Greater Sage-grouse Conservation Efforts Database User Guide Version 1.1

A Living Document That Will Be Refined With Use

U.S. Fish and Wildlife Service

September 30, 2014

Contents

CONSERVATION EFFORTS DATABASE EXECUTIVE SUMMARY

The US Fish and Wildlife Service (hereafter, Service) is reviewing the range-wide status of the greater sage-grouse (*Centrocercus urophasianus*; hereafter, sage-grouse) to determine by September 2015 if this species warrants listing as threatened or endangered under the Endangered Species Act (ESA). The combination of voluntary, incentive-based efforts, habitat restoration projects, and management through regulatory mechanisms could have a significant influence on the Service's upcoming status review. To efficiently capture the unprecedented level of sage-grouse conservation throughout the 11-state range of the species, the Service and the United States Geological Survey (USGS) have developed the Conservation Efforts Database (CED). The CED will be the repository of information describing the plans and projects designed to prevent and ameliorate habitat fragmentation and loss, the primary threat factor identified in the Service's 2010 "warranted but precluded" finding (75 FR 13910).

The CED is easy to use. This is a web-based database with a geospatial component that is used to collect information on the plans and projects currently being implemented, or with a high likelihood of being implemented in the near future, to conserve sage-grouse. Developed to provide a secure and transparent way to gather information on sage-grouse conservation efforts, the CED allows multiple users to enter information about their conservation efforts and link them to one or more threats to the species. Conservation plans, individual project descriptions and reports, tabular data from large data sets, spatial data, and documentation of data sources can all be entered in the CED, which is housed on the data sharing platform, LC Map. LC Map (Landscape Conservation Management and Analysis Portal) is managed by the Great Northern Landscape Conservation Cooperative. The CED is user-friendly for all technical levels and was designed with efficiency in mind. No GIS skills are required for entering data on individual plans or projects, and USGS programmers are available to help with batch uploads of large data sets or GIS files.

The CED is secure. Agencies and organizations will work with the Service/USGS CED Team to establish approving officials to determine who can enter and edit data in the CED for their organization. These agency-designated approving officials will also allow for important oversight of data entry.

The CED is transparent. The information on the CED will become part of the public record and may be publicly disclosed as part of the Service's administrative record or in response to a request under the Freedom of Information Act (FOIA).

The CED is simple. Each project or plan entry consists of six main components:

1. Basic project information
2. Location information (easy-to-use onscreen digitizer, or upload shape files)
3. Activity and metrics
4. Threats addressed
5. Upload supporting documents (optional)
6. Implementation and effectiveness information

How will the information be used? Each plan or project entered in the CED will be linked to one or more populations of sage-grouse and to one or more of the following thirteen threats (in alphabetical order) identified in the Conservation Objectives Team final report (hereafter, COT report; USFWS 2013).

- Agricultural Conversion

- Conifer Encroachment
- Energy Development
- Fire
- Free Roaming Equids
- Grazing/Range Management
- Infrastructure
- Isolated/Small Population Size
- Mining
- Noxious Weeds/Annual Grasses
- Recreation
- Sagebrush Elimination
- Urbanization

We will review the information about individual projects and plans entered into the CED to evaluate the extent to which these efforts will ameliorate the threats to the sage-grouse population(s) identified (and in the associated Priority Areas for Conservation (PACs) defined in the Conservation Objectives Team Report [COT report]), with the goal of compiling these results to generate a range-wide assessment of sage-grouse conservation efforts. The CED does not include information about the distribution or severity of threats; that information will be compiled separately by the Service.

An overview of some of the basic components of the CED is provided in Fig. 1. This schematic is not all-inclusive, but provides general information on the structure of the database. For more information, please visit https://conservationefforts.org

