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Attached.

Plan for the Development of Oil and Gas Resources within a Sage-Grouse Core Population Area

Douglas Core Area

Converse County, Wyoming

ANNUAL REPORT

AUGUST 2013 - JULY 2014

Douglas Core Area Restoration Team

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FOREWORD

This 2014 Annual Report is being submitted by Chesapeake Energy (Chesapeake) to the State of Wyoming. Chesapeake prepared this report in support of its *Plan for Development of Oil and Gas Resources within a Sage-Grouse Core Population Area, Douglas Core Area (DCA), Converse County, Wyoming* (Plan). This Annual Report has been reviewed by the DCA Restoration Team (RT) – a multi-stakeholder team responsible for steering the restoration efforts funded through the Plan. Chesapeake would like to thank the members of the RT for the countless hours of dedicated service they have given to make this sage-grouse habitat management program possible.

Cover Credit: Greater sage-grouse on the Bill Hall #3 Lek, Douglas Core Area, 2013 by WEST, Inc.

1.0 INTRODUCTION

The State of Wyoming (State) implemented a Core Population Area Strategy to protect the Greater Sage-Grouse (*Centrocercus urophasianus;* (GSG)) populations and their habitat, through a Governor's Executive Order signed in 2008. The State renewed the strategy in 2011 through Executive Order 2011-5 (EO) (State of Wyoming 2011). In 2013, Chesapeake Energy Corporation (Chesapeake), in conjunction with the State, voluntarily implemented a plan for development of oil and natural gas resources within the 88,159-acre Douglas Sage-Grouse Core Population Area (DCA). The primary goal of this development plan was to implement management strategies to conserve and restore GSG habitat while sustainably developing oil and natural gas resources.

The Core Population Area Strategy's premise is to locate and protect Wyoming's 'core' GSG population and habitat. The sagebrush steppe ecosystem, which is determined to equate to suitable GSG habitat, has been removed or disturbed over the GSG range by wildfires, agricultural land use, chemical or mechanical treatments, residential development and energy activities. When the core areas were first established in 2008, existing surface disturbance was estimated using available imagery and statewide sage-grouse working group knowledge. As Chesapeake coordinated with the State on a plan for development within the predominantly privately-owned DCA, it became evident that the DCA's surface disturbance was much greater than the EO stipulated threshold of 5%. Most of this disturbance occurred before the EO was implemented and prior to any Chesapeake activity. In fact, pre-EO disturbance, delineated through high resolution aerial imagery and ground assessments, indicates the DCA had greater than 15% surface disturbance. To-date, less than 1% of the total surface disturbance is attributable to Chesapeake's oil and gas activity.

Recognizing that surface disturbance in the DCA already exceeded targeted thresholds and that Chesapeake had valid and existing mineral lease development rights, a plan to provide for energy development in conjunction with GSG habitat conservation and restoration was cooperatively composed. The August 2, 2013, plan entitled *Plan for the Development of Oil and Gas Resources within a Sage-Grouse Core Population Area, Douglas Core Area, Converse County, Wyoming* (Chesapeake 2013) was approved by the State (Rieman 2013) to comply with and to complement the regulatory mechanisms identified in the EO. The State received concurrence for Chesapeake's Plan from the United States Fish and Wildlife Service (FWS) in an October 28, 2013 letter. The letter (Sattelberg 2013) stated, "The Service considers the Plan a sound guide for management of development in the DCA given that the Core Area disturbance protections cannot be achieved in this area because of pre-existing conditions and valid and existing rights."

Chesapeake understands that the FWS will evaluate threats to the species as part of their draft listing decision scheduled for September 2015. Therefore, weaved throughout this report is a description of the actions taken by Chesapeake to address 4 of the 5 typical threats/factors used to determine whether a species is endangered or

threatened as described in the *12-Month Findings for Petitions to List the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered* (Listing Petition) (75 Federal Register 13910). For example:

- Threat #1 - *the present or threatened destruction, modification, or curtailment of habitat or range.* This threat is addressed through altering approaches to oil and gas development by co-locating pipelines with access roads, drilling numerous wells on one pad, and avoiding surface disturbance in key habitat areas, where feasible, to curtail further habitat destruction. Habitat fragmentation concerns are also being addressed by prioritizing the location of potential restoration projects near leks or connective corridors.

- Threat #2 – *overutilization for commercial, recreational, scientific or educational purposes.* This threat is not addressed in this document.

- Threat #3 – *disease or predation.* This threat is addressed through implementing a West Nile Virus monitoring and management program to reduce the threat of disease to DCA GSG populations. In addition, the threat of predation is addressed by removing overhead power lines to eliminate predator perches.

- Threat #4 - *inadequacy of existing regulatory mechanisms.* This threat is addressed by coordinating efforts with state agencies and the Governor's Sage-Grouse Implementation Team (SGIT) to enhance the success of Wyoming's Core Population Area Strategy as an adequate regulatory mechanism.

- Threat #5 – *other natural or man-made factors affecting a species' continued existence.* This threat is addressed by implementing a traffic plan to minimize intrusions from man-made noise and activity during GSG breeding and nesting periods.

This annual report focuses on the commitments made in the Plan and documents the progress Chesapeake has made in carrying out their stated management objectives to avoid, minimize and mitigate impacts to GSG habitat within the DCA. Chesapeake has implemented avoidance and minimization measures, described in Sections 2.1 and 2.2 of this report, to lessen disturbance of seasonal GSG habitats across the DCA landscape. To fulfill mitigation (synonymous to restoration) commitments pursuant to the Plan, restoration projects within the DCA are currently being developed under the purview of the DCA Restoration Team (RT). The RT is a multi-stakeholder team representing various interests ranging from oil and gas to regulatory agencies, to landowners, to environmental groups, to academia. The purpose of the multi-stakeholder team is to facilitate collaboration towards the common goal of restoring valuable GSG habitat while maintaining sustainable land use practices. The restoration/mitigation program and the associated projects guided by the RT are generally described in Section 2.3. Section 3.0 describes the monitoring and adaptive management practices while Section 4.0 provides information on the RT's budget and expenditures over the last year. Section 5.0 provides an overall summary with references listed in Section 6.0.

2.0 DCA DEVELOPMENT PLAN COMPLIANCE

The following sections provide detailed information on Chesapeake's efforts over the past year to comply with the commitments expressed in the Plan. The commitments, per FWS direction, are to avoid key habitat areas; minimize disturbance (e.g., implementing best management practices to reduce impact to the GSG); and mitigate unavoidable disturbances or previously disturbed areas through habitat restoration. This section addresses progress on Chesapeake's management objectives outlined in the Plan; the State's management objectives, also outlined in the Plan, are not addressed in this report.

2.1 AVOIDING KEY HABITAT AREAS

The Plan divides the DCA (WGFD 2010) into three GSG management areas (Areas A, B, and C) that are subject to different management objectives based on habitat quality. As such, these management areas serve to assist in siting restoration projects and in directing the development of oil and natural resources in areas where they are likely to have the greatest positive impacts and least negative impacts, respectively. Area A has been identified as containing higher quality sagebrush habitat and is adjacent to lek areas with documented GSG activity. Area A is therefore considered an area where new development should be avoided to the maximum extent operationally practical in order to maintain high quality sage-grouse habitat.

As it had previously committed to do, Chesapeake has deferred new disturbance related to resource development in Area A for at least 3 years (until March 2016), to reduce lek impacts and to minimize habitat fragmentation. The only qualified exceptions are where development is necessary to prevent lease termination, meet lease obligations or reduce flaring from existing wells. As part of the Plan, Chesapeake and their pipeline contractor, Access Midstream (Access), identified a few qualified exceptions. Updates on the status of these exceptions are provided below. As can be seen throughout the narrative, even in the context of these exceptions, Chesapeake and Access have taken steps to minimize impacts.

1. The Plan (pp. 7-8) states "Chesapeake holds oil and gas leases in Section 15, T33N-R69W that will terminate in 2015. If Chesapeake is unable to obtain reasonable lease extensions, Chesapeake intends to develop these leases which will include building a well pad, facilities pad, access road, pipeline, and the drilling and completion of at least one well."

