
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

***USE OF VOLUNTARY PUBLIC ACCESS AND HABITAT
INCENTIVE PROGRAM FUNDS FOR THE VIRGINIA PUBLIC
ACCESS LANDS FOR SPORTSMEN PROGRAM***



United States Department of Agriculture
Farm Service Agency

Final
April 2012

**United States Department of Agriculture
Farm Service Agency**

FINDING OF NO SIGNIFICANT IMPACT

**Use of Voluntary Public Access and Habitat Incentive Program Funds for the Virginia
Public Access Lands for Sportsman Program**

April 2012

The United States Department of Agriculture Farm Service Agency (FSA) on behalf of the Commodity Credit Corporation (CCC) has prepared a Programmatic Environmental Assessment (PEA) to evaluate the environmental consequences associated with providing the Commonwealth of Virginia Voluntary Public Access and Habitat Incentive Program (VPA-HIP) grant funds. The VPA-HIP is a program authorized by the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) that provides grants to States and tribal governments to encourage owners and operators of privately held farm, ranch, and forest land to voluntarily open land for public access for outdoor recreation activities such as hunting, fishing, hiking, wildlife watching, and other outdoor activities. Distribution of VPA-HIP funds is administered by the State or tribal government that receives the grant.

The Commonwealth proposes to use VPA-HIP grant funds to expand the Public Access Lands for Sportsmen (PALS) program, a public access program on private lands. The purpose of the Proposed Action is use VPA-HIP grant funds to increase the amount of land available for access by the public for wildlife-dependent recreation such as hunting, fishing and wildlife watching, and to improve fish and wildlife habitat on privately held lands. In Virginia, 85 percent of the land is privately owned; with more than 8.1 million acres (nearly 32 percent) of the total land area used as farmland. A 2009 survey found that in the previous five years, over 52 percent of Virginia hunters stopped hunting for a particular species due to the lack of hunting access. The Proposed Action is needed to increase hunting, fishing and other outdoor recreational opportunities throughout the Commonwealth. VPA-HIP funds would also allow the Commonwealth to determine how best to increase public access to private lands, provide incentive payments to private landowners for public access, and manage habitat restoration activities

Proposed Action

The Commonwealth proposes to use \$1,420,000 in VPA-HIP grant funds over a three-year period (\$205,000 in the first year, \$625,000 in the second, and \$590,000 in the third) to expand the PALS program and make habitat improvements. The funds made available in the first year would primarily be used to contract a survey of landowners that would be used to target the use of VPA-HIP funds and provide more information about how to develop an integrated campaign to expand public access to private lands. The available funds would also be used to provide incentive payments to additional landowners to expand publicly accessible lands. Funding received in the following two years would be used for habitat improvement projects, continuation of the landowner survey, and funding a contractual position to contact landowners and manage habitat improvement projects. An additional \$562,000 from other Federal and State sources would be used to supplement habitat improvement projects, and hire an additional staff biologist for program management. VPA-HIP grant funds would pay 80 percent of improvement project costs. The landowners would pay the remaining 20 percent (\$120,000) of project

costs, maintain CREP-prescribed riparian buffers, and maintain the improved habitat for at least 10 years. Access to PALS land for hunting, fishing, or trapping would be obtained through permits from the VDGIF obtained from purchase agents at \$18 per permit. The Code of Virginia (VAC) §29.1-509 waives liability for landowners who allow the public access to their lands at no charge for outdoor recreation.

Reasons for Finding of No Significant Impact

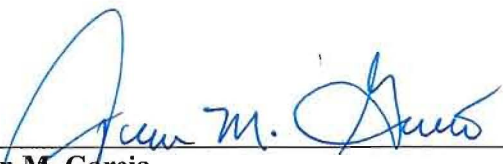
In consideration of the analysis documented in the PEA and the reasons outlined in this Finding of No Significant Impact (FONSI), the Proposed Action would not constitute a major Federal action that would significantly affect the human environment. Therefore, an environmental impact statement will not be prepared. The determination is based on the following:

1. The Proposed Action as outlined in the PEA would provide beneficial impacts to both recreation and economic resources as a result of the increased amount of land available for public use and monies from these activities injected into local economies. Moreover, expanding lands available for wildlife-associated recreation would benefit vegetation and wildlife by maintaining and enhancing suitable habitat rather than converting the land to another incompatible use.
2. Potential beneficial and adverse impacts of implementing the Proposed Action have been fully considered within the PEA. No significant adverse direct or indirect effects were identified, based on the resource analyses provided in the PEA.
3. The Proposed Action would not involve effects to the quality of the human environment that are likely to be highly controversial.
4. The Proposed Action would not establish a precedent for future actions with significant effects and does not represent a decision in principle about a future consideration.
5. The Proposed Action does not result in cumulative significant impacts when considered with other actions that also individually have insignificant impacts. Cumulative impacts of implementing the Proposed Action were determined to be not significant.
6. The Proposed Action would not have adverse effects on threatened or endangered species or designated critical habitat. In accordance with Section 7 of the Endangered Species Act, the effects of implementing the Proposed Action on threatened and endangered species and designated critical habitat were addressed in the PEA.
7. The Proposed Action does not threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

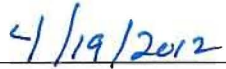
Determination

In accordance with the National Environmental Policy Act and FSA's environmental regulations at 7 Code of Federal Regulations (CFR) Part 799 and implementing the regulations of the Council on Environmental Quality at 40 CFR Parts 1500-1508, I find the Proposed Action is not a major Federal action significantly affecting the quality of the human environment. Barring any new data identified during public and agency review of the PEA that would dramatically change the analysis presented in the PEA or identification of a significant controversial issue, the PEA and FONSI are considered final 30 days after their approval and release to the public. Therefore, no environmental impact statement will be prepared.

Approved:



Juan M. Garcia
Deputy Administrator for Farm Programs
Farm Service Agency
U.S. Department of Agriculture



Date

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COVER PAGE

- Proposed Action:** The United States Department of Agriculture (USDA), Commodity Credit Corporation (CCC) and the Commonwealth of Virginia proposes to use Voluntary Public Access and Habitat Incentive Program (VPA-HIP) grant funds of \$1.42 million over the three-year grant period to leverage Commonwealth, private in-kind, and other Federal funds to expand the Virginia Public Access Lands for Sportsmen (PALS) program. Using VPA-HIP grant funds, the PALS program would provide annual incentive payments to eligible private landowners for negotiated leases, improve habitat on a portion of newly enrolled land, contract an annual survey as a basis for targeting VPA-HIP funds and developing an integrated campaign to expand public recreational access to private lands, and contract a landowner outreach and habitat enhancement program coordinator. The Farm Service Agency (FSA) administers the VPA-HIP on behalf of the CCC. The VPA-HIP is a program authorized by the Food, Conservation, and Energy Act of 2008 that provides grants to States and tribal governments to encourage owners and operators of privately held farm, ranch, and forestland to voluntarily open land for public access for outdoor recreation activities such as hunting, fishing, hiking, wildlife watching, and other outdoor activities.
- Type of Document:** Programmatic Environmental Assessment
- Lead Agency:** Farm Service Agency (on behalf of CCC)
- Sponsoring Agency:** Virginia Department of Game and Inland Fisheries
- Further Information:** Jeffrey Trollinger
Virginia Department of Game and Inland Fisheries
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Bureau of Wildlife Resources
4010 W. Broad St.
Richmond, VA 23230
Phone: 840-367-8747
E-mail: jeff.trollinger@dgif.virginia.gov
- Comments:** This Programmatic Environmental Assessment was prepared in accordance with the Farm Service Agency National Environmental Policy Act implementation procedures found in 7 Code of Federal Regulations 799, as well as the National Environmental Policy Act of 1969, Public Law 91-190, 42 USC 4321-4347, 1 January 1970, as amended.
- The FSA will provide a public review and comment period prior to any final decision. An electronic copy of this Programmatic Environmental Assessment will be available for review at: <http://public.geo-marine.com> or at

[http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ecrc
&topic=nep-cd.](http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ecrc&topic=nep-cd)

Written comments regarding this assessment may be submitted to:

Virginia VPA-HIP PEA Comments

c/o Geo-Marine, Inc.

2713 Magruder Blvd Suite D

Hampton, VA 23666

Or emailed to E-mail: VirginiaPEA@geo-marine.com

EXECUTIVE SUMMARY

BACKGROUND

The United States Department of Agriculture (USDA) Commodity Credit Corporation (CCC) proposes to provide Voluntary Public Access and Habitat Incentive Program (VPA-HIP) grant funds to the Commonwealth of Virginia for expansion of the Virginia Public Access Lands for Sportsmen (PALS) program. The VPA-HIP is a program authorized by the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) that provides grants to States and tribal governments to either expand existing or create new public recreation access programs. Funds may also be requested to provide incentives for eligible private landowners to improve habitat on enrolled lands. Incentives encourage owners and operators of privately held farm, ranch, and forestland to voluntarily open land for public access for outdoor recreation activities such as hunting, fishing, hiking, wildlife watching, and other outdoor activities. The VPA-HIP grant award process is administered by the USDA Farm Service Agency on behalf of the CCC. The VPA-HIP programs are administered by the State or tribal government that receives the grant.

PURPOSE AND NEED FOR THE PROPOSED ACTION

The PALS program is a cooperative private/public program administered by the Virginia Department of Game and Inland Fisheries (VDGIF) to open lands to the public for outdoor activities. The Commonwealth proposes to use VPA-HIP grant funds to expand the PALS program statewide. The purpose of the Proposed Action is to allow the Commonwealth to use VPA-HIP grant funds to increase the amount of land available for access by the public for wildlife-dependent recreation such as hunting, fishing and wildlife watching, and to improve fish and wildlife habitat on privately held lands. In Virginia, approximately 85 percent of land is privately owned, and more than 8.05 million acres (nearly 32 percent) of the total land area is farmland. A 2009 survey found that in the previous five years, over 52 percent of Virginia hunters stopped hunting for a particular species due to the lack of hunting access (Responsive Management 2009). This program is needed to expand on existing Virginia public access programs in order to increase public outdoor recreational opportunities.

PROPOSED ACTION

The Proposed Action Alternative is to use \$1,420,000 in VPA-HIP grant funds in Virginia to expand the current PALS Program for outdoor recreational activities from the current enrollment of approximately 19,000 acres to 38,000 acres. The expanded PALS Program would:

- Contract an annual survey of landowners to determine what factors are of greatest concern with allowing public access to their lands, as well as assessing landowner and public satisfaction with the program and the value of the incentives provided to landowners. The results will be used to target VPA-HIP funds and provide more information about how to develop an integrated campaign to expand public access to private lands.

- Enable private landowners with suitable wildlife habitat to enter into agreements and receive incentive payments for allowing public recreational access and improving habitat values on some portion of the enrolled land. Habitat would be enhanced on approximately 2,000 acres of participating Conservation Reserve Enhancement Program (CREP) properties. Enrollment and habitat improvement would be primarily in Virginia Quail Action Plan (QAP) focus areas, but landowners would also be eligible statewide. Appropriate wildlife habitat plans that are consistent with both the QAP and the Virginia Wildlife Action Plan would be developed for all PALS enrolled lands.
- Fund riparian and instream restoration on private lands having habitat that supports Species of Greatest Conservation Need (SGCN), targeting an additional 10 linear miles that can support increased public access without jeopardizing sensitive areas. Improvement would include implementation of CREP-compliant riparian buffers and would require a 10-year maintenance agreement. Landowners would cost share the improvements and also receive incentive payments for enrolling these areas in PALS.
- Hiring a contractor to locate and contact landowners having approximately 500 or more acres of land, determine their interest in the program, and coordinate habitat plans on newly enrolled lands.
- Promote the availability of the newly enrolled lands through VDGIF's *Virginia Wildlife* magazine, hunting regulations digests, and Virginia's FindGame.org web-based system.

NO ACTION ALTERNATIVE

Although it would not serve the purpose and need for the Proposed Action, a No Action Alternative has been carried forward as the baseline against which the potential impacts arising from the Proposed Action can be measured. Under the No Action Alternative, the Virginia PALS program and wildlife habitat improvement would not be expanded utilizing the VPA-HIP Federal funding. The absence of Federal Funding would limit the expansion of the PALS program, restricting the amount of land accessible for outdoor recreation opportunities.

ENVIRONMENTAL CONSEQUENCES

The environmental consequences of the Proposed Action and No Action Alternative are addressed in this PEA and summarized in Table ES-1.

Table ES-1. Summary of Environmental Consequences

Resource	Proposed Action Alternative	No Action Alternative
Biological Resources	<p>Expanding lands available for wildlife-associated recreation under the Proposed Action Alternative would benefit vegetation and wildlife by maintaining suitable habitat rather than converting land to another incompatible use. Providing hunting and fishing opportunities potentially could decrease game and fish populations to unsustainable levels. This potential would be minimized by VDGIF hunting and fishing permitting regulations. Both upland and instream/riparian habitat improvements would provide long-term benefits to biological resources through the restoration of natural habitats. While some negative impacts may occur during improvement projects, these would be short-term and would be minimized through adherence to best management practices (BMPs) that include measures to maintain adequate ground cover, litter and canopy, control erosion and reduce soil compaction, and controlling the introduction of invasive species.</p> <p>Site-specific evaluation of lands proposed for enrollment by VDGIF qualified personnel would determine the potential for the presence of protected species. If protected species would likely be present, VDGIF would consult with the U.S. Fish and Wildlife Service. If an authorized recreational activity on the land proposed for enrollment would potentially impact a protected species, it would not likely be approved. No adverse effects to protected species would likely occur.</p>	<p>If VPA-HIP funds would not be used, PALS would not be expanded. The additional benefits of the Proposed Action Alternative in expanding acreage maintained in suitable wildlife habitat in the State would not be realized.</p>

Table ES-1. Summary of Environmental Consequences (cont'd)

Resource	Proposed Action Alternative	No Action Alternative
Water Resources	<p>The Proposed Action to use VPA-HIP funds for the expansion of the PALS program statewide and for habitat improvement projects on a portion of any newly enrolled land would benefit water resources by establishing healthy vegetative covers. Vegetative covers reduce erosive runoff leading to sedimentation and pollutant offloading to nearby waters, improving water quality and aquatic habitat. Vegetative covers also reduce runoff velocity, allowing water to percolate and replenish groundwater, and alleviate flooding that erodes floodplains. Instream and riparian habitat improvement would stabilize soils and stream banks, and maintain vegetative cover that would reduce sedimentation. Because of the interaction between surface and groundwater, reduction of sediments and pollutants would provide similar benefits for groundwater. Temporary minor impacts to water resources could occur from ground disturbance associated with habitat improvements, but this would be minimized by employing measures to maintain adequate ground cover, litter, and canopy, and use of silt fencing.</p>	<p>The No Action Alternative would not provide VPA-HIP funds for the expansion of the PALS program; the existing PALS program would continue as currently administered. The potential long-term positive impacts associated with habitat improvement programs derived from maintaining and enhancing habitat for wildlife would not occur.</p>
Coastal Zones	<p>CREP and the VPA-HIP program are not listed as a Federal Assistance Project (15 CFR Part 930, Subpart F) requiring a consistency determination. However, any specific habitat improvement project that may occur within the coastal zone or outside the coastal zone with the potential to impact coastal uses or resources may be subject to a Federal consistency determination. There are several enforceable policies that may be</p>	<p>The No Action Alternative would not provide VPA-HIP funds for the expansion of the PALS program or habitat improvement projects. The existing PALS program would continue as currently administered. The long-term positive impacts resulting from maintaining and enhancing habitat for wildlife would not occur.</p>

Table ES-1. Summary of Environmental Consequences (cont'd)

Resource	Proposed Action Alternative	No Action Alternative
Coastal Zones (cont'd)	<p>considered during a Federal consistency determination of VPA-HIP funded projects, including Fisheries Management, Subaqueous Lands Management, Wetlands Management, and Non-point Source Pollution Control.</p> <p>The expansion of the PALS program and habitat improvement projects on a portion of newly enrolled land using VPA-HIP funds would provide benefits to the areas of the coastal zone in which they occur or effect. Enrollment of additional acreage would maintain vegetative cover suitable for wildlife habitat, and subsequently stabilizing soil and reducing sediment, nutrient and other pollutant offloading into nearby waters from adjacent agricultural fields. The installation of CREP compliant riparian buffers and the 10-year maintenance agreement for instream/ riparian improvement projects would provide long- term, positive impacts.</p>	
Soil Resources	<p>The Proposed Action could increase wildlife-based recreation on private lands with the potential to increase soil erosion and compaction. Access would only be approved for those lands suitable for recreation activities, however, and because habitat plans would be developed for all enrolled lands, the potential for adverse impacts to soils would be minimal.</p> <p>Habitat improvements would temporarily disturb soils, but benefit soils in the long term by establishing healthy vegetative covers, protecting soil from wind and water erosion, and increasing soil quality. Temporary impacts to soil resources would be minimized by adherence to Natural Resource Conservation Service (NRCS) guidelines and BMPs that include</p>	<p>PALS would not be expanded under the No Action Alternative, resulting in the modest benefits of the program to soil unrealized.</p>

Table ES-1. Summary of Environmental Consequences (cont'd)

Resource	Proposed Action Alternative	No Action Alternative
Soil Resources (cont'd)	maintaining adequate ground cover, litter, and canopy, and reducing soil compaction.	
Recreation	Under the Proposed Action, long-term positive impacts to outdoor recreational activities are expected from expanding PALS statewide, increasing opportunities for fishing, hunting, boating, and wildlife viewing activities. The majority of land in Virginia is privately held, and public recreation lands cannot support the demand for outdoor recreation in the State. Program objectives are to double the acreage enrolled in PALS to 38,000 acres and providing 2000 acres of upland and 10 miles of instream/riparian habitat improvements that could benefit fishing.	Under the No Action Alternative, VPA-HIP funds would not be used to expand the PALS program. No change to existing recreational resources would occur and the goal of doubling PALS lands to 38,000 acres would not be fulfilled.
Socioeconomics	The use of USDA VPA-HIP funds for the expansion of the PALS program would create a slight economic benefit to both local economies and the statewide wildlife-associated recreation economy of \$2.2 billion. Providing additional recreational access to private lands would also attract more out of state recreationists, benefiting local and statewide economies. Implementation of the Proposed Action Alternative would have long-term socioeconomic benefits for employment and income with no associated negative effects such as large population movements.	Under the No Action Alternative, the existing PALS program would continue as currently administered. VPA-HIP grant funds would not be used to expand the program statewide or to leverage additional funds. No additional local or statewide economic benefits associated with an expanded PALS program such as increased sales of outdoor recreation related equipment, use of lodging and restaurants, and purchase of hunting and fishing permits would occur.
Environmental Justice	The Proposed Action Alternative would not have highly adverse disproportionate impacts to environmental justice populations. Under Federal law, the USDA prohibits discrimination on the basis of race, color, religion, national origin, age, sex, or disability. Minority and low-income populations would have	Under the No Action Alternative, VPA-HIP grant funds would not be used to expand the PALS program statewide. The PALS program would continue to provide public access to private lands in Dickenson County for wildlife-associated recreation. No highly adverse disproportionate impacts to environmental justice

Table ES-1. Summary of Environmental Consequences (cont'd)

Resource	Proposed Action Alternative	No Action Alternative
Environmental Justice (cont'd)	<p>equal access to participate in PALS if their land meets the eligibility criteria of suitable habitat and recreational value. Further, enrolled participants in the PALS must grant equal access to all sportspersons with a valid hunting and/or fishing license, or wildlife watchers, based on their agreement to wave liability and conform to posted use conditions.</p>	<p>populations would occur.</p>

