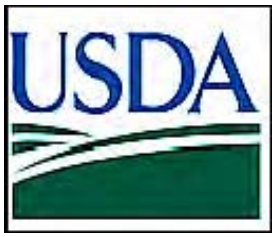
FINAL PROGRAMMATIC ENVIRONMENTAL ASSESSMENT FOR VOLUNTARY PUBLIC ACCESS HABITAT INCENTIVE PROGRAM STATE OF GEORGIA



United States Department of Agriculture
Farm Service Agency

March 2012

Cover Sheet

Proposed Action:	The United States Department of Agriculture (USDA) Farm Service Agency (FSA) and the State of Georgia have agreed to implement a new Voluntary Public Access – Habitat Incentive Program (VPA-HIP). USDA is provided the statutory authority by the provisions of the Food Security Act of 2008, and the Regulations at 7 Code of Federal Regulations (CFR) 1410. VPA-HIP provides grants to State and tribal governments to encourage owners and operators of privately-held farm, ranch, and forest land to voluntarily make that land available for access by the public for wildlife-dependent recreation, including hunting, fishing, and other compatible recreation and to improve fish and wildlife habitat on their land. The VPA-HIP is administered by the State or tribal government that receives the grant funds.
Type of Document:	Programmatic Environmental Assessment
Lead Agency:	USDA, FSA
Sponsoring Agency:	Georgia Department of Natural Resources
Cooperating Agency:	None
Comments:	This Programmatic Environmental Assessment was prepared in accordance with USDA FSA National Environmental Policy Act (NEPA) implementation procedures found in 7 CFR 799, as well as the NEPA of 1969, Public Law 91190, 42 United States Code 4321-4347, 1 January 1970, as amended.
	A Notice of Availability was released on March 12, 2012 announcing a 30-day comment period. A copy of the document can be found on the USDA FSA website: www.fsa.usda.gov. Comments will be accepted until April 11, 2012. Comments may be submitted via e-mail to: Alex.Coley@dnr.state.ga.us Or via mail to the following address: Alex Coley VPA-HIP PEA Georgia DNR, Wildlife Resources Division 2070 US Highway 278 SE, Social Circle, GA 30025

EXECUTIVE SUMMARY

The United States Department of Agriculture Farm Service Agency proposes to implement a new program authorized by the Food, Conservation, and Energy Act of 2008 (the 2008 Farm Bill) in the State of Georgia. The Voluntary Public Access and Habitat Incentive Program (VPA-HIP) provides grants to State and tribal governments to encourage owners and operators of privately-held farm, ranch, and forest land to voluntarily make that land available for access by the public for wildlife-dependent recreation, including hunting, fishing, and other compatible recreation and to improve fish and wildlife habitat on their land. The VPA-HIP is administered by the State or tribal government that receives the grant funds.

Proposed Action

Through this grant, the State of Georgia will expand and/or enhance its existing public access program to provide more opportunities for hunting, fishing, trapping, wildlife watching, and other compatible wildlife related recreational activities. Georgia's existing public access program, the Wildlife Management Area (WMA) program, will be the starting point and model for expanding and enhancing public access across the state. This will provide additional access to recreational lands to as many of Georgia's citizens as possible and concurrently allow qualified landowners opportunities to participate in the VPA Program. The primary goal of this grant proposal is to provide new hunting and fishing opportunities for a wide variety of game and fish species across the state. Secondarily, landowners will be encouraged to participate in the VPA program, offering hunting, fishing and recreational access on their lands to be incorporated into the WMA program. The current statewide access program, the WMA program, has proven to be successful statewide for over 50 years. Therefore, it is expected to meet with widespread acceptance among landowners.

The state will ensure lands enrolled for public access have appropriate wildlife habitat through proper management and evaluation by region wildlife biologists and technicians. Landowners will also have an opportunity to benefit from the improvement of wildlife habitat by receiving technical guidance, management recommendations and actual habitat development work on their lands performed by region wildlife biologists and technicians. These activities may include but are not limited to prescribed burning, forest management recommendations, creating wildlife openings and planting appropriate wildlife crops and plants.

The Division's target is to enroll an additional 15,000 WMA acres as well as adding 1,000 to 1,200 acres of dove fields statewide. The WMA acres will focus initially on middle Georgia, the goal is to conserve the middle Georgia bear population. Available bear habitat in this area has already been delineated through recent research conducted jointly by the WRD and the University of Georgia. These lands will be targeted for enrollment in this program, the landowners will be engaged and advised of the program and associated benefits. A WMA lease agreement will be obtained from interested landowners in this target group. Other lands in close proximity to existing WMAs that receive high public use will be targeted for enrollment in this grant program. Overall, the Division intends to enroll up to 10 different landowners in new annual leases for the WMA program.

The mechanism for locating over 1000 acres of dove fields for public hunting will be through coordination with the agency's Private Lands Program, as well as the local NRCS Farm Services Agency personnel to identify farmers as potential candidates based upon location, available acreage and crops. The Division anticipates being able to enroll up to 13 different landowners in new annual leases for the dove field program.

New lands added to the current public access program through this grant will be publicized through the Georgia Wildlife Resources Division (WRD) website and FaceBook page, the Georgia WRD Popular Guide to Hunting and Fishing Regulations, news releases and Public Service Announcements (PSAs).

The state currently leases lands annually for dove fields and for inclusion as WMAs for the current public access program. This grant will allow for expansion of this effort in the future. All programs will be evaluated for effectiveness by determining hunter participation on the lands.

Another facet of this grant proposal, separate from adding lands to the current public access, is to provide coordination of transient offers of hunting, fishing and other outdoor recreational opportunities by private landowners to the public. There will also be a process to submit and post specific requests for outdoor recreational opportunities that landowners can review and fulfill as appropriate to their situation. These opportunities may be directed to specific segments of public such as youths, disabled or handicapped, or special needs as directed by the donor or specified by the agency. This will require accepting and soliciting offers from private landowners participating in various Private Lands programs administered by or through the agency. Timber companies, and timber investment management organizations (TIMOs) will be asked to make unleased lands available in some limited capacity to provide limited recreational opportunities. Natural resources based non-governmental organizations (NGOs), such as Ducks Unlimited (DU), Georgia Wildlife Federation (GWF), National Wild Turkey Federation (NWTF), Quality Deer Management Association (QDMA), Quail Forever (QF), Trout Unlimited (TU), American Tree Farm and Georgia Outdoor News (GON) will be contacted to promote the concept of donating an outdoor experience opportunity to their membership. DNR will provide staff to solicit, coordinate, advertise and administer the opportunities.

Objectives, Funding, Performance And Other Resources:

- Provide new hunting and fishing opportunities for big/small game, upland/wetland birds including doves, and warm water fishing opportunities in small ponds, lakes and streams.
- Other compatible recreational activities that may be allowed include bird watching, hiking, nature observation and canoeing as negotiated in the individual landowner agreements. Additional recreational opportunities, if approved by the landowner, such as mountain biking and horseback riding may be provided if these activities do not conflict with the primary objective stated above.
- Landowners will be encouraged to participate in the public access program by offering hunting and fishing access to their land through the WMA annual lease program, that has proven to be successful statewide for many years. This program currently has widespread landowner acceptance, and that is expected to continue as acreage is via this grant.

- Ensure lands enrolled for public access have appropriate wildlife habitat, determined by evaluation of region wildlife biologists. Landowners also will have an opportunity to benefit from improved wildlife habitat through technical guidance, management recommendations and habitat development from region wildlife biologists and technicians. These activities include but are not limited to prescribed burning, creating and planting wildlife openings.
- State enrollment targets
    - Approximately 15,000 WMA acres statewide, with a focus on middle Georgia for the conservation of the middle Georgia bear population and its habitat; leasing from up to 10 different landowners
    - 1,000 to 1,200 dove field acres statewide leasing from up to 13 different landowners.
- Publicize location of lands enrolled in the program through the Georgia WRD website and FaceBook page, the Georgia WRD Popular Guide to Hunting and Fishing Regulations, news releases and PSA's.
- Use existing and/or temporary agency staff, consultants, and contractors to conduct management activities on the properties such as prescribe burns, planting of food plots and planting of dove fields.
- Evaluate and report performance and benefits associated with activities of this grant such as landowner satisfaction, participant satisfaction, number of acres enrolled, recreational opportunities created, and user days.
- Develop and operate a web-based system for soliciting, receiving, categorizing, advertising and distributing transient outdoor recreational opportunities for various segments of the public.
- Encourage landowners enrolled in USDA conservation programs to participate in either the lease programs or the transient outdoor recreation opportunities.

Purpose and Need

The purpose of the Proposed Action is to use VPA-HIP grant funds to increase public access and improve wildlife habitat on private farms and forestland in the state of Georgia. The need for the Proposed Action is to: increase the value realized by private landowners for wildlife populations inhabiting their property; increase the types and amounts of public access on qualified private land; and promote wildlife habitat restoration and improvement of watershed conditions on private properties.

Environmental Consequences

This Programmatic Environmental Assessment has been prepared to analyze the potential environmental consequences associated with implementing the Proposed Action (Preferred Alternative) or the No Action Alternative. Under the Proposed Action, Georgia WRD would utilize VPA-HIP funds to expand the existing public access program and offer leasing fees and habitat improvement as incentives for landowners to join this program. Under the No Action Alternative, the public access program would continue as it is currently administered. The WMA program and public dove hunting opportunities would not be expanded and the additional opportunities afforded by the proposed habitat improvement projects would not be realized.

The potential environmental consequences of implementing the Proposed Action would be beneficial overall to the natural environment and increase wildlife-related recreational opportunities in the state. A summary of environmental consequences is provided in Table ES-1.

Table ES-1 Summary of Environmental Consequences

Resource	Proposed Action (Preferred Alternative)	No Action Alternative
Biological Resources (Vegetation, Terrestrial and Aquatic Wildlife, Protected Species, and Wetlands)	Habitat improvement projects would cause minor short-term impacts to vegetation and nearby wildlife due to direct disturbance of the land (re-seeding, mechanical vegetation removal, prescribed burning). Long-term beneficial impacts to biological resources would be expected as a result of more stable native vegetation and improved habitat for game species. No direct impacts to any protected species or wetlands would occur.	Expansion of the WMA program would not occur and the additional funding for VPA-HIP would not be available for habitat improvement projects. The current public access program would remain, but the long-term benefits to the environment from increased funding for habitat improvement would not be realized.
Recreation	Some habitat improvement projects may temporarily limit entry until the project is firmly established. However, long-term beneficial impacts to recreation are expected from improving wildlife habitat and increasing hunting and fishing opportunities.	Expansion of the WMA program would not occur and there would be no use of VPA-HIP funding to expand or improve wildlife-related recreational opportunities in Georgia. Current public access program would continue.
Socioeconomics and Environmental Justice	Beneficial impacts to the local economy from WMA expansion, increased compensation, and from goods and services purchased for habitat improvement projects. Utilization of the land for wildlife-related recreation would also be beneficial due to purchases (lodging, meals, and goods) from traveling sportsmen. There would be no impacts to minority or low-income populations; therefore, there are no environmental justice concerns.	Expansion of the WMA program would not occur and there would be no VPA-HIP grant funding. No direct negative impacts would occur to local economies. Any beneficial impacts from the spending of VPA-HIP funds locally would not be realized. No Environmental Justice impacts would occur.
Air Quality	Localized and temporary increases in particulate matter could occur during habitat improvement projects that disturbed soils or utilized prescribed fire. However, projects would adhere to all state and federal regulations to ensure that no impacts to regional air quality would occur.	Current public access program and habitat improvement projects would continue. Prescribed burning would continue to occur as part of habitat restoration and maintenance efforts. There would be no change to existing air quality conditions.
Water Resources	Short-term, localized impacts to water quality could occur from habitat improvement projects that disturb soil. Long-term, beneficial impacts to water quality would be realized from restoring vegetation cover, establishing native riparian vegetation, and stabilizing banks and streambeds around public access points.	Expansion of the WMA program would not occur and there would be no increase in funding for habitat improvement projects. No direct impacts to water quality would occur. The increased benefits from VPA-HIP grant funding for improvements to habitats, and possible benefits to water quality would not be realized.
Soils	Short-term, localized negative impacts to soils could occur during habitat improvement projects with soil disturbance. Use of best management practices and adherence to all state and federal regulations would minimize soil erosion and runoff. Long-term benefits to soils would occur from stabilization and returning habitats to native vegetative cover.	Expansion of WMA programs would not occur. No direct impacts to soils would occur. However, the increased long term benefits to soils from the utilization of VPA-HIP funding for habitat improvements would not be realized.

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ACRONYMS AND ABBREVIATIONS	
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CRD	Coastal Resources Division
DNR	Department of Natural Resources
DU	Ducks Unlimited
EO	Executive Order
EPA	Environmental Protection Agency
EPD	Georgia Environmental Protection Division
FSA	Farm Service Agency
FWS	U.S. Fish and Wildlife Service
GFC	Georgia Forestry Commission
GON	Georgia Outdoor News
GWF	Georgia Wildlife Federation
HPD	Historic Preservation Division
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGO	Nongovernmental Organization
NRHP	National Register of historic Places
NWTF	National Wild Turkey Federation
PEA	Programmatic Environmental Assessment
PSA	Public Service Announcement
QDMA	Quality Deer Management Association
QF	Quail Forever
SHPO	State Historical Preservation Officer
SWAP	State Wildlife Action Plan
T&E	Threatened and Endangered (Species)
TIMO	Timber Investment Management Organizations
TU	Trout Unlimited
USACE	U.S. Army Corps of Engineers
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
VPA-HIP	Voluntary Public Access and Habitat Incentive Program
WMA	Wildlife Management Area
WRD	Wildlife Resources Division

CHAPTER 1.0 INTRODUCTION

The United States Department of Agriculture (USDA) Farm Service Agency (FSA) proposes to implement a new program authorized by the Food, Conservation, and Energy Act of 2008 (the 2008 Farm Bill) in the State of Georgia. The Voluntary Public Access and Habitat Incentive Program (VPA-HIP) provides grants to State and tribal governments to encourage owners and operators of privately-held farm, ranch, and forest land to voluntarily make that land available for access by the public for wildlife-dependent recreation, including hunting, fishing, and other compatible recreation and to improve fish and wildlife habitat on their land. The VPA-HIP is administered by the State or tribal government that receives the grant funds.

The VPA-HIP is a competitive grants program that is only available for state and tribal governments. The grant funding may be used to expand existing public access programs or create new public access programs, or provide incentives to improve wildlife habitat on enrolled lands. Applicable program objectives in the State of Georgia are to:

- Maximize participation by landowners;
- Ensure that land enrolled in the program has appropriate wildlife habitat;
- Supplement funding and services from other Federal, state, or private resources; and
- Inform the public about the location of public access land.

The State of Georgia, through the Georgia Wildlife Resources Division (WRD), proposes to use VPA-HIP grant funds to expand its existing public access programs to provide the public with more opportunities to hunt, fish, watch wildlife, enjoy other recreation, and to improve wildlife habitat on private lands.

1.1 BACKGROUND

WRD works closely with landowners who voluntarily participate in our Wildlife Management Area (WMA) program. This program provides private landowners with habitat improvements, financial incentives and technical assistance in exchange for public access to their lands and adjoining public waters. This program currently has 120,000 acres of private land opened to the public in Georgia. This successful program also increases awareness about the importance of private lands for individuals who hunt, fish, and enjoy wildlife-related recreation and help motivate landowners to conserve wildlife species.

1.1.1 Wildlife Management Area Program

This grant will be used to provide new hunting and fishing opportunities for big game, small game, upland and wetland birds including doves, and warm water fishing opportunities in small impoundments, lakes and streams. This will be accomplished through expansion of the existing WMA program with new short-term leases with industrial and non-industrial forest landowners. This will also provide additional recreational opportunities including bird watching, hiking, nature photography and observation, and canoeing as specified in the individual landowner agreements. Other recreational opportunities may include mountain biking and horseback riding

provided these activities do not in conflict with the primary objectives stated above and are agreed to by the landowner.

Landowners will be encouraged to participate in the public access program by offering hunting and fishing access within the agency's current public access program, the Wildlife Management Areas. The WMA program has a proven successful history, providing statewide public hunting and fishing access opportunities for over 50 years. Based upon this history, expansion of the program in Georgia will receive widespread acceptance among landowners and outdoor enthusiasts, and meet or exceed our expectations.

Lands enrolled for public access will have appropriate wildlife habitat, as determined by evaluation of region wildlife biologists. Additionally, landowners also will have an opportunity to improve wildlife habitat by receiving technical guidance and management from region wildlife biologists and wildlife technicians. These activities include but are not limited to prescribed burning, establishing or maintaining wildlife openings and supplemental plantings of wildlife food plots.