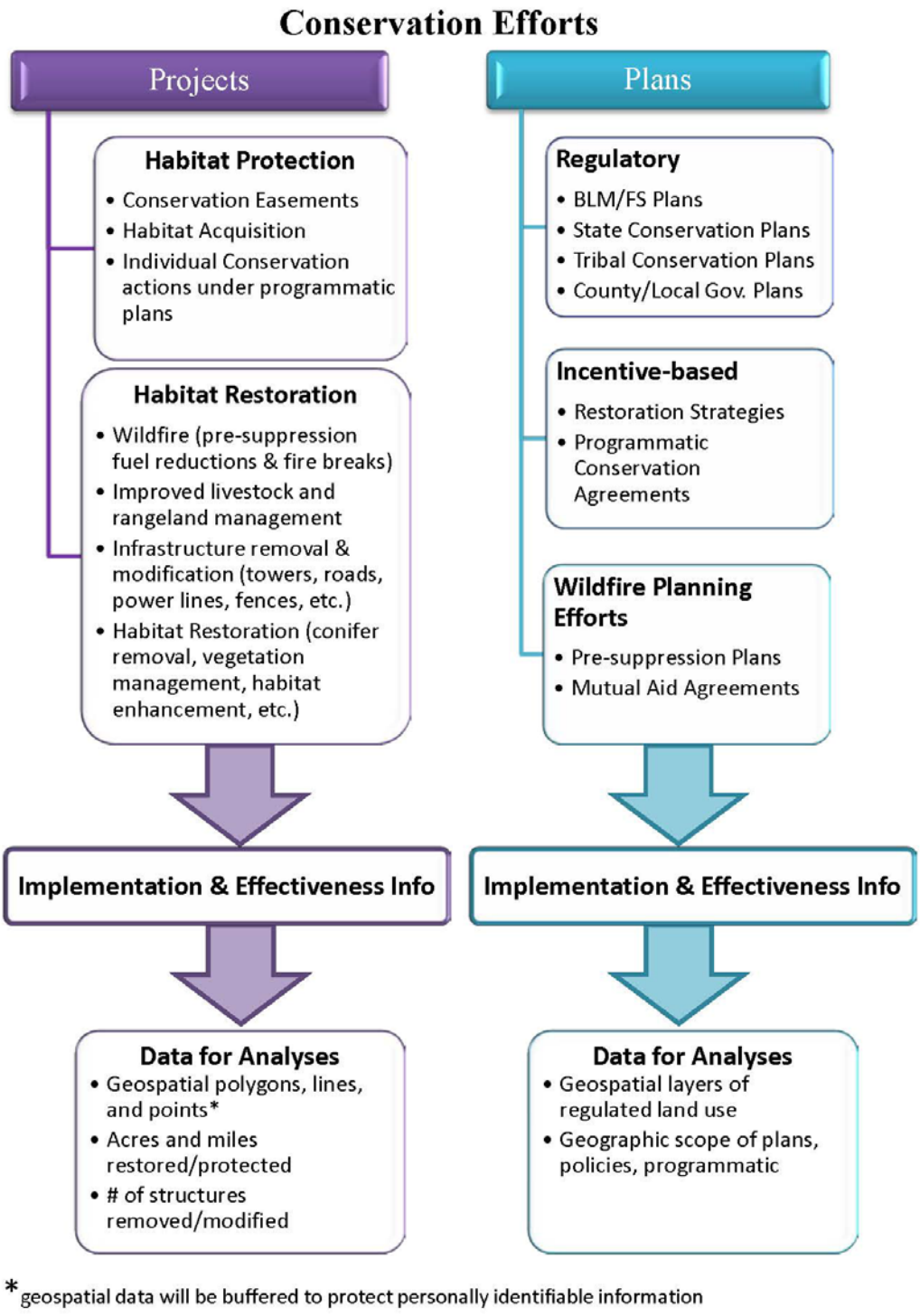

Figure 1. Simplified portrayal of the CED structure and information flow.

1.0 CED Data Providers

Conservation partners throughout the species' range, spanning 11 states, are undertaking unprecedented actions to conserve sage-grouse and sage-steppe habitats. These conservation actions include landscape-scale Federal and State management plans that provide regulatory mechanisms, incentives, and/or strategic approaches to conserve important sage-grouse habitat as well as on-the-ground habitat restoration projects such as addressing piñon-juniper encroachment, improving wet meadow habitats, and installing fire breaks. An important element of our status review will be a compilation of the conservation efforts currently being implemented, or planned for implementation in the near future, to conserve sage-grouse. The status review will also contain an analysis of the effectiveness of the conservation efforts in ameliorating the threats to the species (described in detail in the Service's 2010 petition findings; 75 FR 13910). The Conservation Efforts Database (hereafter, CED) was developed to collect this information from partners in a standardized way so that we can assess the distribution of conservation activities of different kinds and evaluate their effectiveness in ameliorating threats range-wide.

1.1 CED Data Providers

Federal agencies, State agencies, Tribal governments, local governments, non-governmental organizations (NGOs) members of industry, universities, and others will all be able to enter information describing their conservation efforts in the CED.

Data providers are asked to enter information describing the conservation plans and projects they have implemented or developed that will conserve sage-grouse, and also provide information on the implementation and effectiveness of those conservation efforts. Section 2.2 and 2.3 provide more detailed information on the elements of those three components.

1.2 CED Privacy and Transparency

All data in the CED will become part of the public record and may be publicly disclosed as part of the Service's administrative record or in response to a request under the Freedom of Information Act (FOIA).

All interested persons (general public) will be able to view a scalable map of all conservation efforts entered in the CED. An example is provided in Figure 2. The finest viewable scale will be set at 1 inch = 1 mile. . This synoptic map will provide an overview of the database contents and potentially generate further interest in local restoration and conservation efforts. A point on the map (centered for polygons and lines entered by registered users) will represent a conservation effort, or database record, for that location. The following information will be visible to any database user for each conservation effort on the map:

- Effort Identifier Number
- Effort Name
- Subactivity
- Total acres/miles/number of structures

- Implementing Party and contact information

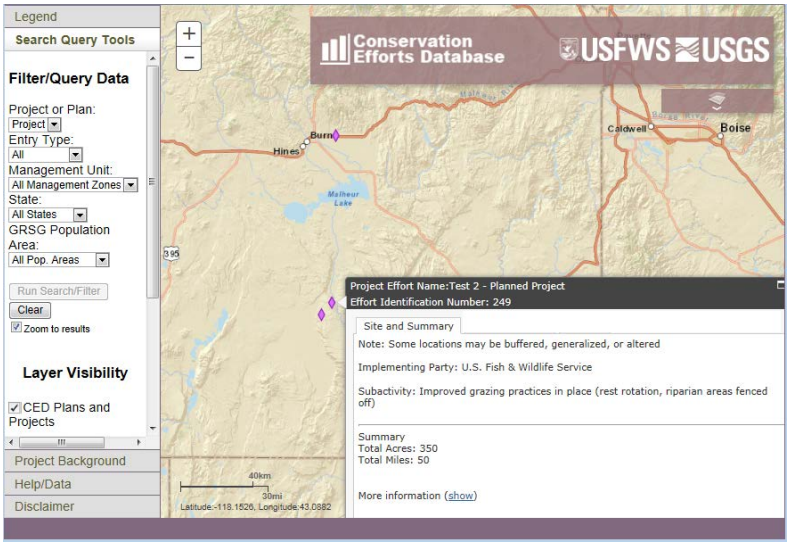

Figure 2. Sample Map Viewable by Public

Registered CED users that provide data in the CED will be able to generate reports and maps for the data that they have provided. No users of the CED other than the Service may generate comprehensive reports from multiple database records. However, all interested individuals or parties will be able to contact any implementing party to request additional information about a plan or project. If a CED data provider wants information in the CED that was provided by a different CED data provider, they need to obtain that information directly from the data owner. This will provide security for CED data providers and allow for them to communicate directly with those requesting additional information and provide responses to those requests.

