

Beaver Conservation and Management Strategy



Appendix C: 2025 Scoping Phase Engagement Report

*Prepared for Colorado Parks and Wildlife
by Keystone Policy Center*

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Background and Structure

Increasing interest in beavers as an agent for ecological restoration prompted Colorado Parks and Wildlife (CPW) to begin developing formal guidance to inform beaver conservation and management, including such topics as: harvest regulation, restoration, techniques for coexisting with beaver, and relocation. Given the broad reach, complexity, and interrelatedness of these topics, CPW gathered input from diverse stakeholders to inform a strategy for beaver conservation and management through a series of focus groups, technical advisory meetings, and written public comment.

This report, presented as an appendix to the Strategy, summarizes the stakeholder feedback received from each of these scoping phase engagement processes. Feedback from the four processes (sector focus groups, cross-sector focus groups, technical advisory meetings, and written public comment) are summarized separately beginning with methods used, key themes, a summary of discussion, and a list of participants. The report concludes with agendas and slide content presented by CPW during the meetings. A copy of the sector focus group meeting slides was also made available to stakeholders providing written public comment via the CPW Engage website, which hosted the slides and the comment form.

Sector Focus Groups Summary

Methods

In July and August 2025, CPW held eleven virtual focus groups for specific stakeholder interests and sectors. A twelfth focus group was held as a “mixed sector” focus group to convene all interested invitees who were unavailable on the date of their sector’s focus group. (See Figure 1 for a list of focus groups and dates) All sessions lasted two hours, and the agenda and objectives remained the same for all twelve focus groups. (See page 129 for the sector focus group agenda)

Figure 1: List of sector focus groups held from July through August 2025

Focus Group	Date	Number of Participants
Water Users and Managers	July 30, 2025	19
Conservation Funders	July 31, 2025	12
Beaver Advocates	July 31, 2025	15
Sportspersons and Trappers	August 5, 2025	9
Agriculture and Landowners	August 6, 2025	10
Watershed Coalitions	August 6, 2025	19
Local Government	August 7, 2025	25
Wildlife and Conservation	August 7, 2025	20
Nuisance Operators and Wildlife Rehabilitators	August 20, 2025	12
Tribal and Indigenous Interests	August 20, 2025	15
Transportation and Infrastructure	August 20, 2025	5
Mixed Sector	August 28, 2025	9

A total of 169 unique individuals participated in the focus groups. Participants were recruited by CPW staff and partners. (See page 53 for the list of sector focus group participants)

Focus groups began with CPW staff providing background on the need for developing a Beaver Conservation and Management Strategy. Facilitators from Keystone Policy Center then provided an introduction to the purpose of the focus groups, shared the agenda and discussion guidelines, and led a round of introductions among participants. During introductions, participants were invited to share their interests in beavers and which of the core topics (Population Status and Management, Beaver Restoration, Coexistence and Conflict Resolution, and Translocation) they were most interested in discussing. While all focus groups spent time on every topic, more time

may have been allocated for any topic(s) in which participants in a given focus group collectively indicated more interest in.

Participants were introduced to each topic with a brief slide presentation by CPW staff leading into a facilitated discussion with participants, and all focus groups were presented with the same slides for all topic areas. (See page 135 for the slide presentation)

Prior to the conclusion of each meeting, participants were also asked to share overall reflections and vision for Colorado's Beaver Conservation and Management Strategy. Participants were also reminded of the opportunity to provide additional comments for the scoping process through August 31, 2025, via the public comment form on CPW's Engage website.

Focus group discussions were guided by open-ended questions and aimed to elicit the full range of participant perspectives rather than build consensus. Notes were thematically analyzed to identify convergent, divergent, and unique viewpoints. While this report synthesizes common themes, it does not reflect consensus of all focus group participants either within or across sectors. **All comments should be considered individual feedback from participants unless otherwise noted** as being raised by multiple participants or noted as a key recurring theme. Regardless, neither key themes nor comments raised by multiple participants should be construed as representing consensus among a focus group.

Focus group meetings were not recorded and all notes were taken live by a member of the facilitation team. Notes were captured entirely without attribution with the exception of introductions. The notes were thematically analyzed primarily through human review, with limited framing support from AI software to help organize this summary. The emphasis remained on human interpretation to ensure contextual accuracy and nuance. The use of AI software did not involve feeding data into model training, and no cultural stories originating from Tribal and Indigenous peoples were included in the content provided to AI software.

Key Themes

Introduction to Key Themes

Themes that emerged across **multiple focus groups** are presented by topic area in the next section. Themes represented here arose from many, but not necessarily all, of the twelve focus group discussions. These themes were salient across discussion, however, should not be interpreted as consensus across focus groups, *nor* as consensus among participants of the focus group(s) in which they were expressed.

Key themes that emerged from a single focus group are listed under the session (sector) in which they arose. These themes were salient in the discussions, however, should not be interpreted as consensus among all participants of that focus group.

Unique suggestions and considerations that emerged from a single focus group are listed under the sector in which they arose. These suggestions did not arise in more than one focus group;

however they may have been voiced by more than one participant in a single focus group; they should not be interpreted as consensus among all participants of that focus group.

Multiple Focus Groups

Cross-cutting Themes

- **Locally driven, collaborative approaches are needed on the ground**
 - Locally trusted partners engaging with private landowners and communities (co-branded materials, training for local wildlife officers and managers, training workshops and/or tuition grants for partners on the ground, peer to peer learning)
 - Projects should incorporate local goals and contexts (social and ecological)
 - Developed and rural landscapes have unique needs and challenges
- **Proactive approaches are a key to success**
 - Proactive outreach to neighboring landowners and stakeholders while considering restoration or translocation projects
 - Proactive planning for coexistence measures in restoration projects or in the building phase of transportation and infrastructure projects
- **Long term considerations should be kept in mind**
 - Some restoration objectives will take significant time to materialize
 - Maintenance and adaptive management is necessary for coexistence devices
 - Removal of beaver, either through lethal methods or translocation, is not a long-term solution for conflict in habitats that are ecologically suitable for beaver
- **Water rights are an important concern among Coloradans that should be addressed**
- **CPW written strategies, materials, and advisors are important for legitimizing beaver restoration and coexistence work on the ground**
- **Agency capacity constraints** (budget and staff) could be a barrier to success
- **More outreach, education, and training are needed**
 - Coexistence training for CPW staff, particularly local wildlife officers and managers
 - More coexistence training opportunities and funding support for partners to enroll in coexistence training programs
 - Expanded awareness of the existence and legitimacy of coexistence solutions
 - General public outreach on beaver and their ecological benefits
 - Demonstration sites including beaver dams and coexistence structures
 - Networks of practitioners and allies are needed for scaling up efforts
- **More data gathering and monitoring are needed**
 - Number and locations of beaver, human-beaver conflicts, and beaver take
 - Outcomes of beaver restoration
 - Positive and negative impacts of beaver activity
 - Risks and outcomes of beaver translocation

Population status and Monitoring themes

- **Gaps in conflict take data.** Reporting the lethal take of nuisance beaver on private land is not currently required, though this data could be a significant contribution to the

understanding of beaver population trends and the development of conservation and management strategies.

- **Gaps in avocational harvest data.** Avocational harvest is currently voluntarily collected, but mandatory reporting of numbers and location of harvested beaver could provide an important, verified source of information.
- **Limitations of remote imaging for population estimates,** particularly the gap in **bank denning beaver populations**
- **Concerns about harvesting of beaver in restoration areas** which could impede success of restoration goals and waste significant public and private investments

Restoration themes

- Key considerations for prioritization of restoration areas:
 - **Local and community input** on opportunities
 - **Reduced conflict potential** including consideration of land ownership, infrastructure, and history of conflict
 - **Scalability**
 - **Habitat connectivity**
 - **Forage availability**
 - **Potential for improving climate resilience,** esp. **wildfire** mitigation
 - **Potential for improving water quality and/or water quantity**

Coexistence and Conflict Resolution themes

- **Desired emphasis on coexistence** as a more sustainable solution than lethal removal or translocation
- **Financial assistance or incentives** should be available for landowners to implement coexistence. **Cost-share programs** were the system most frequently suggested
- **Technical assistance** should be available to support landowners in implementing and maintaining coexistence strategies, such as through **on-the-ground support**, a **beaver hotline**, a **decision tree**, and/or **referral networks**.
- **Maintenance of coexistence devices** is important for their continued utility and acceptance, and should be planned for and supported.
- **Beavers aren't a fit everywhere** and coexistence strategies will not always be feasible.
- **Private landowners should continue to have the ability to lethally manage beaver** on their properties.
- **Both the messaging and messenger are important**
 - The “nuisance” label and the term “coexistence” itself are possible barriers to broader adoption of coexistence strategies
 - Peer to peer outreach, trusted partners, and local examples can build interest in coexistence approaches
- **Navigating the permitting process** for coexistence devices is difficult and more guidance is needed

Translocation themes

- **Translocation should never be the first approach** attempted for conflict situations. It is resource-intensive, involves risks to the beaver being translocated, and may involve risks to other aquatic species
- **More resources are needed to support translocation** including **holding facilities** and **more practitioners** that can provide hands-on assistance, and a **network or referral list** to locate them
- **Clear protocols are needed from CPW** to ensure translocation is used appropriately and with the best chance of success

Agriculture and Landowners

Key themes

- Capturing ecological benefits of beaver while helping landowners and lessees resolve conflict
- Ensuring lethal management continues to be a tool
- Financial and technical support for landowners to voluntarily implement coexistence
- Need for a broad toolbox and flexibility in approaches
- Recognition of variance in habitat suitability across the state and even within the same land

Unique suggestions and considerations

- Target areas where flood irrigation is being phased out; encourage and incentivize its continued use
- Reservoir spillways and headgates as a key area of beaver conflict and safety concerns
- Need for non-profit partners to provide desk support to help landowners submit the necessary paperwork for projects
- Recognition program for landowners that invest in beaver friendly practices
- Strengthen relationships between local wildlife officers and land managers (e.g. re-establish regular checkins)

Beaver Advocates

Key themes

- Changing the narrative around beaver to reflect their value
- Ensuring beaver are not trapped in restoration areas
- Need for coexistence training and resources

Unique suggestions and considerations

- Bag limits for beaver
- Public lands are harder to restore than private lands due to tendency for overgrazing
- Targeted support (labor and/or supplies) for coexistence for low-income communities

- Experience with difficulty in obtaining trapping licenses for translocation

Conservation Funders

Key themes

- Need for more collaboration and shared learnings among existing partners
- Regionally specific definitions of success and locally trusted messengers
- Need for resources and training for coexistence and non-lethal conflict mitigation
- More data and monitoring needed
- State strategy will be used for prioritization of funding decisions and alignment of outcomes

Unique suggestions and considerations

- “Ecological balance” as an outdated term
- Need a standardized method of population counting across partners
- Potential for corporate funding sources for coexisting with beaver in the form of ecosystem service payments

Local Government

Key themes

- Multi-benefit projects (e.g. enhanced climate resilience, water quality, and/or water quantity in addition to environmental benefits)
- Readily available tools and support for landowners
- Regionalized approaches, flexibility or adaptability for developed areas
- Need for clear expectations from the state

Unique suggestions and considerations

- Experience with successful volunteer programs engaging the general public in coexistence activities or beaver population monitoring
- Specific guidelines or thresholds for urban/suburban areas managing beaver populations or experiencing conflict

Mixed Sector

Key themes

- Data driven management decisions
- Harvesting of beaver in restoration areas could undo significant investments made by the public and private sectors

Unique suggestions and considerations

- Targeted outreach to municipal governments, county commissions, town councils

- Curated site list of areas where translocation has higher likelihood of success

Nuisance Operators and Wildlife Rehabilitators

Key themes

- Lack of verified population data and regional variances
- Upper valley habitats as restoration priorities
- Ensuring appropriate translocation release sites
- Pairing priority restoration areas with targeted ground support for coexistence
- Need for clear protocols from the state for holding beaver
- Monitoring of translocation outcomes

Unique suggestions and considerations

- Sourcing of materials for coexistence solutions as a challenge
- Education for wildlife rehabilitators on beaver and coexistence
- Local civic groups as on-the-ground partners for installing coexistence devices
- Wildlife rehabilitators can play a key role in translocation (outreach, education, and holding facilities)
- Consistent terminology, using either “relocation” or “translocation,” not both

Sportspersons and Trappers

Key themes

- Relative abundance of beaver on the landscape and satisfaction with CPW’s current management of beaver
- Ensuring decisions are driven by the agency and backed by data
- Ensuring continued opportunities for harvesting beaver
- Preserving landowners’ ability to manage beaver on private property
- Concerns of impacts to downstream water users and lands from beaver activity

Unique suggestions and considerations

- Coexistence solutions should be implementable by landowners (i.e. not require inviting unknown persons onto private property)
- Experience with large, private operations (railroads, water treatment plants, utilities, etc.) where security protocols and permitting processes are potentially insurmountable barriers to implementing coexistence strategies

Transportation and Infrastructure

Key themes

- Weighing the potential adverse and beneficial impacts for projects
- Need to respond rapidly to address conflict situations with impacts for public safety or infrastructure

- Need for state-specific examples and lessons learned for coexistence strategies

Unique suggestions and considerations

- Guidance for coexistence strategies that can be proactively incorporated into the building phase of transportation and infrastructure projects
- Reach out to federal partners early to establish process that can potentially expedite and support beaver restoration and translocation

Tribal and Indigenous Interests

Key themes

- Respecting cultural and intrinsic value of beaver as relatives and water protectors
- Including the voice of the beaver; avoiding the development of strategies that come only from an extractive lens of what beaver can do for humans
- Promoting and incentivizing non-lethal approaches to beaver conflict
- Education and outreach on beaver and human-beaver coexistence
- Demonstration sites and field activities for Tribal members and youth

Unique suggestions and considerations

- Educational programs and field activities for school-age children
- Engage Tribal elders and those with traditional knowledge in providing education
- Berms as a low-cost alternative to pond levelers when needed
- Kickbacks (e.g. discounted game hunting tags) for private landowners that coexist with beaver

Water Users and Managers

Key themes

- Infrastructure security is a priority consideration for restoration and coexistence strategies
- Locally driven goals and local spokespersons as keys to success
- Need for resources and training for coexistence and non-lethal conflict mitigation
- Concern that CPW constraints (funding and staff) may limit success

Unique suggestions and considerations

- Co-branded coexistence informational materials
- Outreach for urban populations to understand the prevalence of beaver in urban waterways, and the benefits beaver can provide
- Coexistence training for local engineering crews

Watershed Coalitions

Key themes

- Exploring desired future conditions for beaver that consider the realities of development and social acceptance
- Capacity building and sustainability for on the ground work
- Value of state-backed information to support NGOs' work with landowners and municipalities on the ground

Unique suggestions and considerations

- Beaver may be unable to handle pulse-heavy stream systems created by runoff from impervious surfaces in developed areas
- State beaver license plate to generate funding pool

Wildlife and Conservation

Key themes

- Need for more data and monitoring
- Consideration of other species of concern in beaver restoration priority areas
- Importance of peer to peer learning opportunities and outreach

Unique suggestions and considerations

- The term "coexistence" itself may be a turnoff
- Emphasis on two-way education, including education for wildlife advocates to understand the perspectives, knowledge, and needs of landowners
- Mapping of beaver conflict areas and types
- Need for documentation of the precedent for working with federal entities to support conversations with shifting district staff

Agriculture and Landowners Focus Group Summary

Key Themes

- **Capturing the ecological benefits of beaver while helping land owners and lessees resolve conflict**
- **Ensuring lethal management continues to be a tool** in the toolbox for landowners and agencies
- **Financial and technical support** for landowners to **voluntarily** implement coexistence solutions
- Need for a **broad toolbox and flexibility** in approaches
- **Variance of habitat suitability** across the state and even within the same landscapes

Population Status and Management

Challenges and concerns

- Lack of robust data on beaver populations

Suggested actions

- **Regionalized breakdown** of estimated populations to help understand where we need to improve the ecosystem of beaver and where we have adequate or potentially over population, helping landowners understand where the agency is headed and why

Beaver Restoration

Working definition

Participants who expressed an opinion were generally amenable to the working definition, citing its inclusion of human needs as a critical component. Multiple participants suggested further refining this language to specifically note consideration of **working lands**.

Priorities

Multiple participants noted **community involvement** as a priority. Some noted that community understanding of restoration goals and processes is critical for success. Others noted that community members should not be approached as if they lack education, since many people on the ground are knowledgeable about how water and land management interacts with wildlife.

Additional priorities included:

- Encourage and incentivize **flood irrigation** to prevent the cycle of further drying up of streams and wetlands through sprinkler irrigation
- **Low potential for human conflict**

Challenges and concerns

Some participants suggested that restoration of high mountain wetlands could negatively affect **downstream water users** and water rights. Others suggested that water is more secure in watersheds with beaver ponds, although it seems as if more water is stored upriver.

Additional challenges and concerns included:

- **Habitat constraints** of lower elevation areas experiencing drought, where people may be interested in restoration but establishing beaver may not be practical
- **Variety of soil types and vegetation within land boundaries** may mean landowners have some areas beaver would do very well in, and other areas where they would create lots of challenges
- **Variety of ecological systems across the state** requiring different approaches

Coexistence and Conflict Resolution

Priorities

- **Multiple-benefit projects**, e.g. removal of invasive species along a streambed to help livestock grazing as well as beaver and other wildlife
- **Retaining the ability to lethally manage beaver** when there are no viable alternatives or if a stream reach is overpopulated

Challenges and concerns

Multiple participants noted the **lack of a “one size fits all” solution** that would successfully resolve all conflict situations. Some encouraged managing expectations and noted landowners have reported both positive and negative results with coexistence devices such as pond levellers.

The other challenges most frequently mentioned by participants were **time and money constraints on landowners** to implement and maintain coexistence solutions, and safety issues with beavers building dams in **reservoir spillways and headgates**.

Additional concerns included:

- Beaver dams causing **winter freezes** which eliminate the stream as a water source for livestock and wildlife

Resource needs

Financial and/or technical support for landowners to implement coexistence solutions were the needs most frequently mentioned by participants.

Suggestions for financial support included:

- **Cost-sharing**
- **Damage compensation**
- **Payment for ecosystem services** as a viable alternative to damage compensation, which can be difficult to quantify

Suggestions for technical support included:

- **Assistance for both installation and maintenance**
- **Desk support** from local non-profits who can complete the required paperwork

Key partners

Multiple participants stressed the importance of technical and financial support partners who are trusted by landowners, with some citing local partners as the most trusted.

Specific suggestions for partners included:

- CO Water Conservation Board
- CO Cattlemen's Agricultural Land Trust
- CO Cattlemen's Association
- Community Agriculture Alliance

- Friends of the Yampa
- Local conservation districts
- Natural Resources Conservation Service
- Trout Unlimited

Suggested actions

Additional actions suggested by participants included:

- **Recognition program** for producers who invest in beaver friendly practices
- **Strengthen relationships between local wildlife officers and land managers**, e.g. re-establish regular check-ins instead of waiting until a problem is reported

Translocation

Priorities

Ensuring appropriate release sites was most frequently mentioned by participants as a priority in translocation. Some mentioned the need to consider infrastructure and irrigation. Others mentioned the need to ensure translocated beaver are not at high risk of predation.

Other priorities included:

- **Proactive communication** with landowners and lessees in the planning stage
- **Avoiding overly strict and inflexible requirements** (e.g. requiring all neighboring land owners and managers to agree before proceeding) **that could have unintended consequences**

Challenges and concerns

- **Infrastructure and irrigation** considerations for release site selection
- Potential for **high mortality rates**
- **Risk of spreading disease and aquatic invasive species**

Use of State Strategy

Participants anticipated using the Beaver Conservation and Management Strategy in the following ways:

- Informing and supporting their work with landowners and lessees on beaver management and conflict resolution

Beaver Advocates Focus Group Summary

Key Themes

- **Changing the narrative around beaver**, such as through building public understanding of their ecological importance and by removing the nuisance label
- **Ensuring beaver are not trapped in restoration areas**
- **Training** on coexistence solutions

Population Status and Management

Priorities

- **Conserving beaver populations** so that restoration is not necessary

Challenges and concerns

Multiple participants noted **habitat fragmentation** and **the normalization of lethal removal** reinforced by the nuisance and furbearer labels as key concerns for beaver management.

Other challenges and concerns included:

- **Genetic diversity** within certain high elevation populations
- **Human impact from heavy recreational use of rivers**
- **Lack of conflict take data** by both public and private actors
- **Lack of historical population numbers in Colorado**
- **Limitations of remote imaging as a population estimate.** Some noted that ground truthing of Colorado Beaver Activity Mapper (COBAM) undertaken at specific sites revealed many unoccupied potential sites. Others noted the limitations of a “snapshot in time” approach, since beaver populations are dynamic and may return quickly after a dam blowout.
- **Social tolerance limits**

Suggested actions

Multiple participants suggested **ground truthing** of image mapping used for the Colorado Beaver Activity Mapper (COBAM).

Other suggestions included:

- Introducing a **bag limit** for beaver
- **Limiting trapping in areas of greatest wildfire risk**

Beaver Restoration

Working definition

Participants who expressed an opinion were generally amenable to the working definition.

Priorities

The factor most frequently mentioned by participants for key consideration in the identification of priority restoration areas was **increasing connectivity through the stepping-stone approach**, i.e. the development or enhancement of small areas of habitat where they could support natural movement of beaver between larger, fragmented habitat areas.

Additional priorities mentioned by participants were:

- Areas with **headcut erosion**
- Restoration on both **public and private lands throughout a watershed.** Some noted that public lands tend to be overgrazed and harder to restore than private lands. Others noted that work on public land may go unnoticed, while private land restoration helps bring it to the forefront and provides peer to peer learning opportunities.

- Using **low-tech process-based restoration (LTPBR) structures** to help beavers repopulate quicker

Challenges and concerns

The concern most frequently mentioned by participants for beaver restoration was **ensuring that beaver are not trapped in restoration areas**. Some noted a high profile project in Washington saw areas of released beaver were heavily trapped, leading to a cycle of paying to restore the beavers, the beavers being killed, and paying to restore them again. Others noted the importance of removing obstacles to recolonization by an ecologically important species.

Other challenges included:

- **Large-scale success metrics** can be difficult. For example, significantly altering flow regimes would be a broad ecological success but may cause concern among some stakeholders

Suggested actions

- **Develop a video on “Beavers at work in Colorado”** to generate interest and support for beaver restoration with the general public

Coexistence and Conflict Resolution

Priorities

- **Changing the narrative** from nuisance to protected partner
- **Encouraging and supporting beaver**, not just beaver mimicry structures
- **Long term focus and engagement**

Challenges and concerns

- **Capacity constraints at CPW**
- **Research gap regarding what’s happening on the ground** with beaver in Colorado
- Solutions for ponds, culverts, and trees abound but more information is needed for mitigating conflict in **ditches and diversions**
- Restoration goals may not be achievable without **translocation**

Resource needs

Multiple participants highlighted the need for **training on coexistence methods** to build local capacity and to ensure that improperly installed devices don’t lead to the perception that these solutions are ineffective.

Other suggested resource needs included:

- **Cost-share programs** for landowners to implement coexistence solutions
- **Educational toolkit** to foster coexistence, distributed to private landowners
- **Financial support, whether labor or supplies, for low-income communities** to implement coexistence solutions

- **Flowchart for practitioners and CPW** to use in the field when talking with private landowners
- **General funding for beaver coexistence** structures
- **Technical advisors at CPW** who trained volunteers and practitioners can call for advice in complicated situations

Outreach and education

- **Building greater awareness that coexistence solutions exist**, have been implemented successfully in many places, are not going to cost a lot, and may ultimately be cost-saving
- **Peer to peer conversations**

Key partners

- The Beaver Institute

Translocation

Priorities

Multiple participants emphasized that **translocation should be used as a last resort in conflict situations** to prevent lethal removal, after coexistence is found to be a non-viable path forward.

Other priorities included:

- Consider use of translocation to **supplement populations with low genetic diversity**
- **Keeping pairs or families together** to reduce mortality risk

Challenges and concerns

- **Capacity limits of licensed trappers.** Trapping licenses may be unobtainable by entities interested in translocating beaver, and contracts with other partners (e.g. USDA-APHIS) are capacity limited.
- **Harvesting of translocated beaver**
- **Risk potential for spreading disease and aquatic invasive species** and a need for more research

Resource needs

Multiple participants noted the need for **holding and drying locations** for beaver being translocated. Some noted that facilities should be managed by CPW to ensure adherence to standards.

Other suggestions included:

- **Standardized guidelines** for how beavers are trapped, housed and quarantined during translocation efforts
- **Statewide registry** for landowners to indicate interest in having beaver on their property, with determination by CPW of site suitability, coupled with an **outreach program** to build awareness of the registry

Use of State Strategy

Participants anticipated using the Beaver Conservation and Management Strategy in the following ways:

- **Blueprints for developing a locally specific beaver plan**
- **Navigating the permitting process** and understanding when permits are required
- **Prioritizing locations for restoration efforts**

Future Visions

Beaver Populations

- Beaver again occupy suitable habitat
- Beaver are restored to their ecological role throughout their historic range
- Having somewhere near the number of beaver dams that modeling indicates Colorado could have

Coexistence and Non-lethal conflict resolution

- Community is aware of beaver coexistence methods and are primarily using them in conflict situations
- People's first go-to for conflict is non-lethal solutions

Momentum

- Implementation in 5 years, with a move towards preservation in 10 years

Conservation Funders Focus Group Summary

Key Themes

- Need for **more collaboration, shared learnings, and coordination** of existing resources and partners as well as more **data collection**
- **More training and on the ground technical support** for coexistence
- **Regionally specific approaches** including regional definitions of success, and understanding population trends within a region
- **Locally trusted messengers and partners** to build community buy-in
- Use of a future Beaver Conservation and Management Strategy to assist in **prioritization of funding decisions and alignment of outcomes** with the state

Population Status and Management

Priorities

- **Increasing the number of beaver**, while recognizing historical numbers are likely not reachable

Challenges and concerns

- **Human dynamics**
- **Natural limiting factors** (e.g. disease, predation)

Suggested actions

- **Regional analysis of populations and trends** for focusing restoration efforts
- **Standardized method for population counts** across public and private partners

Beaver Restoration

Working definition

Multiple participants suggested the term “ecological balance” was potentially outdated or inaccurate and encouraged being more specific about the objectives.

Priorities

The prioritization area most frequently mentioned by participants was the **upper watershed**. Some noted these have the highest potential to improve water scarcity and water quality. Others noted the opportunity to prioritize areas that were upstream of values and infrastructure (e.g. drinking water reservoirs, egress roads, intakes).