State enrollment targets are 15,000 acres to be added statewide to the WMA program, with a focus on middle Georgia to conserve the middle Georgia bear population and its associated habitat. This will likely involve leasing forestland from 5 to 10 different landowners statewide. Currently, Georgia has at least 85,000 hunters using 982,452 acres of WMA statewide. Therefore, an additional 20,000 acres should result in 1,733 additional hunters utilizing our WMA's. Since Georgia has some form of hunting nearly 10 months out of the year, this will result in nearly 300 access days per acre for hunting and 365 access days for fishing.

Additionally, 1,000 to 1,200 acres will be leased statewide for multiple managed dove fields. This will entail leasing agricultural lands from 10 to 13 different landowners/farmers. Currently the number of hunters wishing to utilizing our state dove fields far exceeds the available land. Based on a common dove hunter density of one hunter per acre, the addition of 1,100 acres in the dove field program would result in an additional 1,100 hunters utilizing the state's dove fields.

The location of lands enrolled in the program will be advertised through the Georgia WRD website, the WRD FaceBook page, the Georgia WRD Popular Guide to Hunting and Fishing Regulations, as well as DNR news releases and public service announcements.

Current DNR wildlife biologists and wildlife technicians will be utilized to conduct management activities on the forested properties enrolled in association with the WMA program such as prescribed burning, maintaining wildlife openings, planting supplemental food plots, posting boundaries and maintaining roads. The enrolled agricultural lands utilized as dove fields will be planted and managed by local farmers under sharecropping agreements with the landowners.

Hunter utilization and harvest data are collected on all WMA projects in the state. This information will be reported on a prorated basis for the number of VPA-HIP acres enrolled on an annual basis. Associated benefits and activities of this grant such as landowner satisfaction, participant satisfaction and other recreational opportunities created will also be documented through survey results.

1.1.2 Georgia Outdoor Heritage Recreational Access Program

DNR plans to contract with a private vendor to create a web-based system to describe and promote the Georgia Outdoor Heritage Recreational Access Program. This program is intended to solicit and accept transient outdoor recreational opportunities from a wide range of private landowners, and make those opportunities available to targeted segments of the public. These transient opportunities may be very limited in scope individually, but in aggregate can provide a significant amount of outdoor recreational opportunities for targets groups. This portion of the grant proposal will be administered through the agency's Hunter Development Program, utilizing that existing network of hunter development, hunter education and shooting sports contacts to promote this new concept. This is also an excellent point to begin the introduction of the "Respected Access is Open Access" concept to the DNR public access program. These campaign materials and logos, as well as links to the Tread Lightly website will be incorporated into the agency's website and Facebook page.

The Private Lands Program staff will be instrumental for interacting with other state and Federal agencies to promote the concept to private landowners. The existing relationships with landowners currently participating in various natural resources technical guidance and assistance programs will be the initial contacts to solicit opportunities. Links from the agency's current website to our Facebook page, will allow the agency to interact with potential donors and allow users to apply for posted opportunities. The program will be promoted on the website, as well as through all media outlets with news releases and with PSAs. There will be information in the Georgia WRD Popular Guide to Hunting and Fishing Regulations, as well as signs at all WRD offices and facilities. Other partnering governmental and nongovernmental agencies will be encouraged to advertise and promote the program.

1.2 THE PROPOSED ACTION

With VPA-HIP grant funds, WRD proposes to expand the WMA program by up to 15,000 acres, add 1,000 to 1,200 acres of leased dove fields, offer habitat improvement as an incentive for landowner participation in the public access program, and pair landowners with sportsmen and other recreational users in need of additional lands to pursue their outdoor activities.
This includes:

- Leasing land from interested private landowners with good wildlife habitat for hunting and recreation access.
- Providing funding to landowners agreeing to implement habitat improvement practices.
- Soliciting and accepting transient outdoor recreational opportunities from a wide range of private landowners, and making those opportunities available to targeted segments of the public.

1.3 PURPOSE AND NEED FOR PROPOSED ACTION

The purpose of the Proposed Action is to use VPA-HIP grant funds to increase public access and improve wildlife habitat on private lands in the State of Georgia. Objectives of the Proposed

Action are to: increase the value realized by private landowners for wildlife populations inhabiting their property; increase the types and amounts of public access on qualified private land, promote wildlife habitat restoration and improvement of watershed conditions and access on private properties and solicit and accept transient outdoor recreational opportunities from a wide range of private landowners, and make those opportunities available to targeted segments of the public.

The current public access program in Georgia is the WMA program. At the current funding level the need for public hunting and recreational lands are not being met. Sales of the WMA licenses, which is required to hunt on a WMA, have increased 72% in the period from 1986-2010. During this same period, however, hunting license sales have decreased over 10%. Annual Harvest of Wildlife in Georgia surveys conducted by the agency have identified access to hunting land as the main non-family or personal related influence on the decision to hunt (See additional attachments 1 and 2). Quotas have been established and used on many of these WMA projects to manage and regulate the high volume of public use. Over one half of the WMA managed dove fields have quotas to regulate hunting pressure. Additional public lands are needed to alleviate this shortfall, and meet the demand for this resource.

Additional public access lands will increase the opportunities for a wide range of quality outdoor recreational experiences throughout the year. This will have a positive impact on the primary constituent group as well as encouraging additional participation and assist in the recruitment of new users to our programs. Other compatible recreational activities will be allowed based upon landowner constraints and local need.

1.4 REGULATORY COMPLIANCE

This Programmatic Environmental Assessment (PEA) has been prepared to satisfy the requirements of the National Environmental Policy Act (NEPA) (Public Law 91-190, 42 United States Code 4321 et seq.); implementing regulations adopted by the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] 1500-1508); and FSA implementing regulations, Environmental Quality and Related Environmental Concerns – Compliance with NEPA (7 CFR 799). The intent of NEPA is to protect, restore, and enhance the natural and human environment through well-informed Federal decisions. A variety of laws, regulations, and Executive Orders (EO) apply to actions undertaken by Federal agencies and form the basis of the analysis presented in this PEA.

1.5 ORGANIZATION OF PEA

This PEA assesses the potential impacts of the Proposed Action and the No Action Alternative on potentially affected environmental and economic resources.

- Chapter 1.0 provides background information relevant to the Proposed Action, and discusses its purpose and need.
- Chapter 2.0 describes the Proposed Action and alternatives.
- Chapter 3.0 describes the baseline conditions (i.e., the conditions against which potential impacts of the Proposed Action and alternatives are measured) for each of the potentially affected resources and the potential environmental impacts to those resources.

- Chapter 4.0 describes potential cumulative impacts and irreversible and irretrievable resource commitments.
- Chapter 5.0 discusses mitigation measures utilized to reduce or eliminate impacts to protected resources.
- Chapter 6.0 contains a list of the persons and agencies contacted during the preparation of this document.
- Chapter 7.0 lists the preparers of this document.
- Chapter 8.0 contains references.
- Appendix A provides a sample WRD Section 7 Evaluation Form
- Appendix B provides a current list of state and federally listed species
- Appendix C provides the Historic Preservation Division timber harvest review protocol
- Appendix D provides a sample project proposal sent to HPD for Section 106 Review

CHAPTER 2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The WRD proposes to use VPA-HIP grant funds to expand its existing public access program to provide the public with more opportunities to hunt, fish, watch wildlife, and enjoy other recreation on private lands. Specific objectives include:

- Increase WMA lease enrollments by 15,000 acres and dove field leases by up to 1,200 acres
- Increase the number of public hunter user days
- Ensure all program lands contain high quality fish and wildlife habitat.
- Provide personalized technical assistance to landowners enrolled in the program to ensure long term, sustainable stewardship of wildlife resources.
- Develop Georgia Outdoor Heritage Recreational Access Program
- Generate publicity for the program and access locations through hunting guides, the department's website, brochures, press releases, landowner presentations, and booths at outdoor events.

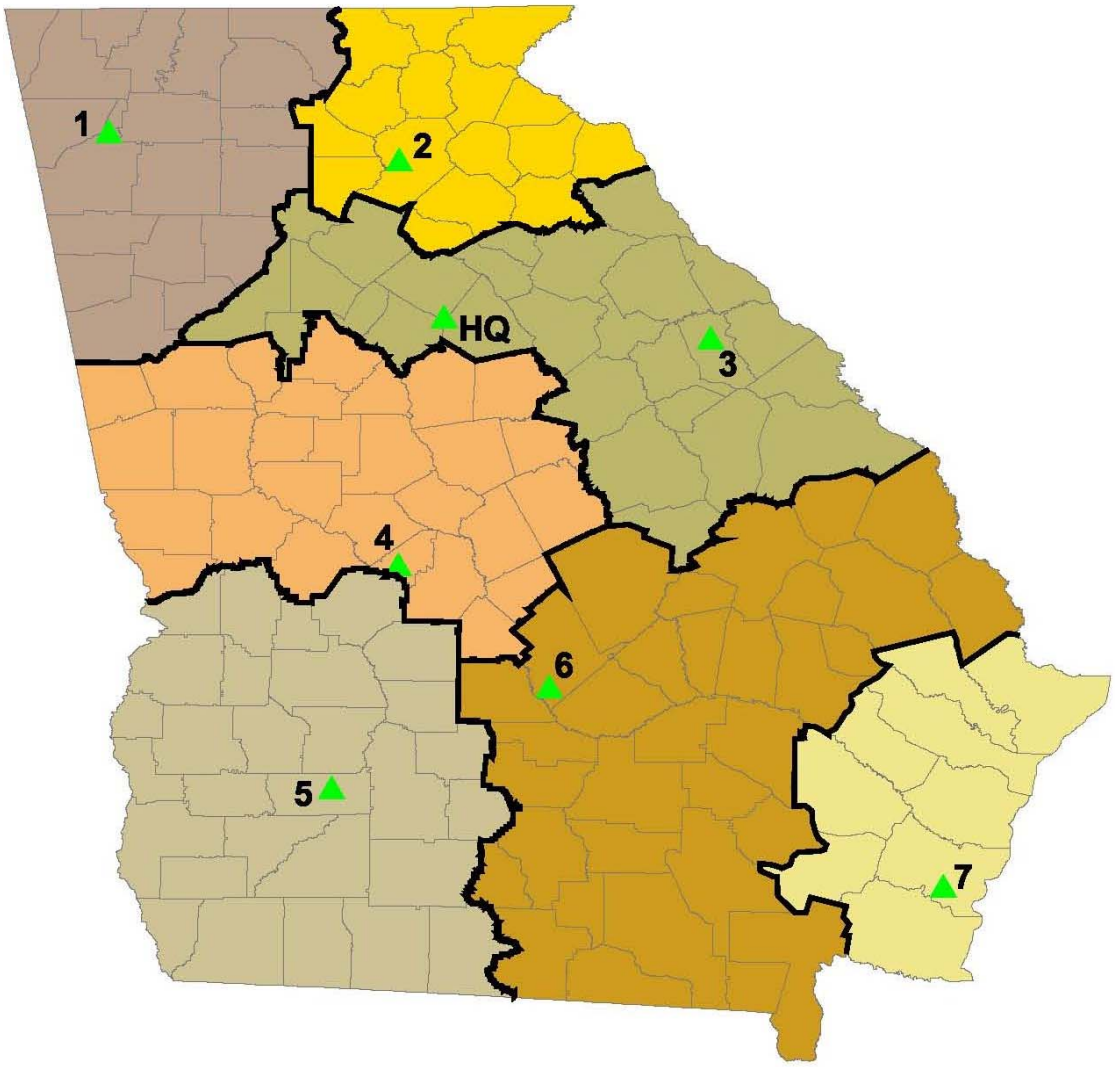
These objectives can be consolidated into two main Proposed Action components: Expansion of the WMA lease program and development of the Georgia Outdoor Heritage Recreational Access Program. These components are discussed in more detail in Sections 2.1.1 and 2.1.2.

Under the Proposed Action, WRD would focus on expanding these programs with the goal of increasing the both the leased acreage available for hunting and other outdoor recreation and participation by hunters and other users by 15%. Initial focus will be on lands within the central Georgia bear population range, but lands throughout the State that meet program objectives will be pursued.

2.1.1 Expansion of the WMA Program

WRD is divided administratively into 7 regions (Figure 2-1). Currently, our public hunting leases are scattered throughout the State wherever biologists and regional administrators find willing landowners with property that meets WRD objectives. In State fiscal year 2006, WRD leased 48 tracts totaling more than 192,000 acres. As a result of the poor economy and subsequent cuts to the State budget (in addition to many timber companies divesting themselves of property), the number of leases and acreage have decreased each year since and the program now sits at 24 leases totaling just over 120,000 acres. Potential properties are evaluated through a process that takes into consideration the size and accessibility of the property as well as current and potential habitat quality.

Figure 2-1 WRD Administrative Regions



2.1.2 Develop Georgia Outdoor Heritage Recreational Access Program

DNR will contract with a private vendor to create a web-based system to describe and promote the Georgia Outdoor Heritage Recreational Access Program. This program is intended to solicit and accept transient outdoor recreational opportunities from a wide range of private landowners, and make those opportunities available to targeted segments of the public. These transient opportunities may be very limited in scope individually, but in aggregate can provide a significant amount of outdoor recreational opportunities for targets groups. This portion of the grant proposal will be administered through the agency's Hunter Development Program, utilizing that existing network of hunter development, hunter education and shooting sports contacts to promote this new concept. This is also an excellent point to begin the introduction of the "Respected Access is Open Access" concept to the DNR public access program. These campaign materials and logos, as well as links to the Tread Lightly website will be incorporated into the agency's website and Facebook page.

The Private Lands Program staff will be instrumental for interacting with other state and Federal agencies to promote the concept to private landowners. The existing relationships with landowners currently participating in various natural resources technical guidance and assistance programs will be the initial contacts to solicit opportunities. Links from the agency's current website to our Facebook page, will allow the agency to interact with potential donors and allow users to apply for posted opportunities. The program will be promoted on the website, as well as through all media outlets with news releases and with PSAs. There will be information in the Georgia WRD Popular Guide to Hunting and Fishing Regulations, as well as signs at all WRD offices and facilities. Other partnering governmental and nongovernmental agencies will be encouraged to advertise and promote the program.

2.2 ALTERNATIVES

CEQ regulations (40 CFR §1502.14) require the lead agency to identify all reasonable alternatives for implementing a Proposed Action. The Federal Register notice announcing the rule for VPA-HIP (Vol. 75(130), page 39135) explicitly states the purpose of VPA-HIP is to provide grants to State and tribal governments to encourage owners and operators of privately-held farm, ranch, and forest land to voluntarily make that land available for access by the public for wildlife-dependent recreation and to improve fish and wildlife habitat on their land. Each VPA-HIP application received by USDA FSA underwent a selection screening process to identify those proposals that met the program objectives (listed in Introduction Section 1.0).

Expanding the WMA leasing program increases current opportunities for private landowners to enroll in public access programs. The proposed rental and habitat improvement payments act as incentives for additional landowners to enroll in the programs as well as provide additional public access to hunting and other recreational pursuits through private lands while protecting natural resources. Given these issues and the overall program goals, the only reasonable action alternative is the Proposed Action.

2.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the VPA-HIP would not be implemented in the State of Georgia. Expansion of the WMA lease program and the creation of the Georgia Outdoor Heritage Recreational Access Program would not occur. The public access program (WMAs) as currently administered would continue to be available. The No Action Alternative does not meet the purpose and need of the Proposed Action, but is being carried forward in accordance with CEQ regulations to serve as the baseline against which potential impacts of the Proposed Action are measured.

2.4 RESOURCES ELIMINATED FROM ANALYSIS

CEQ regulations (40 CFR §1501.7) state that the lead agency shall identify and eliminate from detailed study the issues which are not important or which have been covered by prior environmental review, narrowing the discussion of these issues in the document to a brief presentation of why they would not have a dramatic effect on the human or natural environment.

As described above, the Proposed Action consists of two main components: expanding the WMA lease program and creating the Georgia Outdoor Heritage Recreational Access Program while offering habitat improvement activities. Expansion of the two current access programs by leasing additional acreage would have the greatest potential for environmental impacts via the habitat improvement activities. The potential direct and indirect impacts to physical resources would be dependent on specific ground disturbing activities proposed, methods, location, and time of year. Therefore, WRD plans to utilize the same Section 7 Form (Appendix A) approved by the U.S Fish and Wildlife Service (FWS) for the Wildlife Restoration Program and the cultural resource review (Appendices C&D) currently approved by the Historical Preservation Division (HPD) for timber management operations on State lands for each individual habitat improvement and access project to minimize potential impacts on threatened or endangered species (Appendix B) or cultural resources. Prior to any activity taking place, WRD personnel would utilize this methodology to make an assessment of potential impacts and undertake the proper measures to minimize any impacts and/or consult with the responsible agencies or authority to prevent any undesired consequences. Depending on the scope of the specific improvements implemented under this project, additional environmental clearances may be required (e.g., US Army Corps of Engineers Nationwide Permit 27 for stream restoration), and will be coordinated by WRD and provided to the granting agency before work begins. Thus, from a programmatic level, the Proposed Action should have little to no negative impact on the following resource areas:

Noise. The Proposed Action would not create any new permanent sources of noise to the environment. Expanding the WMA lease program may introduce gunfire noise on lands where public hunting may not be currently occurring. This noise would be intermittent and occur during daylight hours during specified hunting seasons. In addition, the requisite size of land needed for safe hunting would reduce the potential for gunfire noise to be heard outside the property. Habitat improvement activities could require the use of heavy equipment. These activities would be localized, temporary in nature, only occur during typical working daylight hours, and are not likely to exceed typical noise levels experienced on active agricultural land.

