

Western Governors' Wildlife Council
Pilot Project Statement of Work
SUBMISSION DEADLINE: MARCH 19, 2010

Pilot Title: Decision Support System (DSS) Development for Wildlife Resources in California, Nevada, Arizona, and Utah (the Southwest).

Project Objective: California, Nevada, Arizona, and Utah (SW States) will partner to identify areas of conservation potential at a landscape scale across the southwest region. Our goal is to develop a useful and consistent source of mapped biological information across the states, followed by a display tool – a Decision Support System (DSS) - within each state. Developing a DSS is a three-step process that includes Step 1) Compiling types and layers of information valuable in identifying crucial habitat, including important wildlife corridors (aquatic and terrestrial); Step 2) Analysis of information (methodology, modeling, and prioritization) to rank areas as crucial habitat and wildlife corridors; Step 3) Develop the tool to help deliver crucial habitat and corridor information to appropriate users (the actual DSS).

This pilot project initiates DSS development with Step 1 by consolidating, sorting and calibrating species and habitat data among the SW States. We will focus on coordinating data collection methodology, analysis tools, and dataset definitions, attributes, and content, as well as establishing consistent parameters for the scope of datasets in terms of geographic extent and temporal coverage across the SW States. At the end of this pilot project, after 12 months, the SW States anticipate having several calibrated and regionally consistent wildlife and habitat datasets to the extent possible using existing data sets. The pilot will also identify data gaps in one or more state data holdings that could be filled in the future. In Step 2, from 12 to 24 months out we will utilize our newly organized data to delineate consistent crucial habitats and movement corridors for targeted species of concern across landscapes. Step 2 will also involve stakeholders, including industry end users and non-government organizations, to identify information essential for analyzing proposed energy, land use, or transportation projects, or potential climate change adaptation strategies. At the end of this pilot project, each of the SW States will be positioned for Step 3, which is designing, building and implementing a DSS within their state.

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PROJECT DESCRIPTION

Energy Nexus: Throughout the southwest renewable energy technologies are being explored, tested and developed. To meet these new demands, the existing electric transmission

infrastructure will need to be improved in order to effectively distribute the electricity generated by new renewable power facilities to consumers across the western states. Recognizing crucial wildlife areas across the southwest will supply energy developers, consultants, designers, and regulators with information essential to the planning process to design cost effective energy production and transmission projects that do not adversely affect the wildlife resources of the SW States.

DSS Advancement: The completion of phase 1 of this pilot project will result in the creation of a comprehensive and consistent dataset describing the wildlife resources of the SW States. This across state boundaries, the SW States ensure that their approach to DSS design and implementation will be similar and compatible in order to facilitate the effective management of multi-state jurisdictional land use projects.

Federal Agency Coordination: The SW States recognize the extensive and valuable wildlife information resources maintained by the USFWS, USFS, and BLM. These agencies, as well as the NRCS, also collect and maintain valuable non-wildlife related datasets, such as proposed land use development information, existing development infrastructure data, soils and geology information, and other important datasets that will be essential to the development of effective DSSs. The SW States will coordinate with WGWC agency points of contact to facilitate the effective use of data within the SW States Pilot Project. With several federal agencies initiating similar data and strategic planning efforts this year, it is essential the SW States communicate and coordinate with our natural resource partners throughout the course of the project.

Stakeholder Involvement: In the first phase of this pilot project, the SW States will focus on consolidating and calibrating state wildlife and habitat data. We will also coordinate with the Western Regional Partnership to ensure the SW States have use of their habitat GIS layers. Step 2 will involve the WGWC Stakeholder Advisory Group, including representatives from the energy industry, to identify information essential for proposed energy and land use projects.

Connectivity: In Step 2, from 12 to 24 months out (assuming additional funding is secured through WGA and/or other sources), we will use the data from Step 1 to delineate crucial habitats and connectivity corridors for targeted species. Species identified in State Wildlife Action Plans and Important Game Species will be the focus of these connectivity efforts. We anticipate consulting with modeling and technical experts, which will require additional funding.

Climate Change: The southwestern United States will likely experience increased occurrence of invasive species, wildfires, and drought as a consequence of climate change, which may result in negative impacts to wildlife and their habitats. Because the site-specific impacts of climate change cannot be predicted, it is important to monitor habitat to maintain an adaptive approach for flexible management actions as impacts are identified and trends are recognized. SW States DSSs will be an invaluable tool to inform land and resource managers where actions, such as habitat restoration, may benefit wildlife and be more responsive when impacted by climate change.

Deliverables: The SW States anticipate the following tasks and deliverables:

Tasks for months 1 to 12

- 1) Identify types and layers of information valuable in crucial habitat, including important wildlife corridors (aquatic and terrestrial) using the following categories defined in the WGWC White Paper.
 - a. Habitat for “Species of Concern”
 - b. Areas of Significance for Species of Economic and Recreational Importance
 - c. Connectivity or Linkage Assessment
 - d. Native and Unfragmented Habitat
 - e. Terrestrial or aquatic native species richness
 - f. Riparian and Wetland Habitat
 - g. Valued Lands
- 2) Analyze and compare GIS layers between States from the categories listed above (Task 1, a-g).
 - a. Identify those layers and data that are consistent across state boundaries
 - b. Identify those layers and data that only occur in individual states
 - c. Identify those layers with inconsistencies between SW States that may include differences in methodology, prioritization, and modeling of data
 - d. Begin data/metadata assembly and clean up for DSS (level of effort required will vary by state)
- 3) The SW States will share current protocols and methodologies for wildlife and habitat data to identify and remedy areas of inconsistency where feasible. Previous and ongoing WGA efforts, information, and definitions will be utilized in the development of a consistent approach, including crucial habitat and important wildlife corridors.