   Status: The lease terms indicate that a well must be drilled and producing by August 1, 2015, unless an extension is granted by the lessor. Chesapeake is currently pursuing an extension of the approximately 240-acre lease.

2. The Plan (page 8) states "Chesapeake may request exceptions to drill in 2013 up to two additional wells on the existing Rochelle 14-33-69 A pad located in Section 14, T33N-R69W utilizing existing access roads to meet 2014 lease obligations. Chesapeake and Access will make every attempt to reroute the required pipeline to this well and will consult with WGFD to reduce impacts. If new permits are required, Chesapeake and Access will work with WGFD and the relevant permit agencies."

   Status: During the fall of 2013, Chesapeake drilled both wells on the Rochelle 14-33-69 A pad, but delayed the completion until after the 2014 EO seasonal restriction period. Additionally, following an alternatives analysis by Access, the pipeline was carefully located, with WGFD approval, along the county road to reduce additional disturbance. Access also committed to narrow the right of way from 60 feet to 50 feet.

3. The Plan (page 8) states "Access may construct pipelines to connect the following existing Chesapeake drilled and completed wells for the purpose of alleviating long term flaring: Crawford 1-33-69, Krause 10-33-69, and York Ranch 31-33-69 wells located in Sections 1, 10, and 31, T33N-R69W, respectively. Chesapeake and Access will make every attempt to reroute the pipelines to reduce impacts."

   Status of these pipelines is as follows:

   a. The pipeline connection to the Crawford 1-33-69 well was removed as an exception in Area A since Access chose to locate the pipeline adjacent to existing disturbances and within pre-1994 treatments with unsuitable habitat within Areas B and C. This reroute added an additional 2.75 miles of pipeline outside the critical habitat area.

   b. At the Krause 10-33-69 well pad. Chesapeake agreed not to enlarge the pad in order to minimize the disturbance in Area A. Early in 2014, Chesapeake located the production equipment on the pad and completed the previously shut-in well. Access worked closely with WGFD to evaluate possible alternatives and ultimately rerouted the original proposed pipeline to be co-located with Bill Hall Road.

   c. At the York Ranch 31-33-69 well, Access constructed the pipeline outside of the stipulation period along existing two track roads and within pre-1994 treatment areas when possible to minimize fragmentation within Area A. To allow the sagebrush root mass to remain and hopefully accelerate the re-establishment of habitat, where possible, the 60 foot right-of-way was not completely cleared of vegetation.

4. The Plan (page 8) allows for additional exceptions not specifically identified when the Plan was finalized. One additional exception occurred regarding the power line to a compressor facility. Following an evaluation of different routes and construction methods, Access in conjunction with the State, the WGFD, and the Niobrara Electric Association agreed to install 2.5 miles of underground 3-phase power line through Area A. To minimize the associated surface disturbance, underground trenches were narrowed to 6 inches and the work area on each side of the trench was narrowed to 3-4 feet. Additional overhead 3-phase power was installed through Area C, and lines were raptor proofed and marked with bird flight diverters. Access also agreed to remove approximately 7,625 feet of single phase overhead line; 4,220 feet in Area A; 875 feet in Area C; and 1,400 feet within the Flat Top lek no surface occupancy (NSO) area which will decrease potential predator perches.

Table 2.1 provides a summary of Chesapeake's disturbance and avoidance activities by management area. Significantly, well pad construction and access road construction were successfully avoided in Area A; four well pads had been constructed before the Plan was established but no well pads have been constructed in Area A since Plan approval.

2.2 MINIMIZING IMPACTS

Chesapeake and Access minimized surface disturbance by implementing best management practices for siting their development infrastructure. In addition, Chesapeake worked to minimize disruption of GSG breeding and nesting activities and improve overall GSG survival by implementing a traffic plan, a West Nile Virus monitoring and management program, an invasive and noxious weed program, and a program to coordinate fire control with local agencies. In the sections that follow, processes that simultaneously conserve GSG while maintaining oil and gas operations and development are presented.

2.2.1 NATURAL RESOURCE SITE ASSESSMENTS AND DDCTS

In accordance with the Plan, a natural resource site assessment is performed prior to development within the DCA. The goal of the site assessment is to develop purposefully so as to decrease the development footprint and avoid and minimize impacts to GSG habitat.

Chesapeake conducted natural resource site assessments to verify that well pads, roads and pipelines will be located, to the extent operationally practical, in unsuitable or low quality sage-grouse habitat. As part of the management objectives for all areas, Chesapeake used the site assessment process to co-locate new disturbances within existing disturbances to minimize fragmentation of sagebrush habitat, to the extent operationally practical.

The natural resource site assessment begins with a desktop review conducted by a qualified third party professional, followed by a field assessment, if needed, by the same third party. The desktop study involves selecting proposed well pad and road sites to avoid natural resource issues like raptors, wetlands, threatened and endangered species habitat, and most importantly high quality sage-grouse habitat. This process and activities are provided to WGFD and FWS in the DDCT worksheets, documented in DDCT policy letters and/or wildlife environmental reviews (WER), and subsequently incorporated into the appropriate WGFD and FWS databases.

DDCT calculations were conducted for ten potential well pad locations within the DCA during the reporting period from August 2013 through July 2014. Eleven DDCT calculations were conducted for other development sites including pipelines, compressor facilities, and power lines, for a total of 21 DDCT calculations. At least that many natural resource site assessments were conducted in that time frame since the assessments can be conducted on multiple candidate sites prior to location selection. The site assessment process minimized overall additional disturbance in the DCA. Table 2.1 also illustrates the disruption density and surface disturbance contributions prior to the Plan and within the reporting year attributed to Chesapeake's activities in the DCA. Existing disruption density (2013 pre-Plan) in the DCA was 0.36. During the plan year, the density increased by 0.04 for a total disruption density of 0.40, well below the EO limit of 1. Existing disturbance (2013 pre-Plan) in the DCA was 16.5%, with approximately 0.5% of that attributable to Chesapeake development activities. Chesapeake's net development disturbance during the first Plan year increased surface disturbance by just 0.2% for a total of 16.7% in the DCA (Table 2.1).

2.2.2 COORDINATION OF DISTURBANCE ACTIVITIES

As noted above, Chesapeake has coordinated pre-disturbance site assessments with appropriate companies (i.e., Access, Niobrara Electric, various earthwork contractors, etc.) to co-locate pipelines, power lines and access roads in least suitable sage-grouse habitat.

Of the 34.4 miles of pipeline installed since Plan approval, Chesapeake and Access worked together to successfully co-locate 23.3 miles of pipeline with existing roadways based on successful completion of the natural resource site assessment process. Table 2.1 shows more than 100 acres of facilities that were co-located with existing disturbances during the reporting period, reducing the potential net disturbance by more than 36%.

Chesapeake has been planning and drilling multiple wells using horizontal drilling technology, which allows for fewer pads and roads and a reduction in facility infrastructure. During the reporting period, although 24 new wells were drilled, new surface disturbance was only 175.1 acres compared to 396.8 acres of new surface disturbance for 34 wells prior to the Plan (Table 2.1).

2.2.3 TRAFFIC CONTROL PLAN IMPLEMENTATION

Chesapeake first developed and implemented its traffic plan in early 2013, prior to incorporation as a management objective in the Plan. The goal of the traffic plan is to provide relief from man-made noise and activity for GSG during breeding and nesting periods. Mandatory traffic plan training for 41 contractors and Chesapeake employees was conducted in January 2014 in preparation for the March 1, 2014 implementation under the Plan. Multiple internal teams coordinated to synchronize or delay operational schedules while security teams strictly enforced approved Chesapeake or contractor traffic and speed.

Oil field traffic was not allowed in restricted areas from March 1 to June 30, extending beyond the EO period of noise stipulations (March 1st through May 15th). All requests for exceptions during that time period were documented and requests were typically for travel between 8 am and 6 pm, except for emergencies or early morning GSG surveys. The categories of requests ranged from routine operation and maintenance, emergency operation and maintenance, surveys, stormwater compliance inspections, and other reasons. Chesapeake's traffic plan and the noticeable accompanying signage helped develop awareness among landowners and other stakeholders in the DCA.