Human Health and Safety. No components of the Proposed Action would directly impact human health or safety. The goal of the Proposed Action is to increase public access to privately-held land that supports an abundance of wildlife, thereby allowing hunting, fishing, and outdoor recreation. While hunting does pose a slight safety risk, this activity would take place on private land with controlled access. Georgia hunting regulations require hunters to receive the appropriate education and meet minimum age requirements before a permit can be issued.

Land Use. The Proposed Action would not result in any changes to land use designations. The Proposed Action would occur on private lands on a voluntary basis and would not require the alteration of land use except for limited areas used as parking lots or other access points.

Transportation. No aspect of the Proposed Action entails any alteration of the current transportation system in the State of Georgia. Increasing acreage available for enrollment in the WMA program could cause an increase in the number of vehicles traveling to the new lease areas. However, it is highly unlikely this would be considered an impact to the transportation system, but rather a redistribution of vehicular traffic.

Cultural Resources. The Proposed Action would not directly or indirectly impact any cultural resources, either architectural or archaeological. WRD is highly aware of the importance of cultural resources, and no aspect of the Proposed Action would allow for purposeful destruction of any cultural resources. As part of the WRD project review, consultation with the State Historic Preservation Officer (SHPO) would occur if any cultural resources were to be impacted as outlined in Historic Preservation Division's (HPD) timber management protocol (Appendix C). As a matter of practical policy, WRD avoids causing impacts to "eligible" historic properties, choosing instead to redesign or modify specific features of proposed habitat restoration efforts, following survey or consultation with the SHPO. Therefore, no impacts to cultural resources would be expected to occur.

Coastal Zones. The Georgia Gulf Coastal Zone is a low, flat plain extending more than 190 miles northeast to southwest. Rivers drain from the northeast highlands and eastern forests to the Atlantic Ocean and provide fresh water, sediments and nutrients that are critical to native plants and wildlife living in this area. Proposed habitat improvement projects implemented during the WMA program would ultimately benefit these areas by removing invasive species, improving water quality and quantity and increasing public awareness of these natural treasures and the need for their continued protection. Potential water resources impacts are covered in Section 3.4.

Other Formally Classified Lands. The Proposed Action can only be implemented on privately owned lands and there are no formal classifications applicable on private land in Georgia. Therefore, there would be no impacts to any other formally classified lands.

CHAPTER 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter provides a description of the existing environmental conditions that have the potential to be affected by implementation of the Proposed Action and the potential environmental impacts that may occur to those resources. Resource areas potentially impacted by the Proposed Action and covered in this PEA include:

- Biological Resources (Vegetation, Terrestrial and Aquatic Wildlife, Protected Species, and Wetlands)
- Recreation
- Socioeconomics and Environmental Justice
- Air Quality
- Water Resources
- Soils

As described in Chapter 2, this PEA describes the potential impacts from implementing VPA-HIP funds in the State of Georgia on a programmatic level. Site-specific analysis for all proposed habitat improvement projects would be done using methodology described in the WRD Section 7 and cultural resources documents provided in Appendices A and C. Depending on the scope of the specific improvements implemented under this project, additional environmental clearances may be required (e.g., US Army Corps of Engineers Nationwide Permit 27 for stream restoration), and will be coordinated by WRD and provided to the granting agency before work begins. The site-specific analysis in combination with the programmatic level analysis provided in this PEA serves as the full NEPA documentation.

Environmental consequences to each resource area are described for the Proposed Action (Preferred Alternative) and the No Action Alternative:

- Proposed Action (Preferred Alternative): utilize VPA-HIP funds to expand and enhance existing public access program and improve habitat.
- No Action Alternative: continuation of existing public access programs as they are currently administered. No expansion or additional financial incentives for enrollment would occur.

3.1 BIOLOGICAL RESOURCES

Biological resources are any characteristic or feature of the natural environment that adds to the intrinsic value of the local area. In this PEA, biological resources include vegetation, terrestrial wildlife, aquatic wildlife, protected species, and wetlands. Biological resources are included in this PEA because habitat improvement projects have the potential to temporarily disturb the natural environment during implementation but would also result in long-term positive improvements to the natural environment. Also, expanding the public access program and increasing hunting and fishing opportunities may increase the potential for impacting game populations.

3.1.1 Affected Environment

The Proposed Action covers the entire state; however, the biological resources discussed in this PEA focus on those primary ecological areas where there is the potential to implement a habitat improvement project as discussed in Chapter 2. An overview of the ecological region and the vegetation within those areas is presented in Section 3.1.1.1, terrestrial and aquatic wildlife and protected species are described in Section 3.1.1.2, and wetlands are described in Section 3.1.1.3.

3.1.1.1 Ecological Regions, Elevations, Rainfall and Vegetation

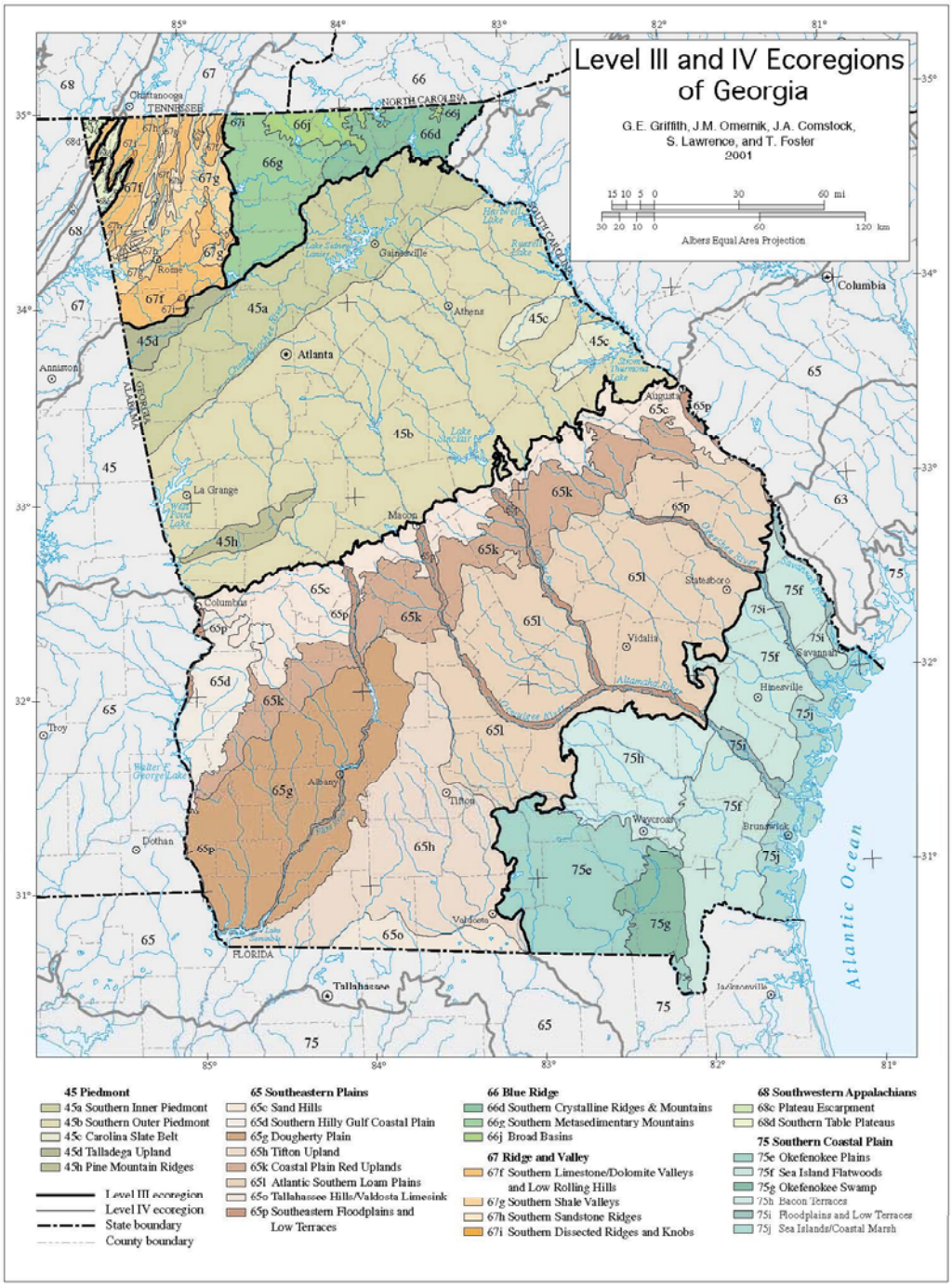
Georgia habitat types can be generally characterized by the dominant tree, shrub, and plant species and are impacted by rainfall, soils, and elevation. For this PEA, vegetation is described for the 6 ecological regions in Georgia shown in Figure 3.1. This information is available on the web at http://www1.gadnr.org/cwcs/Documents/ecoregion.html

Piedmont
Considered the nonmountainous portion of the old Appalachians Highland by physiographers, the northeast-southwest trending Piedmont ecoregion comprises a transitional area between the mostly mountainous ecoregions of the Appalachians to the northwest and the relatively flat coastal plain to the southeast. It is a complex mosaic of Precambrian and Paleozoic metamorphic and igneous rocks with moderately dissected irregular plains and some hills. The soils tend to be finer-textured than in coastal plain regions. Once largely cultivated, much of this region has reverted to pine and hardwood woodlands, and spreading urban- and suburbanization.

The **Southern Inner Piedmont** is mostly higher in elevation with more relief than 45b, but is generally lower and has less relief and contains different rocks and soils than 45d. The rolling to hilly, well-dissected upland contains mostly schist, gneiss, and granite bedrock. In the western portion, west of Atlanta and into Alabama, mica schist and micaceous saprolite are typical. To the east, biotite gneiss is more common. The region is now mostly forested, with major forest types of oak-pine and oak-hickory, with less loblolly-shortleaf pine forest than 45b. Open areas are mostly in pasture, although there are some small areas of cropland. Hay, cattle, and poultry are the main agricultural products. In Georgia, urban/suburban land cover has increased greatly within this ecoregion over the past twenty years.

The **Southern Outer Piedmont** ecoregion has lower elevations, less relief, and less precipitation than 45a. Loblolly-shortleaf pine is the major forest type, with less oak-hickory and oak-pine than in 45a. Gneiss, schist and granite are the dominant rock types, covered with deep saprolite and mostly red, clayey subsoils. The majority of soils are Kanhapludults. The southern boundary of the ecoregion occurs at the Fall Line, where unconsolidated coastal plain sediments are deposited over the Piedmont metamorphic and igneous rocks.

Figure 3.1 Ecoregions of Georgia



The **Carolina Slate Belt** is found primarily in the Carolinas, although a small area extends into Georgia. The mineral-rich metavolcanic and metasedimentary rocks with slatey cleavage are finer-grained and less metamorphosed than most Piedmont regions. It tends to be less rugged,

less dissected, with wider valleys than other Piedmont areas, and it generally has more silty and silty clay soils.

The **Talladega Upland** of the Georgia Piedmont contains some dissected hills and tablelands that are mostly forested and at generally higher elevations than 45a and 45b. The geology is distinctive, consisting of mostly phyllite, quartzite, slate, metasiltstone, and metaconglomerate, in contrast to the high-grade metamorphic and intrusive igneous rocks of 45a and 45b. To the west in Alabama are more mountainous parts of the region, including Alabama's highest peak, 2407-foot Cheaha Mountain. The climate of 45d is slightly cooler and wetter than the other ecoregions (45a, b, c) of the Georgia Piedmont. Oak-hickory-pine is the natural vegetation type.

The **Pine Mountain Ridges**, a small, narrow region in the southwest portion of the Georgia Piedmont, contains quartzite-capped, steep-sloped ridges that rise 300-400 feet above the Piedmont surface to elevations over 1300 feet. Pine Mountain and Oak Mountain are the primary linear ridges trending southwest to northeast, and several other smaller ridges and mountains between these, including Bull Trail Mountain, Indian Grave Mountain, Salter Mountain, and Huckleberry Pinnacle, add to the region's more mountainous appearance. The Flint River has cut some narrow, steep gorges, 400 feet deep, through the ridges. Streams in this region are often of higher gradient than surrounding areas of 45b, and contain more rocky and gravelly substrates.

Southeastern Plains

These irregular plains with broad interstream areas have a mosaic of cropland, pasture, woodland, and forest. Natural vegetation is mostly oak-hickory-pine and Southern mixed forest. The Cretaceous or Tertiary-age sands, silts, and clays of the region contrast geologically with the Paleozoic limestone, shale and sandstone of ecoregions 67 and 68, or with the even older metamorphic and igneous rocks of the Piedmont (45). Elevations and relief are greater than in the Southern Coastal Plain (75), but generally less than in much of the Piedmont. Streams in this area are relatively low gradient and sandy-bottomed.

The **Sand Hills** of Georgia form a narrow, rolling to hilly, highly dissected coastal plain belt stretching across the state from Augusta to Columbus. The region is composed primarily of Cretaceous and some Eocene-age marine sands and clays deposited over the crystalline and metamorphic rocks of the Piedmont (45). Many of the droughty, low-nutrient soils formed in thick beds of sand, although soils in some areas contain more loamy and clayey horizons. On the drier sites, turkey oak and longleaf pine are dominant, while shortleaf-loblolly pine forests and other oak-pine forests are common throughout the region.

The dissected irregular plains and gently rolling low hills of the **Southern Hilly Gulf Coastal Plain** ecoregion developed over diverse bands of sand, clay, and marl formations. The heterogeneous region that stretches west across Alabama and into Mississippi has a mix of clayey, loamy, and sandy soils. It has more rolling topography, higher elevations, and more relief than 65g and 65k, and streams have increased gradient. The natural vegetation is mostly oak-hickory-pine forest, and to the south begins a transition into southern mixed forest. Land cover is mostly mixed forest and woodland, pine plantations, with some small areas of pasture and cropland.

The **Dougherty Plain** is mostly flat to gently rolling and influenced by the near-surface limestone. The karst topography contains sinkholes, springs, and fewer streams in the flatter part of the plain. The northwestern boundary is gradational, as more gentle slopes and lower relief are found towards the center of the region. On the southeast, the Pelham escarpment marks the boundary with the Tifton Upland (65h). Landcover is primarily cropland and pasture, with some small areas of mixed forest. Crops such as peanuts and pecans are common, and cotton production has increased dramatically in recent years. Natural forest cover consisted of pines, including longleaf pine, red oaks, and hickories. Many shallow, flat-bottomed depressions are scattered throughout the region, caused by solution of the underlying limestone. The wetter, poorly drained depressions contain blackgum, sweetgum, water oak, and a few pines and cypress. Many of the limesink ponds and marshes act as biological oases in the mostly agricultural landscape.

The **Tifton Upland** of Georgia has more rolling, hilly topography compared to 65g and 75e, with a mosaic of agriculture, pasture, and some mixed pine/hardwood forests. Soils are well-drained, brownish, and loamy, often with iron-rich or plinthic layers. They support crops of cotton, peanuts, soybeans, and corn. On the west side of the region, the Pelham Escarpment has bluffs and deep ravines with cool microclimates that support several rare plants and animals, as well as species with more northern affinities.

In contrast to the more forested Sand Hills (65c) that formed mostly on light-colored Cretaceous sands, the **Coastal Plain Red Uplands** formed on reddish Eocene sand and clay formations. Soils are mostly well drained with a brown or reddish brown loamy or sandy surface layer and red subsoils. The majority of the area is in cropland or pasture, with some woodland on steeper slopes. The Fort Valley Plateau falls within this ecoregion, a relatively small agricultural area with less relief, flat-topped interfluves, and less dissection than other parts of the 65k.

Also called the Vidalia Upland in Georgia, the **Atlantic Southern Loam Plains** ecoregion is generally lower, flatter, and more gently rolling than 65k, and has more cropland and finer-textured soils than 75f. Similar to 65h, it has an abundance of the agriculturally important Tifton soils, but the region also contains forested areas that are more sloping or are low, flat and poorly drained. Parallel to some of the major stream courses are some excessively drained, dunal sand ridges with xeric vegetation such as longleaf pine / turkey oak forests, and some distinctive evergreen shrubs, such as rosemary and woody mints.

