



Department of Defense Strategy to Support a Multi-Agency Bat Conservation Initiative Within the State of Utah

Project #
07-346

DELIVERABLE: Inventory

State of Utah Bat Data: Summary Report

A total of 18 species of bat are known to occur in Utah, of which, 6 or 30% are considered Species of Concern. Very little information is known about the distribution or population status of bats in the state. Prior to this project, bat inventory data for Utah was scattered within private, state, and federal holdings and were not collectively available for resource managers. Lack of such information creates difficulty in identifying and addressing statewide management issues related to the conservation of bats. With five Department of Defense (DoD) facilities in Utah, whose land ownership encompasses over 1.8 million acres, it was crucial to identify distribution and frequency of occurrence to prevent encroachment and listing issues related to the lack of conservation management of bat species in Utah. While full data is not available to those ends, a solid start is in place as a result of this project.

Originally, the Utah Natural Heritage Program (UNHP) database was the only centralized source of accessible bat data statewide. However, UNHP tracks only Utah Species of Concern, which includes six (Townsend's big-eared bat, *Corynorhinus townsendii*, Allen's big-eared bat, *Idionycteris phyllotis*, Big free-tailed bat, *Nyctinomops macrotis*, Western red bat, *Lasiurus blossevillii*, Spotted bat, *Euderma maculatum*, and Fringed myotis, *Myotis thysanodes*) of the 18 species that occur in Utah. Since the initiation of this Legacy funded effort, large

portions of existing records (both historical and current) for all 18 species found in Utah have been gathered (Table 1). Further data consolidation efforts remain underway.

Table one illustrates sources of data acquired, number of observed species, number of Utah Species of Concern observed, number of occurrences on DoD installations (i.e., one occurrence includes data for at least one individual bat but may include information for multiple individuals and/or multiple species), and total number of individual bats per data source. Sources, directly or indirectly, may include data from federal and state agencies, universities, museums, and private contractors and citizens. For example, the UNHP database alone contains data acquired from all data sources listed above. Although numbers of individual bats are presented for each source, values instead represent approximations. Specifically, data from several sources included estimations of the number of bats present, not exact numbers. Such an example would include roost site counts where approximate numbers of individuals were provided.

Notable partners that are currently absent from this list are the U.S. Department of the Interior (USDI) Bureau of Land Management (BLM) and U.S. Department of Agriculture (USDA) Forest Service (USFS). Although records from BLM and USFS are not currently gathered, representatives from both agencies have agreed to participate in this project and contribute data. BLM personnel are currently searching archives within each field office in Utah and Steve Madsen, the lead scientist for the state of Utah, has strongly encouraged all BLM biologists to participate. USFS biologists are currently compiling their existing data. All available records are anticipated from the BLM and USFS. In addition, data collected from six National Forests (Ashley, Sawtooth, Wasatch-Cache, Fish Lake, Dixie, and Manti-LaSal) and one Ranger District (Spanish Fork Ranger District) have been committed for this project but have yet to be received.

Table 1. Inventory for Consolidated Bat Data Post-Legacy Project 07-346. Data sources, description of data acquired, and numbers of individual bats recorded. Dates range from the earliest record to the most recent for each data source.

