assessments and mitigation measures to reduce impacts to cultural and historical resources. Work with specialists and partners to implement measures. Develop a communication plan with public affairs specialist to inform forest visitors of site changes.
Financial		
Trash/vandalism	Costs associated with cleaning and disposing of trash Impacts to ORVs	Form new partnerships with state/private entities to assist with monitoring and cleaning known dumping locations to help offset the costs associated with cleaning and disposing waste while providing more field presence. Work with law enforcement to develop a plan to mitigate trash and vandalism. Encourage pack it in, pack it out camping principle.
Maintenance	Cost associated with replacing, maintaining, or decommissioning amenities Additional costs associated with designating sites	Complete a site analysis (PACE IT!) to determine the need to replace, maintain or decommission amenities. Develop new partnerships with state and private entities to assist with managing site infrastructure to reduce costs.
Social		
Visitor Use conflicts	Low satisfaction Undesirable activity High use Exceeding length of camping limit	Reduce visitor conflicts by providing high quality designated camping opportunities that reduce resource damage, provide solitude and low impact camping experiences. Provide designated access points for river access and well as a designated path to reduce network of trails. Work with LEOs local interested parties to make visitor contacts to encourage LNT principles, Outreach/Education.
Strong Community Connection	High satisfaction Generational use	Work with the community to identify areas that are highly valued. Protect user access to these areas while reducing Impacts to Outstanding Remarkable Values (ORVs) (biology, recreation, geology, scenery and history) within this treasured area.

Trigger	Indicator	Management Toolbox
High impact recreation	Degradation of water quality Resource damage Impacts to plants and animals Visitor conflicts Vandalism Trash & human waste Noise	Educate and inform visitors of ways to minimize impacts while recreating. Develop partnerships to patrol general forest areas to help monitor and promote leave no trace principles. Work with specialists, other agencies, partners, outdoor retail stores to develop consistent messaging to reduce recreational impacts.

Appendix F – Past, Present and Reasonably Foreseeable Actions

Each resource section includes a discussion of cumulative effects focused on evaluating the effects of the proposed action in context with relevant effects from past, present, and reasonably foreseeable actions.

Past, present, and foreseeable future actions considered in the cumulative effects analyses will vary for each resource. Relevant actions are those expected to generate effects on a specific resource which will occur at the same time and in the same place as effects from the proposed action. Past and present activities are considered part of the existing condition and are discussed in the "Affected Environment (Existing Conditions)" and "Environmental Consequences" section under each resource.

The analysis of cumulative effects is consistent with the direction provided in the 36 CFR 220.4(f). There is a summary in the next paragraph and Table 1 about the recently past, present (or ongoing), and reasonably foreseeable activities in watershed within or near the general area of the *Foothills Landscape Project* that could contribute relevant effects (i.e., effects that overlap in space and time with effects of the proposed action). The analysis for each resource may not consider all actions listed below or it may consider additional actions not listed.

Past and Present Action

Special Use Permits: there are water transmission lines, fiber optic system, utility corridor and power line right-of ways in the project area that are under special use permits.

Dispersed and Developed Recreation: developed and dispersed recreation such as wildlife sightseeing, camping, and hiking have historically occurred and will continue to occur throughout the project area.

Vegetation Management: there were a few small commercial thinning in the foothills project area going back to 2011 in approximately 485 acres

Wildfires: Few small wildfires have occurred over the years, but each has been suppressed by local wildland fire suppression crews. Rough Ridge Fire in 2016 occurred primarily outside of the project area, but 2,670 acres overlapped within the Headwaters Conasauga River watershed and 606 acres within the Jacks River watershed within the Foothills boundary. Wildfires could occur at any time in the future and the effects of these events are unpredictable.

Reasonably Foreseeable Future Action

Roads and Trails: road and trail construction and maintenance have occurred and continue to occur near or within the project area and include projected population growth in surrounding communities, increased recreation demand and use, increased user-created trails and trail proliferation.

Table 21, Table 22, and Table 23 displays a list of the known past, present, and reasonably foreseeable future actions on several watersheds within the Foothills Landscape Project Area that may contribute cumulatively to the direct and indirect effects of proposed Foothills Landscape activities. These tables includes activities during the last decade.