The **Tallahassee Hills/Valdosta Limesink** ecoregion combines two slightly different areas, both influenced by underlying limestone. The Floridan aquifer is thinly confined in this region, and streams are often intermittent or in parts flow underground in the karst landscape. In the west, the Tallahassee Hills portion has rolling, hilly topography that is more forested than 65h. Clayey sands weathered to a thick red residual soil are typical. Relief decreases towards the east, and the Valdosta Limesink area has more solution basins with ponds, lakes, and swampy depressions, as well as areas with more cropland. The soils are typically brownish. Mixed hardwoods and pine are found on the clayhill upland soils, while longleaf pine/xerophytic oak types occur on the sandy, well-drained areas.

Southeastern Floodplains and Low Terraces comprise a riverine ecoregion of large sluggish rivers and backwaters with ponds, swamps, and oxbow lakes. River swamp forests of bald cypress and water tupelo and oak-dominated bottomland hardwood forests provide important wildlife corridors and habitat. The Georgia portion of the region includes the major river systems, such as the Chattahoochee, Flint, Ocmulgee, Oconee, Ogeechee, and Savannah. All of these alluvial rivers of 65p either originate in or cross the Piedmont (45).

Blue Ridge

The Blue Ridge extends from southern Pennsylvania to northern Georgia, varying from narrow ridges to hilly plateaus to more massive mountainous areas with high peaks. The mostly forested slopes, high-gradient, cool, clear streams, and rugged terrain occur on a mix of igneous, metamorphic, and sedimentary geology. Annual precipitation of over 80 inches can occur on the well-exposed high peaks. The southern Blue Ridge is one of the richest centers of biodiversity in the eastern U.S. It is one of the most floristically diverse ecoregions, and includes Appalachian oak forests, northern hardwoods, and, at the highest elevations in Tennessee and North Carolina, Southeastern spruce-fir forests. Shrub, grass, and heath balds, hemlock, cove hardwoods, and oak-pine communities are also significant. Black bear, whitetail deer, wild boar, turkey, grouse, songbirds, many species of amphibians and reptiles, thousands of species of invertebrates, and a variety of small mammals are found here.

The **Southern Crystalline Ridges and Mountains** contain the highest and wettest mountains in Georgia. These occur primarily on Precambrian-age igneous and high-grade metamorphic rocks. The common crystalline rock types include gneiss, schist, and quartzite, covered by well-drained, acidic, brownish, loamy soils. Some mafic and ultramafic rocks also occur here, producing more basic soils. Elevations of this rough, dissected region are typically 1800-4000 feet, with Brasstown Bald Mountain, the highest point in Georgia, reaching 4,784 feet. Although there are a few small areas of pasture and apple orchards, the region is mostly forested.

The **Southern Metasedimentary Mountains** in Georgia contain rocks that are generally not as strongly metamorphosed as the gneisses and schists of 66d. The geologic materials are mostly late Pre-Cambrian and include slate, conglomerate, phyllite, metagraywacke, metasiltstone, metasandstone, and quartzite, with some schist and gneiss. Although the highest peaks are lower than in 66d, and parts of the region have more open low hills, there are some isolated masses of rugged mountains, such as the biologically diverse Cohutta Mountains, Rich Mountains, and Fort Mountain.

The **Broad Basins** ecoregion is drier, and has lower elevations and less relief than the more mountainous Blue Ridge regions (66g, 66d). It also has less bouldery colluvium than those two surrounding regions and more saprolite. The soils are mostly deep, well-drained, loamy to clayey Ultisols. Although this rolling foothills region is mostly forested, it has more pasture than adjacent regions, and some narrow areas of row crops and truck crops on terraces and floodplains. Much of the pasture and corn crops support local cattle, hog, or poultry operations.

Ridge and Valley

Sometimes called the Great Valley in Georgia, this is a relatively low-lying region between the Blue Ridge (66) to the east and the Southwestern Appalachians (68) on the west. As a result of

extreme folding and faulting events, the roughly parallel ridges and valleys come in a variety of widths, heights, and geologic materials, including limestone, dolomite, shale, siltstone, sandstone, chert, mudstone, and marble. Springs and caves are relatively numerous. Land cover is mixed and present-day forests cover about 50% of the region. Forested ridges, and valleys with pasture and cropland, are typical in many parts of ecoregion 67. Its diverse habitats contain many unique species of terrestrial and aquatic flora and fauna.

The **Southern Limestone/Dolomite Valleys and Low Rolling Hills** form a heterogeneous region composed predominantly of limestone and cherty dolomite. Landforms are mostly undulating valleys and rounded ridges and hills, with many caves and springs. Soils vary in their productivity, and land cover includes oak-hickory and oak-pine forests, pasture, intensive agriculture, and urban and industrial. Along the Coosa River floodplain, biota more typical of coastal plain regions can be found due to the valley and riverine connection to ecoregion 65 in Alabama.

The **Southern Shale Valleys** consist of undulating to rolling valleys and some low, rounded hills and knobs that are dominated by shale. The soils formed in materials weathered from shale, shaly limestone, and clayey sediments, and tend to be deep, acidic, moderately well drained, and slowly permeable. The steeper slopes are used for pasture or have reverted to brush and mixed forestland. Small fields of hay, corn, soybeans, tobacco, and garden crops are grown on the foot slopes and bottomland.

The **Southern Sandstone Ridges** region encompasses the major sandstone ridges, but these ridges also have areas of shale, siltstone, and conglomerate. The steep, forested ridges tend to have narrow crests, and the soils are typically stony, sandy, and of low fertility. The chemistry of streams flowing down the ridges can vary greatly depending on the geologic material. In Georgia and Tennessee, most of the sandstone ridges are relatively narrow, but in Alabama, the region also includes the Coosa and Cahaba ridges that are broader and of younger Pennsylvanian-age sandstone and shale. Oak-hickory-pine forests are the dominant land cover.

The **Southern Dissected Ridges and Knobs** contain more crenulated, broken, or hummocky ridges, compared to the smoother, more sharply crested sandstone ridges of 67h. Although shale is common, there is a mixture and interbedding of geologic materials, including cherts, siltstone, sandstone, and quartzose limestone. Oak forests and pine forests are typical for the higher elevations of the ridges, with oak-hickory and more mesic forest species on lower slopes.

Southwestern Appalachians

Stretching from Kentucky to Alabama, these low mountains contain a mosaic of forest and woodland with some cropland and pasture. The eastern boundary of the ecoregion, along the abrupt escarpment next to the Ridge and Valley (67), is relatively smooth and only slightly notched by small eastward flowing stream drainages. The western boundary, next to the Interior Plateau's Eastern Highland Rim in Alabama and Tennessee, is more crenulated with a rougher escarpment that is more deeply incised. The mixed mesophytic forest is restricted mostly to the deeper ravines and escarpment slopes, and the summit or tableland forests are dominated by mixed oaks with shortleaf pine.

The **Plateau Escarpment** is characterized by steep, forested slopes and high velocity, high gradient streams. Local relief is often 1000 feet or more. The geologic strata include Mississippian-age limestone, sandstone, shale, and siltstone, and Pennsylvanian-age shale, siltstone, sandstone, and conglomerate. Streams have cut down into the limestone, but the gorge talus slopes are composed of colluvium with huge angular, slabby blocks of sandstone. Vegetation community types in the ravines and gorges include mixed oak and chestnut oak on the upper slopes, more mesic forests on the middle and lower slopes (beech-yellow poplar, sugar maple-basswood-ash-buckeye), with some rare hemlock along rocky streamsides and river birch along floodplain terraces.

The **Southern Table Plateaus** include Sand Mountain and Lookout Mountain in northwest Georgia. While it has some similarities to the Cumberland Plateau (68a) in Tennessee with its Pennsylvanian-age sandstone caprock, shale layers, and coal-bearing strata, this ecoregion is lower in elevation, has a slightly warmer climate, and has more agriculture. Although the Georgia portion is mostly forested, primarily with mixed oak and oak-hickory communities, elevations decrease to the southwest in Alabama and there is more cropland and pasture. The plateau surface is less dissected with lower relief compared to the the Plateau Escarpment (68c), and it is slightly cooler with more precipitation than in the nearby lower elevations of 67f .

Southern Coastal Plain

The Southern Coastal Plain extends from South Carolina and Georgia through much of central Florida, and along the Gulf coast lowlands of the Florida Panhandle, Alabama, and Mississippi. From a national perspective, it appears to be mostly flat plains, but it is a heterogeneous region also containing barrier islands, coastal lagoons, marshes, and swampy lowlands along the Gulf and Atlantic coasts. In Florida, an area of discontinuous highlands contains numerous lakes. This ecoregion is generally lower in elevation with less relief and wetter soils than ecoregion 65. Once covered by a variety of forest communities that included trees of longleaf pine, slash pine, pond pine, beech, sweetgum, southern magnolia, white oak, and laurel oak, land cover in the region is now mostly slash and loblolly pine with oak-gum-cypress forest in some low lying areas, citrus groves, pasture for beef cattle, and urban.

The **Okefenokee Plains** consist of flat plains and low terraces developed on Pleistocene-Pliocene sands and gravels. These plains have slightly higher elevations and less standing water than 75g, although there are numereous swamps and bays. There are some highly acidic softwater lakes, mostly with low clarity, darkly colored water, but the color is variable depending on rainfall. Soils in the region are somewhat poorly to poorly drained. The region has mostly coniferous forest and young pine plantation land cover, with areas of forested wetland.

The **Sea Island Flatwoods** are poorly-drained flat plains with lower elevations and less dissection than 65l. Pleistocene sea levels rose and fell several times creating different terraces and shoreline deposits. Spodosols and other wet soils are common, although small areas of better-drained soils add some ecological diversity. Trail Ridge is in this region, forming the boundary with 75g. Loblolly and slash pine plantations cover much of the region. Water oak, willow oak, sweetgum, blackgum and cypress occur in wet areas.

The **Okefenokee Swamp** is a mixture of forested swamp and freshwater marsh with some pine uplands. With Trail Ridge at its eastern boundary, the swamp drains to the south and southwest and contains the headwaters for the St. Marys and Suwannee Rivers. The swamp contains numerous islands, lakes, and thick beds of peat. The slow-moving waters are tea-colored and acidic. Cypress, blackgum, and bay forests are common, with scattered areas of prairie, which are comprised of grasses, sedges, and various aquatic plants. The Okefenokee Swamp is a rainfall-dependent system, and cycles of drought and fire affect both its vegetation and wildlife distributions. Most of this region is within the Okefenokee National Wildlife Refuge.

The **Bacon Terraces** include several relatively flat, moderately dissected terraces with subtle east-facing scarps. The terraces, developed on Pliocene-Pleistocene sands and gravels, are dissected in a dendritic pattern by much of the upper Satilla River basin. Cropland is mostly on the well-drained soils on the long, narrow, flat to gently sloping ridges paralleling many of the stream courses. The broad flats of the interfluves are often poorly drained and covered in pine, while bottomland forests are found in the wet, narrow floodplains.

Floodplains and **Low Terraces** are a continuation of the riverine 65p ecoregion across the Southern Coastal Plain. The broad floodplains and terraces of major rivers, such as the Savannah, Ogeechee, and Altamaha, comprise the region. Composed of stream alluvium and terrace deposits of sand, silt, clay, and gravel, along with some organic muck and swamp deposits, the region includes large sluggish rivers and backwaters with ponds, swamps, and oxbow lakes. River swamp forests of bald cypress and water tupelo and oak-dominated bottomland hardwood forests provide important wildlife habitat.

The **Sea Islands/Coastal Marsh** region contains the lowest elevations in Georgia and is a highly dynamic environment affected by ocean wave, wind, and river action. Mostly sandy soils occur on the barrier islands, while organic and clayey soils occur in the freshwater, brackish, and salt marshes. Maritime forests of live oak, red cedar, slash pine, and cabbage palmetto grow on parts of the sea islands, and various species of cordgrass, saltgrass, and rushes are dominant in the marshes. The coastal marshes, tidal creeks, and estuaries are important nursery areas for fish, crabs, shrimp, and other marine species. Parts of the region have a long history of human alterations. Native Americans cultivated corn, melons, squash, and beans; a Spanish mission period during the 1500-1600's included crops of citrus, figs, peaches, olives, artichokes, and onions; and a plantation agriculture economy in the late 1700's through the 1800's produced indigo, rice, sugar cane, and sea island cotton.

3.1.1.2 Terrestrial Wildlife, Aquatic Wildlife, and Protected Species

Georgia has a very diverse and extensive assemblage of wildlife species including many endemic species. Georgia prioritizes native species according to their level of conservation need. The species with the highest conservation need include Federally Threatened and Endangered, and Federal Candidate. Next are the species on the Georgia Threatened and Endangered Species list. A list of federal and state threatened, endangered and candidate species can be found in Appendix B. Finally are those that are of particular conservation concern because they are linked to an at-risk habitat, have had a significant decrease in population size, or those for which available information is limited, especially information regarding the species' life history,

population status, and threats. These species are covered in the Georgia State Wildlife Action Plan (SWAP) that can be found at: http://www.georgiawildlife.com/SWAPSummary

Biologists will file the Section 7 document found in Appendix A for initiation of any project and will work with the WRD nongame section and the state Ecological Services Field Office if there are any potential take implications for federally listed threatened and endangered species.

3.1.1.3 Wetlands

Wetlands are broadly considered "waters of the U.S." and are defined by the U.S. Army Corps of Engineers (USACE) as areas that are inundated and saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE 1987). Wetlands provide valuable habitat for a variety of wildlife.

Low elevation marsh and wetland areas are typically associated with coastal estuaries, rivers, streams and lakes, but can also occur in depressional areas such as mountain bogs. The most common vegetation species include cord grass, cattail, bulrush, and sedge. In Georgia, beaver swamps and forested wetlands are quite common wetlands as are areas along bodies of water.

3.1.2 Environmental Consequences

Impacts to biological resources would be considered significant if activities resulted in reducing the wildlife or fisheries populations to a level of concern, removing land with unique vegetation characteristics, incidental take of a protected species or its habitat, or filling of wetland areas without appropriate permits and mitigation measures.

3.1.2.1 Proposed Action (Preferred Alternative)

Under the Proposed Action, additional habitat improvement projects similar to those currently done by WRD would occur on privately held forest land throughout Georgia under the VPA-HIP. These projects would be consistent with overall strategies to conserve habitat and wildlife important to the state of Georgia as described in the Georgia SWAP. In general, the activities associated with installing these projects would result in minor, short-term impacts, which include disturbance to local vegetation, wildlife, and wetlands. However, the goal of these projects is long-term habitat improvement and sustainability of wildlife. The specific impacts of each individual project, with respect to biological resources, would be addressed by the regional biologist through WRD's Section 7 evaluation (Appendix A) and cultural resources guidelines from HPD (Appendix C). This process would ensure minimal impacts to wildlife and their habitat, and no impact to a protected species or wetlands. Programmatic level impacts to vegetation, terrestrial and aquatic wildlife, protected species, and wetlands are described below.

Vegetation and Terrestrial Wildlife

Under the Proposed Action, it is expected that implementation of the habitat improvement projects would increase habitat value by controlling less favorable vegetation species in

preference for native species that provide greater habitat value. Many habitat improvement projects are focused on the conservation of important terrestrial wildlife species such as bobwhite quail and whitetail deer. In general, habitat improvement would remove invasive or nuisance species to allow for preferred native species to dominate the habitat. Removal of nuisance species can be done by hand, mechanically, or with prescribed burning depending on the habitat type, size of project area, and local conditions. Prescribed burning is preferred for pine-dominated habitats if deemed appropriate by WRD biologists. In some cases, preferred vegetation species may be seeded or planted to increase the habitat value, while in other cases the habitat would be allowed to naturally regenerate after removal of invasive species. Installation of the restoration activity could result in short-term, minor impacts to vegetation and disturbance to local terrestrial wildlife. However, these impacts would be more than offset by the long-term improvement in habitat value and subsequent conservation of important wildlife.

WRD goes to great lengths to ensure hunting a game species does not negatively affect the status of the species. All game species are managed for the long-term viability of the populations. Each year WRD determines the population health, population size, and the conservation objective for each game species. Expanding participation in the current programs and increasing hunting opportunities would not result in adverse impacts to game species' populations given the existing WRD monitoring process.

Aquatic Wildlife

Under the Proposed Action, it is expected that implementation of the habitat improvement projects would improve riparian habitats and result in long-term decreases in erosion and exotic species. Improvements to riparian habitat may include herbaceous seeding and exotic species removal, both of which would improve the quality of the surface water associated with the riparian area. Improving the water quality would have subsequent beneficial impacts to aquatic wildlife. The habitat improvement and access construction activities could cause a minor, localized, short-term impact by increasing sediment loads in runoff; however, the long-term benefit of the habitat improvement more than offsets the short-term impact. In addition, approved erosion and sediment control measures would be utilized during installation of the habitat improvement and access projects.