2.0 CED Contents and Structure

The Service is seeking information on conservation efforts that have been implemented during the timeframe of 2009-2014 and those conservation efforts that have a high likelihood of being implemented in the near future. If conservation partners have data on significant conservation efforts that were not provided or were not yet effective prior for the 2010 finding, the Service will also accept data prior to 2009.

The CED is designed to capture conservation efforts that will help reduce or remove threats or otherwise improve the status of sage-grouse. As defined in the Policy for Evaluation Conservation Efforts (PECE Policy; 68 FR 15100, March 28, 2003), conservation efforts include plans such as conservation agreements, conservation plans, management plans, and specific actions to implement those plans (such as juniper removal projects, wet meadow restoration, and

installation of fire breaks). Activities such as conducting population surveys, mapping habitat, monitoring plans, public outreach, and holding meetings of local working groups to design projects, while important, are not intended for entry in the CED.

Each CED record identifies an effort type, activity, subactivity, and one or more threat to provide a structure for organizing information about sage-grouse conservation efforts. Project efforts also identify quantifiable metrics such as acres or miles of habitat restored. Individual subactivities or metrics listed, whether related to an on-the-ground effort or related regulatory mechanism/plan, are not necessarily applicable everywhere as the threats impacting sage-grouse vary across the landscape in presence and intensity. There are no implications for not reporting data that does not apply to, or is not available for, each conservation partner.

2.1 Implementation and Effectiveness Information

The Service will need some basic information about the plan or project entered into the CED to determine if the plan or project has been fully implemented and if it has been demonstrated to be effective in ameliorating one or more threats to sage-grouse. Information on the conservation effort objectives and effectiveness are required for all conservation efforts.

Effort Objectives: In addition to the general project or plan objective, the Service is seeking a narrative explanation of how the effort intends to address one or more threat and/or achieve one or more conservation objective identified in the the Conservation Objectives Team (COT) Report.COT Report

For example, a shrub-steppe habitat restoration project may have one or more of the following general objectives:

- Restore key components to enhance high-quality habitat for sage-grouse.
- Restore native bunchgrasses and forbs to an abundance and diversity matching the natural range of variability of reference sites.
- Restore productive rangelands that also support a diversity of wildlife.

While the above bulleted statements ae valid objectives for restoring habitat, the Service requests that our conservation partners also specify how the achievement of those objectives will help reduce or ameliorate one of the threats identified in the COT report for the site specific conditions of the restoration effort and in the context of the COT Report threats. For example, would achievement of the above restoration objectives at the site being reported help reduce threats from Noxious Weeds/Annual Grasses , and/or allow for grazing management that also conserves the essential habitat components for sage-grouse (e.g. shrub cover, nesting cover), and/or minimize fire risk by reducing invasive annual grasses. It will also be helpful if the narrative information in the Objectives text box explained how the effort would accomplish one of the Conservation Objectives outlined on pages 31-52 of the COT Report.

Effort Effectiveness: The Service is also seeking information on whether the efforts were successful in fulfilling the stated objective, and effective in ameliorating or reducing one or more threats to sage grouse.

In the CED, three options are available for answering the question: Was the effort effective?

- Yes, project plan or project is already effective.
- Highly Likely, project or plan is reasonably certain to be effective given adequate time.
- Uncertain or Unlikely, project or plan is uncertain or unlikely to be effective based on current information.

In cases where the effort has been deemed effective, or is highly likely to be effective given enough time, we are seeking narrative information explaining how and why that is the case. If monitoring reports or other supporting documents are available, we encourage those be uploaded in Step 3.

Restoration of shrub-steppe habitat is a process that takes repeated interventions to control weeds and restore diverse species assemblages, allow natives to disperse in from adjacent areas, and achieve compositional and structural objectives. Many variables influence the effectiveness of shrub-steppe habitat restoration projects, and it takes many years to achieve functional habitat for sage grouse. Recognizing that that few, if any, restoration efforts implemented since 2009 will have achieved functional habitat, we encourage partners to report effectiveness based on established incremental objectives and conducted timely monitoring to demonstrate effectiveness for that point in time.

Example incremental objectives and effectiveness include:

- Year 1 Objective: Greater than 80% of all seeded species will be established on site. Cover of seeded bunchgrasses will be greater than 15%. Annual weeds will be less than 5% of total cover. Monitoring indicates these objectives were met.
- Year 3: All seeded species will be established. Bunchgrass cover will be greater than 35%. Annual weeds will be less than 2%. Monitoring was conducted, corrective actions were implemented to treat annual weed coverage, and all Year 3 objectives were met.
- Year 10: Greater than 80% of all species on the reference site species list will be present within the restoration area. Too early to tell, but based on previous years monitoring and corrective actions, Year 10 Objectives are highly likely to be met.

If specific, measurable, time-bound, incremental objectives are not available, other information, such as the bullets listed below, could help explain why the restoration effort is on the correct trajectory to provide functional habitat given adequate time:.

- Was the effort part of a broader strategic process that addresses the sagebrush ecosystem as a whole, and that provides explicit rationale for spatial prioritization of best management practices to meet the stated objectives?
- Were established and proved techniques used for soil prep and seeding rates?
- Was periodic weed control provided?
- Was herbivore protection in place?
- Was there adequate precipitation to establish roots and survive the following summer, or was supplemental water provided?
- Was a follow-up monitoring and a corrective action strategy in place, particularly for sites with low precipitation, shallow soils, and/or areas with steep, southwest-facing slopes?
- Were locally-sourced seeds and/or seedlings used in the restoration effort?

The questions used in the CED to elicit implementation and effectiveness information CED are displayed in Fig. 3.

