

# **2013 ENVIRONMENTAL ASSESSMENT**

## **Cooperative Gypsy Moth Slow the Spread Project**

For

Halifax, Patrick, Pittsylvania, Russell, Smyth, Tazewell, & Washington Counties

And the City of Virginia Beach

Prepared by

Virginia Department of Agriculture & Consumer Services

Office of Plant Industry Services

In Cooperation with

United States Department of Agriculture

Forest Service

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## 1.0 PURPOSE OF AND NEED FOR ACTION

### 1.1 Proposed Action

As part of the national strategy to slow the spread (STS) of the gypsy moth, *Lymantria dispar* (L.), the Virginia Department of Agriculture and Consumer Services (VDACS), Office of Plant Industry Services, in cooperation United States Department of Agriculture-Forest Service (FS) is proposing to treat 7 localized infestations on non-federal lands in Halifax, Patrick, Pittsylvania, Russell, Smyth, Tazewell, Washington counties and the City of Virginia Beach (Table 1). The proposed action for this project is Alternative 2: the use of mating disruption on seven sites totaling 16,296 acres. Maps of the proposed treatment sites are in Appendix C.

Table 1. Sites proposed for treatment in 2013 under the proposed action.

Site Name	Treatment & Dose	No. of Applications	Acres	County(s)
Cluster Springs	MD at 6 g ai/ac	1	1,803	Halifax
False Cape	MD at 15 g ai/ac	1	3,769	Virginia Beach
Hayters Gaps	MD at 6 g ai/ac	1	301	Russell, Washington
Poor Valley	MD at 6 g ai/ac	1	387	Washington
Ringgold	MD at 6 g ai/ac	1	5,638	Pittsylvania
Saltville	MD at 6 g ai/ac	1	267	Smyth
Stuart	MD at 6 g ai/ac	1	4,131	Patrick
<b>Total Treatment Acres Proposed</b>			<b>16,296</b>	

(MD=Mating Disruption)

Private aerial contractors under the supervision of VDACS and FS personnel will make the treatments. The proposed treatments will be scheduled to coincide with the most susceptible stage of the gypsy moth. Adult moths are targeted with mating disruption in starting in late May in the coastal region and June in the mountain region just prior to adult flight. The treatments will be followed by monitoring with pheromone traps in 2013 to determine treatment effectiveness.

### 1.2 Need for Action

The gypsy moth (*Lymantria dispar*) is not native to the U.S.; therefore, it lacks many of the natural controls from its native range. Although oaks are the preferred host, gypsy moth caterpillars feed on the foliage of many plants and many other tree species are defoliated when oaks are not available. When gypsy moth populations increase to the level where defoliation is widespread, the gypsy moth larvae can cause a substantial public nuisance, affect human health, reduce tree growth, cause branch dieback and tree mortality.

Since the gypsy moth was accidentally introduced into Massachusetts in 1869, it has steadily expanded its range west and southward and is now established in about one-third of the susceptible habitat in the U.S. The Gypsy Moth Slow-the-Spread (STS) pilot project (1993-1999) demonstrated that the rate of spread of the gypsy moth could be reduced by at least 60% through comprehensive monitoring and management of recently established populations in the

transition area (Liebhold et al 1992, Sharov et al 1998). The benefits of reducing the rate of spread of gypsy moth exceed the costs of treatment and monitoring by a ratio greater than three to one (Leuschner et. al 1996, Mayo et al 2003, Sills 2008).

The STS pilot project shifted to operational status in 2000 and became part of the national strategy for managing the gypsy moth (Sharov et al 2002b). STS is implemented in a band approximately 65 miles wide that is adjacent to the infested area. This band is called the transition area because gypsy moth populations located within it are transitioning from isolated to continuous. These populations are characterized as recently established, spatially disjunct, and typically relatively low population density. The transition area covers approximately 80,000 square miles stretching across 10 states from the eastern portion of Minnesota to the coast of North Carolina.

Areas proposed for treatment as part of STS are selected with the aid of a decision support system (<http://www.gmsts.org>). The STS decision support system uses data from about 100,000 pheromone traps that are deployed in the transition area annually to select, analyze and prioritize dozens of infestations that are proposed for treatment nationally each year. The five infestations proposed for treatment in this EA are located in the STS area in Virginia.

VDACS is dedicated to protecting urban and rural forested habitats from damage by the gypsy moth and to enforcing interstate and intrastate quarantines to protect areas not currently infested by this exotic forest pest.

### **1.3 Project Objective**

The objective of this cooperative project is to slow the spread of the gypsy moth populations by eliminating reproducing populations from the proposed treatment sites. Over the past four years in Virginia, this objective has been successfully met, while implementing the STS (see Tobin & Blackburn (2007) and Gypsy Moth Slow the Spread Foundation, Inc., <http://www.gmsts.org>).

### **1.4 Relationship to Other Decisions**

This EA is tiered to the 2012 Final Supplemental Environmental Impact Statement (USDA-FSEIS, 2012) titled “Gypsy Moth Management in the United States: a cooperative approach”. The FSEIS supplements the 1995 Final Environmental Impact Statement, which describes alternatives for managing gypsy moth populations nationwide and includes an analysis of environmental effects, and human health risks associated with each alternative and treatments that could be used. The FSEIS also adds new treatment options not available in 1996 providing more flexibility in conducting suppression, eradication, and slow-the-spread projects as well as providing updated information on the analyses of human health and non-target impacts of all the treatment options. The 2012 FSEIS Record of Decision (ROD) maintains the selected alternative from the 1995 FEIS, which calls for implementing a suppression strategy in the generally infested area to reduce damage caused by outbreaks of the insect; implementing an eradication strategy in the uninfested area to prevent establishment of isolated infestations of the insect; and implementing a slow the spread strategy in the transition area to slow the rate of spread of the insect from the generally infested area.

The 2012 FSEIS ROD also adds the chemical Tebufenozide as a gypsy moth treatment option and provides a protocol for incorporating any new treatment options in the future. While the

new treatment option provided by the 2012 ROD does not relate to this site-specific analysis, the updated risk assessment for mating disruption is incorporated by reference.

Implementation requires that site-specific environmental analysis be conducted and public input gathered to identify and consider local issues before any Federal or cooperative suppression, eradication, or slow-the-spread projects are authorized and implemented. As part of the analyses conducted for the FSEIS, human health and ecological risk assessments were prepared (USDA 2012a, Volumes III and IV). These site-specific analyses are tiered to the programmatic FSEIS and documented in accordance with Agency National Environmental Policy Act (NEPA) implementing procedures (USDA 2012b, ROD, p. 2). The purpose of tiering is to eliminate repetitive discussions of the issues addressed in the FSEIS (40 CFR, 1502.20 and 1508.28 in Council on Environmental Quality, 1992). Thus, throughout this EA, many references to material in the FSEIS are made. This allows the EA to focus on issues specific to the action proposed by the VDACS.

The 2012 FSEIS provides for Federal funding and technical assistance by the USDA-FS to state agencies for conducting gypsy moth STS projects using an Integrated Pest Management (IPM) approach if site-specific analysis indicates the need to do so. The 2012 FSEIS also provides (1) standard operating procedures for spray projects and associated public involvement activities, and (2) an analysis of potential environmental and human health-related effects. A copy of the 2012 FSEIS is available upon request from the VDACS office listed on the title page of this EA.

## **1.5 Scope of the Analysis**

This EA fulfills the state and site-specific planning necessary for the proposed 2013 VDACS STS project on state and private lands and provides the USDA-FS with the necessary information to make a decision on the proposed project. This EA presents management strategies that are designed to meet the objectives of the STS project on the proposed treatment sites listed in Table I of this EA. It does not relate to other STS, suppression or eradication treatment activities outside the scope of this EA conducted by the USDA-FS or VDACS on other public and private Virginia lands. Those activities are covered by other EAs and decisions. This EA does not prevent private citizens from managing gypsy moth on their own, nor does it constrain their control activities. The only constraints on private citizen's actions are those imposed by Federal and State laws, local ordinances, or specific insecticide labeling.

## **1.6 Decisions to be Made and Responsible Officials**

State laws in Virginia authorize the Commissioner of VDACS to control quarantined and dangerously destructive plant pests (Appendix A). Every year, VDACS designates areas for gypsy moth STS treatments and petitions the USDA-FS (State and Private Forestry) for cost-share funds to treat designated areas. Authorizing Federal legislation allows the USDA-FS to enter into these cooperative agreements with states to slow the spread of gypsy moth populations (Appendix A). Each year, the USDA-FS assists VDACS (the applicants) in preparing the EA for the requested cost-share funding.

The decision to be made by the USDA-FS based on the information provided by VDACS and included in this EA is whether or not to fund the cost share STS project with VDACS to treat a total of 16,296 acres as proposed or take no action.

The responsible official for the decision to fund treatment on non-federal lands in Virginia is Ms. Elizabeth Agpaoa, Regional Forester, Southern Region, USDA-FS, 1720 Peachtree Road, NW, Atlanta, Georgia, 30367.

The responsible official for the implementation of the cooperative project in Virginia is:

Larry Nichols, Program Manager, Office of Plant Industry Services, Virginia Department of Agriculture & Consumer Services, , 102 Governor Street, Richmond VA 23018, (804-786-3515).

If no EIS is required and funding is approved, the finding and decision will be documented in a Decision Notice (DN) and Finding of No Significant Impact (FONSI). Following the DN/FONSI, action could be implemented as early as May 27, 2013. For additional information on the 2013 VDACS STS Project contact the VDACS office listed on the title page of this EA.

### **1.7 Summary of Public Involvement and Notification**

The National Environmental Policy Act requires public involvement and notification for all projects utilizing federal funds that may have an effect on the human environment (40 CFR, 1506.6 in Council of Environmental Quality 1992).

The Virginia Cooperative Gypsy Moth Program has been seeking public input since 1990. During that time, numerous public meetings have been held in areas of the state where treatments have been conducted. These meetings have been scheduled with public officials and the public.

In December of 2012, letters were mailed to landowners within and around the proposed treatment sites notifying them of the proposed treatments on or near their property. The letter also announced dates, times, and locations, of open house public information meetings regarding the proposed treatments. VDACS personnel were available at these meeting to make presentations and provide information with a variety of citizens, agencies and associations.

Other agencies consulted include US-Fish & Wildlife Service, Virginia Department of Game & Inland Fisheries (VDGIF), Virginia Department of Forestry (VDOF) and the Virginia Department Conservation Recreation (VDCR) - Natural Heritage, and VDCR- False Cape State Park.

Landowners within and including a ½ mile buffer of the treatment also receive a second notification letter before spraying begins. Timing of the mailing will coincide with anticipated start dates of the type of treatment proposed.

Packets of information about the gypsy moth STS project and the proposed treatment were mailed to county administrators and other associated local officials during the scoping process. County administrators and law enforcement officials will be notified before the start of treatments.

Information gathered during the 2013 public meetings and from public meetings held in previous years, along with material collected from resource professionals, industry, and environmental groups was used to identify potential issues and concerns related to this project.

### **1.7 Issues**

Review of public comments did not identify any unresolved conflicts associated with the proposed action.

## 1.8 Other Questions

The questions summarized here have been raised during scoping either this year or on past projects.

- 1) The effect of aerial application of mating disruptants on human health was not identified as an issue because a detailed analysis of the risks posed to humans by mating disruption, called Human Health Risk Assessment, was conducted (USDA 2012a, Vol. III, App. H, pp. 3-1 to 3-10). The toxicity of insect pheromones to mammals is relatively low, and their activity is target-specific. Therefore, the EPA does not expect effects on humans and requires less rigorous testing of these products than of conventional insecticides. Once absorbed through direct contact, disparlure is very persistent in humans, and individuals exposed to disparlure may attract adult male moths for prolonged periods of time. This persistence is viewed as a nuisance and not a health risk (USDA 2012a, Vol. III, App. H, p. 3-9). In acute toxicity tests, disparlure was not toxic to mammals, birds, or fish (USDA 2012a, Vol. III, App. H, pp. 4-1 to 4-8) therefore no effects to human health are anticipated.
- 2) The impact of aerial application of mating disruptants on non-target organisms, including federally protected species, was not identified as an issue because mating disruption is specific to the gypsy moth and is not known to directly or indirectly affect anything other than the gypsy moth.
- 3) The impact of aerial application on cultural resources is not an issue because no soil-disturbing actions are proposed; therefore, no effects on architectural, historic, or archaeological sites are possible (Appendix D, letter received from DCR-Heritage, Dated Nov. 26, 2012).
- 4) The impact of aerial application on the physical characteristics of wetlands and flood plains (compliance with Executive Orders 11988 and 11990) is not an issue because no soil-disturbing actions are proposed; therefore, no effects on the physical characteristics of these areas are anticipated.

## **2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION**

### **2.1 Discussion of Alternatives**

The 2012 FSEIS, to which this document is tiered, maintains the alternative from the 1995 FEIS that includes three broad strategies (suppression, eradication and slow the spread) developed to meet the needs of a national management program for gypsy moth. Therefore, the USFS and APHIS can assist in funding and carrying out eradication, suppression, and slow-the-spread projects. The locations of the infestations in this proposal are in the transition area; thus slow the spread is the objective.

A range of treatment options are available to meet the objectives of each of the strategies described in the FSEIS. Seven treatment options are available for use, alone or in combination. The treatment tactics and their effects on human health and safety, ecological effects, and the environmental consequences are discussed in Vol. II, Chapter 4 of the FSEIS. The treatment options include 1) *Bacillus thuringiensis* var. *kurstaki* (*Btk*), 2) the gypsy moth virus Gypchek®, 3) the insect growth regulator, diflubenzuron (Dimilin®), 4) mass trapping, 5) mating disruption, 6) sterile insect release and 7) tebufenozide, another insect growth regulator (Mimic®).

The particular treatment or combination of treatments to be used in any project is a decision made at the project level in accordance with NEPA. The VDACS and FS considered different alternatives (treatment options) including the no action alternative, to meet the 2013 STS project objectives. The following sections describe the alternatives (treatment options) considered for use in this site-specific proposal to slow the spread of the gypsy moth in Virginia.

### **2.2 Alternatives Eliminated from Further Consideration**

The following alternatives that are available were eliminated from consideration:

Diflubenzuron (Dimilin). The label for Dimilin prohibits its use over wetlands and directly to water. Treatment sites contain ponds, lakes, marsh, rivers and/or wetlands. Therefore, Dimilin is not considered for this project. In future projects, it may be evaluated for use.

Gypchek. Gypchek has proven effective at reducing gypsy moth at higher population levels. However, Gypchek is a costly alternative with a very limited supply and is only used in environmentally sensitive areas, generally those with threatened or endangered lepidopterans which could be impacted by other non-target specific treatment options (USDA 2012a, Vol. II, App. A, pp. 3 to 4). In future projects, it may be evaluated for use.

