

RESOURCE ASSESSMENT AND ANALYSIS PROJECT

Final Report for Agreement P0385901

California Department of Fish and Game

UC Davis Wildlife Health Center

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PROJECT START DATE

January 2, 2004

PROJECT END DATE

June 30, 2006

PROJECT GOAL

Agreement P0385901 continued a collaborative agreement between the University of California at Davis Wildlife Health Center (WHC) and the California Department of Fish and Game's Resource Assessment Program (RAP) to assist RAP in developing and implementing a resource assessment strategy for fish, wildlife, native plants and natural communities in the state of California. This agreement specifically aims to increase opportunities for independent scientific review of proposed projects and collaborative resource assessment efforts.

OBJECTIVE 1

- Organize and implement a transparent and scientifically rigorous review of relevant project proposals and prioritize projects based on potential to impact the State's management of resources, scientific merit and achievability of objectives.
- Collaboratively develop and implement a diverse set of efforts to scientifically inventory and monitor habitat and wildlife, particularly in geographic areas at risk of habitat change and fragmentation.

2005 Competitive Grants Program

In order to increase opportunities for collaborative scientific endeavors and identify the most relevant and highest quality projects, the Wildlife Health Center and CDFG's Resource Assessment Program established a competitive grants program in Fall 2004.

Request for Proposals: A request for proposals was widely distributed on November 18 2004 to CDFG and the University of California through the UC Office of Research, UC campus departments and non-profit agencies with relevant research activities. Proposals were requested that seek to investigate the distribution, habitat requirements, dispersal patterns, seasonal movements, population trends, and factors affecting the health and survival of high priority vertebrate wildlife species. Priority species include threatened and endangered species and species of concern in California (on CDFG list of "Special Animals", <http://www.dfg.ca.gov/whdab/pdfs/spanimals.pdf>). The call for proposals specified that proposals must demonstrate relevance to the immediate conservation needs of the targeted species and have strong and direct implications for management of these species. Proposals were due at the Wildlife Health Center on January 21, 2005.

Proposal Review Process: An independent scientific advisory committee (SAC) was established to assist with implementation of the competitive grants program. University faculty and state agency scientists with diverse expertise in applied resource assessment and monitoring research were recruited for the SAC. The primary responsibility of the SAC was to provide critical review of submitted proposals. Committee members agreed to review project proposals submitted to the competitive grants program and attend a meeting on April 11th, 2005 to discuss and rank proposals with the rest of the committee. Each proposal was submitted to three members of the SAC and one external reviewer with expertise in the area of research for review eight weeks prior to the meeting. Reviewers scored each proposal according to the following criteria: scientific merit; achievability; potential of project to inform management and conservation; and grantsmanship (how well the proposal is written). At the scientific advisory committee meeting, an SAC member provided an executive summary and led the discussion for each proposal. Comments and suggestions from the two other SAC reviewers and the external reviewer were incorporated at that time. If any SAC member were also investigators or collaborators on a particular study, they left the room while that project was being discussed. Each proposal was discussed by group, and then all members of the SAC voted as to project whether project should receive low, med or high priority for funding. Proposals were then ranked according to the votes on priority for funding. After all proposals were reviewed, the proposals with the highest scores

were revisited to achieve a consensus on which should be funded based on the amount of funding available (\$300,000).

Eight projects were selected for funding with funding requests ranging from \$13,000 to \$50,000. Principal investigators were notified on April 13th of the status of their award. A detailed summary of the SAC review and recommendations was provided to all principal investigators, which included detailed feedback on the advantages and disadvantages of their proposal. Intercampus agreements for awards off campus were initiated and on campus awards were distributed in April for the funding period of April 1st through March 31st.

