

IDAHO DEPARTMENT OF FISH AND GAME

Virgil Moore, Director

Project F17AF01082

Northern Idaho Ground Squirrel Population Monitoring

Final Report



Performance Period

1 August 2017 to 30 June 2018

Compiled and edited by: Diane Evans Mack

August 2018
Boise, Idaho

Idaho Department of Fish and Game (IDFG) adheres to all applicable state and federal laws and regulations related to discrimination on the basis of race, color, national origin, age, gender, disability or veteran's status. If you feel you have been discriminated against in any program, activity, or facility of IDFG, or if you desire further information, please write to: Idaho Department of Fish and Game, PO Box 25, Boise, ID 83707 or US Fish and Wildlife Service, Division of Wildlife and Sport Fish Restoration Program, 5275 Leesburg Pike, MS: WSFR, Falls Church, VA 22041-3803, Telephone: (703) 358-2156.

Findings in this report are preliminary in nature and not for publication without permission of the Director of the Idaho Department of Fish and Game.

Please note that IDFG databases containing this information are dynamic. Records are added, deleted, and/or edited on a frequent basis. This information was current as of August 2018. Raw data do not have the benefit of interpretation or synthesis by IDFG.

IDFG requests that you direct any requests for this information to us rather than forwarding this information to third parties.

This publication will be made available in alternative formats upon request. Please contact IDFG for assistance.

FEDERAL AID IN WILDLIFE RESTORATION ANNUAL PROJECT PERFORMANCE REPORT

1. State: Idaho

Grant number: F17AF01082

Grant name: Northern Idaho Ground Squirrel Population Monitoring

2. Report Period: 1 August 2017 to 30 June 2018

Report due date: 28 September 2018

3. Location of work: Valley and Adams counties, west-central Idaho

4. Objectives

- a) Analyze data from 2017 surveys to calculate estimates of annual abundance and occupancy and summarize in an annual report.
- b) Conduct field surveys for long-term population monitoring in spring 2018 based on a sampling design developed in 2013.
- c) Incorporate an additional stratum into the survey design to document northern Idaho ground squirrel (NIDGS) activity beyond the current sampling frame.
- d) Conduct additional focused surveys as needed to address site-specific questions, such as change in NIDGS distribution in response to habitat treatment, wildfire, or Columbian ground squirrel competition.
- e) Provide field support as needed to the collaborative study of the effectiveness of forest restoration treatments on NIDGS led by the Idaho Fish and Wildlife Cooperative Research Unit at the University of Idaho partnering with the Payette National Forest, Idaho Department of Fish and Game, and the U. S. Fish and Wildlife Service (Conway 2013).

5. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.

This project is part of the overall interagency collaboration to advance NIDGS recovery. In addition to this Section 6 grant, population monitoring was supported by U.S. Fish and Wildlife Service (USFWS) Recovery Implementation Funds during this reporting period. Population monitoring is 1 piece of a multi-pronged approach that also includes habitat improvement, research, and outreach/education. Population monitoring is conducted in collaboration with biologists from the USFWS, Payette National Forest (PNF), Idaho Cooperative Fish and Wildlife Research Unit at the University of Idaho (UI), species experts, and private landowners. Quantifying the trajectory of the NIDGS population each year is the first step in assessing recovery. Information on the distribution and abundance of NIDGS

directly influences management decisions and land management practices that help identify appropriate conservation strategies. In addition, these results allow continued collaboration with land managers, regulatory agencies, and research partners by providing a range-wide reference point from which to identify objectives or compare results from other site- or topic-specific studies.

Extant populations of NIDGS found on federal land are managed by the PNF. In 2012 the PNF was selected to participate in the national Collaborative Forest Landscape Restoration Program (CFLRP). The PNF currently has three large-scale (>50,000 ac) projects underway which include a component to improve NIDGS habitat with thinning and prescribed fire. These actions aim to rejuvenate forage plants and create corridors to link populations. As part of monitoring for the CFLRP, the PNF entered into an agreement with UI to study response of NIDGS to habitat treatments. This 8-year project works hand-in-hand with overall population monitoring, sharing resources and data.