To ensure an aquatic resource is not over fished, WRD routinely samples fish populations to assess the population size and health of the target species in each area and sets appropriate size and bag limits for game species. Expanding participation in the current programs and increasing fishing opportunities would not result in adverse impacts to fish populations.

Under the Proposed Action, it is expected that implementation of the habitat improvement projects would increase habitat value by controlling less favorable species in preference for native species that provide greater habitat value. As described above, many habitat improvements would result in long-term positive impacts to the habitat and associated wildlife. The WRD Section 7 process and 106 protocols (Appendices A and C respectively) would identify the potential presence of a protected species or its habitat and ensure no impact would occur during installation of a project. Informal consultation with U.S. Fish and Wildlife Service would occur as necessary for individual projects. Depending on the scope of the specific

improvements implemented under this project, additional environmental clearances may be required (e.g., USACE Nationwide Permit 27 for stream restoration), and will be coordinated by WRD and provided to the granting agency before work begins.

Wetlands

The Proposed Action would not directly impact wetland areas; however, it is expected that implementation of the habitat improvement projects in adjacent habitats would increase wetland habitat value. Improvements to adjacent riparian habitat may include herbaceous seeding and tree planting. These measures would stabilize the banks and streambeds. Installation of the habitat improvement measure could cause minor, short-term impact by increasing sediment loads in runoff; however, long-term benefit of the habitat improvements more than offsets the short-term impact. In addition, erosion and sediment control measures would be utilized during project implementation. The WRD project review process would identify the presence of a wetland area and ensure its protection. Consultation with USACE and necessary permits would be obtained for individual projects as required.

3.1.2.2 No Action Alternative

Under the No Action Alternative, the WMA program would not be expanded, the Georgia Outdoor Heritage Recreational Access Program would not be developed, and no habitat improvement projects would be undertaken on private lands utilizing the VPA-HIP funding. The current public access program would continue to be available. While habitat improvement projects and restoration activities would still occur, the benefit from additional improvement projects throughout Georgia utilizing the VPA-HIP funding would not be realized.

3.2 RECREATION

Recreation includes those outdoor activities that take place away from the residence of the participant. The State of Georgia offers a wide variety of recreational opportunities to its residents. Recreational activities that are common in Georgia include hunting, fishing, wildlife viewing, camping, golfing, boating, hiking, biking, and using off-road vehicles. For this PEA, recreation focuses on hunting, fishing and other wildlife-related recreational activities available to the public in the State of Georgia.

3.2.1 Affected Environment

Hunting in the State of Georgia is regulated by WRD and a valid hunting license is required to hunt within the state. These licenses are valid for 1 year from the date of purchase. When combined with the appropriate additional stamps these licenses can be used to hunt large and small game, including most waterfowl and upland game. Licenses and stamps can be obtained online, through a WRD office, or at local retail stores. A separate license is required for the WMA program.

Like hunting, fishing is also regulated by WRD. To legally fish on public waters in Georgia, anyone who is 16 years of age or older is required to purchase a fishing license. These licenses

last for one year from the date of purchase and can be obtained online, through a WRD office, or at local retail stores. The most common types of fish that can be fished for in Georgia are sunfish, catfish, crappie and bass in freshwater and sea trout, redfish, snappers and croakers in salt water.

Other wildlife-related recreational activities in the State of Georgia include wildlife viewing and photography, and wildflower hikes. A recent increase in public interest in these activities on State lands led to the creation of the Georgia Outdoor Recreation Pass.

3.2.2 Environmental Consequences

Impacts to recreation would be considered significant if they drastically reduced, increased, or removed available public lands designated for recreation or significantly degraded the quality of the recreation. Impacts to environmental conditions such as air, water, or biological resources within or near public recreational land in such a way to affect its use would also be considered significant.

3.2.2.1 Proposed Action (Preferred Alternative)

The Proposed Action has the potential to provide long-term, beneficial impacts to recreational resources in the State of Georgia. Expansion of the WMA program would allow more opportunities and venues for hunting, fishing, and wildlife viewing on private property. During habitat improvement projects there could be short-term, negative impacts to recreational resources because the land may not be accessible and improvement activities could disturb wildlife and game species. However, the increased funding for habitat improvement would also lead to long-term, higher quality hunting, fishing, and wildlife viewing opportunities. The Proposed Action would have long-term, beneficial impacts to recreational resources in Georgia.

3.2.2.2 No Action Alternative

Under the No Action Alternative, the WMA program would not be expanded and no habitat improvement projects would be undertaken on private lands utilizing the VPA-HIP funding. There would be no use of VPA-HIP funds for expansion of recreational opportunities in Georgia; therefore, under the No Action Alternative there would be no impacts to recreational resources. The current public access programs would continue as they are currently administered.

3.3 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Socioeconomics for this PEA includes an investigation of population and demographic statistics as well as a discussion on the potential income from selling additional public hunting licenses.

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires a Federal agency to “make achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low-

income populations." A minority population can be defined by race, by ethnicity, or by a combination of the two classifications.

According to CEQ, a minority is defined as being one of the following groups: American Indian or Alaska Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic. A minority population is defined as one of these groups exceeding 50 percent of the population in an area or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population (CEQ 1997).

Each year the USCB defines the national poverty thresholds, which are measured in terms of household income and are dependent upon the number of persons within the household. Individuals falling below the poverty threshold are considered low-income individuals. USCB census tracts where at least 20 percent of the residents are considered poor are known as poverty areas (USCB 1995). When the percentage of residents considered poor is greater than 40 percent, the census tract is considered an extreme poverty area.

3.3.1 Affected Environment

3.3.1.1 Population and Demographics

The State of Georgia had an estimated population of 9.7 million as of July 2009. According to the USCB, Georgia's population growth rate was 18.3% from 2000 to 2009, as compared to a growth rate of 9% for the U.S. as a whole. Long-term projections for the population of the state show a population of 12 million by the year 2030. Georgia's population is mostly white, with 59.7% of the 2009 Census respondents claiming this ethnicity. Black or African American ranked second in the state at 30.5% percent. Persons of Hispanic/Latino origin ranked third at 8.8%, followed by Asian (3.2%), American Indian or Alaskan Native (0.3 percent) and Native Hawaiian or Pacific Islander (0.1 percent). Persons reporting two or more races accounted for 2.1% of respondents in the 2009 Census. Hispanics were the fastest growing population in Georgia and increased 96.7% from 2000 to 2009. In 2009, Georgia had a poverty rate of 16.6% compared to the national average of 13.2%. Of the current population in Georgia, 82.9% have attained a high school degree with 27.1% of persons over 25 having attained a bachelor's degree http://quickfacts.census.gov/qfd/states/13000.html .

3.3.1.2 Private Landowner Income from Hunting Leases

The Proposed Action has the potential to directly impact a small percentage of Georgia's privately held forestland. In 2011 there were 24.3 million forested acres in Georgia, with 93% of that in private ownership (Georgia Forestry Association).

Landowners that are eligible for inclusion into WRD's public access program receive annual compensation payments. WRD currently leases over 120,000 acres of private land for public hunting from landowners who have voluntarily joined the program and have adhered to program regulations. Payments are determined based on location, contract length, acreage and the quality of the hunting opportunity.

3.3.2 Environmental Consequences

Significance of an impact to socioeconomics varies depending on the setting of the Proposed Action, but 40 CFR 1508.8 states that effects may include those that induce changes in the pattern of land use, population density, or growth rate.

Environmental justice is achieved when everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental and health hazards and has equal access to the decision-making process. Significant environmental justice impacts would result if access to decision-making documents was denied or if any adverse environmental effects occurred that would disproportionately affect minority or low-income populations.

3.3.2.1 Proposed Action (Preferred Alternative)

Under the Proposed Action, VPA-HIP funds would be used to negotiate short-term (1-3 years) leases with farmers, timber management companies, corporations, and other private landowners willing to provide public access for hunting, fishing and other wildlife-related recreation. VPA-HIP funding will also be used to develop the Georgia Outdoor Heritage Recreational Access Program to solicit, receive, categorize, advertise and distribute transient outdoor recreational opportunities for various segments of the public.

Ultimately, some of the increased money paid out to private landowners would have a slight beneficial impact on local economies. Any habitat improvement projects undertaken may require purchase of goods (seeds, seedlings, shrubs) and services (rental of heavy equipment) depending on the nature of the improvement project. This would also have a slight beneficial impact to local economies. Increasing hunting opportunities or allowing access to previously inaccessible hunting lands and rivers could also bring indirect economic benefits through traveling hunters, anglers and other recreational users needing lodging, meals, and other goods.

Under the Proposed Action, there would be no disproportionate negative impact to minorities or low-income populations in Georgia. All of the public access programs are voluntary and would only target landowners with eligible lands. WRD's current public access programs actually offer additional outdoor recreational opportunities to lower income hunters by providing low cost public access to favorable habitat provided by private landowners without the need to purchase expensive hunting leases.

3.3.2.2 No Action Alternative

Under the No Action Alternative, GADNR would not receive funding under the VPA-HIP. GADNR would not be able to hire personnel to support this program or perform additional habitat improvement projects. The No Action Alternative would not allow for any of the positive economic impacts from the introduction of the VPA-HIP funding into the economy, nor would it allow for the expansion of low cost hunting and other recreational opportunities on private lands in Georgia which also bring economic benefit via lodging and purchase of goods and supplies.

3.4 AIR QUALITY

The Clean Air Act governs air quality in the U.S. National Ambient Air Quality Standards (NAAQS) have been established for criteria air pollutants regulated by the U.S. Environmental Protection Agency (EPA): ozone, carbon monoxide, sulfur dioxide, nitrous oxide, lead, and particulate matter. The NAAQS are used as thresholds to determine if local air quality is within acceptable thresholds (in "attainment") or exceeds the thresholds ("non-attainment"). Air quality in this PEA is limited to an analysis of particulate matter since the proposed habitat improvement projects could include prescribed burning or result in soil disturbance, both of which have the potential to increase particulate matter in the local area.

3.4.1 Affected Environment

Georgia's climate and high-density urban population create air quality challenges for the Atlanta Metropolitan Region. The Georgia Environmental Protection Division (EPD) and the Georgia Forestry Commission (GFC) have developed processes for planning and acquiring approval for any burning both statewide and within counties in the Atlanta metro area. WRD works closely with both agencies to ensure successful and safe prescribed burns are conducted.

3.4.2 Environmental Consequences

Impacts to air quality would be considered significant if the action resulted in a violation of air quality regulations, resulted in a permanent increase of criteria pollutants, or affected the attainment status of the local area.

3.4.2.1 Proposed Action (Preferred Alternative)

The Proposed Action would have little potential for impacts to regional air quality. Increasing the land available for enrollment into the WMA program will require minimal activities that would impact air quality. Only those habitat improvement projects that involved prescribed burning or soil disturbance (tillage or digging) could temporarily increase particulate matter in the local area. The amount of particulate matter that could be released into the local area and how far it may disperse would be dependent on the specific activity taking place, soil type and condition, topography, climate, and wind speed and direction. The site-specific impacts to air quality would be fully analyzed in the WRD project review process. Programmatic-level air quality impacts with respect to prescribed burning and soil disturbance are described below.

Prescribed burning is a very cost effective and valuable tool that wildlife and habitat managers utilize to return an area to a more natural fire regime. The disturbance caused by prescribed burning releases nutrients, opens understory, thins out dead plant material, and may be necessary for seed germination of fire-dependent species. Prescribed burning, when used appropriately, can greatly benefit many of the targeted habitat types within the public access programs. Additionally, the use of prescribed burning reduces fuel availability to wildfires thereby making wildfires less intense and somewhat easier to control.

If it was determined by WRD that prescribed burning was an appropriate course of action for habitat improvement and the private landowner was in agreement, a prescribed burning plan would be drafted in accordance with the guidelines set forth by GFC and EPD.

Close correspondence and comprehensive planning would ensure that impacts to air quality would remain negligible from any activities undertaken for the Proposed Action. WRD is cognizant of air quality regulations and would plan burning activities accordingly. Adherence to all applicable state regulations and smoke management guidelines would ensure safe and effective prescribed burning practices while minimizing risks to the greatest extent practicable.
In most cases, the proposed projects would occur on current forestland that is already subject to soil disturbance to some degree. The potential air quality impacts from soil disturbance during habitat improvement projects would be minor, temporary, and localized. During those habitat improvement projects that would disturb soil, best management practices would be utilized to reduce the possible amount of particulate matter released into the local area or lost to erosion (such as watering exposed soils, promptly restoring vegetative cover, or installing silt fencing around the project site).

It is anticipated that potential impacts to air quality would be minor and they would not affect the current attainment status of the area. Utilization of best management practices as well as adherence to all state air quality regulations, guidelines, and permits would reduce impacts to air quality to negligible levels.

3.4.2.2 No Action Alternative

Under the No Action Alternative, the WMA program would not be expanded and no habitat improvement projects would be undertaken on private lands utilizing the VPA-HIP funding. WRD would continue with the current public access program. As such, no impacts to air quality from the No Action Alternative would occur.

3.5 WATER RESOURCES

For this analysis, water resources include surface water quality. The Clean Water Act, the Safe Drinking Water Act, and the Water Quality Act are the primary Federal laws that protect the nation's waters including lakes, rivers, aquifers, and wetlands. Georgia EPD is the primary state regulatory agency responsible for the protection of Georgia water quality. Wetlands are addressed in Biological Resources, Section 3.1.

3.5.1 Affected Environment

Surface water in Georgia includes approximately 44,000 miles of perennial rivers and streams found in 14 river basins and 425,582 acres of lakes and reservoirs. Surface waters play an important role in development in Georgia because of its high population growth in the Atlanta metro region. Surface waters are needed in the state for drinking water, recreational opportunities, wildlife, and agricultural production. The quality of these surface waters impacts how they can be utilized by the populace.

All water issues in Georgia lie under the purview of the Department of Natural Resources (DNR), primarily the jurisdiction of EPD. EPD is responsible for planning and funding projects that enhance water availability, protecting the state's water quality and allocating the use of surface water. Georgia WRD and Coastal Resources Division (CRD) work with EPD to ensure that the state's wildlife, including the vital fish, shrimp and oyster industries, have sustainable supplies of fresh water.
Georgia Surface Water Quality Standards establish explicit goals for the quality of streams, rivers, lakes, and bays throughout the state. The Standards are developed to maintain the quality of surface waters in Georgia so that it supports public health and enjoyment and protects aquatic life, consistent with the sustainable economic development of the state. Water quality standards identify appropriate uses for the state's surface waters, including aquatic life, recreation, and sources of public water supply (or drinking water). The criteria for evaluating support of those uses include dissolved oxygen, temperature, pH, dissolved minerals, toxic substances, and bacteria.

The Georgia Surface Water Quality Standards are codified in Title 391, Chapter 3 of the Rules of Georgia DNR. The Standards are written by the EPD under the authority of the Clean Water Act and the Georgia Water Code, O.C.G.A. Title 12 Chapter 5 . The Georgia Surface Water Quality Standards are effective for Clean Water Act purposes when EPA approves them. Specific numerical criteria for 28 toxic pollutants (expressed as maximum instream concentrations) protect aquatic life. Human consumption of fish and drinking water is protected by numerical criteria for 96 toxic pollutants.

All water bodies in the state have been classified based on the scientifically determined best utilization of the surface water from an environmental and economic standpoint. Defined classes are recreation, drinking water, fishing, wild and scenic, and coastal fishing. Streams and stream reaches not specifically listed are classified as fishing. Additional designations are given to trout waters (both primary and secondary) and waters that support shellfish. Segments are listed and defined in the Georgia Surface Water Quality Standards and depicted graphically in the Georgia Rivers Galileo site.

3.5.2 Environmental Consequences

Impacts to water resources would be considered significant if implementation of the Proposed Action resulted in violating laws or regulations established to protect water resources, or actions resulted in major deterioration of water quality.

3.5.2.1 Proposed Action (Preferred Alternative)

Under the Proposed Action, it is expected that implementation of the habitat improvement projects would increase water quality by controlling less favorable species in preference for species that provide greater vegetation and wildlife value, as well as long term decreases in erosion. Improvements to riparian habitat may include herbaceous seeding and tree and shrub planting. Habitat improvement measures could cause a minor short-term impact by increasing sediment loads in runoff; however, the long-term benefit of the habitat improvements more than offset the short-term impact. In addition, sound erosion and sediment control measures would be

utilized during the habitat improvement. The WRD project review would identify all nearby surface water sources and establish the appropriate management practices to protect those resources from increased sedimentation, such as installing silt fencing around the project site and establishing vegetative cover on exposed soils. The potential impact to aquatic wildlife species is addressed in Section 3.1.