Project Reports: The 2005 competitive grants projects are listed below. Principal investigators provided reports summarizing their progress and their findings to the WHC. In addition to the competitive grants program, the WHC and collaborators continued work on major monitoring projects initiated in 2004; 1) Habitat associations, spatial requirements, and conservation status of American badgers in California, 2) Enhancing Conservation Decisions by Studying Mountain Lions, 3) Monitoring West Nile Virus Mortality in Yolo County American Crows and 4) Great Gray Owl Population Genetics and West Nile Virus. These projects were identified as high priorities in previous CDFG-WHC agreements and funds from this agreement supported these projects from June 2005 through June 2006. An update on the statewide mountain lion project progress is requested in agreement P0485902 and will be submitted to CDFG June 30 2006.

2005 Competitive Grants Funded Projects

Beissinger: Black Rail Metapopulation Dynamics

Bennett: Delta Smelt Reproduction and Longevity

Bleich and Mazet: Bighorn Sheep Disease Transmission Model

Moritz: Web-toed Salamander Genetic Diversity and Habitat Characteristics

Rotenberry and Preston: Coastal Sage Scrub Bird Species Niche Models

Rotenberry, Morrison and Stermer: Willow Flycatcher Status and Habitat

Eadie: Great Gray Owl Habitat Requirements and Distribution

Woodroffe: Santa Cruz Island Fox Response to Predation

OBJECTIVE 2

Research and develop computer-based field application research tools, efficient strategies for transferring raw field data to the State’s BIOS repository, and technology for data display and analysis. Initiate a mechanism for electronic transfer and storage of data and provide capability for project leads, researchers, field crews and interagency collaborators to communicate.

Progress towards Objective 2:

Substantial progress was made towards developing handheld data collection applications for use in field studies by the database programmer hired in January 2005 (Phil Deák). The existing RADB database required major revisions to handle the increasing number of protocols and to accommodate the shift to a new handheld program. The overall goal was to create a modular database that retained an overlapping structure between projects, and enhanced this modularity while decreasing database complexity.

All of these goals were accomplished by allowing users to select needed database elements. Non-relevant elements were then removed. This feature instructs the database as to what tables need to be imported in a batch mode and automates the handheld data package importation procedure. This has reduced the overall database importation time by over 80%.

All incoming handheld data from field crews were reviewed by the programmer and feedback was provided on data errors. Extensive

Figure 1



Figure 2



This agreement has also provided GIS support to RAP and WHC through the part time hire of a GIS specialist (R. Anderson). A GIS model was intensively utilized to estimate expected West Nile Virus risk to different wildlife populations throughout the state for the WNV risk assessment project. GIS support has also been provided for the Swainson's hawk and agricultural lands study. This project is creating an inventory of the distribution and relative abundance of agricultural crops and related infrastructures in the Central Valley. These sites are then being compared to important breeding and/or foraging habitats for selected sensitive, threatened and endangered wildlife. Work has also begun on the Sierra Foothills Rare Plant Predictive GIS Model.

In 2005 the California Wildlife Action Plan site was created by Phil Deák to host information on species requiring the greatest conservation need. In addition to hosting species information and maps, the site was developed to allow the public to query for specific species criteria or project data throughout the state. This site is available at <http://www.dfg.ca.gov/habitats/wdp/>.



Other projects under development include the Aspen Delineation Project used to display the GIS data on Aspen stands found in California. The site will include a drill down graphic interface that allows users to identify locations of aspen stands and their associated data. Between 2005-2006 over 27000 photos and an online viewer was updated to allow applications to display data collected during field studies. Example: <http://imaps.dfg.ca.gov/photoviewer/photos/viewer.asp?ID=200505121311001>

Other team assistance included developing new solutions for the Departments High Mountain Lake project used to identify herptofauna species at risk in the Sierra Nevada. These solutions involved the development of tools to automate graph production and allow management and researchers to review or query data from a portable compile application. Additional projects worked on include progress

made on the Oil Bird Collection database for the Wildlife Health Center. The intention of this application is to allow rapid data entry in the field while providing a transferable database that doesn't need to be translated off of the PDA. This application will also allow staff to create reports and inventory bird information.