Additional priorities mentioned by participants were:

- **Lower potential for human conflict**
- **Areas at high risk for flooding, wildfire, or drought**
- **At-scale** projects that could be implemented through an entire upper tributary
- **Continuing to ensure agricultural and water supply uses** are made whole and have the resources they need
- **Data collection and monitoring** (including population tracking) for restoration projects

Participants also suggested the following considerations for success metrics:

- Regionally-specific
- Biodiversity
- Vulnerable aquatic species
- Habitat quality
- Water quality
- Beaver numbers, health, and fitness
- Repaired hydrological processes

Coexistence and Conflict Resolution

Priorities

Collaboration and shared learning was the priority most frequently mentioned by participants. Some stressed the need to not have to “reinvent the wheel.” Others noted the need for more collaboration among water users to better understand how beaver activity impacts downstream water availability.

Additional priorities mentioned included:

- **Balancing water quality and quantity**

Challenges and concerns

- **Technical capacity at CPW**
- **Perceptions shaped by negative terminology.** Leading with language of “nuisance beaver” or “living with beaver” implies the animals are problematic from the outset.

Resource needs

Multiple participants mentioned **trusted technical advisors** as a key resource needed to assist landowners with coexistence solutions. Some participants noted that on-the-ground assistance was often more valuable than financial assistance. Others cautioned that any financial incentives that are transactional in nature do not lead to long-term buy in.

Additional resource needs included:

- **Sustainable funding sources** (e.g. local, county, state, or corporate) that persist after philanthropy funding has enabled startup or proof of concept.
- **Training** on coexistence and conflict resolution solutions

Outreach and education

Multiple participants noted that both **messaging and messenger are important**. Some noted that leading with language of “nuisance beaver” or “living with beaver” implies the animals are problematic from the outset. Others noted the importance of having rural landowner spokespersons or peer to peer conversation partners.

Suggested actions

- **Co-investing in other common technical assistance avenues** such as conservation districts, conservancy districts, and CSU Extension
- **Advancing research on volumetric water benefits** from beaver, which may encourage corporate funding for ecosystem services
- **Internal CPW training** on coexistence and non-lethal conflict resolution
- **Make grant funding available to partners** for coexistence and conflict resolution training

Translocation

Priorities

- **Broad buy-in from local stakeholders and landowners** around a potential release site
- **Increased connection between existing partners and resources**

Challenges and concerns

- **Lack of trained individuals** to assist with translocation, and difficulty attracting people with the skills for translocation to regions with lower salaries
- **Potential high mortality rates** if a mated pair is not translocated together, or if an individual is not moved to a site with an existing population they can successfully integrate with

Resource needs

- **Holding facilities**
- **Referral network or contact list** for agricultural producers and landowners to use if interested in translocation

Outreach and education

- **Proactive outreach to stakeholders and landowners** around a potential release site with explanation of the process, goals, and potential direct benefits
- **General public outreach campaign** about beaver translocation including how and why they are translocated, and how to work with local communities if there is an issue

Suggested actions

- **Engage other state agencies** that have landowners and water managers on the ground
- **Develop risk-based holding protocols** which consider source and release sites, rather than requiring the same quarantine period or procedure for all translocated animals
- **Internal training of CPW wildlife officers** to increase familiarity with translocation as a potential tool for conflict situations

Use of State Strategy

Prioritization of funding or grantmaking decisions and projects was frequently mentioned by participants as the way in which they anticipated using the Beaver Conservation and Management Strategy.

Additional uses included:

- Direct grantees to the strategy for alignment of outputs and outcomes
- Cite as best practices
- Consult when developing, designing, planning, monitoring, and communicating the value add of watershed work

Future Visions

Collaboration and learnings

- Better integration and learning amongst entities whose work involves beaver habitat and populations
- Better understanding from a variety of water users on the benefits of these projects and more robust science on the ramifications, or lack thereof

Momentum and scale

- Increased number of partners involved in beaver restoration

Resources

- Robust sources of funding and technical assistance for restoration

Views and values

- Shifts in the tone of conversation around beaver, and increased acknowledgment of the benefits of working with nature based solutions

- Strategy is seen as a critical tool to achieve common goals and values and not as something being done “to” communities

Wildlife and habitat

- Increased number of beaver and area of beaver ponds
- Increased habitat for species that depend on beaver, and overall wildlife abundance
- Rehydration of desiccated landscapes

Local Government Focus Group Summary

Key Themes

- **Multiple benefit** projects
- **Readily available tools** and support for private landowners
- **Regionalized approaches/flexibility** or adaptability for regional differences (urban, suburban, and mountain potentially have different restoration goals, suitable habitat, translocation thresholds)
- **Sustainable solutions** (trap/remove as temporary when reengineering is needed, concerns that beaver will recolonize levee sites)
- **Clear expectations** from the state

Population Status and Management

Challenges and concerns

- **Lack of conflict take data**
- **Road crossings**
- **Understanding bank denning beaver populations**, which are not reflected in the Colorado Beaver Activity Mapper and could be both a potential source of conflict and a potential source of recolonizing river systems
- **Ungulate overbrowsing**
- **Wood starved systems**

Beaver Restoration

Working definition

Multiple participants had a favorable response to the working definition, finding it clear and useful. Another participant suggested expanding “human needs” to clearly list “agricultural and human needs.”

Priorities

Multiple participants mentioned the **inclusion of low-tech process-based restoration projects, which focus on mimicry structures** rather than the return of beaver, as progress towards restoration goals.

Additional factors mentioned by participants were:

- **Increasing connectivity**
- **Regional and urban/suburban considerations** for defining “healthy and functional beaver populations and habitat”
- **Restoring places where beaver have been active in the past**
- **Retaining the ability for private landowners to manage beaver on their property**, which may include promoting populations on one area of their land while removing beaver from locations where they cause conflict (e.g. irrigation ditches)

Challenges and concerns

Multiple participants mentioned **impacts on agricultural producers and landowners** as a concern.

Suggested actions

- **Proactive communication with private landowners or suburban residents** where restoration is planned

Coexistence and Conflict Resolution

Priorities

- **Landowner support**
- **Maintenance and upkeep** of coexistence structures
- **Proactive outreach and implementation of coexistence methods** for habitats with higher likelihood of conflict (e.g. flooding)

Challenges and concerns

Multiple participants noted **difficulties navigating the process of conflict mitigation**, including understanding who qualifies as a landowner, and when permits are required.

Other concerns included:

- **Beavers burrowing into levees**
- **Coexistence structures aren't always successful**
- **Cost of coexistence methods**, especially when requiring hiring third parties for implementation

Resource needs

Multiple participants suggested a **hotline** for questions about beaver, **financial support or cost-share programs** to implement coexistence strategies.

Other suggestions included:

- Free technical assistance
- Referral list of practitioners that can help implement and maintain coexistence structures

Outreach and education

Multiple participants noted that volunteer programs **engaging the general public with coexistence activities** (e.g. tree painting) or monitoring beaver populations have been successful in generating local interest and support of goals.

Key partners

- The Beaver Institute
- USDA-APHIS Wildlife Services

Translocation

Priorities

Multiple participants noted **standardized policy and guidelines for translocation** as a priority. Specific guidance requested included guidance for land managers, requirements for trappers, and protocols for holding. Some emphasized that these policies should be developed through the agency and not by a legislative process.

Other priorities included:

- **Expanding the network of individuals that can relocate**
- **Incorporation of Native and Indigenous values and knowledge**
- **Minimizing disruption to family units**
- **Specific guidelines or thresholds for urban/suburban areas**
- **Tracking relocation outcomes**
- **Translocation as a last resort** after coexistence methods have been explored

Challenges and concerns

Multiple participants noted that **recolonization of beavers at the trapping site** was a concern.

Resource needs

Multiple participants noted a need to **identify or expand the number of individuals that can assist with translocation**, including engaging with landowners and trapping. Some suggested a training and vetting program could help expand this network.

- **Designated contact at CPW for translocation questions**
- **Holding facilities**

Use of State Strategy

Multiple participants anticipated using the Beaver Conservation and Management Strategy for **clear guidance and expectations for coexistence and translocation decisions**.

Other anticipated uses included:

- To adhere to best practices for beaver restoration
- To identify and connect with resources for coexistence and translocation
- To inform updates to county wildlife guidelines
- To better manage open space lands and waters, and be better stewards of beaver and other wildlife that depend on beaver habitat
- To remove beaver from high-risk, high-conflict areas

Future Visions

Beaver populations

- **Beaver thrive and are appreciated for the ecosystem benefits they provide**

Collaboration and partnerships

- All municipal and county agencies who have an investment in riparian corridors working together for mutual goals of beaver conservation and coexistence
- Local partner networks for education and implementation, such as conservation districts
- Private land partnerships and adaptive management

Watersheds

- Expansion of the benefits that come with beaver activity in our watersheds
- Improved watershed health

Mixed Sector Focus Group Summary

Key Themes

- Data driven management decisions
- Harvesting of beaver in restoration areas could undo significant investments made by the public and private sectors

Population Status and Management

Challenges and concerns

- Impact of development on healthy beaver populations and watershed functions
- Lack of data on bank denning populations
- Lack of data on conflict take

Suggested actions

Multiple participants suggested **more data collection** to inform and support management decisions. Specific data gaps identified were **avocational harvest data** (including geography), **conflict take data**, and **roadkill data**. CO's Department of Transportation was noted as a potential source for roadkill numbers reported by state patrol and maintenance staff.

Other suggested actions included:

- Installation of beaver crossings
- Research on diseases that beaver are susceptible to and how they are transmitted

Beaver Restoration

Working definition

Participants who expressed an opinion were generally positive or amenable to the working definition. Some participants cited the focus on ecological function and processes as a helpful or appropriate metric.

Specific suggestions for improving the definition included:

- Replacing “maintaining” with “stewarding”, since successful restoration efforts might lead to more beaver

Priorities

Multiple participants suggested **ensuring goals are data-driven** as a priority.

Multiple participants also suggested prioritizing areas that could be jump-started, i.e. **where progress could be made relatively quickly**. Areas with intact habitat and existing sources of beaver for recolonization were mentioned as criteria for these areas.

Additional priorities mentioned by participants were:

- **Broad consultation with Tribal, federal, state, and local governments**
- **Beneficial impacts to the water cycle**
- **Developing specific metric and timebound goals with benchmarks**
- **Floodplain considerations**
- **Realistic communication of expectations and timelines**

Challenges and concerns

Multiple participants noted **harvesting of beaver in restoration areas** could undo the significant investments made by the public and private sector. Some noted that any watershed-level harvest management decisions should be supported by geographic data on avocational harvest.

Key partners

- CO Water Control Board

Coexistence and Conflict Resolution

Priorities

- **Increased awareness of coexistence options**
- **Support for private landowners as well as local governments**
- **Voluntary and incentive based coexistence programs**

Resource needs

Multiple participants mentioned **training on the implementation of coexistence strategies** as a resource need. Multiple participants encouraged CPW development of a **coexistence curriculum** and emphasized the importance of state agency branding for legitimacy. Some noted that BeaverCorps training curriculum could provide a helpful blueprint for state-specific, agency-branded curriculum to build from.

Some suggested that those engaging with private landowners and entities should have

- **Beaver hotline**
- **Cost-share programs for implementing coexistence**
- **Funding to support enrollment in beaver coexistence training programs**
- **Funding for trainees to implement coexistence strategies**

Outreach and education

- **Demonstration sites**

- **Education campaign on what a keystone species is**, reinforcing connections between beaver wetlands and other species people enjoy for viewing or sport
- **Outreach targeted to municipal government, county commissions, and town councils**

Key partners

- Natural Resources Conservation Service, for potential inclusion of beaver coexistence structures as a practice eligible for payment

Suggested actions

Multiple participants suggested **eliminating the phrase “nuisance beaver”** from agency communications and programs.

Additional actions suggested by participants included:

- **Internal training for all CPW staff who interact with public and private entities** to ensure coexistence is the first option for conflict situations
- **State-specific research on the dollar value of ecosystem services** beaver provide

Translocation

Priorities

- **Clear communication and collaboration with federal and Tribal partners**
- **Translocation as a last resort after coexistence is explored**

Challenges and concerns

- **Mortality rates**

Resource needs

- **Curated site list of areas where translocation has higher likelihood of success**

Use of State Strategy

Multiple participants anticipated using the Beaver Conservation and Management Strategy to **communicate the benefits of, and demonstrate broad support for, nature-based restoration and coexistence solutions.**

Additional uses included:

- **Aligning efforts with the geospatial prioritization**, allowing for combined resources and amplification of efforts
- **Guidance and legitimization for developing standardized internal policies**
- **Prioritizing watersheds for funding decisions**

Future Visions

- **Broader recognition from federal, state, and local government partners on the ecosystem benefits of beaver**

- Consistent approach to beaver by CPW field staff
- More coordinated approach by all the parties and entities working in restoration

Nuisance Operators and Wildlife Rehabilitators Focus Group Summary

Key Themes

- **Regionalized approach** (mountain habitats could use more beaver, restoration goals dependent on area, no one-size-fits-all)
- **Focus on habitat restoration**, rather than restoring beaver numbers per se. Statewide there is not a lack of beaver, although some habitats don't have the beaver populations we'd like to see

Population Status and Management

Challenges and concerns

Multiple participants noted **limitations of remote imaging for population estimates**. Some noted this method did not reflect **bank denning beaver** or **beaver ponds smaller than 10 meters**. Some participants noted their ground observations indicated a **higher population of beavers** in their region than suggested by the Colorado Beaver Activity Mapper (COBAM). However, other participants noted their ground observations indicated a **significantly lower population of beavers in the state** than the rough estimate developed through modeling.

Multiple participants mentioned **lack of food availability** prevented establishment of significant beaver populations in some mountain areas. Some noted that beaver may consume all the food in an area and die, disperse, or be preyed on.

Other challenges and concerns were:

- **Lack of geographic harvest data**

Suggested actions

- **Ground truthing of population estimates**
- **Removing beaver from the "nuisance species" list**

Key partners

The following partners were suggested for gathering on-the-ground information of regional beaver activities and trends:

- Audubon chapters
- Civic groups (e.g. Boy Scouts, Girl Scouts)
- Grazing leasees
- Licensed outfitters
- Trail maintenance volunteers (e.g. Uncompahgre Trail Riders Association)

Beaver Restoration

Working definition

Participants who expressed an opinion were supportive of or amenable to the working definition. Specific suggestions included:

- Include a more specific definition of what constitutes a healthy population or habitat

Priorities

Multiple participants suggested **upper valley habitats** as a priority. Some suggested that these were the only habitats where beaver population expansion might be warranted.

Multiple participants suggested **incorporation of learnings from other states** as a priority. Some emphasized the importance of reviewing information with a holistic lens, including both successes and failures.

Additional priorities mentioned by participants were:

- **Fire mitigation**
- **Food sources**
- **Inclusion of projects focused on beaver mimicry**, and not necessarily beaver presence, as contributing to restoration goals

Challenges and concerns

- Multiple participants noted **natural dispersal and population succession** as a challenge for restoration planning.

Key partners

- CO Water Trust

Coexistence and Conflict Resolution

Priorities

Multiple participants suggested **regional context** as a priority for coexistence implementation. Some noted the need to approach coexistence on a case-by-case basis with consideration of present and future potential for conflict. Others noted the need to consider variances and thresholds specific to urban and suburban areas.

Additional priorities included:

- **Providing coexistence support in target restoration areas**
- **Retaining as many beaver as possible in their current territories while eliminating property damage**

Challenges and concerns

- Multiple participants mentioned **inexperience and improper installation of coexistence methods** as a challenge that is inhibiting success and impacting perceptions.
- Other challenges included:

- **Cost of Beaver Deceivers**
- **Erosion from bank denning beaver** clearing vegetation
- **Social and intrinsic value of trees**
- **Sourcing of materials** for effective coexistence structures

Resource needs

- **Accessible and available technical guidance for landowners** with distribution at extension offices and other locations landowners already turn to for advice
- **On the ground technical support**
- **Training on coexistence methods and their proper implementation**

Outreach and education

Additional suggestions included:

- **Building awareness of coexistence devices** as an option
- **General public outreach campaign** on the benefits beaver can provide
- **Education for ranchers** on the benefits beaver can provide for working lands
- **Education for wildlife rehabilitators** on beaver and on coexistence

Key partners

- **Boy scout groups** for installing coexistence devices
- **Wildlife rehabilitators** to track down funding sources for coexistence devices and coordinate community volunteers

Suggested actions

Multiple participants encouraged **the development of a task force** geared towards providing assistance for implementation of coexistence solutions in targeted restoration areas.

Translocation

Priorities

Ensuring the appropriateness of release sites was most frequently mentioned as a priority by participants. Some noted that lethal management can be a more humane outcome than translocating beaver to unsuitable habitat.

Multiple participants suggested that **coexistence should be emphasized before translocation**. Some noted the potential for wasted resources if translocation is used without addressing the area of conflict, and other beaver return to the area.

Multiple participants also suggested **post-translocation monitoring** as a priority.

Challenges and concerns

Multiple participants noted the **potential for high mortality** as a concern, and a factor that should be considered before translocating beaver. Some noted that a benchmark could be a survival rate in translocated beavers above the natural dispersal survival rate.

Multiple participants also noted that **recolonization of a trapping site by other beaver** frequently occurs, although the timing can vary. Some noted that the earlier in the year beaver are trapped, the more likely beaver will recolonize within that year.

Other challenges and concerns included:

- **Cost and manpower required for holding beaver** between trapping and release sites
- **Potential risk for disease spread**
- **Territorialness of beaver** could put beaver at risk of harm if translocated into an area with existing populations

Resource needs

- **Funding support** for rehabilitators to develop appropriate holding facilities for beaver
- **Guidance** to potential locations suitable for translocating beaver

Key partners

Multiple participants suggested that **licensed wildlife rehabilitators** can play a key role in translocation. Specific roles suggested were providing holding or quarantine facilities, collecting biological samples, and assisting with outreach and education. Participants frequently noted that rehabilitators would require **clear guidance from the agency** around their roles and responsibilities, holding and handling protocols, facility requirements, and whether any additional licensing would be required.

Suggested actions

- **Clear and consistent terminology**, i.e. using either “relocation” or “translocation” and not both

Future Visions

- Expanded funding opportunities for beaver work (e.g. the Human-Bear Conflict Reduction Grant model)
- Increased knowledge of, access to, and implementation of coexistence strategies
- More conservation and more partners working together for the benefit of Colorado’s wildlife
- More public education on coexistence and the ecosystem benefits beaver provide
- Robust and healthy beaver population that is well managed, well studied, and well understood
- Thriving network of translocation and restoration partners

Sportspersons and Trappers Focus Group Summary

Key Themes

- **Satisfaction with the agency's current management of beaver and the relative abundance of beaver** on the landscape
- Ensuring management decisions are **driven by the agency** and not external parties or priorities
- **Continued opportunities for harvesting beaver**
- Concerns about developing an isolated strategy for one furbearing mammal, the beaver, from the state's **furbearer strategy**
- **Preserving private landowners' ability to manage beaver on their property**, including through lethal methods
- **Impacts to landowners and water users** from beaver activity

Population Status and Management

Priorities

Multiple participants suggested that **the agency's current beaver management approach is working well** and should be maintained, supporting the continued relative abundance of beaver on the landscape while minimizing the negative impacts they can cause for human infrastructure and water systems. However, another participant suggested that there is **room for improvement** in management of beaver as an ecologically important resource.

Challenges and concerns

- **Skewed harvest figures from non-CPW data** presented by other interest groups

Suggested actions

- **Increased harvest data collection** by the agency to ensure data-driven management decisions

Beaver Restoration

Working definition

- "Restoration" seems inappropriately applied to beaver populations that are alive and well

Priorities

- **Restoration funding should be sourced from other interest groups**, rather than falling on sportspersons who are the primary funders of CPW

Challenges and concerns

- **Dispersal of beaver from public land to private land**, even if restoration efforts were focused on public land
- **Impacts to downstream landowners and water users**
- **Senate Bill 270 being expanded** beyond its intended and legal purpose

Suggested actions

- **Proactive communication with landowners** about restoration plans and timelines

Coexistence and Conflict Resolution

Priorities

- **Retaining the ability for landowners to manage beaver** on their property, including through lethal methods
- **Separate funding sources**, rather than the funding the agency receives from sportspersons, should be utilized if any financial support of coexistence is offered by the state
- **Solutions that can be implemented by landowners**, without inviting unknown persons on their property

Challenges and concerns

- **Lack of time to implement** coexistence solutions in time-sensitive conflict situations, such as water delivery for irrigation
- **Large private operations** such as railroads, utility plans, water treatment facilities, man-made dams, etc. are frequently sources of conflict and require significant permitting and oversight for third parties to be on site
- **Social tolerance limits** for beaver after experiencing damage from beaver activity

Key partners

- **Great Outdoors Colorado** was suggested as a funding pool for any coexistence initiatives the agency may undertake

Translocation

Priorities

- **Judicious use of CPW's limited financial and human resources**
- **"No-go zones"** for areas that beaver should not be translocated to, due to human considerations, regardless if the habitat is otherwise suitable

Challenges and concerns

- **Cost and labor required**
- **Limited timeframe** for successful translocation
- Use without consideration of **impacts to water users**

Use of State Strategy

Multiple participants expressed concern that a Beaver Conservation and Management Strategy would unnecessarily decouple beaver from the strategy for furbearer management.

Future Visions

- CPW continues to **respect and protect the rights of private property owners**
- **Continuing the current road** to success, in recognition of the state's healthy beaver population, the limits of social tolerance, and the formidable job the agency has done with available tools and funding

Transportation and Infrastructure Focus Group Summary

Key Themes

- Project managers must **weigh the potential adverse and beneficial impacts** for any project
- Conflict situations with impacts for public safety or infrastructure require **rapid responses**
- **State-specific examples** and lessons learned are important for coexistence strategies
- **Importance of proactive efforts**, including outreach to federal partners to support restoration and/or translocation, and guidance enabling proactive incorporation of coexistence into the building phase of infrastructure projects

Population Status and Management

Suggested actions

- **Regional analysis** of where beaver expansion may be needed and where beaver populations are exceeding thresholds

Beaver Restoration

Priorities

- **Weighing potential adverse and beneficial impacts for any project**

Challenges and concerns

- **Siloing** among entities involved in pieces of restoration projects, and general lack of understanding of each other's priorities and applied lenses

Resource needs

Multiple participants identified a **map of targeted restoration areas** as a resource that would be invaluable for identifying locations of compensatory mitigation and aligning goals.

Other resource needs included:

- **Broad toolkit** to facilitate decisions that are best for the environment, department budgets, and public safety.
- **Matrix** for identifying what makes a habitat most ecologically suitable for beaver

Key partners

- US Army Corps of Engineers' ORM database of Nationwide Permit 27 projects, which can include beaver dam analogs

Coexistence and Conflict Resolution

Priorities

Multiple participants noted **the ability to act quickly** to address conflict situations that have implications for public safety or infrastructure.

Challenges and concerns

- **Fill material** associated with beaver dams
- **Staff capacity** to complete comprehensive coexistence training programs (e.g. BeaverCorps)

Resource needs

Multiple participants suggested **training on the installation, maintenance, and adaptive management of coexistence devices** as a needed resource. Some noted the need for targeted training for different staff (e.g. biologists, maintenance workers, leadership).

Multiple participants also suggested **written specifications for coexistence structures** as a needed resource.

Other needs included:

- **Colorado-specific perspectives and lessons learned** on where coexistence structures do and do not work
- **Guidance on conflict mitigation strategies that can be proactively incorporated in the building phase** of transportation and infrastructure projects
- Guidance for **navigating the permit process**

Suggested actions

- Including beaver coexistence as a topic in the annual CO Department of Transportation and CPW joint training

Translocation

Challenges and concerns

- **Cost and labor**
- **Connecting to suitable release locations**
- **Federal policies and regulatory hurdles** for translocation on federal public lands
- **Potential risk of spreading disease or fungus**
- **Potentially low success rates**

Resource needs

- **Referrals to individuals who can trap and translocate**

Suggested actions

- **Reach out to federal partners early** to establish processes that can potentially expedite beaver restoration and translocation

Use of State Strategy

- Aligning agency strategies and resources towards a big-picture goal
- Guidance towards coexistence devices that are straightforward and accepted
- Informing development of a local beaver management plan
- Outreach and education with communities and staff
- Prioritization of funding decisions

Future Visions

- Collaboration and alignment among large land managers
- Scaling of efforts with aligned prioritization and focus areas

Tribal and Indigenous Interests Focus Group Summary

Key Themes

- **Cultural and intrinsic value** of beaver, including
 - Importance as water protectors
 - Intrinsic worth as a being with a spirit and a voice
 - Presence of beaver in culturally important stories and histories
 - Spiritual and relational connections to beaver
- **Importance of acknowledging how much help, currency, and benefits early immigrants and colonizers got from the beaver**
- **Youth** focused outreach and education
- **Demonstration sites** and field activities
- **Promoting and incentivizing non-lethal conflict resolution** and coexistence

Population Status and Management

Priorities

Multiple participants expressed **honoring beaver's role as relatives, water protectors, and landscape engineers** as a priority. Some shared oral histories illustrating the importance and interconnection of beaver to their Tribe.

Challenges and concerns

- **Lack of robust population data**, without which management decisions may be based on anecdotal evidence or estimates and cause devastation

Suggested actions

- **Ground truthing** of Colorado Beaver Activity Mapper (COBAM)

Beaver Restoration

Priorities

- **Land ownership** and the broader risk of lethal take on private land
- Restoration of **willow communities**
- Simpatico approaches with **fire mitigation** efforts

Challenges and concerns

- **Funding and staff capacity constraints at CPW**
- **Lack of education and awareness** of the importance of beaver to our environment
- **Timeline for realization of benefits** of restoration work may be years

Outreach and education

Multiple participants supported **engaging Tribal members and youth in field activities** (e.g. building beaver dam analogs) and specific targeted **educational programs for youth**, including Native and urban youth.

Key partners

- Metropolitan State University of Denver for outreach to urban youth

Coexistence and Conflict Resolution

Priorities

Multiple participants noted a priority for **promoting and incentivizing coexistence approaches before lethal control**.