Deliverables for months 1 to 12

1. Inventoried list of wildlife and habitat data holdings from each state, including an assessment of which data would be applicable for use in a DSS.
2. Outline of particular “conditions of use” on data to be shared across jurisdictional boundaries.
3. Identified significant data gaps that, if filled, would equilibrate the data across state boundaries and improve the overall utility of the DSS.
4. Standardized list of wildlife and habitat layers across state boundaries.

Desired Outcomes: The SW States are committed to using the best available data to integrate into current GIS technologies and other geospatial mapping tools to advance DSS development. The pilot project will develop a site-specific suite of consistent protocols (e.g., standards for defining and collecting data for shared use) utilizing the *Western Regional Wildlife Decision Support System: Definitions and Guidance for State Systems (WGWC White Paper)*. These protocols will help guide future state and regional level investments in DSS by highlighting areas that are important for wildlife habitat and connectivity conservation, including the needs of important economic or recreational species, and those species identified in State Wildlife Action Plans or other comparable assessments.

Constraints and Assumptions: The diverse nature of each of the individual states will certainly provide challenges to provide consistent datasets across state boundaries. Also, each state has different data methodologies for collecting, housing and maintaining information based on their state’s jurisdiction and

government responsibilities. It is for these reasons we believe a 3rd party contractor, with significant professional experience in edge-matching and working with diverse groups and with multi-state resources would be the best option for the SW States pilot project.

Contracting: The SW States will send out a Request for Proposal (RFP) to enlist a qualified contractor to assist the states in consolidating wildlife and habitat data within each state and with data edge-matching. It is essential that the contractor have a track record of working with diverse organizations, is knowledgeable in contemporary GIS technologies, and have the required technical expertise for “edge-matching” between states boundaries. The RFP and contracting will be managed through Utah Division of Wildlife Resources.

Reporting: The SW States will comply with DOE ARRA reporting requirements as determined by WGA. Along with written reports, the SW States will verbally report progress to WGA throughout the course of the project.

Individual State DSS Workplan: Each state has varying degrees of ongoing data and DSS development. A more detailed workplan is forthcoming, however, the following descriptions provide a rough outline of DSS resources with the SW States.

Arizona: Arizona is currently developing a web-based geospatial planning tool intended to allow users to analyze proposed energy, transportation, and other land use projects at a regional scale. Ultimately, Arizona intends to integrate an online site-specific/project-based environmental review as a component of the geospatial planning tool. This is intended to be used as either a benchmark for the 4 state collaborative project, or a template in this effort.

California: In 2004, the Department of Fish and Game (DFG) created the Biogeographic Information and Observation System (BIOS). BIOS is a system that enables the visualization of the spatial distribution of biological data generated by DFG and its [Partner Organizations](#), the management of those data when necessary, and the sharing of those data with Department employees and partners. It is an evolving system and is expected to change in response to the Department's needs and improvements in technology eventually becoming a comprehensive DSS.

DFG is currently building the BIOS database with a dynamic structure designed to handle large volumes of data from many different types of bio-spatial projects. This effort originated from the need to compile data from ongoing and past surveys, monitoring and research projects, mainly in Southern California. Future features may include the development of specialized catalogs of data to meet the needs of distinctive audiences. In addition, we are working to allow Internet reporting of incidental observations to serve both BIOS and the state natural heritage program data called the California Natural Diversity Data Base (CNDDB). See bios.dfg.ca.gov for more information.

Nevada: Nevada's existing Internet Mapping Service (IMS) provides a web-based geospatial analysis tool that will form the framework upon which Nevada's planned DSS will be built. The IMS application currently allows users to access, view, and obtain several wildlife resource data layers, as well as background information data layers, that are maintained by the Nevada Department of Wildlife (NDOW). As development continues, more of NDOW's data layers will be integrated into the IMS and enhanced capabilities will be added to allow live geospatial data editing, both within and outside of the agency, seamless data updates, expanded data accessibility, and proponent-driven land use planning analysis

Utah: Currently, the Utah Department of Technology Services is developing a web-based geospatial planning tool for use by natural resource agencies, land use planners and transportation developers. Negotiations are underway to assess whether this existing planning tool may be adapted to include wildlife corridors and energy resource areas to develop into Utah's DSS.

The Utah Division of Wildlife Resources partnered with The Nature Conservancy to produce a large scale assessment and map of conservation action areas in Utah. Wildlife Action Plan (WAP) species and habitat layers were input into a reserve-design spatial model using MARXAN software to generate an optimal set of places that collectively contains "enough" of the key habitats and sensitive species for long-term security of Utah's wildlife diversity. The map includes a set of tables in a relational database that show explicit linkages between species/habitats, threats, conservation actions and places that would represent the priority areas for WAP implementation.