BLM and Beavers: Facilitating Recovery

Ethan Ellsworth
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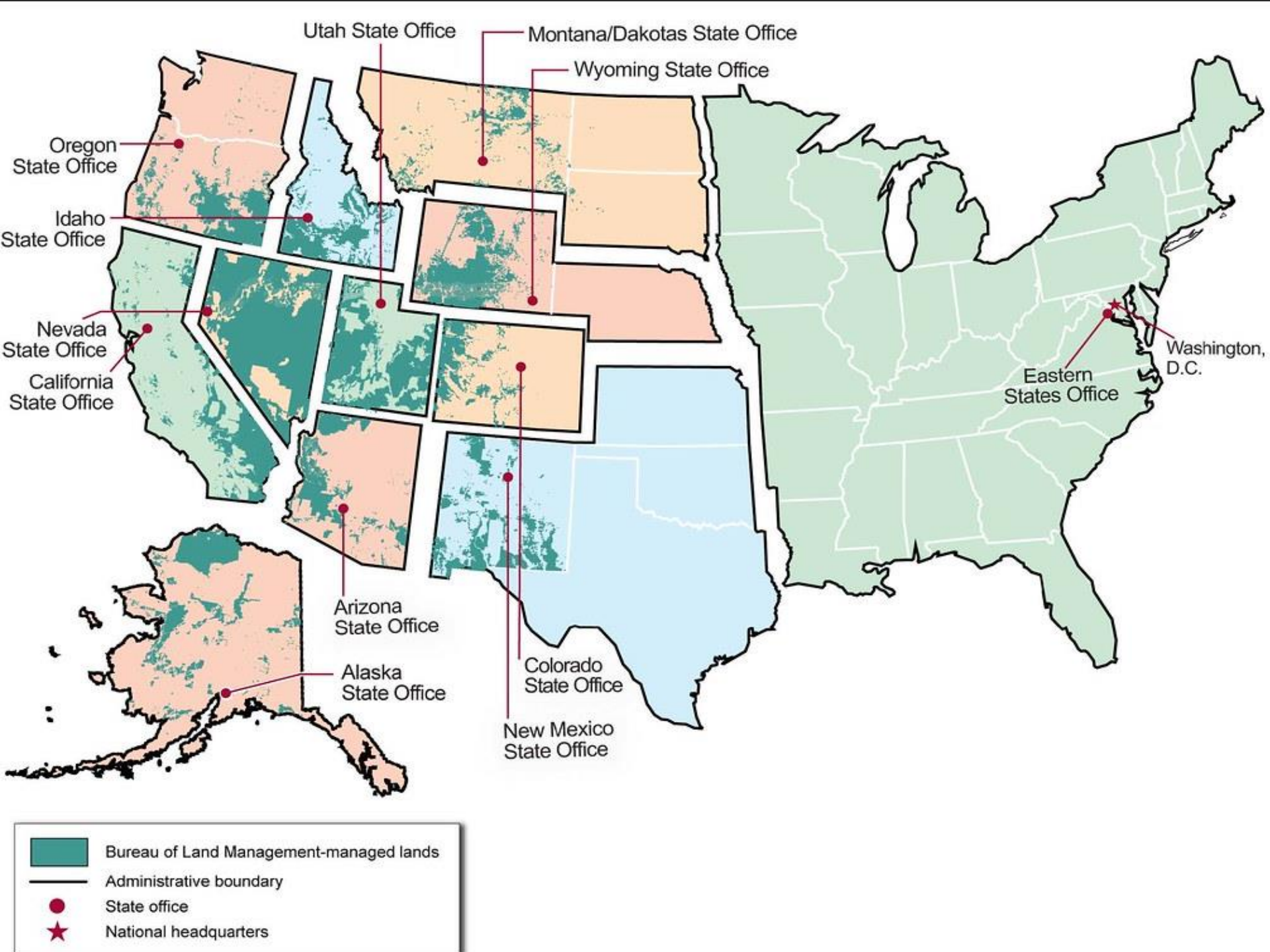
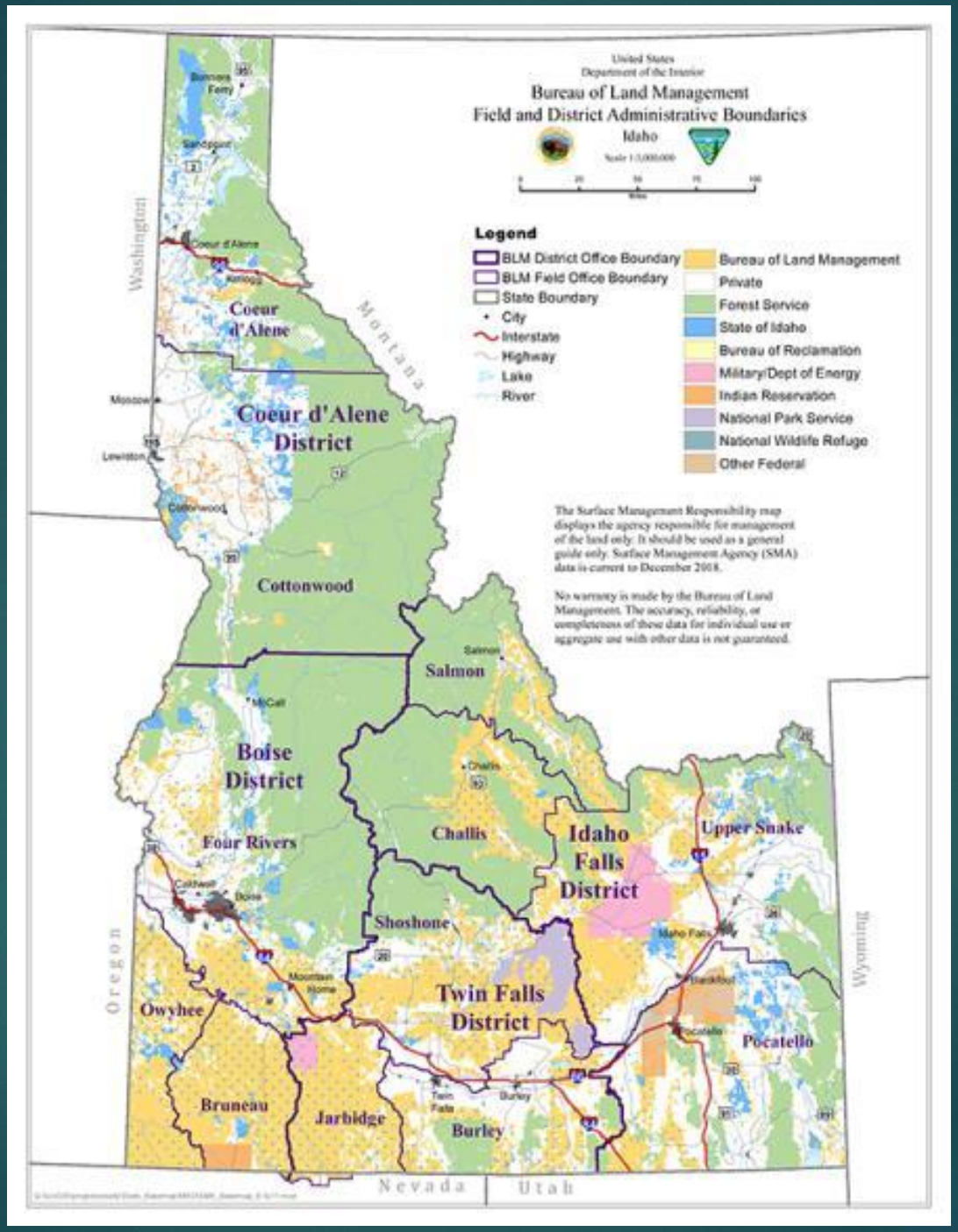
Little Lost River, Idaho