Additional priorities included:

- **Incorporating alternative, successful models for engaging with private landowners** around coexistence on working lands (e.g. Tom Miner Basin Association)

Resource needs

- **Demonstration sites** showcasing beaver dams and coexistence structures

Key partners

- History Colorado
- Rocky Mountain National Park
- Ute Indian Museum
- Ute Elders, who are storytellers and storymakers and can bridge the gap from Tribal ancestral to modern day experiences

Suggested actions

- **Consider berms as a low-cost alternative to pond levelers when needed**
- **Offer financial incentives or kickbacks to encourage coexistence with beaver on private land**, e.g. discounted game hunting tags

Translocation

Priorities

- Use of translocation only after coexistence methods are explored

Challenges and concerns

- Capacity constraints at CPW
- Mortality rates of translocated beaver

Future Visions

- More beaver and more tolerance for beaver
- More wetlands, more water, and increased health of the environment
- Promotion and understanding of beaver as the original engineer of the landscape humans live on

Water Users and Managers Focus Group Summary

Key Themes

- **Infrastructure and water rights are key considerations** that water users and managers need to balance with beaver restoration and coexistence goals
- **Locally-driven goals and local spokespersons** are keys to success
- **Budget and staff capacity constraints at CPW** are a potential barrier to success
- **Coexistence training and resources are needed** for both CPW and local stakeholders

Population Status and Management

Opportunities

- Scaling up the benefits that beaver provide by getting **more beaver back on the landscape**

Challenges and concerns

- **Limitations of remote imaging** as a method of population estimation
- **Social tolerance limits** for beaver, especially near infrastructure

Suggested actions

- Consider beaver harvest limits or restrictions within restoration areas

Beaver Restoration

Working definition

Participants who expressed an opinion were generally amenable to the working definition, while suggesting some areas for improvement. Some participants noted **circularity** in the definition's

references to maintaining habitat in balance with available habitat, and/or confusion about whether habitat was a prerequisite to restoration, a result of restoration, or both.

Specific suggestions included:

- Include more substance to address concerns about the potential for negative impacts
- Provide clarity on what “available” habitat would mean
- Replace “in ecological balance with available habitat” with “in ecological balance with both environmental and human needs”

Priorities

The priorities most frequently mentioned for identifying restoration areas were the **tolerance of landowners for beaver; protection of infrastructure and operating systems; and locally-driven goals**, including the involvement of locally-based state employees.

Additional factors mentioned by participants were:

- **Connectivity to other source populations**
- **Forage availability**
- **Land ownership or management.** (e.g., Federal, state, private)
- **Locally-driven goals and objectives**
- **Multiple-benefit projects**
- **Proximity to highways or other infrastructure** which could be negatively impacted

Challenges and concerns

- **Limited human and financial resources** at CPW and potential tradeoffs if investing some of those resources in beaver restoration
- **Permitting**, including barriers faced with the current federal process and concerns about compounded challenges if state regulatory layers are added

Key partners

- **CO Water Control Board** as a significant funder of restoration
- **Municipalities undertaking post-fire restoration** may hold significant opportunities for alignment, even if beaver restoration is not a stated objective of those municipalities

Suggested actions

- Develop **Good Neighbor Agreements** with USFS and BLM to reestablish vegetation around priority areas

Coexistence and Conflict Resolution

Challenges and concerns

The concerns most frequently mentioned by participants were **areas at high risk for impacts to infrastructure**. Some noted particular areas in which beaver could not be tolerated (e.g. trails, confined flood plains near housing). Other concerns included:

- **Balancing needs and values of multiple parties**, e.g. ensuring water deliveries are happening while maintaining good relationships with community members who want to support wildlife and ecosystems
- **Social tolerance limits**
- **Water rights implications**

Resource needs

Multiple participants suggested the development of a **hotline, decision tree, and/or referral list** for beaver questions and concerns, directing users to avenues for technical advice and financial assistance. Some noted that a referral list should also give direction on which contact(s) are appropriate for a particular common question or issue.

Outreach and education

Multiple participants suggested a need and opportunity for **familiarizing stakeholders** (including water users and managers) **and the general public with coexistence devices**.

Additional suggestions included:

- **Co-branding materials** with a diversity of partners, including water users and managers
- **Demonstrated success of coexistence methods** in a variety of landscapes
- **Outreach for urban populations** about the prevalence of beaver in urban waterway systems and the benefits they can provide

Key partners

Key partners most frequently mentioned by participants were **The Beaver Institute** and the **CO Department of Water Resources**.

Additional suggestions for specific partners included:

- CO State University Extension
- Denver Botanic Gardens, which offers beaver pond viewing at Chatfield Farm
- Trout Unlimited

Suggested actions

Multiple participants encouraged **proactive inclusion of coexistence strategies in restoration work**.

Multiple participants also suggested standardized coexistence and conflict resolution **training for wildlife officers/managers**. Some participants noted that these staff would not necessarily be expected to offer hands-on support for implementing these strategies, but having awareness of them and being able to refer landowners to local support partners would be important.

Additional actions suggested by participants included:

- Annual coexistence and conflict mitigation **training for local engineers**
- Provide grant funds to **support the enrollment costs of the BeaverCorps training program**, which offers cost-share assistance for coexistence structures to trainees. Trained

BeaverCorps members would then be eligible for cost-share assistance for coexistence structures through The Beaver Institute.

- **Consider using CPW's portfolio of water rights to offset** potential retiming impacts in fully appropriated areas
- **Engage state park rangers**, who frequently work to mitigate beaver conflicts

Translocation

Challenges and concerns

- **Potential for spread of whirling disease or aquatic invasive species**
- **Prior reported low rates of success** in translocation efforts

Resource needs

- **Holding facilities** for translocated beaver
- Referrals to **individuals who can assist with translocation**

Use of State Strategy

Multiple participants anticipated using the Beaver Conservation and Management Strategy **to guide ongoing and future restoration work and to support source water protection and infrastructure management.**

Other uses included:

- Communicating with landowners and constituents
- Translating scientific findings into stakeholder-facing materials
- To build partnerships and collaboratives, and strengthen funding opportunities
- To establish buy-in with local officials and community members
- To guide ongoing and future coexistence work

Future Visions

Alignment

- Alignment with state-level planning efforts
- Shared understanding of beaver ecology alongside honest discussion of challenges and opportunities
- Shared vision, goals, and objectives among stakeholders
- A well-communicated understanding of current and potential beaver populations and needed habitat, and a strategy that is always adaptable to current science
- Water users can directly connect the strategy to protecting statewide water resources

Learnings

- A network of partners that share successes and failures to help inform the strategy annually
- Revisit shared goals and metrics, evaluate progress, and adapt to challenges and opportunities identified during the first 5 years
- Published results from the multi-year monitoring of restoration projects in progress

- Validated pilot projects, institutional capacity, and demonstrated, tangible benefits of restoration
- Implementation of pre- and post-restoration monitoring to improve understanding of benefits
- Metrics to track collective progress toward shared goals

Training and resources

- District Wildlife Managers have the training and resources to be a primary leader of beaver restoration and coexistence in Colorado, and private land owners and public land managers have access to those resources
- More training for key stakeholders, including water users and managers, land managers, and wildlife officers
- Accessible, affordable, and well-known resources to improve coexistence
- Available education and resources on the why, what, and how of beaver restoration to help build stakeholder buy-in across Colorado
- Identification and pursuit of funding sources and mechanisms for implementing projects

Momentum and scale

- Broader adoption, institutionalized beaver-based approaches within ecosystem management, and Tribal- and community-led stewardship
- Significant contributions to climate resilience, biodiversity recovery, and water infrastructure innovation
- Momentum to expand the pace and scale of beaver-related restoration across the state

Wildlife and Conservation Focus Group Summary

Key Themes

- **More data and monitoring** is needed for management, restoration, and translocation
- Consideration of **other species of concern** in beaver restoration priority areas
- Importance of **peer to peer learning** opportunities and outreach

Population Status and Management

Challenges and concerns

- **Fragmented land ownership patterns** hinders support of large beaver populations
- **Furbearer designation** may constrict management options towards restoration goals
- **Gaps in avocational harvest data**, including the method of voluntary self-reporting and the lack of geographical data collection
- **Habitat fragmentation**
- **Lack of data on conflict take**
- **Social perceptions**, and lack of societal value placed on an animal with unlimited take

Suggested actions

Some participants suggested **harvest limits** as a key strategy to increase societal value of a keystone species and facilitate restoration. Others suggested that **if restoration goals can be achieved without harvest restrictions, the current management approach should remain.**

Specific actions suggested included:

- **Limit harvest around primary dispersal corridors** of beaver
- **Mandatory checks** to gather more data on avocationally harvested beaver
- **Regional population** data gathering and estimation

Beaver Restoration

Working definition

Participants who expressed an opinion were generally amenable to the working definition, while suggesting some areas for improvement.

Specific suggestions included:

- Replacing “human needs” with “human interests”

Priorities

Multiple participants encouraged prioritizing “**low-hanging fruit**” over heavily degraded areas, while others suggested prioritizing areas in need of restoration **where social resistance is highest and resources are lowest.** Those encouraging the low-hanging fruit approach mentioned **landowner interest** and **connections to source populations** as criteria. Those who encouraged the greatest-need approach mentioned the agency should not focus on areas already well-resourced with funding and organizations focused on their restoration.

Multiple participants mentioned **links to other species of concern**, including species in the State Wildlife Action Plan that may benefit from restoration, and/or cutthroat trout conservation.

Additional factors mentioned by participants were:

- Connection to the Colorado **Habitat Conservation and Connectivity Plan**
- Improving **climate resilience, especially for wildfire and drought**
- Incorporation of **Tribal and Indigenous knowledge and communities**
- **Scaleability**

Participants also suggested the following potential success metrics:

- **Beaver population numbers**
- **Elevated water table**
- **Increased biodiversity** of associated species
- **Restored gallery forests** in the riparian zone

Outreach and education

Multiple participants mentioned **peer to peer learning opportunities and outreach**, including amplifying the stories of landowners who have seen land and water benefits from beaver.

Other suggestions included:

- **Clear communication of timelines** for when restoration benefits may materialize
- **Education campaign** on what healthy, stable beaver populations look like
- **Outreach campaign** encouraging use of suitable habitat for beaver

Key partners

- **Wildland Restoration Volunteers**

Suggested actions

- **Build a community of practitioners** that can expand data collection

Coexistence and Conflict Resolution

Priorities

Multiple participants suggested **lethal management options should be retained** as a tool, alongside coexistence and non-lethal solutions.

Other priorities included:

- **Preserving family units**
- **Input from ranchers, agricultural producers, and landowners** on a conflict resolution framework

Challenges and concerns

- **Capacity constraints at CPW**
- **Coexistence structures are not feasible** in all locations where beaver are present
- **Perceptions of the presence of beaver themselves as a problem**
- **The term “coexistence” itself may be a deterrent**

Resource needs

Multiple participants suggested **flexible cost-share programs for landowners** to implement coexistence strategies. Some noted that any initiative should involve landowner contributions of labor and/or funds, to foster a sense of ownership in the project. Some specifically discouraged payments for outcomes, noting that the cessation of payments can create ill will.

Additional resource needs included:

- **Beaver hotline** for immediate advice and referrals
- **Dedicated CPW staff** to guide coexistence partners working on the ground
- **Demonstration sites** to see coexistence methods in place
- **Internal training** for CPW staff
- **Training for local conservation volunteers**

Outreach and education

Multiple participants suggested outreach and messaging efforts focused on **the hydrological and ecological benefits that beaver can provide**.

Additional suggestions included:

- **Building awareness of coexistence solutions**, being mindful of diverse perspectives
- **Two-way outreach and education, including for advocates** to understand the perspectives and experience of ranchers and landowners

Key partners

Multiple participants identified the entities participating in this focus group as key partners.

Additional suggestions for specific partners included:

- CO Department of Agriculture
- Natural Resources Conservation Service
- US Fish and Wildlife Service

Suggested actions

Multiple participants encouraged **mapping of conflict areas and types**. Some suggested overlaying conflicts with suitable habitat to gain a clearer view of beaver populations and human-beaver interactions on the landscape. Others emphasized the importance of granularity in conflict data collection, noting that tree cutting, road flooding, and daily impediment of irrigation ditches have very different impacts.

Translocation

Priorities

Multiple participants suggested that **translocation should be a last resort for non-lethal conflict resolution**, considered only after coexistence is determined not to be feasible.

Multiple participants also suggested **monitoring of translocation outcomes** as a priority.

Challenges and concerns

Multiple participants mentioned **rigid timelines for translocation** as a challenge. Some noted that landowners experiencing conflicts in months where translocation is not possible may be more likely to opt for lethal removal than to live with beaver on their property until they can be translocated. Others noted that rigid timelines can limit the ability to trap entire families.

Other challenges and concerns included:

- **Perception of translocation as an easy option**
- **Potential high mortality rates**
- **Turnover of federal public lands staff** impacting opportunities on public lands

Resource needs

- **Decision tree** for land owners and managers
- **Documentation of the model and precedent for translocating to federal lands**

Key partners

- Cheyenne Mountain Zoo, for potential research support
- Colorado State University Cooperative Extension

Suggested actions

- **Update CPW's nuisance guidance** to mention beaver translocation as an option

Future Visions

Alignment and collaboration

- Alignment of wildlife management, water law, and landowner incentives to support beaver-based ecological function
- Better alignment of local, state, and federal land owners and managers
- Strong collaboration among state agencies, Tribes, federal partners and NGOs

Coexistence

- Acknowledgement of how much has changed with regard to human views of beaver
- Broad coexistence with continued recreational trapping in areas where populations are doing well
- Reduced human-beaver conflict

Efficiencies

- Streamlined processes for translocating beaver into the most suitable habitats

Momentum and scale

- Beaver based restoration (natural and mimicked) is widely accepted and implemented
- More wetlands and more protection for beaver
- Watersheds that are self-sustaining around beaver and beaver habitats

Resources

- Landowners, ranchers, and restoration practitioners are equipped with the tools and incentives to support coexistence
- Voluntary incentives for landowners to use non-lethal conflict mitigation

Watershed Coalitions Focus Group Summary

Key Themes

- Exploring **desired future condition** for beaver that considers the realities of development and social acceptance
- **Outreach and education**
- **Sustainability of approaches** (need to engage landowners and the general public to do some of this work themselves, coexistence as a more sustainable alternative since beaver will recolonize after lethal removal or translocation)

- Value of **state-backed information** to support coalition work with landowners on the ground

Population Status and Management

Challenges and concerns

- **Accounting for bank denning beaver** in population estimates and monitoring
- **Lack of willow and aspen resources** in some areas
- **Pulse-heavy stream systems** in urban and suburban areas due to runoff from impervious surfaces
- **Social tolerance and public perception**

Beaver Restoration

Priorities

The factors most frequently mentioned by participants for key consideration in the identification of priority restoration areas were **regional or watershed-level recommendations and priorities**. Some noted that relationships and collaborations which have already been developed within watersheds will better enable progress towards success metrics at a watershed level.

Additional factors mentioned by participants were:

- **Expansion for capacity of beaver and improved watershed function** as a benchmark so as not to exclude projects focused on low-tech process-based restoration rather than beaver occupancy
- **Net positive benefits for both streamflow and surrounding lands** and their support of wildlife
- **Pairing vegetation management projects with beaver restoration projects**

Challenges and concerns

- **Stakeholder concerns about impacts to water rights**

Key partners

- CO Water Conservation Board grants and initiatives
- Colorado Mesa University, Colorado State University, and Estes Valley Watershed Coalition are currently capturing project-level data on water velocity, flow, temperature, and sediment capture

Coexistence and Conflict Resolution

Priorities

- **Balancing flood irrigation and beaver** to avoid channelized rivers
- **Transparency that beavers aren't a fit everywhere**

Challenges and concerns

- **Capacity constraints at CPW**

Resource needs

Multiple participants mentioned **funding support and incentives for landowners to implement coexistence over lethal approaches** as a needed resource.

Additional resource needs included:

- **Best practices for infrastructure projects** when beaver are present but not causing conflict
- **Decision tree** for landowners experiencing conflict
- **Technical consultation on the ground** by agency staff or a **Referral list** for other contacts who can offer technical advice
- **Funding support, such as cost-share programs**, for implementation of coexistence projects

Outreach and education

- **Local beaver working groups** as an opportunity for meaningful connections between watershed coalitions, sportspersons, and landowners
- **Messaging of coexistence as a long-term solution**, which removing beaver is not
- **Outreach to water districts and CO Department of Transportation** on the potential benefits of beaver for fire management
- **Peer to peer conversation**
- **Targeted messaging for different stakeholder groups** focused on the benefits that are of value to them, rather than from a general benefits approach

Key partners

Multiple participants mentioned **The Beaver Institute** as a potential partner and model for coexistence training and capacity building.

Additional suggestions for specific partners included:

- Local watershed coalitions, as a place for district wildlife managers to direct calls about nuisance beaver
- USDA-APHIS Wildlife Services, who are knowledgeable about the areas they work and trap in

Suggested actions

- **Designate a portion of the funds received from trapping permits** towards beaver coexistence
- **State license plate** featuring beaver to generate funding

Translocation

Priorities

- **Coexistence should be explored before translocation** for conflict situations, with translocation as a last option to avoid lethal control

Challenges and concerns

- Risk of spreading chytrid fungus or whirling disease to sensitive aquatic species

Resource needs

- Holding facilities
- Regional network of practitioners and partners to bring awareness to when and where beaver might need to be translocated
- Standardized guidelines and protocols

Key partner

- CSU Foothills campus, for holding facilities
- Utah Division of Wildlife Resources, to share learnings
- Wildlife rehabilitation centers, for holding facilities
- Zoos, for holding facilities

Use of State Strategy

- Connecting land and water conservation efforts
- Demonstrating project alignment with state planning efforts for grant applications
- Increasing awareness of beavers as a tool for restoration and showing their importance, resilience, and ability to help create more resilient watersheds
- Informing consideration of translocation
- Integrating into Community Wildfire Protection Plans
- Integrating into Wildfire Ready Watersheds program
- Integrating more beaver habitat needs into a vegetation management strategy
- Prioritizing restoration locations that benefit the landscape scale
- Refining riparian restoration and low-tech process-based restoration projects

Future Visions

Adaptations and learnings

- Better understanding of how beaver can fit into suburban landscapes
- Reflections on changes within the timeline and adaptations for the future

Capacity and resources

- Tools to understand where suitable habitat within developed areas can be
- Engaging and enabling various audiences to do some of the work themselves
- Increased cultural carrying capacity. More folks are okay with more beaver on the landscape, and conflict areas have been addressed.
- More support and information available for landowners

Education and outreach

- More educational opportunities for the general public
- Robust outreach and communication

Momentum and scale

- More on the ground projects and local success stories

Participant List

Sector focus group participants are listed alphabetically by affiliation. Although a single affiliation may be listed, participants often contributed insights from multiple personal and professional roles and perspectives.

Mark Belles
Brian Clarke
Christy DuMond
Ben Goldfarb
Sarah Heckathorn
Bruce Hutcheon
Carol Monaco
Brenda Miller
Jenny Nehring
Hugh Sanberg
Maddy Walinchus

Alamosa County, Richard Hubler
Arkansas Headwaters Wetlands Focus Area Committee, Ricki Garden
Audubon Rockies, Abby Burk
Bent County Commission, Betty Lawrence
Biophilia Foundation, Jennifer Gooden
Bird Conservancy of the Rockies, Anna Greenberg
Blue River Watershed Group, Barrett Friesen & Vanessa Logsdon
Boulder County Parks and Open Space, Monserrat Alvarez, Darren Beck & Sarah Heerhartz
Bureau of Land Management, Natalie Clark & Chris Keefe
Center for Biological Diversity, Samantha Miller
Central Colorado Conservancy, Nathan Ward
Cheyenne Mountain Zoo, Bob Chastain
City and County of Broomfield, Chloe Chalekian & Brian Genge
City of Alamosa, Deacon Aspinwall
City of Boulder, Don D'Amico & Cat McIntyre
City of Fort Collins, Bernadette Kuhn

City of Lakewood, Lee Blair
City of Steamboat, Jenny Carey
Coloradans for Responsible Wildlife Management, Kathleen Curry
Colorado Alliance for Environmental Education, Katie Navin
Colorado Association of Stormwater and Floodplain Managers, Shea Thomas
Colorado Cattlemen's Association, Erin Karney Spaur
Colorado Cattlemen's Agricultural Land Trust, Megan Knott
Colorado Counties Inc., Kieran Boes
Colorado Department of Agriculture, Dustin Shiflett
Colorado Department of Local Affairs, Marguerite Harden
Colorado Department of Natural Resources, Stacy Coleman, Andrea Harbin Monahan & Nate Pearson
Colorado Department of Public Health and Environment, Kenan Diker
Colorado Department of Transportation, Matt Muraro & Becky Pierce
Colorado Farm Bureau, Ashley House
Colorado Municipal League, Elizabeth Haskell
Colorado Natural Heritage Program, Ana Davidson & Rob Schorr
Colorado Nature League, Jen Clanahan
Colorado Open Lands, Dirk Rasmussen
Colorado River District, Melissa Wills
Colorado Springs Utilities, Annie Berlemann
Colorado State Land Board, Lindsay Brandt
Colorado Trapper and Predator Hunter Association, Dan Gates
Colorado Water Conservation Board, Lorelei Cloud

Colorado Water Trust, Kate Ryan
Colorado Wildlife Control Operators Association, Chris Jurney
Colorado Wildlife Federation, Suzanne O'Neill
Colorado Woolgrowers Association, John Field
Defenders of Wildlife, Peggy Darr
Denver Mountain Parks, Lewis Talbull
Denver Parks and Recreation, Scott Bartell, & Vicki Vargas-Madrid
Denver Water, Alison Witheridge
Denver Zoo Conservation Alliance, Julie Krajewski
Ditch and Reservoir Company Alliance, Amber Weber
E3KFM, Peter May
Eagle County, Emily Seddon
Eagle River Coalition, Pete Wadden
Eagle Valley Land Trust, Jessica Foulis
Environment Colorado, Henry Stiles
Estes Valley Watershed Coalition, Wilynn Formeller
Fort Collins Utilities, Jared Heath
Friends of Coal Creek, Casey Lyons
Friends of the Lower Blue River, Rachel Ruiz
Friends of Yampa, Emily Burke
Garden of the Gods Park, Anna Cordova
Gates Family Foundation, Amanda Hill
GOCO, Dan Omasta
Grand County, Kayli Foulk
Grasslands Colorado, Elise Elswood
Greeley Water, Kelen Dowdy
Greenwood Wildlife Rehabilitation Center, Amanda Manoa & Jen Schoonmaker
Huerfano County Commission, Karl Sporleder
Humane World for Animals, Aubyn Royall
Institute for Social and Environmental Transition, Maya MacHamer
Jackson County Commission, Philip Anderson
Jefferson Conservation District, Margo Yousse

Jefferson County Open Space, Erickson Smith
Knott Land and Livestock, Tyler Knott
Lake County Commission, Elsa Tharp
Larimer Conservation District, Anna Cloud & Alyssa Graziano
Middle Colorado Watershed Council, Kate Collins
Mighty Arrow Family Foundation, Nathan Fey
Mile High Flood District, Brandon Cary
Mountain Village Public Works, Scott Pittinger
MSU Denver, Jonathan Lee
National Fish and Wildlife Foundation, Kirstin Neff
National Forest Foundation, Carina Bracer
National Park Service, Isabel de Silva Shewell
National Park Service (retired), Don Whyte
National Wildlife Federation, Brian Kurzel, Alicia Marrs, & Adria Surovy
Native American Fish and Wildlife Society, Shailyn Weichman
Nez Perce Tribe, Rosie Sanchez
Northern Water, Mark Coleman
Ouray County Commission, Lynn Padgett
Peaks to People, Julie Dubin
Pitkin County Healthy Rivers Board, Lisa Tasker
Right Relationship Boulder, Christie Yoshinaga-Itano
Rio Blanco Natural Resources Department, Reece Melton
Rio Grande Headwaters Restoration Project, Connor Born & Daniel Boyes
River Network, Brian Murphy
RiversEdge West, John Leary
Rocky Mountain Farmers Union, Jen Ghigiarelli
Rocky Mountain Wildlife Alliance, Emily Davenport
Round River Resources, Louis Martin

San Luis Valley Water Conservancy District, Heather Dutton
San Miguel Watershed Coalition, Adrian Bergere
Save The Beavers, Nova Snow
SFR Wildlife Rehabilitation Center, Alicia Williams
Sierra Club, Delia Malone
Southern Plains Land Trust, Judith Westveer
Southwest Wetlands Focus Area Committee, Casey Lyons
Sportsperson's Roundtable, Cliff Carney, Tim Emery, Ron Goodrich, Larry McCormack, Dean Riggs, Ryan Sweeney, Roger Tucker
St. Vrain and Left Hand Water Conservancy District, Jenny McCarty
Summit County Open Space, Allison Morton
The Beaver Institute, Adam Burnett
The Big Thompson Watershed Coalition, Brenan Bloyd
The Nature Conservancy, Diana Lane, Drew Rayburn & Austin Rempel
The Watershed Center, Kara Brunngraber & Deborah Hummel
Theodore Roosevelt Conservation Partnership, Alex Funk & Liz Rose
Trout Unlimited, Kevin Terry
University of Idaho, Shanara Spang Gion
Upper Arkansas Water Conservancy District, Greg Felt
Upper Yampa Water Conservancy District, Andy Rossi

US Army Corps of Engineers, Aaron Eilers & Matt Montgomery
USDA-APHIS Wildlife Services, Stacie Robinson
US Forest Service, Ashley Hom & Amanda Sanchez
Valley Varmints, Travis Kistler
Walton Family Foundation, Jill Ozarski & Jared Romero
Western Landowners Alliance, Hallie Mahowald
Western Watersheds, Delaney Rudy
Wild Earth Guardians, Lindsay Larris
World Wildlife Fund, Jonathan Proctor
Yampa Valley Beaver Believers, Eric Washburn
Yampa Valley Sustainability Council, Ryan Messinger

Thank you to the 169 participants who contributed their time and input during these focus groups!

Cross-Sector Focus Groups Summary

Methods

A subset of participants from the July-August sector focus groups were invited to attend a virtual cross-sector focus group in September 2025. The two cross-sector meetings were held on the same date, with one group convening in the morning ("Group 1") and one group convening in the

afternoon (“Group 2”). Both focus group meetings lasted three hours, and the agenda and objectives were the same for each. These meetings provided participants an opportunity for cross-sector discussion and for providing input on new, draft elements of the Strategy that were developed in response to stakeholder input from the initial scoping phase. (See page 129 for the cross-sector focus group agenda)

A total of 43 individuals participated in the cross-sector focus groups. Participants were recruited by CPW staff and partners from the list of participants that had attended a sector focus group in the first phase of stakeholder engagement. Participants were then assigned to a specific group by the facilitators, based on participant availability and ensuring a diversity of sectors were represented in each focus group. (See page 67 for the list of cross-sector focus group participants)

Cross-sector focus groups began with CPW staff reorienting participants to the background on the need for developing a Beaver Conservation and Management Strategy. Facilitators from Keystone Policy Center then provided an introduction to the purpose of the cross-sector focus groups, shared the agenda and discussion guidelines, provided an overview of the methods of public engagement that had occurred in the Strategy’s scoping phase to date, and led a round of introductions among participants. Participants were advised that all concepts and content presented for discussion were in draft form and subject to changes and updates in both the draft and final versions of the Strategy.

Participants were introduced to each topic with a brief slide presentation by CPW staff leading into a facilitated discussion with participants, and both focus groups were presented with the same slides for all topic areas.

Prior to the conclusion of each meeting, participants were provided with the anticipated timeline for the release of the draft Strategy (November 2025), the public comment period (ending December 2025), and the release of the final Strategy (February 2026).

