

IDAHO DEPARTMENT OF FISH AND GAME

Virgil Moore, Director

Project

F15AF00960 Amd 2

Columbia Spotted Frog Conservation

Final Progress Report



Performance Period
10 July 2015 to 30 June 2018

Compiled and edited by: Bill Bosworth

September 2018
Boise, Idaho

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**FEDERAL AID IN WILDLIFE RESTORATION
ANNUAL PROJECT PERFORMANCE REPORT**

1. State: Idaho

Grant number: F15AF00960 Amend 1

Grant name: Columbia Spotted Frog Conservation

2. Report Period: 10 July, 2015 to 30 June, 2018

Report due date: Sept 28, 2018

3. Location of work: Owyhee County, southwest Idaho

4. Objectives

- a) Monitor frog breeding productivity with egg mass surveys at key monitoring sites.
- b) Determine prevalence of nonnative organisms in frog populations.
- c) Map and ground-truth beaver dam locations.
- d) Initiate field assessment of beaver translocation.

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.

N/A

6. Describe how the objectives were met.

a) Monitor frog breeding productivity with egg mass surveys at key monitoring sites.

We conducted amphibian surveys in conjunction with beaver dam surveys in Castle Creek, Big Boulder Creek, Rock Creek, Headwaters Deep Creek, and Headwaters Jordan Creek watersheds (Level 5 Hydrologic Units). We conducted visual encounter surveys, recording adults, tadpoles, and egg masses. We detected 2 species, Columbia spotted frog (*Rana luteiventris*) and Sierran treefrog (*Pseudacris sierra*). The western toad (*Anaxyrus boreas*) is the only species of amphibian occurring within the project area that was not detected during surveys. We detected Columbia spotted frog egg masses at 11 locations, all but 1 site representing new documented oviposition sites. Oviposition sites were distributed in the Castle Creek, Big Boulder Creek, Rock Creek watersheds. Adult Columbia spotted frogs were also encountered in the Headwaters Deep Creek watershed, but surveys were conducted after typical egg mass hatch dates.

b) Determine prevalence of nonnative organisms in frog populations.

Idaho Department of Fish & Game (IDFG) databases contained 2 records of American bullfrog (*Lithobates catesbeianus*) within the range of Owyhee populations of Columbia spotted frog: upper Mary's Creek and Upper Battle Creek. In reviewing and assembling

historical data, we discovered data entry errors. Both records represented observations of Columbia spotted frog that had been entered into the database incorrectly, and these database records have subsequently been corrected. Thus, we are not aware of any historical or current records of American bullfrog sympatric with Columbia spotted frog in Owyhee County. We detected American bullfrog only in conjunction with a beaver dam complex in the lowest reach of Castle Creek, between Highway 78 and the Snake River. This site is >20 miles from the nearest documented Columbia spotted frog population. American bullfrog populations are documented along the Snake River throughout the Middle Snake subbasin.

No nonnative fish were encountered during our surveys of beaver dams using dip nets and visual surveys. Additional data were aggregated from review of IDFG fisheries surveys of Owyhee drainages. IDFG data from fish sampled using electrofishing techniques in several reaches of Rock Creek and its tributaries were available. Nonnative species detected included brown bullhead in Rock Creek and largemouth bass in Josephine Creek.

c) Map and ground-truth beaver dam locations.

We identified potential beaver dam locations from satellite imagery in a GIS. Potential dams were located by searching stream networks using Google Earth Pro. We surveyed a subset of dams observed from satellite imagery. We surveyed potential dam locations in Castle Creek, Big Boulder Creek, Rock Creek, Headwaters Deep Creek, and Headwaters Jordan Creek watersheds (Level 5 Hydrologic Units). Many potential dams were located on private land, and we were granted landowner permission to survey on some, but not all, private property tracts. Where stream reaches contained multiple potential dams, survey transects began 100m before the upper dam and extended 100m beyond the lowest dam. The condition of each dam encountered was ranked as: (1) active dam, (2) dam intact but no new cuttings, (3) deteriorating dam, and (4) breached dam. This represents a continuum in which the status of beaver colonies is uncertain when no new cuttings are apparent or when dams are beginning to deteriorate. We regard these as sites where the age of the dam and current beaver status is uncertain. We also estimated and categorized stream flow as: (1) no flow, (2) <0.1 cfs, (3) 0.1-0.25, (4) 0.25-2 cfs, or (5) >2 cfs and characterized presence and extent of woody vegetation in and adjacent to the stream.

We surveyed 291 dams in the course of this study. Dams were distributed unevenly within watersheds. Some groups of dams represented discrete complexes whereas other dams were distributed along long stream reaches, making delineating presumed colony boundaries infeasible. Dam were concentrated in 3 watersheds: Castle Creek, Rock Creek, and Big Boulder watersheds, which represent priority watersheds in the context of amphibian habitat, as well as representing drainages with high value for sport fisheries and game populations reliant on aquatic, riparian, and wetland habitat management. Active dams were also verified in adjacent portions of the Headwaters Jordan Creek and Headwaters Deep Creek watersheds.

d) Initiate field assessment of beaver translocation.

During development and evaluation of protocols for conducting beaver translocation projects within or to the Owyhee Mountains, one important issue arose which is currently regarded as an overriding constraint on choosing source populations for beaver. Although some scientific

work has been directed toward improving handling and quarantine protocols to minimize the risk of translocating beaver pathogens, we were unable to identify any scientific studies addressing the risk of translocating aquatic invasive species, which would broadly include pathogenic organisms. In particular, we were concerned about the potential for translocating the amphibian chytrid fungus (Bd) or novel strains of this fungus into new areas. This list of potentially harmful pathogens would also include several microorganisms affecting fish and mammals, as well as other amphibian pathogens, such as ranaviruses.

Given this consideration, we instituted guidelines to limit the risk of pathogen introductions. Until additional information is available to support a broader program, we are limiting beaver translocations such that (1) no translocations are undertaken to move beavers from tributary reaches containing American bullfrog, which is documented to carry Bd; and (2) no translocations are undertaken between Subbasins (Level 5 Hydrologic Units).

We captured and relocated 2 beavers within the Jordan subbasin. Source animals were from private property in the vicinity of Silver City along the headwaters of Jordan Creek. Both animals were released on Rock Creek in the vicinity of Triangle Reservoir at the request of a private landowner. Both animals were outfitted with a tail-mounted radiotransmitter. One of the translocated beavers was released in October 2017 but died within 17 days of release. Necropsy results suggested it had been the victim of an attack by a medium-sized canid, likely a coyote or domestic dog. Notably, however, this beaver had very low body fat and was likely in poor condition at the time of release. The second beaver had a high body condition rating at the time of release and has remained within ca. 1 mile of its release site for 6 weeks.

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

None

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

None

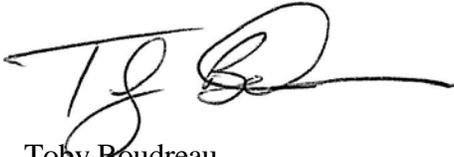
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A handwritten signature in black ink, appearing to read 'TJ B', with a long horizontal flourish extending to the right.

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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
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