Humboldt River, Nevada

Owyhee River, Idaho


Utah State Office
Montana/Dakotas State Office
Wyoming State Office
Oregon State Office
Idaho State Office
Nevada State Office
California State Office
Arizona State Office
Alaska State Office
Colorado State Office
New Mexico State Office
Eastern States Office
Washington, D.C.
Bureau of Land Management-managed lands
Administrative boundary
State office
National headquarters


United States
Department of the Interior
Bureau of Land Management
Field and District Administrative Boundaries
Idaho
Legend
BLM District Office Boundary
BLM Field Office Boundary
State Boundary
City
Interstate
Highway
Lake
River
Bureau of Land Management
Private
Forest Service
State of Idaho
Bureau of Reclamation
Military/Dept of Energy
Indian Reservation
National Park Service
National Wildlife Refuge
Other Federal
The Surface Management Responsibility map displays the agency responsible for management of the land only. It should be used as a general guide only. Surface Management Agency (SMA) data is current to December 2008.
No warranty is made by the Bureau of Land Management. The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.
Washington
Montana
Oregon
Wyoming
Nevada
Utah
Coeur d'Alene
Coeur d'Alene District
Cottonwood
Salmon
Boise District
Four Rivers
Challis
Idaho Falls District
Upper Snake
Shoshone
Twin Falls District
Owyhee
Bruneau
Jarbidge
Burley
Pocatello

Dominiquez-Escalante, Colorado

Little Weiser River, Idaho

South Fork of Snake River, Idaho

BLM, Beaver, and Recovery: State of the Agency

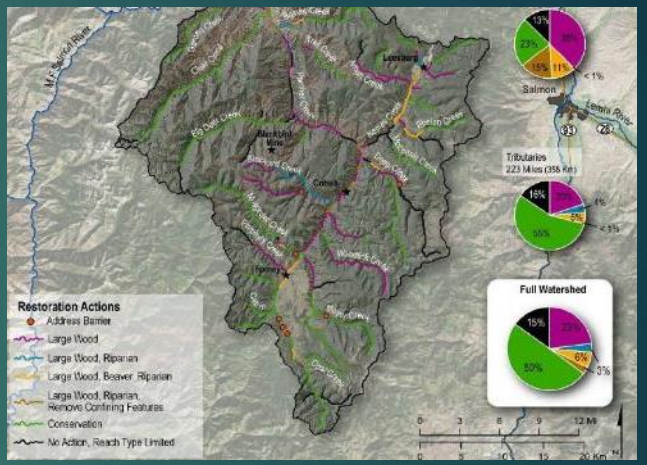
- BLM Aquatic Program Direction
- Does the BLM Reintroduce Beaver?
- Next Steps to Recovery

NAWM Beaver-Related Restoration Training Series

- **Module 01:** The History of Beaver and the Ecosystem Services They Provide
- **Module 02:** Identifying Where to Place Beavers and When to Use Beaver Mimicry for Low Tech Restoration in the Arid West
- **Module 03:** Case Studies of Long-term Changes from Beaver Restoration Activities
- **Module 04:** Addressing Common Barriers and Objections to Beaver Restoration Work
- **Module 05:** Coalition Building for Beaver Based Stream and Wetland Restoration Success
- **Module 06:** Beaver Restoration for Climate Resiliency

BLM Aquatic Restoration Focus: State of the Agency

- Low-tech Process-Based Restoration
- Watershed Focus (Riverscape!)
- Partnerships