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ACRONYMS AND ABBREVIATIONS

2008 Farm Bill	Food, Conservation, and Energy Act of 2008
1-EQ	Environmental Quality Programs for State and County Offices Rev. 2
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
BMP	Best Management Practices
CAA	Clean Air Act
CBP	Chesapeake Bay Program
CCC	Commodity Credit Corporation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CP	Conservation Practice
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSP	Conservation Stewardship Program
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DN	Decision Notice
EI	Erodibility Index
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
ERS	Economic Research Service
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FR	Federal Register
FSA	Farm Service Agency
GRP	Grasslands Reserve Program
HEL	Highly Erodible Lands
LIP	Landowner Incentive Program
MBTA	Migratory Bird Treaty Act
MGD	Million Gallons per Day
MHI	Median Household Income
MLRA	Major Land Resource Areas
NASS	National Agricultural Statistics Service

ACRONYMS AND ABBREVIATIONS (cont'd)

NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NRCS	Natural Resources Conservation Service
PAH	Polycyclic Aromatic Hydrocarbons
PALS	Public Access Lands for Sportsmen
PCB	Polychlorinated Biphenyls
PEA	Programmatic Environmental Assessment
PL	Public Law
QAP	Quail Action Plan
RFA	Request for Applications
ROI	Region of Influence
RUSLE2	Revised Universal Soil Loss Equation
SGCN	Species of Greatest Conservation Need
SWCD	Soil and Water Conservation District
TES	Threatened and Endangered Species
TMDL	Total Maximum Daily Loads
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VAC	Code of Virginia
VCP	Virginia Coastal Zone Management Program
VDACS	Virginia Department of Agriculture and Consumer Services
VDCR	Virginia Department of Conservation and Recreation
VDCR-NHP	Virginia Department of Conservation and Recreation - Natural Heritage Program
VDEQ	Virginia Department of Environmental Quality
VDGIF	Virginia Department of Game and Inland Fisheries
VDOF	Virginia Department of Forestry
VEC	Virginia Employment Commission
VPA-HIP	Voluntary Public Access and Habitat Incentive Program
WHIP	Wildlife Habitat Incentive Program
WMA	Wildlife Management Area
WRP	Wetlands Reserve Program

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Background

The United States Department of Agriculture (USDA) Commodity Credit Corporation (CCC) proposes to provide Voluntary Public Access and Habitat Incentive Program (VPA-HIP) grant funds to the Commonwealth of Virginia for expansion of the Public Access Lands for Sportsmen (PALS) program and enhancement of habitat on newly enrolled PALS acreage. The VPA-HIP is authorized by the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) that provides grants to States and tribal governments to encourage owners and operators of privately held farm, ranch, and forest land to voluntarily open land for public access for outdoor recreation activities such as hunting, fishing, hiking, wildlife watching, and other outdoor activities. The VPA-HIP programs are administered by the State or tribal government receiving the grant.

1.1.1 The Voluntary Public Access and Habitat Incentive Program

The CCC regulations for VPA-HIP have been established in an interim rule (Federal Register [FR] 39135-39143). The VPA-HIP grant funds are awarded through a competitive Request for Applications (RFA) process in which States and tribal governments may request VPA-HIP funds to either expand existing or create new public access programs. Funds may also be requested to provide incentives for eligible private landowners to improve habitat on enrolled lands. The Farm Service Agency (FSA), on behalf of the CCC, evaluates applications to determine eligibility of the applicant and whether the application is complete and sufficiently meets the requirements of the RFA (FSA 2011a). In accordance with the 2008 Farm Bill, funding priority would be given to applications that address the program objectives:

- Maximize participation by landowners
- Ensure the land enrolled in the program has appropriate wildlife habitat
- Provide incentives to strengthen wildlife habitat improvement on lands enrolled in the Conservation Reserve Enhancement Program (CREP)
- Supplement other funding and services provided by other Federal, State, tribal government, or private resources that is provided in the form of cash or in-kind services
- Provide information to the public on the location of public access land

A State's grant amount would be reduced by 25 percent if migratory bird hunting opening dates are not consistent for both residents and non-residents. The VPA-HIP does not preempt liability laws that may apply to activities on any property related to VPA-HIP grants (FSA 2011a).

1.1.2 The Public Access Lands for Sportsman Program

The PALS program is a cooperative private/public program administered by the Virginia Department of Game and Inland Fisheries (VDGIF) to open lands to the public for outdoor activities. The Commonwealth of Virginia (Commonwealth) proposes to use VPA-HIP grant

funds to expand its current PALS program and enhance a portion of habitat on land enrolled using VPA-HIP funds. Virginia consists of about 25.3 million acres of which approximately 14 percent (3.53 million acres) is public land (Federal, Commonwealth or local government land) or private land in trusts and approximately 85 percent is privately held. The Commonwealth currently maintains 39 management areas totaling over 200,000 acres for public outdoor recreational use activities (VDGIF 2012a). These lands are maintained with fees from hunting, fishing, and trapping licenses and Federal Wildlife Restoration funds. Currently, there are 19,000 acres of private land enrolled in the PALS program, all of which is located in Dickenson County. The VDGIF manages hunting, fishing, and trapping access to PALS lands. The incentive payments for this acreage are funded from the sale of permits to access this land.

1.1.3 The Conservation Reserve Enhancement Program

CREP was established in 1997 under the authority of the Conservation Reserve Program (CRP) to address agriculture-related environmental issues by establishing conservation practices (CPs) on privately owned agricultural lands using funding from Federal, State, and tribal governments, as well as non-government sources. CREP addresses State designated high-priority conservation issues in defined geographic areas such as watersheds. Producers who voluntarily enroll their eligible lands in CREP receive financial and technical assistance for establishing CPs on their land. In addition, property owners receive annual rental payments based upon the enrolled acreage. Once eligible lands are identified, site-specific environmental reviews and consultation with and permitting from other Federal agencies are completed as appropriate in accordance with FSA's Handbook: Environmental Quality Programs for State and County Offices Revision 2 (1-EQ) (FSA 2009). Conservation plans developed by qualified personnel are required for all enrolled CREP lands, and any changes to the plans must be documented in writing and submitted for approval prior to implementing a proposed activity.

1.1.4 Regulatory Compliance

This Programmatic Environmental Assessment (PEA) is prepared to satisfy the requirements of the National Environmental Policy Act (NEPA; Public Law [PL] 91-190, 42 U.S. Code [USC] 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). A variety of laws, regulations, and Executive Orders (EO) apply to actions undertaken by Federal agencies and form the basis of the analysis prepared in this PEA. These include but are not limited to:

- National Historic Preservation Act (NHPA)
- Endangered Species Act (ESA)
- Clean Water Act (CWA)
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations

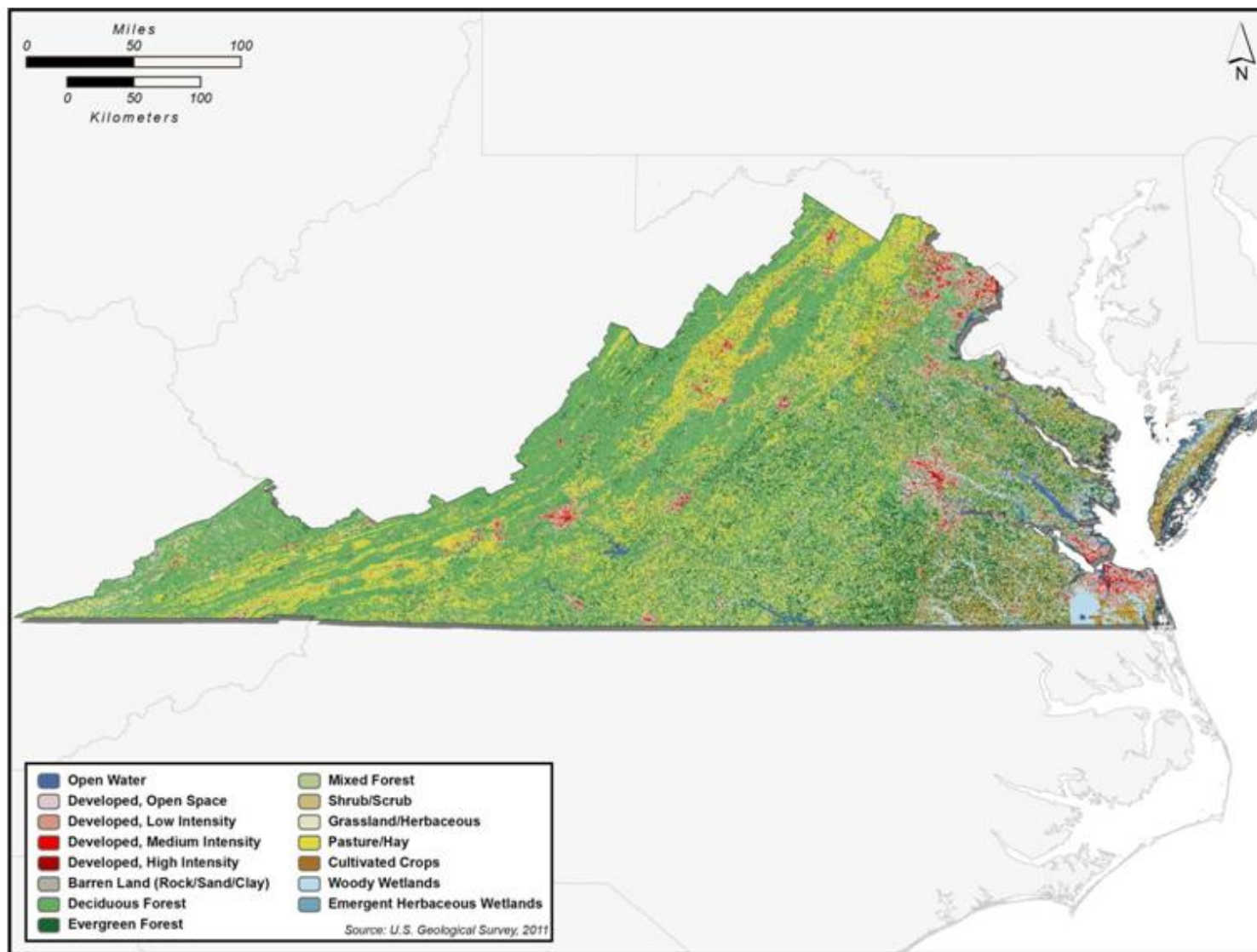
- EO 11988, Floodplain Management
- EO 11990, Protection of Wetlands
- Clean Air Act (CAA)

1.2 Purpose and Need

The purpose of the Proposed Action is to allow the Commonwealth to use VPA-HIP grant funds to increase the amount of land available for access by the public for wildlife-dependent recreation such as hunting, fishing and wildlife watching, and to improve fish and wildlife habitat on privately held lands. As previously noted, the total land area of Virginia is approximately 25.3 million acres of which approximately 85 percent of land is privately owned. Approximately 8.1 million acres (nearly 32 percent) of the total land area is farmland (Figure 1-1) (National Agricultural Statistics Service [NASS] 2012). A 2009 survey found that in the previous five years, over 52 percent of Virginia hunters stopped hunting for a particular species due to the lack of hunting access (Responsive Management 2009). VPA-HIP funds would allow the Commonwealth to determine how best to increase public access to private lands, provide incentive payments to private landowners for public access, and enhance habitat on a portion of these lands. These funds would also be used to manage habitat restoration activities and publicize PALS locations in several media.

1.3 Organization of the PEA

This PEA assesses the potential impacts of the Proposed Action and the No Action Alternatives on potentially affected environmental and socioeconomic resources. Chapter 1 provides background information relevant to the Proposed Action, and discusses its purpose and need. Chapter 2 describes the Proposed Action and alternatives. Chapter 3 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 describes potential environmental consequences to these resources. Chapter 4 includes analysis of cumulative impacts and irreversible and irretrievable resource commitments. Chapter 5 discusses mitigation measures. Chapter 6 presents a list of the preparers of this document and Chapter 7 contains a list of persons and agencies contacted during the preparation of this document. Chapter 8 contains references. Appendix A contains an example of the Agency Coordination Letter.



Source: USGS 2011

Figure 1-1. Land Cover in Virginia

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

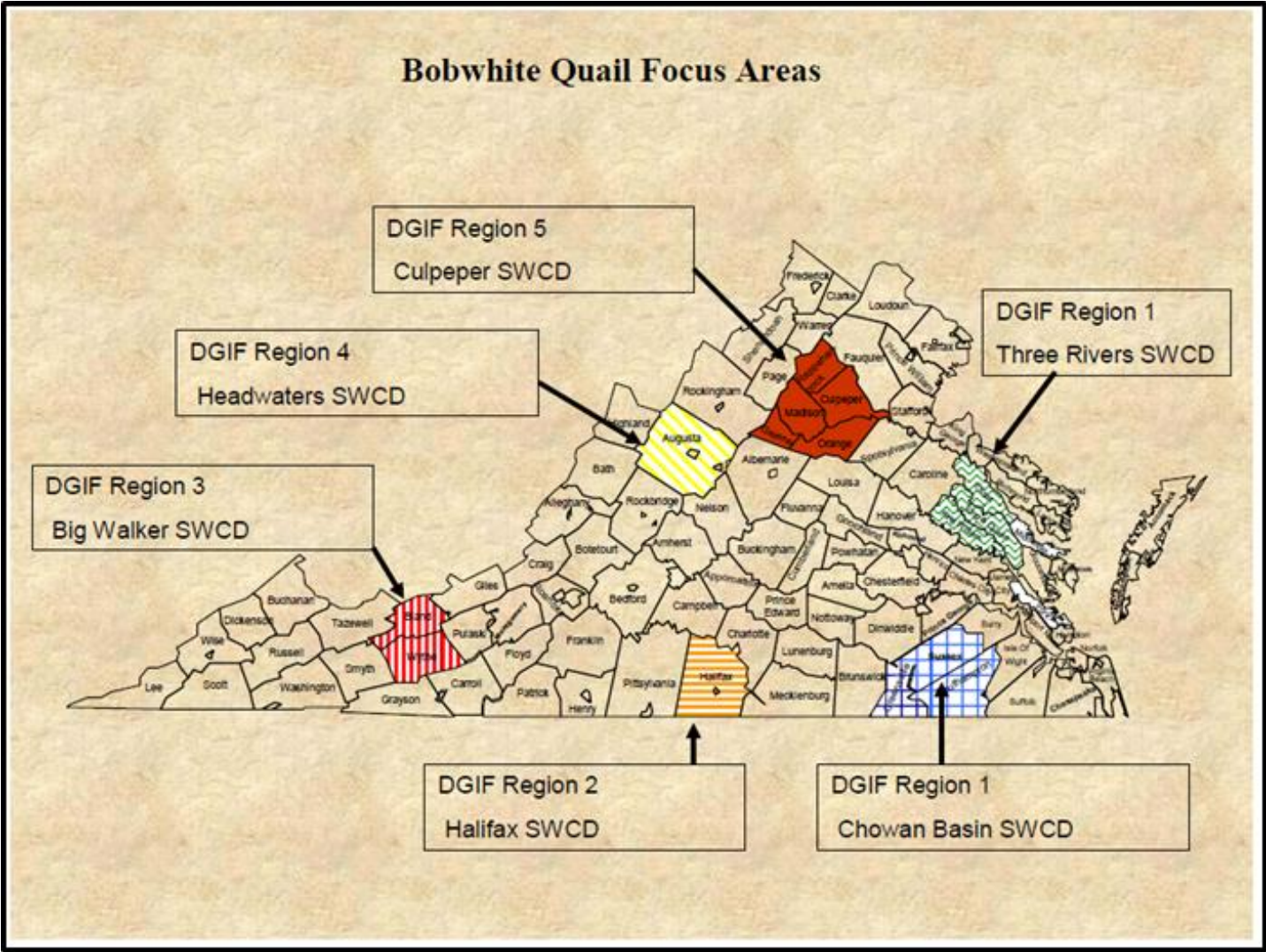
2.1 Proposed Action

The Commonwealth proposes to use \$1,420,000 in VPA-HIP grant funds over a three-year period (\$205,000 in the first year, \$625,000 in the second, and \$590,000 in the third) to expand the PALS program and make habitat improvements. The funds made available in the first year would primarily be used to contract a survey of landowners that would be used to target the use of VPA-HIP funds and provide more information about how to develop an integrated campaign to expand public access to private lands. The available funds would also be used to provide incentive payments to additional landowners to expand publicly accessible lands. Funding received in the following two years would be used for habitat improvement projects, continuation of the landowner survey, and funding a contractual position to contact landowners and manage habitat improvement projects. An additional \$562,000 from other Federal and State sources would be used to supplement habitat improvement projects, and hire an additional staff biologist for program management. VPA-HIP grant funds would pay 80 percent of improvement project costs. The landowners would pay the remaining 20 percent (\$120,000) of project costs, maintain CREP-prescribed riparian buffers, and maintain the improved habitat for at least 10 years. Access to PALS land for hunting, fishing, or trapping would be obtained through permits from the VDGIF obtained from purchase agents at \$18 per permit. The Code of Virginia (VAC) §29.1-509 waives liability for landowners who allow the public access to their lands at no charge for outdoor recreation.

For lands enrolled in CREP that would also be enrolled in PALS, the previously completed site-specific environmental evaluation for CREP would be consulted. Planned PALS habitat improvement activities would conform to CREP guidelines and be evaluated in accordance with FSA's 1-EQ process for any additional potential environmental effects. Appropriate wildlife habitat plans that are consistent with both the Quail Action Plan (QAP) and the Virginia Wildlife Action Plan would be developed for all lands enrolled in PALS but not enrolled in CREP.

Through the PALS program, a survey would be contracted to contact landowners owning a 500 acres to determine what concerns landowners have regarding providing public access to their lands. This survey would be used to assist VDGIF in targeting the use of VPA-HIP funds for maximum benefit and provide more information on how to better expand public access to private lands. This survey would also be used to develop baseline data on existing PALS landowners to determine who may be willing to expand public access with additional incentives.

VPA-HIP funds would be used to provide annual incentive payments to eligible private landowners for public access. Landowners with qualified lands statewide would be eligible for enrollment, but enrollment priority would primarily target those landowners having more than 500 acres within QAP focus areas, although landowners with less than 500 acres would also be eligible (Figure 2-1). Landowners enrolling in CREP could enroll in the expanded PALS



Source: VDGIF No Date

Figure 2-1. Virginia Quail Action Plan Focus Areas Targeted for Habitat Enhancement

program at the same time. Table 2-1 presents CREP enrollment by county in Virginia. Each lease term and amount of incentive payment would be individually negotiated but would range from \$0.25 to \$0.75 per acre. Financial assistance would be provided for upland habitat improvement on approximately 10 percent (an estimated 2000 acres) of enrolled lands. VPA-HIP funds would also be used to fund a contractor position to contact potential enrollees and manage habitat enhancement projects.