Data Source	Dates	Number of Species	Number of Utah Species of Concern	Number of Occurrences on DoD lands	Approximate Number of Individuals
Pre-Legacy Project					
Utah Natural Heritage Program	1933-2007	6	6	8	2373
Post-Legacy Project					
Private Contractor / Joel and Gabby Diamond	2002	4	0	0	128
Ageiss Environmental, INC. / DPG-U.S. Army	1995-1996	10	2	8	148
JBR Environmental Consultants	2002	9	0	0	acoustic detections
Chicago Field Museum	1910-1940	2	0	0	2
LSU Museum of Natural History	1964	1	0	0	1
Royal Ontario Museum	1935-1936	1	1	0	4
L.A. County Museum of Natural History	1965-1978	4	0	0	4
Michigan State University	1935	1	1	0	2
Univ. of Michigan Museum of Zoology	1936-1999	2	1	0	14
Brigham Young University	1998	1	1	0	1
Utah Division of Wildlife Resources	1987-2007	17	6	1	3988
Private Contractor / Brad Lengas	1891-1997	18	6	113	7325
Utah State University		4	0	1	11
Southern Nevada Water Authority	2005	12	1	0	acoustic detections
Certificate of Registration Data (COR)	1995-2006	16	4	2	514
Certificate of Registration Data (COR)	2006	3	0	0	8
Certificate of Registration Data (COR)	1997	1	0	0	2
Certificate of Registration Data (COR)	1998	2	0	0	5
Certificate of Registration Data (COR)	1997	3	0	0	5
Certificate of Registration Data (COR)	1995-1996	10	1	0	53
Certificate of Registration Data (COR)	1998-2001	9	3	0	31
Certificate of Registration Data (COR)	1996	10	2	0	222
Certificate of Registration Data (COR)	1996	6	0	0	30
Certificate of Registration Data (COR)	1995	4	1	0	45
Certificate of Registration Data (COR)	1996-1998	8	3	0	113
Certificate of Registration Data (COR)	1999	5	1	0	74
Certificate of Registration Data (COR)	1999	7	2	0	21
Certificate of Registration Data (COR)	2004	4	4	0	16
Certificate of Registration Data (COR)	2003-2005	11	2	0	304
Certificate of Registration Data (COR)	1999	6	3	0	46
Publication	1998	8	3	0	54
Publication	1998	12	4	0	534
Publication	1999	9	4	0	166
Publication	1999	10	4	0	260
Publication	1997	15	5	0	300
Publication	1997	16	5	0	611
Publication	1997	15	5	0	555
Utah Division of Oil, Gas, and Mining	1996-2003	5	1	0	668
Utah State University	1999	1	0	0	3
Utah Division of Oil, Gas, and Mining		7	3	0	51
National Park Service	2001-2005	17	5	0	2735
Hill Air Force Base, U.S. Air Force		5	0	13	104
Total		18	6	146	21,531

Although data from a few important partners are not currently presented, many records have now been gathered originating on federal, state, and private lands. Figure one illustrates UNHP occurrences representing all data available before Legacy Project 07-346 funding. Bat occurrence data before and after Legacy funding efforts for the six largest landowners in Utah are presented in Figure one as well. Total occurrences (i.e., one occurrence includes data for at least one individual bat but may include information for multiple individuals and/or multiple species) recorded for the state of Utah after Legacy funded efforts, for the six state of concern species have increased **25 fold (i.e. pre-project = 439; post-project = 10,897)** and total occurrences recorded for military installations have increased **18 fold (i.e. pre-project = 8; post-project = 146)** (Table 2).

Table 2. Summary of Consolidated Bat Data Pre and Post-Legacy Project 07-346. Description of data acquired, total occurrences (see text for definition), and numbers of individual bats recorded. Dates range from the earliest record to the most recent for each data source.

Data Source	Dates	Number of Species	Occurrences	Occurrences on DoD Lands	Approximate Number of Individuals
Pre-Legacy Project	1933-2007	6	439	8	2,373
Post-Legacy Project	1891-2007	18	10,867	146	21,531
Total Percent Increase		300%	2475%	1825%	907%

MILITARY BENEFITS

An 18-fold increase in bat occurrence data on or near military lands is a substantial gain. The gathered data offers enhanced knowledge and will dramatically increase the efficiency of Utah's military bases to manage operational areas in a way that minimizes potential impacts to bats. Assessment of impacts to bats and bat habitat through the National Environmental Policy Act (NEPA) review process will now occur more quickly and efficiently once the database is fully up, functional, and populated with gathered data. This efficiency and the enhancement of an accurate impact assessment can only benefit mission essential projects that occur on the five

DoD installations in Utah. This new 21,000 + record statewide database will greatly improve understanding of regional trends and patterns on DoD lands and better facilitate stewardship goals and objectives set out in Integrated Natural Resources Management Plans (INRMPs) on individual installations.

Now that we have a more comprehensive dataset, with current funding, DoD *will*:

1. Continue to collect new bat species occurrence data within the 1.8 million acres of DoD managed lands supported by the Utah Bat Conservation Cooperative;
2. Have increased understanding of Utah bat issues that may pose encroachment problems within DoD training lands and limit ability to meet mission requirements;
3. Encourage and take a pro-active approach to any encroachment or sensitive bat species issues that may be identified (none to date); and
4. Have a better understanding of the biological needs of bats, which directly promotes sound stewardship initiatives developed cooperatively between UDWR and DoD land managers and contained within INRMPs.

Now that we have a more comprehensive dataset, with further funding, DoD *can* 1) introduce real data into the Important Bat Habitat Model, a geospatial database – created with federal, state, and private land managers, housed with the Utah Division of Wildlife Resources (UDWR) – that will track suitability of landscape characteristics that promote or limit potential use by bats and 2) identify what data exists and what data is lacking thereby allowing land managers to collaboratively work together to target data gaps.