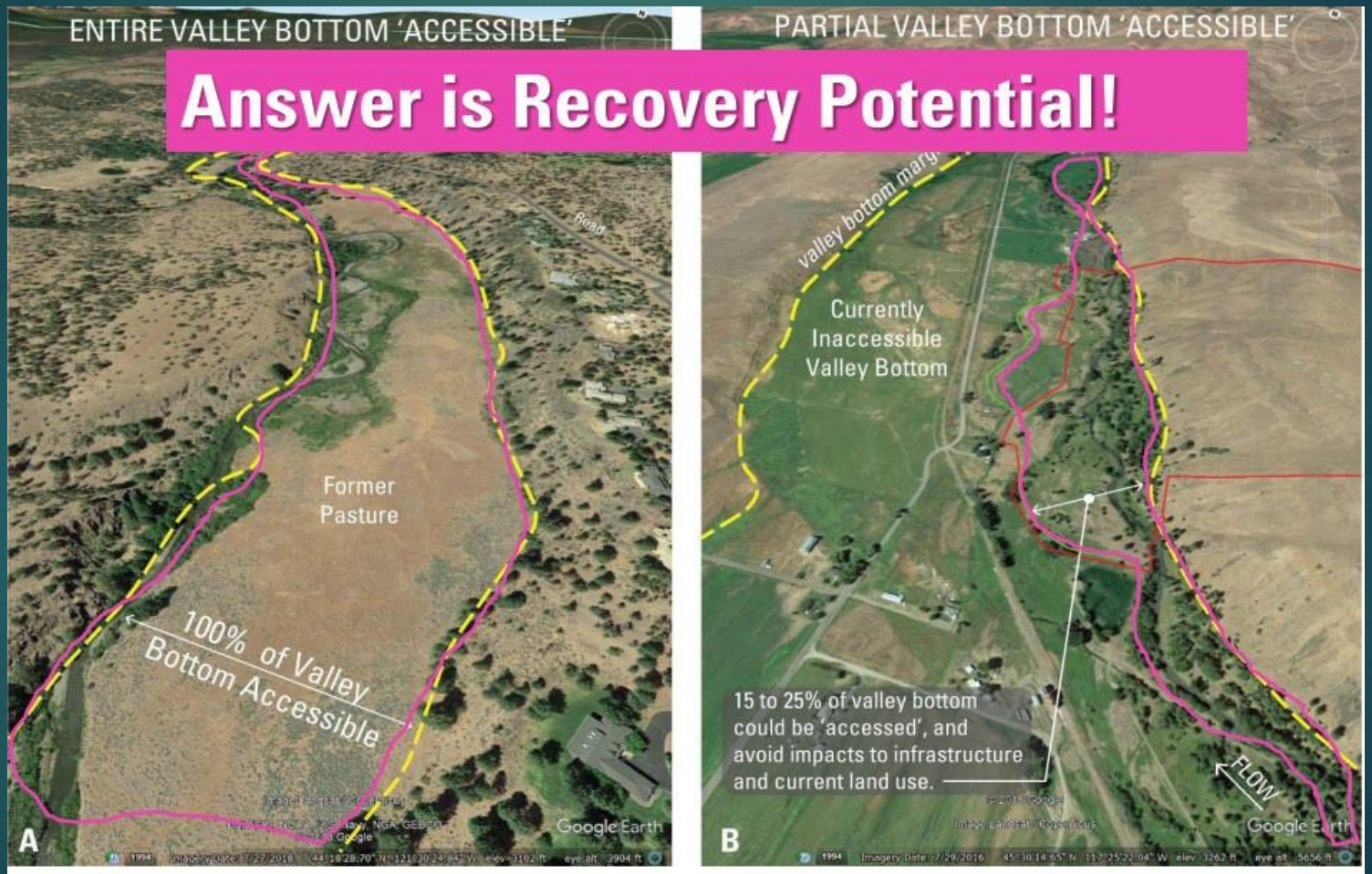
BLM Aquatic Restoration: State of the Agency

- BLM Aquatic Resources 5-Year Strategy
- BLM Aquatic Resources Manual (draft)
- Restoration Focus

BLM Aquatic Restoration: Funding Focus

- BIL/IRA Projects
- NAWM Webinar Series!
- Utah State/Riverscape Consortium: co-produce data, tools, trainings, and support for watershed restoration
- Home: https://www.riverscapes.net/
- Tools: https://lowtechpbr.restoration.usu.edu/resources/models