Btk. *Btk* is a lepidoptera (moth and butterfly family) specific insecticide and is very effective when used as part of the STS strategy to reduce or eradicate low-density populations of the gypsy moth. However, the STS project is committed to using the most environmentally sensitive tactic that will meet project objectives. In this case, the project objectives can be met using a gypsy moth specific tactic (mating disruption) on the treatment blocks. *Btk* would affect a wider range of moth and butterfly species than mating disruption (USDA 2012a, Vol. II, Ch. 4, pp. 13 to 14). Therefore the use of *Btk* was not considered in detail.



Mass trapping. Mass trapping uses an intensive grid of traps limit reproduction. Mass trapping is typically used on small gypsy moth infestations of 100 acres or less (USDA 2012a, Vol. II, App. A, p. 5), and generally uses 9 or more traps per acre. This approach is very labor intensive, especially over large areas. Mass trapping has proven capable of eliminating or reducing gypsy moth at very low population levels in small sites. The use of mass trapping can meet the project objective of slowing the rate of spread of gypsy moth at small treatment sites. Due to the moth catches and the size of the areas proposed for treatment, mass trapping is not considered for this project.

Sterile insect release. Sterile insect release can be done for elimination of isolated gypsy moth populations. There are obstacles using this alternative - the limited release period; need to synchronize production of mass quantities of sterile pupae; and the logistical difficulties of repeated release over a 4-week period (USDA 2012a, Vol. II, App. A, p. 7). This treatment alternative is currently not available, and it has not been used since 1992 (USDA 2012a, Vol. II, App. A, p. 8). Given these obstacles, sterile insect release is not considered for this project.

Tebufenozide (Mimic). The label for Mimic prohibits its use over wetlands and water. Ponds, lakes, marshes, rivers and/or wetlands are present in some treatment areas. Therefore, Mimic is not considered for this project. In future projects, it may be evaluated for use.

## **2.3 Alternatives Considered in Detail**

### **2.3.1 Alternative 1 - No action.**

Under this alternative the USDA-FS would not fund this STS project to slow the spread of gypsy moth on private and public lands in Virginia.

### **2.3.2 Alternative 2 – Mating disruption on 16,296 acres (proposed action).**

Mating disruption is a target specific control tactic that is effective against very low density populations of the gypsy moth (generally less than 10 egg masses per acre). This gypsy moth-specific treatment is applied just prior to the emergence of adult moths during June. Mating disruptants consist of controlled release dispensers containing the gypsy moth pheromone (disparlure) as the active ingredient. In nature, pheromone is produced and emitted by female gypsy moths to communicate their readiness to mate. Males use special receptors found in their antennae to follow a pheromone trail to its source, mating occurs and eggs are laid. When a controlled-release pheromone formulation is applied, the treated area is saturated with pheromone during the 6 to 8 week period when adult gypsy moths are active. The invisible cloud of applied pheromone disrupts the normal communication between the sexes and prevents the males from finding and mating with the flightless females. Mating disruption is only effective in very low population densities because the chance of random encounters between the sexes is high in more dense populations (Reardon et al 1998, Sharov et al 2002a).

There are two products that could be used for this project: Disrupt II and SPLAT-GM, both of which are aerially applied. SPLAT-GM<sup>®</sup> (ISCA Technologies, Riverside California) is a biodegradable amorphous polymer matrix formulation that releases the pheromone over a period of 11 weeks. It is 13% active ingredient by weight; the remaining ingredients consist of waxes, water, emulsifiers, oils, and preservatives. Disrupt II (Hercon Environmental, Emigsville, PA) is

a plastic laminate formulation with the pheromone (17.9% active ingredient by weight) sandwiched between two outer layers of PVC plastic. The laminate is chopped into small flakes, which are applied with a sticking agent (MicroTac, Hercon Environmental, Emigsville, PA), and the pheromone is slowly released through the edges of the small flakes over a period of several months.

This treatment option uses a single application of either Disrupt II or SPLAT-GM. The product would be applied aerially just prior to the emergence of the adult moths. In Virginia the application could begin as early as late May or as late as mid-June depending on local weather conditions that affect the development schedule of the gypsy moth.

## **2.4 Treatment Design Criteria**

The following precautionary measures would apply to the action alternative to enhance the effectiveness of the treatment and to reduce the risk of off-site impacts. Specific safety procedures and guidelines are presented in the Project Aviation Management & Safety Plan, copies of which are available from the address found on the cover page of this EA.

- Local safety authorities would be notified in person or by phone calls.
- Equipment and pesticides would be secured 24 hours per day.
- Employees of state and federal agencies monitoring the treatment would receive training on treatment methods to be able to answer questions from the public.
- Public notification would contain information pertinent to the specific treatment, treatment boundaries and treatment schedule.
- Insecticides would be applied according to label directions; all label warnings and restrictions would be carefully followed by the applicator.
- Pilots would have radio communication with each other and with the base of operations to assure compliance with safety requirements and application constraints.
- Application aircraft would be calibrated for accurate application of treatment material.
- Applications would be timed so the most susceptible gypsy moth stage is targeted.
- Weather would be monitored during treatment to assure accurate deposition of the treatment material and to minimize drift, especially into sensitive areas.
- During the treatments, ground observers and/or aerial observers would monitor deposition of the pesticide.
- No fly zones of 600 feet will be implemented around eagle nests in compliance with recommendations from FWS and VDGIF to prevent potential disturbance of nesting eagles.

Additionally, VDACS honors landowner requests to exclude their property from treatment.

## **2.5 Monitoring**

During the treatments, ground and/or aerial observers will monitor the application for accuracy within the site perimeters, swath width, and drift. Downloading of DGPS information from application aircraft to a computer at the base of operations will also be conducted to help

determine swath widths, spray-on and spray-off, acreage treated, and aircraft altitude during spray runs.

## 2.6 Comparative Summary of Alternatives

Table 2. Summary of Environmental Consequences for Alternatives by Issues from Chapter 4.

	Alternative 1 No Action	Alternative 2 Mating Disruption
Effects on spread of the gypsy moth	- Does not reduce spread	- Reduces spread by at least 60%
Effects on soil, water or forest condition	<ul style="list-style-type: none"> <li>- No direct effects on water quality.</li> <li>- Indirect effects are expected to be short-lived and slight.</li> <li>- Moderate to severe impacts from defoliation (reduced tree growth, limb dieback, tree mortality and a reduction in oak component) would occur within 3 to 5 years.</li> </ul>	<ul style="list-style-type: none"> <li>- No direct or indirect effects on water quality</li> <li>- Delays impacts of defoliation by an additional 10 to 20 years,</li> </ul>
Effects on non-target organisms	<ul style="list-style-type: none"> <li>- No direct effects on non-target organisms</li> <li>- Indirect effects of defoliation are variable but most are not adverse. Species requiring shade would be most at risk.</li> </ul>	- Mating disruption will have no direct or indirect effects on species other than the gypsy moth
Effects on federally protected species	- No direct or indirect adverse impacts are anticipated as a result of no action	- No direct or indirect adverse impacts are anticipated as a result of treatment with mating disruption.

### 3.0 AFFECTED ENVIRONMENT

#### 3.1 Description of the Proposed Treatment Sites

The purpose of this section is to present baseline information on the existing environment for the purpose of comparing environmental consequences. Seven sites totaling 16,296 acres are proposed for treatment under the proposed action - alternative 2. Four of the sites (5,086 acres) are located in the mountains of southwest Virginia in Patrick, Russell, Smyth, Tazewell, and Washington counties; two of the sites (7,441 acres) are located in the piedmont of Virginia in Halifax and Pittsylvania County; and one site (3,769 acres) is located in the coastal plain in False Cape State Park.

Agriculture, forestry, tourism and recreation provide the major sources of employment and tax revenue in these regions. Maps of the proposed treatment sites can be found in Appendix C. Features unique to each site are described below.

##### Mountain Sites

Hayters Gap: Hayters Gap treatment block on the boundary of Washington and Russell counties covers 301 acres and includes a portion of the Channels State Forest. The block covers the physical feature of Hayters Gap, at the intersection of Raven Ridge Road and State Hwy 80, also known as Hayters Gap Road. The block falls on the ridgeline (and county boundary) of Clinch Mountain (elevation ~3,800 ft.). The mountains rise steeply from narrow valleys with roads where a few private residences have cleared acreages. A stream originates near the center of the block and drains south into Wydner Hollow. The area is densely forested with hardwoods, primarily oaks. The bald eagle, a state species of concern, has been observed within this site.

Poor Valley: Poor Valley treatment block in Washington County covers 381 acres in a rectangular shape. It lies over a section of the physical feature Poor Valley, between Clinch Mountain to the north and Little Mountain in the south. Located 15 miles west of Saltville, the block includes a section of State Hwy 698. Brumley Creek (designated wild trout waters), Lee Creek, and at least four other streams pass through the block. The mountains (~ 2,500 ft) rise steeply from the valley (~1200 ft). Only a few private residences lie within the block, surrounded by cleared acreages and fields for grazing. Aside from the clearings, the area is densely forested with hardwoods, primarily oaks. The area labeled as Duncanville sits on the eastern border of the block and contains Brumley Cove Baptist Camp, which predominately lies in the buffer zone. Hidden Valley Wildlife Management Area and the Channels State Forest are very close to this treatment site.

Saltville: Saltville treatment block in Smyth County covers 267 acres in a rectangular shape. It lies in Poor Valley, 1 mile north of the residential area called McCready and 2 miles northeast of Saltville. State route 633, Upper Poor Valley Road crosses through the southeast corner of the block. Private road Clara Lane, alongside a stream, transects the block from NW to SE. Private residences are clustered along route 633, but otherwise scarce. The Clinch Mountain Wildlife Management Area is located very close to this treatment site. The majority of the block covers relatively flat land cleared for housing acreages and grazing fields with patches of forested areas, mainly hardwoods. The northern border begins to rise steeply as it meets the base of Flattop Mountain and is densely forested with hardwoods, primarily oaks. An electrical power transmission line crosses this site in a NE/SW direction.

**Stuart:** The Stuart treatment block in Patrick County covering 4,131 acres, is located 3 miles northwest of the town of Stuart. State highway 610, Busted Rock Road, cuts through the block in a NW/SE direction. The steep slopes of the Blue Ridge Mountains characterize the majority of the area. Big Bend of Dan Ridge (2,851 ft.), Rock Mountain (2,896 ft.), and Tobacco Knob (2,513 ft.) are included in this site. Shingle Block Hollow Valley (1,916 ft.) cuts into the center of the block from the south. This site contains sections of Talbot Reservoir. Big Cherry Creek and Tuggle Creek merge into the Dan River controlled by the Talbot Dam (outside the block but inside the 1/2 mile buffer) to form this reservoir. The open water of at least five hairpin meanders doubled back on themselves characterizes this water body. The channel width reaches nearly a quarter mile at its widest point. Sections of Big Ivy Creek, Rye Cove Creek, Lily cove Branch, South Mayo River and a tributary to the Little Dan River are located within the block. These streams have been designated wild trout waters known to support brook or rainbow trout.

The luxury resort Primland maintains a gated private road and property offering hunting grounds, cabin and hotel accommodations, and a golf course on the plateau traversed by Hwy 610. Outside of Primland, residences are private and generally sparse in the area, close to roads, and associated with cleared acreages. Agriculture is minimal, but includes hay fields and grazing areas. Primary tree species are mixed deciduous hardwoods; oak and poplar dominate the slopes of the Blue Ridge Mountains.

### **Piedmont Sites**

**Cluster Springs:** The Cluster Springs treatment block in Halifax County is a rectangular shape, covering 1,803 acres surrounding the rural community known as Denniston, three miles south of Cluster Springs and two miles north of the North Carolina border. State route 711, Denniston Road, transects the block from NE to SW. State routes 710 and 707 cut into the center of the block from the south and north, respectively. The topography is primarily gently rolling hills. The land cover is characterized by an even mix of agriculture, private residences, and hardwood trees. Agriculture in the area includes corn, soybeans, and hay fields. Horses and their associated buildings are common in the area.

**Ringgold:** The Ringgold treatment block in Pittsylvania County is a rectangular shape covering 5,638 acres 2 miles east of the small town of Ringgold, on the eastern edge of Danville. Sandy Creek runs through the block in a NW to SE direction, as well as state route 713, Rock Springs Road. State routes 730 and 968 transect the block from NE to SW. Land cover is an even mix of agriculture, private residences, and hardwood trees (primarily oaks) and pines (Virginia and White). Housing along route 713 is dense for not being in a town and includes a trailer park and houses every 30 meters as it meets route 730. Agriculture is predominately hay fields, but also includes a few acres of pine plantings and/or clear cuts. Deep valleys occur in the SW portion of the block, while remaining sections are rolling hills. Open water and wetland vegetation appear intermittently in the center of the block along Sandy Creek and its tributaries. There is a large farm pond (~100 x 50 m) in the Milton Quad, at the end of Moore Dairy Farm Road on the west side of route 713.

### **Coastal Plain Site**

**False Cape:** This 3,769 acre proposed spray block is located entirely within False Cape State Park. The Park, which is 4321 acres, is the only Virginia State Park on the Atlantic Ocean. It is located in the southeast corner of the City of Virginia Beach and contains 5.9 miles of

oceanfront. The park is a mile wide barrier spit, bordered on the north by Back Bay National Wildlife Refuge, on the east by the Atlantic Ocean, on the west by Back Bay, and on the south by the state of North Carolina. False Cape State Park is one of the few remaining undeveloped areas along the Atlantic Coast. The topography of False Cape is divided into foreshore, berm, fore-dunes, mid-dunes and swale, and back-dune flats with elevations in the park ranging from sea level to 54 feet above mean sea level. The vegetative communities include a mid-dune and swale shrub-land and a coastal forest area with a pine, oak, and hardwood association. Several maritime ecosystems exist at the park including the maritime upland forest, maritime dune woodland, maritime dune scrub, maritime swamp forest, maritime dune grassland and maritime wet grassland. An active eagle's nest site is located within the block.

### **3.2 Non-target Organisms**

Non-target organisms include all species except the target pest (gypsy moth) that live in or near treatment sites. Although they are not the targets of treatment activities, some may be impacted directly or indirectly by the proposed treatments.

Non-target organisms that may be found in or near the treatment vicinity include:

- Vascular and non-vascular plants such as trees, shrubs, ferns and mosses
- Vertebrates:
- Outdoor pets such as cats, dogs or rabbits
- Livestock such as cows, horses, pigs or chickens
- Wild birds such as such as crows, blue jays, sparrows, warblers, wrens, woodpeckers, pheasants, quail, grouse, turkeys, hawks, eagles, herons and owls.
- Small and large wild mammals such as bats, mice, rabbits, foxes, raccoons, squirrels, bear and deer.
- Native trout and other species of game and non-game fish in streams and rivers.
- Many species of reptiles and amphibians such as salamanders, frogs, turtles and snakes.
- Invertebrates such as moths and butterflies, natural enemies of the gypsy moth, spiders, beetles, earthworms, centipedes, crayfish and freshwater mussels.

