

Welcome

Riparian Book Club: CPW Beaver Conservation & Management Strategy

CRA Host: Julie Ash, P.E., Senior Engineer with Parametrix

COCO Host: Maria Brandt, Outreach & Development Director

Technical Hosts: Boyd Wright & Brian Sullivan, Colorado Parks & Wildlife (CPW)



Riparian Book Club

Bridging the gap between academic research on stream/wetland systems and applied restoration design. These book club discussions are targeted toward those tasked with stream-wetland restoration design and project planning, connecting them to pivotal scientific papers that can help them in daily work tasks.

View previous meetings at CO-CO.org > Resilient Communities > Riparian Book Club

Colorado Riparian Association

Formed in 1989 by a small group of dreamers who believed that our riparian zones should not become sacrifice areas.

Promoting the conservation, restoration, and preservation of Colorado's riparian areas and wetlands.



Coalitions & Collaboratives

We believe in working together. No single individual, business, organization, or government can fix the difficulties facing our planet and its people, but by working together, we can drive positive change for people and the planet. This includes as much open access to resources and information sharing as possible.

To advance healthy and resilient communities through collaborative conservation and restoration.

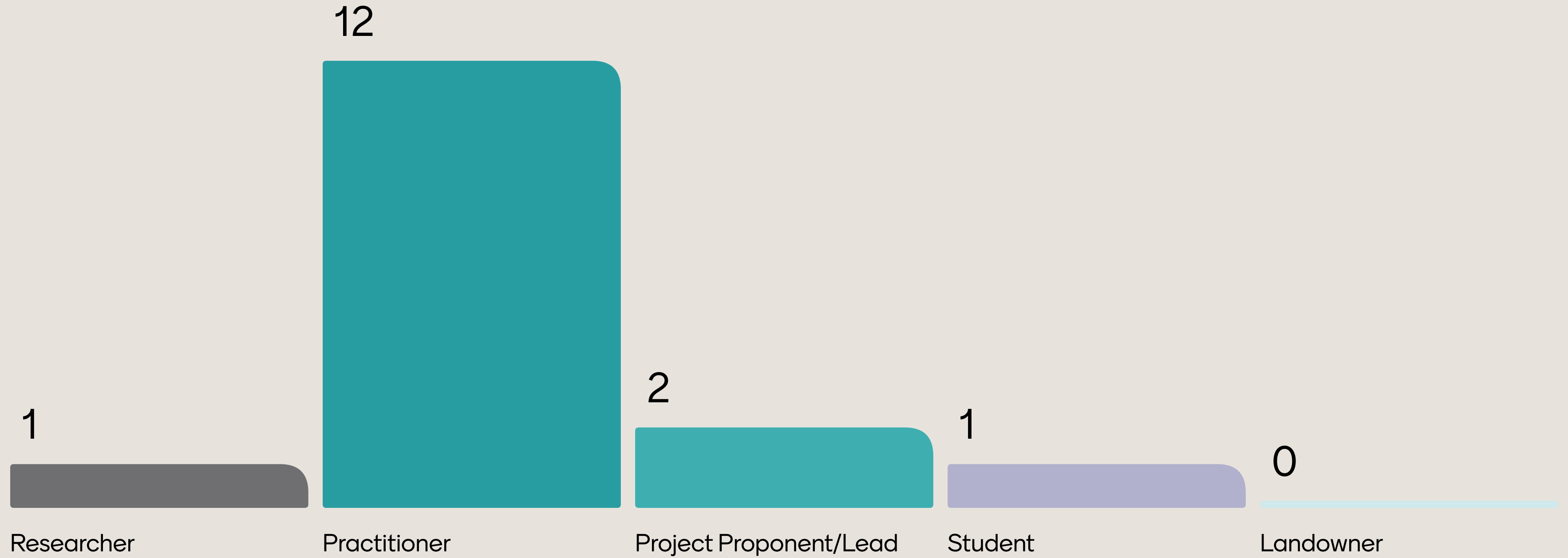


COCO

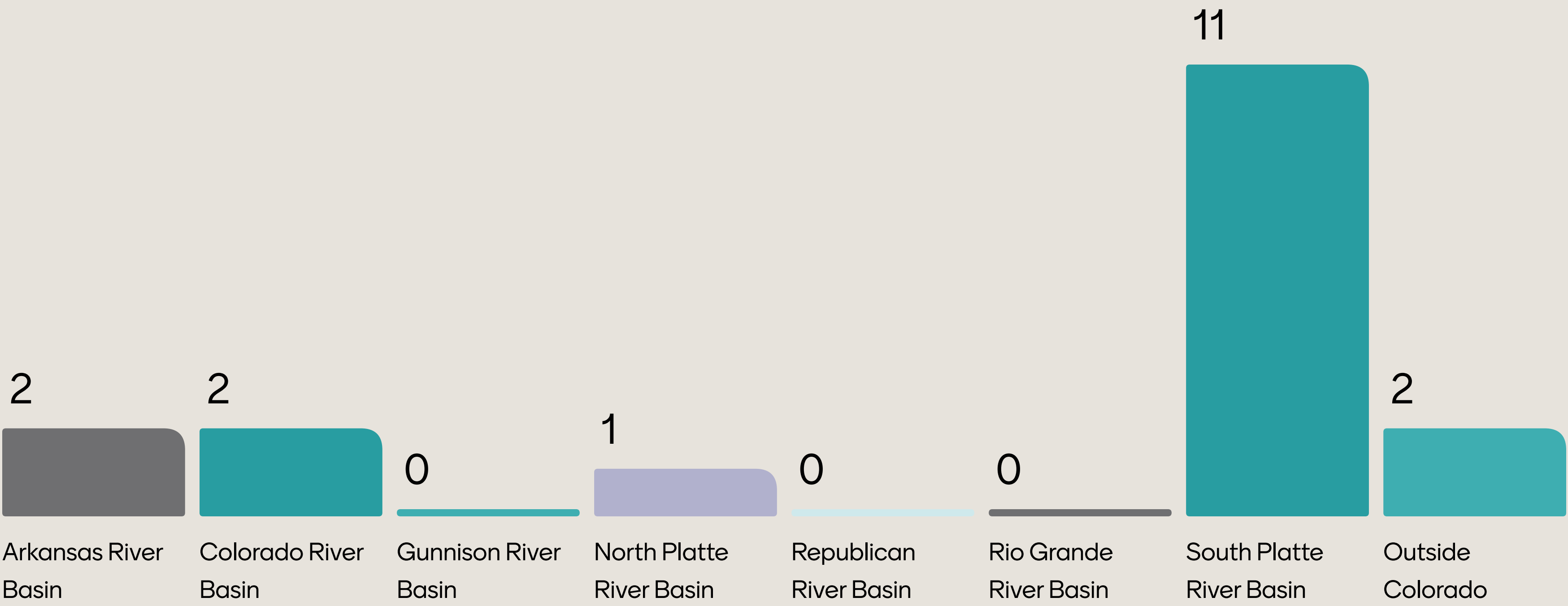
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- Follow along and participate in the webinar
- Polling is anonymous. Please be respectful and professional.