Cross-sector focus group discussions were guided by open-ended questions and aimed to elicit the full range of participant perspectives rather than build consensus. Notes were thematically analyzed to identify convergent, divergent, and unique viewpoints. While this report synthesizes common themes, it does not reflect consensus of all cross-sector focus group participants either within or across meetings. **All comments should be considered individual feedback from participants unless otherwise noted** as being raised by multiple participants or noted as a key recurring theme. Regardless, neither key themes nor comments raised by multiple participants should be construed as representing consensus among a focus group.

Cross-sector focus group meetings were not recorded and all notes were taken live by a member of the facilitation team. Notes were captured entirely without attribution with the exception of introductions. The notes were thematically analyzed and summarized by a member of the facilitation team with no assistance from ChatGPT or other AI tools.

Key Themes Across Both Cross-Sector Focus Groups

- Beavers hold **intrinsic value** as well as ecological value
- **Conflict take** is a significant knowledge gap in beaver conservation and management
- **Public lands** may present additional opportunities for conserving beaver that are less feasible on private lands
- **Social science research** around public perceptions and desires could help inform beaver restoration and coexistence strategies
- **Standards for holding facilities** and handling of beaver during translocation will help beavers and practitioners
- **Streamlining of the translocation permitting process** is welcomed and needed
- **Terminology is important** and can impact public perceptions and buy-in
- The Beaver Conservation and Management Strategy represents a thorough and **significant effort** by CPW

Cross-Sector Group 1 Focus Group Summary

Key Themes

- **Alignment with existing funding opportunities** can boost success
- **Conflict data** (locations and types of conflicts, number of lethal outcomes) is a **key knowledge gap**
- **State-led frameworks** are important, but should allow for **flexibility** on the ground
- **Strategies should be data-informed and revisited regularly** to incorporate new learnings and monitor progress
- **Tribal and Indigenous knowledge** should be incorporated into beaver conservation and management strategies

Population Status

Support for proposed strategy components

Multiple participants indicated support and interest for:

- Developing or refining tools to **estimate bank-denning beaver populations**

Other specific areas of support included:

- **Consideration of vegetation abundance** in potential habitat for beaver
- **Focusing on habitat occupancy** rather than number of beaver for a target metric

Challenges and concerns with proposed strategy components

Multiple participants identified the need for **data-informed revisions** to the Beaver Conservation and Management Strategy as efforts progress to fill the data gaps and priorities identified in the strategy.

Other challenges and concerns included:

- **Regional variability of the accuracy of remote sensing** as a model for identifying potential beaver habitat. Some participants noted recent ground-truthing aligned with Colorado Beaver Activity Mapper (COBAM) predictions for their area, while others noted the lack of accounting for urbanization and vegetation cover limited its use in their area.
- **Capacity for population monitoring or ground truthing**, particularly on private land

Restoration

Support for proposed strategy components

- **Watershed-level prioritization frameworks** that can be incorporated into local planning and decision-making

Challenges and concerns with proposed strategy components

Multiple participants expressed concerns that **designating specific locations as priority restoration areas without local input** on those designations could lead to opposition for the strategy. However, others felt that **CPW expertise should determine the designation** of priority areas and criteria.

Other challenges and concerns included:

- **Engagement of private landowners** whose land falls within potential restoration areas. Specific considerations included whether landowners can opt to have their land excluded from a restoration map, and how landowners can be incentivized to coexist where possible or to report a nuisance take when coexistence is not possible.

Suggested Additions or Emphasis to proposed strategy components

Multiple participants suggested **Basin Roundtables as a key partner** for restoration, noting their diverse membership. Suggested roles included expanding education and awareness, potential funding sources, and local expertise for refining the considerations and priorities for local restoration efforts.

Multiple participants also suggested **conservation of existing high-functioning habitats** as a priority. It was noted that determining what percentage of active functional beaver populations exist on federally or privately conserved lands could help prioritize further protections for key populations.

Multiple participants encouraged seeking ways to enable restoration projects not just in “low-hanging fruit” areas with existing high suitable habitat, but also in areas that historically had beaver but currently have **highly compromised conditions** such as soil incision or poor water cycles. While requiring a larger effort, these areas could realize large-scale ecosystem benefits with beaver restoration.

Other suggested additions or areas of emphasis included:

- **Center the voice and needs of the beaver**
- **Clarify whether restoration priority areas are areas for restoring habitat for beaver or for restoring beaver populations**, as the latter implies areas with existing suitable habitat while the former may implicate areas with degraded habitat
- **Conservation of existing high-functioning habitats**
- Consider **ties to critical infrastructure** as potential high-conflict areas, such as whether potential restoration sites are upstream of major reservoirs
- Include **benefit to species of greatest conservation need** as a prioritization factor
- Include **sediment capture** as a prioritization factor
- **Integrate beaver restoration planning with CO Water Conservation Board's stream and watershed plans and projects**
- **Limit the initial number** of priority restoration areas
- **Long-term success planning** to include consideration of beaver biology and behavior, i.e. family grouping and late dispersal mechanisms
- **Use the term "restoration suitability"** rather than "restoration prioritization" to avoid misunderstandings and invite locally driven priorities

Harvest Management

Support for proposed strategy components

Multiple participants expressed support for **mandatory reporting of avocationally harvested beaver**, including geographic data. Some noted support specifically if instituting this through the formal rulemaking process.

Other specific areas of support included:

- **Watershed-level management goals**, including potential harvest restrictions

Challenges and concerns with proposed strategy components

Multiple participants noted the **lack of data on conflict take** on private lands as a challenge to beaver conservation and management, and indicated that this number was likely much more significant than the numbers from avocational take.

Multiple participants also noted making **effective watershed level regulations without having geographical harvest data in hand** as a challenge.

- **Accessibility of reporting options** may impact participation, even if mandatory. Consider the benefits and drawbacks of physical checks and various remote reporting options (e.g., in-browser vs. mobile applications).

Suggested Additions or Emphasis to proposed strategy components

Multiple participants suggested **acknowledgement of the data gap of beaver taken on private land** under CO Department of Agriculture (CDA) statutes and/or **collaboration with CDA** to seek

to address the data gap. However, others felt that mandatory data collection for avocational take should be the first step with any additional steps carefully considered.

- **Incentivize private landowner reporting of conflict take** on their lands, such as through the utilization of report data to identify areas for directing additional resources for conflict resolution
- **Plan for updates to the management strategy** within a fixed number of years, to incorporate the collected data

Coexistence and Conflict Resolution

Support for proposed strategy components

Multiple participants expressed support and interest for the proposed **coexistence decision tree or flow chart** to guide responses to various conflict scenarios.

Other specific areas of support included:

- **Flexibility** for municipalities to respond to conflict situations, which require a case-by-case approach

Challenges and concerns with proposed strategy components

Multiple participants encouraged **mandating coexistence efforts** as the first approach to conflict scenarios, noting that coexisting with beaver should be a responsibility shared by all. However, multiple others felt that **keeping coexistence voluntary** was necessary and would lead to better acceptance and outcomes for humans and animals. Some noted situations (e.g., certain urban settings, federally regulated systems) when removal is the only option.

- **Funding** for landowners and municipalities to employ coexistence strategies

Suggested Additions or Emphasis to proposed strategy components

Multiple participants stressed the **integration of Indigenous knowledge** as a priority, noting that Tribal and Indigenous peoples have ancestral ties to the land, relational ties to beaver, and hold thousands of years of knowledge about beavers and river systems.

Multiple participants suggested an emphasis on **reframing the narrative around coexistence** from a mandatory or voluntary measure to a shared responsibility of stewardship.

Multiple participants encouraged advancing **social science research** on community perspectives of beaver to help inform coexistence strategies and increase success.

Multiple participants also encouraged **collecting data on the types and locations of conflicts**. Some suggested that CPW could host a form for those experiencing issues to request coexistence resources, and this could be a touchpoint for collecting data on conflict.

Other suggested additions or areas of emphasis included:

- **Collect data on the types and locations of conflict situations**
- **Consider the importance of terminology.** Landowners who have experienced years of conflict with beaver may not be interested in “coexistence devices” when presented as such, but may be interested in “Beaver Deceivers”
- Consider the **prairie dog management model** for conflict resolution
- Develop a **decentralized model** for coexistence education and support, including a state framework, a blended funding structure, and trained local implementation partners
- **Include municipalities and special districts** in consideration of landowners that need support for coexistence and conflict resolution
- **Make coexistence approaches mandatory on state public land**
- **Promote the cultural value and connections to beaver**, not just the ecological benefits of beaver, in education and outreach efforts
- **Pursue all opportunities for non-lethal conflict resolution** even in cases that do not necessarily result in greater acceptance and coexistence with beaver
- **Train local “Beaver Ambassadors”** who can support coexistence measures on the ground and encourage community members to report nuisance take

Translocation

Support for proposed strategy components

Multiple participants expressed support for the proposed **streamlining of approved translocation releases** via pre-approval of sites and permits that cover multiple releases at a site.

Multiple participants also expressed support for the utilization of translocation only as a **last resort to non-lethally resolve conflict**.

Multiple participants also expressed support for the focus on **standards for holding and quarantine facilities**. Some specifically noted the **veterinary-client relationship requirement** as key.

Other specific areas of support included:

- Ability for utilization and adaptation of existing **wildlife rehabilitation facilities**
- Prioritization of relocating beaver in **pairs and families**

Challenges and concerns with proposed strategy components

Multiple participants noted that **individual beavers are often sources of conflict in urban areas** and requiring a special permit process for translocating individual beavers could pose a barrier to non-lethal conflict resolution.

Suggested Additions or Emphasis to proposed strategy components

- **Allow multiple trapping sites to be utilized under a single permit**

- **Clarify standards for the transportation** of beaver
- **Confirm that outreach to adjacent landowners has been undertaken** on the permitting application for translocation release sites
- **Develop a resource list** of practitioners that can provide on-the-ground support with trapping and translocating
- **Outline timelines for monitoring reports and permit requests**

Visions

Multiple participants expressed the importance of **aligning the Beaver Conservation and Management Strategy with existing funding and resources** to facilitate success.

Other visions shared by participants included:

- Allowing beavers to colonize on their own through **natural movement of beaver** through watersheds with less reliance on translocation and human intervention.
- Ensuring a commitment to **honoring the Brunot Treaty** is at the forefront of, and detailed within, the Beaver Conservation and Management Strategy.
- Preparing for the likelihood that some goals will take many years to achieve and **planning for some shorter-term goals and opportunities to review progress along the way** towards achieving bigger goals.

Cross-Sector Group 2 Focus Group Summary

Key Themes

- **Authentic engagement** with partners and stakeholders
- **Internal training and coordination** to ensure consistent responses from CPW staff in situations involving beaver
- **Many beaver in conflict situations may fall outside of translocation success parameters** (i.e. social structures, time of year, etc.)
- **Terminology is important** and should be specific and well-defined for stakeholders
- **The current climate crisis creates an urgent need** for realizing the ecological benefits of more beaver on the landscape

Population Status

Support for proposed strategy components

- Focusing in on **suitable habitat**

Challenges and concerns with proposed strategy components

Multiple participants noted that **land ownership** (i.e. public or private) will impact population thresholds, management strategies, and resource needs for an area.

Beaver Restoration

Support for proposed strategy components

- **Being able to filter in or out prioritization criteria** that may be less relevant for a specific landscape or type of project planned

Challenges and concerns with proposed strategy components

- Beaver populations are at their highest in decades and **the term “beaver restoration” seems inappropriate** when there are many drainages and tributaries where beaver are thriving
- **Downscaling of US Forest Service** has prevented restoration projects from proceeding on federal public lands this year

Suggested Additions or Emphasis to proposed strategy components

Multiple participants suggested **local involvement** to create buy-in for, or to guide the selection of, priority restoration areas. Some noted local and regional on the ground experts were a key resource for determining the most promising areas. Others noted that engaging a diverse cross-section of local stakeholders around a potential restoration priority area would be critical.

Multiple participants also suggested that **social tolerance** should be a key factor in the determination of priority restoration areas. Some noted that social tolerance should be considered **upstream and downstream** of an intended site, especially if beaver translocation is being considered, as beaver may disperse for miles. Others noted that CPW could identify areas for focusing restoration efforts by **putting out a call for willing partners**, and prioritizing areas with social tolerance and buy-in.

Other suggested additions or areas of emphasis included:

- **Conduct social science surveys** to gather public perceptions and desires which can inform the selection of priority restoration areas
- **Encourage low-tech process-based restoration** in priority locations where stakeholders are resolutely opposed to the reintroduction of beaver
- **Expand on the definition of restoration** to clarify its relevance for a species that is far from extirpation
- **Financial support for coexistence and beaver restoration will be critical to social acceptance.** Landowners are often tolerant or indifferent to beaver until they experience conflict with negative financial impacts
- **Increase internal coordination** to ensure consistency in how CPW field staff respond
- **Priority restoration areas should not be limited to mountain regions**, as restoring beaver on the Eastern plains is important for statewide biodiversity

Harvest Management

Support for proposed strategy components

- **Tagging requirements for harvested beaver** would provide opportunities for gathering more data on beaver populations

Challenges and concerns with proposed strategy components

- Removal of beaver seems at odds with the **vital need for increased climate resilient landscapes** in Colorado
- Beavers have **intrinsic value** as well as their ecological value
- **Lack of data on the number of conflict beaver taken on private land** makes it difficult to get a complete picture

Suggested Additions or Emphasis to proposed strategy components

Multiple participants suggested **time-sensitive needs for restricting avocational harvest in priority restoration areas**. Some suggested that areas targeted for restoration will not currently have significant beaver populations, but restoration could increase those populations and thus increase the opportunity and interest for avocational trapping at sites where beaver are needed. Others suggested the urgent need for climate resilient landscapes warranted implementing harvest restrictions without waiting years for geographical harvest data, although the restrictions could be revisited after that data is gathered.

Other suggested additions or areas of emphasis included:

- Avocational harvest management needs in Colorado, where lethal traps are not allowed, **should not be compared to other Western states** in which they are allowed
- Clarify that any avocational harvest restrictions would **not impact a municipality's ability to manage beaver** on their own properties
- Consider **special restriction areas for avocational take on public lands**
- **Survey trappers who previously voluntarily submitted harvest data** to gather geographic locations of past beaver take
- The goal of beaver management should be to have a **thriving population of beaver everywhere possible** and not just to prevent beaver from becoming a threatened or endangered species

Coexistence and Conflict Resolution

Support for proposed strategy components

Multiple participants noted that **state guidance and initiatives for coexistence** will help to build momentum and legitimacy for adoption of coexistence devices.

Multiple participants also indicated support and interest for a **hotline** for beaver questions and issues.

Challenges and concerns with proposed strategy components

Multiple participants noted that **more funding** is needed to provide on the ground support for coexistence strategies. Some noted specifically the need for sustainable funding sources.

Other challenges and concerns included:

- **Coexistence is not going to be feasible in all locations**
- **Landowners should not be required to contribute to the cost** of coexistence devices in order to receive technical support for mitigating conflict
- **Maintenance commitments** for coexistence devices can be a barrier to adoption by local governments
- Some people interpret **the term “non-lethal conflict resolution”** to inevitably mean translocation

Suggested Additions or Emphasis to proposed strategy components

Multiple participants noted a need for **agency-wide awareness** of coexistence devices and non-lethal conflict resolution solutions.

Multiple participants emphasized the **integration of grassroots NGO partners** in coexistence strategies. Some participants suggested that coexistence programs should be built from the grassroots level up; other participants suggested that a state-led framework would be welcomed by many NGO partners. Some suggested an all-of-the-above approach.

Other suggested additions or areas of emphasis included:

- Communicate that **coexistence is a longer term solution** than removal and may be less expensive in the long run
- Consider setting up demonstration projects on acres owned by the **CO State Land Board**
- Develop a **mobile app or website** for stakeholders that may not utilize a hotline
- **Emphasize the need for a broad toolbox** and that no coexistence device will work for everyone
- **Ensure coexistence devices are being installed to the proper specifications** that give them the best chance of success
- **Engage authentically** with locally trusted partners; avoid using them just to make an unwelcome message more palatable
- Have **one central and easily accessible location** for landowners to turn to for guidance with conflict situations
- **Involve hunting and trapping communities** as critical stakeholders in conflict resolution programs
- **Landowners should be considered partners in beaver conservation**, not stakeholders in need of educating. They are already doing much to steward habitat and need more support, not education.

- Seek all opportunities to **resolve conflicts for landowners** even if that initially means translocation, as this may build trust and open the door for coexistence strategies in the future
- **Talk openly and clearly about the potential damages and conflict**, as well as the benefits, that beaver can bring when considering moving or attracting beaver into a restoration area
- Where active, CPW's **Wetland Focus Area Committees** could serve as hubs for beaver coexistence support

Translocation

Support for proposed strategy components

- **Streamlining the permitting process**
- Setting statewide **standards for appropriate holding facilities and handling** of beavers for translocation

Challenges and concerns with proposed strategy components

Multiple participants noted that **nuisance complaints are highest in September-October** which may fall outside the window when beaver can be translocated in time for establishment and overwinter survival.

Other challenges and concerns included:

- **Elevation is a significant factor** for determining the time of year when translocation can succeed
- The term “relocation” is only used for moving an animal within a home range in conservation and wildlife ecology, and **the term “translocation” is more accurate**
- While translocating families and mated pairs offers the best chance of success, **individual juvenile beavers** are often sources of conflict

Suggested Additions or Emphasis to proposed strategy components

- **Provide pathways for translocating later in the year in appropriate areas** (e.g. lower elevations), such as through defining different allowed timeframes for different geographies or through the ability to apply for a special exemption
- **Support adaptation of existing wildlife rehabilitation facilities** to appropriately house beaver

Participant List

Sector focus group participants are listed alphabetically by affiliation. Although a single affiliation may be listed, participants often contributed insights from multiple personal and professional roles and perspectives.

Alamosa County, Richard Hubler
Audubon Rockies, Abby Burk
Biophilia Foundation, Jennifer Gooden
Bird Conservancy of the Rockies, Anna Greenberg
City and County of Broomfield, Chloe Chalekian
City of Alamosa, Deacon Aspinwall
Colorado Cattlemen's Association, Erin Karney Spaur
Colorado Department of Agriculture, Dustin Shiflett & Wayne East
Colorado Farm Bureau, Ashley House
Colorado Nature League, Jen Clanahan
Colorado Trapper and Predator Hunter Association, Dan Gates
Colorado Wildlife Control Operators Association, Chris Journey
Colorado Wildlife Federation, Suzanne O'Neill
Denver Parks and Recreation, Vicki Vargas-Madrid
Eagle County, Emily Seddon
Fort Collins Utilities, Jared Heath
Friends of Yampa, Emily Burke
GOCO, Dan Omasta
Greenwood Wildlife Rehabilitation Center, Amanda Manoa
Mile High Flood District, Brandon Cary
MSU Denver, Jonathan Lee
National Fish and Wildlife Foundation, Kirstin Neff

National Park Service (retired), Don Whyte
National Wildlife Federation, Alicia Marrs & Adria Surovy
Nez Perce Tribe, Rosie Sanchez
Pitkin County Healthy Rivers Board, Lisa Tasker
Rio Grande Headwaters Restoration Project, Daniel Boyes
RiversEdge West, John Leary
Rocky Mountain Farmers Union, Jen Ghigiarelli
Rocky Mountain Wildlife Alliance, Emily Davenport
Round River Resources, Louis Martin
San Luis Valley Water Conservancy District, Heather Dutton
Save The Beavers, Nova Snow
Sierra Club, Delia Malone
Theodore Roosevelt Conservation Partnership, Alex Funk
Trout Unlimited, Kevin Terry
USDA-APHIS Wildlife Services, Stacie Robinson
Western Landowners Alliance, Hallie Mahowald
Western Watersheds, Delaney Rudy
World Wildlife Fund, Jonathan Proctor
Yampa Valley Sustainability Council, Ryan Messinger

Thank you to the 43 participants who contributed their time and input during these cross-sector focus groups!

Technical Advisory Sessions Summary

Methods

In July and August 2025, CPW held three virtual Technical Advisory sessions to gather expert feedback during the scoping phase of the Beaver Conservation and Management Strategy. (See Figure 1 for a list of topics and dates) All sessions lasted two hours. (See page 131 for the Technical Advisory session agendas)

Figure 1: List of Technical Advisory Sessions held from July through August 2025

Topic(s)	Date	Number of Participants
Population Status and Management; Restoration	July 30, 2025	28
Coexistence and Conflict Resolution	August 6, 2025	21
Translocation	August 20, 2025	17

A total of 38 unique participants attended one or more of the Technical Advisory sessions. Participants were recruited by CPW staff and partners. (See page 90 for a list of Technical Advisors)

Facilitators from Keystone Policy Center provided an introduction to the purpose of the session, shared the agenda and discussion guidelines, and led a round of introductions among participants. CPW staff provided a brief introduction to the topics of the day, followed by discussion.

Technical Advisory discussions were guided by open-ended questions and aimed to elicit the full range of participant perspectives rather than build consensus. Notes were thematically analyzed to identify convergent, divergent, and unique viewpoints. While this report synthesizes common themes, it does not reflect consensus of all focus group participants either within or across sectors.

All comments should be considered individual feedback from participants unless otherwise noted as being raised by multiple participants or noted as a key recurring theme. Regardless, neither key themes nor comments raised by multiple participants should be construed as representing consensus.

Technical Advisory sessions were not recorded and all notes were taken live by a member of the facilitation team. Notes were captured entirely without attribution with the exception of introductions. The notes were thematically analyzed primarily through human review, with limited framing support from AI software to help organize this summary. The emphasis remained on human interpretation to ensure contextual accuracy and nuance. The use of AI software did not involve feeding data into model training, and no cultural stories originating from Tribal and Indigenous peoples were included in the content provided to AI software.

Key Themes

Priorities and Themes for each of the major Technical Advisory topics (Population Status and Management, Beaver Restoration, Coexistence and Conflict Resolution, and Translocation) can be found at the beginning of the respective section.

Population Status and Management Discussion Summary

Priorities and Themes

- Population estimate methods should be updated to account for bank-denning beavers.
- Opportunities for acquiring additional population data could include boots-on-the-ground observational data, the use of eDNA monitoring, and building a public beaver activity reporting system, although those strategies come with their own challenges.
- Current limiting factors for beaver populations include low riparian condition and habitat quality, predation, habitat fragmentation, and low starting populations.

Population Estimates

Participants acknowledged that the Colorado Beaver Activity Mapping (COBAM) tool does not currently account for bank-denning beavers, since it is based on imaging of beaver dams and ponds. Participants expressed that accurately **accounting for bank-denning beavers is important for both population estimates and habitat and population connectivity assessments**. However, the distinction between bank-denning beavers and dam-building beavers is not always clear-cut; some bank-denning beavers build dams during low water flow that wash out in high flows, and are rebuilt the next year.

Suggested actions for accounting for bank-denning beavers included:

- Acquiring boots-on-the-ground observational data
 - A challenge noted with this approach was the increased time and resource requirements compared to modeling with aerial imagery
- Consider the use of eDNA monitoring
 - Challenges noted with this approach included:
 - Testing anywhere within a river that holds beaver will return a positive result, since beaver contribute large amounts of DNA
 - DNA persistence has led to the detection of beaver up to 7 months after they were presumed gone
 - Primer issues experienced during metabarcoding have led to messy data

Participants suggested a public beaver activity reporting system could be useful for ground-truthing COBAM population estimates, and discussed potential challenges and opportunities of this approach.

Opportunities for collaboration on a public reporting system included:

- Restoration practitioners, who often map active beaver populations before starting restoration projects
- Trappers
- The iBeaver project:
<https://defenders.org/blog/2021/05/ibeaver-crowd-sourcing-data-north-americas-busy-beaver>
- CPW's Resource Department has experience doing public outreach using iNaturalist and holding BioBlitzes to source community science observations
- The Colorado Department for Public Health and Environment (CDPHE), Bureau of Land Management (BLM), and local watershed groups hold small-scale beaver counts in some headwater watersheds. These counts could be used to cross-check wetland mapping efforts over the same spatial footprints and test correlation.
- Boulder County has tracked twenty-five years of beaver activity in their Parks and Open Space system

Challenges with a public reporting system included:

- Limited adoption noted with existing tools such as iBeaver
- Publicly available data on beaver locations may lead to those areas being targeted for harvest
- Trappers may be hesitant to report their trapping locations on a public forum

Peer Organization Examples

California Department of Fish and Wildlife (CDFW) has an **online beaver observation tool** that any member of the public can contribute sightings to, and verified sightings and iNaturalist data on sightings are pulled into a map. One shortcoming of this map is the lack of differentiation between areas that have no beaver and areas that just do not have anyone reporting beaver. CDFW is planning a "beaver blitz" event that will **offer guidance on identifying signs of beaver**. CDFW also **solicits inventories of beaver presence on public lands from public land managers** at individual state parks, wildlife areas, ecological reserves, National Parks, and others.

Recommended Resources

- Rutherford, W. H. 1964. [The beaver in Colorado: its biology, ecology, management and economics](#). Technical Publication 17. Colorado Game, Fish and Parks Department.

Harvest Estimates

This conversation focused on avocational harvest as regulated by CPW, rather than on nuisance beaver management, which is regulated by Colorado Department of Agriculture.

Participants weighed potential benefits and downsides of closing certain areas, such as restoration areas or other critical habitat, to beaver harvest. Participants considered whether harvest is a limiting factor for the beaver population. A key caution is that closure of areas to harvest without scientific reasoning and clear timelines will be of concern to the sporting community.

Peer Organization Examples:

- Participants have observed areas of voluntary closure to beaver harvest in Utah
- A trapping association in Montana is currently working on closures to beaver harvest during beaver reintroduction projects. The closures are producing no net loss for trappers, assuming that the drainage was devoid of beavers before reintroduction. However, the trapping community is more comfortable with regulation supported by clear science and timelines.
- CDFW regulates all beaver harvest (avocational and nuisance) for six months of the year with depredation permits. There is no limit on beaver harvest for the other half of the year.

Population Limiting Factors

Participants discussed the major limiting factors of current beaver populations. Primary limiting factors included:

- **Riparian condition and habitat quality:** Lack of riparian vegetation (including tall, extensive willows) and other riparian habitat degradation is a limiting factor. Potential causes for degraded riparian condition included:
 - Moose grazing (especially at high elevations)
 - Cattle grazing (especially at low elevations)
 - Prior drought leading to decline in overall health and vigor
 - Channelized, low-complexity stream complexes
- **Predation:** Predation risk is higher when riparian habitat and water availability is lower, leaving less vegetative or deep water cover for beavers. Predation risk is higher when beavers are establishing new habitat.
- **Harvest and lethal management:** Participants **did not indicate whether they considered harvest or lethal management a limiting factor for total beaver population numbers.** Participants did mention that repeated harvest or lethal management in a specific location could drive changes in beaver distribution and behavior.
- **Habitat fragmentation** by roads may be a barrier for beavers moving up and down watersheds. A participant suggested that if beavers have to cross a road to move up or downstream, they are unlikely to return to the original location.
- **Small, fractured populations:** Beavers beget more beavers. Participants mentioned that smaller, fractured existing populations of beaver might be preventing high-quality former beaver habitat from being re-occupied.