Traffic associated with industrial operations and maintenance is limited beyond this sign during key periods of the sage-grouse's life cycle.

2.2.4 ADDITIONAL MINIMIZATION PRACTICES

The goal of minimizing impact on the GSG was furthered by a number of additional practices:

- West Nile Virus Monitoring and Management Program - GSG are considered to have a high susceptibility to West Nile Virus (WNV) with resultant high levels of mortality, as noted in the Listing Petition. Therefore, to aid in controlling mosquito larvae that may spread WNV to GSG, Chesapeake implemented a program to monitor and control WNV on its leases to mitigate the threat of the disease. Beginning July, 2014, Chesapeake placed mosquito pucks containing natural larvicide (*bacillus thuringiensis v. israelensis)* in cellars, secondary containment, and other standing water at well pads and production facilities located within the DCA. Chesapeake conducted monthly inspections of these locations for remaining larvae, reapplied pucks as necessary through August, and tracked monitoring and application activities through a WNV Mitigation Log. In addition, the RT, in cooperation with Converse County Weed and Pest, implemented the DCA WNV Program in order to aid landowners within a three mile radius of active DCA leks to monitor and control WNV. Landowners were offered mosquito larvae sampling and if applicable, treatment, throughout August and the beginning of September of 2014. At least three sites were identified as containing Culex species known to carry West Nile virus and were subsequently treated with larvicide.

- Coordination with local Fire Departments - To facilitate and prepare for potential fire and spread of fire, Chesapeake coordinated with the local emergency services to locate existing fresh water impoundments across the county that could be used for fire protection within Converse County and the DCA. This activity helps reduce the risk of sage-grouse habitat loss due to wildfire.

- Invasive and Noxious Weed Management - Chesapeake has developed an integrated weed management plan to abate noxious weeds such as cheatgrass (*Bromus tectorum*) in the DCA. This will help maintain quality habitat for sage-grouse. Chesapeake works with each landowner to offer the EO approved seed-mix that contains grasses, forbs and sagebrush seed, but final seed mix selection is based on private landowner preference. Within appropriate growing seasons, Chesapeake and Access coordinate with the surface owners to initiate reclamation on newly disturbed locations.

2.3 MITIGATING/RESTORING SUITABLE HABITAT

The DCA RT is charged with mitigating habitat loss through identifying and implementing restoration projects in locations within the DCA that can provide the most benefit to GSG productivity and survival, where possible. The RT began their collaborative effort with monthly meetings beginning in September 2013 followed by an introductory field trip in October 2013. Participating groups include Chesapeake, Access, FWS, Bureau of Land

Management (BLM), Natural Resources Conservation Service (NRCS), WGFD, Converse County Conservation District, Wyoming Stock Growers Trust, Nature Conservancy, Audubon Society, the Northeast Wyoming Sage Grouse Working Group, Thunder Basin Grasslands Prairie Ecosystem Association, and the Wyoming Restoration and Reclamation Center at the University of Wyoming. Additionally, Chesapeake contracted with Western EcoSystems Technology, Inc. (WEST) and Trihydro Corporation (Trihydro) to provide support services for the team's ongoing projects. A timeline of the RT's activities which summarizes their accomplishments is presented as Figure 1.

The RT is implementing and planning restoration projects by purposely following goals, criteria, and key success indicators they developed for habitat loss mitigation. Restoration project objectives are to focus on one or more of the following objectives:

- Enhancement of GSG nesting habitat
- Enhancement of key forage species for sage-grouse during the nesting and early brood-rearing period
- Enhancement of sage-grouse late-brood rearing habitat
- Restoration of previously disturbed habitats to suitable sage-grouse habitat

Restoration projects are categorized as either active or passive projects. In general, passive restoration focuses on beneficial land management practices and on maintaining sagebrush, while increasing cover by native grasses and forbs. Active restoration projects are those that purposefully reestablish sagebrush cover as well as an herbaceous understory in areas of unsuitable habitat. The RT is breaking new ground by undertaking a type of active restoration project (mass sagebrush plantings in established rhizomatous perennial grass communities) that, to our knowledge, has not been accomplished in Wyoming previously. In March 2014, RT members approved a methodology for prioritizing potential project areas, whether passive or active, as described below.

2.3.1 PROJECT PRIORITIZATION

The RT developed a strategic approach to the selection and prioritization of potential project sites. The following five step process was used to identify actions and project locations that would provide the greatest benefit to sage-grouse:

- Step 1: Perform a desktop analysis to identify and rank potential active and passive project areas.
- Step 2: Perform baseline vegetation surveys and data collection in high priority potential project areas where possible.

- Step 3: Continue to refine and prioritize both active and passive project areas according to what is most beneficial to sage-grouse.
- Step 4: Plan and Implement projects.
- Step 5: Monitor Results and Report/Disseminate information.

The initial desktop analysis resulted in identification of 44 potential active project areas and 20 potential passive project areas. These potential project areas, as well as GSG management areas A, B and C, are shown on Figure 2. Potential active project areas were those requiring revegetation since desired sagebrush species had been previously eliminated and were now insufficient for natural seed dispersal. Potential passive restoration areas were locations where desirable plant species were present but management activities, other than human-aided revegetation or chemical treatments, would be required to enhance the plant community. A landscape level approach to restoration is being implemented that includes various types of restoration projects near existing key seasonal habitats or in areas that will provide connective corridors. Historical habitat near leks was prioritized for restoration projects to improve habitat for the DCA sage-grouse population and address the habitat threats listed in the Listing Petition. Potential project areas were ranked using a rubric approved by the RT that considered acreage, surface ownership, connectivity, management area, distance to leks, distance to anthropogenic and oil and gas features. Each potential active and passive project area depicted on Figure 2 is labeled with the priority ranking.

During this Plan year, the RT focused on implementing pilot and full-scale projects in the top priority potential active project site - the East Antelope Burn Site, which includes the areas designated as both #1 and #2 in the active area rankings. The following sections provide details on the RT's activities to produce native seedlings for use in restoration projects and to implement those projects in the high priority areas. Projects implemented between August 2013 and July 2014 are described below; project costs are discussed in Section 4.0.

2.3.2 SAGEBRUSH SEED COLLECTION AND SEEDLING PROPAGATION

In early November 2013, several members of the RT, UW graduate students, and Wildlands Restoration Volunteers met to harvest sagebrush seed from private land within the DCA. Native seed was collected in order to propagate sagebrush seedlings with a higher likelihood of survival in the climate and soil conditions within the DCA. UW graduate students subsequently prepared the seed by drying it on large screen tables at 24° Celsius for 72 hours, then cleaned the seed by removing stems and excess debris using mechanical hand separation and a series of sieves. The result was 83.2 pounds of seed with a higher than typical rate of pure live seed (12%).

A portion of the seed was kept by UW for propagation and use on the pilot projects and a portion was sent to a nursery contracted to grow the sagebrush seedlings in time for the full-scale plantings. A RT subgroup evaluated proposals from three commercial nurseries and considered propagation methods including hardening (preparing the seedlings to go from a greenhouse environment to a natural environment). The RT awarded the contract in February 2014. To improve seedling survival after transplant, native soil was used in the planting mix; the soil was loaded by Chesapeake and delivered to the nursery by WGFD at no cost to the project. Seedling progress is being monitored and regularly reported to the RT.

2.3.3 EAST ANTELOPE BURN RESTORATION

The East Antelope Burn Restoration project is located on a private ranch in a historic wildfire burn area near the East Antelope Lek within the DCA (Figure 3). The historical burn area is disturbed land that will be improved to 5% or more sagebrush cover within 60 meters of qualified sagebrush habitat to meet EO criteria to ultimately create suitable sage-grouse habitat. Two sagebrush seedling pilot projects, the UW Graduate Project and the Spring Pilot, were implemented on the site in spring 2014 and at least one full-scale sagebrush seedling planting project will be implemented in fall 2014.