### **3.3 Federally Protected Species**

Informal consultation with FWS, VDGIF and VDCR-Heritage revealed that no threatened or endangered species or their critical habitat have been documented in the project area, although potential habitat for several federally protected fish, numerous freshwater mussels, mammals (squirrels and bats), plants and Mitchell's satyr (butterfly) is thought to exist within the four mountain sites proposed for treatment. Bald eagle nesting sites were documented near three of the four mountain sites although none of the proposed blocks intersects with an eagle concentration area. No federally protected species or their critical habitats were documented for the two piedmont sites, although a single eagle nesting site was documented in the vicinity of one of the two blocks. The coastal plain site contains potential habitat for a variety of federally protected birds, fish, mammals, turtles and plants associated with the Atlantic Ocean, coastal dunes or maritime forests. An active eagle nesting site was also documented within this block. A list of the federally protected species associated with each block can be found in Appendix D.

## 4.0 ENVIRONMENTAL CONSEQUENCES

This section is the scientific and analytic basis for the comparison of alternatives. It describes the probable consequences (effects) of each alternative. Environmental consequences are summarized in Table 2 (Section 2.6) for each combination of the alternatives and issues.

### 4.1 Impacts of Alternative 1 – No Action

Under this alternative, no action would be taken to control the localized gypsy moth infestations. Spread rates through Virginia and into neighboring states would increase to historical levels of 13 miles per year. Gypsy moth populations would increase to outbreak within 3 to 5 years in and near the project site depending on availability of hosts. Moderate to heavy defoliation is anticipated where host type is abundant whereas light to moderate defoliation is anticipated where host type is less abundant.

Direct, Indirect and Cumulative Effects on Forest Condition and Soils: Defoliation may cause an increase in the seasonal temperature of soil and leaf litter, and increased exposure to sunlight, resulting in short-term increases in biological productivity on the forest floor, especially for plants that require abundant sunlight such as the federally protected smooth coneflower that could occur in the Poor Valley and Saltville blocks. Any changes in microclimate, soil productivity and fertility are expected to be short-lived (USDA 2012a, Vol. II, Ch. 4, p.7).

The effects of defoliation on the forest vary based upon the pre-existing condition of the forest, current stress, abundance of gypsy moth preferred host-type, and the severity and longevity of the outbreak. Defoliation will be most frequent and severe among preferred hosts of the gypsy moth such as oak. On average, trees will experience growth loss proportional to the levels of defoliation and tree mortality following defoliation will be variable. Based on data from previous outbreaks, stand losses from tree mortality can be expected to average 20-35 percent where preferred hosts are common and 5-20% where preferred hosts are less dominant. Hard mast production by oaks would decline after defoliation, but an increase in soft mast would partially compensate for the hard mast reduction. Cumulative effects from repeated defoliation can result in a shift in stand structure to a more one-storied stand and a shift in stand composition from gypsy moth preferred hosts such as oak to less preferred hosts. Red maple, sweetgum and pines will become more prevalent in Virginia forests as gypsy moths focus their feeding on oaks. The resulting forest will be less susceptible to feeding by the gypsy moth. Further discussion of gypsy moth and its impact on forest conditions can be found in the FSEIS (USDA 2012a, Vol. II, Ch. 4, pp 4 to 7, and Vol. IV, App. L, pp 4 to 6).

A change in the forest composition and appearance can be expected following defoliation. Some positive effects include an increase in the number of snags for cavity nesters such as the red cockaded woodpecker that could occur in the False Cape block, more deer browse and soft mast for other wildlife, more nesting sites in snags for bald eagles, and a reduction of the favored host type for the gypsy moth. Negative effects include unfavorable aesthetic and nuisance impact to recreation sites, decline in property value, timber loss, an increase in the number of hazardous dead trees and the cost to remove these trees and rehabilitate these areas, and an increase in fuel levels due to an increase in the number of dead trees in the forests resulting in a fire hazard to private lands and homes.

Direct, Indirect and Cumulative Effects on Water Quality: Under this alternative no insecticides would be used so there would be no direct effect of treatment on water quality. This alternative

would result in defoliation in and near the site within 3 to 5 years. Increases in water yield, changes in water quality such as elevated temperatures and reduced oxygen levels, could occur following defoliation but are expected to be minor and short-lived (USDA 2012a, Vol. II, Ch. 4, pp 6 and 7), even in the event of multiple consecutive defoliations. The federally protected fish and freshwater mussels that may occur in the streams in the four mountain sites are not likely to be adversely affected by potential changes in water quality.

Direct, Indirect and Cumulative Effects on Non-target Organisms: Under this alternative no treatments would be made so there would be no direct adverse impacts to non-target organisms. Indirect effects of defoliation on non-target organisms are variable, but most are not adverse. Impacts on a larger scale (national, regional, or state) are subtle, gradual, and may be noticeable only after many years or decades (USDA 2012a, Vol. II, Ch. 4, pp. 7 through 10 and Vol. IV, App L).

Gypsy moth defoliation has varying effects on vertebrates. Defoliation is likely to be beneficial to some birds because defoliation appears to have positive impacts, both short and long-term, on most non-game bird species, including the federally protected birds that may occur in the False Cape block. The effect of defoliation on bats, including the federally protected Indiana, Gray and Virginia Big-eared bats that may occur in or near the four mountain sites, is not well known. Deer, bear and turkey do not appear to be adversely affected by defoliation, acorn crop failure, or tree mortality. The gray squirrel and the white-footed mouse (an important predator of the gypsy moth) are possibly the most adversely affected due to their dependence on acorn crops. Tree mortality following defoliation will increase the availability of habitat for species that use standing or downed dead trees, such as woodpeckers and eagles. Surface habitats of reptiles and amphibians may be affected in the short-term as a result of increased sunlight (degraded for salamanders and improved for reptiles), but in the long-term reptiles and amphibians are expected to benefit from more dead and downed trees.

Defoliation is not likely to have adverse impacts on non-target fish such as the Yellowfin matdom, the Slender or Spotfin chub or the Roanoke logperch or other aquatic vertebrates. Fish requiring cold water habitats such as trout may be indirectly affected by increased pH, elevations in water temperature and reduced oxygen levels during defoliation but this is expected to be minor and short-lived. While no data are available on bivalves, defoliation is not believed to pose a hazard to the multitude of freshwater mussels that inhabit mountain streams.

Gypsy moth defoliation has varying effects on other invertebrates. In the short-term, natural enemies of the gypsy moth such as the nucleopolyhedrosis virus, parasitoids and entomaphagous fungus will increase as the gypsy moth population increase. Gypsy moth defoliation may occasionally result in reduced abundance or diversity of other terrestrial arthropods, especially species that require oak-dominated forest canopies, but in the long run, a more diverse arthropod community can be expected. Defoliation is not anticipated to degrade the fens inhabited by Mitchell's satyr.

The most common response to gaps in the forest canopy created by defoliation and tree mortality is increased growth and density of sun-loving woody and herbaceous plants, which in turn increases competition for the shade loving plants. Sun-loving plants such as the smooth coneflower would benefit from defoliation, but a shade-loving species such as trillium could be adversely impacted by the increased levels of sunlight following defoliation.



Direct, Indirect and Cumulative Effects on Federally Listed Species: Under this alternative, no direct effects to federally listed species would occur because no action would be taken to control the gypsy moth. Indirect or cumulative effects from gypsy moth defoliation (increased sunlight) are likely to be short-term and subtle and are unlikely to adversely affect the potential habitat for the federally protected fish, mussels, squirrels, woodpeckers, manatees, turtles, plants or bald eagles that have been documented in the project area.

## **4.2 Impacts of Alternative 2 - Use of Mating Disruption (Proposed Action).**

Under this alternative, mating disruption would be used on 16,296 acres, as outlined in Table 1, section 1.1. This alternative would delay defoliation and reduce the risk of spread at all sites. This approach maximizes the potential for treatment success while also making effective use of gypsy moth specific tactics to protect non-target organisms including federally protected species.

Direct, Indirect and Cumulative Effects on Forest Condition and Soils: This action will not involve any ground-disturbing activities because the treatments would be applied by aircraft. Mating disruption formulations (plastic flakes or waxy emulsion), which serve as the controlled-release dispensers for the pheromone and which are applied at a rate of less than  $\frac{3}{4}$  cup per acre, may persist in the environment for years. Despite this, mating disruption is not likely to cause changes in forest condition, microclimate, or soil productivity and fertility. Because the proposed treatments do not include soil disturbing activities, no cumulative impacts are anticipated.

In the short-term (5 to 10 years), this alternative will maintain forest condition, prevent changes in microclimate and maintain mast production (USDA 2012a, Vol. II, Ch. 4, pp. 10 and 19). In the long-term however (10 to 30 years), gypsy moth populations will become permanently established in the area. At this point, some local populations would reach levels where defoliation could be light to heavy, with the same anticipated effects as described in the no action alternative.

Direct, Indirect and Cumulative Effects on Water Quality: Although the products proposed for use do not directly affect water quality (USDA 2012a, Vol. II, Ch. 4, pp. 14 and 20), they will not be applied over open water in compliance with the product labels, project mitigation measures and VDACS policy.

During application of mating disruptants, more than 90% of the product will be intercepted by and adhere to vegetation, where it will remain until leaf fall. At this point, the product will have released at least 60% of its disparlure. The risk of the remaining disparlure leaching into surface or groundwater via translocation after leaf fall is minimal because disparlure is insoluble in water. In laboratory experiments, one of two mating disruption products, Disrupt II, was submerged in water and vigorously agitated for 24 hours. Under these conditions, less than 0.04% of the active ingredient (disparlure) contained in the Disrupt II leached into water (pers. comm. with Hercon). Therefore, the proposed treatment using mating disruption is not likely to cause changes in water quality. No cumulative effects are anticipated due to the target specific nature of the treatment.

Direct, Indirect and Cumulative Effects on Non-target Organisms: This action would not have any direct, adverse impacts on non-target organisms.

Mating disruption may indirectly help to maintain existing forest conditions, water quality, microclimate, and soil condition (USDA 2012a, Vol. II, Ch. 4, p. 19) by delaying gypsy moth population increases. Mating disruption is considered specific to gypsy moth and is not known to cause impacts to non-target organisms (USDA 2012a, Vol. II, Ch. 4, pp. 19 to 20). Like other insect pheromones, disparlure is generally regarded as nontoxic to mammals, and no adverse effects are expected from exposure (USDA 2012a, Vol. II, Ch. 4, p. 19). The ecological risk assessment states that disparlure, the active ingredient used in mating disruptant products for gypsy moth, has a very low toxicity to mammals and birds (USDA 2012a, Vol. III, App. H, pp. 4-1 to 4-2). In addition, it is not likely to cause toxic effects in aquatic species such as the wild trout in the four mountain blocks (USDA 2012a, Vol. III, App. H, pp. 4-3 to 4-5). Based on the results of the available data, the toxicity profile of disparlure in terrestrial animals does not suggest that disparlure is likely to cause adverse effects at plausible levels of exposure. Similarly, disparlure is not likely to cause any toxic effects in aquatic species at the limit of solubility of disparlure in water. Thus, under normal conditions of exposure, no hazard to aquatic species can be identified (USDA 2012a, Vol. III, App. H, p. xi).

Any potential indirect effects to nesting eagles associated with a disturbance from low flying aircraft were mitigated by implementation of a 500 foot no fly zone surrounding the occupied nest in the False Cape block.

Disparlure is a pheromone component for some other species in the genus *Lymantria* (USDA 2012a, Vol. III, App. H, pp. 2-1 to 2.2), and could disrupt mating in nun moth or pink gypsy moth (USDA 2012a, Vol. III, App. H, p. 4-2). But these species are Asian or Eurasian, and are not known to occur in North America. Therefore there is no basis for asserting that mating disruption using the gypsy moth pheromone would affect other non-target species in North America, specifically native Lepidoptera.

There would be no permanent or noticeable effects to non-target species, and thus no likelihood of cumulative effects from the mating disruption treatment combined with any other factors, including past treatments, that may affect non-target species (USDA-FSEIS, 2012, pp. 4-20, Volume II).

Effects on Federally Listed Species: The FWS on-line project review process was used to identify the threatened or endangered species or their critical habitats in the vicinity of each proposed treatment site and to assess any potential impacts to federally protected species. Each species identified using the online project review process was listed in a Species Conclusion Table for the site. Conclusions were made based on the presence of habitat and biological requirements of the species. Based on this information, ESA Section 7 / Eagle Act Determinations were documented. A letter was submitted to FWS with the lists generated from the on-line project review along with the species conclusion tables documenting the VDACS finding that direct, indirect or cumulative impacts to federally-listed species or their critical habitats are not likely to occur under this alternative (Appendix D. Letter submitted to US Fish & Wildlife Service dated Dec. 17, 2012). With respect to these findings, and in concurrence with the FWS review of the on-line project review (App. D, FWS letter dated: February 11, 2013), as well as the VDGIF and DCR-Heritage review (letters in App D), I have determined that impacts

to federally protected species or their critical habitats are not likely to occur as a result of the proposed action.

/s/

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William A. Carothers  
Field Office Representative, Southern Region, FHP

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Date

### **4.3 Climate Change**

When analyzed at very large scales (regional or national) climate change has been proposed as a potential cause of range expansion or increased intensity of outbreaks of some forest pests. Likewise improving forest health through control of forest pests at the regional or national scale may have an effect on climate change. The proposed actions would contribute minor amounts of greenhouse gasses through the use of energy to produce and transport the products and through the use of fuel to power the spray aircraft. The proposed actions would also help reduce greenhouse gasses by helping retain carbon capture and storage on 1,590 acres. Treatments will prevent defoliation by gypsy moths and contribute to maintaining tree health, which will allow for greater absorption of carbon dioxide and other pollutants. The scope of the proposal is limited and effects are essentially imperceptible at the scale of global carbon balance and climate change.

### **4.4 Irreversible and Irretrievable Commitments of Resources**

An irreversible commitment of resources results in the permanent loss of 1) nonrenewable resources, such as minerals or cultural resources; 2) resources that are renewable only over long periods of time, such as soil productivity; or 3) a species (extinction) (USDA 1995, Vol. II, p. 4-93). An irretrievable commitment is one in which a resource product or use is lost for a period while managing for another (USDA 1995, Vol. II, p. 4-93). For this project, no irreversible and irretrievable commitments were identified for either alternative.

## **5.0 LIST OF PREPARERS**

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Asheville, NC 28804  
(828-273-4324)

## **6.0 LIST OF PERSONS AND AGENCIES CONSULTED**

US Fish & Wildlife Service-Virginia Ecological Services

Virginia Department of Conservation & Recreation-Division of Natural Heritage  
Virginia Department of Game & Inland Fisheries-Environmental Services  
Virginia Department of Conservation & Recreation-False Cape State Park  
Virginia Department of Forestry

Halifax County, Virginia  
Patrick County, Virginia  
Pittsylvania County, Virginia  
Russell County, Virginia  
Smyth County, Virginia  
Washington County, Virginia

## **7.0 REFERENCES CITED**

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USDA. 1996. Gypsy Moth Management in the United States: A Cooperative Approach. Record of Decision. USDA-Forest Service and USDA-APHIS.