Table 2-1 Counties within Virginia with Enrolled CREP Acreage

County	CREP Acreage	County	CREP Acreage	County	CREP Acreage	County	CREP Acreage
Accomack	753.3	Albemarle	631.8	Alleghany	45.9	Amelia	174.3
Amherst	217.0	Appomattox	160.2	Augusta ¹	2,476.9	Bath	373.9
Bedford	781.7	Bland ¹	118.0	Botetourt	214.9	Brunswick	94.0
Buchanan	17.2	Buckingham	203.2	Campbell	208.9	Caroline	32.4
Carroll	293.9	Charles City	26.6	Chesapeake	575.3	Chesterfield	4.7
Clarke	96.6	Craig	112.8	Culpepper ¹	731.0	Cumberland	259.6
Dinwiddie	86.5	Essex ¹	61.8	Fauquier	1,089.9	Floyd	26.7
Fluvanna	156.6	Franklin	41.7	Frederick	135.2	Goochland	142.3
Grayson	304.7	Greene ¹	222.5	Greensville ¹	1,384.1	Halifax ¹	1,965.4
Hanover	15.5	Highland	561.1	Isle of Wight	212.9	James City	6.2
King and Queen ¹	39.2	King George	199.4	King William ¹	11.5	Lancaster	19.3
Lee	125.7	Loudoun	101.9	Louisa	531.4	Lunenburg	54.1
Madison ¹	547.0	Mathews	25.5	Mecklenburg	15.7	Montgomery	90.2
Nelson	253.6	New Kent	19.3	Northampton	132.6	Northumberland	16.2
Nottoway	90.4	Orange ¹	498.2	Page	252.1	Patrick	128.7
Pittsylvania	58.4	Powhatan	64.2	Prince Edward	518.2	Prince George	36.9
Prince William	84.3	Pulaski	28.3	Rappahannock ¹	636.2	Richmond	106.4
Roanoke	1.9	Rockbridge	477.0	Rockingham	1,215.8	Russell	981.3
Scott	131.8	Shenandoah	344.7	Smyth	532.7	Southampton ¹	2,506.8
Spotsylvania	137.1	Stafford	34.4	Suffolk	279.2	Surry	12.5
Sussex ¹	157.2	Tazewell	478.5	Virginia Beach	33.5	Warren	29.2
Washington	808.0	Westmoreland	195.0	Wythe ¹	245.3	Total	28,304.0

Source: FSA 2012

Note 1: Counties within the QAP Focus Areas

An additional 10 linear miles of riparian/instream habitat improvements on private lands would be funded, primarily focusing on areas with Species of Greatest Conservation Need (SGCN) designated in the Virginia Wildlife Action Plan. Improvement would include implementation of CREP-compliant riparian buffers and would require a 10-year maintenance agreement. Landowners would cost share the improvements and also receive incentive payments for

enrolling these areas in PALS. The instream/riparian restoration area may be expanded statewide if funds can be combined with other riparian restoration efforts to increase benefits to identified important watersheds. These projects would include constructing cattle exclusions, planting vegetation, restoring natural flows, and improving degraded channels and shorelines. Public access would be granted to the completed riparian/instream project areas as negotiated by VDGIF personnel.

2.1.1 Eligible Lands

The PALS expansion would primarily target owners and operators with more than 500 acres of privately held farm, ranch and forestland that is enrolled in the Virginia CREP. Enrollment efforts would also primarily focus in the five areas identified in the Virginia QAP (see Figure 2-1), and appropriate land would also be eligible statewide. Efforts to enhance riparian and instream habitat would target the Upper James and Rivanna, Upper Roanoke and Upper Nottaway Rivers, and the Tennessee drainage (Figure 2-2) for those areas that support SGCN.

2.1.2 Public Involvement and Agency Coordination

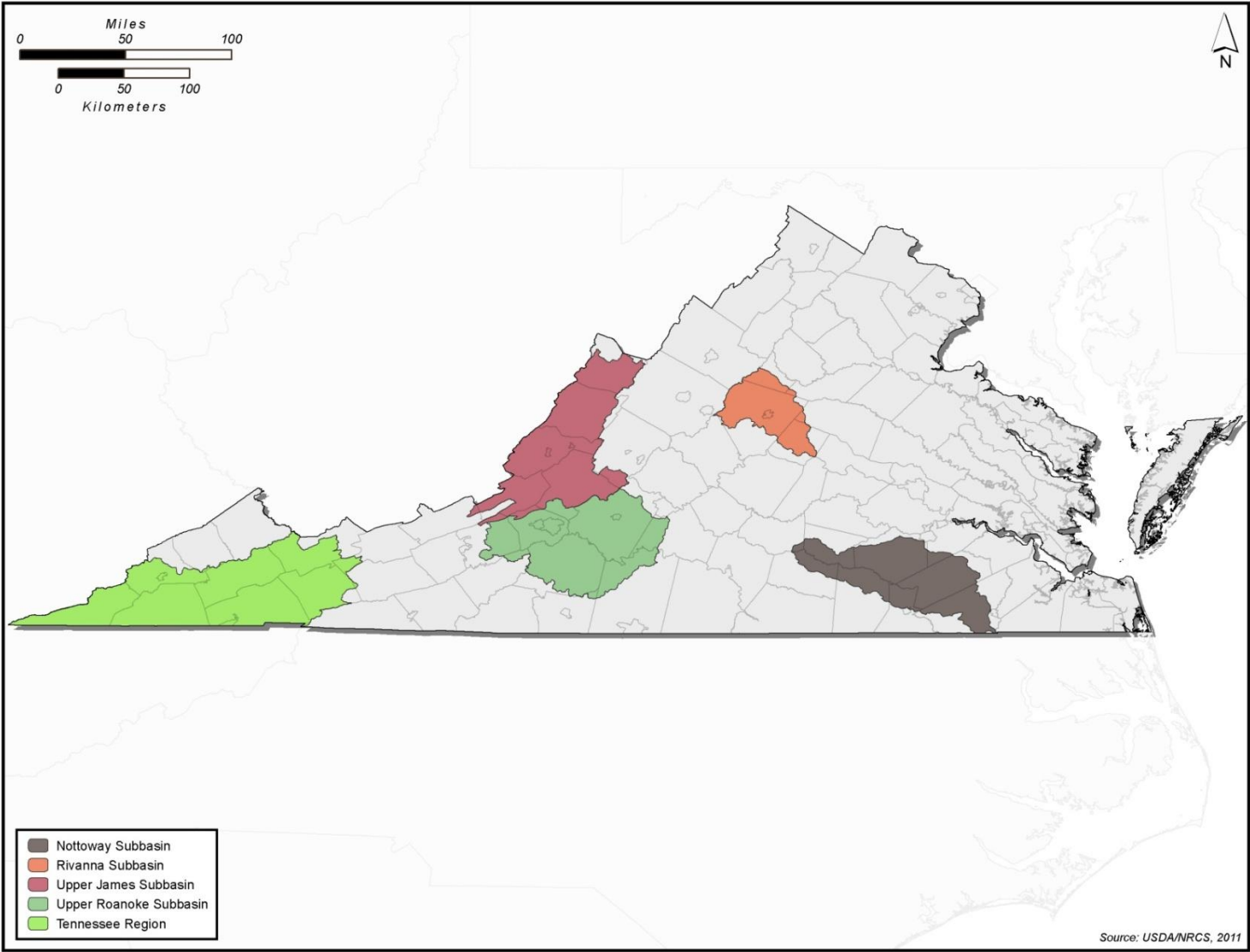
The VDGIF would manage the distribution of VPA-HIP grant funds for the expansion of PALS, including public outreach. Agencies and organizations contacted concerning this PEA and the notification letter for the availability of the Final PEA is provided in Section 7, List of Agencies Contacted and Appendix A. A Notice of Availability (NOA) for the Final PEA was advertised in Commonwealth newspapers to announce a 30-day public comment period beginning on May 7, 2012. A public website was created that provides program information, copies of the Final PEA and signed Finding of No Significant Impact (FONSI) and an electronic form for submitting comments via the internet. Barring any new data identified during public and agency review of the PEA that would dramatically change the analysis presented in the PEA or identification of a significant controversial issue, the PEA and FONSI are considered final 30 days after their approval and release to the public.

2.2 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. In accordance with 40 CFR §1501.7, issues eliminated from detailed analysis in this PEA include the following:

Noise

Implementing the Proposed Action would not permanently increase ambient noise levels at or adjacent to the access areas. While expanding PALS may increase traffic, boating and hunting in some locations, the associated noise from these activities would be intermittent and dispersed. There may be some slight increases in noise levels associated with habitat improvement activities, but these would be minor, temporary, and would cease once habitat improvement activities are complete. Therefore, noise has been eliminated from detailed analysis.



Source: NRCS 2011

Figure 2-2 Virginia River Basins and Drainages Targeted for Instream/Riparian Habitat Enhancement under VPA-HIP

Air Quality

The Proposed Action is not expected to impact either local or regional air quality. Temporary minor impacts to local air quality as a result of soil disturbance during habitat improvement projects would not differ measurably from those resulting from continued use of the land for agriculture, and would not exceed ambient air quality standards. Since the expansion of PALS with VPA-HIP grant funds would not result in impacts to the attainment, non-attainment, or maintenance status of any of the Commonwealth's airsheds, this issue has been eliminated from further study in this PEA.

Transportation

The Proposed Action has little potential to impact transportation on a local, regional, or State level. While traffic may increase slightly in areas in which new lands are enrolled in PALS, the lands that would be enrolled are predominately rural and widely dispersed. Therefore, transportation has been eliminated from further analysis.

Human Health and Safety

There would be no adverse impacts to human health and safety under the Proposed Action. The Proposed Action would expand PALS and make additional private lands available for outdoor related activities. Some of these activities such as hunting and boating have some inherent safety risks, yet the expansion of PALS would not increase potential risks to human health and safety. Virginia requires all individuals between the ages of 12 and 16 to attend a hunter education course, and hunters under the age of 12 must be accompanied by a licensed adult. Similarly, Virginia also requires operators of certain classes of watercraft take an approved boating safety education course, and all watercraft to have all necessary safety equipment worn or immediately available as required.

Prime and Unique Farmland

The Proposed Action would not remove any land from agricultural production; therefore the Farmland Protection Policy Act of 1981 is not applicable.

Cultural Resources

Prior to any habitat enhancement project, a site-specific environmental evaluation must be completed to ensure compliance with the NHPA. It would determine the potential for the proposed recreational activities to affect historic properties, the need for an inventory, and if resources were found, consultation with the State Historic Preservation Officer would be completed regarding the eligibility of resources found for the National Register of Historic Places, potential effects of the undertaking, and measures to take effects into account. Every effort would be made to avoid any adverse effects; however, if such effects were anticipated to occur, the proposed activities would not likely be approved. Lands enrolled in CREP have already been evaluated for potential effects to historic properties in accordance with 1-EQ, and in many instances, earth disturbing conservation practices have been installed. The Conservation

Plan would be re-evaluated prior to any habitat enhancement project occurring on CREP lands, including any potential for effects to historic properties. The Proposed Action does not allow for the purposeful destruction of any cultural resources. Therefore, cultural resources have been eliminated from detailed study in this PEA.

2.3 Alternatives Selected for Analysis

2.3.1 Proposed Action Alternative

Under the Proposed Action Alternative, VDGIF would use \$1,420,000 in VPA-HIP grant funds in Virginia to expand the existing PALS Program for outdoor recreational activities from the current enrollment of approximately 19,000 acres to 38,000 acres. These funds would be used to leverage \$682,000 in other Commonwealth, Federal, and private funds to provide increased outdoor recreational opportunities in the Commonwealth. The PALS is an existing public access program that would be expanded by the Commonwealth to meet the need to increase the amount of land accessible to the public for outdoor-related recreational activities and is administered by the VDGIF.

Using VPA-HIP grant funds, the VDGIF would develop and implement a survey whose results would be used to target VPA-HIP funds and provide more information about how to develop an integrated campaign to expand public access to private lands. The survey will target landowners owning more than 500 acres and determine what factors are of greatest concern with allowing public access to their lands, as well as assessing landowner and public satisfaction with the program, and the value of the incentives provided to landowners.

Currently, there are 19,000 acres enrolled in PALS, all of which are in Dickenson County. The expansion of PALS would initially target owners and operators with 500 acres or more of privately held farm, ranch and forestland and are enrolled in the Virginia CREP. Enrollment efforts would also initially target those lands in QAP focus areas (see Figure 2-1); however, all landowners with qualified lands statewide would be eligible for enrollment. PALS provides incentive payments to eligible private landowners for negotiated leases to provide the public with increased access to lands for hunting, fishing and other outdoor recreational opportunities. All new PALS agreements would include a habitat management plan emphasizing the restoration and management of early successional habitat. Approximately 10 percent of any newly enrolled land, about 2,000 acres statewide, would have habitat improvements that conform to CREP guidelines. The VPA-HIP grant would provide funding for one contractual position dedicated to working with landowners for public access and managing all habitat improvement projects.

The VPA-HIP grant would also be used to restore an additional 10 linear miles of streams. Projects would include building cattle exclusions, planting vegetation, restoring natural flows, and improving degraded channels. The VPA-HIP grant would fund 80 percent of project costs, the remaining 20 percent would be paid by the landowner. The landowner would also be responsible for maintaining CREP-prescribed riparian buffers and the enhanced habitat for at least 10 years. The level of public access to restored sites, as negotiated by VDGIF, would be

dependent upon the site's sensitivity, landowner willingness, and the recreational opportunities it can provide.

VPA-HIP grant funds would also fund a contractor position to locate and contact landowners having 500 or more acres of land and determine their interest in the program. The contractor would also be responsible for managing habitat plans on newly enrolled lands

2.3.2 No Action Alternative

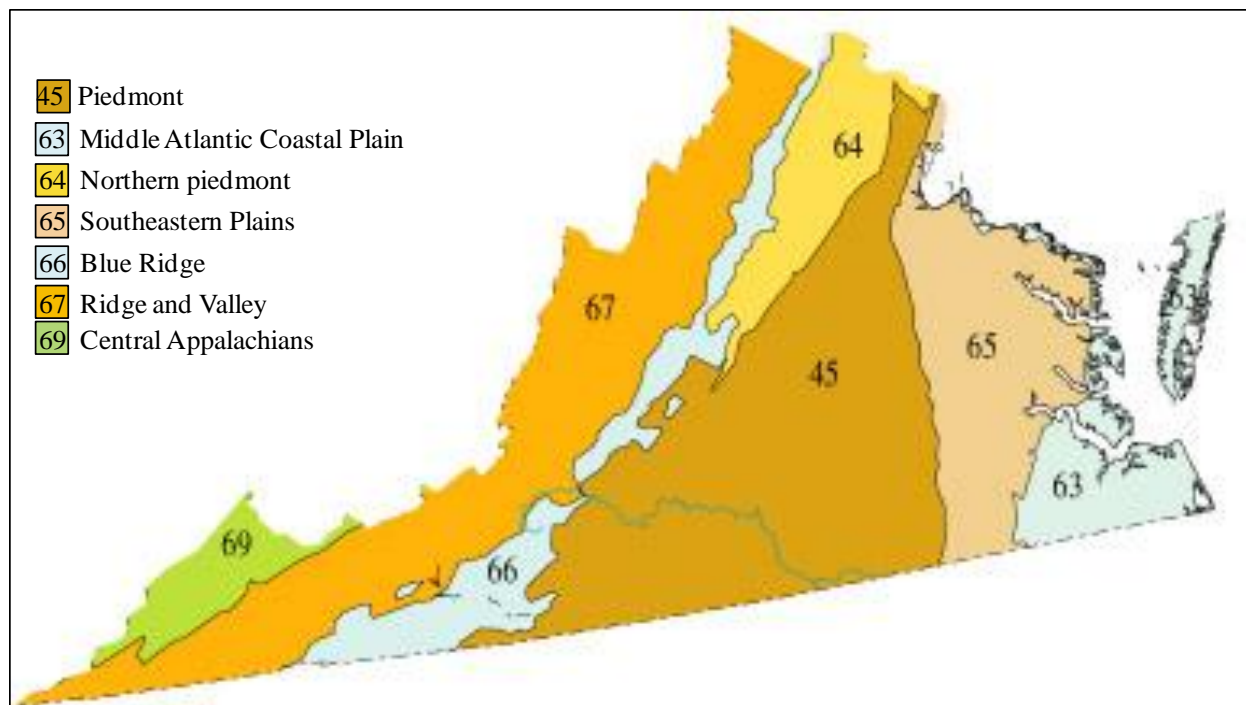
Under the No Action Alternative, the PALS program would not be expanded using VPA-HIP funding. The absence of Federal funding would hinder the ability of Virginia to expand the PALS program and the amount of land accessible for outdoor recreation opportunities would remain limited. The No Action Alternative does not meet the purpose and need of the Proposed Action, but is being carried forward for analysis in accordance with CEQ regulations in order to provide a baseline against which the impacts of the Proposed Action can be assessed.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Biological Resources

Biological resources include all plant and animal species and the habitats in which they occur. For this analysis, biological resources are divided into the following categories: vegetation, wildlife, and protected species and critical habitat. Vegetation and wildlife refer to the plant and animal species, both native and introduced, which characterize a region. For this analysis, noxious weeds are not discussed since habitat improvement projects would conform to CREP guidelines and include control of these species. Protected species are those Federally designated as threatened or endangered and protected by the ESA (16 USC §§1531-1544). The USFWS designates critical habitat as essential for the recovery of specifically listed threatened and endangered species, and like those species, is protected under the ESA. Although the bald eagle (*Haliaeetus leucocephalus*) has been delisted from the ESA it continues to be protected by the Bald and Golden Eagle Protection Act (16 USC §§668-668c). Further, protection to the vast majority of bird species is provided by the Migratory Bird Treaty Act (MBTA) (16 USC §§703-711). Additional protection for vegetation and wildlife species is afforded by the Virginia ESA (VAC §§29.1-563 through 570 as amended). Under the Virginia ESA and a cooperative agreement with the USFWS, VDGIF has regulatory and management authority over Federally and State listed fish or wildlife species. The Virginia Department of Conservation and Recreation (VDCR) – Natural Heritage Program (NHP) is responsible for the identification, protection, and stewardship of Virginia's natural heritage resources defined as the habitat of rare, threatened, or endangered plant and animal species, rare or State significant natural communities or geologic sites, and similar features of scientific interest. The VDCR-NHP's database serves as the statewide clearinghouse for threatened and endangered plant species information and is shared among the agencies responsible for enforcement. The Virginia Department of Agriculture and Consumer Services (VDACS) holds authority to enforce regulations pertaining to plants and insects. Through a memorandum of agreement, VDCR represents VDACS by providing comments regarding potential impacts of projects on State listed threatened and endangered plant and insect species.

The organizing principle of this analysis of biological resources is based upon ecoregions (Woods *et al.* 1999; 2003). Ecoregions are areas of relatively homogenous soils, vegetation, climate, and geology, each with associated wildlife adapted to that region. Virginia is subdivided into seven Level III classes defined as the Piedmont (45), Middle Atlantic Coastal Plain (63), Northern Piedmont (64), Southeastern Plains (65), Blue Ridge (66), Ridge and Valley (67), and the Central Appalachians (69) (EPA 2010; Woods *et al.* 1999; 2003). Figure 3-1 displays these ecoregions and Table 3-1 presents a brief description of the major characteristics of these regions.