2.3.3.1 UW GRADUATE PROJECT

The UW Graduate Project is an active project (Figure 3) developed by the Wyoming Reclamation and Restoration Center at UW. The purpose of the study is to develop an effective planting method for Wyoming big sagebrush (*Artemisia tridentate Wyomingensis)* seedlings that maximizes the amount of soil moisture available to them. One of the desired goals of the RT's work is to increase our collective knowledge of successful restoration techniques which will be broadly beneficial to management of sage-grouse throughout their range. The UW study is intended to be scientifically rigorous and produce publishable results that can be made widely available to the restoration community.

Approximately 1,000 sagebrush seedlings were propagated at the UW Agricultural Experiment Station Laramie Research and Education Center Greenhouse Facility. The seedlings were grown for use on both the UW Graduate Project as well as the East Antelope Burn Restoration Spring Pilot, at no expense to the RT.

In late May, 648 3-month old seedlings were planted in a randomized block design with a total planting area of 0.22 acres. A weather station was installed at the site to accurately monitor wind, temperature and moisture conditions. Monitoring for seedling survival and growth (height and width of seedlings) occurs on a monthly basis. Thus far, the use of fabric mulch has proven to be important in influencing success in height and width growth and overall plant vigor. Those with fabric mulch are substantially more vigorous and four to five times

larger than those without. As of August 2014, seedlings without fabric mulch had a 75% survival rate and those with fabric mulch had a 93% survival rate. Monitoring will be conducted in concert with monitoring for the Spring Pilot, described below.

Sagebrush seedlings planted with fabric mulch are being monitored for height and width growth.

2.3.3.2 SPRING PILOT

The Spring Pilot is an active project (Figure 3) developed by WEST and reviewed and accepted by the RT. The purpose of the project is to evaluate planting protocols for larger-scale implementation in fall 2014 and to restore previously disturbed habitats to suitable sage-grouse habitat, per the EO requirements.

Three-month old seedlings were planted along contours to meet the EO definition of suitable sage-grouse habitat and above a drainage to maximize snow capture. This pilot project includes planting 468 sagebrush seedlings in a total planting area of 1.12 acres. An exclosure design using cattle panels was approved by the landowner and materials were provided by Chesapeake. Small mammal fencing (poultry netting) and wood mulch were added to some areas to evaluate their effectiveness. Exclosures will remain in place for approximately one year or until plants reach a height of 12 inches. Parameters being monitored include height, width, plant condition, surface condition (e.g., concave, convex, flat), percent herbaceous cover, and percent cover by cheatgrass. The seedlings will be monitored for up to two years beyond the Plan term.

As of August 2014, those seedlings with wood mulch had average dimensions 3.77 cm high and 2.3 cm wide. The survival rates are as follows: 98% are alive, 92.7% have good vigor, 6.4% are wilted, and 1.5% are desiccated. Nine plants, amounting to 2% of the total, have been lost. At this stage, poultry netting is not impacting survival. Because of the above normal precipitation within the study area in 2014, dense pockets of cheatgrass were noted in several exclosures and were 2.5 to 3 feet high in some areas. However, the presence of cheatgrass did not appear to affect survival and growth of the sagebrush seedlings at this time.

2.3.3.3 FALL PLANTING

The fall planting is an active project which will consist of approximately 16,000 sagebrush seedling planting and construction of exclosures (Figure 3). The purpose of the project is to restore a historic wildfire burn area to suitable sage-grouse habitat. The planting design is being refined based on the monitoring results from the UW graduate student pilot project and the spring pilot project.

A request for proposals was developed by the RT and was sent out to contractors that were recommended based on their expertise and prior experience with planting seedlings. Proposals were received and were evaluated based on qualifications of the company, the project work plan, experience with similar projects, and estimated costs. In June 2014, the RT awarded the contract to an experienced restoration contractor.

The expected planting density is one sagebrush seedling per one square meter within approximately 3.9 acres. The seedlings and exclosures will be monitored for up to two years beyond the Plan term. The density and spatial distribution of seedlings across the project area is intended to provide sagebrush cover that will ultimately meet EO suitability criteria once plants mature as well as provide a seed source for future seedling establishment within the burn area. Assuming EO suitability criteria will be met, this would return 2.7% surface disturbance in Area A to suitable habitat, bringing the total surface disturbance in Area A to below the EO 5% threshold criteria.

2.3.4 DCA COMMUNITY OUTREACH

An Outreach subgroup of the RT was developed to facilitate communication and build relationships with landowners for future restoration projects and sage-grouse habitat restoration. The outreach activities included:

- In October 2013, landowners in or adjacent to Area A were offered a tour of the DCA; 69% of the invitees attended the tour, were provided information on the Plan, and given an opportunity to provide feedback to the RT.
- A Converse County Conservation District newsletter article was developed and released in July providing details about the DCA and the RT's activities.

- RT representatives initiated individual meetings with landowners near sage-grouse leks to discuss potential restoration projects.
- The RT coordinated with Converse County Weed and Pest to distribute pamphlets during the August State Fair, conduct radio spots, and communicate with landowners to offer WNV monitoring and management assistance.

3.0 PERFORMANCE MONITORING

The success of restoration projects depends upon monitoring, collaboration, and sharing of information, which are integral components to adaptive management. The Plan will be continuously evaluated and revised, if necessary, to reflect current knowledge and the best available science regarding GSG habitat restoration. The Plan specifically focuses on threats to sage-grouse habitat that were identified in the Listing Petition and uses the avoidance, minimization, and mitigation framework to lessen development impacts to sage-grouse habitat within the DCA.

The following sections provide a brief summary of the surveys and monitoring that have been and will continue to be implemented, along with the opportunities and the process for which the Plan may be evaluated and altered, if necessary, due to issues identified through the adaptive management process.

3.1 BASELINE VEGETATION SURVEYS

Establishing baseline habitat conditions is integral to 1) measuring Plan success and 2) planning and implementing future DCA restoration projects. Baseline vegetation surveys were conducted on individual land parcels, which were previously characterized as priority potential active or passive project areas. The purpose of these surveys was to characterize parcels as suitable or unsuitable sage-grouse habitat (based on criteria within the EO), establish baseline habitat vegetation conditions, and identify optimum strategies to restore and/ or enhance habitat for sage-grouse. Baseline surveys were also conducted in areas that were identified as historical disturbances but over many years have naturally been restored. The goal of the vegetation surveys in these latter locations was to quantitatively assess present habitat conditions and ultimately result in removing these areas from the WGFD disturbance database.

In April 2014, a Request for Proposals to perform baseline vegetation surveys was distributed. A subgroup from the RT reviewed proposals, provided a summary and contractor recommendation to the RT, and a contract was awarded in May 2014. Surveys were completed for approximately 1,870 acres overall and resulted in general design recommendations for both active and passive projects. A portion of the existing historical disturbance area was determined to be effectively restored and the DCA RT expects to transmit a request for reclassification to suitable habitat to the WGFD.

3.2 HABITAT RESTORATION MONITORING

Chesapeake has funded and will continue to fund restoration projects that include a 5-year annual monitoring plan. Costs to conduct monitoring that are integral to tracking project success will be estimated up-front in the restoration project cost estimate and these funds will be ear-marked to cover the monitoring plan. To date, restoration project monitoring has focused on sagebrush seedlings that were planted as part of the UW Graduate Study and the Spring Pilot projects. This monitoring has focused on plant growth in response to different techniques to enhance soil moisture (e.g. fabric or wood mulch) as well as evaluating the efficacy of exclosures. The planting protocol for the fall 2014 project was refined based on these monitoring results.

3.3 LEK MONITORING

To determine if the Plan is successful in maintaining the GSG population within the DCA, monitoring of existing leks and surveys to identify previously undocumented or new leks will continue to occur. Chesapeake and WGFD are coordinating on annual monitoring activities to identify trends for the DCA population. In addition, survey biologists are using WGFD protocols to ensure that counts are performed consistently and accurately and that valid comparisons can be made between data sets.

The statewide sage-grouse population was at its lowest in the mid-1990s, but from 1996-2006, the average size of leks increased to levels not seen since the 1970s. Since 2006, average lek size has declined; however, this decline in lek size is not to the levels recorded in the mid-1990s. Figure 4 illustrates comparable trends in the peak number of males that were documented on sage-grouse leks statewide and within the DCA from 1996-2014.