USDA. 2012a. Gypsy Moth Management in the United States: A Cooperative Approach. Final Supplemental Environmental Impact Statement, Vols. I – V. USDA-Forest Service and USDA-APHIS. NA-MB-01-12.

USDA. 2012b. Gypsy Moth Management in the United States: A Cooperative Approach. Record of Decision. USDA-Forest Service and USDA-APHIS.

## **Appendix A - Summary of Authorizing Laws and Policies**

**State.** Authorization to conduct treatments for gypsy moth infestations on state and private lands is given in the Plant Pest Law (Virginia General Statute 106-36). Aerial applicators must meet Virginia Pesticide Use and Application Law (Virginia Code 3.2.3900-3947) to provide safe, efficient and acceptable applications of pesticides. This project will be conducted in accordance with the Virginia Pollutant Discharge Elimination System (VPDES) requirements and is operating under Virginia Pesticide General Permit 9VAC25-800.

**Federal.** Authorization to conduct treatments for gypsy moth infestations is given in the Plant Protection Act of 2000 (7 U.S.C. section 7701 et.seq.).

The Cooperative Forestry Assistance Act of 1978 provides the authority for the USDA FS and state cooperation in management of forest insects and diseases. The law recognizes that the nation's capacity to produce renewable forest resources is significantly dependent on non-federal forestland. The 2008 Farm Bill (P.L. 110-246) reauthorizes the basic charter of the Cooperative Forestry Assistance Act of 1978.

The National Environmental Policy Act (NEPA) of 1969 (P.L. 91-190), 42 USC 4321 et. seq. requires a detailed environmental analysis of any proposed federal action that may affect the human environment. The courts regard federally funded state actions as federal actions.

The Federal Insecticide, Fungicide and Rodenticide Act of 1947, (7 USC 136) as amended, known as FIFRA, requires insecticides used within the United States be registered by the United States Environmental Protection Agency (EPA).

Section 7 of the Endangered Species Act of 1973, as amended (16 USC 1531 et. seq.) prohibits federal actions from jeopardizing the continued existence of federally listed threatened or endangered species or adversely affecting critical habitat of such species.

USDA Departmental Gypsy Moth Policy (USDA 2009) assigns the USFS and APHIS responsibility to assist states in protecting non-federal lands from gypsy moth damage.

## **Appendix B - Concerns or Questions from Public Outreach**

Notification letters were mailed to landowners of record whose property fell within a ½ mile buffer of each of the proposed treatment sties. The letters gave a general description of the proposed action and gave dates and time of public information meetings in their area. At each public meeting, a presentation was given with information on the biology and history of gypsy moth, and survey and management options.

### **Cluster Springs & Ringgold Proposed Treatment Blocks**

Riverstone Technology Building, Industrial Development Authority of Halifax, VA

January 15, 2013

There was no public attendance at this meeting. However, on 12/10-2012 Ms. Barbara Garland of Woltz Farm LLC emailed in support of the proposed treatments and on 12/17/2012, Mr. Moore emailed a request for additional information about the material being applied.

### **Stuart & Middle Fax Creek Proposed Treatment Blocks**

Patrick County Community Center, Stuart, VA

January 17, 2013

This meeting was cancelled due to weather.

### **Hayters Gap, Poor Valley, and Saltville Proposed Treatment Blocks**

Saltville Town Hall, Saltville, VA

January 24, 2013

There was no public attendance at this meeting. However prior to the meeting, Ms Pledger, whose property fell within the Poor Valley block, emailed a request for more information on the project and the material being applied and Mr. Wasserman, whose property falls within the Hayters Gap block, sent an e-mail requesting his property be excluded from treatment.

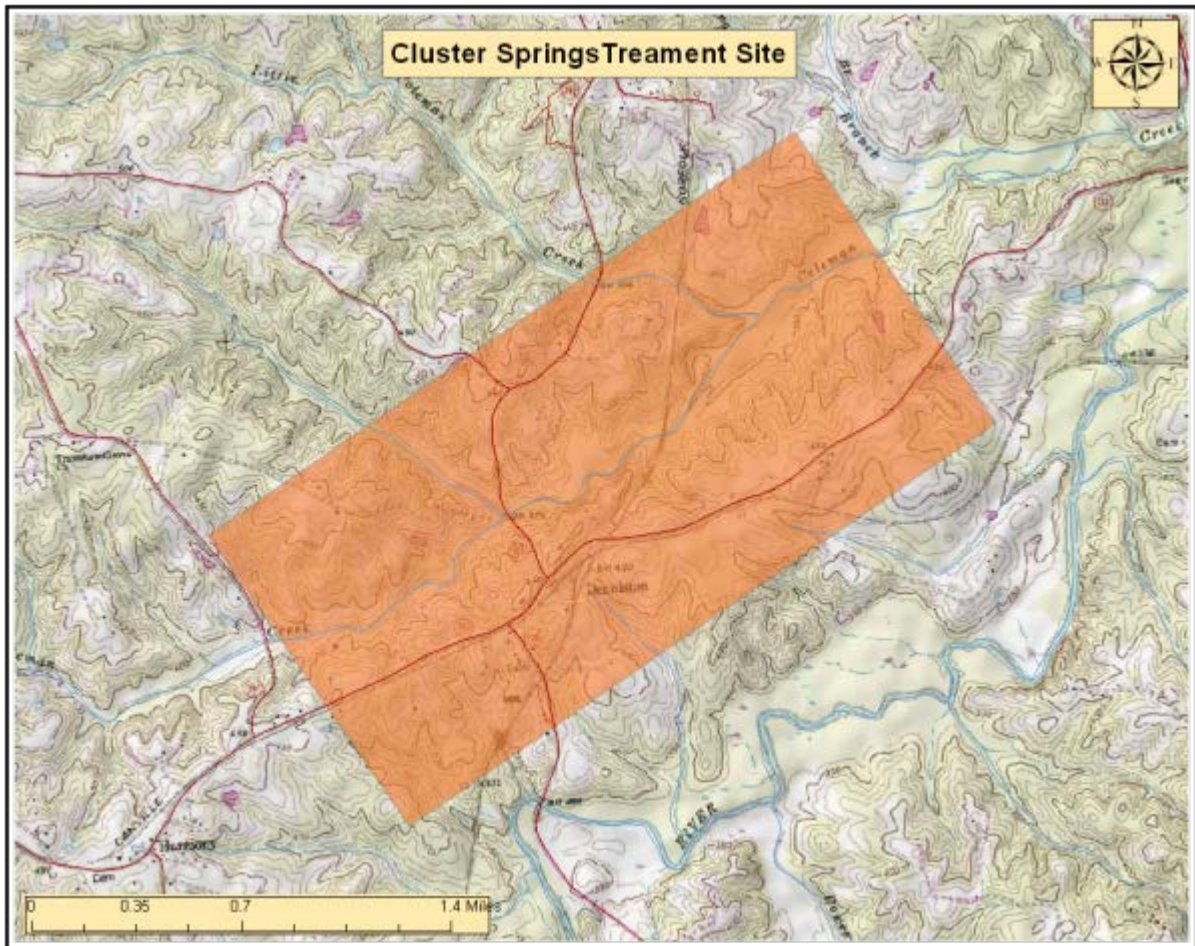
### **Garden Mountain Proposed Treatment Block**

Bland County Court Room, Bland, VA

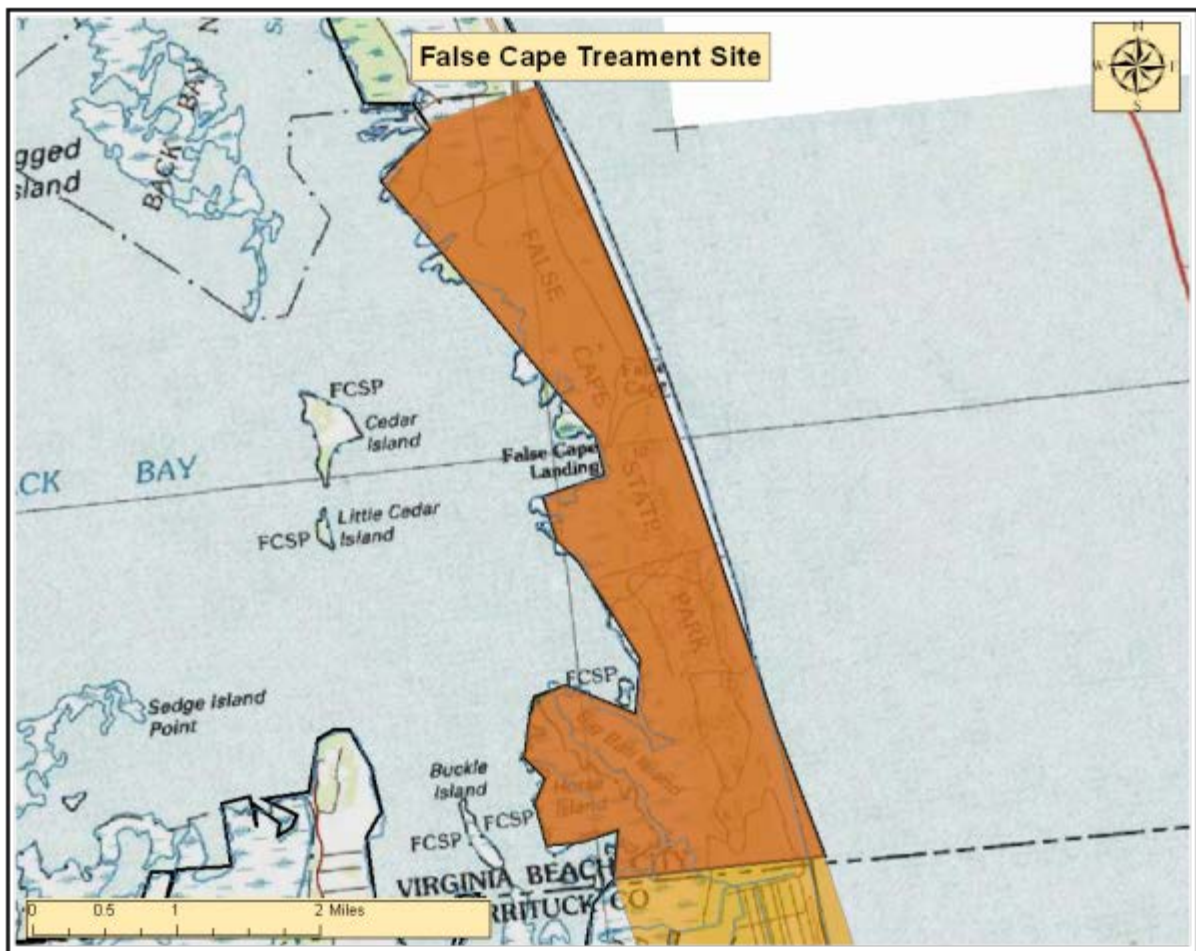
January 23, 2013

No public attendance

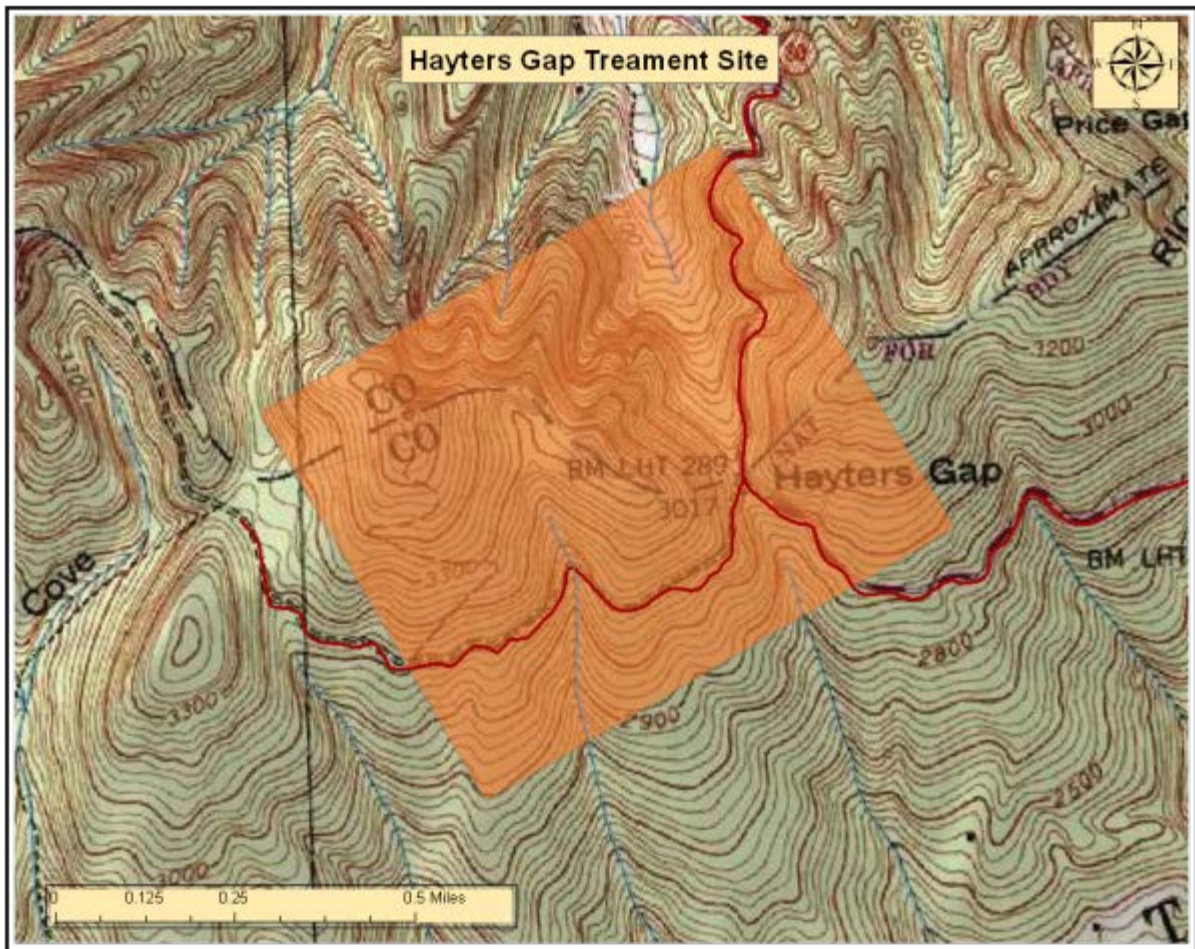
## Appendix C - Maps of proposed treatment sites