3.5.2.2 No Action Alternative

Under the No Action Alternative, the WMA program would not be expanded and VPA-HIP funding would not be available for habitat improvement projects on private lands. The current public access programs would continue to be available. While habitat improvement projects and restoration activities would still occur, the benefit from additional improvement projects on water quality throughout Georgia utilizing the VPA-HIP funding would not be realized.

3.6 SOILS

Soils are included in this PEA because of the increased erosion potential resulting from the proposed habitat improvement projects.

3.6.1 Affected Environment

A variety of soils occur throughout the State of Georgia. Differences in geology, topography, and climatic conditions have led to the development of many different soils with unique characteristics and distributions. There are also large areas in the state that are covered in outcropped granite.

Six soil orders are found in the state. Ultisols are the dominant soils of the state, with Inceptisols, Entisols, and Alfisols of secondary prevalence throughout the State. Spodosols are restricted to the Atlantic coastal flatwoods and Histosols are only found in the tidewater. Generally, soils in the mountainous regions of Georgia are underlain by limestone with valleys underlain by acid shale. Soils in much of the southern two-thirds of Georgia are derived from Precambrian and Paleozoic metamorphic and igneous rocks.

3.6.2 Environmental Consequences

Impacts to soils would be considered significant if activities resulted in increased erosion and sedimentation to a level that could not be avoided or minimized with appropriate management practices or mitigation measures.

3.6.2.1 Proposed Action (Preferred Alternative)

The Proposed Action has the potential to negatively impact soils resources during habitat improvement projects associated with the Georgia VPA-HIP. Specific impacts would depend on the types of soil in the project area and the erosion potential of each individual soil, and the size and depth of the proposed disturbance. These site-specific impacts would be fully addressed during the WRD project review process. Programmatic level impacts would include temporary

disturbance during habitat improvement from activities such as grading or the removal of invasive vegetation. The use of approved proper best management practices, such as silt fencing, during soil disturbing activities would reduce the amount of soil erosion and sedimentation in project areas. Completion of habitat improvement projects would have long-term benefits on area soils because an increase in vegetation cover would help reduce future soil erosion in improved areas. Under the Proposed Action, there would be short-term, negative impacts to soil resources during habitat improvement projects; however, once the projects are completed there would be long-term, beneficial impacts to soil resources in the State of Georgia.

3.6.2.2 No Action Alternative

Under the No Action Alternative, the WMA program would not be expanded and no habitat improvement projects would be undertaken on private lands utilizing the VPA-HIP funding. WRD would continue with the current public access program. Therefore, the long-term, positive impacts associated with the implementation of the Proposed Action would not be realized. There would be only minor impacts to soils under the No Action Alternative.

CHAPTER 4.0 CUMULATIVE IMPACTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

4.1 CUMULATIVE IMPACTS

CEQ regulations stipulate that the cumulative impacts analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Recent CEQ guidance in considering cumulative impacts involves defining the scope of the other actions and their interrelationship with the Proposed Action. The scope must consider geographical and temporal overlaps among the Proposed Action and other actions as well as evaluate interactions among these actions.

Cumulative impacts are most likely to arise when a relationship or synergism exists between the Proposed Action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the Proposed Action would be expected to have more potential for cumulative impacts than those more geographically separated.

In this PEA, the affected environment for cumulative impacts includes all of the State of Georgia since the public access programs are available statewide; therefore, the proposed habitat improvement projects could occur anywhere in the state on private land enrolled in one of the three public access programs. In addition to VPA-HIP, several other Federal and state programs in Georgia focus on conservation. Federal programs include the Partners for Wildlife Program, Conservation Reserve Program, Wildlife Habitat Incentives Program, Environmental Quality Incentives Program, and the Wetlands Reserve Program.

The potential long-term impacts from habitat improvement projects under the VPA-HIP in combination with other wildlife habitat conservation strategies would have overall long-term, beneficial impacts to the wildlife populations and habitat in the state of Georgia. Increasing public awareness of the presence of important wildlife and game species and activities they can do to improve habitat on their land would create an environment to support a sustained wildlife population. Therefore, cumulative impacts are expected to be beneficial to the natural environment.

4.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable commitments are related to the use of nonrenewable resources and the effect that the use of these resources has on future generations. Irreversible effects primarily result from the use or destruction of a specific resource that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action. Under the Proposed Action, long-term beneficial impacts are expected for fish and wildlife populations and their habitats. There would be no irreversible or irretrievable commitment of resources.

CHAPTER 5.0 MITIGATION MEASURES

The purpose of mitigation is to avoid, minimize, or eliminate significant negative impacts on affected resources. CEQ regulations (40 CFR 1508.20) state that mitigation includes:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

CEQ regulations state that all relevant reasonable mitigation measures that could avoid or minimize significant impacts should be identified, even if they are outside the jurisdiction of the lead agency or the cooperating agencies. This serves to alert agencies or officials who can implement these extra measures, and will encourage them to do so. The lead agency for this Proposed Action is FSA. The state partner agency is WRD.

There are no expected long-term, significant negative impacts associated with implementation of the VPA-HIP in Georgia. State employed biologists or representatives must complete site-specific environmental evaluations (WRD Section 7 Evaluation Form, Appendix A) and HPD reviews all proposals for operations in new areas prior to all habitat improvement projects (Timber Harvest Protocol, Appendix C), which would reveal any protected resources on the property. In those site specific instances where a wetland, threatened or endangered species, or cultural resources may be present, consultation with the appropriate lead agency would identify specific mitigation measures required to eliminate or reduce the negative impacts to an acceptable level.

CHAPTER 6.0 PERSONS AND AGENCIES CONTACTED

Contact information for a list of Agencies informed of the Georgia VPA-HIP PEA:

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CHAPTER 7.0 REFERENCES

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CHAPTER 8.0 LIST OF PREPARERS

Georgia Department of Natural Resources, Wildlife Resources Division
Alex Coley, Assistant Chief of Game Management

APPENDIX A

SAMPLE WRD SECTION 7 EVALUATION FORM

REGION 4
INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

[Note: This form provides the outline of information needed for intra-Service consultation. If additional space is needed, attach additional sheets, or set up this for to accommodate your response.]

Originating Person: _____
Telephone Number: _____ **E-mail**:
Date: _____

PROJECT NAME (Grant Title/Number):

_____

I . Service Program: Federal Assistance
- ___ **Ecological Services**
- ___ **Federal Aid**
  - ____ **Big P**
  - ____ **Clean Vessel Act**
  - ____ **Coastal Wetlands**
  - ____ **Endangered Species Section 6**
  - ____ **Farm Bill Section 390**
  - ____ **Landowner Incentive Program**
  - ____ **Sport Fish Restoration**
  - ____ **State Wildlife Grant**
  - ____ **Wildlife Restoration**

II. State/Agency: Georgia / DNR, Wildlife Resources Division

III. Station Name: Game Management Section (Statewide)

IV. Description of Proposed Action (attach additional pages as needed):

V. Pertinent Species and Habitat:

A. Include species/habitat occurrence map:

B. Complete the following table:

SPECIES/CRITICAL HABITAT	STATUS[1]

[1]STATUS: E=endangered, T=threatened, PE=proposed endangered, PT=proposed threatened, CH=critical habitat, PCH=proposed critical habitat, C=candidate species

VI. Location (attach map):

A. Ecoregion Number and Name:
B. County and State:
C. Section, township, and range (or latitude and longitude):
D. Distance (miles) and direction to nearest town:
E. Species/habitat occurrence:

VII. Determination of Effects:

A. Explanation of effects of the action on species and critical habitats in item V. B (attach additional pages as needed):

SPECIES/ CRITICAL HABITAT	IMPACTS TO SPECIES/CRITICAL HABITAT

B. Explanation of actions to be implemented to reduce adverse effects:

SPECIES/ CRITICAL HABITAT	ACTIONS TO MITIGATE/MINIMIZE IMPACTS

VIII. Effect Determination and Response Requested:

SPECIES/ CRITICAL HABITAT	DETERMINATION[1]			RESPONSE[1] REQUESTED
	NE	NA	AA	

[1]DETERMINATION/ RESPONSE REQUESTED:

NE = no effect. This determination is appropriate when the proposed action will not directly, indirectly, or cumulatively impact, either positively or negatively, any listed, proposed, candidate species or designated/proposed critical habitat. Response Requested is optional but a "Concurrence" is recommended for a complete Administrative Record.

NA = not likely to adversely affect. This determination is appropriate when the proposed action is not likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat or there may be beneficial effects to these resources. Response Requested is a "Concurrence".

AA = likely to adversely affect. This determination is appropriate when the proposed action is likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat. Response Requested for listed species is "Formal Consultation". Response requested for proposed and candidate species is "Conference".

signature (State Representative) **date**

title

Comments:

IX. Reviewing Division of Federal Assistance Staff Evaluation:

A. Concurrence_____ Nonconcurrence _____

B. ESA Section 7 Coordinator Consulted _____

C. Remarks (attach additional pages as needed):

_____ _____
signature **date**

_____ _____
title **office**

X. Reviewing Ecological Services Office Evaluation:

A. Concurrence_____ Nonconcurrence _____

B. Formal consultation required _____

C. Conference required _____

D. Informal conference required_____

E. Remarks (attach additional pages as needed):

_____ _____
signature **date**

_____ _____
title **office**

XI. Programmatic Assistant Regional Director - - Division of Federal Assistance:

A. Concurrence_____ Nonconcurrence _____

_____ _____
signature **date**

APPENDIX B

STATE AND FEDERALLY-PROTECTED SPECIES OF GEORGIA

Scientific Name	Common Name	State Status	Federal Status
Amphibians			
Ambystoma cingulatum	Frosted Flatwoods Salamander	T	LT
Amphiuma pholeter	One-toed Amphiuma	R	None
Aneides aeneus	Green Salamander	R	None
Cryptobranchus alleganiensis	Hellbender	R	None
Cryptobranchus alleganiensis alleganiensis	Eastern Hellbender	T	None
Gyrinophilus palleucus	Tennessee Cave Salamander	T	None
Haideotriton wallacei	Georgia Blind Salamander	T	None
Notophthalmus perstriatus	Striped Newt	T	None
Plethodon petraeus	Pigeon Mountain Salamander	R	None
Rana capito	Gopher Frog	R	None
Birds			
Aimophila aestivalis	Bachman's Sparrow	R	None
Ammodramus henslowii	Henslow's Sparrow	R	None
Calidris canutus	Red Knot	R	None
Campephilus principalis	Ivory-billed Woodpecker	E	LE
Charadrius melodus	Piping Plover	T	LT
Charadrius wilsonia	Wilson's Plover	T	None
Corvus corax	Common Raven	R	None
Dendroica cerulea	Cerulean Warbler	R	None
Dendroica kirtlandii	Kirtland's Warbler	E	LE
Elanoides forficatus	Swallow-tailed Kite	R	None
Falco peregrinus	Peregrine Falcon	R	None
Falco peregrinus anatum	American Peregrine Falcon	E	None
Falco sparverius paulus	Southeastern American Kestrel	R	None
Haematopus palliatus	American Oystercatcher	R	None
Haliaeetus leucocephalus	Bald Eagle	T	None

Mycteria americana	Wood Stork	E	LE
Picoides borealis	Red-cockaded Woodpecker	E	LE
Rynchops niger	Black Skimmer	R	None
Sterna antillarum	Least Tern	R	None
Sterna nilotica	Gull-billed Tern	T	None
Vermivora chrysoptera	Golden-winged Warbler	E	None
Fish			
Acipenser brevirostrum	Shortnose Sturgeon	E	LE
Alosa alabamae	Alabama Shad	T	None
Ameiurus serracanthus	Spotted Bullhead	R	None
Cyprinella caerulea	Blue Shiner	E	LT
Cyprinella callitaenia	Bluestripe Shiner	R	None
Cyprinella xaenura	Altamaha Shiner	T	None
Elassoma okatie	Bluebarred Pygmy Sunfish	E	None
Enneacanthus chaetodon	Blackbanded Sunfish	E	None
Erimystax insignis	Blotched Chub	E	None
Etheostoma brevirostrum	Holiday Darter	E	None
Etheostoma chlorobranchium	Greenfin Darter	T	None
Etheostoma chuckwachatte	Lipstick Darter	E	None
Etheostoma ditrema	Coldwater Darter	E	None
Etheostoma duryi	Black Darter	R	None
Etheostoma etowahae	Etowah Darter	E	LE
Etheostoma parvipinne	Goldstripe Darter	R	None
Etheostoma rupestre	Rock Darter	R	None
Etheostoma scotti	Cherokee Darter	T	LT
Etheostoma tallapoosae	Tallapoosa Darter	R	None
Etheostoma trisella	Trispot Darter	E	None
Etheostoma vulneratum	Wounded Darter	E	None
Fundulus bifax	Stippled Studfish	E	None
Fundulus catenatus	Northern Studfish	R	None
Hemitremia flammea	Flame Chub	E	None
Hybopsis lineapunctata	Lined Chub	R	None

Ichthyomyzon bdellium	Ohio Lamprey	R	None
Lucania goodei	Bluefin Killifish	R	None
Macrhybopsis sp. 1	Coosa Chub	E	None
Micropterus notius	Suwannee Bass	R	None
Moxostoma carinatum	River Redhorse	R	None
Moxostoma robustum	Robust Redhorse	E	None
Moxostoma sp. 2	Sicklefin Redhorse	E	C
Notropis ariommus	Popeye Shiner	E	None
Notropis asperifrons	Burrhead Shiner	T	None
Notropis hypsilepis	Highscale Shiner	R	None
Notropis photogenis	Silver Shiner	E	None
Notropis scepticus	Sandbar Shiner	R	None
Noturus eleutherus	Mountain Madtom	E	None
Noturus munitus	Frecklebelly Madtom	E	None
Percina antesella	Amber Darter	E	LE
Percina aurantiaca	Tangerine Darter	E	None
Percina aurolineata	Goldline Darter	E	LT
Percina crypta	Halloween Darter	T	None
Percina jenkinsi	Conasauga Logperch	E	LE
Percina kusha	Bridled Darter	E	None
Percina lenticula	Freckled Darter	E	None
Percina sciera	Dusky Darter	R	None
Percina shumardi	River Darter	E	None
Percina smithvanizi	Muscadine Darter	R	None
Percina squamata	Olive Darter	E	None
Percina tanasi	Snail Darter	E	LT
Phenacobius crassilabrum	Fatlips Minnow	E	None
Phenacobius uranops	Stargazing Minnow	T	None
Phoxinus tennesseensis	Tennessee Dace	E	None
Pteronotropis euryzonus	Broadstripe Shiner	R	None
Pteronotropis welaka	Bluenose Shiner	T	None

Invertebrates			
Typhlichthys subterraneus	Southern Cavefish	E	None
Alasmidonta arcula	Altamaha Arcmussel	T	None
Alasmidonta triangulata	Southern Elktoe	E	None
Amblema neislerii	Fat Threeridge	E	LE
Anodonta heardi	Apalachicola Floater	R	None
Anodontoides radiatus	Rayed Creekshell	T	None
Cambarus coosawattae	Coosawattee Crayfish	E	None
Cambarus cryptodytes	Dougherty Plain Cave Crayfish	T	None
Cambarus cymatilis	Conasauga Blue Burrower	E	None
Cambarus doughertyensis	Dougherty Burrowing Crayfish	E	None
Cambarus englishi	Tallapoosa Crayfish	R	None
Cambarus extraneus	Chickamauga Crayfish	T	None
Cambarus fasciatus	Etowah Crayfish	T	None
Cambarus georgiae	Little Tennessee Crayfish	E	None
Cambarus harti	Piedmont Blue Burrower	E	None
Cambarus howardi	Chattahoochee Crayfish	T	None
Cambarus parrishi	Hiwassee Headwaters Crayfish	E	None
Cambarus scotti	Chattooga River Crayfish	T	None
Cambarus speciosus	Beautiful Crayfish	E	None
Cambarus strigosus	Lean Crayfish	T	None
Cambarus truncatus	Oconee Burrowing Crayfish	T	None
Cambarus unestami	Blackbarred Crayfish	T	None
Cordulegaster sayi	Say's Spiketail	T	None
Distocambarus devexus	Broad River Burrowing Crayfish	T	None
Elliptio arca	Alabama Spike	E	None
Elliptio arctata	Delicate Spike	E	None
Elliptio purpurella	Inflated Spike	T	None
Elliptio spinosa	Altamaha Spinymussel	E	C
Elliptoideus sloatianus	Purple Bankclimber	T	LT
Epioblasma metastriata	Upland Combshell	E	LE
Epioblasma othcaloogensis	Southern Acornshell	E	LE