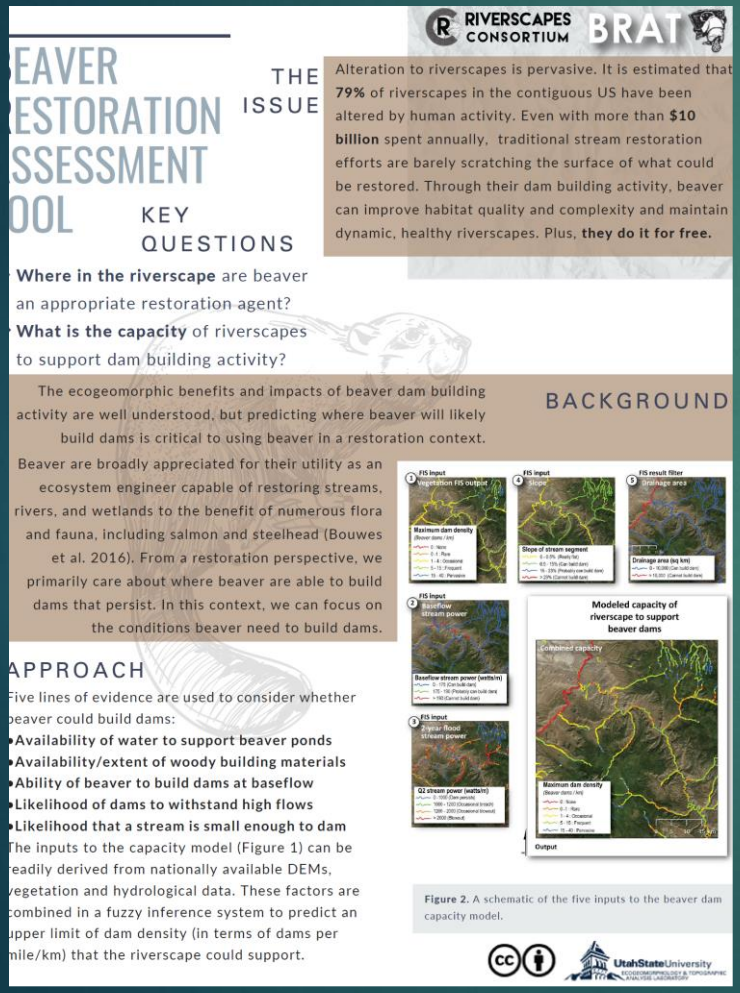
Riverscape Helps Planning: Where Should Restoration Occur?



From page 14 of Pocket Guide; Wheaton et al. (2019)
DOI: 10.13140/RG.2.2.28222.13123/1

How much is in play for restoration?

Beaver Restoration Assessment Tool (BRAT)



RIVERSCAPES CONSORTIUM BRAT

EAVER
ESTORATION
SSESSMENT
OOL

THE ISSUE

Alteration to riverscapes is pervasive. It is estimated that **79%** of riverscapes in the contiguous US have been altered by human activity. Even with more than **$10 billion** spent annually, traditional stream restoration efforts are barely scratching the surface of what could be restored. Through their dam building activity, beaver can improve habitat quality and complexity and maintain dynamic, healthy riverscapes. Plus, **they do it for free.**

KEY QUESTIONS

- **Where in the riverscape** are beaver an appropriate restoration agent?
- **What is the capacity** of riverscapes to support dam building activity?

BACKGROUND

The ecogeomorphic benefits and impacts of beaver dam building activity are well understood, but predicting where beaver will likely build dams is critical to using beaver in a restoration context. Beaver are broadly appreciated for their utility as an ecosystem engineer capable of restoring streams, rivers, and wetlands to the benefit of numerous flora and fauna, including salmon and steelhead (Bouwes et al. 2016). From a restoration perspective, we primarily care about where beaver are able to build dams that persist. In this context, we can focus on the conditions beaver need to build dams.

APPROACH

Five lines of evidence are used to consider whether beaver could build dams:

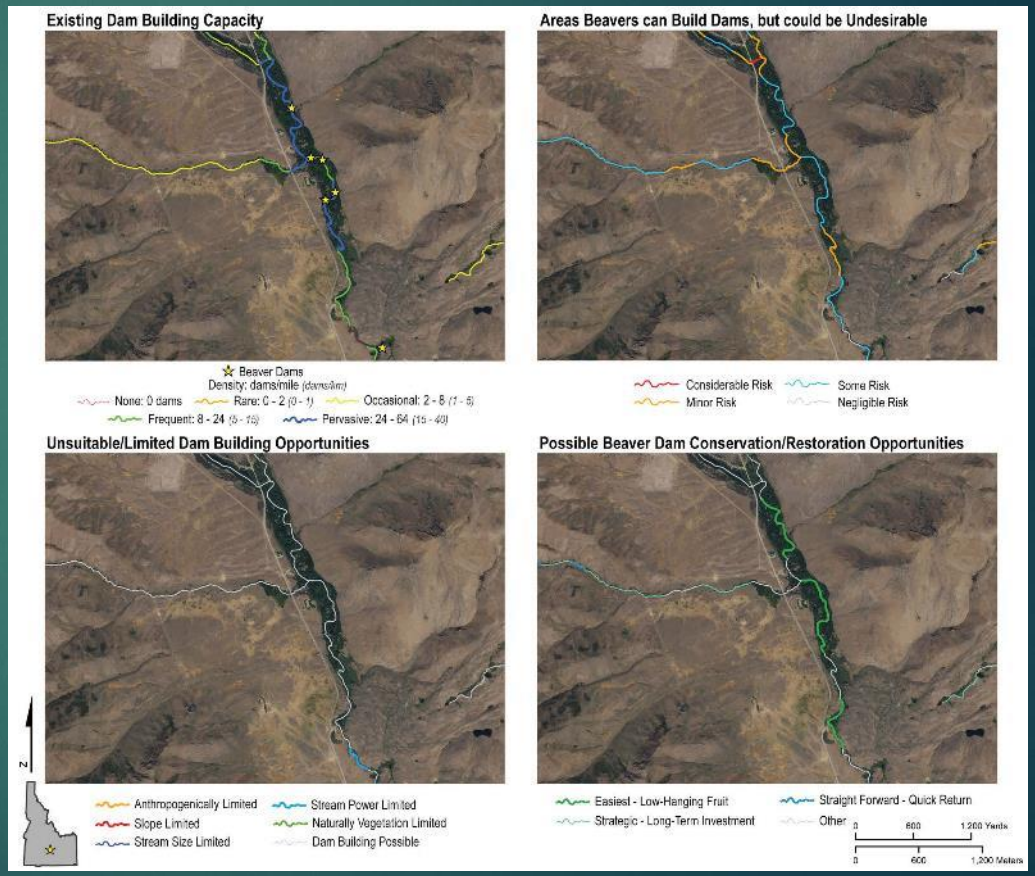
- **Availability of water to support beaver ponds**
- **Availability/extent of woody building materials**
- **Ability of beaver to build dams at baseflow**
- **Likelihood of dams to withstand high flows**
- **Likelihood that a stream is small enough to dam**

The inputs to the capacity model (Figure 1) can be readily derived from nationally available DEMs, vegetation and hydrological data. These factors are combined in a fuzzy inference system to predict an upper limit of dam density (in terms of dams per mile/km) that the riverscape could support.