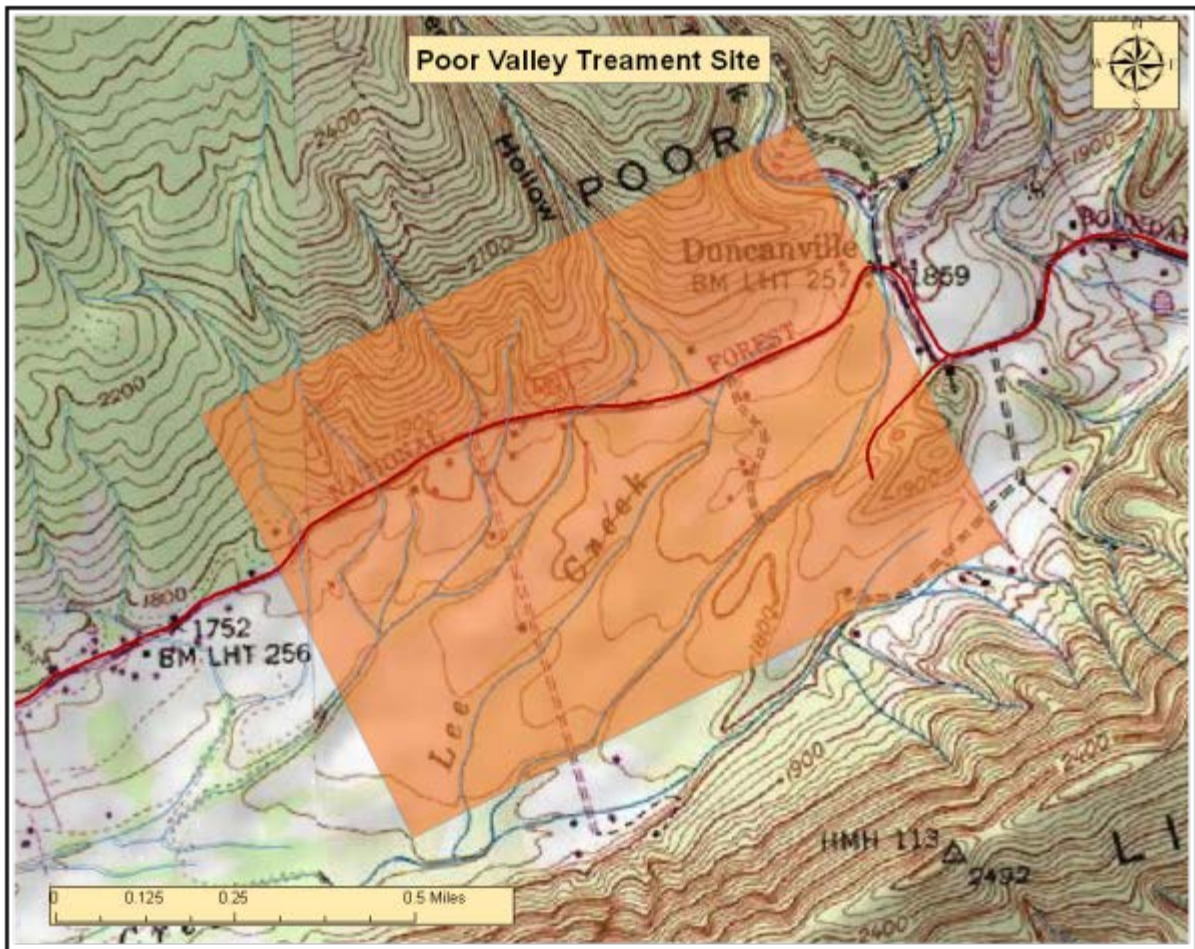




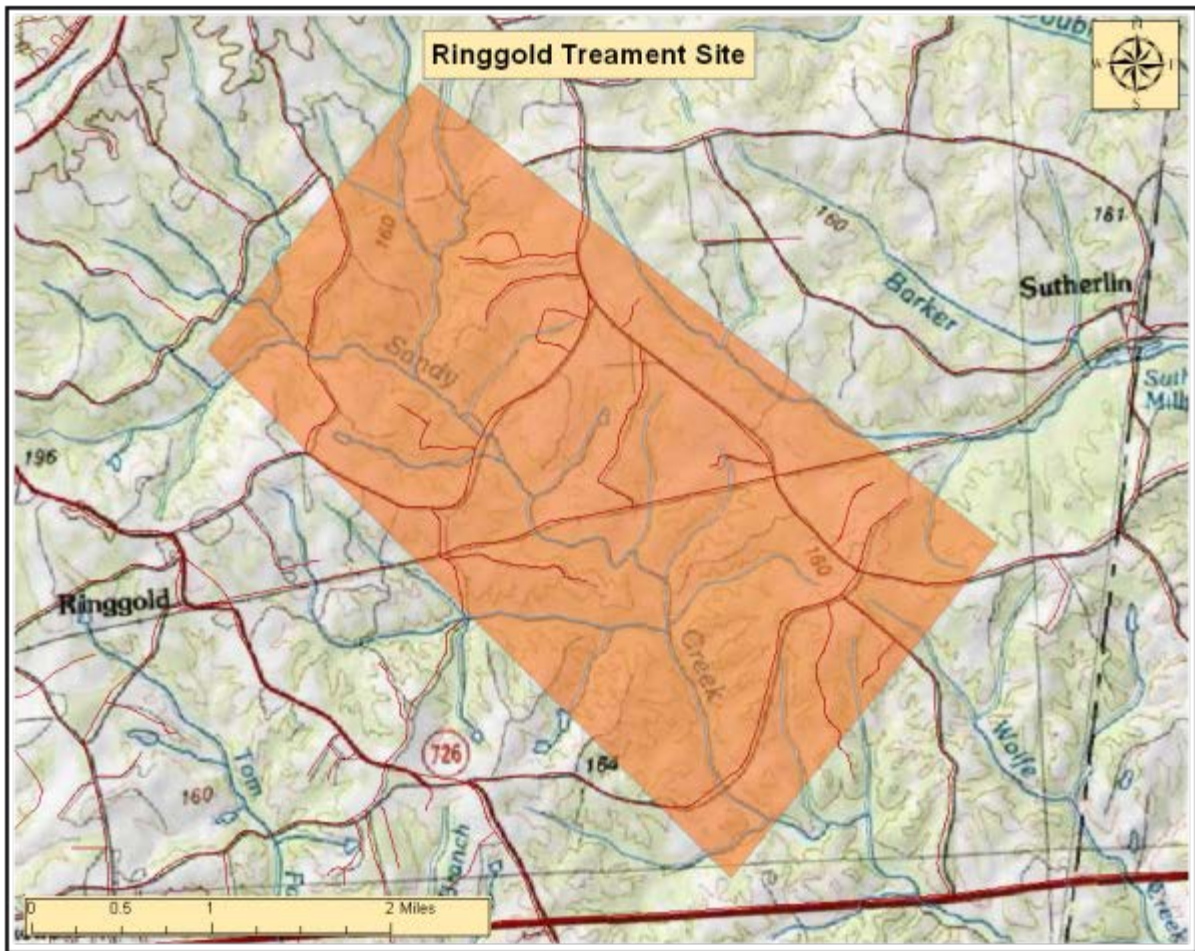


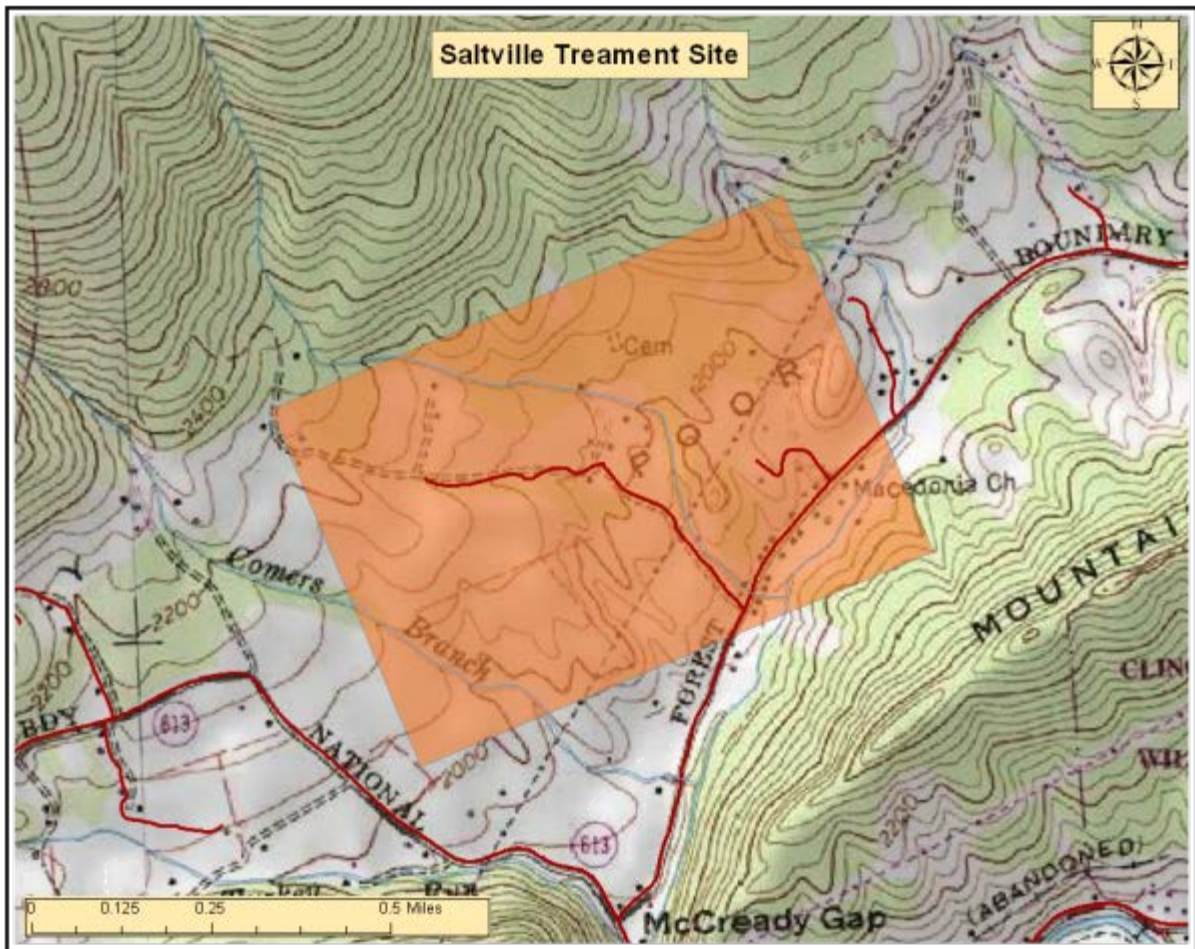




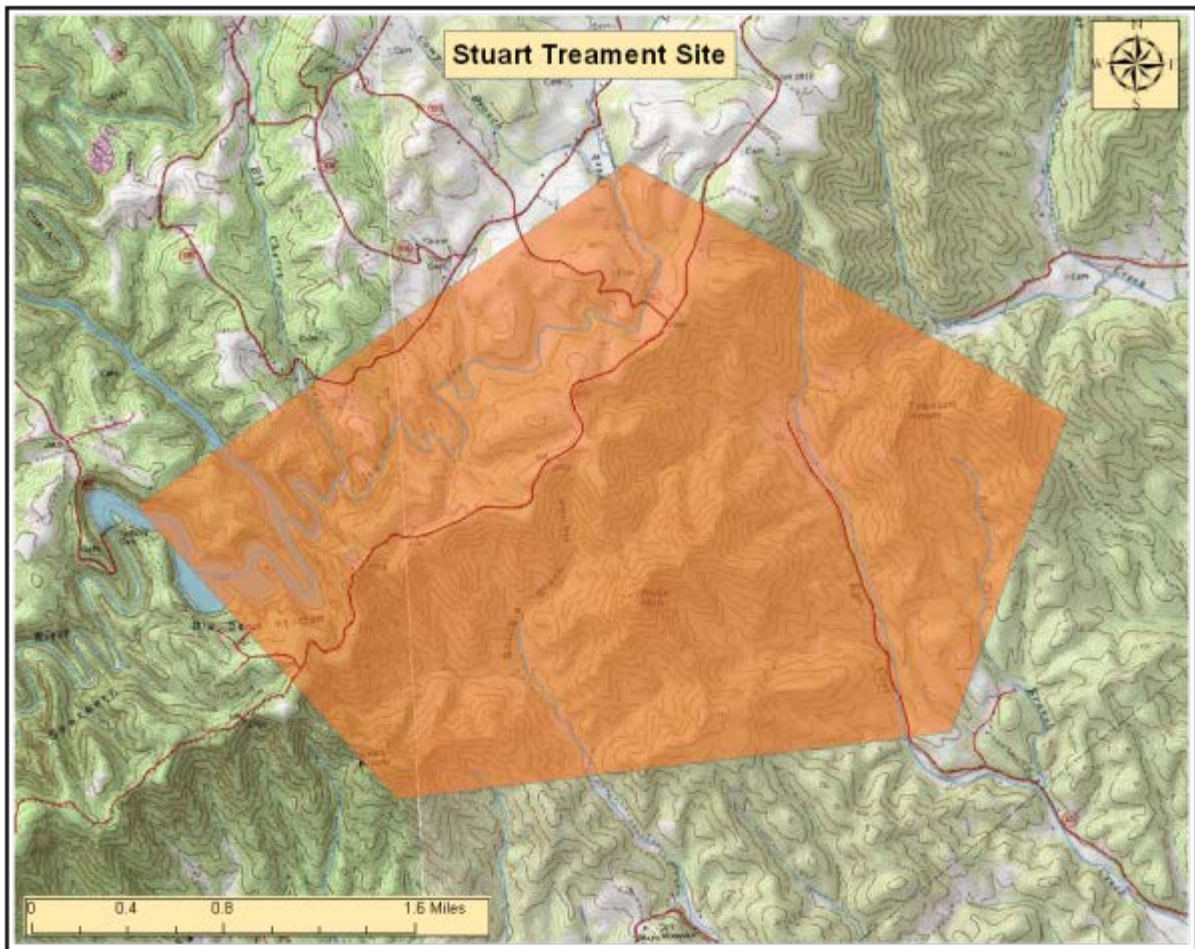












## **Appendix D - Agency Responses to Scoping**

Douglas W. Domenech  
Secretary of Natural Resources



David A. Johnson  
Director

**COMMONWEALTH of VIRGINIA**  
**DEPARTMENT OF CONSERVATION AND RECREATION**

Division of Natural Heritage  
217 Governor Street  
Richmond, Virginia 23219-2010  
(804) 786-7951

November 26, 2012

Larry Bradfield  
VDACS-Consumer Protection  
P.O. Box 1163  
Richmond, VA 23218

Re: 2013 Gypsy Moth Slow the Spread Campaign

Dear Mr. Bradfield:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

DCR's review of gypsy moth treatment areas is based on both known and potential occurrences of natural heritage resources within or adjacent to proposed blocks. A primary concern from the standpoint of biodiversity preservation is the impact that gypsy moth suppression treatments have on non-target organisms. For our purposes, non-target organisms include those species directly susceptible to the indications of a proposed treatment (e.g. Lepidopterans killed by *Bt*), as well as species that may be secondarily affected by a proposed treatment. Secondarily-affected organisms may include, but are not limited to, rare plants with insect pollinators that are directly susceptible to gypsy moth treatments, and songbirds or small mammals faced with a diminished prey base following gypsy moth treatment.