In 2014, both aerial lek surveys and ground sage-grouse counts were performed. Table 3.1 summarizes the status of each lek and the number of individuals (males and females) that were observed from 2012-2014. A new lek location was identified and confirmed by WGFD and additional GSG males were recorded in 2014.

3.4 ADAPTIVE MANAGEMENT

Success of the Plan, as well as individual restoration projects, depends on adaptive management. Monitoring data will be utilized not only to determine success, but also, more importantly, to determine whether changes are necessary. In addition, as biological knowledge of GSG habitat management continues to grow, new strategies may need to be incorporated into the Plan, previously developed projects, or the planning process for new projects.

Chesapeake, in coordination with the RT, is sharing information in monthly meetings to readily implement any changes to components of the project-specific restoration designs. For example, discussions regarding specific

methods of planting and growing seedlings, effectiveness of exclosure types, prioritizing the locations to focus the restoration actions, and recommendations for site monitoring have taken place and are continuing.

As directed by FWS, any modifications of the Plan will be presented to the SGIT for review and all feedback received from SGIT would be considered by the State before modifications are implemented. To date, no modifications of the Plan have been requested or presented.

In addition to RT meetings and collaborative information sharing, a field tour of potential project sites was conducted in May 2014 to provide a mid-year update to the State. Per the commitments in the Plan, annual meetings between Chesapeake, Access, and the State, and possibly the designated representatives on the RT will occur to review and modify the plan, if necessary.

4.0 FINANCIAL SUMMARY

Chesapeake has voluntarily made a financial commitment to assist with the funding of restoration projects in order to enhance and restore habitat within the DCA. Restoration funding is managed through an escrow agreement with the Wyoming Wildlife Foundation, which is a component fund of the Wyoming Community Foundation (WyCF).

Per the Plan, Chesapeake funding is based on the amount of qualified disturbance. Qualified disturbance is defined on a per pad basis and determined for pads located outside of the known disturbed areas. The restoration formula used to determine Chesapeake's contribution to the fund is: *Average Surface Footprint per Location* X the *Average Cost for Restoration* X the *Mitigation Ratio*. The *Average Surface Footprint per Location* is based on an average of 20 acres of disturbance per location, which is inclusive of well pad, facilities pad, access road, power line, and associate pipelines. The *Average Cost for Restoration* is $1,300 per acre. The *Mitigation Ratio* of 3:1 reflects Chesapeake's commitment to provide funds towards restoring three acres for every one acre disturbed to help offset any loss of habitat or ecosystem functionality.

4.1 FUND INVESTMENTS AND EXPENDITURES

Chesapeake contributed $2,808,000 for sage-grouse habitat restoration projects to the WyCF. The prefunding was based on $1,014,000 for qualified disturbance areas existing at the time the Plan was written (260 acres) and $1,794,000 for anticipated qualified disturbance areas (460 acres). The pre-funding acreage was based on the anticipated construction of 36 qualified pads. Within the reporting period, Chesapeake has constructed 21 of the 36 qualified pre-funded pads.

The RT understands their fiscal responsibility regarding expenditures from the fund, and actively seeks to minimize costs through project efficiencies, cost sharing and volunteer labor where possible. For example, the GSG aerial survey cost was reduced by cost-sharing the helicopter ferrying with WGFD. The aerial survey contractor donated a portion of the labor costs as well as their overhead costs to the RT. WGFD staff volunteered time and equipment to haul native soil to the commercial nursery in Colorado for seedling propagation while delivering material for another project. Volunteers harvested native seed, including RT members, UW staff, graduate students, and Wildlands Restoration Volunteers. UW faculty shipped seed and provided support for the seedlings propagated at the UW greenhouse at no charge to the RT. Twenty-five Chesapeake employees and RT members provided manpower to the spring seedling planting effort at the East Antelope Burn Restoration project. UW reduced their indirect costs on the UW Graduate Project from 41.5% to 26% to support the RT.

Expenditures to date are summarized in Table 4.1 and include monitoring and project management, WyCF fees, and restoration project expenses. Funds that have been committed for the fall 2014 restoration projects are not included in Table 4.1 but will be listed in the Plan Year 2 budget summary. Funds that have been allocated but not yet expended are estimated to be between $250,000 and $300,000. Considering the expenditures from August 2013 to July 2014 and the committed funds, there will be approximately $2.2 million remaining in the budget for future sage-grouse habitat restoration projects.

4.2 ADDITIONAL EXPENSES

Chesapeake has incurred direct expenses in support of the RT and funded projects that are not deducted from the WyCF funds. For example, Chesapeake has expended over $203,000 in technical, administrative, project planning, reporting and legal support services. Chesapeake also expended approximately $80,000 to manage the traffic plan and the natural resource site assessments.

Chesapeake's expenses in support of restoration efforts are not limited to these direct project costs, however. Chesapeake has also incurred nearly four million dollars in additional expenses associated with developing the oil and gas resources in accordance with the Plan. These additional expenses total well more than the $2,808,000 that Chesapeake contributed to the WyCF. Day to day operations for Chesapeake and its many contractors have been changed to avoid sage-grouse habitat and minimize impacts; these changes have come with costs. Examples of additional expenses for implementing the DCA Plan include:

- Implementation of the traffic plan added costs for Chesapeake employees and their contractors due to schedule and route changes throughout all phases of the development. For example, considering only the collection of product, approximately 6,210 extra miles were driven to avoid the traffic zone. Since typically the product is gathered 24 hours a day, Chesapeake recorded approximately 562 hours delayed in regular working schedules. This resulted in several hundred thousand dollars of lost revenue due to delays and additional miles driven during the production phase.

- Chesapeake expects to incur significant lease extension costs to accommodate Exception #1 as described in Section 2.1.

- Chesapeake incurred substantial lost revenue due to the delay in drilling two wells at the Rochelle 14-33-69 A pad to accommodate EO seasonal stipulations as described in Section 2.1, Exception #2.

- Pipelines were rerouted to avoid high-quality habitat and minimize surface disturbances. Co-location of pipelines in all three management areas necessitated additional right-of-way acquisition and installation of approximately 8 miles of additional pipe.

5.0 SUMMARY

In 2013, Chesapeake and Access voluntarily implemented the Plan to actively address threats to GSG and GSG habitat identified in the Listing Petition. Efforts to enhance GSG habitat, with the goal of returning large areas within the DCA to suitable habitat, are currently being led by the RT and will continue into the future. These efforts emphasize the avoidance, minimization, and mitigation hierarchical framework. In addition, they demonstrate the diverse strategies and development policies implemented by Chesapeake to enhance GSG habitat within the DCA while concurrently and responsibly developing oil and natural gas resources.

Statewide trends indicate an increasing GSG population in the past year, and the trend within the DCA mirrors the state wide trend. Recent monitoring efforts in the DCA have identified a new lek location and documented a greater number of male sage-grouse attending DCA leks in 2014.

August 2013 to July 2014 represents the first year in which the Plan was implemented and a considerable number of achievements occurred during this time (Figure 1). In this first Plan year, the RT established their goals, objectives and success indicators and put into place a restoration plan methodology for prioritizing potential restoration projects within the DCA. Native sagebrush seed was harvested and seedlings were propagated to provide planting stock. Two critical pilot projects commenced in the top priority East Antelope Burn Area, and ongoing monitoring from these pilot projects is providing direction for the design of the more extensive plantings in the same area scheduled for fall 2014. To date, approximately 1.34 acres of sagebrush habitat is in the process of being restored to suitable habitat through the pilot projects and an additional approximately four acres of sagebrush habitat restoration is planned for fall 2014. More importantly, these seedling plantings are integral to the eventual reestablishment of sagebrush across the East Antelope Burn Area and trending of the majority of the burn back to suitable habitat. Restoration of the large burn acreage has the potential to reduce total surface disturbance in Area A by 2.7% thereby reducing disturbance to below the EO suitability threshold of 5%.

In addition, Chesapeake and Access have worked together to successfully co-locate 23.3 miles of pipeline with existing roadways through the successful completion of the natural resource site assessment process. More than 100 acres of facilities were co-located with existing disturbances during the reporting period. Due to Chesapeake's and Access' avoidance and minimization actions over the past year, surface disturbance in the DCA was only increased by 0.2% with an increase in disruption density of 0.04.