Peer Organization Examples

Rocky Mountain National Park has experienced limiting factors to beaver re-population, including moose grazing degrading riparian vegetation and disease.

Recommended Resources

- [Tularemia Detected In Lily Lake Area Of Rocky Mountain National Park - Rocky Mountain National Park \(U.S. National Park Service\)](#)
- Cooper D et al 2025 (<https://doi.org/10.1111/cobi.70053>)

- State-level tularemia stats are available, but not beaver-specific [Tularemia | Colorado Department of Public Health and Environment](#)

Research Needs

Participants discussed research needs for population and management. Recommendations included:

- **Bank-denning beavers:** Using crowd-sourcing to help count bank lodges; investigating which habitats are more likely to have bank-denning vs. dam-building beavers.
- **Ground-truthing population models:** Understand how the model's probability of beavers matches with beavers on the ground, which could be extrapolated to the statewide model.

Beaver Restoration Discussion Summary

Priorities and Themes

- Some participants recommended changing the working definition of beaver restoration, while others appreciated its current form. There was no consensus on needed changes.
- Beaver restoration projects should be prioritized according to clear criteria. Recommended criteria for prioritizing projects included:
 - **Multi-priority projects:** Look for areas that can benefit priority species and/or overlap with flood resilience, fire adaptation, and drought resilience goals. This may also align with funding interests.
 - **High social tolerance and low conflict potential:** Quantify social tolerance in specified areas and prioritize those with low human conflict potential.
- Prepare for potential human conflict during the planning phase of restoration projects. This could include establishing relationships with private landowners who may be affected by restoration, undertaking outreach efforts to increase social tolerance, and proactively planning for coexistence solutions.
- The term **Low-Tech Process-Based Restoration (LTPBR)** can be used to refer to many different kinds of restoration. Participants used it mainly to refer to LTPBR-only restoration (where beaver are unlikely to return and LTPBR is used as a beaver analog), LTPBR as preparation for the restoration of beaver, and a combination of the two. All types of LTPBR should be deployed strategically, considering **site-specific restoration plans**.
- There are many available avenues of research related to beaver restoration. Participants recommended **prioritizing research needs by considering whether a management decision or policy hinges on the result**.

Working definition

Participants discussed whether the presented definition was appropriately focused on beaver populations, or should be expanded to include more about beaver ecosystem services (including habitat and watershed restoration). Comments included:

- This definition reads as a goal of increasing beaver populations and ecosystem benefits, rather than being framed around watershed and/or habitat restoration

- Framing around beaver populations is appropriate to CPW's goal to manage the wildlife resources of the state
- Appreciate that the definition approaches beaver as a wildlife biology issue, not just for their ecosystem benefits
- Restoration of beaver seems to be as much or more about the habitat as it is about the beaver itself
- Recommend broadening the definition to talk about "beaver wetlands" that beaver support, in order to communicate all the ecosystem services that come with beaver

Additional aspects of the working definition that participants liked included:

- Acknowledging that beaver habitat has changed and that the potential areas for beaver have changed dramatically since their historic distribution
- Considering the balance with human needs

Additional recommended changes to the working definition included:

- Specifying the meaning of "beaver restoration," which can mean many things. The key to longevity is the beavers themselves, over beaver mimicry structures.
- Focus on having habitat that can support beaver as they move across the landscape
- The definition could raise questions about what we consider a healthy or functional beaver population

Prioritization

Participants discussed how to prioritize beaver restoration areas. Recommended prioritization criteria included:

- **Overlap with other priority species** (i.e. Colorado River cutthroat trout, Rio Grande cutthroat trout, sucker, Gunnison sage grouse) to create a multi-species focus
- **High social tolerance and low conflict potential:** Participants recommended quantifying social tolerance. Suggested tools included the socioecological suitability model for wolf reintroduction, lethal management data, and spatial data on land use
- **Flood, fire, and drought resilience:** This could include partnering with other agencies who are interested in using beaver restoration in service of restoration and resilience planning
- **Funding interests:** Funding entities may be interested in seeing multi-benefit projects (i.e. traditional harvest, assisting private landowners)

Participants also offered suggestions on tools that could be used to prioritize and prepare for beaver restoration projects. Tool suggestions included:

- Using the **Beaver Restoration Assessment Tool (BRAT) model from Utah State University**, which evaluates unoccupied suitable habitat with low probability of conflict. Participants noted that the accuracy of this model can be highly variable based on ecoregions. There are some efforts to ground-truth and tailor the model locally.
- Identify areas where conflict is likely and either **proactively plan for coexistence or de-prioritize** those restoration sites. Planning for coexistence could include offering trainings and providing supplies for coexistence devices.

- Undertake outreach efforts to **increase social tolerance** (i.e. offering education on ecosystem services) before restoration
- Establish and utilize **relationships with private landowners** who may be affected by restoration efforts

Peer Organization Recommendations

CDFW has drafted parameters for modeling and prioritizing beaver restoration sites. The parameters include:

- Probability of annual wildfire
- Probability of severe wildfire
- History of drought and fish rescues
- Biodiversity indices
- Abundance or presence of critical habitat species with a nexus to beaver habitat
- Overlaid with:
 - Base flows
 - Soil moisture
 - Climate change parameters
- Prioritized by areas that would show benefits the soonest

Low-Tech Process-Based Restoration

Participants discussed the uses of Low-Tech Process-Based Restoration (LTPBR) in beaver restoration projects. Discussion revealed that participants use LTPBR to describe many different kinds of restoration. The two main categories of LTPBR for beaver restoration discussed were:

1. LTPBR-only restoration, where beaver are not likely to be restored and LTPBR is used as beaver analog.
2. LTPBR as preparation for restoration of beaver

Recommendations for using LTPBR-only (beaver analog) restoration included:

- Locations that have suitable habitat but no way for beavers to get there (because of topography, high-head dams, habitat fragmentation, population fragmentation, etc.)
- Sites that have a high likelihood of conflict
- Sites that would benefit from beaver activity, but where restoring beaver is not feasible

Recommendations for using LTPBR to prepare sites for beaver restoration included:

- Sites with high connectivity or where habitat could be enhanced for more watershed connectivity, allowing beavers to naturally disperse
- Sites where the current conditions of habitat are unsuitable for beaver, but might ultimately be best maintained by beaver. LTPBR can benefit the area until the habitat is suitable for beaver.
- Sites with potential for rehabilitating hydrology and riparian conditions, even if that may take many years

These two types of LTPBR are not always distinct. Participants emphasized that restoration is site-specific – including whether to use LTPBR-only, LTPBR in preparation for beaver, or a

combination of the two. It is useful to be as specific as possible when describing restoration projects (i.e. restoring riparian vegetation, building more pond habitat, planting willow, log structure).

Participants shared some cautions around restoration projects, including receiving pushback against LTPBR in ditches and takes and balancing the possibility of chytrid fungus and other pathogens.

Research Needs

Participants recommended **prioritizing research needs by considering whether a management decision or policy hinges on the result** of the research.

Suggested needs for beaver restoration needs included:

- **Beaver effects on hydrology:** Existing papers in the US lack the ability to directly affirm, confirm, or say that beaver effects on hydrology are marginal. More boots-on-the ground research would be useful, especially for speaking to ranchers, irrigators, water users, and water managers.
 - Recommended topics:
 - More data on inflows and outflows of beaver systems, particularly when looking at agricultural water use
 - Groundwater recharge
 - Attenuation of flow (duration, timing, etc.)
 - Recommended resource: Effects on Hydrology and Fluvial Geomorphology papers: https://drive.google.com/drive/folders/1AT_IRnfcS6UulmJidvCs8NtXI_S7fL0K?usp=drive_link
- **Systematic monitoring method for restoration:** LTPBR is applied differently across different geographies, which makes it difficult to develop replicable but flexible methods. Research funding for monitoring is often short-term, and developing metrics has often rested on the shoulders of students with rapid turnover.
- **Establish a water quality threshold for beaver habitat expansion/restoration:** EPA classifies beavers as riparian terrestrial species (no aquatic species) and has little data on water quality impacts on beavers. A tissue study for bioaccumulation and uptake of metals is needed for land remediation projects hoping to use beaver.
- **BMPs for river restoration involving heavy equipment around bank-denning beavers**
- **Pre-restoration baseline data** is one of the least-funded aspects of restoration projects
- **Quantifying the population of beaver needed over time to sustain beaver complexes**
- **Beaver recruitment success:** Study of which LTPBR structures and projects are the most successful at recruiting beavers
- **Water storage quantification and connection to climate resilience**

Reflections and Vision

Overall reflections on beaver restoration included:

- Capturing and demonstrating ecological benefits of having beaver on the landscape with solid science (pre- and post-beaver landscapes) will be critical for improving social tolerance
- Beaver license plates could raise money for co-existence

Visions for the future of beaver restoration included:

- In 10 years, having a good method for estimating beaver population and area of beaver-occupied habitat in Colorado. Both measures are increasing.
- More beaver restoration in the Eastern plains of Colorado to facilitate lateral connectivity and increase drought and flood resilience
- A more positive perception of beaver on the landscape
- Prioritize habitat restoration with private landowners

Coexistence and Conflict Resolution Discussion Summary

Priorities

- Coexistence solutions must be applied **strategically**. Participants recommended outlining criteria to help Strategy users determine what kind of coexistence is likely to work in a certain situation, or if coexistence is likely to work at all.
- Deploying coexistence in areas where it will not be successful will only hurt the overall effort to coexist with beaver.
- **Coexistence devices require maintenance**. Be clear with landowners and partners about who is responsible for regular maintenance.
- **Outreach and education** will be a crucial piece of the Strategy, especially to build social capital in communities.
- CPW may be able to **partner with a variety of individuals and organizations** for more effective outreach and education. Recommended partners included local government, landowners, ditch and irrigation stakeholders, NGOs and non-profits, and agencies.
- **Rapid response will be critical** for expanding the number of coexistence devices in Colorado. Recommendations for **expanding Colorado's capacity for installing coexistence devices** included incorporating planning and funding for coexistence into restoration projects, including long-term maintenance and adaptation into initial funding, partnering with state and federal agencies, and creating a simple permitting process.

Decision Tree Factors

Participants discussed CPW's plans to incorporate a Coexistence Decision Tree in the Beaver Conservation and Management Strategy. Recommended criteria for the Decision Tree included:

- Road proximity and road crossings
- Irrigation ditches and headgates
- Cattle grazing
- High-value trees
- Trails and recreation
- Social carrying capacity
- Flood risks
- Nearby suitable habitat

Participants emphasized the need to install coexistence **strategically**. Recommendations to guide strategic implementation of coexistence included:

- Outline criteria of situations where coexistence is less likely to work, or where only a few types of coexistence are likely to work
- There are times and places that coexistence will not work. **Assess if coexistence is the most beneficial solution on a site-by-site basis.**
- **It will only hurt the effort to try and apply coexistence in places where it will not be successful.** Bad coexistence snowballs via word of mouth and makes others less likely to try it.
- Consider that **coexistence strategies are more expensive than lethal management** and think about where to strategically use those resources
- Assess whether reported conflicts are real conflict (i.e. damage to infrastructure), or just a change and/or observed beaver activity. Coexistence strategies are not needed unless there is actual physical conflict.
- Coexistence is worth it to keep beavers in place. Supporting existing beaver populations is the best method of keeping beaver on the landscape.
- Ensure that coexistence devices are installed by knowledgeable technicians (avoid “cowboy” coexistence methods). Poor installation can become downstream debris hazards that decrease community trust.

Participants discussed the **definition of coexistence**. Some participants considered coexistence to describe conversations, as well as installing structures. Others limited the term coexistence to installing structures to mitigate physical conflict.

Participants also discussed the importance of determining **maintenance needs and requirements** for coexistence devices. Recommendations for navigating maintenance agreements and mitigating conflicts included:

- **Be clear with landowners about who is responsible** for regular maintenance. One participant recommended building maintenance into landowner agreements, including whether landowners will be responsible for doing maintenance themselves, hiring a practitioner, etc.
- Consider who is responsible for debris if beavers move in, ownership changes, land use changes, and other potential future situations
- There is a fine line between supporting long-term maintenance and taking liability for impacts to infrastructure from coexistence devices
- Consider downstream impacts of upstream projects
- Talk to landowners about the timing of maintenance. Utilize local knowledge of what a stream looks like in different seasons to create a better maintenance plan.

Technical recommendations on maintenance of coexistence devices included:

- Flow devices need approximately one hour of maintenance two times per year, preferably with observation every spring and fall
- Maintenance should be performed in line with the site’s hydrograph (after spring runoff and before base flow). Look at gradients to assume velocity.

- Consider weather when building structures to minimize maintenance. Especially consider **ice flows**, which may require bracing or more durable materials and may result in structures having a shorter lifespan.
- Ice flows, logs, and other debris will do more damage than high flows, and may be too damaging to brace structures against
- Do not design structures to be taken out. Modern structures are too bulky and hard to take out seasonally.

Outreach and education

Participants discussed the need for outreach and education surrounding coexistence, and the Beaver Conservation and Management Strategy more broadly. Participants noted the importance of using outreach and education to **build social capital** in communities. Multiple participants recommended **emphasizing education and outreach** as a crucial part of the Strategy.

Recommendations for **key partners** included:

- Landowners and producers
- Water managers and commissioners
- Ditch and irrigation stakeholders
 - Engaging ditch and irrigation stakeholders is important even when engaging water managers/commissioners, to make sure that everyone is clear on what management actions should *and* should not be taken.
- NGOs (conservation districts, land conservancies, etc.) and University extension
 - Agreements with conservation districts, University extension, and/or NGOs could capitalize on existing infrastructure to get more work completed
 - Working with NGOs could expand the education and outreach network and capitalize on existing relationships
- CPW regional offices
 - Capitalize on the CPW regional offices' existing connections and understanding of what communities will respond to
- Public Works and Roads Departments
- Federal Agencies (APHIS Wildlife Services, etc.)
 - Getting agreements in place with federal agencies will take time (estimated 1-2 months)

Recommendations on **outreach actions** included:

- Community listening sessions and local meetings
- Example sites of successful coexistence (on public and private lands)
- Grants for coexistence structures and workshops
 - A participant who received a grant for a coexistence workshop reported lower turnout than hoped, but it generated helpful conversations about landowner priorities
- Workshops
 - Include building a coexistence structure in workshops

- Can also be a place to provide materials to support other coexistence structures (i.e. tree protection materials)
- Building one-on-one relationships
- Find local champions/spokespeople who have on-the-ground knowledge, experience, and reputations with landowners to help build community relationships
- Example sites (on public and private lands)
 - Landowners respond well to seeing successful projects on neighbors' properties and hearing from neighbors about their successful projects
 - CPW State Wildlife Areas could highlight "show and tell" coexistence structures for both landowners and CPW technicians who are interested in how the structures work
- Public signage around existing coexistence structures: Signs can offer opportunities for outreach and education, and could reduce vandalism of coexistence structures
- Provide a list of vetted practitioners for landowners dealing with nuisance beaver
 - Offer a list of practitioners that have a variety of approaches to allow the landowner to choose which ones mesh with their goals
 - This may require consideration of whether CPW is creating a new market with a vetting process

Recommendations for **key messages** included:

- Structures can and do fail, and need to be installed with site-specific considerations
- How coexistence devices function
- Where coexistence devices do *and* do not work

Peer Organization Recommendations

- **CPW's RiverWatch program:** Could be a model for partnership between technical divisions of CPW and nonprofits building a network across the state. They have had to overcome geographic challenges and build local partnerships.
- **Partners for Fish and Wildlife (PFW):** Landowners agree to maintain and keep the device in place for the span of a 10-year agreement. PFW provides technical assistance throughout the 10-year agreement.
- **CDFW:**
 - Recommends coexistence structures as options when landowners have conflict
 - Does not provide technical assistance
 - Cannot deny depredation permits, but provides best recommendations and knowledge on non-lethal options to landowners who apply for depredation permits (during the 6 months where permits are required)
 - Offers resources on website: <https://wildlife.ca.gov/beaver>
 - Upcoming projects include:
 - Partnering with a nonprofit (Occidental Arts and Ecology Center), who is working with Beaver Institute to offer training and add practitioners to a list that the agency refers to when landowners have conflicts with beaver

[\(https://oaec.org/projects/california-beaver-coexistence-training-and-support-program/\)](https://oaec.org/projects/california-beaver-coexistence-training-and-support-program/)

- Program for landowners including cost-sharing, a help desk, technical assistance, and tours of areas with coexistence devices
- Coexistence toolkit with spec sheets for coexistence devices, including costs and scenarios for each type of device

Building Capacity

Participants discussed ways to increase Colorado's capacity for installing coexistence devices. Recommendations included:

- **Incorporate planning and funding for coexistence into restoration projects:**
 - Think about road, culvert, and passage design when doing restoration, including impacted structures outside of the immediate restoration site (i.e. culverts down the road that may need to be modernized)
 - CPW already allows coexistence installation and maintenance funding in watershed restoration programs, but this could be promoted more
- **Include maintenance and adaptation in initial coexistence funding:** Include funding for maintenance in all coexistence projects. Be prepared for claims that downstream debris comes from coexistence devices. Prepare for future adaptations and accommodations if beavers adapt to coexistence devices.
- **Partner with state and federal agencies:**
 - State agencies are often a first point of contact when conflicts arise. Make sure that state agencies are knowledgeable about coexistence.
 - APHIS Wildlife Services is increasing capacity for nonlethal control, and currently has 15 employees in the Front Range who have been through the Beaver Corps program. They are interested in partnering with CPW on coexistence projects.
 - Establish partnerships with agencies before it is an emergency, so that they can help respond in a timely manner when crises arrive
- **Time is of the essence when dealing with beaver conflicts.** Currently, CPW response times are sometimes too slow.
 - Funding is needed for a statewide response team who can respond quickly, then adapt nimbly as the situation changes
 - Quick responses may be especially challenging in areas with low human population density
- There should be a **clear, simple, fast permitting process** for installing coexistence structures
 - Regulations and permitting are often the limiting factor for installing devices in a timely manner for landowners
 - Clarity is key for practitioners to set realistic expectations with landowners
 - In CO, permitting for coexistence devices is based on local requirements around water flow. State guidance could **provide clarity to regulators** on whether they should require permits for flow devices, and which waterways certain devices are safe for.

Peer Organization Recommendations

- **Montana** has a call-line to a state agency for people experiencing beaver conflict to access knowledge and get references to partners who can help with coexistence
- **California** has had some lawsuits preventing Wildlife Services from installing non-lethal deterrents until biological opinions are issued
- **CDFW** only requires permits for coexistence devices based on lake and streambed alternation. Permits are not required for devices installed without heavy machinery. Water or other regulators could require permits.
 - CDFW defines the minimum mesh size, orientation, and diameter of flow pipes for recommended coexistence devices to not impede fish passage.

Research Needs

Participants discussed the research needs for coexistence. Recommendations included:

- **Demonstrated positive impacts of beaver and/or restoration**, including:
 - Strong, multi-year hydrologic studies
 - Strong groundwater data (i.e. floodplain connections, water restoration amounts, flow attenuation)
 - Hyperspectral studies
 - Geomorphology studies across geographies
 - Studies of fisheries and benthic macroinvertebrates
 - Soil moisture monitoring
 - Studies of impacts on pasture production and sustainable agriculture
- Coexistence device specifications (i.e. sizing, maintenance needs)
- Rural needs and rural perceptions of coexistence
- Barriers to permitting or acceptance of flow devices (How much debris certain mesh sizes can catch in a spring flow?, How is this flow device going to impact water rights?, etc.)
- Beaver reactions to coexistence devices (change in movement, feeding dynamics, population dynamics, migrations, etc.), including in comparison to harvest or lethal management
 - Creation of thresholds for when coexistence measures drive beaver away or create problems for beaver populations

Reflections and Vision

When asked for their visions of the future that the Strategy's approach to coexistence could create, participants suggested:

- **Creation of a pipeline of knowledge, resources, and financial support.** If someone has a conflict, they know enough about coexistence to ask about their options; agencies know enough about coexistence options to recommend them.
 - Landowners have decision-support tools to help evaluate if/what kind of coexistence is appropriate, find a professional and/or specs, and have support for installation and maintenance
 - Knowledge, resources, and financial support are universal across Colorado
- **Uniform permit guidance and a streamlined process** to install coexistence devices

Translocation Discussion Summary

Priorities

- When considering success rates for translocation, consider **how to define “success.”** Defining success in the Strategy could help **weigh the benefits and risks of translocation** as well as **impacting the measured rates of success**. Recommendations for factors considered “success” could include survival of individual beaver, site fidelity, reproduction, constructing dams, digging canals, creating wetlands, and achieving landowner goals.
- **Sites should be evaluated prior to beaver translocation.** Recommended factors for developing a site assessment scorecard included suitable vegetation, predator densities, seasonal timing, and potential for conflict.
- **The risks of transmitting pathogens, especially chytrid fungus, should be considered** when weighing risks and benefits of translocation. Existing information on quarantining to prevent pathogen spread seems inconclusive, with strong possible benefits and downsides. Other suggestions for mitigating transmission risk included outlining go/no-go zones based on disease risk or species of concern.

Success Factors

While discussing factors for successful translocation, participants emphasized the importance of defining “success” for CPW’s translocation policy. Defining success for the Beaver Conservation and Management Strategy could help with weighting the benefits and risks of translocation. The definition of success could also impact the goals and rates of success. Factors that could be considered success include:

- Survival of beaver
- Site fidelity
- Reproduction
- Constructing dams
- Digging canals
- Creating wetlands
- Landowner goals

Participants discussed existing literature on rates of success for translocation. Across existing studies from MT, OR, and UT, rates of success are typically less than 50%. Most rates of success look at site-specific establishment, rather than watershed-scale. Success rates are also impacted by different definitions of success: the Tulalip Tribe claims a 90% success rate of beaver translocation since 2013, measured by site colonization, not individual beaver survival.

Participants discussed factors to be considered in developing a site assessment scorecard.

Recommended factors for success included:

- Areas with suitable vegetation levels (especially willow)
- Predator densities
- Seasonal timing: Allowing enough time for beavers to establish, build, and cache food to survive the winter. Exact timing will depend on elevation, climate, and number of beavers.

- Permitting can create a bottleneck with seasonal timelines, if the permitting is not timely and comes too late in the season to actually release beaver
- Multiple participants noted that they often get more conflict calls in the translocation offseason. Times that are suitable for translocation also have less building activity and therefore less conflict.
- When offseason calls come in, participants have asked if the complainant are willing to put up with the beaver until the translocation window, but the answer is often no.
- Potential for conflict, both at the translocation site and on surrounding property
 - Coordinate with landowners on conflict reduction and coexistence techniques. Can provide outreach to neighbors, or give landowners the responsibility of sharing resources with neighbors.
 - Coordinate with regional managers, fisheries, wildlife, habitat, and threatened/endangered species staff to gather data on the property and any concerns they have for placing beaver on the site

Participants discussed sources of beavers for translocation. Potential sources included Wildlife Services and direct contact with counties, CDOT, and/or individual landowners who have conflict with beaver.

Peer Organization Recommendations

- **Seasonal timing:**
 - CDFW translocates in May or June at the earliest
 - In WA, the window is roughly May to October 31st. The window opens when kits are out the lodge.
 - Boulder County tries to complete translocations by August 31. The window could be extended to September in lower elevations. They look for indications of beaver chew to measure when beaver are beginning to cache for the winter.
- **Permitting:** WA offers annual permits for relocators, who can then offer sub-permits. Sub-permittees are able to trap and bring beaver to facilities but not release beaver.
- **Definition of success:** CDFW is doing a meta-analysis of translocations to understand how “success” is defined. CDFW’s definition is site-specific based on how landowner priorities and restoration goals align with CDFW restoration objectives. The definition of success impacts monitoring of the site.
- **Site assessments:**
 - While several peer organizations have a site assessment scorecard, another receives enough beaver (approximately 60 per year in 20-25 colonies) that they are not very choosy. They find sites that are somewhat suitable and see what happens when beaver are placed there.
 - WA Department of Fish and Wildlife’s site assessment scorecard includes:
 - Hydrologic and geomorphologic model (does not measure food sources or riparian vegetation)

- Ground habitat assessments (qualitative survey of floodplain for amount of stems, distance from water, species, presence of herbaceous vegetation, water depth, substrate type)
- Measurements over a habitat unit size of about 1.2km
- No active beaver sign within 1.2km upstream or downstream
- Distance to culverts and other infrastructure, including quality of infrastructure
- Does not assess conflict, since usually working on federal land or with large landowners
- CDFW's site assessment scorecard includes:
 - Availability of preferred food
 - Water/deep pools for escape covers
 - Hydrology and geomorphology (measured for likelihood of building dams)
 - Likelihood of conflict with neighboring landowners and local infrastructure. Recipient landowners sign an agreement that they will attempt coexistence if the beavers become a nuisance, rather than seeking a depredation permit.
 - Proximity for known beaver populations, which influences the number and diversity of genetics brought into the area
- Boulder County's site assessment scorecard includes:
 - Looking at BRAT model with ground-truthing
 - Geomorphology assessment to identify suitable areas
 - After identifying sites, restoring sites to prepare for beaver (repairing breached dams, fencing around vegetation, ensuring deep pools, etc.)

Pathogen spread

Participants outlined two key studies on pathogen spread via beaver pelt. Details on the study of pathogens on live beaver in quarantine for translocation included:

- Methods:
 - Studied approximately 20 live beavers
 - Collected:
 - Molecular studies (eDNA) from pelts when beaver came to holding facility
 - Used water from facility
 - Pelts on exit of holding facility
 - Water from release sites
 - Tested for:
 - Chytrid fungus
 - Ranavirus
 - Bacterial coldwater disease
 - New Zealand mud snails
- Results:
 - Many detections of fish pathogens from beavers held in fish hatcheries - these essentially became a control because pathogens in water were ubiquitous in fish hatchery facilities
 - Did not detect a transfer of fish pathogen to release sites

- One detection of chytrid fungus on a live beaver (spurious detection from enclosure water at a hatchery facility)
 - No subsequent detections
 - No detections on the beavers

Details on the study of drying sections of beaver pelt to control chytrid fungus included:

- Methods:
 - Lab experiment on sections of beaver pelt harvested locally about 3 months old, dried without chemicals
 - Pelts were sterilized
 - Chytrid fungus was grown in lab (pure culture)
 - Let fungus sit on pelts with no nutrients, then transferred to nutrient-available water
 - Tested drying for two lengths of time, with two types of salt, and rinsing
 - 10-hour drying time was informed by wildlife veterinarians because beaver need access to water to drink and swim
 - Studies were performed at about 80F. Heat can kill chytrid fungus, but at a temp that is unsuitable for beavers.
 - Anecdotally, live beavers do not want to stay in dry areas when the temperature is hotter
- Results:
 - Chytrid fungus was really good at remaining viable on pelts, transferring, and growing in new environments up to 21 days after initial exposure
 - Significant reduction in chytrid fungus viability if pelts were dried for ~10 hours
 - Drying is approximately 60% effective at neutralizing chytrid in lab in sterile conditions
 - Drying may be more effective in a natural setting because beavers would be exposed to lower concentration of chytrid fungus, and other factors
- Additional testing:
 - Have been trying to replicate experiments on a large scale with larger pelts. The larger pelts were not remotely dry in mock quarantine after 8 hours. They were no longer dripping wet, but still saturated.