- Using Menti and Zoom to engage
- Welcome to add questions to Menti during presentation

I'm a



What geographic location are you joining us from?



What do you hope to get from this online workshop?

To learn!

None

Monitoring beaver populations

Check out the plan

interact with people and stay up to date on recent information

Beaver strategy highlights so I know which chapters to review

Beaver hope!

Improve our city's goal of coexistence

What do you hope to get from this online workshop?

Learn more about our neighbors are doing in this world of beavers

Excited to learn about new methods and advice for handling beavers and potential conflicts!

See other riparian nerds like me

Tools and resources for future restoration projects.

to learn

Learn



Technical Hosts

Boyd Wright is a Native Aquatic Species Coordinator for CPW. Aside from his special assignment co-leading the beaver strategy, Boyd guides and supports cutthroat trout restoration statewide, and generally helps advance aquatic conservation priorities in eastern Colorado. Based out of Fort Collins, Boyd enjoys all things outdoors, and adventuring across the west with his family.

Brian Sullivan is CPW's Wetlands for Wildlife Program Coordinator. Aside from his special assignment co-leading the beaver strategy, Brian oversees CPW's investments in wetland and riparian restoration projects on CPW properties and other public and private lands statewide. Brian is originally from Minnesota, where developed early affinities for chasing critters in wetland habitats, ice fishing, and canoeing.