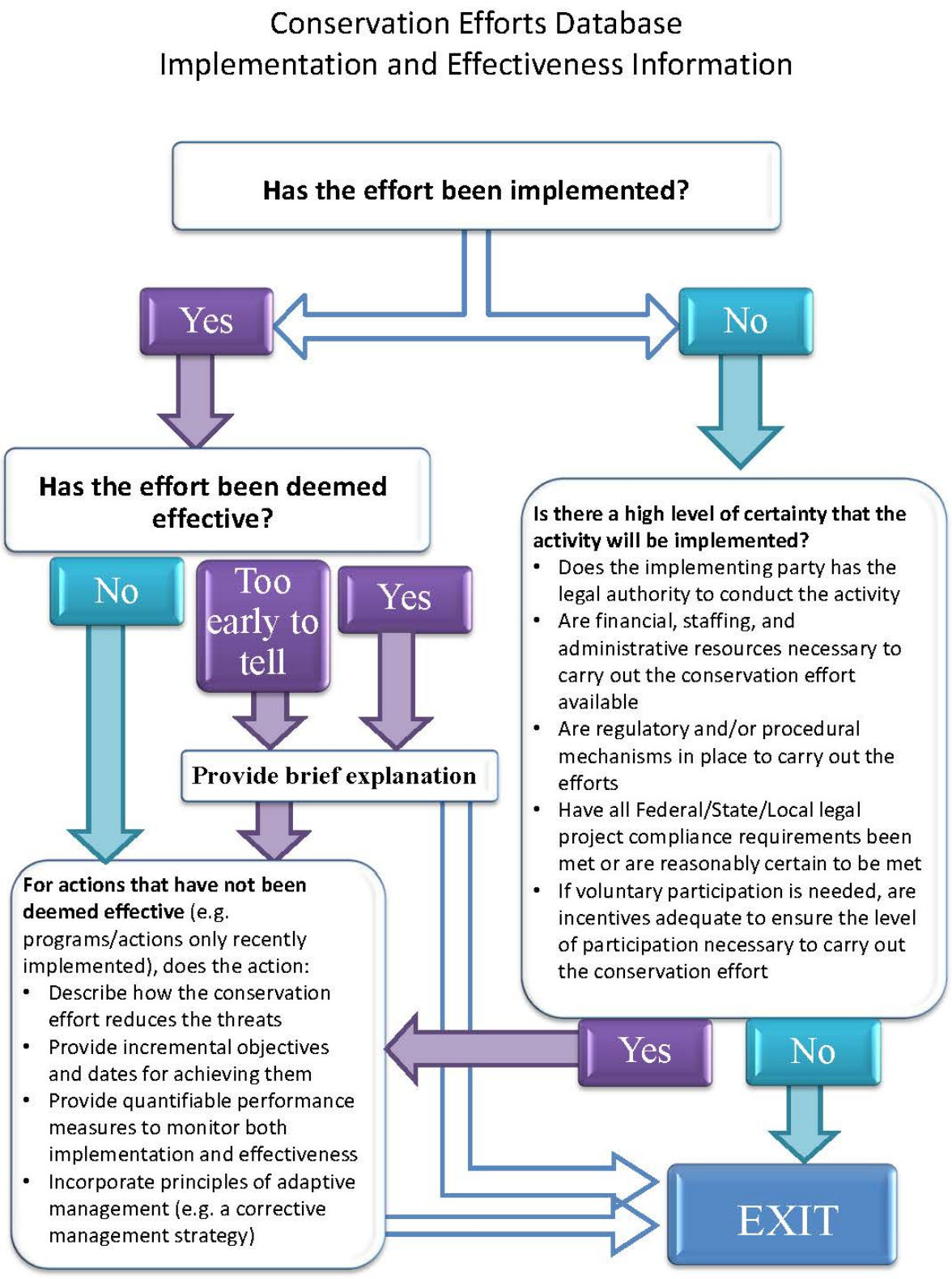

Figure 3. Implementation and Effectiveness Information

2.2 Plan Information

As stated in the COT Report, the goal for long-term conservation of sage-grouse and healthy sagebrush habitats (including native perennial grass and forb communities) is achieved by maintaining viable, connected, and well-distributed populations and habitats across the species' range, through threat amelioration, conservation of key habitats, and restoration activities. One of the objectives to achieve this goal is to "develop and implement state and federal sage-grouse conservation strategies and associated incentive-based conservation actions and regulatory mechanisms."

Recognizing that threats can be ameliorated using a variety of tools within the purview of states and federal agencies, including incentive-based conservation actions or regulatory mechanisms, the CED organizes information about planning efforts into three broad categories (Fig. 4)

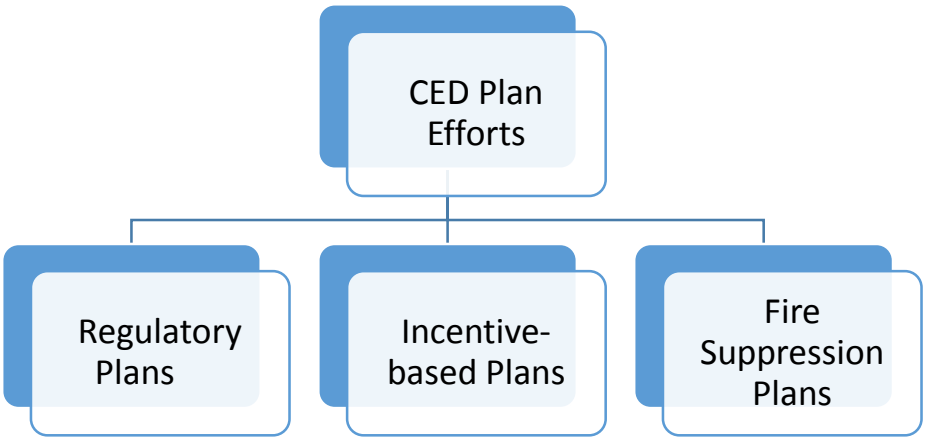

Figure 4. Types of Planning Efforts captured in the CED.