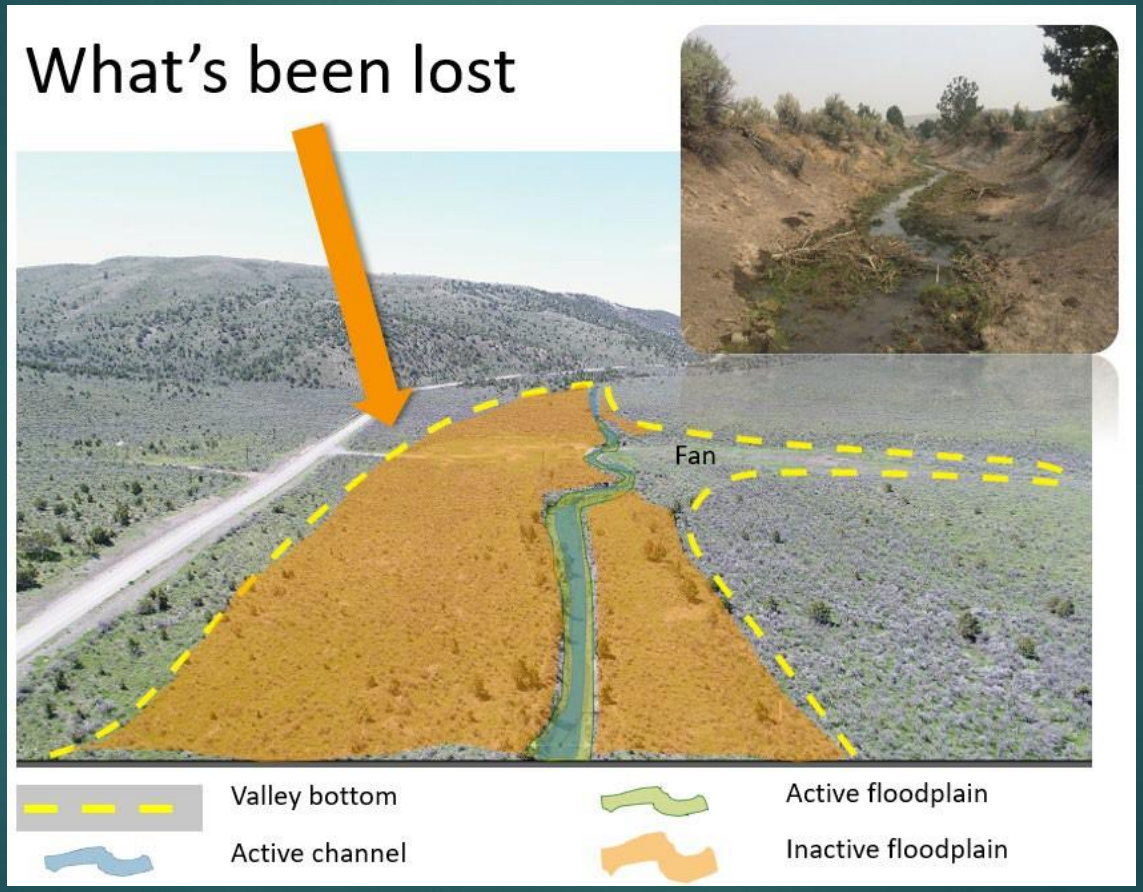
Modeled capacity of riverscape to support beaver dams

Figure 2. A schematic of the five inputs to the beaver dam capacity model.

UtahStateUniversity



Riverscape:
Valley Bottom Extraction Tool



Does the BLM Reintroduce Beaver? No, but…

- BLM manages habitat (State wildlife agencies manage wildlife/fish)
- ***BLM should cooperate fully with State agencies to reestablish native populations of wildlife***
  (BLM Manual MS-1745, BLM Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants; BLM Manual MS-6521, State Agencies)
- BLM can manage outcome of species introduction with a Categorical Exclusion (CX) that provides for
  1. Routine augmentations such as fish stocking, wildlife transplants
  2. Relocation of nuisance or depredating wildlife

Has BLM Participated in Beaver Reintroduction?

- Informal Survey:
  - Idaho Department of Fish and Game (IDFG)
  - BLM Idaho Field Offices
  - BLM State Office Aquatic Program Leads

Survey Results: IDFG

How many beaver has your region translocated in the past 5 years?

IDFG Region	Beaver Translocated on all lands	Beaver Translocated on BLM lands
"A"	189	7
"B"	57	0
"C"	0	0
"D"	61	8
TOTAL	307	15

Why do you think more beaver weren't transplanted on BLM managed lands?

- Unsuitable habitat: Need LTPBR prior to restoration
- IDFG Regional Office restrictions
- BLM management reluctance
- High release mortality: caution, need better release locations
- Downstream water user resistance

Survey Results: BLM

Are BLM FO managers comfortable with state agencies leading reintroduction efforts on BLM lands?

YES, most managers recognize that state agencies manage wildlife/fish and BLM manages habitat

One manager "*is not comfortable due to concerns with coordination with grazing permittees and potential impacts to staff dealing with high priority, time sensitive, court-ordered workloads*"

Do some managers think that reintroduction requires NEPA?

No, with exceptions:

- If introduction involves an interrelated BLM land management action
- Yes, a CX (one manager)
- Large-scale, watershed restoration projects

Survey Results: BLM

Have beaver been reintroduced successfully on at least one BLM Field Office in your state?

Mostly, yes.

What proportion of Field Offices across the BLM have had beaver reintroduced?

>20%

Little Jacks Creek, Idaho

Path Forward?

- State-wide or regional beaver plans (Utah example)
- MOUs/agreements between BLM - State Agencies
- Annual letters authorizing and supporting beaver reintroduction by state wildlife agencies
- Training for BLM managers/specialists
- LTPBR!
- Public Education!!