Because the DCA is largely comprised of private land, a critical component of restoration and Plan success has been relationship building with landowners. Successful outreach activities and one-on-one meetings with landowners were integral to performing baseline vegetation surveys on private land in the DCA and moving restoration projects forward. Based on the data collected during the baseline vegetation surveys, previously

disturbed areas that have since been reclaimed are being requested to be re-classified as suitable habitat with subsequent removal from the WGFD disturbance database.

To address the disease threat to sage-grouse posed by West Nile Virus, Chesapeake implemented a West Nile Virus program on its leases. In the past year, Chesapeake also initiated coordination with the County and State to monitor and control West Nile Virus on private land within three miles of active leks in the DCA.

Robust sage-grouse habitat conservation and restoration efforts will continue. The baseline vegetation survey data will be used to make informed decisions on near-term and long-term restoration projects. Anticipated near-term projects may include invasive species control and sagebrush restoration projects that will utilize the sagebrush seedlings being grown by the commercial nursery. Long-term projects will include working with landowners to strategically locate both active and passive restoration projects. They will also include outreach activities to continue to build relationships.

Information regarding the status and impacts of these continuing efforts will be presented regularly to the RT in the months ahead and will be summarized in the 2015 annual report.

6.0 REFERENCES

Chesapeake Energy. 2013. Plan for the Development of Oil and Gas Resources within a Sage-Grouse Core Population Area, Douglas Core Area, Converse County, Wyoming. August 2, 2013.

Rieman, J.L. 2013. Concurrence Letter to Chesapeake from Office of the Governor of Wyoming. April 17, 2013.

Sattelberg, R.M. 2013. Concurrence Letter from Department of the Interior, Fish and Wildlife Service to Office of the Governor of Wyoming. October 28, 2013.

State of Wyoming. 2011. Executive Order 2011-5, Greater Sage-grouse Core Area Protection. Office of the Governor, Cheyenne, Wyoming. 18 pp.
Available from:
http://wgfd.wyo.gov/web2011/Departments/Wildlife/pdfs/SAGEGROUSE_EO_COREPROTECTION0000651.pdf.

Wyoming Game and Fish Department. 2010. Sage-Grouse Core Management Areas Version 3, September 27, 2010
Available from:
http://wgfd.wyo.gov/web2011/Departments/Wildlife/pdfs/SG_COREAREASV3_CONNECTIVITY0000657.pdf.

50 C.F.R. Part 17 Vol. 75, No. 55 (March 23, 2010) Proposed Rules Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered.

TABLES

Table 2.1 DCA DEVELOPMENT AND DISTURBANCE [1] SUMMARY BY MANAGEMENT AREA

Conditions at Beginning of Plan Year 1 (Before DCA Plan Approved on 8/2/2013)				
DCA Management Area	**Area A**	**Area B**	**Area C**	**Total**
Number of Well Pads Constructed	4.0	3.0	16.0	23.0
Number of Wells Drilled	3.0	7.0	24.0	34.0
Total Acres Disturbed from Well Pads and Infrastructure[2]	45.7	87.1	424.5	557.3
Acres of Facilities Co-located with Existing Disturbances	4.1	2.1	154.4	160.6
Acres of Net Development Disturbance[3]	41.6	85.1	270.1	396.8
% Net Development Disturbance	0.4%	0.4%	0.5%	0.5%
Acres of Total Disturbance (Existing Pre-Plan Disturbance[4] plus Net Development Disturbance)	636.5	240.0	13,631.6	14,508.1
Total % Disturbance	6.6%	1.2%	23.2%	16.5%
Total Disruption Density	0.73	0.13	0.37	0.36

Activity During DCA Plan Year 1 from 8/2/2013 - 7/31/2014				
DCA Management Area	**Area A**	**Area B**	**Area C**	**Total**
Number of Well Pads Constructed	0.0	3.0	2.0	5.0
Number of Wells Drilled	2.0	10.0	12.0	24.0
Total Acres Disturbed from Well Pads and Infrastructure	10.5	82.0	182.7	275.2
Acres of Facilities Co-located with Existing Disturbances	0.4	34.2	65.5	100.1
Acres of Net Development Disturbance	10.1	47.8	117.2	175.1
Net Change in % Disturbance	+0.1%	+0.2%	+0.2%	+0.2%
Total % Disturbance	6.7%	1.4%	23.4%	16.7%
Net Change in Disruption Density	+0.00	+0.10	+0.03	+0.04
Total Disruption Density	0.73	0.23	0.40	0.40

FOOTNOTES:

[1]Density and disturbance calculations are available upon request.

[2]Well and infrastructure information is from Chesapeake Energy and their pipeline contractor only. Includes the following: as-built fenced well pad, assumed 30' lease road right-of-way (ROW), pipeline 50' or 60' ROW, power line 16.5' permanent ROW for overhead lines or permitted ROW for underground power lines, and compressor station pad.

[3]Net Development Disturbance equals total acres of well pads and infrastructure minus acres co-located in existing (not new) disturbance.

[4]Existing Pre-Plan Disturbance is the disturbance area delineated on the WYGISC statewide surface disturbance layer that is NOT attributable to a Chesapeake project. Disturbance may be the result of wildfires, agricultural land use, chemical or mechanical treatments, residential development and non-Chesapeake energy activities.

Note: Only 21 of the 28 pads are qualified pads for RT funding purposes. The other 7 Pads are located in existing disturbances. The number of wells includes those wells spudded on or before July 31, 2014.

TABLE 3.1. DCA LEK COUNTS 2012-2014

	2012			2013			2014		
Lek Name	**Status**	**Males**	**Females**	**Status**	**Males**	**Females**	**Status**	**Males**	**Females**
Bill Hall[1]	Active	2	0	Active	0	0	Inactive	0	0
Bill Hall #2	Unknown	0	0	Inactive	0	0	Inactive	0	0
Bill Hall #3[1]	NA	NA	NA	Active	3	0	Active	1	0
East Antelope #1	Active	12	11	Active	8	10	Active	22	11
Flat Top[2]	Active	1	0	Inactive	0	0	Inactive	0	0
Potential Bill Hall South[3]	NA	NA	NA	NA	NA	NA	Active	8	0

Note: The number of males or females observed included in the table are the maximum numbers counted during one observation.
NA indicates not applicable

[1] These leks have been combined and renamed Bill Hall (pers. comm. WGFD)

[2] The Flat Top lek associated with the DCA is in Management Area C so the LEKID is C – Flat Top.

[3] This lek has been confirmed by WGFD (pers. comm. WGFD). This lek is also referred to as the Bill Hall #4 lek.

Table 4.1. DCA RESTORATION PROJECT BUDGET

Total DCA Funds Available August 2013	**$**	**2,808,000**
Expenditures - Plan Year 1		
Baseline Vegetation Survey		
Baseline Vegetation Survey	$	121,007
Sub-Total Baseline Vegetation Survey	$	121,007
Native Sagebrush Propagation		
Sagebrush Seed Collection	$	7,762
Seedling Propagation	$	9,570
Sub-Total Native Sagebrush Propagation	$	17,332
East Antelope Burn Restoration		
UW Graduate Project	$	78,218
2014 Spring Pilot	$	40,735
Sub-Total East Antelope Burn Restoration	$	118,953
Restoration Project Prioritization Plan		
Project Prioritization Planning	$	6,590
Sub-Total Prioritization Planning	$	6,590
Lek Monitoring		
Aerial Sage-grouse Survey	$	48,421
Ground Sage-grouse Count	$	4,476
Sub-Total Lek Monitoring	$	52,896
Other		
WyCF Fee	$	28,080
Sub-Total Other	$	28,080
Total Plan Year 1 Expenditures	**$**	**344,859**
Total Remaining in Budget	**$**	**2,463,141**