Additional discussion on drying as a potential method of combatting chytrid fungus included:

- Cautiously hopeful that this method could be successful, but maybe more cautious than hopeful
- There is a need to distinguish between amount of dryness that can be expected on a small section of pelt in lab conditions and the dryness that a full-size beaver will achieve in the shade, or stacked with other wet beavers
- Need to think about other ways to facilitate drying
- Beaver welfare should be considered. Beaver need access to water and can get overheated. Make sure an animal's fitness is not being sacrificed for a method that may not work.

Participants discussed whether CPW could define “go/no-go zones” to simplify where beavers can be released and give an understanding of source sites:

- Could define these zones based on the presence of pathogens and fungus in the source site compared to the potential release site
 - Creating clean and dirty classifications, allow translocation from dirty to dirty, clean to dirty, clean to clean
 - In order to do this, CPW would need better data on the presence and risks of chytrid fungus, ranavirus, and whirling disease
- Could define zones based on where species of concern are (i.e. amphibian species of high conservation value). This could assume that beavers bring risks of pathogens.
 - Wyoming has done something similar to this
 - Would depend on the vulnerability of species of concern to pathogens and fungus that beaver might be exposed to

Participants discussed the risks vs. benefits of translocating beavers, as related to disease transmission. Comments included:

- Species also cannot overcome disease if they do not have any habitat
- If whirling disease is already on a site, beaver could create more microhabitat for the whirling disease habitat
- Boreal toads are almost completely dependent on beaver habitat, but also very vulnerable to chytrid fungus
- The disease transfer issue has made relocating beaver much more difficult. BLM, USFS, and private landowners used to all want dams for fish populations. Finding suitable habitat and working with land managers and biologists was easier. Now, beavers are really only moved within the same drainage.

Peer Organization Recommendations

- One protocol in **Utah** is to dry out, visually monitor, and release after 3 days
- **USFWS** has been trying to translocate beaver into spotted frog habitat in OR, but has not been able to overcome disease concerns. So far, they are only doing beaver dam analogues.
- **Washington** has watershed-level restrictions for release sites:
 - Designate HUC-10 level as either chytrid positive or chytrid absent (chytrid absent usually means absence of sampling effort)
 - In process of developing an eDNA sampling protocol for HUC-10 watersheds to look for pathogens
- **CDFW**
 - Know that tularemia is widespread in CA but no translocated or held beavers have tested positive for it
 - Chytrid, whirling disease, and New Zealand mud snails are of interest
 - Have a matrix of comparisons of source to release sites (i.e. dirty to dirty), but don't have extensive, comprehensive surveys done in these waters
 - Looking into best management practices for eDNA monitoring and water testing

Holding and Quarantine Facilities

Participants discussed recommendations for creating holding facilities:

- Using active fish hatcheries takes advantage of an existing structure with water flowing through and is cheaper than constructing or modifying facilities
 - Although it is an ideal animal husbandry site, it could be hard to control quarantine
 - May be hotspots of fish disease
 - Tulalip's fish hatchery filters water before water enters and leaves the facility
- With pools or non-moving water, it can be challenging and labor-intensive to keep a beaver clean
- Put a lot of forethought into where in state beavers will be held, as it may limit translocation opportunities by geography
- Mobile/trailer-mounted facilities:
 - Concerned about maintaining cleanliness, especially water quality
 - Limitation of accessing water
 - Considering making mobile quarantine facilities with old horse trailers
 - Peer organizations:
 - WY has good trailers and advice
 - CA in very beginning of exploring this option
 - UT had mixed reviews

Peer Organization Recommendations

- Washington:
 - Quarantine protocol: Hold beaver for 3-day quarantines and change water in the facility every day
 - State holding facility is a converted dog kennel with six interior runs, gravel floor, and a 150-gallon trough per run
 - Mini-split AC to control indoor climate
 - Cover pallets with untreated wood in wood chips and straw to bed on
 - Can fit five 44 lb. beavers in one run
 - Doors can be closed between inside and outside to facilitate drying
 - It takes one person about an hour per day to change water in four troughs
 - Water filtration is a 6-foot-deep gravel strip, water treated with Virkon
 - Other facilities in WA use hatchery raceways
- USDA APHIS Wildlife Services:
 - Has used some CPW sites
 - Have used some employee properties with a ditch that can be a temporary holding facility
 - Have partnered with a wildlife rehabber for a temporary holding facility
 - Some partners create temporary holding facilities from dog kennels
- CDFW:
 - Quarantine protocol is 3-5 days
 - Protocol timeline is based on best available information (Scottish beaver trials), but there are very few publications with reasoning for any specific time of beaver holding

- Timelines also consider veterinary advice on how long ivermectin takes to flush parasites from the system
- Quarantine time is often functionally the amount of time that it takes to capture the whole family
- Aim not to hold any single beaver longer than 14 days
- Treatment and testing:
 - Give ivermectin upon entry to the facility
 - After 3 days of quarantine, change water and test for chloroforms in water
 - Take some DNA samples, fecal samples, and tail plugs when tagging
- Holding facilities:
 - 4 locations in CA are permitted to hold beaver
 - Having trouble expanding the translocation program statewide because all permitted facilities are in the northern part of the state

Research Needs

Participant recommendations for needed research on translocation included:

- Minimum restoration objectives or thresholds before considering beaver translocation
- Risk of disease and aquatic pathogen transmission
- Necessary quarantine time
- Watershed-scale translocation impacts on site occupancy. Could include long-term monitoring of several units in a watershed to see how translocation impacts the sites over time.
- Translocation outcomes on individual beaver (survival, establishment, animal welfare)
- Impacts of translocation on landscape transitions, including establishing baseline conditions pre-translocation and holistic monitoring (hydrology, biodiversity, etc.) using a variety of methods
 - Biodiversity changes post-translocation could be studied with eDNA, game cameras, and acoustic recording units
- Upcoming research: Dr. Emily Fairfax will study East-West and North-South comparisons of biodiversity, hydrology, and geomorphology between BDAs, beavers, and control sites

Reflections and Visions

When asked for their visions of the future that the Strategy's approach to translocation could create, participants suggested:

- Flexibility to manage beaver conflict throughout the state: clarity on when to use translocation, coexistence, or neither and flexibility in choosing which option is best
- Clarity on how beavers can be used to achieve goals
- A Research coordination network:
 - Connect restoration practitioners with researchers early in the process
 - Get baseline data
 - Build out appropriate spatial and temporal scales for studies
- Reduced permit time by pre-approving release sites
- Engage Tribes as much as possible through the process

Participant List

Alpine Water Resources, Rory Cowie

Arable Earth, Alli Vitello

Boulder County Parks and Open Space, Sarah Heerhartz

Boulder Watershed Collective, Preston Brown

Bureau of Land Management, Tom Fresques, Matthew Holloran, Christopher Keefe & Ed Rumbold

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Songdog Outdoor Services, Nick Hagan

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US Fish and Wildlife Service, Brandon Miller

Thank you to the 38 Technical Advisors who contributed their time and expertise!

Online Public Comment Summary

Methods

From July 30, 2025 to August 31, 2025, CPW provided an online public comment form for the scoping phase to inform the development of the Beaver Conservation and Management Strategy. Comments were collected via an online comment form on EngageCPW.

The comment form provided four long-form comment fields to respond to a set of questions on each of the strategy topics (Population Management, Beaver Restoration, Coexistence and Conflict Resolution, Translocation) and a fifth and final comment field for general and additional comments. Commenters were not required to respond to all topic fields. Commenters were required to indicate whether they were submitting feedback on behalf of an affiliated organization, agency, or group. The form also collected optional demographic information including the commenter's name, organization, contact information, zip code, interests and sectors, ethnicity, gender, age, and formal education. Please see page 125 for the full list of questions.

Comments were exported from the EngageCPW website and thematically analyzed to identify convergent, divergent, and unique viewpoints. While this report synthesizes common themes, it does not reflect consensus of commenters either within or across sectors. **All comments should be considered individual feedback from commenters unless otherwise noted** as being raised in multiple comments or noted as a key recurring theme. Regardless, neither key themes nor comments raised by multiple commenters should be construed as representing consensus.

Public comments were thematically analyzed and summarized by a member of the facilitation team with no assistance from AI software.

Key Themes

Population Status and Management

Comments on **population status and management** responded to questions on what successful population management looks like, current statewide beaver populations and harvest estimates, limiting factors to beaver recolonization, and potential management actions by CPW. Comments could generally be grouped into themes of:

- Population levels
- Harvest
- Limiting factors
- Population management

Comments on beaver population levels tended to be divided on whether increases to beaver populations were needed, or whether populations should remain at status quo. Suggestions of

factors currently limiting beaver populations could be generally categorized into direct impacts of humans and ecosystem and environmental changes.

Comments on harvest and beaver population management tended to be divided between commenters who wished to maintain beaver harvest and lethal management options, and those who recommended ending all harvest and lethal management of beavers. Commenters who wished to maintain beaver harvest were further divided between those who wished to increase the available harvest methods, maintain current regulations, or restrict beaver harvest. Those in favor of maintaining lethal management tended to advocate for maintaining a variety of management options for private landowners.

Commenters across the spectrum of opinions on harvest and population management recommended gathering more data on beaver populations and harvest, in order to develop science-based goals to drive the Strategy.

Restoration

Comments on **restoration** responded to questions on the provided definition of beaver restoration, prioritizing restoration areas, and what successful restoration looks like. Comments could generally be grouped into themes of:

- Feedback on working definition of restoration
- Prioritizing restoration areas
- Coexistence and conflict management (as part of restoration)
- Measuring restoration success

Comments on restoration illustrated differing understandings of what the term “beaver restoration” means: restoring populations, restoring habitat for beaver reintroduction, habitat restoration by beavers, or using beaver mimicry to restore habitat.

Comments recommending criteria for prioritizing restoration areas tended to fall into two categories: (1) prioritize sites that are ready for beaver and have relatively little risk of human conflict, or (2) prioritize sites that have the highest potential for benefit, including those that are in dire need of restoration. Recommendations also diverged on whether public, private, or all land should be prioritized. Visions of how to measure successful beaver restoration included both qualitative and quantitative measures that could be generally categorized as population-based or ecosystem-based.

Regardless of recommendations for prioritizing early restoration sites, commenters frequently recommended using beaver restoration as a method of wildfire risk mitigation. Commenters across the spectrum also recommended integrating plans for conflict management into restoration planning.

Coexistence and Conflict Resolution

Comments on coexistence and conflict resolution answered questions about how to support landowners who are open to installing conflict resolution devices, outreach and education that could increase tolerance of beaver, and what successful coexistence looks like in Colorado.

Comments could be grouped into themes of:

- Coexistence strategies
- Support for landowners
- Outreach and education
- Measuring coexistence success

Comments included recommendations for guidelines, priorities, and methods of coexistence from specific coexistence devices to landscape-scale management strategies. Comments covered a spectrum of attitudes toward nonlethal coexistence strategies from belief that coexistence devices eliminate the need for lethal management to skepticism about whether nonlethal coexistence measures are effective at all. These divisions were also illustrated in visions of successful coexistence, which varied from keeping all beavers in place with management.

Commenters across the spectrum of belief in coexistence methods encouraged clear policies, collaboration, and rapid responses to nuisance beaver calls to increase the use of coexistence methods. Additional recommendations for supporting landowners interested in installing coexistence devices generally fell into the categories of financial compensation and technical assistance.

Outreach and education was noted as a crucial part of the Strategy, although commenters differed on recommended topics of education. Topic recommendations spanned from education the benefits of beavers, to advertising available resources to landowners, to helping the public understand how destructive beavers can be. Recommendations for outreach and education methods tended to suggest hands-on experiences with coexistence devices and storytelling as key elements.

Translocation

Comments on translocation responded to questions on guidelines for translocation, what has worked in past translocations, and what successful translocation looks like. Comments could be grouped into themes of:

- Translocation policy
- Translocation protocols
- Concerns regarding translocation
- Measuring translocation success

Comments on translocation reflected a difference in commenters' understandings about the viability of translocation as a management strategy. Commenters in favor of widespread use of translocation tended to see it as an alternative to lethal management. Those more skeptical of translocation tended to highlight the considerable effort required and low success rates of beaver

translocation. Recommendations on when translocation should be used, prioritizing translocation release sites, outreach and education, and other guidelines tended to diverge along the same lines. Visions of success also generally aligned with these divides, varying from wanting no more funds spent on developing a translocation program, to translocation programs promoting beaver welfare, to translocation eliminating the need for lethal management.

Commenters who suggested specific translocation protocols tended to be concerned about the welfare and success of translocated beavers. Commenters who expressed concerns about the viability of translocation tended to refer to its expense, labor requirements, limited success, and potential for spreading disease or aquatic pathogens.

Strategy Use and Visions of Success

Commenters responded to questions on how they or their organization will use the strategy and overall visions of success for the Strategy.

Commenters who outlined how they or their organization will use the Strategy tended to be those commenters who are in favor of widespread beaver conservation. Uses diverged between individuals and organizations. Both individuals and organizations suggested that the Strategy could be a forward-looking vision to align beaver conservation goals across the state.

Visions of success varied widely to reflect the broad spectrum of commenters. Those who outlined a 5-year and 10-year vision tended to hope for “low-hanging fruit” restoration within 5 years and expansion of beaver habitat as well as more positive attitudes toward beavers in 10 years. Major categories of visions of success included: beaver population metrics, harvest and management, restoration, coexistence, translocation, outreach and education, collaboration, and policy.

Thank you to the 315 individuals and organizations that provided public comment for the scoping phase of the Beaver Conservation and Management Strategy!

Population Status and Management

Population Levels

Recommendations for ideal beaver population levels ranged from **increasing population levels dramatically to maintaining the current population**.

Comments in favor of increasing beaver populations often encouraged **using historic (pre-European settlement) beaver populations as a goal metric**. Those in favor of increasing beaver population frequently cited **beavers' ecosystem benefits and potential for ecosystem restoration** as a reason to restore population.

Comments in favor of maintaining the current population often referred to the **potentially destructive nature of beaver populations**, either through damage to infrastructure or over-browsing of tree populations. Others observed apparently **healthy or increasing populations of beaver** in certain areas.

More population data and the **development of science-based population goals** were recommended by commenters across the spectrum of opinions on population goals. Recommendations also included **metrics by which to measure an ideal beaver population**, including stability, availability of ecosystem services, availability for harvest, location, and more.

Dominant themes for comments on population harvest included:

- **No population increase needed (status quo)**
 - The population appears healthy, based on personal observation and/or modeling
 - Beaver can be destructive and no increase in population is needed
- **Increase beaver population**
 - Increase beaver population to historic (pre-colonization) levels
 - Increase beaver population to a percentage of historic levels
 - Restore beaver to all suitable streams
 - Increase population in Eastern Plains
- **Science-based population goals are needed**
 - Create targeted population goals based on ecosystem benefits
 - CPW biologists should set management minimum and maximum thresholds and manage beaver populations to those thresholds
- **Need more population data**, especially on bank-denning beaver
 - Ground-truth modeled population
 - Citizen science could be used to estimate population
 - Include bank-denning beaver in population estimates
 - Monitor population data before making other decisions
- **Ideal beaver population is:**
 - Stable, as measured by rearing young, generational persistence in site, resilience, and other factors
 - Stable enough to support harvest
 - Offering full benefits of ecosystem services

- Balanced between offering ecosystem services and reducing conflict with humans
- Statewide.
- Strategically located in areas of low conflict and high potential

Sample comments on Population Levels

“Monitoring beavers across the state comes with a lot of difficulty and uncertainty, but the tool that CNHP has developed is a good first step. I would like to see this tool widely adopted and ground-truthed to the extent possible. This could be an annual effort to refine this tool, update the numbers and keep running it. Particular attention should be focused on mapping the geographic footprint of beavers through the years too.”

“Beaver populations should be allowed to expand where social tolerance exists. However, this should include continuing hunting and trapping with long seasons and liberal bag limits. Social tolerance for beavers will be increased by preventing adversarial relationships between property owners on one side and beavers and state authorities on the other. Increased social tolerance will allow increased beaver populations where they cause no property damage. Hunting and trapping are critical to maintaining social tolerance of beavers.”

“Since beavers were nearly extirpated in the 1900's by the fur trade, they have never fully regained their historical populations in Colorado. My hope is that through co-existence measures and more, they can once again recover their numbers in viable beaver habitat areas. All wildlife faces challenges like habitat loss and conflict with human development. Beavers are no exception and need a focused plan to regain their numbers.”

“Given that the American Beaver (two species) is ranked 0 – species is not vulnerable in the SWAP analysis and is broadly distributed throughout Colorado, CPW should follow its own scientific guidance: continue gathering population data to monitor long-term trends, but avoid making any drastic management changes at this time.”

Harvest

Comments on avocational harvest spanned from **increasing availability of harvest methods to ending all harvest and lethal management.**

There was **some difference in understanding of whether the term “harvest” included lethal management of nuisance beaver.** Commenters who called for the end of harvest tended to group harvest and lethal management into a single practice (sometimes termed “killing of beaver”).

Those in favor of **keeping the status quo** of harvest management protocols referred to the limited trapping techniques allowed in Colorado and CPW data that does not indicate a large impact to beaver populations from avocational harvest.

A middle ground included recommendations on **restricted harvest** based on either a more **restricted season** (time and bag limits) or **targeted restoration and population goals.** These restrictions could be as overarching as a bag limit for avocational beaver harvest or as complex as

banning avocational harvest in specifically targeted geographies based on watershed-level population goals.

Recommendations also included an increase in **quantity and specificity of harvest data** collected, including **making beaver harvest reporting mandatory**. Reasoning included distrust of the voluntary nature of existing harvest estimates and a need for more precise data on where beavers are harvested to compare with restoration efforts. Commenters also recommended collecting data on lethal management of nuisance beaver.

Dominant themes for comments on harvest included:

- **Keep existing harvest methods (status quo):**
 - Avocational trapping is a key tool for population management of any game animal
 - Trapping methods are already limited, and the season is limited by weather
 - CPW data do not indicate that avocational trapping is having a large effect on beaver populations
 - Current beaver management methods are working
- **Increase availability of harvest methods:**
 - Allow more options for trapping and harvest (including body-hold traps, leg traps, other historical methods)
 - Allow additional technology, like night-vision and thermal imaging
 - Connect avocational trappers with nuisance beaver complaints
- **Restrict harvest via bag limits and season restrictions:**
 - Set a bag limit on beaver harvest
 - Implement a restricted season for avocational beaver harvest
 - Pause avocational harvest for a set number of years
 - Reduce beaver harvest
- **Restrict harvest based on targeted restoration and population goals:**
 - Restrict harvest geographically, especially where beavers have been restored or translocated, in key watersheds, in areas that recently experienced wildfire
 - Restrict harvest based on population data in specific areas
 - Restrict harvest until statewide population and/or restoration goals are reached
 - Limit harvest on public land to areas with healthy (non-fragmented) habitat and strong populations
- **End all avocational harvest:**
 - Beaver populations should not be managed; populations should be allowed to grow and manage themselves naturally
 - Beaver should not be classified as game animals or allowed for avocational harvest
 - Beaver provide too many important ecosystem services to be harvested
- **Improve harvest data:**
 - Improve precision of data on how many beavers are harvested
 - Build trust in voluntary harvest data or make harvest surveys mandatory (some commenters distrust the accuracy of voluntary harvest survey data)
 - Improve geographic data on where beavers are harvested
 - Instate mandatory harvest reporting

- Gather data on lethal management of nuisance beaver

Sample comments on Harvest

“I do not have the impression that hunters and trappers are harvesting beavers at rates that are impacting population numbers or beaver recolonization. I don't see a need to reduce bag limits or further limit methods of take. I [see] this as a PR issue for beavers. We need people to see them as a valuable species that protects landscapes not as a pest and a threat to the things they do value like trees and roads.”

“Very important to me, is continuing to allow the harvest of beaver so long as it is understood to not be harming the population. This should be based on concrete science and not some theoretical idea that hunting beavers is inherently harmful. Every population can be determined to be able to sustain a harvest or not and continue to grow/be maintained or not. That should be the sole determinant in whether or not beavers can be harvested is an objective analysis of whether or not the population can sustain harvest and grow or be maintained at a desired level.”

“There should be no recreational harvesting of beavers, as they are not only an important keystone species, but they also provide important watershed storage, and natural protection against wildfires.”

“Recreational trapping of beavers should be prohibited because even low harvest levels can destabilize local populations and reduce ecosystem services...”

“Better harvest data should be collected. Mandatory reporting should be common when trapping to know where beavers are taken and how many. I recommend closing certain areas for trapping that are core beaver conservation areas. These could be areas below burn scars, where native trout are found, or where reintroduction efforts have established beavers.”

Limiting factors

Commenters had mixed understanding of the question on limiting factors for beavers. One understanding was that CPW was asking whether they should create limiting factors for beavers. Answers with this understanding tended to insist that **CPW should not limit beavers in any way**.

Commenters who responded describing factors that currently limit beaver populations generally outlined two categories of limiting factors: (1) **Direct impacts of humans** and (2) **Ecosystem and environmental changes**. Commenters often included both categories in their list of limiting factors.

Some themes were evident in **limiting factors that commenters identified and how they thought these factors should be addressed**. Commenters citing human attitudes as a major limiting factor for beavers tended to recommend further education on the benefits of beavers. Commenters citing conflicts with infrastructure tended to recommend balanced management strategies that give private landowners multiple options to manage nuisance beavers, although some recommended that infrastructure should be moved to allow for beaver expansion instead. The

most common recommendations for addressing ecosystem-related limiting factors were restoring potential beaver habitats and choosing strategic locations for beaver populations. Coexistence strategies (beaver deceivers, pond levelers, tree fencing, etc.) were recommended as solutions to most limiting factors.

Suggested limiting factors driven by **direct interactions with humans** include:

- **Human attitudes toward beavers:**
 - Beavers are a “PR” issue, due to the perception of them as nuisance rodents, destructive, and other factors
 - Limited knowledge of or support for coexistence techniques leads to lethal management
- **Management due to conflicts with:**
 - Recreation (especially trails)
 - Agriculture (including irrigation and grazing areas)
 - Water rights
- **Harvest**
- **Human development:**
 - Expansion of housing and infrastructure development
 - Reduction of suitable habitat with low conflict due to human expansion

Limiting factors driven by **ecosystem changes** include:

- **Lack of suitable habitat, including:**
 - Food, particularly woody vegetation and perhaps specifically willow
 - Connectivity; fragmented habitat limits ability for beaver to move in search of food
 - Water, especially deep-water pools needed for protection from predators
 - High-quality riparian habitat. Trampling by ungulate grazing (moose, elk, cattle) was highlighted as a cause of degradation.
- **Disease**, especially tularemia
- **Predation**, especially of juvenile beavers. Bears, wolves, and birds of prey were noted as particular predators.
- **Lack of source population**, or the idea that “beavers beget beavers.” When starting with lower populations, there will continue to be fewer beavers.

Sample comments on Limiting Factors

“Limiting factors appear to be 1) food (inadequate willow and/or aspen due to over browsing by ungulates or livestock and/or mechanical damage from snowmobile use and/or diminished snowfall/snowpack that would otherwise protect branches). 2) disease: when habitat looks excellent, riparian shrubs are healthy and vigorous, are beavers absent due to tularemia? Are there other diseases to be concerned with? How long does tularemia persist within the habitat in the absence of beavers? Can animals be inoculated before translocation? 3) consistent, relentless lethal control: e.g. habitat in the upper Williams Fork watershed, including Bobtail and Steelman drainages, look to be in good condition to support beavers, and beavers used to be there as evidenced by old dams and ponds.”

“A 2022 modeling study by The Nature Conservancy and Ecohydrologix found that human-modified landscapes have reduced active dam-building potential by over 50% in some Colorado watersheds. Urban sprawl along the Front Range and agricultural expansion in the Western Slope have fragmented riparian corridors, reducing the availability of suitable woody vegetation and intact streambanks. These trends increase overlap between beaver activity and human infrastructure, raising the risk of flooding, property damage, and nuisance reports — and, consequently, a rise in lethal beaver removals.”

“I think that beaver are limited mainly by habitat quality and connectivity - dispersing juveniles experience the greatest mortality. Therefore, I think habitat quality should be the greatest priority - this would involve finding funding sources for large-scale riparian and wetland restoration across private and public land. From my research on beaver habitat as an MS student and my work in the area now - I feel that there is a lack of large source populations which is limited by large-contiguous habitat areas.”

“As a restoration engineer who has worked in many areas that beavers have abandoned, food sources are a limiting factor for beaver recolonization. Pressure from moose, elk, and cattle grazing and trampling has eliminated material for food and shelter in many areas where beavers should be living. Additionally, as riparian corridors have shrunk (i.e. meadows have consolidated to a single channel) without beaver to maintain them, upland vegetation has displaced riparian vegetation.”

Management

Commenters had strongly differing opinions on lethal management of nuisance beaver. There was **some difference in understanding of whether the term “harvest” included lethal management of nuisance beaver**. Commenters who called for the end of harvest tended to group harvest and lethal management into a single practice (sometimes termed “killing of beaver”). Commenters who specifically mentioned lethal management tended to be in favor of keeping management options, including lethal removal, for private landowners. Those in favor of keeping lethal management options referred to the **damages that beavers can cause on private property and the need for many available methods of control**. Those in favor of ending lethal management often believed that **the availability of coexistence methods and translocation should negate the need to lethally remove nuisance beavers**.

Commenters across the spectrum of opinions on lethal management recommended **prioritizing coexistence over translocation and/or lethal management**. Recommendations included incentivizing coexistence, providing better information on coexistence, and building coexistence strategies into infrastructure plans. Further recommendations on coexistence can be found in the “Coexistence and Conflict Resolution” section.