Table 20 Past Present, and Reasonably Foreseeable Activities in Watersheds that Touch the Foothills Landscape Project Area

6th Level Watershed	Activity	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
Bridge Creek 030601020106	Slick Shoals Rx Burn	2009, 2014	1816 acres	X	X	X
	Bridge Creek Hazard Tree Removal	2010	10	X		
	Tom's Swamp Bog Maintenance & Restoration	2008-2018	2.3 acres	X	X	X
Cane Creek 031300010603	Paul S. Rx Burn	2009, 2011	25 acres[P]	X		
	Stevens Grant-EG Rx Burn	2011	23 acres[P]	X		
	Stevens Grant-SB Rx Burn	2011	13 acres[P]	X		
	William G. Rx Burn	2010	182 acres[P]	X		
Cochrans Creek 031501040203	Bob L. GFC Rx Burn	2015	145 acres[P]	X		
Dicks Creek 031300010501	Gayle A. Rx Burn	2014	5 acres[P]	X		
	Sanitation Cut	2011	37 acres	X		
	Plant Trees	2012	37 acres	X		
	Plantation Survival Survey	2013, 2015	37 acres	X		
	Boggs Creek Private Rx Burn	2013	95 acres[P]	X		
	Boggs Creek Rx Burn	2013	85 acres	X		
Sumac Creek 031501010201	Sumac GA Intermediate Harvests	2015	Woodland 75 acres	X		
			SLP Maint. 30 acres			
			Forest Health 91 acres			
			Total 196 acres			
	Sumac GA Restoration Harvests	2015	SLP Restoration 113 acres	X		
			Road Corridor 14 acres			
			Total 127 acres			

6th Level Watershed	Activity	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
	Sumac GA NNIS	2017	17 acres	X		
	Sumac GA Tree Planting	2021	116.7 acres		X	
	Sumac GA Site Prep Burn	2020	113 acres		X	
	Sumac GA Site Prep chemical	2020	113 acres		X	
	Sumac GA Tree Release and Weed	2022	113 acres		X	
	Sumac GA Control of Understory	2015	105.1 acres			
	Sumac GA W/L Mech. Trtmt	2015	64 acres	X		
	Sumac GA W/L opening rehab	2015	7.8 acres	X		
	Sumac GA W/L Corridors	2015	28.8 acres	X		
	Oak Midstory	2014	134 acres	X		
	SLP Crown Release	2016	86 acres	X		
		2018	Restore SLP 53 acres		X	
	Sumac III Restoration Harvest		Restore Oak/Oak-pine 35 acres			
			Daylighting(ESH) 22 acres			
			Total 110 acres			
	Sumac III Site Prep Burns	2024	88 acres		X	X
	Sumac III Site Prep Chemical	2024	53 acres			
	Sumac III Tree Release and Weed	2027,2029	88 acres			X
	Sumac III Intermediate Harvests	2018	Restore Woodland 38 acres		X	
			Forest Health 280 acres			
			Maintain Oak/SLP 54 acres			
			Total 372 acres			

6th Level Watershed	Activity	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
	Sumac III W/L Corridors (harvest and slashdown)	2018	22 acres		X	
	Sumac III Canopy Gaps	2018	13 acres		X	
	Sumac III NNIS	2018	99 acres		X	X
	Sumac III Burns	2024	354 acres		X	X
	Sumac IIII Planting SLP	2025	53 acres			X
	Sumac III Control Understory	2018,2024	92 acres		X	X
	Hickey Gap Burn Unit	2009, 2014	387 acres	X	X	X
	Pleasant Gap Burn Unit	2013,2016	1330 acres	X	X	X
	Hickory Ridge Burn Unit	2013, 2016	1494 acres	X	X	X
	Muddy Branch Burn Unit	2014	553 acres	X	X	X
Conasauga River Headwaters 031501010101	Alaculsey Valley Burn Unit	2009	258 acres	X		
	East Cowpen Burn Unit	2010,2013,2016	422 acres	X	X	X
	David B. Rx Burn	2009	7 acres[P]	X		
North Prong Sumac Creek 031501010202	Bob Jones Burn unit	2009, 2015	1191 acres	X	X	X
Jacks River 031501010102	Buffalo Burn Unit	2010, 2013, 2016	26 acres	X	X	X
Perry Creek 031501010105	Mooneyham Burn Unit	2010, 2013, 2016	100 acres	X	X	X
	Boyd J. Rx Burn	2009	24 acres[P]	X		
Bogden Creek 031501010103	Mooneyham Burn Unit	2010, 2013, 2016	205 acres	X	X	X
	Turkey Beard Burn Unit	2012, 2015, 2017	435 acres	X	X	X
Mill Creek/Rockflat Branch 031501010206	Rocky Flats Burn Unit	2015, 2018	1172 acres	X	X	X
	Songbird W/L Habitat Mech. Treatment	2015	64 acres	X		
Holly Creek Headwaters 031501010401	Cohutta Overlook Underburn	2015	4 acres	X		X