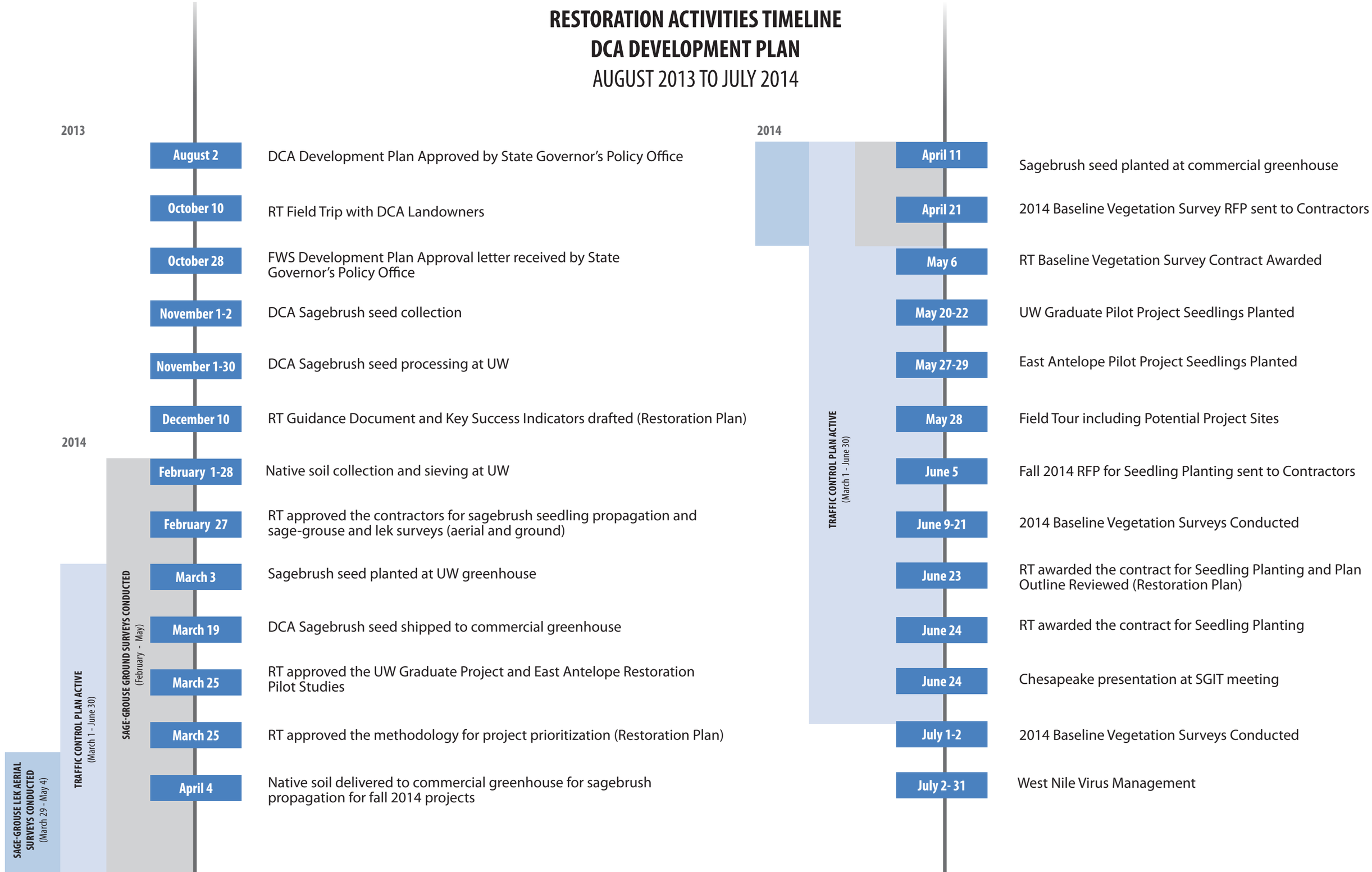
Notes:

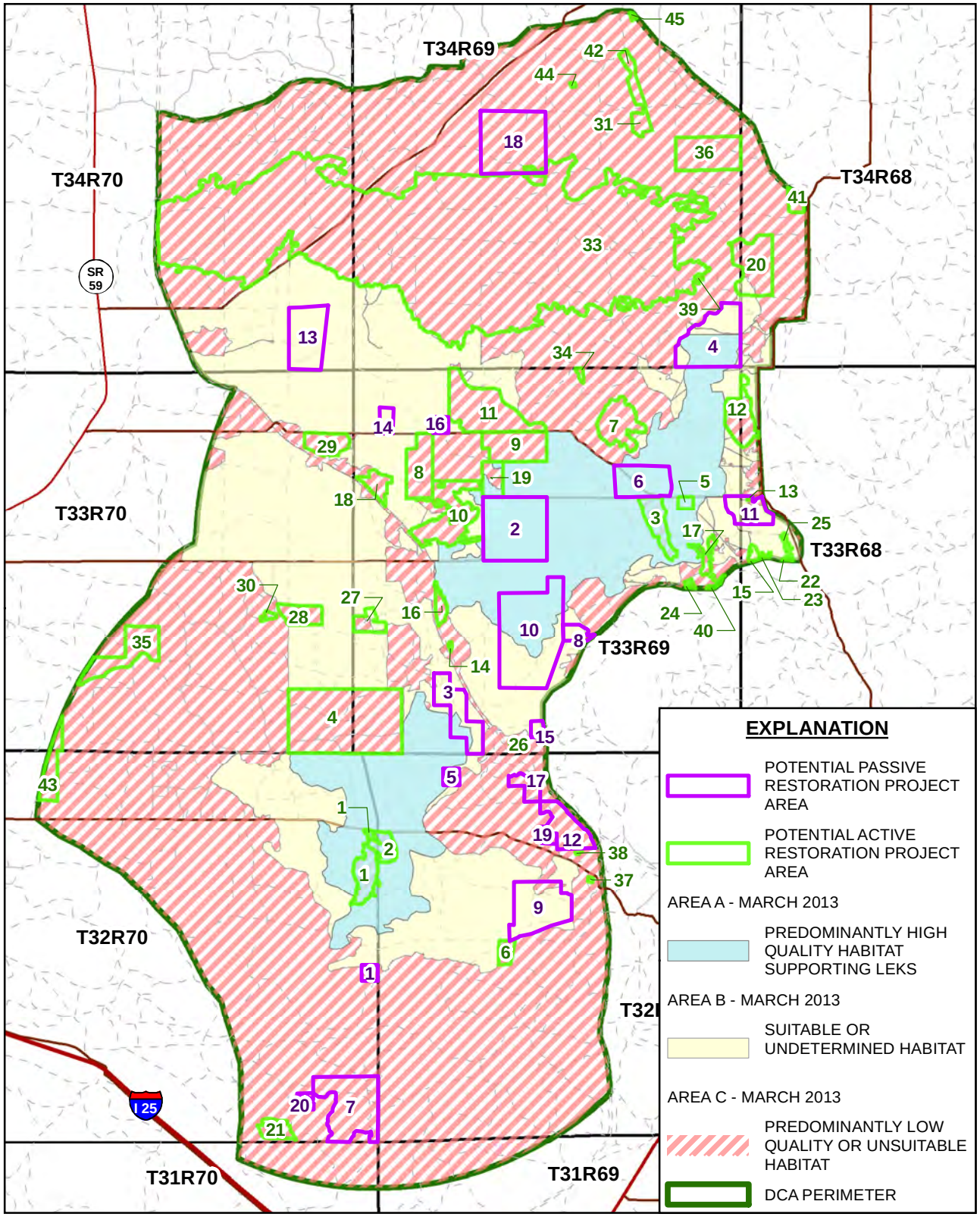
Costs include expenses through July 31, 2014. Funds allocated but not yet expended wil be shown on Plan Year 2 budget.