Fusconaia masoni	Atlantic Pigtoe	E	None
Gomphus consanguis	Cherokee Clubtail	T	None
Hamiota altilis	Finelined Pocketbook	T	LT
Hamiota subangulata	Shinyrayed Pocketbook	E	LE
Lampsilis perovalis	Orange-nacre Mucket	T	None
Leptoxis foremani	Interrupted Rocksnail	E	C
Medionidus acutissimus	Alabama Moccasinshell	T	LT
Medionidus parvulus	Coosa Moccasinshell	E	LE
Medionidus penicillatus	Gulf Moccasinshell	E	LE
Medionidus simpsonianus	Ochlockonee Moccasinshell	E	LE
Ophiogomphus edmundo	Edmund's Snaketail	E	None
Pleurobema decisum	Southern Clubshell	E	LE
Pleurobema georgianum	Southern Pigtoe	E	LE
Pleurobema hanleyianum	Georgia Pigtoe	E	None
Pleurobema pyriforme	Oval Pigtoe	E	LE
Procambarus gibbus	Muckalee Crayfish	T	None
Procambarus verrucosus	Grainy Crayfish	R	None
Procambarus versutus	Sly Crayfish	R	None
Ptychobranchus foremanianus	Rayed Kidneyshell	E	LE
Strophitus connasaugaensis	Alabama Creekmussel	E	None
Toxolasma pullus	Savannah Lilliput	T	None
Mammals			
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	R	None
Eubalaena glacialis	Northern Atlantic Right Whale	E	LE
Geomys pinetis	Southeastern Pocket Gopher	T	None
Megaptera novaeangliae	Humpback Whale	E	LE
Myotis grisescens	Gray Myotis	E	LE
Myotis sodalis	Indiana Myotis	E	LE
Neofiber alleni	Round-tailed Muskrat	T	None
Puma concolor coryi	Florida Panther	E	LE
Sylvilagus obscurus	Appalachian Cottontail	R	None
Trichechus manatus	Manatee	E	LE

Plants			
Allium speculae	Flatrock Onion	T	None
Alnus maritima ssp. georgiensis	Georgia Alder	T	None
Amorpha georgiana	Georgia Indigo Bush	E	None
Amphianthus pusillus	Pool Sprite	T	LT
Arabis georgiana	Georgia Rockcress	T	C
Arnoglossum diversifolium	Variable-leaf Indian-plantain	T	None
Asclepias purpurascens	Purple Milkweed	R	None
Asplenium heteroresiliens	Marl Spleenwort	T	None
Astragalus michauxii	Sandhill Milk-vetch	T	None
Aureolaria patula	Spreading Yellow Foxglove	T	None
Balduina atropurpurea	Purple Honeycomb Head	R	None
Baptisia arachnifera	Hairy Rattleweed	E	LE
Berberis canadensis	American Barberry	E	None
Brickellia cordifolia	Heartleaf Brickellia	T	None
Calamagrostis porteri	Porter's Reed-grass	R	None
Calamintha ashei	Ohoopee Wild Basil	T	None
Carex baltzellii	Baltzell's Sedge	E	None
Carex biltmoreana	Granite Dome Sedge	T	None
Carex dasycarpa	Velvet Sedge	R	None
Carex misera	Wretched Sedge	T	None
Carex radfordii	Radford's Sedge	T	None
Carya myristiciformis	Nutmeg Hickory	R	None
Ceratiola ericoides	Sandhill Rosemary	T	None
Chamaecyparis thyoides	Atlantic White-cedar	R	None
Chelone cuthbertii	Cuthbert's Turtlehead	T	None
Clematis fremontii	Fremont's Leatherflower	E	None
Clematis socialis	Alabama Leatherflower	E	LE
Convallaria majuscula	American Lily-of-the-valley	R	None
Coreopsis integrifolia	Floodplain Tickseed	T	None
Coreopsis latifolia	Broadleaf Tickseed	R	None
Crataegus triflora	Three-flowered Hawthorn	T	None

Croomia pauciflora	Croomia	T	None
Cuscuta harperi	Harper's Dodder	E	None
Cymophyllus fraserianus	Fraser's Sedge	T	None
Cypripedium acaule	Pink Ladyslipper	U	None
Cypripedium kentuckiense	Kentucky Ladyslipper	E	None
Cypripedium parviflorum	Yellow Ladyslipper	R	None
Desmodium ochroleucum	Cream-flowered Tick-trefoil	T	None
Dicerandra radfordiana	Radford's Mint	E	None
Dichanthelium hirstii	Hirst's Witch Grass	E	C
Draba aprica	Sun-loving Draba	E	None
Echinacea laevigata	Smooth Purple Coneflower	E	LE
Elliottia racemosa	Georgia Plume	T	None
Epidendrum magnoliae	Greenfly Orchid	U	None
Eriocaulon koernickianum	Dwarf Hatpins	E	None
Evolvulus sericeus	Silky Morning-glory	E	None
Fimbristylis perpusilla	Harper's Fimbry	E	None
Forestiera godfreyi	Godfrey's Wild Privet	E	None
Forestiera segregata	Florida Wild Privet	R	None
Fothergilla gardenii	Dwarf Witch-alder	T	None
Fothergilla major	Mountain Witch-alder	T	None
Gentianopsis crinita	Fringed Gentian	T	None
Gymnoderma lineare	Rock Gnome Lichen	E	LE
Habenaria quinqueseta	Michaux's Spider Orchid	T	None
Hartwrightia floridana	Hartwrightia	T	None
Helianthus verticillatus	Whorled Sunflower	E	C
Helonias bullata	Swamp Pink	T	LT
Hydrastis canadensis	Goldenseal	E	None
Hymenocallis coronaria	Shoals Spiderlily	T	None
Illicium floridanum	Florida Anise	E	None
Isoetes melanospora	Black-spored Quillwort	E	LE
Isoetes tegetiformans	Mat-forming Quillwort	E	LE
Isotria medeoloides	Small Whorled Pogonia	T	LT

Jamesianthus alabamensis	Alabama Warbonnet	E	None
Jeffersonia diphylla	Twinleaf	R	None
Kalmia carolina	Carolina Bog Laurel	T	None
Leavenworthia exigua var. exigua	Least Gladecress	T	None
Leiophyllum buxifolium	Sand-Myrtle	T	None
Leitneria floridana	Corkwood	T	None
Lilium michiganense	Michigan Lily	R	None
Lilium philadelphicum	Wood Lily	E	None
Lindera melissifolia	Pond Spicebush	E	LE
Litsea aestivalis	Pond Spice	R	None
Lotus helleri	Carolina Trefoil	E	None
Lysimachia fraseri	Fraser's Loosestrife	R	None
Lythrum curtissii	Curtiss' Loosestrife	T	None
Macbridea caroliniana	Carolina Bogmint	R	None
Macranthera flammea	Hummingbird Flower	T	None
Marshallia mohrii	Coosa Barbara Buttons	T	LT
Marshallia ramosa	Pineland Barbara Buttons	R	None
Matelea alabamensis	Alabama Milkvine	T	None
Matelea pubiflora	Trailing Milkvine	R	None
Megaceros aenigmaticus	Bighorn Hornwort	T	None
Monotropsis odorata	Sweet Pinesap	T	None
Morella inodora	Odorless Bayberry	T	None
Myriophyllum laxum	Lax Water-milfoil	R	None
Najas filifolia	Narrowleaf Naiad	E	None
Nestronia umbellula	Indian Olive	R	None
Neviusia alabamensis	Alabama Snow-wreath	T	None
Oxypolis canbyi	Canby Dropwort	E	LE
Pachysandra procumbens	Allegheny-spurge	R	None
Packera millefolia	Blue Ridge Golden Ragwort	T	None
Paronychia virginica	Yellow Nailwort	E	None
Pedicularis lanceolata	Swamp Lousewort	E	None
Pediomelum piedmontanum	Dixie Mountain Breadroot	E	None

Penstemon dissectus	Cutleaf Beardtongue	R	None
Pinguicula primuliflora	Clearwater Butterwort	T	None
Pityopsis pinifolia	Sandhill Golden-aster	R	None
Platanthera integrilabia	Monkeyface Orchid	T	C
Prenanthes barbata	Barbed Rattlesnake Root	R	None
Pteroglossaspis ecristata	Crestless Plume Orchid	T	None
Ptilimnium nodosum	Harperella	E	LE
Quercus oglethorpensis	Oglethorpe Oak	T	None
Rhododendron prunifolium	Plumleaf Azalea	T	None
Rhus michauxii	Dwarf Sumac	E	LE
Rhynchospora solitaria	Solitary Beakrush	E	None
Rudbeckia auriculata	Swamp Black-eyed Susan	E	None
Rudbeckia heliopsidis	Little River Black-eyed Susan	T	None
Sabatia capitata	Cumberland Rose Gentian	R	None
Sageretia minutiflora	Climbing Buckthorn	T	None
Sagittaria secundifolia	Kral's Water-plantain	T	LT
Salix floridana	Florida Willow	E	None
Sanguisorba canadensis	Canada Burnet	T	None
Sapindus marginatus	Soapberry	R	None
Sarracenia flava	Yellow Flytrap	U	None
Sarracenia leucophylla	Whitetop Pitcherplant	E	None
Sarracenia minor	Hooded Pitcherplant	U	None
Sarracenia minor var. minor	Hooded Pitcherplant	U	None
Sarracenia minor var. okefenokeense	Okefenokee Giant	U	None
Sarracenia oreophila	Green Pitcherplant	E	LE
Sarracenia psittacina	Parrot Pitcherplant	T	None
Sarracenia purpurea	Purple Pitcherplant	E	None
Sarracenia purpurea ssp. purpurea	Northern Purple Pitcherplant	E	None
Sarracenia purpurea ssp. venosa	Southern Purple Pitcherplant	E	None
Sarracenia purpurea ssp. venosa	Southern Purple Pitcherplant	E	None
Sarracenia rubra	Sweet Pitcherplant	T	None
Sarracenia rubra ssp. rubra	Red-flower Sweet Pitcherplant	E	None

Schisandra glabra	Bay Star-vine	T	None
Schwalbea americana	Chaffseed	E	LE
Scutellaria montana	Large-flowered Skullcap	T	LT
Scutellaria ocmulgee	Ocmulgee Skullcap	T	None
Sedum nevii	Nevius Stonecrop	T	None
Sedum pusillum	Granite Stonecrop	T	None
Shortia galacifolia	Oconee Bells	E	None
Sibbaldiopsis tridentata	Mountain Cinquefoil	E	None
Sideroxylon macrocarpum	Ohoopee Bumelia	R	None
Sideroxylon thornei	Swamp Buckthorn	R	None
Silene ovata	Ovate Catchfly	R	None
Silene polypetala	Fringed Campion	E	LE
Silene regia	Royal Catchfly	E	None
Solidago simulans	Cliffside Goldenrod	E	None
Spiraea virginiana	Virginia Spirea	T	LT
Spiranthes magnicamporum	Great Plains Ladies-tresses	E	None
Stewartia malacodendron	Silky Camellia	R	None
Streptopus lanceolatus var. lanceolatus	Rosy Twisted Stalk	T	None
Stylisma pickeringii var. pickeringii	Pickering's Morning-glory	T	None
Symphyotrichum georgianum	Georgia Aster	T	C
Thalictrum cooleyi	Cooley Meadowrue	E	LE
Thalictrum debile	Trailing Meadowrue	T	None
Thaspium pinnatifidum	Glade Meadowparsnip	E	None
Torreya taxifolia	Florida Torreya	E	LE
Trientalis borealis	Starflower	E	None
Trillium persistens	Persistent Trillium	E	LE
Trillium pusillum	Dwarf Trillium	E	None
Trillium reliquum	Relict Trillium	E	LE
Tsuga caroliniana	Carolina Hemlock	E	None
Veratrum woodii	Ozark Bunchflower	R	None
Viburnum bracteatum	Limerock Arrow-wood	E	None
Waldsteinia lobata	Barren Strawberry	R	None

Xerophyllum asphodeloides	Eastern Turkeybeard	R	None
Xyris tennesseensis	Tennessee Yellow-eyed Grass	E	LE
Reptiles			
Caretta caretta	Loggerhead Sea Turtle	E	LT
Chelonia mydas	Green Sea Turtle	T	LT
Clemmys guttata	Spotted Turtle	U	None
Dermochelys coriacea	Leatherback Sea Turtle	E	LE
Drymarchon couperi	Eastern Indigo Snake	T	LT
Eretmochelys imbricata	Hawksbill Sea Turtle	E	LE
Eretmochelys imbricata imbricata	Atlantic Hawksbill Sea Turtle	E	None
Glyptemys muhlenbergii	Bog Turtle	E	LT
Gopherus polyphemus	Gopher Tortoise	T	None
Graptemys barbouri	Barbour's Map Turtle	T	None
Graptemys geographica	Map Turtle	R	None
Graptemys pulchra	Alabama Map Turtle	R	None
Heterodon simus	Southern Hognose Snake	T	None
Lepidochelys kempii	Kemp's or Atlantic Ridley	E	LE
Macrochelys temminckii	Alligator Snapping Turtle	T	None
Malaclemys terrapin	Diamondback Terrapin	U	None
Malaclemys terrapin centrata	Carolina diamond-backed Terrapin	U	None
Ophisaurus mimicus	Mimic Glass Lizard	R	None

C = Candidate Species
E = State Endangered
LE = Federally Listed Endangered
LT = Federally Listed Threatened
R = Rare
T = State Threatened
U = Unusual

APPENDIX C

HPD TIMBER HARVEST REVIEW PROTOCOL

HPD Timber Harvest Archaeology Protocol

The following protocol was developed after a review of all available literature (Brynn et al. 1990; Minnesota Environmental Quality Board 1993; Minnesota Forest Resources Council 1998; Taylor 2010) on the effects of timber harvest on archaeological sites. This protocol was developed to guide the review of timber harvest on lands owned or managed by the State of Georgia in order to comply with State Agency Historic Property Stewardship (O.C.G.A. 12-3-55) and The Georgia Environmental Policy Act of 1991 (O.C.G.A. 12-16-1). Some sites or projects may require modification of these guidelines based on soil conditions, the nature of the resource, or other atypical conditions. The review process is outlined below.

Step One- Initiate Review

Standard Projects

1) For standard projects, WRD should send a proposed project to HPD for review. The proposal should use a standard Environmental Review Form found at http://gashpo.org/assets/documents/ER_Form_9_2011.doc and include all supplemental information (such as loading deck locations, new road construction or improvements, etc).

2) HPD's recommendation will be returned to the applicant. HPD usually provides initial comments within 30 days of receipt of documentation, though submission of multiple projects may slow this response. The recommendations should be included in the contract before it is bid out to the contractors; it is WRD's responsibility to assure the provisions are included in the contract and that the provisions are adhered to in the field.

3) Salvage cuts can be submitted for expedited review. In expedited cases, initial comments can be expected in as little as two weeks.

Timber Harvest on Parks or Historic Sites Property

1) Send all information to Dr. Debbie Wallsmith in the Cultural Resources Unit of Parks and Historic sites. Dr. Wallsmith will submit the information to Environmental Review for review. HPD should return the recommendations to Dr. Wallsmith within 30 days for standard projects and 2 weeks for salvage cuts.

2) Dr. Wallsmith will work with WRD/GFC to include the recommendations in the contract.

Step Two- Desktop Review

The staff archaeologist will conduct a desktop review of the harvest area and identify potential high probability areas using GIS and other electronic means including a review of previously recorded sites in and around the area.

Step Three- Field Review

The staff archaeologist will visit the harvest areas, if necessary, to confirm the desktop probability assessment based on standard factors including:

- Type of soils
- Landforms
- Distance to water

Step Four- Determination of Potential Effects

Assessment of Soil Conditions

After confirming or adjusting the desktop probability assessment of the harvest area, the archaeologist will determine if potential sites would be adversely affected by timber harvest based on an examination of the landform including:

- The presence or absence of intact soil profiles (A-horizons, E-horizons)
- Depth of plow zone
- Depth of subsoil
- Soil type

Archaeological Reconnaissance

The staff archaeologist will conduct limited archaeological reconnaissance to attempt to locate sites and assess their potential to be adversely impacted based on the criteria outlined above—soil profiles, artifact density and distribution, the presence or absence of above and below ground features.

- The archaeologist may concentrate on areas where the likelihood of encountering archaeological sites and their probability of being disturbed are highest including the locations of loading decks, new roads and skidder trails. These locations are also likely to have been suitable for prehistoric and historic habitation and there is a high probability of encountering archaeological resources in them.

- If a high probability area is too large for the staff archaeologist to adequately assess for potential effects, then a Phase I archaeological assessment may be recommended.