CPW Beaver Conservation and Management Strategy

Riparian Book Club (CSRN & COCO)

April 28, 2026

Boyd Wright
Native Aquatic Species Coordinator

Brian Sullivan
Wetlands Program Coordinator



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Photo credit: Mark Beardsley/EcoMetrics

“Book Review” Overview

- Chapter 1: Introduction and Purpose
- Chapter 2: Beaver Natural History and Ecology in Colorado
- Chapter 3: Population and Habitat Status and Monitoring
- Chapter 4: Beaver Harvest Management
- Chapter 5: Beaver Restoration Opportunities
- Chapter 6: Living with Beaver: Non-lethal conflict resolution
- Chapter 7: Translocation Policy and Protocol
- Chapter 8: Summary of Goals, Strategies, and Actions



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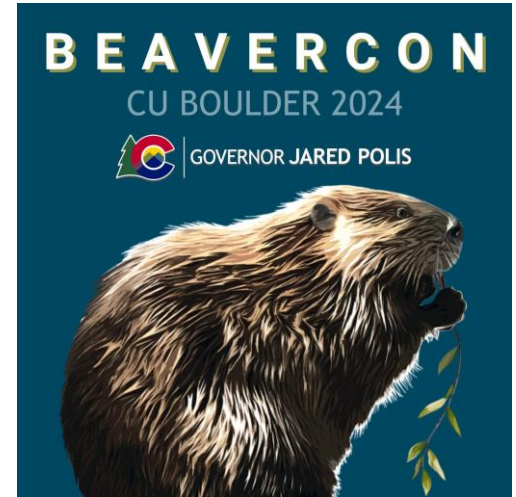
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Background & Development Process

Why a beaver management strategy, and why now?

- Beaver management touches many diverse sectors in society.
- Value of beavers for supporting wetland and riparian habitat conservation and ecosystem resilience
- Reduction of beavers and beaver wetlands on the landscape, particularly in headwaters
- Source of human-wildlife conflict.
- Increasing agency and stakeholder interest (the “Beaver Movement”)
- Need to account for diverse perspectives and coordinate partners
- Developed a strategy based on best available science, and robust internal and external stakeholder engagement



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Purpose

“...increase and sustain the prevalence of beaver and beaver-influenced wetlands in suitable habitats for the benefit of Colorado’s stream and wetland ecosystems and the array of wildlife species that utilize them.”

Goal

“Increase beaver populations and beaver-occupied wetland habitats in Colorado until social or ecological carrying capacity is reached.”



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Individual Chapter Goals

(3) Population and Habitat Status and Monitoring: Improve knowledge of beaver wetland habitat and beaver populations in Colorado at multiple scales.

(4) Beaver Harvest Management: Manage beaver populations for continued sustainable avocational harvest.

(5) Beaver Restoration Opportunities: Support a thriving beaver population in Colorado by identifying opportunities and encouraging strategic restoration of ecologically and socially suitable historical, but currently unoccupied, beaver habitats.

(6) Living with Beaver and Nonlethal Conflict Resolution: Promote the widespread adoption of nonlethal solutions to common beaver conflicts when such solutions are appropriate and feasible.

(7) Translocation Policy and Protocol: Optimize translocation as a tool to support restoration objectives by providing a standard permitting process that maximizes translocation success while reducing the risk of disease and Aquatic Nuisance Species (ANS) spread.