6th Level Watershed	Activity	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
	Cohutta Overlook Thinning	2014	Thinning for Hazardous Fuels 2.2 acres	X		
Lower Mill Creek 031501010207	Emily C. GFC Rx Burn	2015	27 acres[P]	X		
Muskrat Creek 031501010402	Pre commercial Thin	2009	29 acres	X		
	TSI-Thinning	2009	9 acres	X		
Goldmine Creek 031501010403	Ft. Mtn. State Part - Chipping of Fuels	2013	15 acres[P]	X		
Sugar Creek 031501020801	Alan R. Rx Burn-GFC Grant	2008	30 acres[P]	X		
Headwaters Etowah River 031501040101	Jeff A. Rx Burn	2014	5 acres[P]	X		
	Gary T. Rx Burn	2012	10 acres[P]			
	Montgomery Creek Rx Burn	2014	171 acres (Part of larger burn unit outside of FLP boundary)	X		
	Forest Health South IRTC (commercial thinning)	2019	145 acres		X	
Jones Creek 031501040102	Commercial Thin	2014	Forest Health 30 acres	X		
	Pre-Commercial thin	2015	Forest Health 58 acres	X		
	Bill S. Rx Burn	2012	26 acres[P]	X		
	Cynthia M. Rx Burn	2012	32 acres[P]	X		
	Jones Creek Rx Burn	2012	815 acres	X	X	X
	Jones Creek East Rx Burn	2013, 2018	446 acres	X		
	Turner Creek Rx Burn	2013	608 acres	X		
	Montgomery Creek Rx Burn	2014	162 acres (Part of larger burn unit outside of FLP boundary)	X		
	Forest Health South IRTC (commercial thinning)	2019	55 acres		X	

6th Level Watershed	Activity	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
Lower Chattooga River 030601020210	Wildlife Habitat Slash treatment (Connected to Waterguage)	2014	220 acres	X		
	Tallulah Gorge North Rim Co-Op Rx Burn – 1316 ac. (USFS-101/State-1215)	2014	676 acres USFS – 101 acres State/private – 575 acres	X		X
	Deaden Timber Rx Burn (formerly Camp Creek/Wolf Creek)	2009	882 acres	X		X
	Cliff Creek TS (1st thin SYP)	2012	212 acres	X		
	Watergauge 1 TS	2011	Woodland 220 acres	X		
	Watergauge Rx Burn	2014	1,020 acres	X	X	X
	Waterguage Bog Maint & Restoration	2010	7.2 acres	X		X
Panther Creek 030601020401	P&M Black Rx Burn	2013	10 acres[P]	X	X	
	Walter L. Rx Burn	2015	7 acres[P]	X		
	Laura W. GFC	2015	22 acres[P]	X		
Upper Warwoman Creek 030601020205	Doug B. Rx Burn	2010,2012	80 acres[P]	X		
	Commercial Thin	2019	125			X
	Non-commercial thin	2022	100 acres			X
	Sandy Ford ROW	2017	2 acres	X		
West Fork Chattooga River 030601020203	Hale Ridge Rx Burn – Bog	2012, 2016	60 acres within FLP boundary (870 total acres)	X		X
	Hale Ridge East Rx Burn – Bog	2016	32 acres within FLP boundary (837 total acres)	X		X
	Hale Ridge Bog Maintenance & Restoration	2008-2018	4.6 acres	X	X	X
Nimblewill Creek 031501040103	Jim C. Rx Burn	2014	56 acres[P]	X		
	Pre-Commercial Thin	2015	Forest Health 22 acres	X		