Overall, DCR recommends the use of Gypcheck or Disrupt II over *Btk* and Dimilin when possible at any site. DCR submits the following comments for "VDACS 2013 Gypsy Moth Slow the Spread" treatment blocks:

**Stuart and Ringgold:**

According to the information currently in our files, natural heritage resources have not been documented in the project area. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.



**Saltville, Hayters Gap, Cluster Springs, False Cape, and Poor Valley:**

Biotics documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

The False Cape State Natural Area Preserve has been documented within the False Cape treatment block and The Channels State Natural Area Preserve has been documented in the vicinity of the Hayters Gap treatment block. Due to the scope of the project, we do not anticipate any adverse impacts to these preserves and associated natural heritage resources.

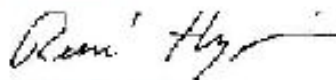
Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <http://vafwis.org/fwis/> or contact Gladys Cason (804-367-0909 or [Gladys.Cason@dgif.virginia.gov](mailto:Gladys.Cason@dgif.virginia.gov)). False Cape, Saltville and Hayters Gap treatment blocks are located within 2 miles of documented occurrences of state listed animals. Therefore, DCR recommends coordination with VDGIF, Virginia's regulatory authority for the management and protection of this or these species to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

Should you have any questions or concerns, feel free to contact me at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,



S. Rene' Hypes  
Project Review Coordinator

Cc: Ernie Aschenbach, VDGIF





**Doug Domenech**  
*Secretary of Natural Resources*

**COMMONWEALTH of VIRGINIA**  
*Department of Game and Inland Fisheries*

**Robert W. Duncan**  
*Director*

December 3, 2012

Larry Bradfield  
VDACS - OPIS  
Slow the Spread Office  
1580 North Franklin Street, Suite 7  
Christiansburg, VA 24073

Re: ESS Log # 33305 – 2013 Gypsy Moth Spray Blocks,  
VDACS

Dear Mr. Bradfield:

Pursuant to your letter of request, we have reviewed the proposed gypsy moth treatment blocks referenced above and offer the following comments. The Virginia Department of Game and Inland Fisheries (VDGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over those resources, inclusive of state or federally listed species, but excluding listed insects. We are a consulting agency under the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), and we provide environmental analysis of projects or permit applications coordinated through the Virginia Department of Environmental Quality (DEQ), the Virginia Marine Resources Commission (MRC), the Virginia Department of Transportation (DOT), the Army Corps of Engineers (ACOE), the Federal Energy Regulatory Commission (FERC), and other state or federal agencies. Our role in these procedures is to determine likely impacts upon fish and wildlife resources and habitat, and to recommend appropriate measures to avoid, reduce or compensate for those impacts.

The Virginia Department of Agriculture and Consumer Services (VDACS) proposes to treat 7 blocks of land with a single application of Disrupt II or SPLAT-GM, gypsy moth mating disruption insecticides. These applications will be made from late May to early July, 2013. Based on a review of our data records, we offer the following comments and recommendations:

**Stuart:**

Big Ivy Creek, Rye Cove Creek, Lily Cove Branch, South Mayo River, and a tributary to the Little Dan River have been designated wild trout waters known to support brook or rainbow trout. Based on the scope of the proposed application and the chemicals proposed for use, we do not anticipate this project to result in adverse impacts upon these resources.

**Saltville:**

Clinch Mountain Wildlife Management Area (WMA) is located very close by this spray block. We recommend coordination with Tom Hamilton, VDGIF Region III Lands and Facilities Manager, at 276-782-9973 to ensure that the proposed spraying does not interfere with management activities on the WMA.

**Hayters Gap:**

According to our records, state Threatened bald eagles have been observed within this proposed spray block. However, based on the scope and location of the proposed activities, we do not anticipate it to result in adverse impacts upon this species.

**Cluster Springs:**

We do not currently document any listed wildlife or resources under our jurisdiction from this proposed spray block. Therefore, we do not anticipate the proposed activities to result in adverse impacts upon such resources.

**False Cape:**

According to our records, federal Threatened loggerhead sea turtles, state Threatened eastern glass lizards, federal Endangered Kemp's Ridley sea turtles, and federal Endangered roseate terns have been documented from the proposed spray block. However, based on the scope and location of the proposed activities, we do not anticipate it to result in adverse impacts upon these species.

State Threatened bald eagles have been documented from the project site. The active eagle nest is located in a tree at coordinates 36.613889, -75.903762. Although this species will no longer be state-listed as of January 1, 2013, we recommend that to best protect the eagles using the nest from harm, no aircraft flyovers within 1000' vertical feet of the nest occur during the breeding season which is from December 15 through July 15 of any year.

**Ringgold:**

We do not currently document any listed wildlife or resources under our jurisdiction from this proposed spray block. Therefore, we do not anticipate the proposed activities to result in adverse impacts upon such resources.

**Poor Valley:**

Brumley Creek and its tributaries located within this proposed spray block have been designated wild trout waters known to support brown trout. Based on the scope of the proposed application and the chemicals proposed for use, we do not anticipate this project to result in adverse impacts upon these resources.

North Fork Holston River has been designated a Threatened and Endangered Species Water due to the presence of federal threatened spotfin chub and state Endangered purple lilliput. However,

based on the scope and location of the proposed activities, we do not anticipate it to result in adverse impacts upon these species.

Hidden Valley Wildlife Management Area (WMA) is located very close by this spray block. We recommend coordination with Tom Hamilton, VDGIF Region III Lands and Facilities Manager, at 276-782-9973 to ensure that the proposed spraying does not interfere with management activities on the WMA.

**Overall project recommendations:**

We recommend that aerial applications of pesticides occur during dry weather and with winds less than 10 mph. We recommend that applications not be performed within 24 hours of a rain event or

Larry Bradfield  
December 3, 2012  
Page 3 of 3

predicted rain event. We recommend that no-spray buffers of at least 100-feet on all streams and wetlands lacking canopy cover be established and adhered to. If our recommendations for the protection of listed resources under our jurisdiction cannot be adhered to in a practicable manner, we recommend further coordination with our agency regarding ways to avoid or minimize adverse impacts upon such resources during spraying.

Thank you for the opportunity to comment on this project. Please contact Amy Ewing or me at 804-367-0909 if we can be of further assistance.

Sincerely,

*for Amy Ewing*  
Raymond T. Bernald, Manager  
Environmental Programs

CC: file





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
6669 Short Lane  
Gloucester, Virginia 23061



Date: December 17, 2012

### Online Project Review Certification Letter

Project Name: 2013 Gypsy Moth-Slow the Spread project in Virginia

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Virginia Field Office online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. These conclusions resulted in "no effect" and/or "not likely to adversely affect" determinations for listed species and critical habitat and/or "no Eagle Act permit required" determinations for eagles regarding potential effects of your proposed project. We certify that the use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the "no effect" and "not likely to adversely affect" determinations for listed species and critical habitat and "no Eagle Act permit required" determinations for eagles. Additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of listed species, critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for one year.

Applicant

Page 2

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Virginia is available at our website [http://www.fws.gov/northeast/virginiafield/endspecies/project\\_reviews.html](http://www.fws.gov/northeast/virginiafield/endspecies/project_reviews.html). If you have any questions, please contact Kimberly Smith of this office at (804) 693-6694, extension 124.

Sincerely,

/s/ Cynthia A. Schulz

Cindy Schulz  
Supervisor  
Virginia Field Office

Enclosures - project review package



*Matthew J. Lohr*  
Commissioner

## COMMONWEALTH of VIRGINIA

Department of Agriculture and Consumer Services

Division of Consumer Protection

*Office of Plant Industry Services*

PO Box 1163, Richmond, Virginia 23218

Phone: 804/786 3515 • Fax: 804/371-7793 • Hearing Impaired: 800/828 1120

[www.vdacs.virginia.gov](http://www.vdacs.virginia.gov)

From: Larry Bradfield  
Virginia Department of Agriculture & Consumer Services  
Office of Plant Industry Services  
1580 N. Franklin Street, Suite 7  
Christiansburg, VA 24073  
(540) 394-2507  
[larry.bradfield@vdacs.virginia.gov](mailto:larry.bradfield@vdacs.virginia.gov)

To: U.S. Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, Virginia 23061

December 17, 2012

Re: Online Project Review Request, Gypsy Moth-Slow the Spread project in the Counties of: Halifax, Patrick, Pittsylvania, Russell, Smyth, Washington, and the City of Virginia Beach, Virginia.

We have reviewed the referenced project using the Virginia Field Office's online project review process and have followed all guidance and instructions in completing the review. We completed our review on 12/06-12/17, 2012 and are submitting our project review package in accordance with the instructions for further review.

Our proposed action consists of: We Propose to treat these areas with a single application of a Gypsy Moth Specific mating disruption pheromone. These applications will be made in May and June of 2013 using low flying aircraft. One of two materials will be applied, Disrupt II, manufactured by Hercon Environmental, Emigsville, PA or SPLAT, manufactured by ISCA Technologies, Riverside, CA.

The location of the project and the action area are identified on the enclosed map. A GIS shape file is enclosed with the location of the seven sites.

The project is expected to be completed. Time timing of these applications will be based on insect development and weather conditions. Typical start dates in the coastal plain are early to mid-may, in the piedmont region start dates

This project review is needed for The Virginia Department of Agriculture & Consumer Services (VDACS), in cooperation with the United States Department of Agriculture-Forest Service, as part of the Gypsy Moth Slow the Spread project (STS), is considering aerial pesticide treatments to control recently established, low level populations of gypsy moth found in Virginia. Seven sites have been selected for

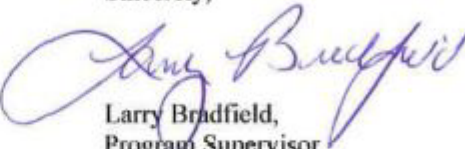


treatment in 2013. This information will be used as the biological evaluation of the proposed projects. Please respond by January 28, 2013.

The enclosed project review package provides the information about the species, critical habitat, and bald eagles considered in our review, and the species conclusions table included in the package identifies our determinations for the resources that may be affected by the project.

For additional information, please contact Larry Bradfield at the address listed above.

Sincerely,



Larry Bradfield,  
Program Supervisor

Enclosures:

- 1) ENTIRE PROJECT REVIEW PACKAGE
- 2) General Location map of the sites



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
VIRGINIA ECOLOGICAL SERVICES FIELD OFFICE  
6669 SHORT LANE  
GLOUCESTER, VA 23061

PHONE: (804)693-6694 FAX: (804)693-9032  
URL: [www.fws.gov/northeast/virginiafield/](http://www.fws.gov/northeast/virginiafield/)

Consultation Tracking Number: 05E2VA00-2013-SLI-0829

February 11, 2013

Project Name: 2013 Gypsy Moth STS-Cluster Springs

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having



similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

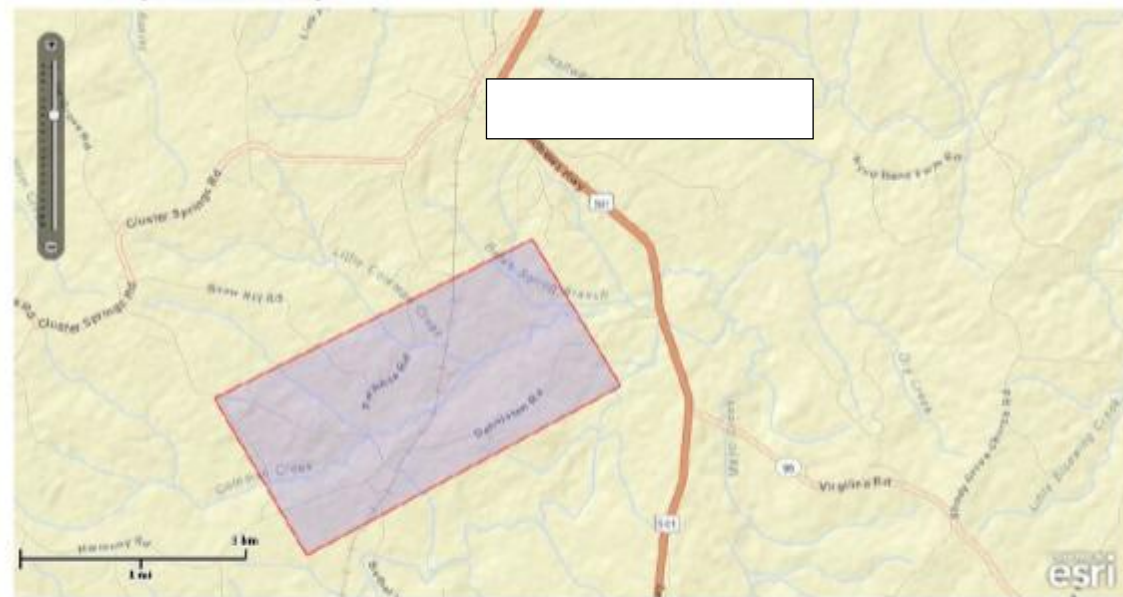
Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

**Project Location Map:**



**Project Coordinates:** MULTIPOLYGON (((-78.9650714 36.5787338, -78.9175211 36.597872, -78.9043032 36.5802364, -78.9512698 36.559908, -78.9650714 36.5787338)))