Source: Purdue University 2012

Figure 3-1. Ecoregions of Virginia

Table 3-1. Descriptions of the Ecoregions of Virginia

Ecoregion	Description
Piedmont (45)	This ecoregion is largely wooded and consists of irregular plains, low rounded hills and ridges, shallow valleys, and scattered monadnocks (i.e.knobs or ridges). It is a transitional area between the mostly mountainous ecoregions of the Appalachians to the west and the lower, more level ecoregions of the coastal plain to the east. On average, elevations range from about 200 to 1,000 feet, although higher monadnocks occur and reach 2,000 feet. Prior to settlement, this ecoregion’s soil and humid, warm temperate climate supported mixed-deciduous forests dominated by hickory, shortleaf pine, loblolly pine, white oak, and post oak. Once highly cultivated, much of this region has since changed to pine and hardwood forests, and is currently being converted to urban and suburban land cover.
Middle Atlantic Coastal Plain (63)	The Middle Atlantic Coastal Plain is characterized by a low, nearly flat plain, with several swampy or marshy areas. This ecoregion extends northeastward from Georgia to New Jersey. Forest cover in this ecoregion is comprised largely of loblolly-shortleaf pine along with intermittent areas of oak, gum, and cypress occurring adjacent to major streams. This ecoregion is typically lower and flatter than inland ecoregions. Wetlands are common, along with salt estuarine bay marshes. Cropland is more common in the central and northern portions of this ecoregion than in the southern portion.

Table 3 1. Descriptions of the Ecoregions of Virginia (cont'd)

Ecoregion	Description
Northern Piedmont (64)	The Northern Piedmont consists of low rounded hills, irregular plains, and open valleys. Elevations typically range from about 325 feet to 1,300 feet. The climate is humid, having cold winters and hot summers, with an average 170-210 day growing season. The natural vegetation here once consisted of Appalachian oak forests. Due to heavy agricultural and commercial development, today's land use and land cover is a complex mix of small farms interspersed with residential, commercial, and industrial development with only scattered woodlands.
Southeastern Plains (65)	The Southeastern Plains are composed of irregular plains that are covered by a mosaic of cropland, pasture, woodland, and forest. Elevations range from sea level to about 300 feet; relief and maximum elevations are less than in the neighboring Piedmont. Stream channels are relatively low in gradient and are sandy-bottomed. The natural vegetation of this area was once largely longleaf pine, with smaller areas of oak-hickory-pine and Southern mixed forests. The major crops grown in the ecoregion are corn, soybean, and peanuts. Once dominated by oak-hickory-pine forests, this ecoregion's forests are now dominated by hardwoods due to a history of fires and preferential cutting of pines.
Blue Ridge (66)	The Blue ridge is a narrow strip of forested mountain ridges that extends from southern Pennsylvania to northern Georgia. Elevations range from about 1,000 feet to some peaks reaching over 6,600 feet. Streams are cool and clear, with several riffle ponds and support a different, less diverse fish assemblage than the warmer, slower and more turbid streams of the valleys. The natural vegetation is varied from north to south. The southern Blue Ridge is one of the most floristically diverse ecoregions with Appalachian oak forests, northern hardwoods and southeastern spruce-fir forests at the higher elevations. There are also significant areas of shrub, grass, and heath balds, hemlock, cove hardwoods, and oak-pine communities.
Ridge and Valley (67)	The Ridge and Valley ecoregion is characterized by alternating forested ridges and agricultural valleys. Elevations here range from about 500 to 4,300 feet. This ecoregion lies between the Blue Ridge Mountains and the Allegheny and Cumberland plateaus. Forests currently cover about 50% of the region and vary from north to south. The valleys with adequate fertile soils now support field crops while others support poultry operations. In those locations in which woodlands still stand, the northern area is dominated by Appalachian oak forests while in the south oak-hickory-pine forest is more common, although near the James River Appalachian oak forests return.
Central Appalachians (69)	The Central Appalachians extend from south central Pennsylvania, through eastern West Virginia, western Maryland, and southwestern Virginia and into northern Tennessee. It is a high, dissected, and rugged plateau with elevations generally ranging from 1,200 feet to 4,600 feet increasing from west to east. Due to elevation, some areas have a short growing season, a large rainfall amount, and extensive forest cover. The lower elevations are primarily comprised of dairy and livestock farms, but still have scattered woodlands. The Central Appalachians once consisted primarily of Appalachian oak and oak-hickory forests. Today, this ecoregion is a mosaic of agricultural (predominately pasture land and hay crops) and silvicultural lands (Christmas tree and lumber) amongst scattered natural woodlands.

Source: Woods *et al.* 1999

3.1.1 Affected Environment

As previously stated, 85 percent of the 25.3 million acres in Virginia is privately owned; with approximately 8.1 million acres (nearly 32 percent) of the total land area as farmland (see Figure 1-1) (NASS 2012). Approximately 14 percent (3.53 million acres) is public land (Federal, Commonwealth or local government) or is private land in trusts available for outdoor recreational activities. Under the current PALS program, there are 19,000 acres of private land available for public recreational activities, all of which is located in Dickenson County.

3.1.1.1 Vegetation

Climate greatly affects vegetation type and the health and vigor of plants. Virginia's diverse climate is affected by the Atlantic Ocean, topography, and the complex pattern of rivers and streams resulting in five different climate regions: the Tidewater, Piedmont, Northern Virginia, Western Mountain, and Southwestern Mountain regions (Hayden and Michaels 2000). The Atlantic Ocean and the warm waters of the Gulf Stream influence the climate and weather patterns over the central and eastern portions of Virginia resulting in relatively warm, humid air and seasonal storm systems. The high elevations of the Appalachian and Blue Ridge mountain systems influence climate of the western portions of Virginia. When there is western airflow, mountains of southwestern Virginia receive up to 60 inches of precipitation annually, while creating a rain shadow pattern over the New River and Shenandoah Valleys to the east (Hayden and Michaels 2000). When airflow is from the east, the Blue Ridge Mountains receive moisture while creating a rain shadow to the west over the same valleys. The New River and Shenandoah Valleys are the driest portions of the Commonwealth, typically receiving about 33 inches of precipitation annually (Hayden and Michaels 2000). The climate in Virginia is also influenced by the complex pattern of rivers and streams that drains the precipitation that falls, modifying the patterns of moist airflow. The average length of the growing season, or freeze-free period, in the Commonwealth ranges from approximately 136 days in the western-most mountains, to over 245 days in the southeastern region (SERCC 2012a; 2012b).

Virginia lies between the glaciated mountainous northern region and the southeastern lowlands. This unique position represents the southernmost extent of many northern species and the northernmost extent of many southern species, creating a high degree of diversity (VDCR-NHP 2012a). Ecological community types in Virginia range from the dunes, beaches, maritime forests, and forested wetlands of the coastal plain to the spruce forests and shale barrens of the mountains, with eastern deciduous woodlands found throughout (VDCR-NHP 2012a).

Forestland in Virginia covers about 15.72 million acres and is predominately (79 percent) hardwoods (VDOF 2011). The principal forest cover types include: Oak/Hickory (62.3 percent); Pine (20.5 percent); Mixed (10.3 percent); Bottomland (4.1 percent); Maple/Beech/Birch (2.2 percent), and nonstocked (0.6 percent) (Pemberton 2009). Approximately 66 percent of forestland in Virginia is privately owned (VDOF 2011).

Agriculture is Virginia's largest industry (VDACS 2011). Approximately 32 percent of land area in the Commonwealth is utilized by farms which consist of about 40 percent cropland (NASS 2009). In 2007 the harvested acreage in Virginia included: grain barley (27,833 acres); grain corn (401,070 acres); silage corn (126,295 acres); cotton (59,243 acres); grain oats (4,893 acres); peanuts (21,631 acres); rye (5,380 acres); grain sorghum (1,497 acres); silage sorghum (2,573 acres); soybeans (490,396 acres); sunflower seed (137 acres); tobacco (20,881 acres); winter wheat (200,342 acres); alfalfa and other hay (1,305,624 acres); vegetables (26,265 acres); orchards (19,713 acres); and berries (982 acres) (NASS 2009).

3.1.1.2 Wildlife

The climates and habitats of Virginia support approximately 828 vertebrate and over 10,000 invertebrate animal species (VDGIF 2005). The diverse natural communities found in the seven Level III Virginia Ecoregions provide habitat for a wide array of wildlife species. From the lush forested wetlands in the east to the oak-hickory and spruce forests of the mountains, the local variations in altitude, terrain, soil type, and rainfall create numerous niches and habitats that meet the needs of a variety of species. Common mammals found in the State include white-tailed deer (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensis*), deer mouse (*Peromyscus maniculatus*), little brown bat (*Myotis lucifugus*), red fox (*Vulpes vulpes*), gray fox (*Urocyon cinereoargenteus*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), woodchuck (*Marmota monax*) and river otter (*Lontra canadensis*) (VDGIF 2012b). Wild turkey (*Meleagris gallapavo*), a variety of woodpeckers, songbirds, waterfowl, and many species of amphibians, reptiles, fishes, and invertebrates are also commonly found throughout the State.

Virginia's Comprehensive Wildlife Conservation Strategy report identifies 925 SGCN (VDGIF 2005). In addition to a detailed discussion of specific problems facing these species, the strategy identifies the "Top 10" threats faced by terrestrial and aquatic wildlife. Seven of the top 10 threats to terrestrial species are related to habitat destruction or fragmentation from various sources. Eight of the top threats to aquatic species are related to water quality. Development, industrial activities, and some agricultural and forestry practices are included in these threats.

Of particular relevance to the Proposed Action Alternative are the many game species found in Virginia (VDGIF 2012b). White-tailed deer occur in every county of the Commonwealth and inhabit a variety of habitats. Approximately 180,000 wild turkeys can now be found in the Commonwealth although they are not uniformly distributed. Other game species in Virginia include black bear (*Ursus americanus*), rabbits (*Sylvilagus* spp.), squirrels (*Sciurus* spp.), dove (*Zenaidura macroura*), quail (bobwhite; *Colinus virginianus*), and Ruffed grouse (*Bonasa umbellus*). Principal sport fish are the muskellunge (*Esox masquinongy*), northern pike (*Esox lucius*), walleye (*Sander vitreus*), sauger (*Sander canadensis*), largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), spotted bass (*Micropterus punctulatus*), rock bass (*Ambloplites rupestris*), warmouth (*Lepomis gulosus*), striped bass (*Morone saxatilis*), white bass (*Morone chrysops*), sunfish (*Lepomis* spp.), crappie (*Pomoxis* spp.), brook trout

(*Salvelinus fontinalis*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), catfish (Ictaluridae), yellow perch (*Perca flavescens*), freshwater drum (*Aplodinotus grunniens*) and carp (*Cyprinus carpio*). With the exception of endangered or threatened species, Commonwealth fishing regulations also allow the take of baitfish, crayfish (Cambaridae), and bullfrogs (*Rana catesbeiana*) (VDGIF 2012c).

Hunting, trapping, and freshwater fishing in Virginia are regulated by the VDGIF to assure conservation and enhancement of the resources, while providing for maximum enjoyment. Statutes provide the framework by which hunting, trapping and fishing opportunities are administered. Detailed regulations are set forth in administrative rules that are suited to local site conditions and situations. These are monitored and enforced in the same manner as the provisions of the statutes and are subject to the same penalties.

3.1.1.3 Protected Species

Currently, the USFWS has identified 44 Federally-listed wildlife species (8 threatened and 36 endangered) as well as 2 proposed endangered, and 4 candidate non-marine wildlife species in Virginia. They have also identified 8 threatened, 9 endangered, and 1 candidate plant species in the Commonwealth (Townsend 2009; USFWS 2012; VDGIF 2011). Virginia has identified 139 State-listed species: 42 threatened and 74 endangered non-marine wildlife species, and 9 threatened and 14 endangered plant species (Townsend 2009; USFWS 2012). Some species are both Federal and State listed. The USFWS has also identified critical habitat in the Clinch and Powell River watersheds in southwestern Virginia for two fish and four mussel species (USFWS 2012).

Virginia's Comprehensive Wildlife Conservation Strategy was prepared in 2005 to act as a framework for effective and efficient wildlife conservation in Virginia. Through coordination with the many stakeholders, this document identifies and prioritizes the wildlife and habitats in most need of conservation. In 2005, Virginia's Comprehensive Wildlife Conservation Strategy identified 925 species of conservation need (VDGIF 2005). Listed species, along with their Federal and State status and those with designated critical habitat, as well as their ranking in the Virginia Wildlife Action Plan, are included in Appendix B.

3.1.2 Environmental Consequences

Impacts to biological resources would be considered significant if implementation of an action or program resulted in reducing plant or wildlife populations to a level of concern, removing land with unique vegetation characteristics, or "take" of a protected species or critical habitat as defined by the ESA.

3.1.2.1 Vegetation

Proposed Action Alternative

Under the Proposed Action Alternative, VDGIF would use VPA-HIP grant funds to expand the existing PALS program for outdoor recreational activities from the current enrollment of 19,000

acres to approximately 38,000 acres and make habitat improvements on approximately 2,000 acres of newly enrolled lands with an emphasis on early successional habitat. Initially, landowners having more than 500 acres within QAP focus areas (see Figure 2-1) would be targeted, but all areas within the Commonwealth would be eligible. The VPA-HIP grant would also be used for instream and riparian habitat improvements on an additional 10 linear miles of streams. Projects would include building cattle exclusions, planting vegetation, restoring natural flows, and improving degraded channels. Under this program, the landowner would be responsible for the maintaining CREP-prescribed riparian buffers and the enhanced habitat for at least 10 years.

Allowing access to private lands for outdoor recreational activities such as hunting or fishing under the Proposed Action is not likely to have long-term, negative impact on vegetation. All land would be evaluated for its sustainability for recreational activities and habitat management plans developed that would minimize potential adverse impacts from increased visitation. Enrolling land in PALS under the Proposed Action would benefit vegetative communities by maintaining, and in some cases, improving the plant community and precluding its conversion into another incompatible use. Actions taken for habitat improvement would maintain the health of riparian and early successional habitat, and would provide long-term, positive impacts to vegetation through natural function restoration.

Some short-term negative impacts may occur as a result of ground disturbing activities associated with habitat improvement projects. These activities may include establishment of native warm season grass, tree cutting and trimming, slash removal, and grading or tilling that may result in temporary minor increases in vegetation disturbance. However, these impacts would be mitigated through adherence to best management practices (BMPs) that include measures to maintain adequate ground cover, litter and canopy, control erosion and reduce soil compaction, and control the introduction of invasive species. For lands enrolled in CREP that would also be enrolled in PALS, the previously completed site-specific environmental evaluation for CREP would be consulted. Planned PALS habitat improvement activities would conform to CREP guidelines and be evaluated in accordance with FSA's 1-EQ process for any additional potential environmental effects. CREP habitat management plans would be updated to include measures for PALS activities. Appropriate wildlife habitat plans that are consistent with both the QAP and the Virginia Wildlife Action Plan would be developed for all lands enrolled in PALS. There would be no significant negative impacts to vegetation under the Proposed Action.

No Action Alternative

Under the No Action Alternative, VPA-HIP grant funds would not be used to increase the amount of acreage enrolled in the PALS program for hunting, fishing and other outdoor recreational activities or for habitat improvements. As such, the long-term positive impacts to vegetation associated with maintaining and improving wildlife habitat would not be realized.

3.1.2.2 Wildlife

Proposed Action Alternative

Under the Proposed Action Alternative, VDGIF would use VPA-HIP grant funds to expand PALS, increasing public access to private lands for fishing, hunting and other outdoor related activities and making habitat improvements. The amount of land enrolled in PALS would increase from 19,000 to approximately 38,000 acres. All new PALS agreements would have a habitat management plan emphasizing the restoration and management of riparian or early successional habitat. The VPA-HIP grant would also be used to restore an additional 10 linear miles of streams. Allowing access to private lands for outdoor recreational activities such as hunting or fishing under the Proposed Action may increase the potential for impacting game species. However, no long-term, negative impacts to wildlife or game species populations would be likely because these activities would be approved only on suitable lands and conducted in accordance with Virginia fish and game laws. Further, bag and creel limits, which are established through analysis of wildlife population trend data and harvest numbers, would continue to be managed through the sales of Virginia licenses. Actions taken for habitat improvement such as building cattle exclusions, planting vegetation, restoring natural stream flows, and improving degraded channels would maintain the health of early successional and riparian habitat. These improvements would provide long-term, positive impacts to wildlife through improved stream conditions and more beneficial habitat for game species. Moreover, lands enrolled in PALS would not be converted to agricultural production for the duration of the contract.

Some short-term negative impacts may occur as a result of ground disturbing activities associated with habitat improvement projects such as planting vegetation, restoring natural stream flows, and improving degraded channels and may involve tree cutting and trimming, slash removal, grading or tilling. These measures may result in temporary minor increases in wildlife disturbance, displacement and stress; however, this impact would be localized, temporary, and would cease once habitat improvement activities are complete and habitat is restored.

Enrolling land in PALS under the Proposed Action would benefit wildlife communities by maintaining, and in some cases improving, suitable habitat and precluding habitat conversion into another incompatible use. Previously completed site-specific environmental evaluation for CREP would be consulted for lands enrolled in CREP that would also be enrolled in PALS. Planned PALS habitat improvement activities would conform to CREP guidelines, be evaluated in accordance with FSA's 1-EQ process for any additional potential environmental effects, and the CREP habitat management plan updated to incorporate PALS activities. Appropriate wildlife habitat plans that are consistent with both the QAP and the Virginia Wildlife Action Plan would be developed for all lands enrolled in PALS but not enrolled in CREP and land would be evaluated for its sustainability for recreational activities to minimize the potential for

adverse impacts from increased visitation. There would be no significant negative impacts to wildlife under the Proposed Action.

No Action Alternative

Under the No Action Alternative, VPA-HIP grant funds would not be used for the expansion of the PALS program in the Commonwealth or for habitat improvements. As a result, the long-term positive impacts to wildlife associated with habitat improvement projects would not be realized.

3.1.2.3 Protected Species

Proposed Action Alternative

Under the Proposed Action, Virginia would use VPA-HIP funds to expand the PALS program. Funds would be used to meet the public demand in Virginia for increased access to outdoor recreation opportunities. This would open more private land in Virginia to outdoor recreational activities, which also helps ensure that the land is maintained as natural habitat. Federal and Commonwealth laws prohibit many activities that would disturb or kill protected species.

The previously completed site-specific environmental evaluation for CREP would be consulted prior to enrolling the same land in PALS. Any habitat improvement projects would conform to CREP guidelines and be evaluated in accordance with FSA's 1-EQ for any additional potential environmental effects. Moreover, wildlife habitat plans would be developed that are consistent with the Virginia Wildlife Action Plan for all lands enrolled in PALS. If TES would likely be present, VDGIF personnel would consult with the USFWS. If any negative impacts are identified from the proposed activity that cannot be alleviated, it is not likely that the proposed activity would be approved. Temporary minor negative impacts could occur during habitat improvement projects as a result of noise or other disturbance.

As previously discussed, a site-specific evaluation prior to enrollment of land into PALS would identify the potential for Federal or State protected species, if any negative impacts are identified from the proposed activity that cannot be alleviated it is not likely that the proposed activity would be approved. The hunting of some State protected species is allowed, yet this is regulated by VDGIF through controlled hunt tags that only allow the harvest of a certain number of individuals each year based on population sizes. Enrolling land in PALS under the Proposed Action would benefit protected species by improving or maintaining suitable habitat and precluding conversion into another incompatible use. There would be no significant negative impacts to protected species and their associated habitats under the Proposed Action.

No Action Alternative

Under the No Action Alternative, VPA-HIP grant funds would not be used for the expansion of PALS to increase the amount of private land that is accessible to the public for outdoor recreation. Likewise, habitat improvement measures would not occur. As a result, protected species would not benefit from the long-term positive impacts associated with habitat

improvement. Lands not enrolled in PALS may also be converted to other uses, decreasing the availability of suitable habitat.