6th Level Watershed	Activity	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
	Forest Health South IRTC (Commercial Thin)	2019	Forest Health 45 acres		X	
Upper Chestatee River 031300010502	Thomas D. Rx Burn	2012	35 acres[P]	X		
	Kenneth D. Rx Burn	2012	99 acres[P]	X		
	Dave I. Rx Burn	2008,2009	150 acres[P]	X		
	Tamera B. GFC Rx Burn	2015	6 acres[P]	X		
Town Creek	Margaret T. Rx Burn	2010	5 acres[P]	X		
031300010503	Gary M. Rx Burn	2015	4 acres[P]	X		
Chickamauga Creek 031300010104	Robert S. Rx Burn	2009	9 acres[P]	X		
	Jim W. Rx Burn	2011	52 acres[P]	X		
Lower Soquee River 031300010202	Low Gap ROW	2009	10 acres	X		
Upper Soquee River 031300010201	Mark L. Rx Burn	2014	19 acres[P]	X		
Lower Tallulah River 030601020108	Michael C. Rx Burn	2010	7 acres[P]	X		
	Rabun Beach Campground Rx Burn(Rec Related Maintenance)	2008	76 acres (Portions on Private)	X		X
	Tallulah Gorge North Rim Co-Op Rx Burn – 1316 ac. (USFS-101/State-1215)	2014	640 acres[P] State/private	X		X
Lower Stekoa Creek 030601020208	Ricky F. GFC Rx Burn	2008	38 acres[P]	X		
	Pearce A. Rx Burn	2010	1 acre[P]	X		
	Deaden Timber Rx Burn (formerly Wolf Creek)	2009	116 acres	X		X
Sarahs Creek 030601020206	Bynum Branch Commercial Thin	2010	56 acres	X		
Middle Chattooga River 030601020209	Bynum Branch Commercial Thin	2010,2014	Forest Health 29 acres			
	Boyce S. Rx Burn	2013	47 acres[P]			
Foothills Landscape (All	BRRD Wildlife Openings-Maintenance	-	80 acres	X	X	X

6th Level Watershed	Activity	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
watersheds within FLP)	CRRD Wildlife Openings - Maintenance	-	60 acres	X	X	X
	CRD Wildlife Openings- Maintenance	-	126 acres	X	X	X
	BRRD Hemlock		1 Conservation area	X	X	X
	Conservation Areas- Insecticide Maintenance					
	CRRD Hemlock Conservation Areas- Insecticide Maintenance		18 Conservation areas	X	X	X
	CRD Hemlock Conservation Areas- Insecticide Maintenance	2009	11 Conservation areas	X	X	X
	BRRD Hemlock Conservation Areas - Beetle Release			X	X	X
	CRRD Hemlock Conservation Areas - Beetle Release			X	X	X
	CRD Hemlock Conservation Areas - Beetle Release	2009	662 Acres	X	X	X
Lower Chestatee River 031300010601	Community Protection Grant Rx Burn	2013	541 acres*	X		
Dukes Creek 031300010103	Pheasant Branch Rx Burn	2009, 2016	641 acres*	X		X
Deep Creek 031300010203	Rx Burn	2013, 2014	~40 acres*	X		
Wildcat Creek 030601020105	Bramlett Ridge Rx Burn	2010, 2014, 2018	2,210 acres*	X		X
	Dickenson Branch Rx Burn	2015	166 acres*	X		X

Table 21 Past, Present, and Foreseeable Future Recreation Activities (Developed, Dispersed and Non-Motor Trails) in the Foothills Landscape Project Area

	Activity by Ranger District	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
Foothills Landscape (All watersheds Within FLP)	CRD- Conversion of Murray's Lake Campground to Day Use site	2005	.01 acre	X		
	CRD- Decommission well at Lake Con. Overflow Camping area	2008	.01 acre	X		
	CRD – Decommission Loop B, Lake Conasauga Cmpgrd (4 sites, chemical toilet, access road and access trail)	2008	1.92 miles 1 acre plus .15 miles of road and .1 mile of trail	X		X
	CRD – Decommission Arrowwood Shelter	2008	2500 square feet, plus .1 mile of trail, plus .1-mile access road	X		
	CRD- Decommission Peeples Lake Campground; Remove toilet	2005	.01 acre	X		
	CRD – Cottonwood Patch High Line Hitching Addition	2013	.05 acres	X		
	CRD – Dennis Mill Pinhoti Trail Section – new construction	2014	2.4 miles	X		
	CRD- Dennis Mill Parking Lot construction	2014	.75 acre	X		
	CRD- Decommission SST toilet ;Install CXT in new location: Cottonwood Patch Campground	2014	.1 acre	X		
	CRD -Lake Conasauga Host Cabin Construction	2016	.01 acre	X		