**Project Counties:** Halifax, VA

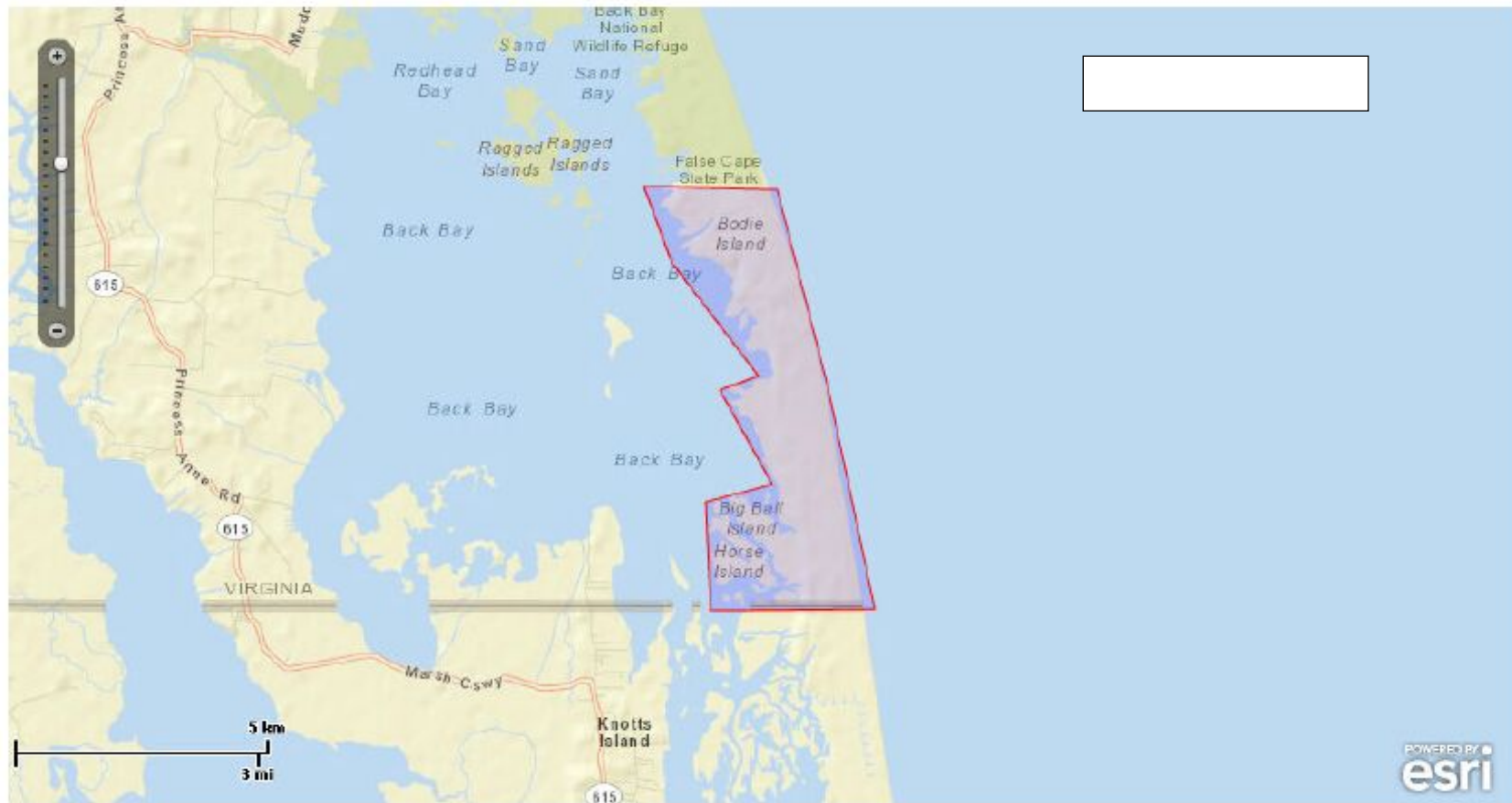
### Species Conclusions Table

Project Name: Gypsy Moth STS-Cluster Springs

Date: 12/14/12

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
ESA listed species	Species not present	No adversely effects	
Bald Eagle	Unlikely to disturb nesting Bald Eagles	No Eagle Act permit required	No within 660 feet of a bald eagle nest

### Project Location Map:



**Project Coordinates:** MULTIPOLYGON (((-75.9157445 36.6246469, -75.8862187 36.6240958, -75.8749062 36.5888325, -75.8646065 36.5496781, -75.9009816 36.5493885, -75.9020287 36.5687063, -75.8872658 36.5717393, -75.8989388 36.5885568, -75.8903557 36.5910378, -75.9095818 36.6111582, -75.9157445 36.6246469)))

**Project Counties:** Currituck, NC | Virginia Beach, VA



## Species Conclusions Table

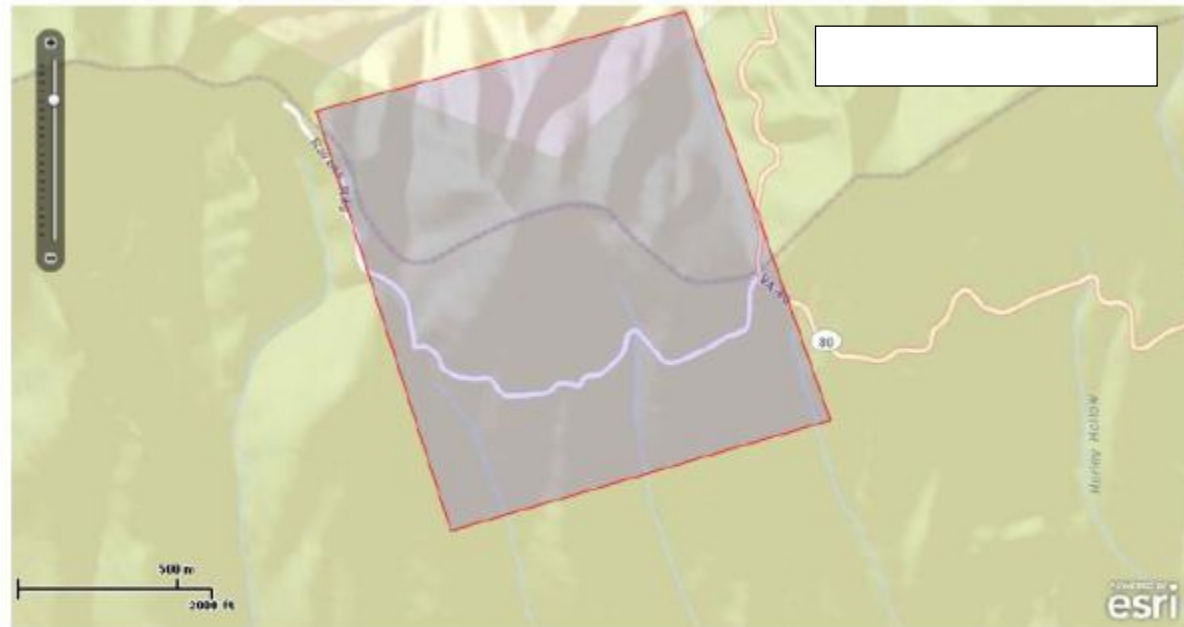
Project Name: Gypsy Moth STS-False Cape

Date: 12/14/12

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Piping Plover	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone application is species specific and will not disturb nesting sites along the shore line. The noise disturbance will be brief.
Red Knot	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone application is species specific. The noise disturbance will be brief.
Red-Cockaded woodpecker	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone application is species specific. The noise disturbance will be brief.
Roseate tern	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone application is species specific. The noise disturbance will be brief.
Shortnose sturgeon	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone applications will not be made over open water.
Seabeach amaranth	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone application is species specific and will not disturb soil or sand dunes along the shore line.
West Indian manatee	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone applications will not be made over open water. The noise disturbance will be brief.
Green sea turtle	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone application is species specific and will not disturb soil or sand dunes along the shore line. The noise disturbance will be brief.
Hawksbill sea turtle	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone application is species specific and will not disturb soil or sand dunes along the shore line. The noise disturbance will be brief.
Kemp's Ridley sea turtle )	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone application is species specific and will not disturb soil or sand dunes along the shore line. The noise disturbance will be brief.

Leatherback sea turtle (critical habitat)	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone application is species specific and will not disturb soil or sand dunes along the shore line. The noise disturbance will be brief
Loggerhead sea turtle (critical habitat)	Potential habitat present and no current survey conducted	Not likely to adversely affect	The pheromone application is species specific and will not disturb soil or sand dunes along the shore line. The noise disturbance will be brief
Bald Eagle	May disturb nesting bald eagles. (does not insect with an eagle concentration area)	Eagle Act permit may be required	Project is within a 660' of a nest. Not within a concentration area. We propose a 500' vertical buffer around the nest site. . The noise disturbance will be brief

**Project Location Map:**



**Project Coordinates:** MULTIPOLYGON (((-81.9625644 36.8692629, -81.9495203 36.8720781, -81.9444134 36.8605419, -81.957803 36.8574172, -81.9625644 36.8692629)))

**Project Counties:** Russell, VA | Washington, VA



## Species Conclusions Table

Project Name: Gypsy Moth STS-Hayters Gap

Date: 12/10/12

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Appalachian monkeyface (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Birdwing pearlymussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Cracking pearlymussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Cumberland bean (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Cumberland monkeyface (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Cumberlandian combshell (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Finerayed pigtoe (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Fluted kidneyshell (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Littlewing pearlymussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Oyster mussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.

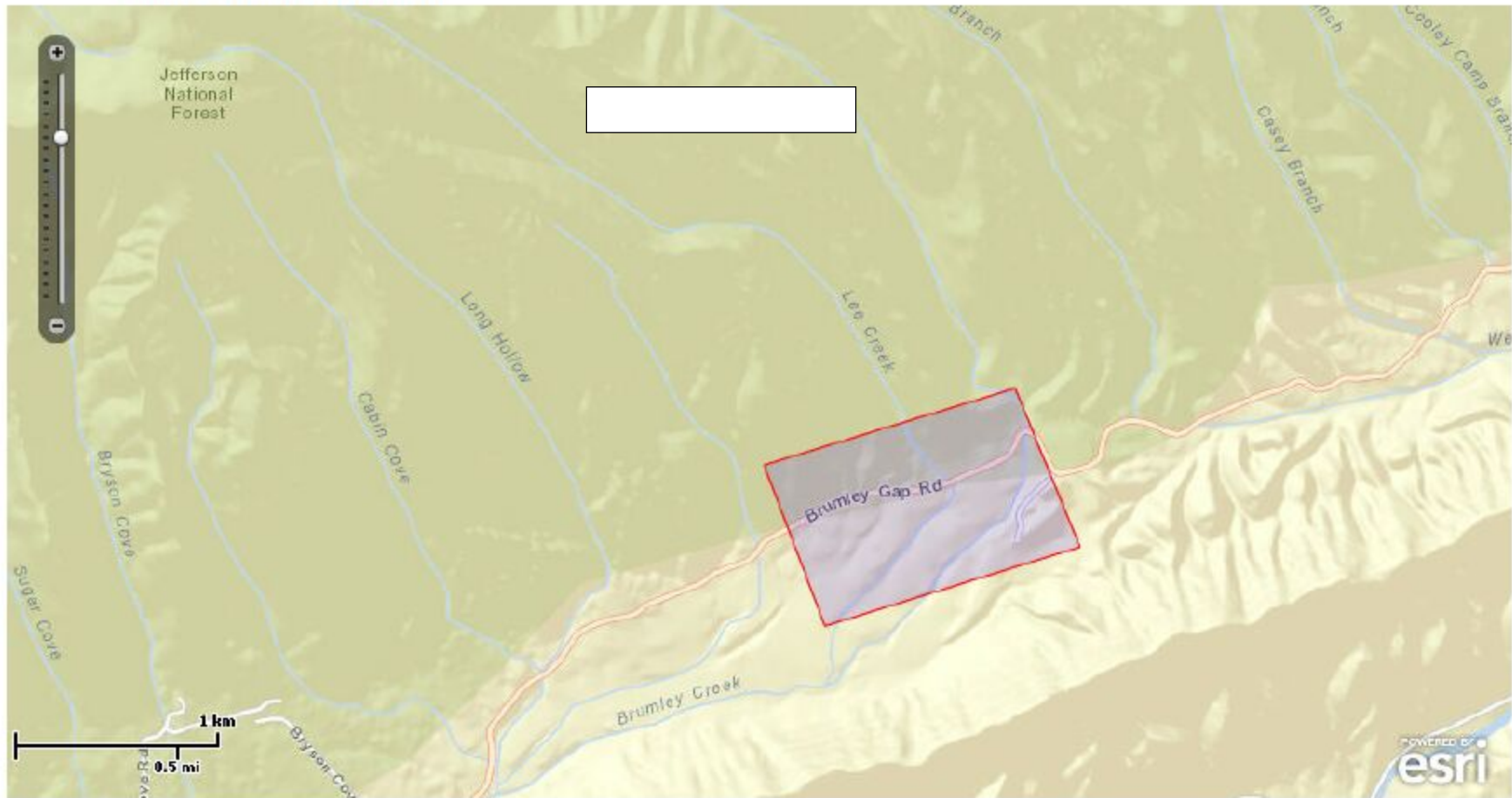


Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Purple bean (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Rayed Bean (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Rough rabbitsfoot (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Sheepnose Mussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Shiny pigtoe (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Slabside pearlymussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Snuffbox mussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Spectaclecase (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Tan riffleshell (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it enters

			the streams.
Slender chub (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it enters the streams.
Spotfin Chub (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it enters the streams.
Yellowfin madtom (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area are small and tend to be canopy covered which would intercept the pheromone dispenser material before it enters the streams.
Gray bat	Potential habitat present and no current survey conducted	Not likely to adversely effect	The proposed applications would have a limited effect on bat food supplies because of the species specific nature of the pheromone and the size of the treatment area.
Indiana bat	Potential habitat present and no current survey conducted	Not likely to adversely effect	The proposed applications would have a limited effect on bat food supplies because of the species specific nature of the pheromone and the size of the treatment area.
Virginia Big-eared bat	Potential habitat present and no current survey conducted	Not likely to adversely effect	The proposed applications would have a limited effect on bat food supplies because of the species specific nature of the pheromone and the size of the treatment area.
Bald Eagle	Unlikely to disturb nesting bald eagles (does not intersect with an eagle concentration area)	No Eagle Act permit required	Project is not within 660' of a known nest. Not within a concentration area.