Dominant themes of comments on management included:

- **Do not change management options.**
 - Keep lethal management options for private landowners

- Incentivize coexistence and translocation, but keep lethal management as an option
- Offer additional support for management of nuisance beavers
- Beavers cause damage to private property (trees, irrigation structures, etc.) and property owners must have methods to control them
- **No lethal management**, mandate coexistence or translocation instead
 - Remove “nuisance” designation from beaver
 - End all harvest and lethal management (“killing of beaver”)
- **More nuisance management options (and clarity on management options) are needed**
 - Restrict beaver from private property
 - Nuisance beaver calls are frequent and translocation windows are limited
 - Permitting requirements for trapping and translocating are unclear
- **Prioritize coexistence over translocation and/or lethal management**
 - Incentivize coexistence via cost-sharing, technical assistance, or other methods
 - Provide better information on coexistence with education
 - Build coexistence strategies into planning (especially for roads, trails, development)

Sample comments on Management

“Modern coexistence tools, flow devices, culvert fencing, tree protection, are highly effective and cost-efficient compared to lethal removal or infrastructure repair ... CPW should launch a statewide coexistence incentive program, offering cost-share and technical assistance to landowners who adopt non-lethal management. Education should focus on the climate adaptation value of beavers, reframing them from “nuisance” to “natural water engineers” that protect property by slowing floods, buffering droughts, and reducing fire risk. Where conflicts do occur, the decision tree should mandate that non-lethal measures are attempted before removal is authorized.”

“As a cattle rancher and land steward, I fully support encouraging greater beaver populations in the state, particularly in the high desert country in NW Colorado where I live and work. However it is important to continue to give ranchers the freedom to manage beaver on their land. Many ranchers and landowner do not have the time to trap and move beavers. If the state could train and provide tool to volunteers, perhaps one in each county that would be ideal.”

“I am delighted to see beavers returning to the greenbelt near my house in Aurora. However, in urban/suburban areas their populations will need active management and education of residents by CPW to prevent property damage and associated conflict.”

Beaver Restoration

Working definition of Restoration

There were relatively few comments offering revisions to the working definition of beaver restoration. Recommendations for **additions** to the working definition included:

- Including expansion of beaver population and attendant ecosystem benefits as a purpose of restoration
- Add that humans are the biggest threat to beavers
- Make working with stakeholders a purpose of the restoration process
- Creating social, political, and physical conditions to help beavers thrive

Commenters had **different understandings** of whether the term “beaver restoration” meant restoring beaver populations, restoring habitat for beavers, habitat restoration by beavers, or using beaver mimicry to restore habitat. **Comments in the following sections reflect this mix of definitions of restoration.**

Sample comments on the definition of Restoration

“The definition’s focus on healthy, functional beaver populations and habitats in ecological balance is great. We should include mention of the role of beavers in wetlands, climate resistance and biodiversity. We should include that humans and human-created environments are the biggest threat to beavers.”

“Beaver “restoration” includes identifying appropriate beaver habitat areas, which are underused by beavers, and examining why the areas are underused, and if prudent allowing the recolonization of such areas. It does not include developing new habitat areas with beaver dam analogs, or attempting to colonize areas prone to conflict.”

“I believe the definition of beaver restoration should go beyond simply reintroducing animals — it must also include creating the social, policy, and physical conditions that allow them to thrive without recurring lethal removal. This includes working with local stakeholders to identify high-priority areas, ensuring there is adequate forage and suitable dam-building sites, and putting coexistence measures in place before beavers arrive.”

Prioritizing Restoration Areas

Comments generally fell into **two categories of recommendations for early restoration sites**: (1) “Low-hanging fruit,” or **sites that are ready for beaver with relatively little risk of human conflict** and (2) **sites with highest potential for benefit**, including those that are in need of more biodiversity, water storage, etc.

Comments that prioritized sites that are ready for beaver tended to recommend **avoiding any areas with likely human conflict**. They particularly highlighted wilderness areas as a priority.

Other comments prioritized sites with the **highest potential for benefit from beaver restoration**, especially degraded watersheds that are in need of ecosystem services. These commenters were more agnostic to placing beavers on public or private land. In regards to human-beaver conflict, these commenters tended to recommend rating conflict potential as one of several factors and **including proactive conflict mitigation in the restoration plans**.

Commenters that recommended considering private land emphasized the need to **work with willing landowners** who will agree to prioritize nonlethal coexistence methods for any future nuisance beaver issues.

Regardless of recommendation for early restoration sites, commenters frequently recommended using beaver restoration as a method of **wildfire mitigation**. Commenters interested in using beaver restoration to improve ecosystems also cited increasing water quantity, water quality, and biodiversity as co-benefits.

Recommendations for areas to prioritize for beaver restoration included:

- **Start with areas that are ready for beaver**
 - Remote areas with low to no human conflict
 - Areas away from infrastructure, including roads and irrigation structures
 - Environments that are ready for beaver to succeed, with intact riparian habitat and connectivity
 - Begin with pilot projects in smaller and/or remote areas
- **Focus on areas where beavers can do the most good with ecosystem services.** Areas that are in need of:
 - Wildfire mitigation, possibly identified by Wildfire Ready Action Plans (WRAPs) or Wildland Urban Interface (WUI) strategies
 - More biodiversity
 - More water, especially if the areas have high water storage potential
 - Repair to damaged ecosystems and/or degraded watersheds
- Historic beaver habitat where there are currently no beavers
- Public vs. private land
 - Public lands only, or primarily
 - Begin with willing private landowners who will commit to using coexistence measures
 - Consider public land and private land with willing landowners equally
- Restore areas that can be shown as examples of successful restoration projects

Recommended **factors to consider when prioritizing** areas for beaver restoration included:

- Impacts to water rights. Ensure that water law is followed during restoration projects and consider potential needs for water augmentation plans.
- Avoiding damage or interference with infrastructure (roads, water, trails, etc.)
- Social tolerance of beaver in the potential restoration area

- Beaver population carrying capacity, making sure that watersheds are not overwhelmed with more beaver than they can support. There may be a need for more data on carrying capacity and existing population density before beaver restoration.
- Preparing habitat for the return of beavers, including tools like LTPBR to ensure that there is sufficient food, water, and protection
- Habitat potential, including capacity for water storage, suitability to support a variety of plant and animal species, and other factors
- Areas with historic beaver occupation
- Opportunities for humans to benefit, such as creating recreation areas for birding. This could also include financial compensation for beaver restoration on private lands.
- Consider overlapping priorities, especially wildfire, drought, and flood mitigation
- Ensure that BDA and other LTPBR permitting guidelines are clear

Recommended **benefits to target with beaver restoration** included:

- Ecosystem resilience, especially for wildfires, drought, and flooding. **Wildfire mitigation** could include exploring using fire mitigation funds for beaver restoration.
- Increasing quantity and quality of water, resulting in drought mitigation
- Stream restoration, including increasing stream complexity, slowing water, and widening streams
- Increasing biodiversity and supporting wildlife, especially boreal toads and cutthroat trout. Benefits of increasing biodiversity could include recreational opportunities like fishing and wildlife viewing.
- Visual benefits of restored riparian ecosystems
- Carbon sequestration
- Cost-effective ecosystem improvement

Sample comments on Prioritizing Restoration Areas

“Prioritization of restoration areas should be guided by both ecological potential and community willingness to adopt coexistence tools. Locations with degraded watersheds, declining water tables, or high erosion risk should be prioritized, as these are the places where beaver activity can have the most immediate and long-lasting positive impact.”

“Areas with ample beaver habitat and willing landowners should drive the prioritization of restoration areas. Given the current state of fractured goodwill with landowners following wolf restoration and depredation issues clouding everyone right now, I think CPW needs to prioritize landowners extensively in this process and not heavy hand anything.”

“Restoration areas could be prioritized using many factors. Certainly willing landowners who are willing to commit to non-lethal management if conflicts arise. Public lands should be considered where habitat would support beavers and beavers are likely to thrive, especially within watersheds that historically supported beavers. Wildfire restoration areas could benefit from beavers, if riparian vegetation has recovered. Similarly, beavers could be restored in WUI watersheds as a means to decrease susceptibility to wildfire and/or create fuel breaks and defensible spaces near communities.”

“We should focus our restoration efforts on areas where toads and frogs are dependent on beaver mediated habitats, where beaver infrastructure is still evident on the landscape and can be re-hydrated, where we are seeing reduced flows or impacts to watershed health, where we are experiencing drought, or wildfire, or other impacts to the water cycle.”

Coexistence and Conflict Management as part of Restoration

Commenters recommended **integrating plans for conflict management into restoration plans**. Recommended methods for mitigating conflict ranged from limiting harvest and moving infrastructure to ensuring that beavers do not travel onto private property.

Recommendations for **managing human conflict with restoration areas** included:

- Integrate conflict management in restoration plans
- Make sure that beavers in restoration areas do not travel to and/or damage private property
- Prioritize nonlethal coexistence, especially in restoration areas
- Consider holistic ecosystem management options, including excluding cattle from restoration areas
- Limit avocational harvest in restoration areas
- Limit trails in restoration areas
- Reconsider land and water use strategies to prioritize beaver over other uses (including agriculture, development, etc.)
- Move roads and trails as needed to prioritize beaver restoration
- Offer monetary compensation for successful restoration projects on private lands. This could come in the form of “beaver easements,” mobile conservation easements encompassing beaver habitat.

Sample comments on Conflict Management

“There needs to be a healthy balance between destruction of private and public land and the healthy establishment of beaver colonies to preserve ponds and natural wetlands.”

“Camp Hale is an excellent opportunity to show how we can return a fairly barren area back to the wandering river and ponds that should exist. Success is wandering rivers, occasional ponds, healthy beaver families that are allowed to travel and modify the ecosystem. If that means we need to dismantle and move roads and trails then that's what needs to be done. Beavers help the water table of an entire area.”

“Rivers and ponds that don't cause damage to infrastructure. Dont [sic] intrude on private property owners without their willingness to having Beavers making changes to their property.”

Measuring success

Commenters offered varying visions of successful beaver restoration varying from beaver populations at historic levels and distribution to maintaining the status quo. Visions of success are

also captured in the preceding sections, especially those on population and restoration prioritization.

Metrics for measuring success could generally be divided into: (1) **population-based metrics** and (2) **ecosystem-based metrics**. Population-based metrics focused on success for the beavers themselves. Ecosystem-based visions of success tended to be more holistic, looking for co-benefits outside the success of the beaver themselves.

Comments in both categories **spanned qualitative and quantitative metrics of success**.

Quantitative metrics for population-based metrics included concrete population objectives for specific geographies. Quantitative ecosystem-based metrics included measurements of water quality, water retention, stream width and complexity, vegetation height and density, acreage of suitable riparian habitat, biodiversity, and others.

Population-based visions of successful restoration included:

- Establishing a beaver population that can sustain harvest
- A multi-generational or reproducing population of beaver
- Beaver population with stable numbers
- Populations that can successfully overwinter
- Populations that have expanded to all suitable historical (pre-European settlement) habitat
- Population levels restored to historical (pre-European settlement) numbers
- Populations that no longer need human assistance to expand
- Beavers remain in the area to which they were restored
- Create scientific population objectives based on geographic and landscape factors

Ecosystem-based visions of successful restoration included:

- Abundant food resources available to beaver, especially an increase in woody vegetation height and density
- Linked beaver habitat that can be easily traversed
- Suitable beaver habitat has been expanded
- Increased biodiversity, including increased fishing opportunities
- Beavers are allowed to make changes to their environment, including building dams, caching food, and building lodges
- Increase in overall stream health, including more channel complexity
- Increase in water quantity and quality, including through more water retention and ultimately a raised water table
- Improved riparian habitat health
- Decreased human conflict, including the increased use of nonlethal coexistence solutions
- Improved perception of beavers among human communities

Sample comments on Measuring Success

“To see if beaver programs are working, Colorado Parks and Wildlife (CPW) and partners can watch where beavers live and how many dams they build. They can also check if streams are holding more water, if wetlands are growing, if there are more birds and fish, and if there are fewer

complaints about beaver damage. They can look at how many landowners use simple, non-lethal solutions to live with beavers.”

“Success in beaver restoration means establishing self-sustaining beaver populations in suitable watersheds where their natural activities enhance ecological health, improve water retention, and increase habitat diversity. A successful restoration program should be measured by improvements in water quality, increased biodiversity, and the resilience of riparian areas to drought and wildfire.”

“I think success looks like a large majority of the population having a positive view of beavers on the landscape and acceptance of them in/on their own neighborhoods, parks, ranches, etc... Also tracking actual quantifiable factors like water storage/retention, moisture levels in plants and soils, acreage of riparian habitats and the existence of a diversity of species found in those habitats, etc... If these positive ecological indicators are increasing, then beaver restoration is successful. If they are decreasing, it is not showing success and may need more assistance and/or refocusing of efforts in more suitable areas.”

“Restoration success should be defined by beaver activity (dam-building) and longevity of which they are occupying these restored areas. Beaver do come and go from sites, but long-term occupation is ideal. I think the definition is fine, but monitoring should focus on water retention (pond growth), water table, channel complexity/sinuosity, woody riparian vegetation height/density and beaver activity (dam building or forage sign). I think that valley width, stream gradient and wood riparian vegetation condition are the key factors for beaver establishment. Focusing on what makes a site suitable for long-term occupation is critical because beaver inhabit such a wide range of habitats (ie large wet meadow vs laterally confined conifer dominated forest).”

Coexistence and Conflict Resolution

Coexistence Strategies

Commenters recommended many **guidelines, priorities, and methods for coexistence** ranging from specific coexistence structures to landscape-scale management strategies.

Comments covered a **spectrum of attitudes toward the effectiveness of coexistence devices**, from a belief that coexistence devices should eliminate the need for lethal management to skepticism about whether nonlethal management is effective at all. The middle of the spectrum included advocacy for using coexistence where appropriate, but maintaining availability of a wide variety of management strategies. Commenters across this spectrum of faith in coexistence devices encouraged **clear policies, collaboration with key partners** (including landowners, local organizations, local governments, and agencies), and **rapid response to nuisance calls**.

Frequently mentioned **coexistence devices** included:

- Beaver deceivers
- Flow devices and pond levelers
- Tree fences and painting to prevent harvest of specific trees
- Culvert fences to prevent damming of culverts
- Ungulate exclusion fencing, especially to keep cattle and moose away from riparian areas

Recommended **resources and tools** to promote coexistence included:

- Enabling rapid response to nuisance beaver calls, possibly including a hotline for nuisance beaver calls and strike teams who can quickly respond to calls
- Make resources for nonlethal coexistence options easily accessible, including information on funding, technical assistance, expert opinions, and when coexistence is appropriate
- Create an easier coexistence device permitting process and ensure guidelines are clear
- Move irrigation systems as needed to allow for beavers to change ecosystems
- Offer CPW help with coexistence devices and trapping. Create a simple application for assistance with coexistence devices.
- Create a flowchart of when coexistence measures are appropriate, what permitting is needed, and other factors

Recommended **management strategies** related to coexistence included:

- Keep management strategies the same, including continuing to allow lethal management and incorporating harvest into population management
- Do not use nonlethal coexistence structures because they are not effective
- Manage beaver with the full ecosystem in mind, including considering how to prevent overpopulation and damage to tree populations
- When considering coexistence, make sure that beaver do not damage private property or infrastructure
- Develop a science-based management plan and let that guide decisions on where increasing coexistence methods are appropriate
- Prioritize nonlethal coexistence over translocation and/or lethal management
- Proactively plan for coexistence. Consider coexistence needs in the planning phase of projects (restoration, infrastructure, development, etc.) and install coexistence devices before conflict arises.

Recommended **partners for collaboration** to promote coexistence included:

- Working directly with landowners
- Local organizations, including regional roundtables and non-profits
- State and federal agencies, including CO Department of Agriculture, CO Department of Transportation, CPW's Game Wardens, and CO Water Conservation Board
- Local and county governments

Sample comments on Coexistence Strategies

"I am quite positive that beavers are currently coexisting with humans in Colorado. Am I wrong to assert that? Coexistence should be science-based management based on carrying capacity and population models, this includes both lethal and non-lethal methods. Why would we try to

increase nonlethal solutions to problems? Why would we intentionally try to take management tools like lethal take off the table?”

“Modern coexistence tools include flow devices, culvert fencing, and tree protection. There should be a simple process whereby landowners should be able to apply for and receive assistance in installing these methods. This would be much more cost effective in the long run than infrastructure repair, and fighting wildfires.

Coexistence will be 100% related to the timely identification of conflict areas with effective mitigation of those conflicts. This will be dependent upon true partnerships with wildlife agencies, private landowners and other parties that rely on specific public lands for recreation.”

“Key elements of a successful coexistence strategy include: Installation of proven devices like flow control structures (“beaver deceivers”) and culvert protectors to prevent flooding while allowing beavers to stay in place. Early detection and rapid response programs that address potential conflicts before they require drastic measures. Strong partnerships between CPW, irrigation districts, landowners, and wildlife advocates to share knowledge and resources.”

Support for Landowners

Commenters noted the need to **support landowners in installing coexistence devices**. The prompt for this question included compensation examples of cost-sharing and technical assistance. Comments on methods to support landowners generally fell into the categories of **financial compensation** (including cost-sharing) and **technical assistance**. Commenters noted that the category of “landowners” can include agricultural landowners, housing developments, ditch operators, transportation authorities, and others.

Recommendations for **financial compensation** for landowners included:

- Implement cost-sharing programs to help landowners bear the cost of installation
- Offer financial compensation for areas or infrastructure negatively impacted by beavers
- Offer discounts on fire and/or flood insurance to reflect the mitigation potential of beaver habitat
- Offer “beaver easements,” similar to conservation easements
- Pay landowners for ecosystem services provided by allowing beavers on their property
- Cover the cost of installation of coexistence devices
- Connect landowners to grant funding that could cover the cost of installing coexistence devices
- Offer landowners a financial benefit for keeping beavers on their property, beyond compensation for damage. This could be specific to keeping beavers in place without interference.
- Offer property tax incentives or deductions for installing coexistence devices

Recommendations for **technical assistance** included:

- Offer technical assistance for installation and maintenance of coexistence structures from trained, knowledgeable staff
- Connect landowners to volunteer labor for installation and maintenance of coexistence structures
- Provide materials, including traps for translocation and building materials for coexistence devices
- Simplify permitting and regulations, including water rights and management methods, and/or offer landowners access to experts who can provide quick answers to permitting and regulation questions

Additional comments on compensation for landowners included:

- Offer recognition to landowners with successful coexistence projects
- Levy fines against landowners who opt for lethal management methods
- Favor permitting for infrastructure and irrigation projects that build in beaver coexistence strategies
- Easier permitting and clearer regulations, especially on water rights, could mitigate the need for financial compensation because landowners could get more benefit from beaver presence
- Landowners should cover the full costs of coexistence structures on their properties

Sample comments on Supporting Landowners

“I think landowners would not need any cost assistance as it would be beneficial to our land, we just need to know what we are legally allowed to do and not have it have burdensome regulations like water right requirements and dam permits. Red tape needs to be cut with statewide guidelines.”

“When beavers are reintroduced, landowners should not be left to deal with problems on their own. They can be supported with free or low-cost tools to prevent flooding or tree damage, such as flow devices that control water levels or fencing around important trees. They can also get help from wildlife experts who can visit their property, show them how to use these tools, and answer questions. Financial support or small grants can help landowners pay for these solutions. Clear rules and quick help from local agencies can also reduce frustration and build trust.”

“There are ranchers in Lake County interested in coexistence management strategies. The barriers to this include finding someone with the technical expertise to provide advice on which technique would work best, and also having someone with the technical expertise to install whatever solution is determined to be best. And as always, funding, funding, funding. This one rancher keeps trapping (killing) beavers, and does not want to, but has no other solutions available to him.”

“Technical assistance to any/all interested in bringing beavers into their landscapes should definitely be encouraged and technical/guidance sessions should be facilitated by CPW in partnership with agencies such as UDFCD, Denver Water, Aurora Water, Ft. Collins, SEMSWA et al. to discuss opportunities, challenges, questions and concerns. Non-lethal means of trapping

relocation should be encouraged as much as possible and made easy and cheap/free as much as possible.”

Outreach and Education

Commenters focused on **outreach and education as a crucial part of increasing successful beaver coexistence**. Comments encouraging education and outreach tended to advocate for more education on the **benefits of beavers** in hopes that perceptions of beavers will shift to be more positive. Recommendations for education included **outreach to specific key groups**, including youth, landowners, producers, road crews, and others. An exception to this trend was calls to help the public understand **how damaging beavers can be and the need to manage them strategically**.

Recommended methods for education and outreach tended to suggest **hands-on experiences** with coexistence devices. This included observation sites, pilot programs, workshops, field days, and training programs. **Storytelling** was also highlighted as a key element of outreach and education, especially sharing success stories of beaver coexistence. Recommendations for outreach also highlighted the need for **additional advertisement of available support for landowners**.

Recommended **topics for outreach and education** included:

- Widely advertise support options for landowners to implement nonlethal coexistence strategies. This could include available resources, incentives, and details on coexistence tools.
- Provide education on the benefits of beavers, especially their ecosystem services, risk mitigation potential, benefits for other species, and benefits to water quantity and quality. Help shift the public perception of beavers from nuisance species to valuable ecosystem builders.
- Provide specific education to agricultural landowners on the ways that beavers can improve rangelands
- Educate on the potential for large re-framing and potential changes to roads, trails, etc.
- Help the public understand that beavers are a managed resource in Colorado, with potential to damage infrastructure, relatively low harvest levels, and well-established populations

Recommended **methods of outreach and education** included:

- Media campaigns, including brochures, videos, web pages, guides, fact sheets, signage, newspapers, television broadcasts, and social media campaigns
- Engage beaver ambassadors or community champions to share about beaver benefits. This could include “beaver brigades” of volunteers to educate and implement coexistence strategies.
- Create areas where the public can view beavers and see successful coexistence methods
- Highlight coexistence success stories, including high-profile projects
- Engage children and youth education to build early understanding of beaver as a keystone species
- Host workshops on coexistence
- Hold field days with public tours of successful coexistence structures

- Hold workshops with water agencies, local governments, and/or non-profits to train them to provide technical assistance to landowners for support with coexistence structures and/or providing rapid-response to nuisance beaver issues
- Provide training on coexistence for road and bridge crews, as well as other front-line jobs who often deal with nuisance beaver
- Encourage landowner-to-landowner peer sharing
- Work with schools and universities for beaver monitoring and research projects
- Collaborate with willing landowners, agencies, game wardens, and conservation non-profits
- Hold hunter education classes and reach out to trappers directly
- Provide specific, one-on-one outreach to landowners who are experiencing nuisance beavers

Sample comments on Outreach and Education

“Education and outreach should emphasize the value of beavers in creating wetlands, improving water quality, and increasing climate resilience. Public engagement campaigns, school programs, and demonstration sites can build tolerance and shift the default response from removal to coexistence.”

“Go to the landowners in conflict. Talk to them about solutions. Go find the trappers and change their minds. Tell them the benefits the species has to their water. Their ability for groundwater storage, supporting base flows, holding water in the system. All that helps them as irrigators. Go tell them and show that they may have other options.

“This is Colorado, we need our irrigations systems to function properly. Beavers need to be managed in such a way that maintains our man made water systems and landowners should be a tool for that management. People need to be educated that beavers are a managed resource, harvest levels are low and they are well established in the state.”

“Education and teamwork are just as important. Many people don’t realize how helpful beavers are or that most problems they cause can be fixed without trapping or killing them. Communities need simple guides, workshops, and online videos that explain how to prevent common issues and why living with beavers is worth it. Local schools, landowner groups, and wildlife agencies can work together to share these lessons. When neighbors see that beaver problems can be solved, they are more likely to accept them and even support their return.”

“Education. Speaking to landowners early, informing them of the full scope of impacts (both beneficial and those that some landowners are not in favor of). Provide the science, goals, challenges, and potential outcomes ahead of reintroduction efforts.”

Measuring Success

Visions of success for coexistence **varied from a status quo combination of lethal and nonlethal management to visions of all beavers remaining in place with the use of coexistence devices.** Commenters across the spectrum of visions of success called for **increased collaboration between**

CPW and a variety of partners: landowners, conservation groups, local organizations, agencies, and more. Commenters with differing visions of success also agreed that a **reduction in human-beaver conflict** and **fewer emergency nuisance beaver calls** could be a metric of success.

Recommendations for **measuring success** of the coexistence strategy included:

- All (or most) beavers remain in place on the landscape with the use of coexistence strategies
- No lethal management is needed due to coexistence methods
- Increased collaboration with landowners, including before beaver nuisance becomes an emergency
- Increased community understanding of the benefits of beavers
- Implementing coexistence strategies remains voluntary and all management options are still allowed
- Agencies, including transportation and infrastructure agencies, embrace nonlethal coexistence as the primary method of resolving human-beaver conflict
- Reduced human-beaver conflict overall
- There is a clear, standardized decision-making process for when coexistence or removal (lethal removal or translocation) is needed
- There are fewer emergency nuisance beaver removals because coexistence is considered before reaching crisis point
- Rapid-response technical assistance is widely available
- Increased understanding of how coexistence works and the support available for landowners who wish to implement coexistence

Sample comments on Measuring Success

“I feel the coexistence is already a success. Sportsman, general public and other stewards of the land already accept beavers as they are. When a problem arises it is dealt with one way or the other and the beaver population continues to thrive. As for the landowners, education is paramount. If CPW fixes whatever problem the landowner may have in a very timely manner it may work, however if not most landowners will deal with each situation as necessary. For the agricultural community the growing season is short and water is often limited, water must flow at an unobstructed rate all season. There needs to be some incentive in agricultural areas to tolerate beavers or at least nuisance beavers.”

“Coexistence looks like rejecting lethal management and embracing nonlethal coexistence strategies. Key elements of a successful nonlethal coexistence solution include community-based education with consequent implementation of nonlethal management strategies. In Colorado landowner financial assistance to support nonlethal coexistence methods should be available from Colorado Department of Agriculture, County’s, and local Cattlemen’s Associations and are currently available from NGOs. Robust community-based education is essential to both inform and provide hands-on help regarding nonlethal conflict prevention solutions.”

“Coexistence should be voluntary and site-specific, with lethal control remaining a readily available and supported tool when nonlethal options are ineffective or impractical. Success means

beavers can provide watershed benefits without causing ongoing damage to agricultural operations, infrastructure, or private property. Landowners need quick access to both technical assistance for nonlethal methods and immediate authorization for lethal removal when necessary.”

Translocation

Policy

Comments on translocation revealed a **difference in understanding about the viability of translocation as a management strategy**. Commenters in favor of widespread use of translocation tended to see **translocation as a blanket solution to the need for lethal management** of beaver. Comments more skeptical of translocation tended to **highlight the considerable effort required and low success rates of translocation**.

Comments on translocation offered a number of recommended **guidelines for translocation policy**. Comments on translocation policy strongly diverged on several themes, including how release sites should be prioritized and when translocation should be used.