We offer the following guidelines for identifying plans for entry in the CED:

Regulatory Plans: Plans with regulatory authority (e.g., laws, regulations, ordinances) that define land use designations/allocations or control activities that occur in sage-grouse habitat. Examples include but are not limited to: Federal Land Use Plans, State Management Plans, and County Zoning Ordinances.

Incentive-based Plans: Proactive, voluntary conservation plans that provide a geospatial prioritization, and/or schedule of implementation for practices and activities needed for the long-term conservation of sage-grouse and healthy sagebrush shrub and native perennial grass and forb communities. Examples include, but are not limited to: Programmatic Candidate Conservation Agreements with Assurances (CCAAs), Candidate Conservation Agreements (CCAs), Programmatic Restoration Plans, and Natural Resources Conservation Service Strategic Plans. Incentive-based programs can provide a strategic approach for prioritizing opportunities with landowners.

Fire Suppression Plans: A mix of land use planning efforts and preparation efforts that could be considered "projects" but for the lack of an on-the-ground component, this planning category is designed to capture the important fire suppression actions such as geospatial plans to prioritize fuels management and habitat recovery/restoration designed to improve desirable habitat with greater

resistance to invasive annual grasses and/or resilience after disturbances such as wildfires. This category also includes planning efforts such as agreements to share fire response resources, or pre-positioning those resources in advance of wildfires.

When entering planning information in the CED, the following three elements are required:

1. The geospatial footprint of the planning effort.
2. A narrative explanation of what the plan entails (suggested topics presented below).
3. Information on implementation and effectiveness.

2.2.1 Regulatory Mechanisms, Plans, and Policies

2.2.1.0 BLM and USFS Federal Land Use Plans

The Bureau of Land Management (BLM) and the U.S. Forest Service (USFS) have developed 15 Environmental Impact Statements that will inform the promulgation of almost 100 Land Use Plans. The National Operations Center (NOC) is working with the Service and USGS CED Team to upload the geospatial data layers of the land use allocations/designations that are intended to reduce or ameliorate threats to sage-grouse.

2.2.1.1 Other Federal, State, Tribal, County, and Local Government Conservation Plans

Because Federal, State, Tribal, county, and local governments manage actions to address multiple threats, we encourage these partners to enter a separate record for each threat addressed in their regulatory plans. This will allow for threat-specific map layers and threat-specific implementation and effectiveness information to be entered into the CED. For example, a State fish and wildlife management agency is encouraged to upload a shape file or digitize a polygon in the CED for the elements of their conservation plan that address conifer encroachment, and complete the rest of the CED record with information and supporting documents specific to their efforts to manage conifer encroachment. Following the same process, they would then complete a CED record for efforts related to impacts of mining, another for fire, and so forth for each threat addressed in the plan.

Suggested Naming Convention for Plans addressing multiple threats:

Plan Name:Fire

Plan Name:Mining

Plan Name:Urbanization

We offer the following suggested approach for the threat-specific narratives entered in the CED.

In Step 1 – Provide information as requested

In Step 2 - Activity Information Objectives and Effects narrative text boxes:

- Summarize how the plan addresses the suggested Conservation Objective listed in the COT Report
- Summarize policies/regulations/ordinances to prevent/minimize/ameliorate the threat

In Step 3 - Documentation

- Upload relevant documents supporting the summary information provided in Steps 2 and Steps 5

In Step 4 – Check land ownership boxes as appropriate

In Step 5 – Implementation Information narrative box on effectiveness

- Summarize funding source(s) and funding plan
- Describe any obstacles to full implementation of the plan
- Describe any successes in implementing the plan (for example, a new transmission line was installed outside of sage-grouse habitat after initially being planned for installation in high quality sage-grouse habitat, a project with a 100-acre footprint was redesigned to only have a 10-acre footprint, etc.)
- Describe implementation plan for the next five years
- Describe plans for monitoring effectiveness
- Include any additional information needed to describe the plan

2.2.2 Wildfire Pre-Suppression Planning Efforts

As briefly described in Section 2.2, Wildfire Pre-Suppression Planning efforts can range from conservation strategies that strategically identify priority areas for fuels management, fuel treatments, fuel breaks, anchors for suppression, and/or coordinated fuels management approaches cross-jurisdictional boundaries to share resources, pre-position resources, or increase water availability through installation of helicopter refill wells or water storage tanks.

This component of the CED is designed to capture the single- or multi-agency plans and/or programmatic management approaches to strategically implement wildfire pre-suppression actions. Implementation of on-the-ground efforts implemented under these plans will be captured in the Project section of the CED.

2.2.3 Incentive-based (Non-regulatory) Conservation Strategies

Incentive-based conservation strategies play an important role in the conservation of sage-grouse, especially on private lands. Because of their conservation potential, programmatic and/or large scale non-regulatory conservation strategies will be important entries in the CED. Examples include Voluntary Federal, State, NGO, Local and Tribal habitat restoration programs, Programmatic Candidate Conservation Agreements, Programmatic Candidate Conservation Agreements with Assurances, Programmatic Restoration Plans for Invasive Plants, and Programmatic Reclamation Plans.

2.3 Project Information

2.3.1 Mitigation

Mitigation strategies or programs are designed to avoid, minimize, rectify, reduce over time, and compensate impacts to sage-grouse (i.e. the mitigation hierarchy). Mitigation strategies or programs are typically part of a larger conservation plan or program, and as such, will be captured in the CED as a regulatory mechanism, plan, or policy. Individual project-specific minimization or avoidance measures should not be reported as conservation projects in the CED. However, application of effective minimization and avoidance measures will be important information to demonstrate the effectiveness of conservation plans. Examples of minimization and avoidance measures that are part of a broader conservation plan should be described in Step 5 – Implementation Information for the overall conservation plan.