On private lands, a Safe Harbor Agreement (SHA) and a Low-Impact Habitat Conservation Plan (HCP) contribute to NIDGS conservation. The SHA, finalized in 2009, covers 4,227 acres on the OX Ranch and encompasses significant occupied NIDGS sites near Bear, Idaho. The HCP, signed in 2007, covers 5 acres within the larger Price Valley population complex. The cooperation of these landowners contributes to population monitoring by ensuring access for surveys on key private lands.

6. Describe how the objectives were met.

Objective (b), 2018 surveys

During 13 April – 30 June 2018, we completed at least 2 line-transect distance-based surveys in each of 844 grid cells randomly selected from the primary sampling frame established in 2013. In addition, we surveyed 268 grid cells randomly selected from a newly created expansion of the sampling frame (see *Objective (c)*, below). Collectively this represented 222 km of surveys, on which we tallied 2,253 NIDGS detections. These data will be used in program DISTANCE to estimate detection probability, density, and an estimate of abundance with confidence intervals for 2018. Funds from this grant covered 80% of the 2018 field survey effort for population monitoring summarized above. This included 4 temporary technicians, 1 year-round senior technician, field housing, supplies, and transportation to conduct NIDGS surveys.

Objective (c), add stratum to sampling

Prior to the onset of surveys in spring 2018, we expanded the population monitoring sampling frame to encompass locations more recently occupied by NIDGS, areas proposed for habitat treatments by the PNF as part of CFLR projects, or areas of modeled suitable habitat that had not been surveyed. The sampling design developed in 2013 recognized the potential need to add new sites over time, and defined such an expansion as Stratum 3 (Evans Mack et al. 2013). We used ArcGIS to select 833 grid cells from the underlying sampling frame grid that overlaid these current areas of interest. We created 2 parallel 100-m transect lines in each new grid cell and exported the start and end points of each line for uploading to GPS units for field navigation. We created a spatially balanced random ranking of the 833

cells and distributed those across our 3-year rotating panel (278 cells surveyed each year for 3 years, then repeated). We targeted the first group of 278 cells for surveys during the 2018 field season.