3.2 Soil Resources

Soils are a natural body made up of weathered minerals, organic matter, air and water (Brady and Weil 1996). This body of inorganic and organic matter is home to a wide variety of fungi, bacteria, insects, reptiles, amphibians and mammals, as well as the growth medium for terrestrial plant life. Soil plays a key role in determining the capacity of a site for biomass vigor and production (physical support, air, water, temperature moderation, protection from toxins, and nutrient availability). Soils also determine a site's susceptibility to erosion (by wind and water), and a site's flood attenuation capacity.

The organic and mineral component of soils is a product of mineral weathering, organic matter decay and balance, and soil moisture dynamics. The rate of weathering (mineral breakdown and organic matter accumulation or loss and decay) is determined by parent materials (the initial organic materials and rock), climate (precipitation and temperature), living organisms (plants, animals, microbes and humans), topography, and time. The process of soil formation is a dynamic and on-going process. Generally speaking, soil weathering or development is slowed by cold weather and lack of moisture; inversely, hot and moist climates accelerate soil development.

Soils vary in texture, depth, and organic matter. Soil texture refers to mineral particle size. Mineral particle sizes are broadly classified as sand, silt, clay or a combination of the three. Sand is the coarsest (largest) particle size, silt is intermediate, and clay is the finest (smallest) particle size. Soil texture and the amount of organic matter directly influence soil shear strength, nutrient holding capacity, and permeability. Soils with fine texture (clay) typically have greater shear strength than more coarse soils. Organic carbon levels also enhance particle aggregation and therefore strengthen soils shear strength.

Soil scientists refer to a soil's fitness for any given function as soil quality or soil health. Soil functions include: protect ground and surface water, protect air quality, resist soil erosion, protect biodiversity, support plant production, support animal production, and food safety. Soil properties that influence these functions include: soil nutrient levels, water holding capacity, permeability, gas exchange, microbial abundance, and structural stability (Brady and Weil 1996).

Soil erosion is a naturally occurring event and erosion rates are relatively slow. Natural or geologic erosion rates seldom exceed soil development rates. Soil and vegetation disturbance created by man greatly accelerate erosion rates. The average erosion rate on cropland in the U.S. is 13.2 metric tons/hectare/year (5.3 metric tons/acre/year), 132 times the natural erosion rate (Brady and Weil 1996). Poor farming practices such as cultivating steep slopes, not planting on contours, no windbreaks, and overgrazing are a major factor in accelerating erosion. The detrimental effect of soil loss is compounded by the fact that erosion removes the topsoil first, which is the layer with the highest organic matter content and where the most biological activity

occurs. Once this nutrient rich layer of soil is gone, plant growth decreases and erosion increases substantially.

Soils susceptible to erosion are identified using the NRCS Erodibility Index (EI). The EI provides a numerical expression of the potential for a soil to erode based on factors such as topography and climate. The index value is derived from the Revised Universal Soil Loss Equation (RUSLE2) for water erosion, and the Wind Erosion Equation for wind erosion. Highly erodible lands (HEL) are those with an index value of eight or higher (NRCS 2009). A list of soils considered highly erodible are developed and maintained on a county level by NRCS.

3.2.1 Affected Environment

Virginia is within four major land resource areas (MLRA) defined by USDA: (1) the East and Central Farming and Forest Region; (2) the Northern Atlantic Slope Diversified Farming Region; (3) the South Atlantic and Gulf Slope Cash Crops, Forest, and Livestock Region; and (4) the Atlantic and Gulf Coast Lowland Forest and Crop Region (NRCS 2006). Table 3-2 presents a description of the soil orders found within these MLRAs.

Table 3-2. Soil Order Descriptions

Order	Description
Alfisols	A dark surface horizon mineral soil, similar to Mollisols however, lacking the same level of fertility and more acidic.
Entisols	This soil order is relatively un-weathered. These soils have no diagnostic horizon development. Often found on floodplains, glacial outwash areas and other areas receiving alluvial materials.
Histosols	Soils high in organic carbon. Dark surface profile. Often associated with wetlands.
Inceptisols	Soils of the humid and sub humid region. Weathering has created minimal diagnostic differentiation in the soil column.
Mollisols	Dark colored mineral soils developed under grassland conditions. Rich in nutrients, very fertile. Associated with America’s corn belt.
Spodosols	These soils have undergone significant weathering. Organic carbon, aluminum and often iron has been translocated to a lower horizon referred to a spodic horizon. These soils are acidic and may have deleterious levels of aluminum in the subsoil.
Ultisols	Highly weathered soils found in hot, moist regions. Typically acidic and low in available nutrients.

Source: Brady 1990

The westernmost mountainous portion of Virginia is within the East and Central Farming and Forest Region. Alfisols, Entisols, Inceptisols, or Ultisols are the dominant soils in this region (NRCS 2006). The major soil resource concerns in this region are erosion resulting from agricultural and forestry harvest practices, maintaining the productivity of the soils, and prevention of groundwater contamination. The Northern Atlantic Slope Diversified Farming

Region is found in the northwestern portion of the State on the east and west sides of the Blue Ridge Mountains. The soils in this region are predominantly Alfisols, Ultisols, or Inceptisols (NRCS 2006). The major soil concerns in this region include water erosion, sedimentation, urbanization, and maintenance of the content of organic matter and productivity of the soils. The South Atlantic and Gulf Slope Cash Crops, Forest, and Livestock Region includes the Piedmont and Middle Atlantic Coastal Plain ecoregions of Virginia. Prevalent soils in this region are Alfisols, Entisols, Inceptisols, Ultisols, or Vertisols (NRCS 2006). The major soil resource concerns in this region include maintenance of the productivity of the soils, control of erosion, and prevention of groundwater contamination. The Atlantic and Gulf Coast Lowland Forest and Crop Region encompasses the Southeastern Plains ecoregion of Virginia. Prevalent soils in this region are Alfisols, Entisols, Spodosols, Ultisols, and to a lesser extent, Histosols (NRCS 2006). The major soil resource concerns in this region include maintenance of the productivity of the soils, control of erosion, and prevention of groundwater contamination.

3.2.2 Environmental Consequences

Significant impacts to soils would occur if implementation of the Proposed Action resulted in permanently increasing erosion and stream sedimentation, or affected unique soil conditions.

3.2.2.1 Proposed Action

Under the Proposed Action Alternative, VDGIF would use VPA-HIP grant funds to expand PALS to increase public access to private lands for fishing, hunting and other outdoor related activities statewide as determined appropriate for individual lands. PALS funds would be used to provide technical and financial assistance for certain terrestrial and aquatic habitat improvements with the potential to disturb soil. Allowing access to private lands for outdoor recreational activities such as hunting, fishing, and wildlife viewing under the Proposed Action is not likely to have long-term, negative impact on soil resources. Habitat improvement activities would maintain the health of vegetative covers that protect soil from erosion. Riparian habitat improvements such as planting vegetation, restoring natural stream flows, and improving degraded channels would provide long-term, positive impacts to soil resources through soil and stream bank stabilization, and reduced potential for erosion and runoff. Moreover, lands enrolled in PALS would not be converted to agricultural production for the duration of the contract.

The outdoor recreation associated with the expanded public access would be walk-in activities and as such would have very little potential to negatively impact soil resources or soil stabilizing vegetative cover. Land enrolled in PALS would have habitat management plans developed to minimize potential adverse impacts from increased visitation. Some short-term negative impacts may occur as a result of ground disturbing activities associated with habitat improvement projects. These measures may result in temporary minor increases in soil compaction, and wind and water erosion. Adherence to NRCS conservation practice guidelines and BMPs that include measures to reduce soil erosion, maintain adequate ground cover, litter, and canopy, and reduce soil compaction would minimize the potential for adverse impacts to soil.

3.2.2.2 No Action Alternative

Under the No Action Alternative, VPA-HIP grant funds would not be used for the expansion of PALS to increase access to private lands for hunting, fishing and other outdoor recreational activities in the State, or for habitat improvements. As such, the long-term positive impacts to soil associated with stable vegetative covers created by habitat improvement projects would not be realized.

3.3 Water Resources

The principal laws governing pollution of the nation's water resources are the Federal Water Pollution Control Act, now commonly called the CWA and the Safe Drinking Water Act. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. and regulating quality standards for surface waters. The CWA does not directly address groundwater contamination, which is provided for by the Safe Drinking Water Act. The U.S. Environmental Protection Agency (EPA) sets standards for water quality, but most states implement their own water quality programs, which are overseen by the EPA. The Virginia Department of Environmental Quality (VDEQ) water quality assessment program is responsible for assessing surface water quality throughout the state, whereas the Virginia Department of Health has primary responsibility for compliance with the Safe Water Drinking Act requirements; however, VDEQ is also charged under the state Groundwater Management Act of 1992, to conserve, protect and beneficially utilize the groundwater of the Commonwealth, and to ensure the public welfare, safety and health (VAC §2.1-254). For this analysis, water resources include surface water, groundwater/aquifers, wetlands, and floodplains.

Surface waters are defined by EPA as waters of the U.S., which include lakes, rivers, estuaries, coastal waters, and wetlands. The CWA requires states to report on water quality of water bodies located within the states and their attainment of designated uses. There are six uses defined by the VDEQ for all waters in Virginia: aquatic life, fish consumption, public water supplies, shellfish consumption, swimming, and wildlife, as well as several specific Chesapeake Bay designated uses (VDEQ 2011a). Under Section 303(d) of the CWA, states are required to identify and establish a priority ranking of all water bodies not meeting state water quality standards and to biennially develop a Water Quality Limited Segments List (commonly called the 303(d) List). Total maximum daily loads (TMDLs) of pollutants for the listed water bodies must be established by the State and approved by EPA (2011a). EPA defines those surface waters with levels of pollutants that exceed state water quality standards as "impaired". The degree of support of a designated use in a particular stream segment or lake is referred to as "attainment" and is determined by an analysis of various types of information, including biological, physicochemical, physical habitat, and toxicity data (EPA 2011a).

Groundwater is the water that is stored in, and moves through, spaces in underground layers of soil, sand and rock until it reaches a layer of rock through which it cannot easily penetrate (U.S. Geological Survey [USGS] 2001). The underground soil or rock through which water can easily

move is an aquifer. The speed at which water moves through an aquifer is dependent on size of the spaces in the soil or rock and how these spaces are connected. The water in aquifers is brought to the surface through a spring, or is discharged into lakes and streams. It can also be brought to the surface through a well. Groundwater is recharged by rain and snowmelt, and also seeps from the bottom of lakes and streams. Shortages occur when groundwater is used faster than it is recharged. Under the Safe Drinking Water Act, an aquifer that provides at least 50 percent of the drinking water to an area may be designated as a sole source aquifer which requires EPA review of any proposed projects within the designated area that are receiving Federal financial assistance (EPA 2008). There are two EPA-designated sole source aquifers in Virginia; the Prospect Hill Sole Source Aquifer, which underlies a portion of Clark County, and the Columbia and Yorktown-Eastover Multiaquifer System, which underlies Virginia's Eastern Shore (EPA 2007).

Wetlands are defined by the U.S. Army Corps of Engineers (USACE) as areas characterized by a prevalence of vegetation adapted to saturated soil conditions and identified based on specific soil, hydrology, and vegetation criteria defined by USACE (1987). Federal regulations (40 CFR part 230.3) implementing the CWA include wetlands as waters of the U.S. and therefore require water quality standards (EPA 2011b). Riparian wetlands are associated with running water systems found along rivers, creeks, and drainage ways that have a defined channel and floodplain. The major wetlands found in Virginia are classified as estuarine, which are tidal wetlands partially enclosed by land but have some access to the open ocean and occasionally receive freshwater input, while palustrine systems are best described as swamps, marshes and bogs (USGS 1987).

Floodplains are defined by the Federal Emergency Management Agency (FEMA) as those low-lying areas that are subject to inundation by a 100-year flood or a flood that has a one percent chance of being equaled or exceeded in any given year. Activities within a floodplain have a potential to affect the flooding of lands downstream of the activity. Based on EO 11988 Floodplain Management, Federal agencies are required to avoid, to the extent possible, adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development. The floodway is the channel of the river or stream, and parts of the floodplain that adjoins the channel, which efficiently carry and discharge floodwater. The fringe is that portion of the floodplain outside of the floodway. Development or improvement is subject to different regulations depending upon their location within the floodplain. Floodplains provide for flood and erosion control support that helps maintain water quality and contribute to sustaining groundwater levels.

3.3.1 Affected Environment

3.3.1.1 Surface Water

Virginia has an estimated 52,232 miles of streams and rivers (VDEQ 2010). Major rivers of the Coastal Plain include the James, York, Rappahannock, and Potomac rivers, which flow through the Piedmont region. Other important rivers in the lower Piedmont include the Meherrin,

Roanoke, and Dan rivers. The Clinch, Powell, New, and Shenandoah rivers are major rivers from the Blue Ridge westward. Additionally there are 248 publicly owned lakes in Virginia, with a combined surface area of 130,344 acres, and many hundreds of other small privately owned lakes and ponds distributed throughout the state (VDEQ 2010). Other significant surface water features of Virginia include approximately 120 miles of Atlantic Ocean coastline, and more than 2,300 square miles of estuaries such as the Chesapeake Bay (See Section 3.4, Coastal Zones) (VDEQ 2010). Surface waters provide approximately 86 percent of the total water supply in Virginia. Streams and rivers account for approximately 57 percent, and reservoirs account for approximately 29 percent of surface water supply (VDEQ 2011a).

Results from the 2010 state water quality assessment indicate 12,101 miles (23 percent) of Virginia's rivers and streams were impaired. The impaired area for significant lakes was 96,651 acres (83 percent), and in estuaries was 2,157 square miles (94 percent) (Table 3-3) (VDEQ 2010). Conversely, 5,635 miles (11 percent) of rivers and streams, 15,971 acres of lakes (14 percent), and 113 square miles (5 percent) of estuary fully supported (attained) some designated uses (VDEQ 2010). Public drinking water supply and recreational use were two designated uses that were fully or partially supported. Specifically, 94 percent of the rivers and 100 percent of lakes and estuaries assessed fully supported public drinking water supply criteria, whereas 34 percent of rivers, 96 percent of lakes, and 85 percent of estuaries supported recreational uses (VDEQ 2010) (see Table 3-3).

Major impairments in Virginia's surface waters included high levels of *Escherichia coli* and fecal coliform, and mercury and polychlorinated biphenyls (PCBs) in fish tissue, low dissolved oxygen, low pH, and impaired biota. The major potential sources of impairment were atmospheric deposition of nitrogen and toxins, agriculture, livestock grazing or feeding, loss of riparian habitat, industrial point source discharge, municipal point source discharge, and unknown sources (VDEQ 2010).

3.3.1.2 Groundwater

Although the amount of water withdrawn from groundwater is less than is withdrawn from streams and reservoirs, users of groundwater sources surpass surface water users in Virginia (VDEQ 2011b). Of Virginia's 2,500 public water supply systems, 2,300 use groundwater (VDEQ 2011a). Groundwater withdrawal comprises approximately 13 percent of water use in Virginia. The average groundwater withdrawal for the five-year period from 2006-2010 was 195 million gallons per day (MGD) (VDEQ 2011b). Manufacturing was the largest consumer, accounting for 45 percent of groundwater usage. Public water supply accounted for another 37 percent and agriculture was 7 percent. Commercial, irrigation, and mining comprised the remaining nine percent of groundwater use (VDEQ 2011b).

Table 3-3. Individual Use Support Summary

Designated Use	Water Body Type	Fully Supporting	Total Impaired	Not Assessed	Size Assessed
Aquatic Life	River (mi)	10,763	4,895	35,480	15,658
	Lake (ac)	63,436	48,475	4,214	111,911
	Estuary (sq mi)	117	2,112	40	2,229
Fish Consumption	River (mi)	3,013	2,748	42,260	5,761
	Lake (ac)	16,421	85,668	14,113	102,089
	Estuary (sq mi)	26	2,088	188	2,114
Public Water Supply	River (mi)	1,315	79	7,935	1,394
	Lake (ac)	72,220	0	18,356	72,220
	Estuary (sq mi)	5	0	1	5
Recreation	River (mi)	4,199	8,133	38,851	12,331
	Lake (ac)	100,528	3,747	11,202	104,276
	Estuary (sq mi)	512	91	1,647	603
Shellfishing	River (mi)	NA	NA	NA	NA
	Lake (ac)	NA	NA	NA	NA
	Estuary (sq mi)	1,921	74	26	1,995
Wildlife	River (mi)	12,948	85	38,966	13,033
	Lake (ac)	105,759	574	9,896	106,333
	Estuary (sq mi)	539	5	1,753	544
Chesapeake Bay designated Uses					
Open-Water Aquatic Life	Estuary (sq mi)	323	1,589	244	1,913
Deep-Water Aquatic Life	Estuary (sq mi)	21	288	321	309
Deep-Channel Seasonal Refuge	Estuary (sq mi)	67	191	0	258
Shallow-Water Submerged Aquatic vegetation	Estuary (sq mi)	272	1,855	0	2,127
Migratory Fish Spawning and Nursery	Estuary (sq mi)	0	0	261	0

Source: VDEQ 2010

Groundwater occurs in two types of aquifers in Virginia; the unconsolidated deposits of the Atlantic Coastal Plain aquifers or the sedimentary and crystalline bedrock aquifers of the Piedmont, Blue Ridge, and Valley and Ridge physiographic provinces (van der Leeden 1993). In the Coastal Plain region, the Columbia and Yorktown-Eastover are the largest and most productive aquifers, whereas the Chickahominy-Piney Point, Aquia, Brightseat, and Potomac aquifers provide groundwater to smaller areas, primarily in the outer Coastal Plain. The principal sedimentary and crystalline bedrock aquifers are the Piedmont and Blue Ridge crystalline aquifers, the carbonate aquifers in the Great valley, and the Ridge and Valley aquifers (van der Leeden 1993).

3.3.1.3 Sole Source Aquifers

The Columbia and Yorktown-Eastover Multiaquifer System, which underlies Virginia's Eastern Shore, has been designated by the EPA as a sole sources aquifer for Accomack and Northampton counties (Figure 3-2) (U.S. EPA 1997). Nearly all drinking water on the Eastern Shore of Virginia is derived from groundwater, as there are no surface water bodies capable of supplying a large quantity of water. The designated area is a multiaquifer system with the surficial Columbia aquifer consisting of shallow sand and gravel deposits and the deeper confined Yorktown-Eastover aquifer, which is recharged by water from the surficial aquifer. The quality of groundwater in Accomack and Northampton counties is generally good, but the highly permeable nature of the aquifer material and the shallow depths to the water table make the aquifer vulnerable to contamination from point and nonpoint sources, which could pose a significant public health hazard (U.S. EPA 1997).