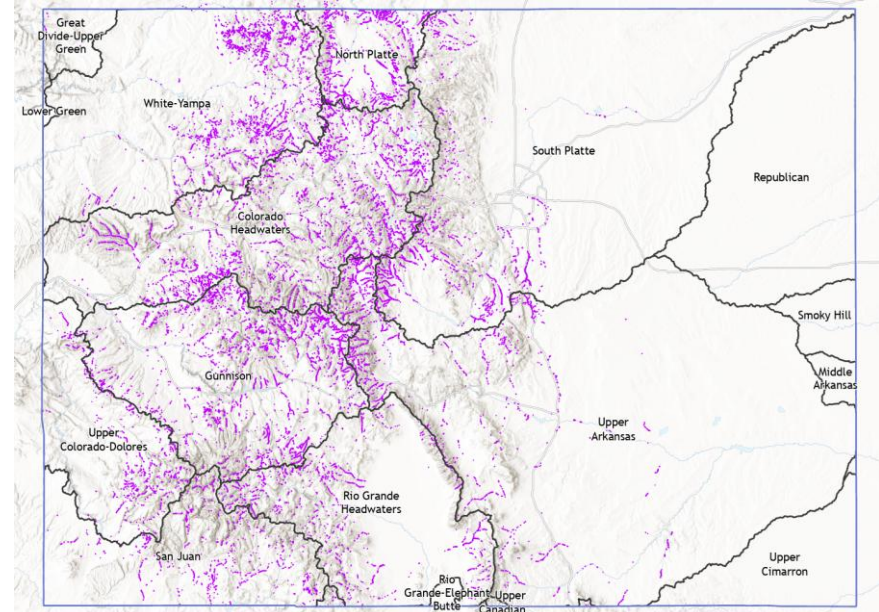
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Chapter 3: Population and Habitat Status and Monitoring

- Population goals are occupancy based, not abundance based
 - But population estimates needed for harvest caps (Chapter 4)
- Colorado beaver population through time
 - 1941: ~48,000 - 50,000
 - 1965: ~60,000
 - Present estimate: 43,000 - 64,000
 - Bias likely low: dam-building only
- Need for better information



Colorado Beaver Activity Mapper (COBAM):
Beaver Ponds, 2013 - 2021



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Chapter 3: Population Habitat Status and Monitoring *GOAL*

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Chapter 3: Population and Habitat Status and Monitoring

Strategy 1: Estimate spatial extent of beaver wetlands & population size at statewide & watershed scales

- Update beaver wetland mapping & display in Colorado Beaver Activity Mapper
- Refine estimates of individuals per complex & bank-denning beaver
- Combine refined mapping and population estimates into working estimate of CO beaver population
- Develop molecular tools for assessing genetic diversity and geographic structure

Strategy 2: Estimate beaver occupancy – statewide & HUC10 scales

- Develop monitoring approach; ground-truth fall food caches
- Implement pilot occupancy monitoring in 2-3 HUC10s
- Create iNaturalist community science project



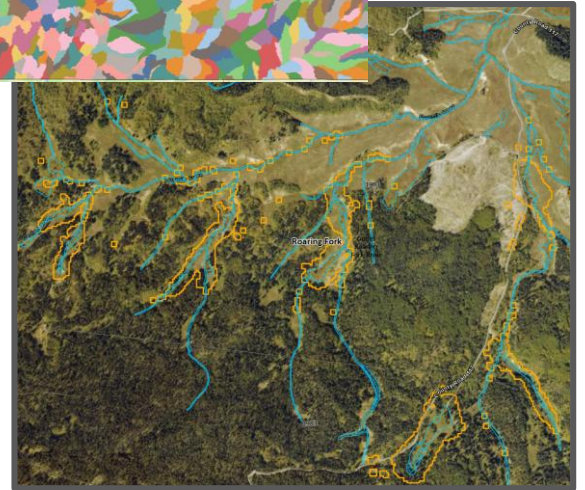
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Chapter 5: Beaver Restoration Opportunities

- Restoration includes strategically targeting stream restoration to entice colonization by beaver and/or beaver translocation
- Utilize COBAM: Currently occupied, potentially suitable (historic NWI and modeled)
- BROWs- Beaver Restoration Opportunity Watersheds (HUC10) - greatest opportunity for restoration
 - Considers ratio of occupied vs. potential suitable habitat
 - Additional factors: land use, infrastructure, etc.



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Chapter 5: Beaver Restoration Opportunities

