



## Utah Bat Initiative Phase III: Modeling, Protocol Analysis, and Risk Assessment

Project # 09-346

### Background:

A total of 18 bat species are known from Utah, with six considered species-at-risk (SAR) by the Utah Division of Wildlife Resources (UDWR). Although many agencies were concerned with bats, there was no comprehensive plan for bat management in Utah. With five Department of Defense (DoD) facilities in Utah having authority over 1.8 million acres, it was crucial to address potential encroachment and Endangered Species Act (ESA) listing issues. Therefore, the DoD, through Legacy Program funding (07-346, 08-346, & 09-346) and in cooperation with the Utah Bat Conservation Cooperative (UBCC) – an organization comprised of 14 individual public, private, state, federal, and commercial organizations – developed a plan for proactive bat management.

### Objective:

The goal of this Legacy initiative was to develop, direct, and facilitate comprehensive bat management in Utah centered on defensible data, a survey protocol, strong multi-agency partnerships, and coordinated long-term planning. The project sought to coordinate content within existing Integrated Natural Resource Management Plans (INRMPs) and the State Wildlife Action Plan (WAP). We have attempted to promote conservation of Utah's bats with special emphasis on the six SAR and DoD testing and training lands.

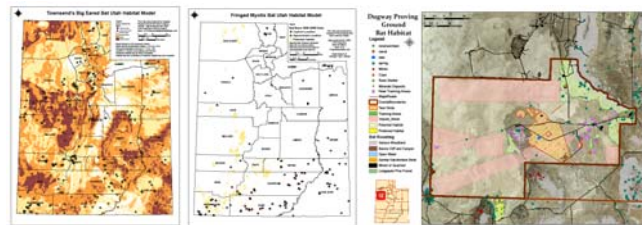
### Summary of Approach:

In the first phase of this project 28,629 bat records were consolidated into a web-based geodatabase called BATBASE. Within the second phase, an analysis of the collected data was conducted to identify trends and data gaps important for bat management. Partners then met to develop measurable conservation objectives. A data collection and monitoring protocol was created by regional subject matter experts. A Utah Bat Conservation Plan (UBCP) was written to address the threats facing bats. This third phase concentrated on implementing the monitoring protocol, modeling the BATBASE data set, creation of a DoD bat risk assessment, and analysis of the first year's protocol data.

### Benefit:

The project provides wildlife and land managers information on the bat resources under their purview and gives recommendations for addressing threats to long-term sustainability. This effort led to an entire

taxon of wildlife being cooperatively managed across numerous state and federal agencies within well coordinated stakeholder action groups. DoD land managers can be assured that land owners securing property surrounding military lands are doing their part to manage species that could affect mission. As a result, DoD biologists can make informed decisions about command liability and approve and support the continued use of testing and training areas without restrictions.



Species specific habitat models (left) produced using 2009 data. Bat habitat and mission overlap at Dugway Proving Ground (right).

### Accomplishments:

This final phase of Legacy funding has enabled a further understanding of the relationship between historical data and landscape level ecological trends. Random forest modeling provided an additional level of understanding of the BATBASE data set. Data collection and analysis within a state-wide protocol produced a clearer understanding of the detectability of individual bat species and the ecological variables associated with site occupancy. Implementation of the monitoring protocol through the UBCC and UDWR ensured state-wide support and a continued commitment to implement the protocol on a three year cycle to detect changes in populations over time. The DoD risk assessment provided ecologically sound bat management recommendations based on past, present, and future bat and mission needs. Together these accomplishments serve as a foundation and plan for future cooperative bat research and management efforts within Utah targeting DoD testing and training lands. These accomplishments and the bat management stakeholder momentum have provided means through which net conservation and mission supporting ends have been established which, in the future, will guide conservation of bat SAR throughout Utah into the foreseeable future.

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