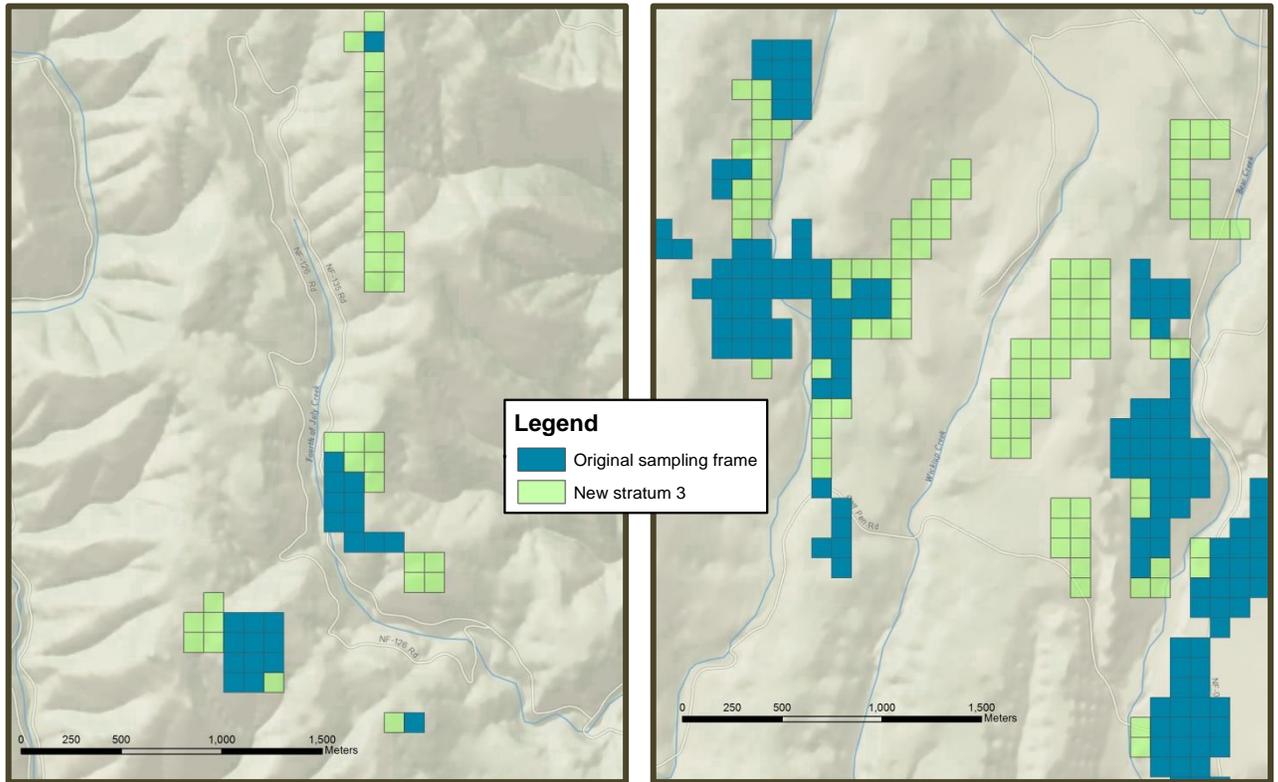


Figure 1. Portions of expanded sampling frame (stratum 3) that incorporate areas proposed for habitat treatment (left) and recently occupied by northern Idaho ground squirrels (right).

Objective (d), additional surveys

During Spring 2018 we surveyed 3 areas outside of the selected sampling frame to address site-specific issues. First, we followed up on a report by the PNF of NIDGS observed at a site proposed for gravel extraction. We made 3 exploratory visits to this site and confirmed the presence of at least 4 individual NIDGS. This was a new location for this species, 3 km away from the nearest occupied site. Second, we conducted 2 walk-through surveys in a location planned for timber harvest by Idaho Department of Lands (IDL). This location was adjacent to known occupied habitat but not encompassed by our annual surveys. We detected NIDGS at several locales within the timber project area and worked with IDL to avoid these sites during road upgrades and timber harvest. Last, we conducted line-transect distance sampling in 42 grid cells that hadn't been selected for surveys in 2018 but which were located within the proposed new high water boundary at Lost Valley Reservoir. This was in response to a proposal by the Lost Valley Reservoir Company to raise the height of the dam and increase

the size of the reservoir pool, potentially inundating occupied habitat. We surveyed the additional 42 grid cells to have seamless coverage, in 1 year, of the area potentially affected. Otherwise, the data we had within this project area would have been compiled across 3 consecutive years of surveys, given the rotating panel design of population monitoring.

Objective (e), support University of Idaho collaborative study

During this grant period the IDFG population monitoring crew assisted the UI study (NIDGS response to habitat treatments) by documenting badger occurrence in shared study areas. Badger predation can have a significant impact on NIDGS colonies, particularly less robust colonies of few individuals. The USFWS contracts with Wildlife Services to address chronic badger issues at NIDGS occupied sites. We documented recent badger activity as we conducted population surveys, and provided those locations to the USFWS to facilitate proactive response. Other collaboration with the UI research project, specifically in regard to overall planning and trouble-shooting, occurred with other funding sources.

7. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds.

Objective (a), analyzing results of 2017 surveys, was completed with other funds and thus not reported on here. The remaining 4 objectives were completed as anticipated.

8. List any publications or in-house reports resulting from this work.

No reports have yet been prepared from this work. A report on results from the 2018 field season will be released in December 2018.

Name, title, phone number, and e-mail address of people compiling this report:

Diane Evans Mack, Regional Wildlife Biologist
diane.evansmack@idfg.idaho.gov

Literature Cited

Evans Mack, D., C. Gillen, and L. McDonald. 2013. Long-term population monitoring of northern Idaho ground squirrel: sampling design, pilot implementation, and 2013 population estimates. Unpublished report to the U.S. Fish and Wildlife Service, threatened and endangered species projects F11AP00417 and F12AP00815 and cooperative agreement no. F11AC00175. December 31, 2013. Idaho Department of Fish and Game, Boise, Idaho, USA.

Submitted by:

A handwritten signature in black ink, appearing to read 'TJ B', with a long horizontal flourish extending to the right.

Toby Boudreau
Federal Aid Coordinator

Approved by:

IDAHO DEPARTMENT OF FISH AND GAME

A handwritten signature in black ink, appearing to read 'Scott Reinecker', written in a cursive style.

Scott Reinecker, Chief
Bureau of Wildlife