Targeted restoration example: Rough and Tumbling Creek



Photo series: Mark Beardsley, EcoMetrics



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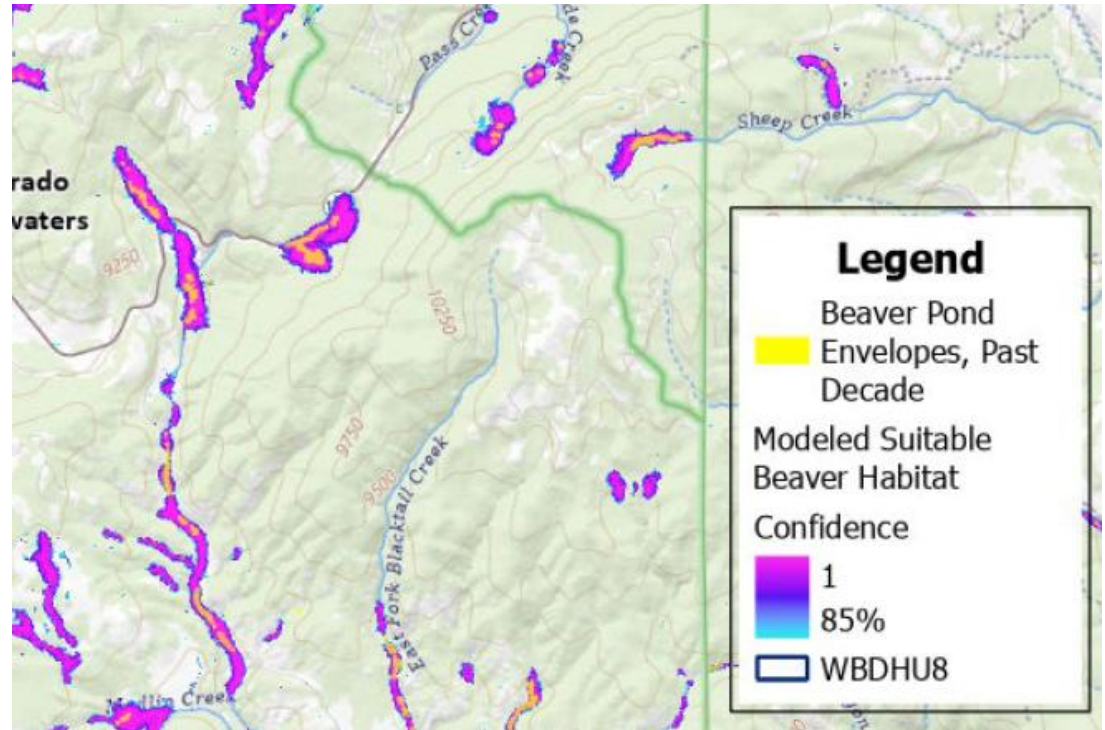
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Chapter 5: Beaver Restoration Opportunities

Beaver activity areas (COBAM) and modelled suitable beaver habitat output

-Courtesy of Sarah Marshall (CNHP)



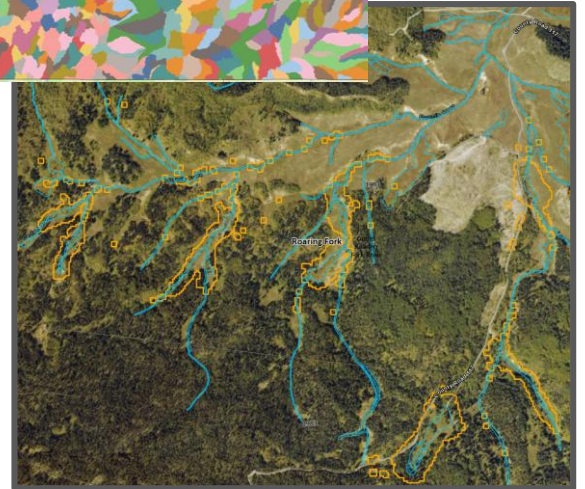
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Chapter 5: Beaver Restoration Opportunities

Strategy 1: Identify greatest opportunities for beaver restoration

- Model and map suitable habitat statewide
- Identify subset of beaver restoration opportunity watersheds (BROWs) with greatest ecological benefit & minimized human conflict
- Re-evaluate BROWs and sites every 5 years

Strategy 2: Increased occupation of unoccupied suitable habitat

- Collaborate with partners to prioritize & implement restoration activities in watersheds with abundant acreage of suitable unoccupied habitat
- Pair translocation with vetted restoration sites



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Chapter 5: Beaver Restoration Opportunities