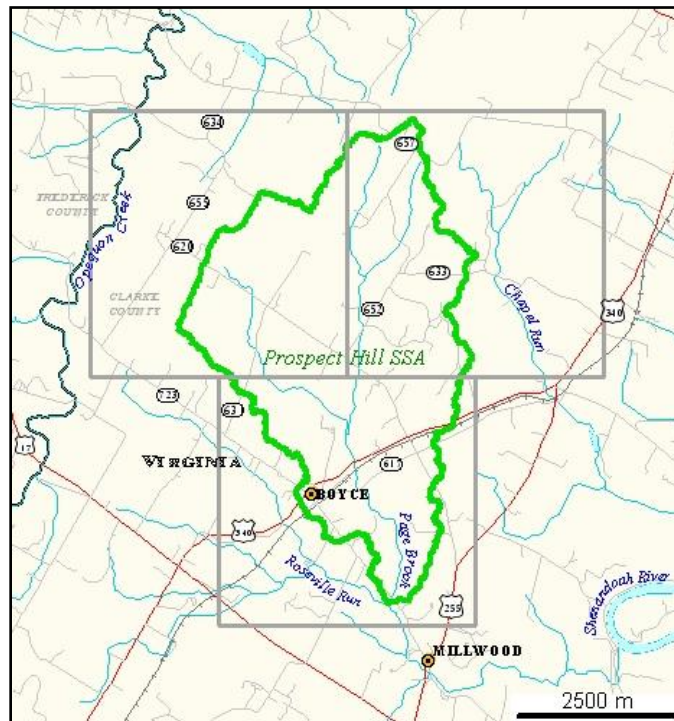


Source: U.S. EPA 1997

Figure 3-2. Columbia and Yorktown-Eastover Multiaquifer System

As with the Columbia and Yorktown-Eastover Multiaquifer System, the EPA has determined that the groundwater system of the Stonehenge and Conococheague Limestone formations of the Appalachian Valley Region, which underlies part of Clarke County, Virginia in and around the towns of Boyce and Millwood (denominated the "Prospect Hill Spring Aquifer"), is the sole source or principal source of drinking water for that part of Clarke County (Figure 3-3) (EPA 1987).

The designated portion of the Prospect Hill Spring Aquifer, which supplies 100 percent of the drinking water to the population, is susceptible to contamination through the recharge or stream flow source zone from abandoned wells, septic tanks and agricultural activity in which fertilizers, herbicides, and pesticides are applied directly to the soil surface. The presence of high nitrate levels, several types of herbicides, and two or three types of phenols, which may have originated from pesticides, was detected in municipal water source wells in the area. Since groundwater contamination can be difficult or impossible to reverse, and because this aquifer system is heavily relied upon for drinking water purposes by the general population, contamination of the aquifer would pose a significant hazard to public health.



Source: EPA 1987

Figure 3-3. Prospect Hill Spring Aquifer - Clarke County, Virginia

3.3.1.4 Wetlands

Virginia’s wetland resources include 236,900 acres of tidal and coastal wetlands and 808,000 acres of freshwater wetlands (VDEQ 2010). An exceptional diversity of wetlands is found across the Virginia landscape including swamps, tidal marshes, wet meadows, bogs, pocosins and sinkhole wetlands (VDEQ 2012a). An estimated 75 percent of the wetlands are palustrine (e.g., swamps, marshes and bogs) vegetated wetlands, and the remaining 25 percent of these acres are estuarine wetlands. Approximately 72 percent of the wetlands in Virginia are in the Coastal Plain, with another 20 percent in the Piedmont and the remaining 8 percent in the other physiographic provinces (Tiner and Finn 1986). According to the state summary of the National Water Summary on Wetland Resources (USGS 1997), forested wetlands (swamps) are the most

common wetlands in the State. It is estimated that conversion to non-wetland uses (agricultural, urban, industrial, and recreational), channelization and ditching, and other causes have resulted in the loss of about 42 percent of Virginia's wetlands since the 1780s (USGS 1997).

Vegetated buffer zones along streams, rivers, and coastal wetlands are classified as riparian zones. Riparian areas differ from the uplands because of high levels of soil moisture, frequent flooding, and the unique assemblage of plant and animal communities that occur. Studies indicate that forested and grass riparian buffers can reduce the amount of sediment, nutrients, and other contaminants that enter surface waters (Virginia Cooperative Extension 2009).

3.3.1.5 Floodplains

The land area inundated by the "100-year flood" usually defines the limits of the floodplain for floodplain management purposes. Additional land area outside of the 100-year floodplain may also be inundated by waters from a larger, less frequent flood (Virginia Department of Conservation and Recreation [VDCR] 2005). A 100-year flood is designated by FEMA as a flood that has a one percent chance of being equaled or exceeded in any given year (VDCR 2005).

Services provided by floodplains include: storing excess runoff, slowing water flow, recharging wetlands and aquifers, and reducing erosion. Additional benefits are recreational benefits as well as wildlife and fisheries habitat and water quality improvement (VDCR 2005). When portions of floodplains are preserved in (or restored to) their natural state, they are better able to provide these benefits.

All of Virginia's 52,232 miles of rivers and streams, as well as 3,100 miles of tidal shoreline have associated floodplains. An estimate developed by the VDCR Floodplain Management Plan suggest that a "reasonable approximation of the total area that is subject to flooding by the 100-year flood would be 10 percent of the Commonwealth or 3,970 square miles" (VDCR 2005).

3.3.2 Environmental Consequences

Impacts to water resources would be considered significant if implementation of the Proposed Action resulted in changes to water quality or supply, threatened or damaged unique hydrologic characteristics, or violated established laws or regulations.

3.3.2.1 Proposed Action Alternative

Under the Proposed Action Alternative, VDGIF would use VPA-HIP grant funds to expand the existing PALS program for outdoor recreational activities from the current enrollment of approximately 19,000 acres to 38,000 acres. A portion of all newly enrolled lands would also have habitat improvement activities. Of the 19,000 new acres enrolled, 2,000 would have habitat improvement projects. All new PALS agreements would have a habitat management plan emphasizing the restoration and management of early successional habitat. Existing CREP Conservation Plans would be modified to include approved PALS activities as detailed in the recreational access plan. The VPA-HIP grant would also be used to restore an additional 10

linear miles of streams. Projects would include building cattle exclusions, planting vegetation, restoring natural flows, and improving degraded channels. Under this program, the landowner would be responsible for the maintaining CREP-prescribed riparian buffers and the enhanced habitat for at least 10 years.

Increasing the amount of private lands accessible to the public for outdoor recreational activities such as hunting or fishing under the Proposed Action is not likely to have long-term, negative impacts on water resources. Land enrolled in PALS would be evaluated for its sustainability for recreational activities and habitat management plans developed that would minimize potential adverse impacts from increased visitation. Habitat improvement projects would include actions such as increasing field borders, conversion of cool season grass pastures to native warm season grasses, increasing the oak component in forested hardwood areas, reducing tree density in pine stands and increasing early successional vegetative communities (VDGIF 2012d).

Stream improvement activities would stabilize soils and stream banks, and maintain vegetation for the retention of sediment, excess nutrients, and other pollutants from lands adjacent to surface waters. Stream improvements may also include restoring natural flows and improving degraded channels. Because of the interaction between surface water and groundwater, improvements that would reduce nutrients and pollutants in surface water would provide similar benefits for groundwater. Maintaining floodplain vegetation would reduce flood flows, maintain hydrology, and reduce the potential for flood damage. Moreover, lands enrolled in PALS would not be converted to agricultural production for the duration of the contract; consequently there would be no increase in the use of agricultural chemicals on these lands that could potentially impact water quality.

Some short-term negative impacts may occur as a result of ground disturbing activities associated with habitat improvement projects. However, these activities would be limited to habitat improvement actions such as forest management operations and native warm season grass establishment that include tree cutting and trimming, slash removal, and grading or tilling that may result in temporary and minor increases in erosion and sedimentation. For lands enrolled in CREP that would also be enrolled in PALS, the previously completed site-specific environmental evaluation for CREP would be consulted and the CREP Conservation Plan would be modified to include habitat improvement project actions. Planned PALS habitat improvement activities would conform to CREP guidelines and be evaluated in accordance with FSA's 1-EQ process for any additional potential environmental effects. Appropriate wildlife habitat plans that are consistent with both the QAP and the Virginia Wildlife Action Plan would be developed for all lands enrolled in PALS but not enrolled in CREP. Any potential impacts would be reduced through adherence to NRCS conservation practice guidelines that include measures to maintain adequate ground cover, litter, and canopy and reduce soil compaction. There would be no substantial or long-term negative impacts to water resources under the Proposed Action Alternative.

3.3.2.2 No Action Alternative

Under the No Action Alternative, VPA-HIP grant funds would not be used for the expansion of the Virginia PALs program to increase public access to private lands for hunting, fishing and other outdoor recreational activities in the Commonwealth. Likewise, habitat improvements would not occur. As a result, water quality would not benefit from the long-term positive impacts associated with habitat improvement programs. Lands not enrolled in PALs may also be converted to agricultural production, increasing the potential for sedimentation and runoff of agricultural chemicals into adjacent water bodies.

3.4 Coastal Zones

The Coastal Zone Management Act (CZMA) of 1972 (16 USC. section 1451 *et seq.*) encourages states to preserve, protect, develop, and where possible, restore or enhance valuable natural coastal resources such as wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as the fish and wildlife supported by those habitats. The CZMA provides a procedure for states to review federal actions for consistency with their own approved coastal zone management program. Under CZMA section 307, Federal agency activities affecting any land or water use or natural resource of a State's coastal zone are required to be implemented in a manner which is consistent to the maximum extent practicable with enforceable policies of the State's coastal zone management program. Under 15 CFR §930.3(c), the Federal Agency should consider any advisory policies as well. Federal agency activities include activities performed, approved, and/or funded by a Federal agency. The Virginia Department of Environmental Quality (VDEQ) is the lead agency and assists cooperating Commonwealth agencies and localities to develop and implement coastal policies and solve coastal management problems (VDEQ 2012b). In Virginia, the VDEQ reviews the determination for concurrence. The Virginia Coastal Zone Management Program (VCP) has nine applicable enforceable policies: fisheries management; subaqueous lands management; wetlands management; primary coastal sand dunes management; point source pollution control; non-point source pollution control; shoreline sanitation; air pollution control; and coastal lands management. As part of the Coastal Zone Management Program, any Federal action that could have reasonably foreseeable effects on land or water use, or natural resources within the coastal zone, is to be consistent with the Commonwealth's Federally approved Coastal Management Program prior to implementation (VDEQ 2011c).

3.4.1 Affected Environment

The Virginia coast includes 132 miles of ocean shoreline, and over 7,200 miles of tidal and tributary shoreline of the Chesapeake Bay, with four tidal rivers (James, Potomac, Rappahannock and York rivers) stretching as far as 100 miles inland (VDEQ 2012b; VIMS 2010). Virginia's coastal zone also includes parts of the Albemarle-Pamlico Sound watersheds. The coastal zone includes all these waters and those out to the three-mile Territorial Sea boundary.

The major source of pollution of the Chesapeake Bay is excess nutrients from agriculture, wastewater treatment plants, urban and suburban runoff, and other sources (EPA 2012a). About 25 percent of the lands in the Chesapeake Bay watershed are dedicated to agriculture and it is the largest single source of nutrient and sediment pollution. Other pollutants include chemical contaminants such as metals (e.g., mercury, lead), organic compounds (e.g., PCBs, polycyclic aromatic hydrocarbons [PAHs], and organophosphate pesticides), and sediments. The health of Chesapeake Bay (i.e., its water quality and ability to support habitats, fish and shellfish) has improved over the last several years but is still ranked as poor (EPA 2012b). In 2010, only 38 percent of the combined open water, deep water, and deep channels and tributaries met dissolved oxygen standards, 18 percent of tidal waters met the water clarity goal, 22 percent of tidal waters met chlorophyll *a* concentration levels, and 28 percent of analyzed tidal waters had no impairment for chemical contaminants.

3.4.2 Environmental Consequences

Impacts to the coastal zone would be considered significant if implementation of the proposed action resulted in effects on resources that are not consistent with enforceable laws of the VCP.

3.4.2.1 Proposed Action

Under the Proposed Alternative, the PALS program would be expanded from 19,000 acres to approximately 38,000 acres using VPA-HIP grant funds. A portion of any newly enrolled land would receive habitat improvement. VDGIF estimates that a total of 2,000 acres would receive upland habitat improvements, which would primarily be in the QAP focus areas (see Figure 2-1), but could be accomplished statewide, including the coastal zone. Upland habitat improvements would emphasize early successional habitat and would likely include actions such as increasing field borders, conversion of cool season grass pastures to native warm season grasses, increasing the oak component in forested hardwood areas, reducing tree density in pine stands and increasing early successional vegetative communities (VDGIF 2012d). Additionally, approximately 10 linear miles of instream/riparian habitat improvements would occur. These improvements would focus in those watersheds that provide habitat for SGCN and would likely occur in the Upper James and Rivanna, Upper Roanoke, and Upper Nottaway watersheds, and the Tennessee drainage (see Figure 2-2), but could also occur statewide. Instream and riparian habitat enhancements may include activities such as construction cattle exclusions, planting vegetation, restoring natural flows, and improving degraded channels.

Ground disturbing activities associated with habitat improvement projects, such as grading or tillage may result in temporary and minor increases in erosion and sedimentation of adjacent water bodies. For lands enrolled in CREP that would also be enrolled in PALS, the previously completed site-specific environmental evaluation for CREP would be consulted. Planned PALS habitat improvement activities would conform to CREP guidelines and be evaluated in accordance with FSA's 1-EQ process for any additional potential environmental effects. Any specific habitat improvement projects that may occur within the designated coastal zone or outside the coastal zone with the potential to impact the Commonwealth's coastal uses and

resources are subject to a Federal consistency determination as specified in 15 CFR Part 930. Those enforceable policies under the Virginia Coastal Zone Management Program that may be considered during a Federal consistency determination of VPA-HIP funded projects may include Fisheries Management, Subaqueous Lands Management, Wetlands Management, and Non-point Source Pollution Control. Under the review procedure for Federal Assistance Projects (15 CFR Part 930, Subpart F), the only USDA programs requiring a consistency certification are Rural Development loans and grants; CREP and the VPA-HIP program are not listed.

Habitat improvement projects would provide long-term benefits to the coastal zone through the establishment of native vegetation for the stabilization of soil and stream banks, and the retention of sediment, excess nutrients, and other pollutants from adjacent agricultural lands. Moreover, improvements would enhance habitat for both stream and terrestrial wildlife within the coastal zone. Because of the requirement to install CREP-compliant riparian buffers and 10-year maintenance agreements for instream/riparian improvement projects, there would be long-term positive impacts to the coastal zone under the Proposed Action Alternative. The specific areas for instream/riparian habitat enhancement and actions necessary for improvement would not be known until land is offered for enrollment. At that time, the potential impact to the coastal zone would be assessed and appropriate actions under the Virginia Coastal Zone Management Program would be taken.

3.4.2.2 No Action Alternative

Under the No Action Alternative, VPA-HIP grant funds would not be used for the expansion of the Virginia PALs program to increase public access to private lands for hunting, fishing and other outdoor recreational activities in the Commonwealth. Likewise, habitat improvements would not occur. As a result, coastal zones would not benefit from the long-term positive impacts associated with habitat improvement programs. Lands not enrolled in PALs may also be converted to other uses, increasing the potential for sedimentation and pollutants entering the coastal zone.

3.5 Recreation

Outdoor recreation generally includes leisure pursuits engaged in outside, especially in natural or semi-natural settings out of town. Popular outdoor activities in Virginia include pleasure walking, visiting historic places, swimming, visiting natural areas, fishing, picnicking, playground use, boating, jogging, visiting gardens or arboretums, bicycling, camping, hiking, hunting, and other recreational and wildlife-based pursuits (VDCR 2007). This PEA is limited to recreation activities that would be affected by implementation of the Proposed Action. The primary activities included would be fishing, hunting, and wildlife observation.

3.5.1 Affected Environment

Although approximately 85 percent of land in Virginia is privately owned, and approximately 14 percent (3.53 million acres) is public land (Federal, Commonwealth or local government land) or is private land in trusts. These public properties include national parks, national forests, state

parks and natural areas, state forests, wildlife management areas (WMAs), public fishing lakes, greenways, scenic rivers, scenic byways, public beaches, and historic sites (VDCR 2012). The Commonwealth currently maintains 39 management areas totaling over 200,000 acres for public outdoor recreational use activities (VDGIF 2012a). In addition, over 70% of all counties and virtually all of the cities in Virginia have full-time park and recreation departments (VDCR 2012).

Hunting, fishing, and other consumptive recreational activities are permitted on a number of these facilities including portions of the national forests, national wildlife refuges, state parks, state forests, and WMAs (VDGIF 2012a). No hunting is permitted on National Park Service (NPS) lands in Virginia (VDGIF 2012a). In addition, more than 19,000 acres of private land in Dickenson County has been opened to public hunting, fishing and trapping through the current PALS program. From 2006 to 2012, over 6,200 permits for access to PALS lands had been sold.

National and state-by-state demand for outdoor recreation activities is assessed every five years by the USFWS and U.S. Census Bureau (USCB). The survey collects information on the number of anglers, hunters, and wildlife watchers and how often they participate in these activities in the United States (USFWS/USCB 2008). Based on the 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation for Virginia, 2.9 million Virginia residents and nonresidents 16 years old and older fished, hunted, or observed wildlife in the Commonwealth. Of the total number of survey participants, 858,000 fished, 413,000 hunted, and 2.3 million participated in wildlife-watching activities. In addition, there were 196,000 resident 6 to 15 year-olds who fished, 31,000 of this age group who hunted, and 2.1 million of this age group who observed wildlife. The sum of anglers, hunters, and wildlife-watching participants exceeds the total number of participants in wildlife-related recreation because many individuals engaged in more than one wildlife related activity.

Comparison of data from the 1991, 1996, 2001, and 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation for Virginia, indicate the total number of people participating in fishing, hunting, and wildlife observation has remained between 2.3 million and 3 million recreationists over the past 15 years (USFWS/USCB 1993, 1998, 2003, 2008). The popularity of fishing and hunting has not changed considerably over the 15-year period, whereas wildlife observation increased by over 800,000 participants (Figure 3-4). During the same general timeframe, from 1990 to 2006, the population of Virginia increased by 19 percent (about 1.46 million) (USCB No Date). A survey accomplished in 2009 found that in the last 5 years over 52 percent of Virginia hunters had stopped hunting a particular species due to a lack of hunting access (Responsive Management 2009).

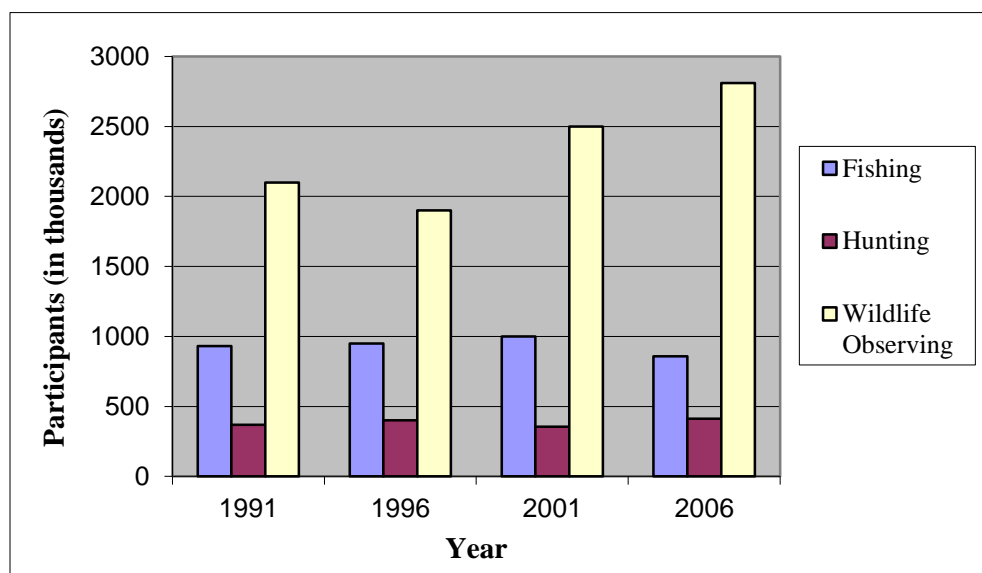
3.5.2 Environmental Consequences

Impacts to recreation would be considered significant if they severely reduced, increased, or removed the amount of land available for public recreation or significantly degraded the quality of the recreational experience. 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.