## Project Location Map:



**Project Coordinates:** MULTIPOLYGON (((-81.9997737 36.8216707, -81.9858004 36.8250889, -81.9821913 36.818036, -81.9963877 36.8145145, -81.9997737 36.8216707)))

**Project Counties:** Washington, VA

## Species Conclusions Table

Project Name: Gypsy Moth STS Project- Poor Valley

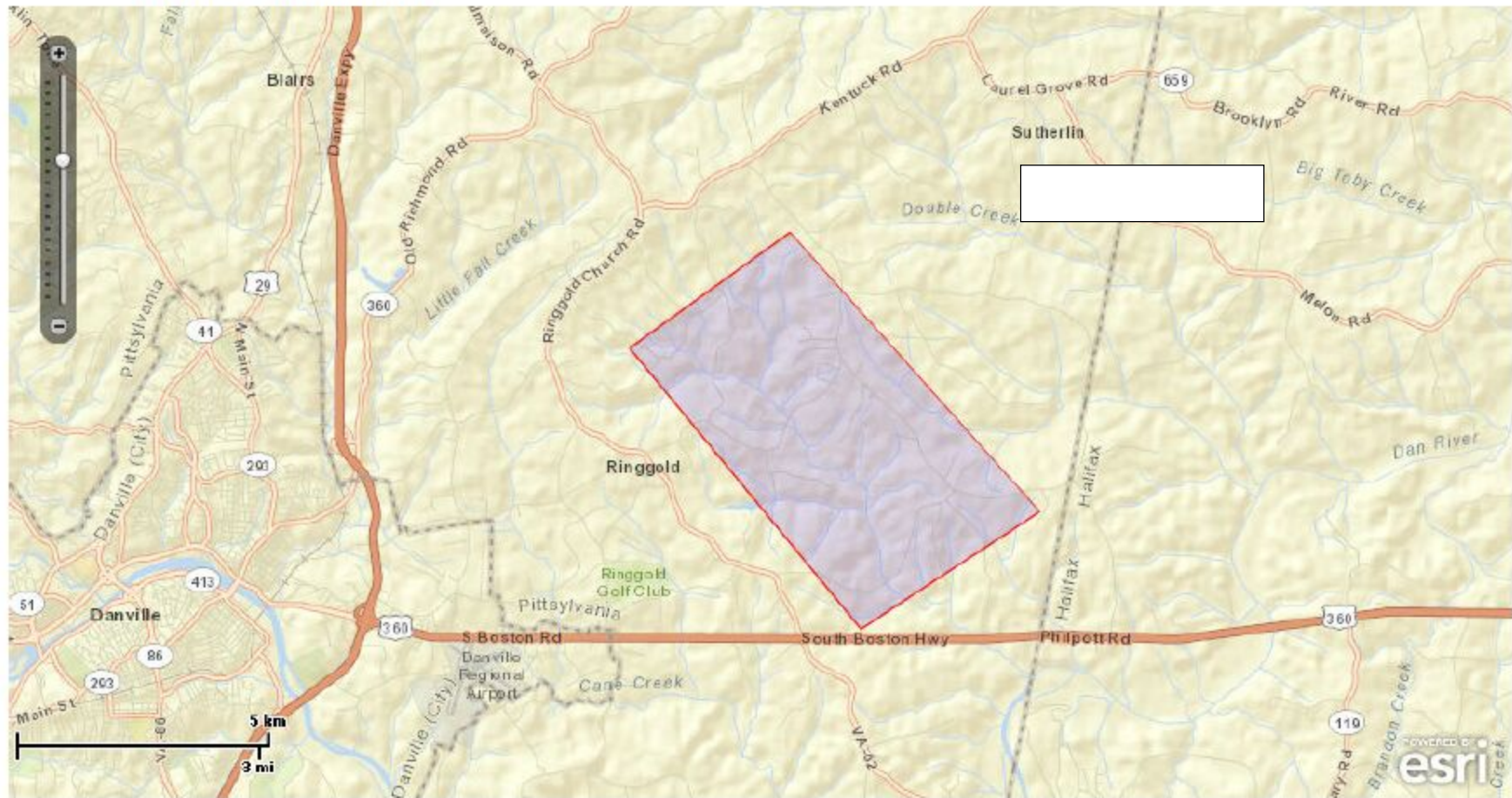
Date: 12/10/12

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Birdwing pearlymussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Cumberland monkeyface (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Cumberland combshell (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Finerayed pigtoe (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Fluted kidneyshell (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Littlewing pearlymussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Purple bean (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Rayed Bean (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Rough rabbitsfoot (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Shiny pigtoe (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.



Slabeside pearlymussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Snuffbox mussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Slender chub (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Spotfin Chub (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Yellowfin madtom (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Smooth coneflower	Potential habitat present and no current survey conducted	Not likely to adversely effect	Mating disruption pheromones affect only the Gypsy Moth
Virginia spiraea	Potential habitat present and no current survey conducted	Not likely to adversely effect	Mating disruption pheromones affect only the Gypsy Moth
Grey bat	Potential habitat present and no current survey conducted	Not likely to adversely effect	Mating disruption pheromones affect only the Gypsy Moth. Due to the limited size of the treatment area, mating disruption pheromones would not have adverse effects on the bat food supply.
Indiana bat	Potential habitat present and no current survey conducted	Not likely to adversely effect	Mating disruption pheromones affect only the Gypsy Moth. Due to the limited size of the treatment area, mating disruption pheromones would not have adverse effects on the bat food supply.
Oyster Mussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.

## Project Location Map:



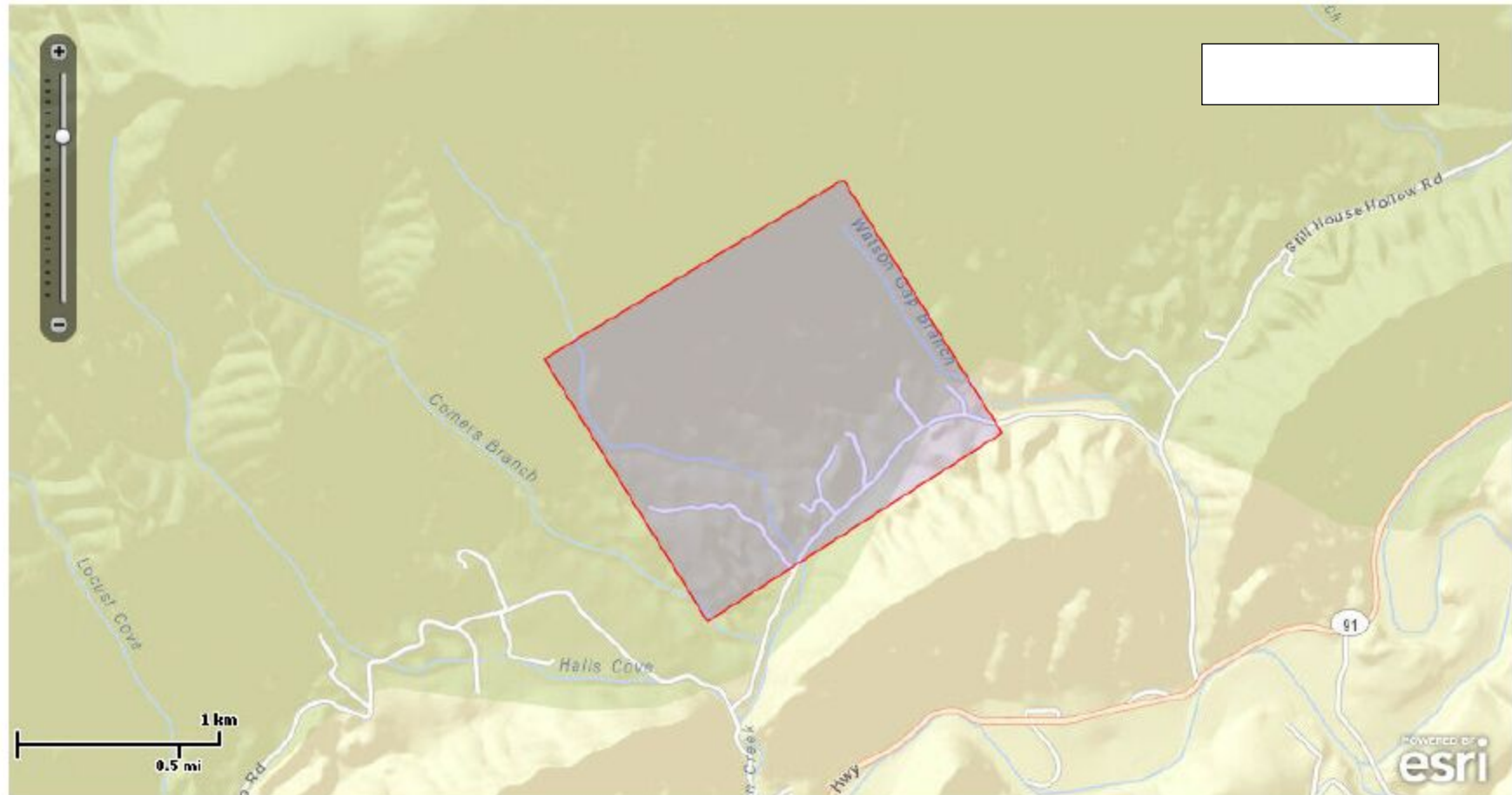
**Project Coordinates:** MULTIPOLYGON (((-79.3000279 36.6323679, -79.2643395 36.6530284, -79.2087212 36.6031584, -79.2485466 36.5822088, -79.3000279 36.6323679)))

**Project Counties:** Pittsylvania, VA

There are no listed species identified for the vicinity of your project.



## Project Location Map:



**Project Coordinates:** MULTIPOLYGON (((-81.7482897 36.9264232, -81.7316385 36.934382, -81.7227979 36.9231297, -81.7391916 36.914758, -81.7482897 36.9264232)))

**Project Counties:** Smyth, VA

## Species Conclusions Table

Project Name: Gypsy Moth STS-Saltville

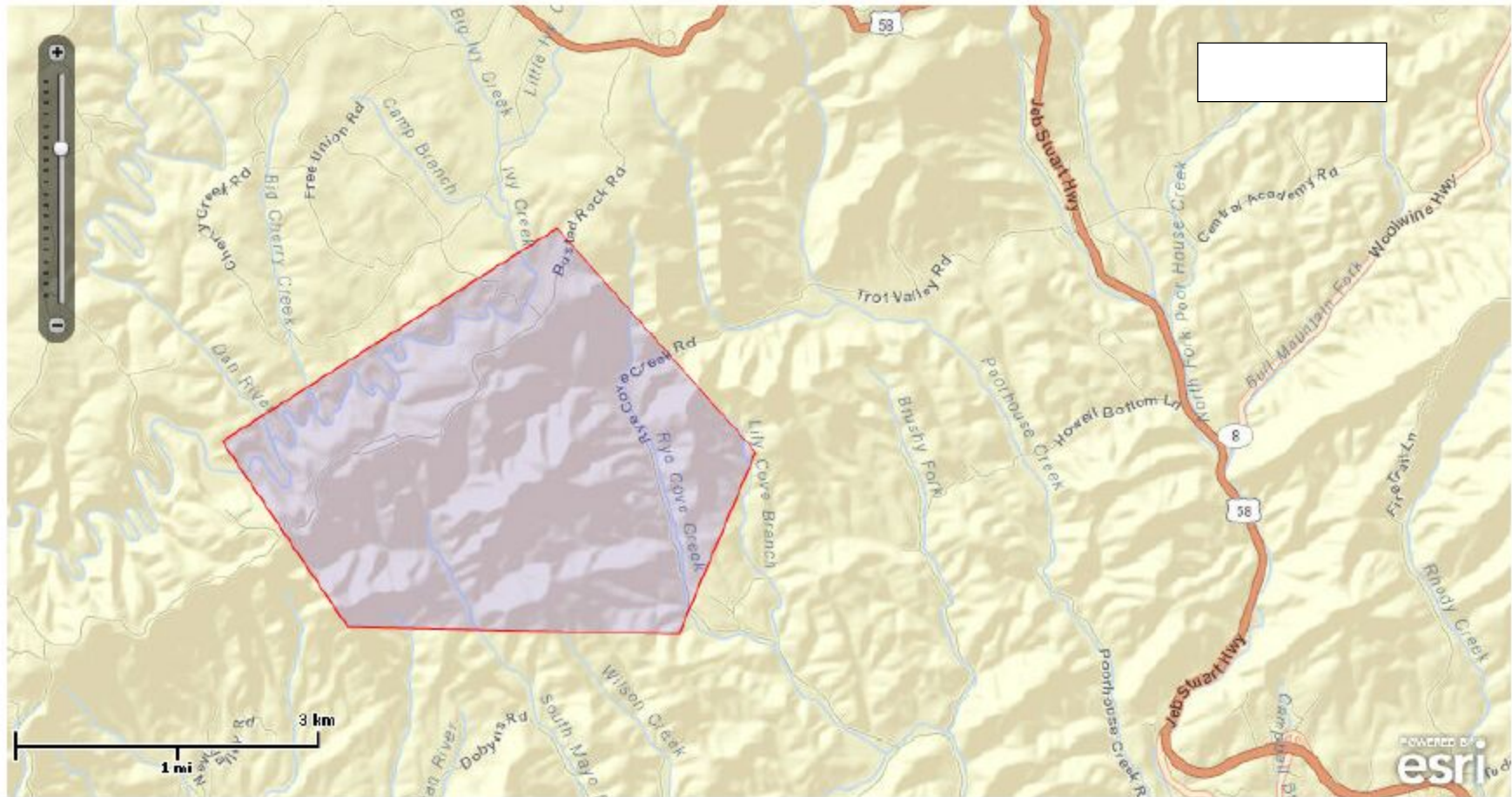
Date: 12/06/12

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Carolina Northern Flying squirrel	Potential habitat present and no current survey conducted	Not likely to adversely effect	Mating disruption pheromones affect only the Gypsy Moth
Fluted kidneyshell (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Mating disruption pheromones affect only the Gypsy Moth
Indiana bat (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Mating disruption pheromones affect only the Gypsy Moth. Due to the limited size of the treatment area, mating disruption pheromones would not have adverse effects on the bat food supply.
Littlewing pearlymussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Rayed Bean (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Rough rabbitsfoot (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Shiny pigtoe (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Slabeside pearlymussel (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.
Slender chub (critical habitat)	Potential habitat present and no current survey conducted (no critical habitat present)	Not likely to adversely effect	Streams in this area tend to be canopy covered which would intercept the pheromone dispenser material before it entered the streams.

Bald Eagle	Unlikely to disturb nesting bald eagles (does not intersect with an eagle concentration area)	No Eagle Act permit required	Project is not within 660' of a known nest. Not within a concentration area.
Smooth coneflower	Potential habitat present and no current survey conducted	Not likely to adversely effect	Mating disruption pheromones effect only the Gypsy Moth
Virginia big-eared bat	Potential habitat present and no current survey conducted	Not likely to adversely effect	Mating disruption pheromones affect only the Gypsy Moth. Due to the limited size of the treatment area, mating disruption pheromones would not have adverse effects on the bat food supply.



### Project Location Map:



**Project Coordinates:** MULTIPOLYGON (((-80.3894986 36.6774106, -80.3522395 36.6964073, -80.3300952 36.6764469, -80.3386783 36.6601994, -80.3755855 36.6608879, -80.3894986 36.6774106)))

**Project Counties:** Patrick, VA



## Species Conclusions Table

Project Name: Gypsy Moth STS-Stuart

Date: 12/13/12

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Roanoke Logperch	Potential habitat present and no current survey conducted	Not likely to adversely effect	Streams in this area tend to be small and canopy covered which would intercept the pheromone dispenser material before it enters the streams. Applications will not be made over open bodies of water.
James Spiny mussel	Potential habitat present and no current survey conducted	Not likely to adversely effect	Streams in this area tend to be small and canopy covered which would intercept the pheromone dispenser material before it enters the streams. Applications will not be made over open bodies of water.
Small-anthered bittercress	Potential habitat present and no current survey conducted	Not likely to adversely effect	The proposed pheromone applications are species specific and only effect the Gypsy Moth. This application will not cause any land disturbance. Applications will not be made over open bodies of water.
Mitchell's Satyr	Potential habitat present and no current survey conducted	Not likely to adversely effect	The proposed pheromone applications are species specific and only effect the Gypsy Moth. This application will not cause any land disturbance. Applications will not be made over open bodies of water.
Bald Eagle	Unlikely to disturb nesting bald eagles (does not intersect with an eagle concentration area)	No Eagle Act permit required	Project is not within 660' of a known nest. Not within a concentration area.