Strategy 3: Create & maintain beaver-focused tools & resources

- Maintain CO Beaver Activity Mapper with restoration-related mapping layers
- Develop & maintain beaver Decision Support System to screen restoration opportunity watersheds & sites
- Maintain Beaver Habitat Scorecard to rapidly assess habitat restoration suitability
- Host links to restoration tools & resources on centralized toolkit website
- Host/create resources on how to identify & document relative age of beaver signs
- Explicitly connect restoration with coexistence in outreach, engagement, & review of project proposals
- Connect people seeking to restore habitat to tools & resources through outreach & engagement
- Develop a standard coordination process between CPW and DWR for responding to water right administration issues arising from beaver related restoration activity



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Chapter 6: Living with Beaver- Non-lethal Solutions to Conflict Resolution

Context & Trends

- Beavers are frequently involved in human-beaver conflicts at the interface of aquatic systems and human infrastructure.
- Human-beaver conflicts are a significant source of beaver mortality
- “Living with beaver” approaches have improved substantially in the past decade and are an emphasis of the Beaver Strategy



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(Photos courtesy of the Beaver Institute)

Chapter 6: Living with Beaver- Non-lethal Solutions to Conflict Resolution

Context & Trends (Stakeholder Feedback)

- Desired **emphasis on coexistence**
- Private landowners should **continue to have the ability to lethally manage beaver**
- **Beavers aren't a fit everywhere**
- **Financial assistance or incentives**
- **Technical assistance** should be available to support landowners
- **Training** is essential for effective installations that support increased acceptance and use
- **Maintenance of coexistence devices** is important for their continued utility and acceptance
- **Both the messaging and messenger are important** for developing education & outreach
- Opportunities for **local partnerships**



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Chapter 6: Living with Beaver- Non-lethal Solutions to Conflict Resolution **GOAL**

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Chapter 6: Living with Beaver- Non-lethal Solutions to Conflict Resolution

Strategy 1: Increase education about the value of beaver and available nonlethal solutions

- Within CPW, institutionalize a shared understanding of the value of beaver and their wetlands to habitat, wildlife, and society as a whole
- Lead and collaborate with partners on developing external, co-branded education materials.
- Update CPW's Living with Beaver webpage

Strategy 2: Collaborate with partners on comprehensive outreach that reaches diverse key audiences

- Identify key spokespeople to create and distribute living with beaver educational materials that reach key audiences
- Work with Tribal governments to identify opportunities to incorporate tribal management perspectives into education and outreach materials
- Promote & prioritize local beaver coexistence strategy development in watershed planning grants
- Coordinate & share educational materials with other Colorado agencies that deal with beaver conflicts
- Coexistence demonstration projects on CPW properties



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Chapter 6: Living with Beaver- Non-lethal Solutions to Conflict Resolution

Strategy 3: Expand statewide capacity of CPW and partners for coexistence through formal training and by supporting volunteer networks

- Work with partners to organize annual coexistence training workshops; Identify and prioritize CPW staff each year to participate in coexistence training.
- Collaborate with partners to establish a volunteer network in each region to assist with coexistence work in order to increase capacity and foster community ownership.
- Develop a network of trained coexistence contacts for each geographic region

Strategy 4: Support the establishment of cost-share programs for landowners

- Work with partners to establish coexistence cost-share programs that can respond in a timely manner to beaver complaints.
- Conduct annual surveys of landowners who received assistance to implement coexistence to determine effectiveness of the measures taken among other data that will be helpful for future coexistence work.
- Work with partners to assess conflict data and opportunities for support of non-lethal solutions



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Chapter 7: Translocation Policy and Protocol

Context & Trends

- Translocation- human assisted movement of individuals beyond their home range
- A potential outcome in stepwise conflict resolution
- Used carefully and strategically to support beaver restoration objectives
 - Survival and success of beaver translocations are variable
 - Concerns about unintended spread of ANS and pathogens that can harm other wildlife



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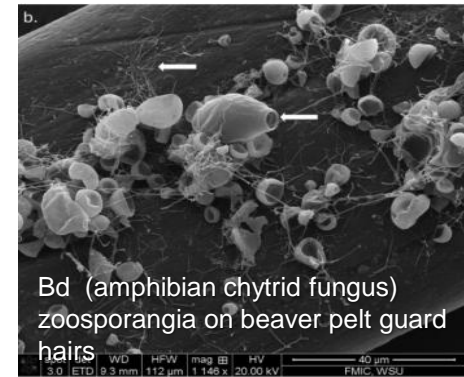
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Chapter 7: Translocation Policy and Protocol

