

IDAHO DEPARTMENT OF FISH AND GAME

Ed Schriever, Director

Project F18AF01187

**Idaho Panhandle Bees to Bears Climate Adaptation Project
Cooperative Endangered Species Conservation**

Final Performance Report



Grant Performance Period

August 13, 2018 through June 30, 2020

Compiled and edited by:

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August 2020
Boise, Idaho

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ESA TRADITIONAL SECTION 6 FINAL PERFORMANCE REPORT

1. **State:** Idaho

Grant number: F18AF01187

Grant name: Idaho Panhandle Bees to Bears Climate Adaptation Project (B2B)

2. **Report Period:** August 13, 2018 through June 30, 2020

Report due date: September 28, 2020

3. **Location of work:** Boundary-Smith Creek Wildlife Management Area, Boundary Co., Idaho

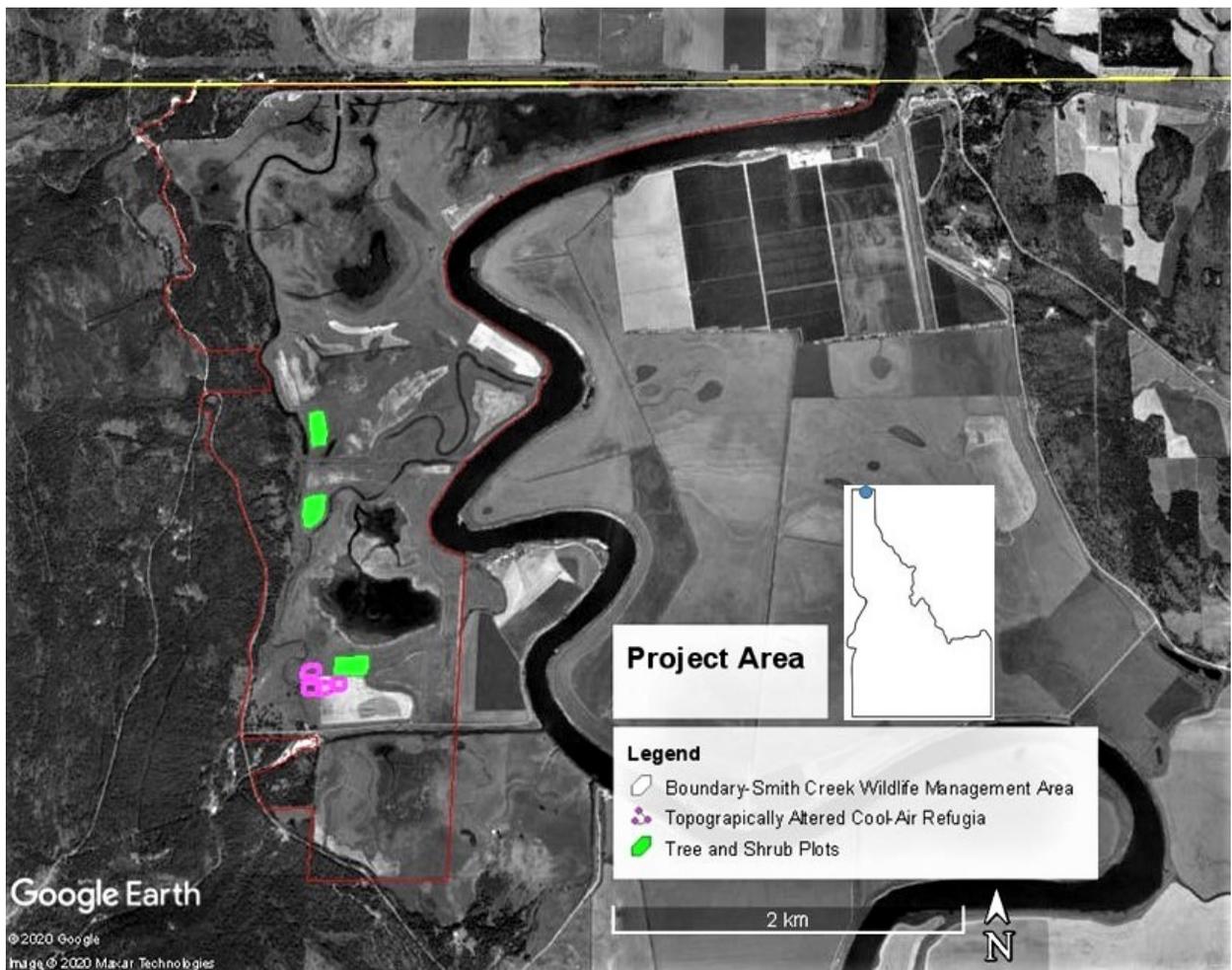


Figure 1. Project Area

4. Objectives

The objectives of this grant are the following deliverables:

Western Bumble Bee

- Restore 25 acres of topographically-altered forested bumble bee habitat.

Grizzly Bear

- Plant 10,000 trees and shrubs to benefit grizzly bears.

Both Species

- Develop a written long-term monitoring plan.