Individual compensatory mitigation projects can be reported in the CED as project-specific conservation efforts. Consider the following example: a conservation easement is placed on a ranch with high quality sage-grouse habitat, protecting that ranch from fragmentation and development threats in perpetuity as compensatory mitigation for the siting of a new communication tower in general habitat. The conservation easement would be entered in the CED, whereas any applicable minimization measures such as construction timing restrictions, or footprint reduction stipulations for the new communication tower would not be entered in the CED as a specific conservation effort.

2.3.2 Activities, Subactivities, and Metrics

Table 1 provides a list of the quantitative project metrics used in the CED, organized by 'Activity' and 'Subactivity'. Users will have the option to provide information related to seasonal habitat (breeding/nesting, brood-rearing, winter) where known. If seasonal habitat designations are unknown, users will provide metrics based on available information.

A project can only be associated with one activity and one subactivity. In cases where a conservation effort includes several activities and subactivities (e.g., a comprehensive restoration action on a land parcel to decommission an old telecommunication road, revegetate that road, and place a perpetual conservation easement specifically for sage-grouse on that parcel), the data provider is encouraged to either enter multiple CED effort records (one for each sub-activity or action), or to enter the project for the highest conservation value for the area. Please let the CED Team know if you have multiple projects that include multiple subactivities so we can revisit this if needed.

Not all relevant information will be captured by the metrics associated with each subactivity, such as miles of fence marked or acres of juniper removed. Therefore, in addition to standardized data fields and metrics, qualitative information will be gathered from text box entries and from supplemental documents that can be uploaded by registered CED users. Narrative reports, plans, monitoring results, and other documents will provide essential context for information provided in standardized format and other valuable information about each conservation effort entered into the CED.

Table 1. List of quantitative project activities, subactivities, and metrics.

Project Activity	Project SubActivity	Project Metrics	Examples and Information to include in narrative boxes
Habitat Protection: Conservation Easement	Habitat Protected by Easement for Long-Term Conservation	Total Acres (if known:Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres), Length of agreement, Early termination penalty (yes/no) Percent (based on acres) of easement that protects against Sagebrush Elimination, Agricultural Conversion, Energy Development, Mining, Infrastructure, Improper Grazing/Range, Management, Recreation, Urbanization/Subdivision, Development	Long-term or permanent easements such as those provided through the Grassland Reserve Program, Farm and Ranchlands Protection Program, Wetland Reserve Program, and the 2014 Farm Bill Agricultural Conservation Easement Program, or provided through other Federal, State, or NGO programs. Lands enrolled in rental-payment programs such as the Conservation Reserve Program and State Acres For Wildlife Enhancement (SAFE) could also be entered as a conservation effort, provided that the lands were planted to native grasses, forbs, and native arid-land shrubs and/or native shrubs (particularly big sagebrush) have seeded-in from adjacent shrubsteppe.
Habitat Protection: Habitat Acquisition	Habitat Protected by Acquisition for Long-Term Conservation	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres Percent (based on acres) of acquisition that protects against: Sagebrush Elimination, Agricultural Conversion, Energy Development, Mining, Infrastructure, Improper Grazing/Range,	Permanent protections such as acquisitions of lands for governmental or NGO programs where the purpose is for sage-steppe habitat wildlife dependent species.

		Management, Recreation, Urbanization/Subdivision, Development	
Restoration: Conifer Removal	Conifer Removal: Phase 1	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres	Projects to remove piñon pine and/or juniper in areas with <10% canopy cover and intact sage brush and understory vegetation present, shrubs and herbs are the dominant vegetation that influences ecological processes on the site.
	Conifer Removal: Phase 2	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres	Projects to remove piñon pine and/or juniper in areas where trees are co-dominant with shrubs and herbs and all three vegetation layers influence ecological processes on the site.
	Conifer Removal: Mixed Phase 1 and 2	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres	Projects that remove a mix of Phase I and II together
	Conifer Removal: Phase 3	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres	Projects to remove piñon pine and/or juniper in areas where trees are the dominant vegetation and the primary plant layer influencing ecological processes on the site. Selectively conducted to improve connectivity.
Restoration: Wildfire Pre-suppression	Fuel Reduction Treatments	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres	includes projects that are designed to change vegetation composition and/or structure to modify fire behavior characteristics for the purpose of aiding in fire suppression and reducing fire extent.

Efforts	Fuel Breaks	Total Miles/Breeding and Nesting Miles/Brood-Rearing Miles/Winter Miles	Fuel breaks involve removing flammable vegetation in a swath wide enough to prevent a fire from spreading. Roads and natural fuel breaks can sometimes be incorporated into the design. If the project or plan has reduced the threat of wildfire by creating fuel breaks as a habitat protection measure, please provide a summary in which you respond to the following questions: what type of fire break(s) was/were created? What was the reason for the siting/placement of the firebreak? How will the firebreak be maintained?
Restoration: Infrastructure Removal, and Modification	Structure Removed: Communication Tower	Number Removed Total	Number of cell towers removed/moved out of sage grouse habitats.
	Structure Removed: Wind Turbines	Total Acres	Acres of habitat restored after wind turbines removed
		Number Removed Total	Number of wind turbines removed/moved out of sage grouse habitats,
	Structure Removed: Road	Total Miles	Miles of road removed or de-commissioned not associated with rangeland management
	Structure Removed: Power line	Total Miles	Miles of power line removed
	Structure Removed: Other	Total Acres	Acres, miles, or total number of other structures that have not been previously defined. Do not enter rangeland management structures here.
		Total Miles	
		Number Removed Total	
	Power line Burial: Transmission Line	Total Miles/Breeding and Nesting Miles/Brood-Rearing Miles/Winter Miles	Miles of large transmission line buried.
	Power line Burial: Distribution Line	Total Miles/Breeding and Nesting Miles/Brood-Rearing Miles/Winter Miles	Miles of distribution line buried.