FIGURES

FIGURE 1

RESTORATION ACTIVITIES TIMELINE
DCA DEVELOPMENT PLAN
AUGUST 2013 TO JULY 2014





N

0 12,000'

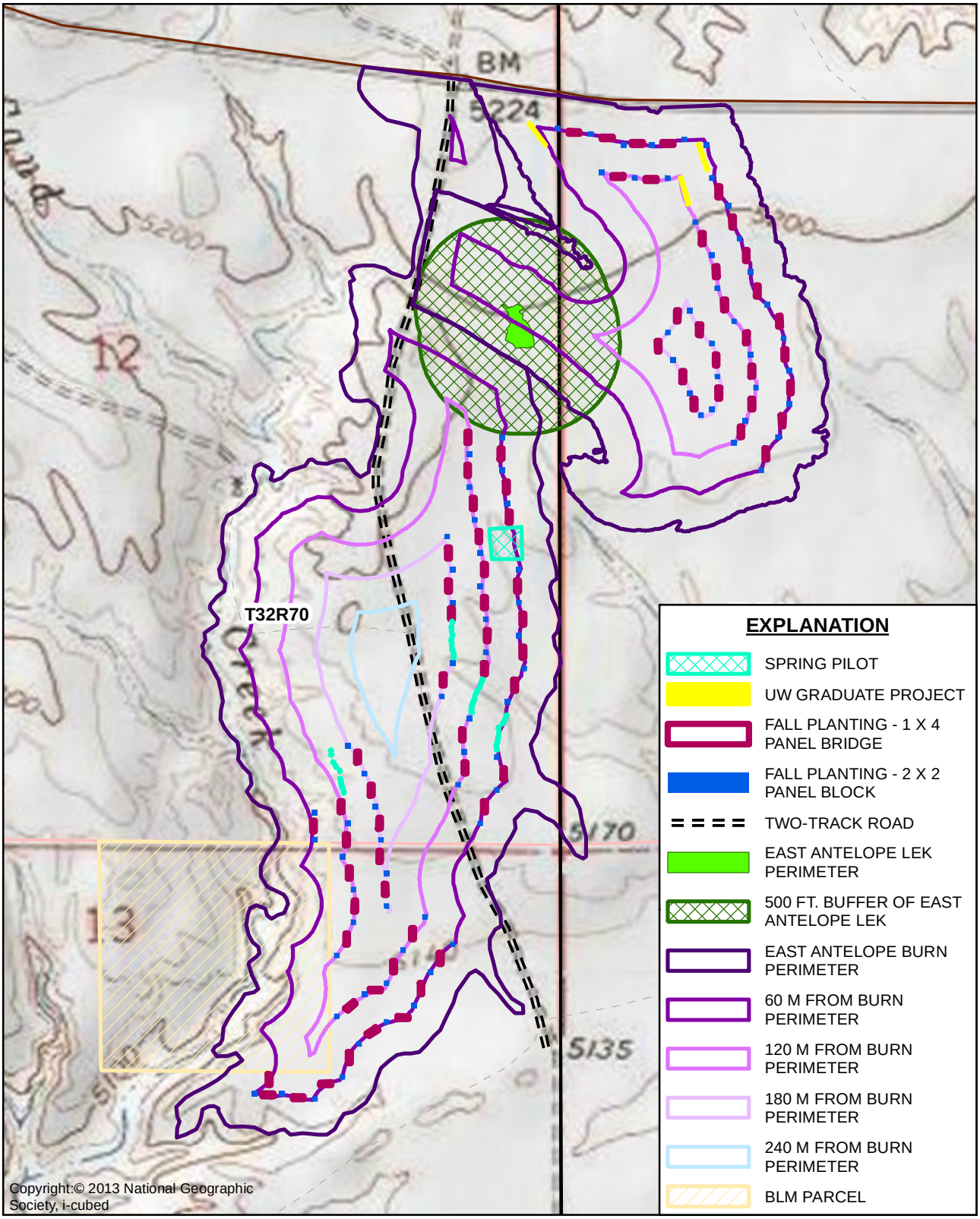
Scale: 1 " = 12,000 '

Date: 10/13/14
File: Active_PassiveRestoratn.mxd

FIGURE 2

POTENTIAL ACTIVE AND PASSIVE RESTORATION AREAS

DOUGLAS CORE AREA
CHESAPEAKE ENERGY



N

0 850'

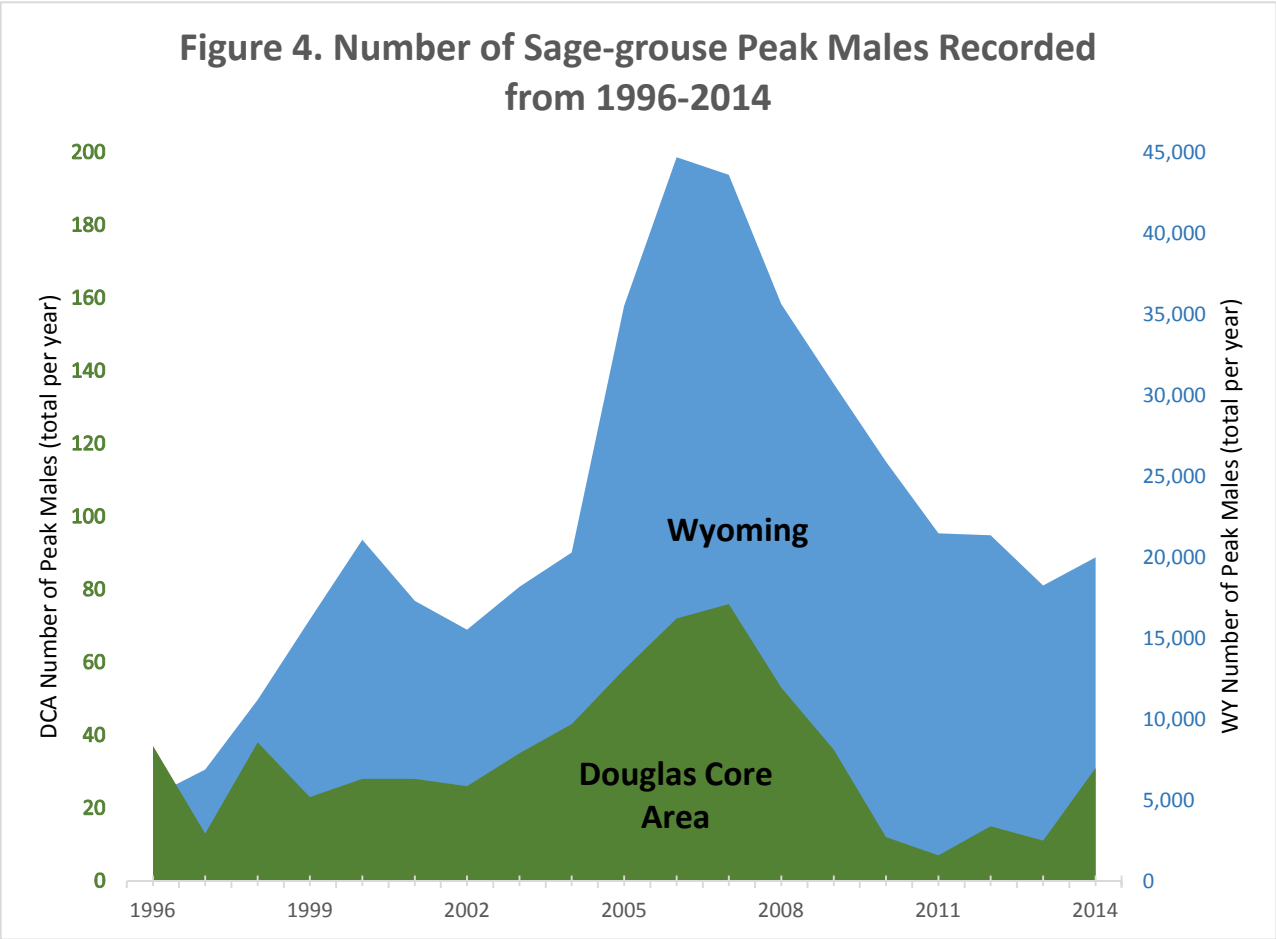
Scale: 1 " = 850 '

Date: 10/13/14
File: 2014EastAntelopeBurnProjDesign.mxd

FIGURE 3

EAST ANTELOPE BURN RESTORATION ACTIVE AREAS 1 AND 2

DOUGLAS CORE AREA CHESAPEAKE ENERGY



Note: Chart represents trend data not sage-grouse population.
Source: WGFD 2014