	Activity by Ranger District	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
	CRD- Decommission well: Cottonwood Patch Campground	2018	.01 acre		X	
	Culvert Replacements on Lake Conasauga Campground Access Road	2018	1.0 mile		X	
	CRD- Songbird Trail Reroute	2019	1.0 miles		X	
	BRRD-Jones Creek Campground Decom/Conversion to dispersed camping	2005	34 acres	X		
	BRRD-Waters Creek Campground Conversion to dispersed camping	2005	87 acres	X		
	BRRD-Jake Mtn Trail Reroutes, Decommissioning	2008, 2009, 2014, 2020	XX	X		X
	BRRD-Cochran Creek Falls Trail Decommissioning		1.92 miles			X
	BRRD-Dicks Creek Campground Decom/Conversion to dispersed camping	1990's	184 acres	X		
	BRRD-Boggs Creek Campground converted to day-use area	2013	280 acres	X		
	BRRD-Boggs Creek chemical toilet decommissioning – 5 chemical toilets, 1 storage building	2018	1 acre	X		

	Activity by Ranger District	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
Watersheds that touch the Foothills Landscape	CRD-Mountaintown Creek Trail Re-Alignment	2008		X		
	CRD-South Fork Trail Reconstruction	2012	2.74 miles	X		
	CRD-County Line Trail Designation (existing old roadbed – no new construction	2012	1.7 miles	X		
	CRD-Beech Bottom Trail Re-Route (Cohutta Wilderness)	2012-2013	800 feet	X		
	CRD-Benton-MacKaye Trail Relocation	2012-2013	.7 mile	X		
	CRD-Jacks River Trail Re-Route (Cohutta Wilderness)	2014	.1 mile	X		
	CRRD-2012 Decision	2012		X	X	X

Table 22 Past, Present, and Foreseeable (Roads and Motorized Trails Activities) in Watersheds within the Foothills Landscape Project Area

	Activity by Ranger District	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
	Whissenhunt OHV Trail Reroutes, Maintenance, toilet upgrades, Decommissioning	2009, 2010, 2013, 2016, 2018, 2020	XX	X		X
	Dicks Creek Dispersed Area Access FS Road 34 Maintenance	2014	5.1 miles	X		
	Jake Mtn. Trail Access Road Maintenance			X		X
	CRD-Tibbs OHV Trail – partial decommissioning	2015	1.5 miles	X		
	CRD-Seasonal Closures of Rock Creek, Windy Gap, Milma Creek and Tibbs OHV trails	2015	14.0 miles	X		
	CRD-Emergency Closure of Rocky Flats OHV trail due to loss of culvert	2015	5 miles	X	X	
	CRD-Bi-Annual Maintenance of Rock Creek, Windy Gap, Milma Creek, Tibbs, and Tatum Lead OHV trails	2020, 2022, 2024 etc.	19.4 miles			X
	CRRD-Annual OHV Maintenance of Oakey Trail System	2016, 2018	14 miles	X	X	X

Table 23 Watersheds within Foothills Boundary with No Activities Reported[12]

6th Level Watershed	Activity	Year(s) Implemented	Acres /Miles Affected	Past	Present	Reasonably Foreseeable
Yahoola Creek 031300010602						
Turner Creek 031300010504						
Spoilcane Creek 031300010102						
Stonewall Creek 030601020107						
Reed Creek 030601020204						
Mountaintown Creek Headwaters 031501020301						
East Mountaintown Creek 031501020302						
Conasauga Creek 031501020303						
Davis Creek 031501020304						
Rock Creek 031501010405						
Chicken Creek 031501010404						
Tails Creek 031501020403						

[12] Captured here in the event they need to be added to the tables above should activities arise.