	Power line Retrofitting / Modification: Transmission Line	Total Miles/Breeding and Nesting Miles/Brood-Rearing Miles/Winter Miles	Miles of transmission power lines modified to promote sage-grouse conservation.
	Power line Retrofitting / Modification: Distribution Line	Total Miles/Breeding and Nesting Miles/Brood-Rearing Miles/Winter Miles	Miles of distribution power lines modified to promote sage-grouse conservation.
	Fence Modification	Total Miles/Breeding and Nesting Miles/Brood-Rearing Miles/Winter Miles	Miles of fence modified to promote sage-grouse conservation. Do not include fences modified as part of an improved grazing/range management strategy.
	Fence Marking	Total Miles/Breeding and Nesting Miles/Brood-Rearing Miles/Winter Miles	report miles of fence marked in areas with high potential for sage-grouse strikes/collisions documented. Consider entering as a "batch" polygon rather than multiple separate "line" geospatial projects.
	Fence Removal	Total Miles/Breeding and Nesting Miles/Brood-Rearing Miles/Winter Miles	report miles of fence removed in areas with high potential for sage-grouse strikes/collisions documented. Consider entering as a "batch" polygon rather than multiple separate "line" geospatial projects.
Restoration: Livestock & Rangeland	Allotment Closure	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres	Acres of habitat permanently closed from livestock grazing

Management	Improved grazing practices in place (e.g. rest rotation, riparian areas fenced off)	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres	Enter total acres of rangeland/ranchland being managed according to NRCS Sage-Grouse Initiative grazing practices and range management recommendations or other State or Federal agency recommendations including: 1. Rotating livestock to different pastures, while resting others to establish a diversity of habitat types. 2. Changing seasons of use within pastures to ensure all plants have the ability to reproduce. 3. Leaving residual cover (grass from the past season) to increase hiding and nesting cover for sage-grouse. 4. Managing the frequency and intensity of grazing to sustain native grasses, wildflowers, and shrubs. 5. Managing livestock access to water to ensure healthy livestock and healthy
	Road closure	Total Miles/Breeding and Nesting Miles/Brood-Rearing Miles/Winter Miles	Enter miles of roads closed or de-commissioned to improve rangeland health/sage-grouse habitat
Restoration: Recreation Management	Road and Trail closure	Total Miles/Breeding and Nesting Miles/Brood-Rearing Miles/Winter Miles	
	Reroute Trail	Total Miles/Breeding and Nesting Miles/Brood-Rearing Miles/Winter Miles	
Restoration: Population Augmentation	Translocation	Number Birds Total	
Restoration: Wild Equid Management	Wild Equid Population Control	Number Wild Equids Total	Number of free-roaming equids treated with population control method s in order to achieve properly functioning condition (PFC) for riparian areas and rangeland health standards (RHC) for uplands
	Wild Equid Gather	Number Wild Equids Total	Number of free-roaming equids gathered for relocation in order to achieve properly functioning condition (PFC) for riparian areas and rangeland health standards (RHC) for uplands

Restoration: Habitat Restoration	Habitat Restoration following wildfire disturbance	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres	Acres restored to functional sage-grouse habitat. Enter acres that have been treated post-fire to restore functional sage-grouse habitat. Recognizing that multiple treatments and multiple steps are often needed to restore shrub-steppe habitat, please describe in objectives box, which step the restoration treatment is currently undergoing (e.g. chemical treatment of annual grasses, seeding, planting sage brush seedlings, etc.), and report the project as implemented when the habitat is of conservation value for sage-grouse.
	Habitat Restoration	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres	Acres restored to functional sage-grouse habitat. Enter acres that have been treated to restore functional sage-grouse habitat. Recognizing that multiple treatments and multiple steps are often needed to restore shrub-steppe habitat, please describe in objectives box, which step the restoration treatment is currently undergoing (e.g. chemical treatment of annual grasses, seeding, planting sage brush seedlings, etc.), and report the project as implemented when the habitat is of conservation value for sage-grouse.
Restoration: Habitat Reclamation Efforts	Mine reclamation with goal of sage brush restoration	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres	Provide acres of functional sage-grouse habitat that was restored to remove or reverse the effects of mining operations on the landscape.
	Oil and gas reclamation with goal of sage brush restoration	Total Acres/Breeding and Nesting Acres/Brood-Rearing Acres/Winter Acres	Provide acres of functional sage-grouse habitat that was restored to remove or reverse the effects of oil and gas operations on the landscape.

3.0 Entering Data in the CED

Data terms are defined as follows in the CED:

- Metadata = the who, what, when, where, and how behind the data. Metadata for individual efforts is captured as the plans are being entered. For example, who=project contact, when=effort start and finish dates, etc. Metadata will need to be provided during batch uploads of tabular or geospatial data in order to comply with Federal Geographic Data Committee guidelines.
- Attribute data = the information requested in the CED for a conservation plan or project (e.g. activity, sub-activity, threat the effort is intended to help ameliorate, effectiveness information, etc.). For individual efforts, the attribute data is required information to enter the plan or project. When batch uploading tabular or geospatial data, some attribute data may be missing and will need to be provided.

3.1 Individual Plan and Projects

Detailed instructions for entering individual plans and projects are provided in a separate document: Greater Sage-grouse Conservation Efforts Database Help Document Version 1.0. The Help Document is also available under the Help tab of the CED.