Context & Trends

- Continued relevance as a tool for beaver management in Colorado
- Insights from translocation programs elsewhere in west
- Increasing interest in coordinated efforts from partners
- Need for standardized and more efficient permitting
- Concerns around disease spread, specifically aquatic pathogens
- Need for holding facilities



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Chapter 7: Translocation Policy and Protocol

GOAL

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Chapter 7: Translocation Policy and Protocol

Strategy 1: Develop standardized and understandable translocation permitting process

- Standardize the beaver translocation permit as a license through CPW Special Licensing
- ID central CPW staff member to coordinate conflicts, holding facilities, nuisance operators, permitted release sites
- Maintain database to track beaver translocations
- Develop standardized translocation season dates

Strategy 2: Develop translocation procedures that maximize beaver well-being & translocation success

- Use new DSS and develop standardized release site scorecard for vetting release sites
- Require CPW aquatic staff review of release site proposals
- Build network of holding facilities
- Require quarantine of beaver moved across HUC12 boundaries
- Develop standardized translocation monitoring requirements; conduct research
- Research pathogen persistence on beaver, research spatial distribution of aquatic pathogens
- Prevent translocation of beaver from ANS positive areas



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Example Facilities

Wyoming Game and Fish: trailer design



USU Beaver Ecology and Relocation Collaborative



IDGF



WY Wetlands Society



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New Beaver Program (\$1.1 M; SB230)

- **Personnel:** Beaver Conservation Coordinator
- **Translocation:** Initial investment in CPW existing facilities for beaver holding and quarantine, and aquatic pathogen research
- **Restoration:** Prioritized funding to support beaver-related habitat restoration projects; DSS and BROWs
- **Population Monitoring and Harvest:** Update and refine beaver mapping; development of systems to collect and store mandatory check data
- **Conflict Resolution:** Develop landowner cost-share program, develop and distribution of information and education materials, and some internal capacity building



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Thank you!

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- mark.vieira@state.co.us

Beaver Conservation and Management Strategy



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Acknowledgements

Stakeholders

- Approximately 170 who participated on stakeholder focus groups and technical advisory team
- 300 public members who submitted comments during scoping
- 160 public members who commented on the draft
- Tribal and Indigenous

Facilitation and Drafting Team

- Colorado Natural Heritage Program: Sarah Marshall & Lee Granau
- Keystone Policy Center: Julie Shapiro, Briana Brumbaugh, Margaret McGuirk, Ernes House Jr.
- CPW Team: Mark Vieira, Jonathan Boydston, and Katie Lanter

CPW Staff Support

- CPW Beaver Working Group (26 Staff) & Internal Draft Review Team
- Brian Dreher, Matt Nicholl, Casey Cooley, Jenn Logan, Sherri Huwer
- Executive Management Team



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Riparian Book Club Discussion

If we restore a stream on private land and the landowner is interested in beaver translocation - how do we start that process with CPW?

I understand there are various conflicts with humans & beavers, but have you heard any negative feedback or pushback from those receiving water downstream, especially give current water scarcity?

Could you name some contractors/practitioners who are experienced in building co-existence structures?

Pls provide more info on how iNaturalist can be a useful tool in assessing the abundance or influence of beaver in a particular area? Is there an example you can share?

I was not familiar with the potential of disease spread with translocation- thanks for being so thoughtful with this plan!

WOW! The new beaver program will be amazing!! Hope you get great candidates for the coordinator role.

\$1.1 million for the project is awesome! How does that compare with your "ideal" budget for implementation?

As a young professional new to this space, how would you recommend getting involved in this program?



1



8/8



Riparian Book Club Discussion

My partner and I both work in LTPBR right now in SLV, but are interested in doing BeaverCorps through the Beaver Institute to jump into conflict management work as well. Is now a good time to plug in?

Will CPW be able to help a city determine the capacity for a city to harbor beavers?

For the Beaver Corp possible recruits - it's a good program BUT be aware it needs four individual projects to achieve their certification standards.

You mentioned local coordinators. Would this be in addition to local district wildlife managers? What role would these coordinators play, at what scale, and would this be through CPW?

Thank You

A recording of this webinar will be available at CO-CO.ORG -> Resilient Communities -> Riparian Book Club

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