3.5.2.1 Proposed Action Alternative

Under the Proposed Action Alternative, VDGIF would use VPA-HIP grant funds to expand the existing PALS program for outdoor recreational activities from the current enrollment of approximately 19,000 acres to 38,000 acres of private land for hunting, fishing, and other outdoor recreation activities. Therefore the Proposed Action has the potential to provide substantial beneficial impacts to recreational resources in Virginia. The expanded acreage would be advertised on the VDGIF FindGame. FindGame is an interactive Web-based map viewer designed to provide better and more current information about hunting land location and access. Additionally, this program would increase public awareness of recreational opportunities advertising enrolled PALS program lands on Virginia’s online FindGame mapping system, hunting regulation digests, in *Virginia Wildlife* magazine, and on the VDGIF website.



Source: (USFWS/USCB 1993, 1998, 2003, 2008)

Figure 3-4. Participation in Wildlife-Associated Recreation in Virginia, 1991- -2006

3.5.2.2 No Action Alternative

Under the No Action Alternative, the Virginia PALs program would continue as currently administered. Additional USDA VPA-HIP grant funds would not be used to increase private landowner enrollment and additional staff would not be hired to increase enrollment through public outreach. Therefore, under the No Action Alternative there would be no change to existing recreational resources, and the goal of enrolling 38,000 acres into the Virginia PALs program and an expanded public awareness program would not be fulfilled.

3.6 Socioeconomics

Socioeconomic analyses generally include detailed investigations of the prevailing population, income, employment, and housing conditions of a community or Region of Influence (ROI). The socioeconomic conditions of a ROI could be affected by changes in the rate of population growth, changes in the demographic characteristics of a ROI, or changes in employment within the ROI caused by the implementation of the Proposed Action.

Socioeconomic resources examined in this document include statewide population, demographics, and income characteristics of Virginia.

3.6.1 Affected Environment

3.6.1.1 Population and Demographics

The 2010 Census data indicates Virginia increased in population from about 7.1 million in 2000 to just over 8.0 million in 2010, a growth of 13.0 percent (U.S. Census Bureau [USCB] 2012a). According to the U.S. Census Bureau, 49.1 percent of the persons living in Virginia were male and 50.9 percent female, with a median age of 37.5 years (USCB 2012b). In 2010, the USDA Economic Research Service (ERS) estimated about 1.1 million persons lived in rural Virginia and 6.9 million lived in urban areas of the Commonwealth (ERS 2012).

3.6.1.2 Employment and Income

The median household income (MHI) of Virginians in 2010 was \$60,674, above the U.S. MHI of \$50,046 (USCB 2012b). In 2010, per capita income of Virginians was \$44,246, an increase of 2.6 percent over 2009, and the 7th highest per capita income in the nation (Bureau of Economic Analysis [BEA] 2012). The average net farm income for the Commonwealth was about \$425,000 that year (ERS 2012). The Commonwealth's 2010 gross domestic product was approximately \$423.9 billion, which ranked 10th in the nation (BEA 2012).

In 2009, approximately 521,890 jobs were rural and 4.2 million jobs were urban in the Commonwealth (ERS 2012). Agriculture is by far Virginia's largest industry (VDACS 2011). Out of 3,527,350 persons employed in the Commonwealth in 2010 (Bureau of Labor Statistics [BLS] 2011), over 357,000 were in the agriculture industry (VDACS 2011). There are over 47,000 production farms in Virginia, employing approximately 60,000 farmers (VDACS 2011). The major nonfarm employment sectors in Virginia include government (Federal State, and local), professional and business services, and trade, transportation and utilities (VEC 2012).

3.6.2 Environmental Consequences

A significant impact to socioeconomic conditions can be defined as a change that is outside the normal or anticipated range of those conditions that would flow through the remainder of the economy and community, creating substantial adverse effects in housing, employment, demographic trends, and business sectors. Generally, small percentage changes in individual attributes would not likely result in significant impacts at the county-level of analysis. Changes to the statewide or national economy of greater than agriculture's normal contribution could be

considered significant, as this could affect the general economic climate of other industries on a much greater scale.

Additional changes in demographic trends such as population movements would be considered significant if a substantial percentage of the population were to enter or leave a particular area based on the changing economic conditions associated with the alternatives analyzed, rather than unrelated projected changes or changes generated by economic activities as a whole.

3.6.2.1 Proposed Action Alternative

Under the Proposed Action, a total of \$1,420,000 in VPA-HIP grant funds would be expended over the three-year grant period (\$205,000 in the first year, \$625,000 the second and \$590,000 in the third). Grant funds would be supplemented by an additional \$562,000 from other Federal and Commonwealth sources, and \$120,000 from landowners for habitat improvements, for a total of \$2,102,000 in projected expenditures. The program would negotiate PALS agreements with incentive payments ranging from \$0.25 to \$0.75 per acre. Approximately \$35,000 would be used to provide incentive payments to landowners; this would be supplemented by an estimated \$15,000 from sales of the PALS permit fees (\$18 per permit). For those areas in which instream/riparian habitat improvements would occur, VPA-HIP grant funds would fund approximately 80 percent of the project (a total of \$600,000) with landowners paying the remaining costs (a total of \$120,000). Other Federal and Commonwealth funds would contribute an estimated \$382,000 to habitat improvement projects. Remaining funds would be spent on a contracted annual survey of landowners that would be used to determine how to target VPA-HIP funds and provide more information on how to develop an integrated campaign to expand public access to private lands. Similarly, a contractor position would be funded to locate and contact landowners having 500 or more acres of land to determine their interest in the program and coordinate habitat plans on newly enrolled lands.

There would be a slight economic benefit to both the Commonwealth and local economies as a result of increased access to private lands from an expanded PALS program under the Proposed Action Alternative. Additional access to lands for outdoor recreational activities would potentially increase sales of hunting, fishing and other outdoor equipment, as well as trip expenditures from traveling outdoor recreationists such as lodging, restaurants and the purchase of fuel. In 2006, approximately \$2.2 billion was spent on fishing, hunting, and wildlife-watching activities in Virginia (USFWS / USCB 2008). For hunting and fishing, approximately \$520.0 million was spent for trip-related activities and \$785.9 million for equipment, while for wildlife watching activities about \$248.0 million was spent for trip-related expenses and \$712.0 million for equipment (USFWS / USCB 2009). There would also be increased revenue for the Commonwealth from the increased purchase of hunting and fishing permits, from the purchase of PALS permits, and from the taxes collected on the retail sales of outdoor gear, lodging and restaurants. Providing new access to privately-held lands would also attract more out of state recreationists, benefiting the local and statewide economies. Implementation of the Proposed

Action Alternative is expected to have long-term socioeconomic benefits for employment and income, with no associated negative effects such as large population movements.

3.6.2.2 No Action Alternative

If VPA-HIP funding was not utilized, the PALS program would continue to be funded with access permit fees and may remain limited to the currently enrolled 19,000 acres in Dickenson County. No additional local or statewide economic benefits associated with the PALS and increased outdoor recreation would occur.

3.7 Environmental Justice

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations requires Federal agencies to consider as a part of their action, any disproportionately highly adverse human health or environmental effects to minority and low-income populations. Agencies are required to ensure these potential effects are identified and addressed.

The FSA defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (FSA 2011b). In this context, fair treatment means that no group of people should bear a disproportionate share of negative environmental consequences resulting from a Federal action.

Consideration of the potential consequences of the Proposed Action for environmental justice requires three main components:

- A demographic assessment of the affected community to identify the presence of minority or low-income populations that may be potentially affected;
- An integrated assessment of all potential impacts identified to determine if any result in a disproportionately highly adverse impact to these groups; and
- Involvement of the affected communities in the decision-making process and the formation of any mitigation strategies.

The FSA’s guidance issued in 1-EQ [Rev. 2] defines a minority population by race, ethnicity, or a combination of these two classifications such that a minority population can be described as being composed of the following population groups, singly or in combination, exceeding 50 percent of the population in an area:

- American Indian or Alaskan Native
- Asian or Pacific Islander
- Black
- Hispanic

Each year the USCB defines the national poverty thresholds, which are measured in terms of household income dependent upon the number of persons within a household. Individuals

falling below the poverty threshold are considered low-income individuals. The USCB census tracts where at least 20 percent of the residents are considered poor are known as poverty areas. When the percentage of residents considered poor is greater than 40 percent, the census tract is considered an extreme poverty area.

3.7.1 Affected Environment

The 2010 Census population data indicates approximately 31.5 percent of the population in Virginia are minorities (Table 3-4). The populations of all races increased from 2000 to 2010 (USCB 2012a).

The poverty threshold established in 2010 by the USCB was \$22,113 for a family of four with two children under the age of 18 years (USCB 2012c). Nationally, the 2010 poverty rate was 15.1 percent, an increase from the 2009 rate of 14.3 percent (USCB 2012a). In 2010, the poverty rate in Virginia was 11.1 percent, increasing from the 2009 rate of 10.5 percent (USCB 2012a). Of the population living in urban and rural areas of Virginia, 11.2 and 10.2 percent lived below the poverty level, respectively (USCB 2012a)

3.7.2 Environmental Consequences

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 were denied or if any adverse environmental effects occurred from an action that would disproportionately and highly adversely affect minority or low-income populations.

3.7.2.1 Proposed Action Alternative

Under the Proposed Action Alternative, no highly adverse disproportionate impacts to environmental justice populations would occur. Under Title VI of the 1964 Civil Rights Act, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972, the USDA prohibits discrimination on the basis of race, color, religion, national origin, age, sex, or disability.

Entry into the PALS would be voluntary and its scale would be statewide. Minority and low income populations would have equal access to participate in the program if their land meets the eligibility criteria of suitable habitat and recreational value. Enrolled participants in the PALS must grant equal access to all sportspersons with a valid hunting and/or fishing license, or wildlife watchers, based on their agreement to wave liability and conform to posted use conditions.

3.7.2.2 No Action Alternative

Under the No Action Alternative, VPA-HIP funding would not be used for expanding the PALS program and related habitat improvement activities and surveys. Other programs offering

recreational opportunities administered by VDGIF would continue as currently implemented, with no changed conditions that may affect environmental justice populations.

Table 3-4. Virginia Population by Race 2010

Race	Total	Population (Percent)	Change 2000 – 2010 (Percent)
Total Population	8,001,024	100.0	+11.5
White Alone	5,486,852	68.6	+6.7
Black or African American Alone	1,551,399	19.4	+10.4
American Indian and Alaskan Native Alone	29,225	0.4	+27.6
Asian Alone	439,890	5.5	+40.7
Native Hawaiian and other Pacific Islander Alone	5,980	0.1	+34.0
Some Other Race Alone	254,278	3.2	+45.4
Two or More Races	233,400	2.9	+38.7
Hispanic or Latino (of any race)	631,825	7.9	+47.8

Source: USCB 2012a

4.0 CUMULATIVE EFFECTS

4.1 Introduction

The CEQ regulations stipulate that the cumulative effects analysis within a PEA should consider the potential environmental impacts resulting from the incremental impacts of the action when added to other past, present and reasonably foreseeable actions, regardless of what agency or person undertakes such other actions. The CEQ guidance in Considering Cumulative Effects affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the Proposed Action. The scope must consider geographic and temporal overlaps affected by the Proposed Action and other programs or projects. It must also evaluate the nature of interactions among these actions.

Cumulative effects most likely arise when a relationship exists between a 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 a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time tend to have potential for cumulative effects.

4.2 Past, Present, and Reasonably Foreseeable Actions

In this PEA, the affected environment for consideration of direct and indirect impacts includes the entire State of Virginia where landowners of private lands are eligible to enter into PALS agreements with the Commonwealth. For the purposes of this analysis, the goals and plans of Federal programs designed to provide incentives for public recreation access to private lands and those that mitigate the risks of degradation of natural resources on private lands are the primary sources of information used in identifying past, present, and reasonably foreseeable actions. In addition to VPA-HIP grant funds, the Commonwealth of Virginia maintains and implements numerous Federal programs authorized under the Farm Bill to conserve and enhance the natural resources of the State. These programs include, but are not limited to Wildlife Habitat Incentive Program (WHIP), Environmental Quality Incentives Program (EQIP), Wetlands Reserve Program (WRP), Grassland Reserve Program (GRP) and the Conservation Stewardship Program (CSP). Other Federal programs are sponsored by the USFWS such as the Landowner Incentive Program (LIP) and Partners for Fish and Wildlife (Table 4-1).

4.2.1 Cumulative Effects Matrix

The incremental contribution of impacts of the Proposed Action, when considered in combination with other past, present, and reasonably foreseeable actions, are expected to add positively to the long-term cumulative impacts to biological, soil, water, recreation and socioeconomic resources in the proposed use of VPA-HIP grant funds for the expansion of the PALS program. Past, present, and reasonably foreseeable actions are considered generally for each resource included within Section 3.0 of this PEA and are presented in Table 4-2.

Table 4-1. Federal and State Conservation Assistance Programs

Program	Summary
Landowner Incentive Program (USFWS and VDGIF)	The LIP is a partnership between Federal/State governments and private landowners. This program provides financial incentives and technical advice to private landowners for the improvement, restoration and protection of habitat for at-risk species on private lands.
Partners for Fish and Wildlife (USFWS)	The primary purpose of this program in Virginia is working with others to restore historic habitat conditions with a focus on wetlands and streams, and TES habitat. The program targets landscapes that will maximize benefits and create large blocks of habitat to offset the pressure from development. The Partners Program works with landowners to develop partnerships that foster pride in good stewardship of the land. Habitats of special concern include areas for migratory waterfowl and songbirds, forested wetlands, and threatened, endangered and candidate species.

Sources: USFWS 2011; VDGIF 2012e

4.3 Irreversible and Irretrievable Commitment of Resources

NEPA requires that environmental analysis include identification of any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects 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. For the Proposed Action, no irreversible or irretrievable resource commitments would result.

Table 4-2. Cumulative Effects Matrix

Resource	Past and Present Actions	Proposed Action	Future Actions	Cumulative Effects
Biological Resources	Positive impacts to vegetation, wildlife and protected species would result from past and present actions as an outcome of maintaining suitable wildlife habitat under other Commonwealth and Federal programs for conservation of private lands. However, the added benefits of expanding the PALS program statewide would not occur.	Under the Proposed Action, positive impacts to wildlife and protected species would occur as a result of an increased amount of private lands being maintained as suitable wildlife habitat. While the amount of accessible public and private land, and the number of persons using it would increase, bag and creel limits would continue to be managed in accordance with Virginia fish and game laws. Vegetation would benefit from PALS habitat improvements.	Continued enrollment of private lands in the PALS is likely to have positive impacts on vegetation, wildlife and protected species from improved habitat.	Long-term positive impacts to biological resources would occur from the Proposed Action and other known and reasonably foreseeable actions.
Water Resources	Long-term positive impacts to water quality are expected to result from programs that improve wildlife habitat on privately held lands. The goal of many of these programs is to improve surface and groundwater quality, restore	Long-term positive impacts to water resources would occur from maintaining additional lands as wildlife habitat under the Proposed Action. Instream/riparian habitat improvements would stabilize soils and stream	Continued enrollment of privately held cropland, ranchland and forestland in PALS would have positive impacts to water resources, similar to those described for the Proposed Action.	Positive long-term cumulative impacts to surface water quality including wetlands, groundwater quality, and floodplain stabilization are expected to result from the Proposed Action and other.

Table 4 2. Cumulative Effects Matrix (cont'd)

Resource	Past and Present Actions	Proposed Action	Future Actions	Cumulative Effects
Water Resources (cont'd)	wetlands and stabilize floodplains. However, greater benefits attained from statewide implementation of PALS would not be realized under past and present actions.	banks, and maintain vegetation for the retention of sediment, excess nutrients, and other pollutants from lands adjacent to surface waters.		past, present and reasonably foreseeable future actions
Coastal Zone	There would be no negative impacts to the coastal zone from past and present actions. All land currently enrolled in the PALS program is currently in Dickenson County in the far western portion of the Commonwealth with little potential to impact coastal zones. The long-term benefits associated with the expansion of PALS statewide and habitat improvement projects would not occur under past and present actions.	Long-term positive impacts to the coastal zone would occur from enrolling additional acres in the PALS program and maintaining vegetative cover for suitable wildlife habitat. Instream/riparian habitat improvements and CREP-compliant riparian buffers would stabilize soils and stream banks, and maintain vegetation for the retention of sediment, excess nutrients, and other pollutants from adjacent agricultural lands.	Future enrollment of privately held cropland, ranchland and forestland in PALS in the coastal zone or in areas with the potential to impact coastal zone uses or resources would have positive impacts similar to those described for the Proposed Action.	Long-term positive impacts to the coastal zone would occur from the Proposed Action and other known and reasonably foreseeable actions

Table 4 2. Cumulative Effects Matrix (cont'd)

Resource	Past and Present Actions	Proposed Action	Future Actions	Cumulative Effects
Soil Resources	Long-term positive impacts to soils result from past and present programs that create vegetative habitat on privately held lands. Permanent vegetative cover results in reduced erosion. However, greater benefits to soils associated with expansion of the PALS program statewide would not occur under past and present actions.	Long-term positive impacts to soils are expected to result from the increased amount of land enrolled in PALS, as well as the stabilization and reduced erosion of soil and streams achieved by habitat improvement projects.	Continued implementation of habitat improvements on private lands for enhanced outdoor recreation and other conservation programs would benefit soils in both the short and long term.	Positive long-term impacts to soil resources are expected to result from the Proposed Action and other known and reasonably foreseeable actions.
Recreation	Positive impacts to recreation would result from past and present actions on largely public lands. Few other programs besides USDA's agricultural land conservation programs provide financial incentives to private landowners to implement habitat improvements to support public recreation on those lands, or permit public access for recreational purposes.	Under the Proposed Action, long-term positive impacts to outdoor recreational activities are expected from expansion of PALS by increasing opportunities for fishing, hunting, and wildlife viewing activities. The majority of land in Virginia is privately held, and public recreation lands, especially near major urban centers, cannot support the demand for outdoor recreation in the State.	Continued enrollment of private lands in the PALS program is likely to have positive impacts on recreational activities similar to those described for the Proposed Action.	Long-term positive impacts to recreation would occur from the Proposed Action and other known and reasonably foreseeable actions.

Table 4 2. Cumulative Effects Matrix (cont'd)

Resource	Past and Present Actions	Proposed Action	Future Actions	Cumulative Effects
Socioeconomics	Past and present programs that offer monetary compensation to private landowners for allowing recreational access to public and private lands would continue. However, the slight economic benefit to local and statewide outdoor recreational-related retail economies from expansion of the PALS program would not occur.	A slight economic benefit to both local and statewide economies would occur under the Proposed Action from the expansion of the PALS program. The availability of additional private lands for public outdoor recreational use would potentially increase expenditures for such things as equipment, lodging and food, providing a slight economic benefit to local and Commonwealth economies. Access to additional lands may also attract out of state recreationalists, further benefitting local and statewide economies.	Continued enrollment of private lands in PALS is likely to have potential impacts to socioeconomics described for the Proposed Action.	Positive, long-term direct and indirect cumulative impacts to local economics are expected to result from the Proposed Action, along with past, present, and future actions.
Environmental Justice	No highly adverse disproportionate impacts to environmental justice populations would occur. The PALS program would continue to provide equal public access to private lands for outdoor recreation.	As with past and present actions, no highly adverse disproportionate impacts to environmental justice populations would occur under the Proposed Action. Providing public recreation opportunities on private lands	Continued enrollment of private lands in PALS is likely to have potential impacts to environmental justice similar to those described in past and present actions.	Positive, long-term direct and indirect cumulative impacts to environmental justice populations are expected to result from the Proposed Action, along with past, present, and future actions.