No Adverse Effect Assumptions

We assume timber harvest will not adversely impact a site's National Register of Historic Places (NRHP) eligibility if five conditions are met. Please note, only the archaeologist can make a determination of no adverse effect.

- Harvest conducted in accord with GA's Best Management Practices (BMPs) AND
  - Based on prior studies we assume the effects of timber harvest conducted under the BMP's are limited to:
    - ca. 5% artifact breakage (Minnesota Forest Resources Council 1998)
    - ca. 30 cm of horizontal artifact movement (Taylor 2010)

- No Class 3 disturbance as defined by the USDA Forest Service's Soil-Disturbance Field Guide (Napper, Howes, and Page-Dumroese 2009) AND
- The site has been subject to repeated plowing AND
  - Indications a site has not been repeatedly plowed include: little or no plow zone, dense artifact scatters or clusters
- There is sufficient plow zone to protect subsurface features (at least 10 inches/25 cm) AND
- Above ground features (for example mounds, earthworks, foundations, chimneys, and graves) are avoided.

Adverse Effects

If a harvest or site does not meet the assumptions for No Adverse Effects then the timber harvest may potentially adversely affect the site's NRHP eligibility. The archaeologist will make this determination. Please note:

- Prior plowing does not disqualify a site from being potentially eligible
- Prior bedding does not disqualify a site from being potentially eligible

Step 5- Mitigation of Potential Adverse Effects

Limit Soil Disturbance

If potentially eligible sites are located or are already known, the archaeologist will recommend they are not subjected to activities that might cause Class 3 soil disturbance (used as a logging deck, logging road, or skidder trail, etc.) (Napper, Howes, and Page-Dumroese 2009).

Avoidance

The archaeologist may recommend that particularly sensitive sites (some battlefields, some historic sites, and areas of great cultural significance such as Traditional Cultural Properties) be avoided if an adverse effect is anticipated.

Cut-to-Length

If timber harvest is required (e.g. beetle infestation) on sensitive sites, the archaeologist may request a cut-to-length approach, rather than the standard feller-buncher and skidder operation, which has been shown to cause less impact (Taylor 2010).

Step Six- Future Projects

Recommendations from the current project do not transfer to future projects because different projects may have different potential impacts or impact different resources. Projects will be reviewed on a per project basis until a full cultural resource inventory and assessment has been conducted for the project area. Post-harvest activities including site preparation and replanting are actions that also require archaeological review, but these proposals may be submitted and reviewed with the initial harvest proposal.

APPENDIX D

SAMPLE PROJECT PROPOSAL SENT TO HPD FOR SECTION 106 REVIEW

PROPOSAL NUMBER: _____

FY-2011 FOREST MANAGEMENT PROPOSAL
OTTING WMA

CLEARCUT AND THINNING

03/10/2010

Prepared by: David Gregory and Matt Payne

PROJECT LOCATION: NORTHWEST CHATOOGA COUNTY; FROM CLOUDLAND, GA, TAKE HWY 157 NORTH 2.1 MILES. THE SIGN FOR THE WMA AND ROAD ACCESSING THE PROPERTY IS ON THE LEFT. DELORME GEORGIA GAZETTEER PAGE NUMBER 12, BLOCK G-2.

Project Description:

Pine and Hardwood Clearcut (38 acres)

This area consists of two adjacent stands. One stand is an overstocked Virginia pine stand and the other stand is an immature hardwood stand. The two areas are to be clearcut harvested and the area is to be planted with shortleaf pine. This area will increase small game hunting opportunities on the WMA. This area was proposed for harvest in FY-2008. The Virginia pines were to be clearcut and the hardwoods thinned.

Mixed Pine/Hardwood Thinning (150 acres)

Management actions are focused on creating canopy openings to stimulate understory vegetation and release remaining hardwoods to increase vigor and mast production. Timber operations should include selectively removing the Virginia pine component from the stand and selectively thinning the remaining pine and hardwoods to a basal area of approximately 50 ft^2. Hardwood removal should occur by removing deformed or unhealthy hardwoods first followed by removal of sweet gum and poplar, and then if needed, removal of remaining clustered hardwoods to achieve an open stand condition.

Access: The sale areas can be accessed by current WMA roads. Roadwork will be needed to facilitate timber extraction.

Expenses: Roadwork $10,000

Loading Deck Management: Slash will be scattered in the stand and only enough slash, to prevent erosion, should be left on the decks.

Managed Hunts: None

Species of Concern: Are there any known endangered, threatened, or special concern species on the site? No

Archaeological Sites: Are there any known archaeological sites that may be impacted by this project? Yes, see attached information from HPD.

Does this project meet 50-year plan objectives for this area? Yes

Additional Comments or Concerns:

_____ _____

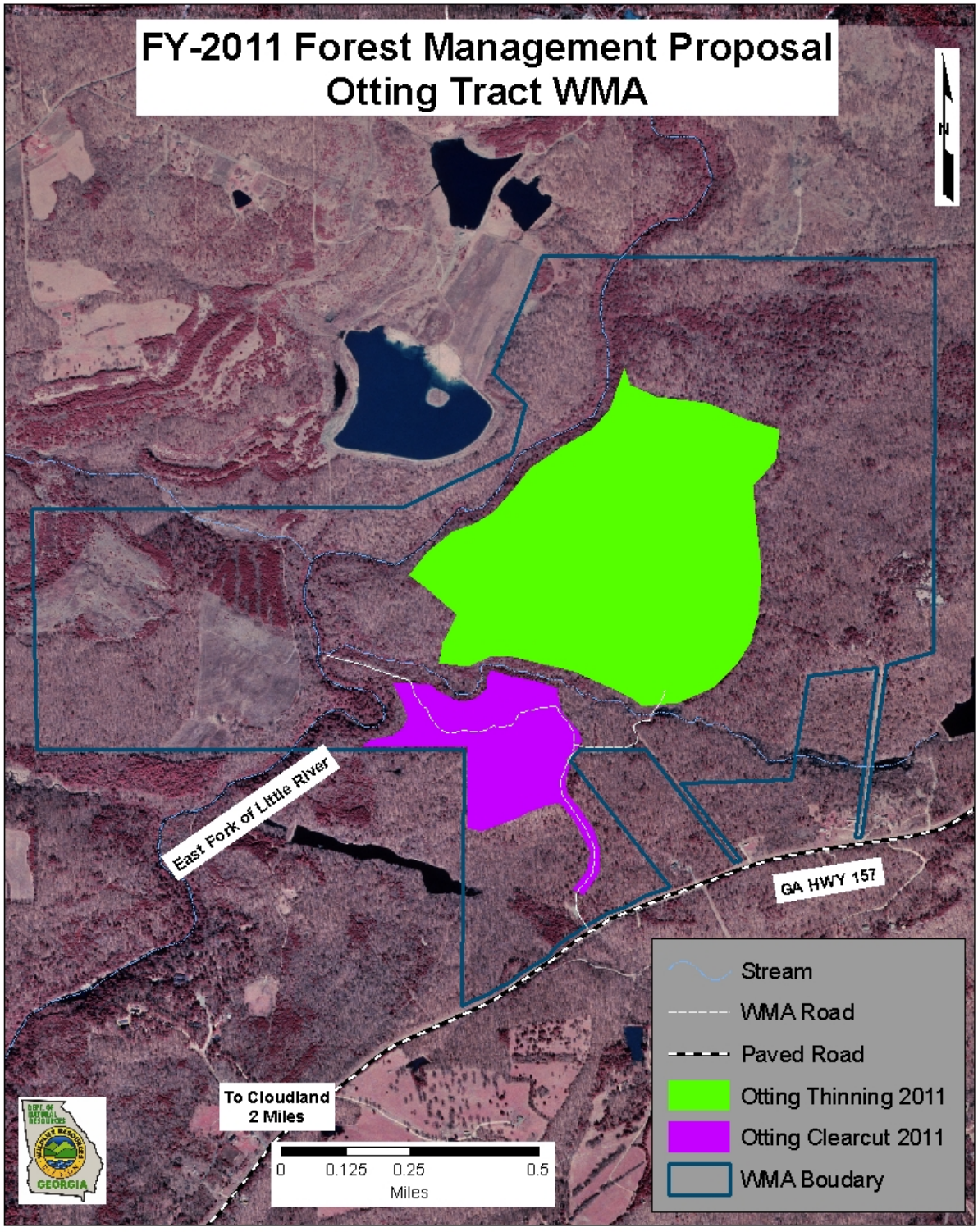
Regional Supervisor Date

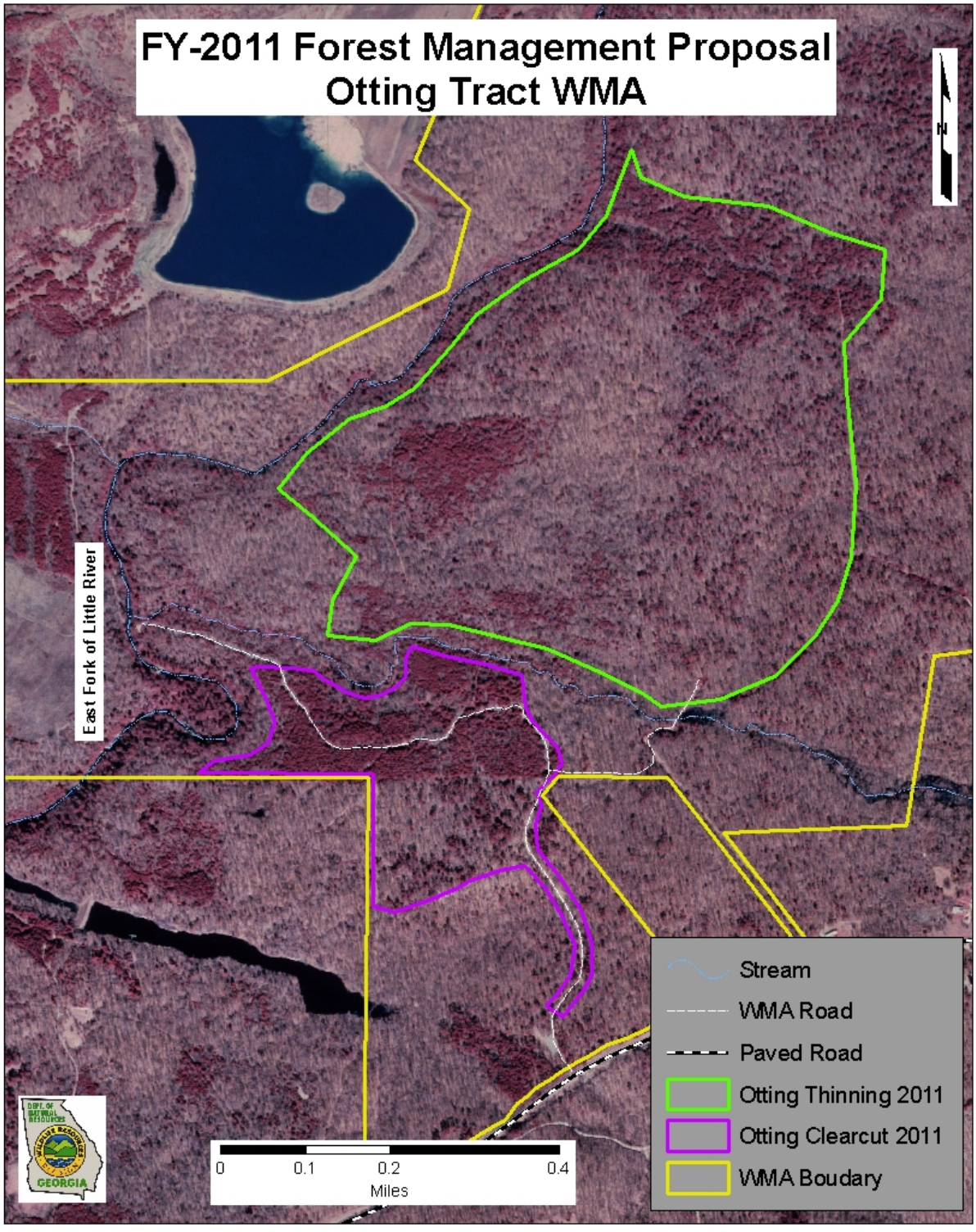
_____ _____

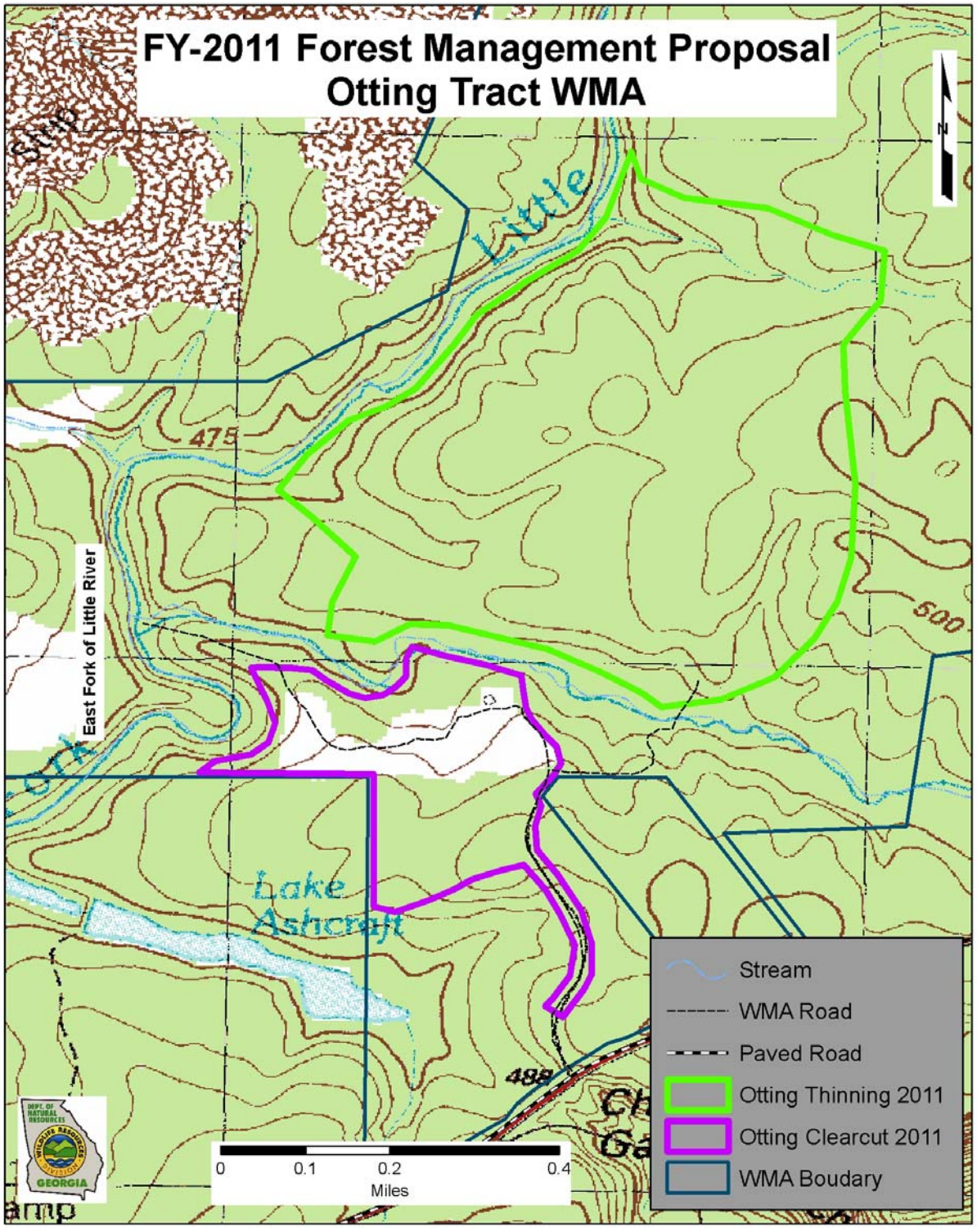
Section Chief Date

_____ _____

NCS Program Manager Date


FY-2011 Forest Management Proposal
Otting Tract WMA
N
East Fork of Little River
GA HWY 157
To Cloudland
2 Miles
0
0.125
0.25
0.5
Miles
Stream
WMA Road
Paved Road
Otting Thinning 2011
Otting Clearcut 2011
WMA Boudary
GEORGIA


FY-2011 Forest Management Proposal
Otting Tract WMA
N
East Fork of Little River
Stream
WMA Road
Paved Road
Otting Thinning 2011
Otting Clearcut 2011
WMA Boudary
0
0.1
0.2
0.4
Miles
GEORGIA


FY-2011 Forest Management Proposal
Otting Tract WMA
Little
475
East Fork of Little River
500
Lake
Ashcraft
488
Stream
WMA Road
Paved Road
Otting Thinning 2011
Otting Clearcut 2011
WMA Boudary
0
0.1
0.2
0.4
Miles
GEORGIA