Recognizing the limited resources and working relationships our conservation partners have, we encourage the following prioritization approaches for entering conservation efforts in the CED:

- Large and/or significant efforts that are most relevant to addressing threats to sage-grouse within the partners' realm of influence are the highest priority efforts to enter in the CED.
- If partners worked together to develop or implement an on-the-ground project, we suggest that the partner that provided the majority of the funds serve as the lead and enter the project information into the CED, if practical. Partners are encouraged to work together to determine the most efficient approach for entering projects that were implemented through partnership efforts.
- Consider the merits of consolidating multiple small projects involving similar activities into one larger project for data entry purposes. For example, if multiple fence marking projects have occurred in one targeted area and have the same implementation and effectiveness information, the registered CED user could combine those individual fence marking actions into one project entry for the CED. This would save time and effort by creating one project polygon that describes the total of the fence marking projects, rather than creating multiple individual lines with repetitive project information for each fence that was marked.

3.2 Batch Uploads

Many conservation partners will find it more efficient to batch upload information from their existing databases rather than entering data for individual projects. The Service/USGS CED Team will be available to assist with the batch uploading process. The first step will be to contact the Service CED Team Lead, identified in the contact section of the CED. A crosswalk between the two will be necessary because field names and values between the fields in the partner's database and the fields in the CED

will be different. An Excel spreadsheet providing additional information can be developed as this intermediary step or crosswalk; this spreadsheet can then be used to populate the appropriate fields in the CED. A simplified schematic is illustrated in Figure 4.

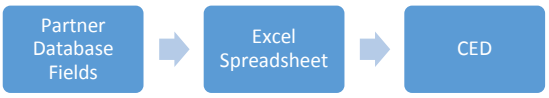

Figure 4. Simplified batch upload schematic

3.3 Geospatial Data

CED documentation and spatial data are housed on the Landscape Conservation Management and Analysis Portal (LC Map), which is built upon ScienceBase, a collaborative scientific data and information management platform. LC Map is managed by the Great Northern Landscape Conservation Cooperative.

Geospatial data can be uploaded directly into ScienceBase as indicated in Appendix A of the Help document (located under the Help tab of the CED). The organizational information provided by agencies and organizations for the CED user registration process will also be used to organize ScienceBase folders for agencies and organizations to post their geospatial data in ScienceBase.

4.0 How will data in the CED be used?

Under the ESA, the Service must base its decision on whether to list the greater sage-grouse on the best available data. In addition, we must evaluate the threats to greater sage-grouse in the context of actions and plans that are in place, or which are reasonably certain to be in place, to ameliorate those threats. The CED was designed to collect information on conservation efforts in an organized and spatially explicit fashion so that we could better understand the full extent to which conservation actions are ameliorating threats to sage-grouse populations. The specifics of how we will quantitatively or qualitatively assess the extent to which threats are ameliorated are currently in development. We are working closely with modeling experts and structured decision making experts to develop a process that fully accounts for the actions in the CED in a transparent and objective manner, and in a way that appropriately accounts for uncertainty. Beyond the context of the Service's listing decision, we envision that the CED could also help identify geographic gaps in conservation efforts to help prioritize future conservation actions.

Appendix A – Glossary

Candidate Conservation Agreement (CCA): Voluntary conservation agreements between the US Fish & Wildlife Service and one or more public or private parties to address the conservation needs of proposed or candidate species, or species likely to become candidates, before they become listed as endangered or threatened. The Service works with its partners to identify threats to the species, plan the measures needed to address the threats and conserve these species, identify willing landowners, develop agreements, and design and implement conservation measures and monitor their effectiveness.

Candidate Conservation Agreement with Assurances (CCAA): Voluntary conservation agreements that provide non-federal landowners with additional incentives beyond a CCA for engaging in voluntary proactive conservation through assurances that limit future conservation obligations. One of the primary reasons for developing the CCAA program is to address landowner concerns about the potential regulatory implications of having a listed species on their land. The CCAA program specifically targets non-federal landowners and provides them with the assurance that if they implement various conservation activities, they will not be subject to additional restrictions if the species becomes listed under the ESA.

Conservation Easement: A legal agreement voluntarily entered into by a property owner and a qualified conservation organization such as a land trust or government agency. The easement contains permanent restrictions on the use or development of land in order to protect its conservation values. Easement restrictions vary greatly for each agency or organization.

Endangered Species Act (ESA): Law which serves to protect and recover imperiled species and the ecosystems upon which they depend. Under the ESA, species may be listed as either endangered or threatened.

Hydrologic Unit Code (HUC): A system of dividing and sub-dividing the United States into successively smaller hydrologic units or drainage areas.

Lek: An aggregation of males that gather to engage in competitive displays to attract attending females for mating.

Range Improvement: Any activity, structure, or program on or relating to rangelands which are designed to improve production of forage, change vegetative compositions, control patterns of use, provide water, stabilize soil and water conditions, and provide habitat for livestock and wildlife. The term includes, but is not limited to, structures, treatment projects, and use of mechanical means.

Reclamation: Rehabilitation of a disturbed area to make it acceptable for designated uses. This normally involves re-contouring, replacement of topsoil, re-vegetation, and other work necessary to ensure eventual restoration of the site.

Restoration: Implementation of a set of actions that promotes plant community diversity and structure that allows plant communities to be more resilient to disturbance and invasive species over the long-term. The long-term goal is to create functional, high-quality habitat that is occupied by sage-grouse.

The short-term goal may be to restore the landform, soils, and hydrology, and increase the percentage of preferred vegetation, seeding of desired species, or treatment of undesired species.

Western Association of Fish and Wildlife Agencies (WAFWA): Association which advocates for the rights of 23 states and Canadian provinces to manage fish and wildlife within their borders. The WAFWA sage-grouse technical committee developed objectives in 1999 to maintain and increase where possible the present distribution and abundance of sage-grouse.

Wild Equids: Free-roaming horses (*Equus caballus*) and burros (*E. asinus*).

Wildland Fire: Any non-structure fire that occurs in the vegetation and/or natural fuels. Includes both prescribed fire and wildfire.