Table 4 2. Cumulative Effects Matrix (cont'd)

Resource	Past and Present Actions	Proposed Action	Future Actions	Cumulative Effects
Environmental Justice (Cont'd)		would benefit environmental justice populations as well as the public at large.		

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5.0 MITIGATION

5.1 Introduction

The purpose of mitigation is to avoid, minimize, or eliminate 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

5.2 Roles and Responsibility

CEQ regulations state that all relevant reasonable mitigation measures that could improve a project should be identified, even if they are outside the jurisdiction of the lead agency or 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 Alternative is FSA.

5.3 Mitigation

There are no expected major negative impacts associated with utilizing VPA-HIP grant funds for the expansion of PALS. Lands enrolled in CREP have already been evaluated for potential effects to TES, wetlands, and historic properties in accordance with 1-EQ, and in many instances CPs have already been installed. In these instances, the Conservation Plan would be re-evaluated prior to enrollment of CREP lands in PALS, including the potential for negative impacts. Further, the existing CREP Conservation Plan would be modified if necessary to include approved PALS activities. Planned PALS habitat improvement activities would conform to CREP guidelines and be evaluated in accordance with FSA's 1-EQ process for any additional potential environmental effects. In those site-specific instances where a wetland, threatened or endangered species, or a cultural resource may be present, consultation with the appropriate lead agency would identify the potential severity of the impact and devise measures required to eliminate or reduce the negative impacts to those sensitive resources.

PALS habitat improvement activities may result in temporary impacts to vegetation and wildlife during activities associated with restoring, enhancing and maintaining land with an emphasis on early successional habitat. These activities may include tree cutting and trimming, slash removal, tilling and prescribed burning. Moreover, instream/riparian habitat improvement may

include construction of cattle exclusions, planting vegetation, restoring natural flows, and improving degraded channels. Potential impacts from these improvement projects include increased erosion and sedimentation of nearby water bodies and would be short term, ending once improvements are complete. Potential impacts may be mitigated by adherence to NRCS conservation practice guidelines and BMPs that include measures to reduce soil erosion, maintain adequate ground cover, litter, and canopy, and reduce soil compaction would minimize the potential for adverse impacts to soil. BMPs are specific, usually site-based approaches for controlling potential pollutants and may include actions such as mulching, silt fencing, grade stabilization, and terracing vegetation planting.

6.0 LIST OF PREPARERS

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Appendix A
Agency Coordination Letter

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www.geo-marine.com

May 3, 2012

To: [See Section 7, List of Agencies Contacted]

Re: Final Programmatic Environmental Assessment for the use of Voluntary Public Access and Habitat Incentive Program grant funds for the Virginia Public Access Lands for Sportsmen Program

Dear: [Agency]

The United States Department of Agriculture, Farm Service Agency (FSA) on behalf of the Commodity Credit Corporation has prepared a Programmatic Environmental Assessment (PEA) to assess the impacts of using Voluntary Public Access and Habitat Incentive Program (VPA-HIP) grant funds for the expansion of the Virginia Public Access Lands for Sportsmen (PALS) program. The VPA-HIP is a program authorized by the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) that provides grants to States and tribal governments to encourage owners and operators of privately held farm, ranch, and forest land to voluntarily open land for public access for outdoor recreation activities such as hunting, fishing, hiking, wildlife watching, and other outdoor activities. Projects receiving VPA-HIP funds are administered by the State or tribal government that receives the grant.

The Virginia Department of Game and Inland Fisheries (VDGIF) proposes to use VPA-HIP grant funds over a three-year period to expand the PALS program to increase hunting, fishing and other outdoor recreational opportunities throughout the Commonwealth. The VPA-HIP funds would be used to provide annual incentive payments to eligible private landowners for negotiated leases, improve habitat on a portion of newly enrolled land, contract an annual survey for use in targeting VPA-HIP funds and provide a basis for developing an integrated campaign to expand public recreational access to private lands. Funds would also enable contracting a landowner outreach and habitat enhancement program coordinator position.

An electronic version of the Final PEA for the proposed use of VPA-HIP grant funds for the expansion of PALS is now located at <http://public.geo-marine.com>. Electronic comments may be posted at this site as well. An electronic copy of the Final PEA can also be reviewed at <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ecrc&topic=nep-cd>. Written comments regarding this assessment can also be submitted to:

VirginiaVPA-HIP PEA Comments
c/o Geo-Marine Incorporated
2713 Magruder Boulevard, Suite D
Hampton, Virginia 23666

Or emailed to VirginiaPEA@geo-marine.com

Or faxed to (757) 873-3703

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Virginia VPA-HIP PEA
May 3, 2012
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Please submit all comments by June 6, 2012. Thank you in advance for your input; it will greatly assist FSA and the VDGIF in their planning.

Respectfully,

Brian Bishop, NEPA Project Manager

Cc: Amy Braun, FSA
Jeffrey Trollinger, VDGIF

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Appendix B
Federal and State Threatened, Endangered, and Candidate Species of Virginia

Federal and State Threatened, Endangered, and Candidate Faunal Species of Virginia

Common Name	Scientific Name	Federal Status ¹	State Status ¹	WAP Teir ²
Amphibians				
Barking Treefrog	<i>Hyla gratiosa</i>		T	II
Mabee's Salamander	<i>Ambystoma mabeei</i>		T	II
Shenandoah Salamander	<i>Plethodon shenandoah</i>	E	E	I
Tiger Salamander	<i>Ambystoma tigrinum</i>		E	II
Arachnida (Spiders & Pseudoscorpions)				
Spruce-fir Moss Spider	<i>Microhexura montivaga</i>	E		
Birds				
Appalachian Bewick's Wren	<i>Thryomanes bewickii altus</i>		E	I
Bachman's Sparrow	<i>Aimophila aestivalis</i>		T	I
Bachman's Warbler	<i>Vermivora bachmanii</i>		E	
Bald Eagle	<i>Haliaeetus leucocephalus</i>	SOC	T	II
Gull-billed Tern	<i>Gelochelidon nilotica</i>		T	I
Henslow's Sparrow	<i>Ammodramus henslowii</i>		T	I
Kirtland's warbler	<i>Dendroica kirtlandii</i>		E	IV
Loggerhead Shrike	<i>Lanius ludovicianus</i>		T	I
Peregrine Falcon	<i>Falco peregrinus</i>		T	I
Piping Plover	<i>Charadrius melodus</i>	T	T	I
Red-cockaded Woodpecker	<i>Picoides borealis</i>	E	E	I
Red Knot	<i>Calidris canutus rufa</i>	C		IV
Roseate Tern	<i>Sterna dougallii</i>	E	E	IV
Upland Sandpiper	<i>Bartramia longicauda</i>		T	I
Wilson's Plover	<i>Charadrius wilsonia</i>		E	I
Bivalvia (Mussels)				
Appalachian Monkeyface	<i>Quadrula sparsa</i>	E	E	I
Atlantic Pigtoe	<i>Fusconaia masoni</i>	SOC	T	II
Birdwing Pearlymussel	<i>Lemiox rimosus (=Conradilla caelata)</i>	E	E	I
Black Sandshell	<i>Ligumia recta</i>		T	III
Brook Floater	<i>Alasmidonta varicosa</i>		E	II
Cracking Pearlymussel	<i>Hemistena lata</i>	E	E	I

Federal and State Threatened, Endangered, and Candidate Faunal Species of Virginia (cont'd)

Common Name	Scientific Name	Federal Status ¹	State Status ¹	WAP Teir ²
Cumberland Bean	<i>Villosa trabalis</i>	E	E	I
Cumberland Combshell	<i>Epioblasma brevidens</i>	E; CH	E	I
Cumberland Monkeyface	<i>Quadrula intermedia</i>	E	E	I
Deertoe	<i>Truncilla truncata</i>		E	IV
Dromedary Pearlymussel	<i>Dromus dromas</i>	E	E	I
Dwarf Wedgemussel	<i>Alasmidonta heterodon</i>	E	E	II
Elephant Ear	<i>Elliptio crassidens</i>		E	IV
Fanshell	<i>Cyprogenia stegaria</i>	E	E	I
Finerayed Pigtoe	<i>Fusconaia cuneolus</i>	E	E	I
Fluted Kidneyshell	<i>Ptychobranthus subtentum</i>	C		II
Fragile Papershell	<i>Leptodea fragilis</i>		T	IV
Green Floater	<i>Lasmigona subviridis</i>		T	II
Green-blossom Pearlymussel	<i>Epioblasma torulosa gubernaculum</i>	E	E	I
James Spiny mussel	<i>Pleurobema collina</i>	E	E	I
Littlewing Pearlymussel	<i>Pegias fabula</i>	E	E	I
Ohio Pigtoe	<i>Pleurobema cordatum</i>		E	III
Oyster Mussel	<i>Epioblasma capsaeformis</i>	E; CH	E	I
Pimple Back	<i>Quadrula pustulosa</i>		T	IV
Pink Mucket	<i>Lampsilis abrupta</i>	E	E	I
Purple Bean	<i>Villosa perpurpurea</i>	E; CH	E	I
Purple Liliput	<i>Toxolasma lividus</i>	SOC	E	II
Pyramid Pigtoe	<i>Pleurobema rubrum</i>	SOC	E	II
Rayed Bean	<i>Villosa fabalis</i>	E		II
Rough Pigtoe	<i>Pleurobema plenum</i>	E	E	I
Rough Rabbitsfoot	<i>Quadrula cylindrica strigillata</i>	E; CH	E	I
Sheepnose	<i>Plethobasus cyphus</i>	PE	T	II
Shiny Pigtoe	<i>Fusconaia cor</i>	E	E	I
Slabside Pearlymussel	<i>Lexingtonia dolabelliformis</i>	C	T	II
Slippershell Mussel	<i>Alasmidonta viridis</i>		E	II
Snuffbox	<i>Epioblasma triquetra</i>	E	E	II
Spectacle Case	<i>Cumberlandia monodonta</i>	PE	E	II

Federal and State Threatened, Endangered, and Candidate Faunal Species of Virginia (cont'd)

Common Name	Scientific Name	Federal Status ¹	State Status ¹	WAP Teir ²
Tan Riffleshell	<i>Epioblasma florentina walkeri</i>	E	E	I
Tennessee Heelsplitter	<i>Lasmigona holstonia</i>		E	II
Coleoptera (Beetles)				
Holsinger's Cave Beetle	<i>Pseudanophthalmus holsingeri</i>	SOC	E	I
Northeastern Beach Tiger Beetle	<i>Cicindela dorsalis dorsalis</i>	T	T	II
Crustacea (Amphipods Isopods & Decapods)				
Big Sandy Crayfish	<i>Cambarus veteranus</i>	SOC	E	II
Kenk's Amphipod	<i>Stygobromus kenki</i>	C		
Lee County Cave Isopod	<i>Lirceus usdagalun</i>	E	E	I
Madison Cave Amphipod	<i>Stygobromus stegerorum</i>	T	T	I
Madison Cave Isopod	<i>Antrolana lira</i>	T	T	II
Diplopoda (Millipedes)				
Ellett Valley Pseudotremia Millipede	<i>Pseudotremia cavernarum</i>	SOC	T	II
Laurel Creek Xystodesmid Millipede	<i>Sigmoria whiteheadi</i>	SOC	T	I
Fish				
Blackbanded Sunfish	<i>Enneacanthus chaetodon</i>		E	I
Blackside Dace	<i>Chrosomus (=Phoxinus) cumberlandensis</i>	T	T	III
Carolina Darter	<i>Etheostoma collis</i>		T	II
Duskytail Darter	<i>Etheostoma percnurum</i>	E	E	I
Emerald Shiner	<i>Notropis atherinoides</i>		T	III
Golden Darter	<i>Etheostoma denoncourti</i>	SOC	T	
Greenfin Darter	<i>Etheostoma chlorbranchium</i>		T	II
Longhead Darter	<i>Percina macrocephala</i>		T	II
Orangefin Madtom	<i>Noturus gilberti</i>	SOC	T	II
Paddlefish	<i>Polyodon spathula</i>		T	II
Roanoke Logperch	<i>Percina rex</i>	E	E	I
Sharphead Darter	<i>Etheostoma acuticeps</i>		E	I
Shortnose Sturgeon	<i>Acipenser brevirostrum</i>	E	E	I
Slender Chub	<i>Erimystax cahni</i>	T; CH	T	I

Federal and State Threatened, Endangered, and Candidate Faunal Species of Virginia (cont'd)

Common Name	Scientific Name	Federal Status ¹	State Status ¹	WAP Teir ²
Spotfin Chub	<i>Erimonax monachus</i>	T	T	I
Steelcolor Shiner	<i>Cyprinella whipplei</i>		T	III
Tennessee Dace	<i>Chrosomus tennesseensis</i>		E	I
Variagate Darter	<i>Etheostoma variatum</i>		E	II
Western Sand Darter	<i>Ammocrypta clara</i>		T	II
Whitemouth Shiner	<i>Notropis alborus</i>		T	IV
Yellowfin Madtom	<i>Noturus flavipinnis</i>	T; CH	T	I
Gastropoda (Snails)				
Appalachian Springsnail	<i>Fontigens bottimeri</i>	SOC	E	II
Brown Supercoil	<i>Paravitrea septadens</i>	SOC	T	I
Rubble Coil	<i>Helicodiscus lirellus</i>	SOC	E	I
Shaggy Coil	<i>Helicodiscus diadema</i>	SOC	E	I
Spider Elimia	<i>Elimia arachnoidea</i>		E	II
Spiny Riversnail	<i>Io fluviialis</i>	SOC	T	III
Spirit Supercoil	<i>Paravitrea hera</i>	SOC	E	I
Thankless Ghostsnail	<i>Holsingeria unthinksensis</i>	SOC	E	I
Virginia Fringed Mountain Snail(=Virginia Coil)	<i>Polygyriscus virginianus</i>	E	E	I
Virginia Springsnail	<i>Fontigens morrisoni</i>	SOC	E	I
Heteroptera (True Bugs)				
Virginia Piedmont Water Boatman	<i>Sigara depressa</i>	SOC	E	I
Homoptera (Cicadas & Leaf Hoppers)				
Buffalo Mountain Mealybug	<i>Puto kozstarabi</i>	SOC	E	I
Lepidoptera (Butterflies & Moths)				
Appalachian Grizzled Skipper	<i>Pyrgus centaureae wyandot</i>	SOC	T	I
Mitchell's Satyr	<i>Neonympha mitchellii</i>	E	E	I
Mammals				
American Water Shrew (Southern)	<i>Sorex palustris punctulatus</i>		E	II
Carolina Northern Flying Squirrel	<i>Glaucomys sabrinus coloratus</i>	E	E	I
Delmarva Fox Squirrel	<i>Sciurus niger cinereus</i>	E	E	II

Federal and State Threatened, Endangered, and Candidate Faunal Species of Virginia (cont'd)

Common Name	Scientific Name	Federal Status ¹	State Status ¹	WAP Teir ²
Dismal Swamp Southeastern Shrew	<i>Sorex longirostris fisheri</i>		T	IV
Gray Bat	<i>Myotis grisescens</i>	E	E	II
Indiana Bat	<i>Myotis sodalis</i>	E	E	I
Rafinesque's Eastern Big-eared Bat	<i>Corynorhinus rafinesquii macrotis</i>		E	I
Snowshoe Hare	<i>Lepus americanus</i>		E	I
Southern Rock Vole	<i>Microtus chrotorrhinus carolinensis</i>		E	II
Virginia Big-eared Bat	<i>Corynorhinus townsendii virginianus</i>	E	E	II
Virginia Northern Flying Squirrel	<i>Glaucomys sabrinus fuscus</i>	E	E	I
Reptiles				
Bog Turtle	<i>Glyptemys muhlenbergii</i>		E	I
Canebrake Rattlesnake	<i>Crotalus horridus</i> [Coastal Plain population]		E	II
Chicken Turtle	<i>Deirochelys reticularia</i>		E	I
Eastern Glass Lizard	<i>Ophisaurus ventralis</i>		T	II
Wood Turtle	<i>Glyptemys insculpta</i>		T	I

Source: USFWS 2012; VDGIF 2011

*Does not include marine species and species Federally listed in this state but do not occur in this state

1. Status: E – Endangered; T– Threatened; PE – Proposed Endangered; C – Candidate; SOC – Species of Concern; CH – Critical Habitat

2. Virginia Wildlife Action Plan (WAP) ranking of Species of Greatest Conservation Need

Federal and State Threatened, Endangered, and Candidate Floral Species of Virginia

Common Name	Scientific Name	Federal Status ¹	State Status ¹
Bentley's Coralroot	<i>Corallorhiza bentleyi</i>		E
American Chaffseed	<i>Schwalbea americana</i>	E	
Eastern Prairie Fringed Orchid	<i>Platanthera leucophaea</i>	T	T
Harperella	<i>Ptilimnium nodosum</i>	E	E
Harper's Fimbristylis	<i>Fimbristylis perpusilla</i>	SOC	E
Long-stalked Holly	<i>Ilex collina</i>		E
Michaux's Sumac	<i>Rhus michauxii</i>	E	T
Narrow-leaved Spatterdock	<i>Nuphar sagittifolia</i>	SOC	T
Nestronia	<i>Nestronia umbellula</i>		E
New Jersey Rush	<i>Juncus caesariensis</i>	SOC	T
Northeastern Bulrush	<i>Scirpus ancistrochaetus</i>	E	E
Peter's Mountain Mallow	<i>Iliamna corei</i>	E	E
Reclining Bulrush	<i>Scirpus flaccidifolius</i>	SOC	T
Running Glade Clover	<i>Trifolium calcaricum</i>	SOC	E
Seabeach Amaranth	<i>Amaranthus pumilus</i>	T	T
Sensitive Joint-vetch	<i>Aeschynomene virginica</i>	T	T
Shale-barren Rockcress	<i>Arabis serotina</i>	E	T
Small Whorled Pogonia	<i>Isotria medeoloides</i>	T	E
Small-anthered Bittercress	<i>Cardamine micranthera</i>	E	E
Smooth Coneflower	<i>Echinacea laevigata</i>	E	T
Swamp-pink	<i>Helonias bullata</i>	T	E
Virginia Round-leaf Birch	<i>Betula uber</i>	T	E
Virginia Sneezeweed	<i>Helenium virginicum</i>	T	E
Virginia Spiraea	<i>Spiraea virginiana</i>	T	E
White-fringeless Orchid	<i>Platanthera integrilabia</i>	C	
Rock Gnome Lichen	<i>Gymnoderma lineare</i>	E	

Source: Townsend 2009; USFWS 2012

*Does not include marine species and species Federally listed in this state but do not occur in this state

1. Status: E – Endangered; T– Threatened; PE – Proposed Endangered; C – Candidate; SOC – Species of Concern; CH – Critical Habitat

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