As Utah DoD land managers strive to deal with the challenges of balancing land and air resources within a very high operational tempo, an understanding of the biological status on 18 species of bat is critical. Further, the overall collaborative efforts we have facilitated with 14 key

stakeholders will enhance military readiness and overall training needs to prepare the finest war fighters anywhere to meet mission needs and objectives.

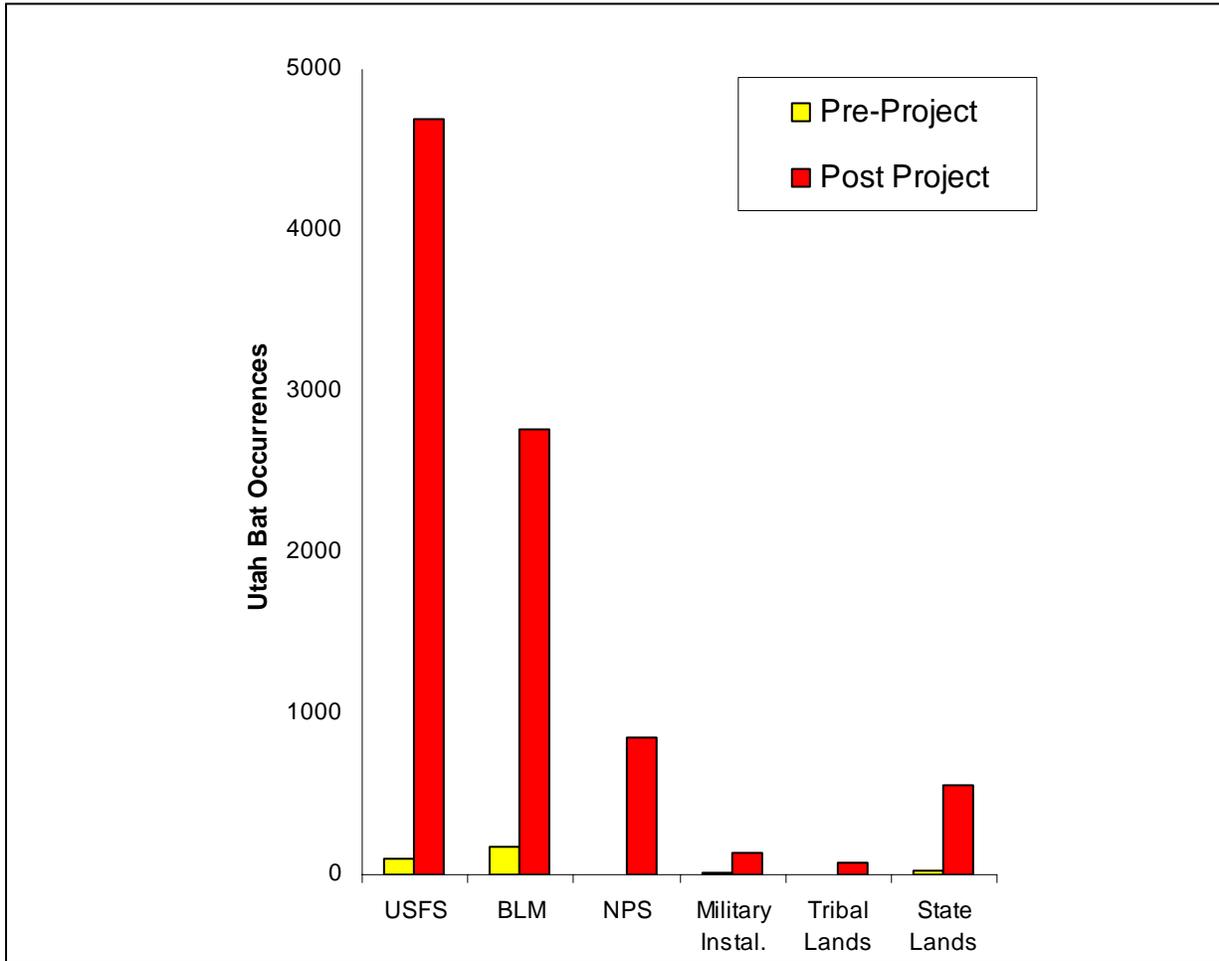


Figure 1. Legacy Project 07-346 Contribution to Bat Data in Utah by Land Owner. Bat occurrence data before and after Legacy Project 07-346 by the six largest landowners in the state of Utah. Comparison of available data before (March 2007) and after (November 2007) Legacy funded efforts.