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 a larger undertaking with other components and funding. The Idaho Panhandle Bees to Bears Climate Adaptation project (B2B) is a cooperative partnership between Idaho Department of Fish & Game (IDFG) and the Yellowstone to Yukon Conservation Initiative. This project is funded by grants from the US Fish and Wildlife Service, Wildlife Conservation Society Climate Adaptation Fund, and Doris Duke Charitable Foundation. Additional partners include Ducks Unlimited, Idaho Conservation League, and Selkirk Outdoor Leadership and Education. The focus of B2B is restoring 250 acres of forested lowland habitat to improve landscape climate resiliency for 6 Species of Greatest Conservation Need on the Boundary-Smith Creek Wildlife Management Area (WMA). Climate specific actions of the larger B2B project include: 1) Restoration of ephemeral flood cycles to benefit western toads (*Anaxyrus boreas*) and northern leopard frogs (*Rana pipiens*), 2) creating topographically altered pollinator habitat to provide cool-air refugia for western (*Bombus occidentalis*) and Suckley's cuckoo (*Bombus suckleyi*) bumble bees, and 3) reforestation with 50,000 native trees and understory plants to provide cover for grizzly bears (*Ursus arctos*), and improve soil moisture content and reduce air temperatures for pale-jumping slugs (*Hemphillia camelus*).

The first phase of this project was funded under F17AF01079. In that project we had developed goals for a four-year project. We anticipated applying annually for funding to continue to work toward those goals. Rather than apply for amendments to F17AF01079 we applied for a new grant each funding cycle. Therefore, we have 3 grants (F17AF01079, F18AF01187, and F19AF00804) which are working toward the four-year goals of reforestation of 75 acres of grizzly bear habitat and 25 acres of topographically altered western bumble bee habitat. In this document we report the final work completed by F18AF01187 only. Work funded by F17AF01079 and F19AF00804 is summarized in separate reports.

6. Describe how the objectives were met.

1) Restore 25 acres of topographically altered bumble bee habitat.

We have made the following progress toward this objective:

- Heavy equipment was used to construct 4 cool air refugia (CAR) totaling four acres (Figure 2).

- Hand planting 4 acres of locally collected bumble bee habitat seed mix on the CARs.
- Prescribed burn implemented on 58 acres in the fall of 2019.

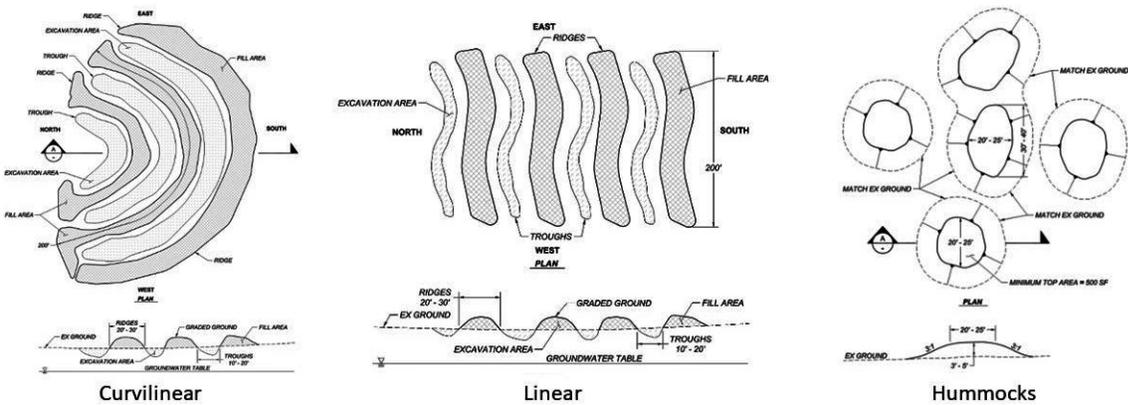


Figure 2. Cool air refugia (CAR) designs. We built one of each design along with a fourth control CAR. The control site is a flat area from which reed canary grass was stripped with a bulldozer and will be planted with pollinator forage plants and a mix of trees and shrubs similar to the three other designs. CAR designs were developed by Brian Heck, Ducks Unlimited.



Figure 3. Volunteers planting trees on the curvilinear cool air refugia pictured above. Recent snow has been retained on the north face of the constructed mounds while south facing slopes have melted out. This suggests we have achieved the goal of increased micro-site temperature heterogeneity.

2) Plant 10,000 trees and shrubs.

- 2019: 10,000 trees and shrubs were planted across 58 acres.
- To prevent ungulate damage to saplings, two additional exclosures were constructed. The exclosures are 4.6 and 8.9 acres in size.

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

1) 25 acres of topographically altered bumble bee habitat.

We topographically altered 4 acres of bumble bee habitat. Additional topographic alteration is discussed in the F19AF00804 report.

2) Plant 10,000 trees and shrubs.

We planted 10,000 trees and shrubs across 58 acres.

3) Develop a written long-term monitoring plan.

We were unable to complete this objective due to an unanticipated loss of key personnel.

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

Idaho Department of Fish and Game. 2019. Interim Report: F18AF01187, Idaho Panhandle Bees to Bears Climate Adaptation Project. Boise, Idaho.

Jarrold, C. and J. Grossman. 2019. Wildlife Conservation Society Final Report, December 20, 2019. Canmore, Alberta.

Literature Cited

Koch, J. 2012. Bumble bees of the western United States. US Forest Service; *San Francisco, Calif.*

Lucid, M., Robinson, L., & Ehlers, S. 2016. Multi-species Baseline Initiative Project Report: 2010–2014. *Idaho Department of Fish and Game, Coeur d'Alene, ID.*

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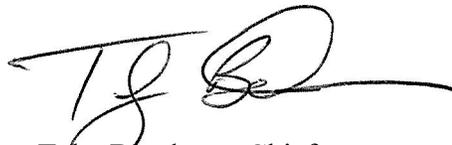
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