General recommendations for **translocation policy** included:

- Translocation teams must be ready to respond rapidly to nuisance beaver calls
- Only trained wildlife handlers should perform beaver translocation
- Do not move beavers from outside of Colorado into the state. Consider restricting beaver translocation between regions of Colorado.
- The current translocation policy is confusing. The new translocation policy should be clear, consistent, and streamlined.
- Translocation should be offered as a nuisance beaver solution at no cost to landowners
- Translocation policy should include follow-up monitoring of the translocated beavers
- When developing a translocation policy, ensure that the program will have long-term funding through CPW
- Translocation should be integrated into restoration plans, so that beavers can be released into targeted restoration areas

Recommendations on **when translocation should be used** included:

- Translocation should be used only for the benefit of beavers only, not for human convenience
- Translocation should be used for population management to move beavers from over-populated areas to less populated areas
- Translocation should be used rarely
- Translocation should only be used as a last resort for human-beaver conflict
- Translocation should remain a voluntary alternative to lethal management
- Translocation should be used according to a science-based management protocol
- Translocation should not be used in any case

Recommendations for **prioritizing translocation release sites** included:

- CPW should perform site assessments at potential release sites to consider suitable habitat
- Impacts to water rights at release sites should be considered
- Beavers should only be released on public lands
- Beavers should only be released in remote areas or other areas with low risk of human conflict
- Historical habitat should be prioritized for beaver release
- Beavers should only be released in areas that are being targeted for restoration goals. These areas should consider which ecologies could most benefit from beaver presence.

Recommendations on **outreach and education** related to translocation included:

- Translocation should involve close collaboration with landowners at both removal and release sites. Landowners should be allowed to volunteer to receive beavers.
- Local entities, such as local governments and nonprofits, should be able to request beavers for their communities
- CPW should ensure that they communicate reasonable mortality rates to stakeholders who are invested in translocation projects
- CPW representatives should be available to explain translocation policy
- Landowners and neighbors at both removal and release sites should receive education on expected impacts to water rights

Sample comments on Translocation Policy

“Translocation policies and protocols should be clear and there should be an available representative from CPW to help guide. Disease and stress on the individual are most critical. Cost of holding and transporting the individual should also be considered. Would money be better spent on habitat improvement?”

“Translocation should be prioritized over lethal control, using family-unit relocations to increase success (McKinstry & Anderson, 2002; McNew & Woolf, 2005). Standard operating procedures must include quarantine protocols to prevent pathogen spread and post-release monitoring to track survival and dam-building success. Translocation should be integrated into watershed-scale restoration plans to maximize climate and fire resilience benefits. CPW should partner with NGOs and watershed groups to scale translocation efforts, targeting degraded headwaters, post-fire landscapes, and areas with high drought vulnerability. Recreational trapping undermines translocation investments, removing animals from potential restoration source populations, and should be prohibited statewide.”

“I feel translocation should only be tried after all coexistence measures have been tried OR if the landowner refuses any coexistence measures. Success in beaver translocation means the entire family group has been moved, all individuals have survived and have resumed normal, healthy beaver behaviors. I would like to see a long term monitoring program of any relocated populations. I am especially concerned about long term survival rates and long term monitoring efforts.”

“Translocation should be rare, voluntary, and only occur with full consent from willing landowners and adjacent neighbors at both removal and release sites, with no impact on existing water rights. Problem animals should never be moved into new conflict areas, and all releases must be into suitable habitat with broad local support.”

“Translocation should be used not just as a conflict response, but as a proactive restoration strategy to repopulate historically occupied watersheds, enhance wetland creation, and strengthen ecosystem resilience. When done with science-based planning and strong stakeholder engagement, translocation is a powerful tool for expanding healthy beaver populations across Colorado.”

Translocation Protocols

Commenters offered recommendations on specific elements of translocation protocols. Commenters who recommended protocols tended to be **concerned about the welfare and success of translocated beavers**. Recommendations ranged throughout the translocation process, from calls to reduce stress during the translocation process to guidelines for release sites that will ensure the greatest beaver success.

Recommendations for **translocation protocols** included:

- Protocols should be modeled after other, comparable state protocols including UT, WA, and MT
- Release sites must be suitable with food and shelter available right away. This could involve preparing sites for beaver reintroduction with LTPBR.
- Ensure that release sites do not have too many predators
- When evaluating suitable release sites, consider how specific beaver populations have adapted. For instance, differences in elevation and urban vs. rural beaver populations.
- Ensure that release sites are within travelling distance of existing beaver populations
- Consider increasing genetic diversity in release sites when translocating beavers
- Full family groups must be translocated together
- Translocations must be timed seasonally to allow beavers to adequately prepare for winter. Translocations should occur from spring to late summer.
- Reduce stress on beavers during the translocation process
- Standardize health checks and quarantine procedures to minimize disease and pathogen transmission including tularemia, ranavirus, and chytrid fungus

Sample comments on Translocation Protocols

“Beavers should only be transported and released in areas where they have a reasonable chance of success. Characteristics of those areas include: sufficient type and amount of vegetation; adequate stream flows and appropriate stream gradient; areas with minimal human development conflict and landowners that are willing to install conflict prevention devices.”

“Factors to consider in guidelines for translocation:

- The new location must have enough food, water, and building materials for the beavers.

- Landowners at the release site must agree to have beavers and know how to handle them.
- Beavers should be moved in family groups whenever possible to increase survival.
- The timing of moves should avoid harsh weather and food shortages.
- Health checks should be done to avoid spreading disease.
- Follow-up monitoring is needed to make sure the move was successful.”

“After a successful assessment of disease risk (and quarantine?), consider habitat suitability and the likelihood that a beaver will stay in the system. Understand what a reasonable amount of mortality is and effectively communicate this to stakeholders. Will nuisance beavers in urban areas respond as well to translocation as rural beavers (which may be more familiar with predator identification and avoidance?”

“Translocation between watersheds should be allowed to ensure sufficient genetic diversity and beaver availability for watersheds where beavers have been removed or significantly reduced. Their benefits to water quality including temperature regulation and fine sediment retention outweigh the risks of spreading diseases to fish. Translocation should take place where appropriate food sources are available. If there's a high demand for beavers, ideally, individuals or family units could be translocated where other beavers are within traveling distance so kits can access each other for reproduction.”

Concerns Regarding Translocation

Commenters who were skeptical about the viability of translocation as a management strategy expressed concerns about the **potential downsides of translocation**. The largest overarching concern was that **translocation is expensive, labor-intensive, and offers limited success**. Concerns within this category included time requirements, financial burden, low success rate, specific needs for translocation sites, and the possibility that beavers will move again. Commenters were also concerned about the **potential for spreading disease and aquatic pathogens** when moving animals to new areas.

Concerns about translocation included:

- Beavers are animals and will not stay exactly where they are moved. They may move again.
- Wildlife were here before humans and should not be interfered with
- Human intervention for translocation to help restoration is not needed. Beavers will disperse by themselves.
- Translocation is expensive and difficult
- Translocation can cause stress to beavers
- Expanding translocation will increase the potential for spreading disease and aquatic pathogens between locations
- Translocation has a low success rate, especially when success is measured by survival of individual beavers
- There is a very limited time frame in which beavers can be successfully moved
- Beavers have very specific habitat requirements, which may vary by elevation, urban vs. rural population, and other factors

Sample comments expressing concerns about Translocation

“Translocation is a baron of time and money. It is rarely successful, it causes high amounts of stress and pressure on the animal and not to mention that is how pathogens are transferred from one ecosystem to another.”

“I would leave the efficacy, methods and best practices for translocation up to our biologists and experts at CPW, who can also learn from what has worked in other western states. From my perspective as a citizen, I know that translocation efforts are expensive and they cost our state agency a great deal of time and resources. So, I would lean on CPW staff to determine when and how that needs to be done so that it is done wisely.”

“I don't think much money should be spent on translocation. The beaver population is doing well and expanding to new areas slowly, as they do. Please keep the status quo for current policy, but continue to introduce them places where they're suitable if you think it's beneficial.”

“Translocation works for some other species but with our weather, altitude and current population of humans it doesn't with beavers. There is only about an 8 to 10 week period where survival rates are every [sic] considered humane. Runoff in the spring and cooling weather in the fall makes it a rare instance where it could even occur. WHY move problems from one area to another with massive financial implications?”

Measuring Success

Commenters had differing visions of a successful translocation program. Commenters who were not in favor of translocation saw success as **no additional translocations** and **no funds spent on developing a translocation program**. Commenters who were cautious about the use of translocation and those who wanted translocation used widely **generally aligned on their visions of beaver welfare**. Commenters who wanted translocation used widely tended to offer more **ambitious visions of beaver success**.

Visions of success for translocation policy included:

- Thriving, multi-generational beaver colonies are established, particularly in areas targeted for ecosystem benefits
- Translocation has a high success percentage and high beaver survival rates (up to 100%)
- There is no increased spread of disease or unwanted species due to beaver translocation
- There is a method to match people who want beaver on their property with nuisance beaver who need to be removed
- Translocation protocols create a consistently humane process
- There are clear policies and protocols around translocation across Colorado

Sample Visions of Success for Translocation Policy

“Success for beaver translocation policy means that when conflicts arise in areas where coexistence is not feasible, beavers are relocated safely and humanely to suitable habitats where they can thrive and provide ecological benefits. A strong program ensures minimal stress and

mortality for the animals, high survival rates post-release, and measurable improvements to the recipient ecosystem over time.”

“Success: Beaver translocations are safe and effective. Beaver more frequently survive, stay at/near where they are released (because of suitable habitat), and translocations don't contribute to spread of diseases, invasive, or nuisance species that will negatively impact beaver or habitat.”

“Success of translocation policy and protocol depends on a high percentage (98%-100%) of beavers surviving and thriving after translocation.”

“Success for translocation policy means that it works for the beavers and it works for people simultaneously. Beavers must be able to be captured and transported in an ethical way, which means they are not hurt or harmed in the process - hopefully captured as peacefully as possible without lots of ruckus. Beavers must be able to live in their new spot and be healthy, and also positively affect the space they are now inhabiting. Protocol would be created by people who are well informed about why a beaver needs to be relocated, how far it can be relocated, how people treat the beavers, and how people process the steps of capture and relocation. If beavers need additional "friends" to be successful, beavers of the same overpopulated household need to stay together. If people are infringing on beavers' space too much and thus ruining the habitat itself, this would not be a valid reason to relocate and people need to find/think of a better space to build on.”

Strategy Use and Visions of Success

Strategy Use

Commenters provided a number of visions for how they could use the strategy. Commenters who offered ways that they could use the strategy **tended to be those in favor of widespread beaver conservation**. Comments on use of the strategy also tended to be separated by **individual use and use by organizations**.

Both individuals and organizations suggested that they could use the Strategy as a **forward-looking vision to align beaver conservation goals across the state**.

Individual commenters suggested that they will use the strategy to:

- Advocate for beavers in their community
- Advocate for coexistence and translocation
- Help provide outreach and education about beavers in their community
- Guide trapping and hunting efforts to areas of high beaver population and potential conflict
- Find out more information on getting permitted for translocation, and potentially volunteer for translocation
- Encourage their local government to use coexistence
- Advocate for habitat conservation

- Assist with restoration efforts, especially if technical assistance and funding is available
- Better understand CPW

Organizations suggested they will use the strategy to:

- Evaluate future funding applications for their inclusion of beaver strategies, especially related to watershed restoration
- Provide a practical guide for landowners and land managers for managing conflict and restoration projects
- Keep goals aligned between agencies, partner organizations, and overlapping mitigation plans
- Prioritize restoration areas
- Coordinate volunteer efforts for restoration and coexistence
- Assist landowners with conflict prevention
- Translocate beavers to suitable habitat
- Share updates on beaver
- Observe and collect data on beaver habitats

Sample comments on Use of the Strategy

“I hope the strategy is used as both a practical guide for land managers and a visionary framework for ecosystem restoration. In my own capacity as a community member, I will use it to advocate for balanced, science-based solutions that protect water resources while preserving and restoring one of Colorado’s most important keystone species.”

“I hope the strategy will have a framework for having sustainable beaver populations across the state in as many native areas as possible...I also think having a plan to allow for harvesting of beavers by both hunters and trappers needs to happen and puts a value on the beavers themselves. I will use the strategy by expanding my efforts at trapping and hunting beavers where I know their numbers are good and in areas of potential conflicts.”

“[My organization] will use this strategy to prioritize areas for beaver habitat restoration, and will help inform how we guide private landowners that either do or do not want beaver on their property.”

Future Visions

In addition to visions of success in each category of questions, commenters provided overall visions of success for the Strategy. These visions covered the spectrum of topics included in the Strategy, from **education to harvest**. Comment themes are divided into major categories below.

Comments that differentiated between a vision of success in 5 years and 10 years tended to hope for **“low-hanging fruit” restoration in 5 years**, meaning smaller-scale restoration that could provide early wins. In 10 years, they tended to hope for a move toward **expanding beaver habitat beyond the recent historic range** and **changing attitudes to see beaver as beneficial to the ecosystem**.

Visions of **successful beaver population** included:

- Healthy, stable beaver population
- Populations sustained or increased in low-conflict areas, with little damage to private property, infrastructure, or water rights
- Populations are stable enough for harvest
- There is a widespread increase in beaver populations
- Beaver populations have remained the same
- There is more information available on the beaver population in Colorado and their effects on the landscape
- There are additional beaver monitoring efforts
- There are more dammed areas

Visions for successful **harvest and management** included:

- Avocational harvest of beavers continues to be allowed
- Avocational harvest is restricted - by bag limits, targeted geographic restrictions, time restrictions, or other methods
- More trapping methods are allowed in Colorado
- There is no more avocational harvest of beaver.
- All current management methods continue to be available, including lethal management
- There is no more lethal management of beaver
- There is increased reporting on beaver harvest
- Wildlife management plans continue to be science-based
- Beaver populations are managed in a site-specific manner, understanding that there is no one-size-fits-all approach
- Beavers are left alone as much as possible.
- Management strategies prioritize improving or expanding beaver habitat and enabling beavers to provide ecosystem services
- Management plans are holistic

Visions for **restoration success** included:

- Beavers restore stream and wetland ecosystems
- Water quantity and quality are both improved by beavers, including rising water tables from beaver ponds
- Biodiversity is increasing
- Beaver ecosystem improvements contribute to wildfire and drought mitigation
- Restored habitats that lead to beaver expansion
- There are more wildlife-viewing opportunities

Visions for **coexistence success** included:

- CPW facilitates the installation and maintenance of coexistence structures
- Provide financial support and technical support to landowners to install coexistence devices
- There are more coexistence methods in use across Colorado
- New coexistence methods are available

- There is widespread knowledge on the existence and implementation of coexistence methods as well as support available for their installation and maintenance

Visions of **translocation success** included:

- There are more successful translocations
- The public receives updates on successful and unsuccessful translocation
- Translocation used as a conflict management strategy
- Translocation is used to restore beaver populations in formerly populated watersheds

Visions for **education and outreach** success included:

- There is an increase in awareness of coexistence methods
- The public supports beavers and understands how they can benefit the environment
- Public attitudes toward beavers change to be more accepting
- The public receives regular updates on beaver management efforts, including restoration and translocation
- Trainings are widely available

Recommended entities for **collaboration** included:

- Neighboring states (especially WY and MT)
- NGOs and nonprofits, particularly for outreach efforts
- Landowners, particularly ranchers, other producers, and ditch companies
- Planners and developers, particularly to build beaver coexistence into their initial plans
- Conservation Districts
- Universities and researchers

Visions for **successful policy** included

- A long-term, well-staffed, well-funded support program at CPW
- Consistent policy across the state
- The ability to work quickly and efficiently, especially to respond rapidly to beaver nuisance reports

Sample comments on Visions of Success:

“In 5–10 years, the strategy should maintain healthy, stable beaver populations where they provide clear ecological benefits, while ensuring they do not create ongoing conflicts with agricultural operations, private property, or water rights. Success will mean CPW follows its own SWAP science—recognizing beaver are not a vulnerable species—while focusing restoration only where watershed benefits are clear, coexistence is voluntary, lethal control remains available, translocation occurs only with full consent from willing landowners and neighbors, and water rights are protected.”

“I would love to see a thriving beaver population that supports legal methods of take from hunters/trappers, along with increased thriving wetland environments created by the beaver populations.”

“By increasing the number of beavers on the landscape of Colorado we should witness a myriad of ecosystem services to a variety of species and landscapes. More water storage higher in the watershed aids in river health for a variety of species in addition to making the landscape more resilient in times of drought, flooding or wildfire. Increased biodiversity as beaver ponds and dams create suitable habitat for fish populations to regenerate. They also aid in keeping river temperatures cool aiding our native cutthroat trout populations.”

“In 5 years, I hope this strategy results in a measurable reduction in lethal beaver removals and a measurable increase in coexistence-based management, relocation efforts, and restored beaver populations across Colorado. By then, irrigation districts, landowners, and agencies should have easy access to cost-effective tools, training, and relocation teams, making non-lethal solutions the default choice.

In 10 years, I envision thriving beaver populations strategically distributed across watersheds where their presence improves water retention, biodiversity, and climate resilience — with a statewide culture that recognizes beavers as valuable partners in ecosystem health. Conflicts with infrastructure will be anticipated and managed through proven, non-lethal methods, and translocation will be an established, well-funded program with high success rates.”

“As a process-based restoration practitioner (engineer), I hope to recommend beaver reintroduction as part of adaptive management for floodplain connectivity projects. These projects are frequently completed as part of post-wildfire recovery when excessive sediment, debris flows, and floodplain and stream degradation need to be addressed to keep communities, drinking water sources, etc. secure. Beavers were extirpated from many areas on the Front Range pre-Cameron Peak and East Troublesome fires which contributed to the high burn severity and extensive burn footprint. Successful floodplain recovery projects in these areas rely on years of successive vegetation planting, structure repair, and structure installation in an attempt to mimic beavers' natural activities. Where appropriate food sources are available or have been restored, beavers could significantly improve the long-term success of these projects. Ideally, beavers could be reintroduced as part of wildfire readiness restoration work. Watershed coalitions, drinking water suppliers, and municipalities are frequent organizers of these restoration projects.”

Additional Comments

Some comments did not fit into the provided comment categories. Commenters expressed **concerns about CPW**, particularly in relation to other wildlife management and reintroduction efforts and perceived bias in the agency. Other commenters expressed **concerns about funding and spending limited financial resources** on development of the strategy.

Some commenters asked for **help with beavers in specific locations** or to **receive beavers to their area**.

Sample Uncategorized comments

“Coexistence includes supporting beaver populations where they do not have a profound detrimental effect. It also includes providing assistance where they do have a detrimental effect. The recent debacle of Wolf reintroduction has done an incredible disservice to other species, such as beaver. Landowners are not much less inclined to work with CPW or NGOs. A sincere and converted effort on behalf of CPW and NGOs is needed to reconstruct relationships which have been severely damaged due to the Wolf issue. If west slope landowners perceive beaver recolonization efforts as an east Slope initiative, it will have little to no support. It needs to be Colorado-centric, science based, and in the best interest of the local populace.”

“Again, I’m just not convinced this is the right move. It is my belief that anti-trapping organizations force CPW into a corner with a purpose on wasting their money on something a small group of people funded by out of state organizations somehow get prioritized.”

“I’m a private retired citizen in Frisco, Colorado, and I and a neighbor have teamed up with Public Works Frisco to build and maintain (at this time) four beaver deceivers to limit their damaging behavior in the Town. But my neighbor and I are getting old - and not so strong. The strategy should facilitate the expansion or continuance of our work in Frisco, and expand it to many other towns in Colorado. Public officials, as well as the public, should be educated about the benefits (and risks/downsides) of beavers.”

“I own [a parcel of land], that I would love to have access to relocation efforts for a pair of breeding beavers. The land includes some very wet, riparian habitat, water level is quite shallow, and intermittent stream levels through July. Water saturation is constant year round, and beavers could very well create more surface water, through damming and denning. Please, help me in acquiring relocation beavers!”

Comment Form Language

Please use this form to provide feedback to Colorado Parks and Wildlife to help inform the development of the Beaver Conservation and Management Strategy. Refer to the scoping period presentation recording and slides under Important Links for background information on each topic.

- The form includes a comment field for several important topics for the strategy, including population management, restoration, coexistence and conflict resolution, and translocation. Discussion prompts are provided for each topic.
- A final comment field is provided for general feedback; if you prefer to include all of your feedback in one place, you may skip to the final comment field.
- Demographic questions are provided at the end to help us better understand who is engaging in this scoping period.

Online comment themes will be compiled, reviewed, and synthesized by a third-party facilitator; the comment synthesis will not attribute individual comments to the participant. Colorado Parks and Wildlife will also have access to all individual, attributed comment submissions.

Additional background information and the timeline for strategy development are available on this same EngageCPW page. The public scoping period will be open from July 30 to August 31, 2025.

Population management. Please provide your comments regarding population status, management, and harvest. Sample discussion questions include:

- What does success look like for population management?
- What feedback do you have on the presented statewide beaver population and harvest estimates, and how could/should they be improved?
- What do you believe are limiting factors to beaver recolonization on public and private lands, and what information are you using to make this conclusion?
- What management actions to address limiting factors could/should CPW and other agencies, organizations, and land managers undertake?

Beaver restoration. Please provide your comments regarding beaver restoration. Sample discussion questions include:

- What does success look like for beaver restoration? How should CPW and others determine whether restoration is successful in a watershed?
- What feedback do you have on the definition of beaver restoration?
- What values and information should drive the prioritization of restoration areas?

Coexistence and conflict resolution. Please provide your comments regarding coexistence and conflict resolution. Sample discussion questions include:

- What does success look like for coexistence in Colorado? What are some key elements of a successful coexistence solution?
- Do you have ideas for how to support landowners who are open to installing coexistence solutions (e.g., cost sharing and technical assistance)?
- What education/outreach/collaboration are needed to increase tolerance of beaver and use of nonlethal solutions to typical problems they can cause?

Translocation. Please provide your comments regarding translocation policy and protocol. Sample discussion questions include:

- What does success look like for translocation policy and protocol?
- What factors regarding guidelines for translocation should be considered?
- What has worked well for beaver relocations in Colorado or other western states, and what could be improved?

General and additional comments. Please provide any general comments, additional comments, or comments to address all topics

- What do you hope the strategy will accomplish in 5 years? 10 years?
- How will you or your organization or agency use the strategy?

Name *(write-in)*

Are you submitting feedback on behalf of an affiliated organization, agency or group? *(Choose any one option) (Required)*

- ☐ No
☐ Yes

Answer this question only if you have chosen Yes for Are you submitting feedback on behalf of an affiliated organization, agency or group?

What is the name of the group(s) that you represent? *(Required)*

Email *(write-in)*

What is your zip code? *(write-in)*

With which interests and sectors do you identify *(Select all that apply)*

- ☐ Agriculture and private landowners
☐ Beaver advocacy
☐ Conservation funders
☐ Local governments
☐ State government
☐ Federal government
☐ Nuisance operators

- ☐ Sportspeople and trappers
- ☐ Transportation/Infrastructure
- ☐ Tribal and Indigenous Interests
- ☐ Water users and managers
- ☐ Watershed coalitions
- ☐ Wildlife/Conservation
- ☐ Wildlife rehabbers
- ☐ Other (please specify)

How do you describe your ethnicity? *(Select all that apply)*

- ☐ American Indian, Native American, or Native Alaskan
- ☐ Black or African American
- ☐ East, Southeast, or Central Asian
- ☐ Hispanic, Latino, or Latinx
- ☐ Middle Eastern, North African, or South Asian
- ☐ Native Hawaiian or other Pacific Islander
- ☐ White or Caucasian
- ☐ Biracial or Multiracial
- ☐ I prefer not to answer
- ☐ Other (please specify)

What best describes your gender? *(Choose any one option)*

- ☐ Woman
- ☐ Man
- ☐ Non-binary/third gender
- ☐ Agender/I don't identify with any gender
- ☐ I prefer not to answer
- ☐ I prefer to self-identify as:

What is your age range? *(Choose any one option)*

- ☐ Under 18
- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-64
- ☐ 65+
- ☐ I prefer not to answer

What is the highest level of formal education that you have completed? *(Choose any one option)*

- ☐ Less than 12th grade
- ☐ High school graduate or GED
- ☐ Some college, but no degree

- ☐ Associate's or technical degree
- ☐ Bachelor's (four-year) college degree
- ☐ Graduate or advanced degree

Meeting Materials

Sector Focus Group Meeting Agenda

Meeting start times vary by focus group. The time stamp in the schedule below is relative to the start time. Times are approximate; time allocation across topics may vary based on interests of each group.

0:00	Welcome, Introductions, Purpose, and Discussion Guidelines • <i>CPW and facilitator welcomes</i> • <i>Brief roundtable introduction question:</i> Name, organization, and, which topic are you most excited or interested to discuss today (population and management; restoration; coexistence; translocation)
0:10	Population Status and Management • <i>5-min overview:</i> Beaver natural history; population and beaver mortality context and trends • <i>Discussion questions:</i> ○ What does success look like for population management? ○ What feedback do you have on the presented statewide beaver population and harvest estimates, and how could/should they be improved? ○ What do you believe are limiting factors to beaver recolonization on public and private lands, and what information are you using to make this conclusion? ○ If limiting factors to beaver abundance and distribution can be identified in the future, what management actions could/should CPW and other agencies, organizations, and land managers undertake to address those factors?
0:35	Beaver Restoration • <i>5-min overview:</i> Defining beaver restoration; restoration area prioritization • <i>Discussion questions:</i> ○ What does success look like for beaver restoration? How should CPW and others determine whether restoration is successful in a watershed? ○ What feedback do you have to the definition of beaver restoration? ○ What values and information should drive the prioritization of restoration areas?
1:00	Coexistence and Conflict Resolution • <i>5-min overview:</i> Context and best practices • <i>Discussion questions:</i> ○ What does success look like for coexistence in Colorado? What are some key elements of a successful coexistence solution? ○ Do you have ideas for how to support landowners who are open to installing coexistence solutions? <i>E.g., fair market payment for ecosystem services, cost sharing, and technical assistance?</i> ○ What education/outreach/collaboration are needed?
1:25	Translocation Policy and Protocol • <i>5-min overview:</i> History of translocation; current science and best practices; aquatic disease

	• <i>Discussion questions:</i> ○ What does success look like for translocation policy and protocol? ○ What factors regarding guidelines for translocation should be considered? ○ Ideas to facilitate translocations? Holding facilities, partner networks, etc.? ○ What has worked well for beaver relocations in Colorado, and what could be improved?
1:50	Final Reflections & Vision • <i>Discussion questions:</i> ○ What do you hope the strategy will accomplish in 5 years? 10 years? ○ How will you or your organization or agency use the strategy?
2:00	Next Steps & Adjourn

Discussion Guidelines

- **Confidentiality & Attribution:** Participants are free to use and discuss information from the focus group. A list of names and organizations of participants will be compiled, however, neither the identity nor the affiliation of the speaker(s), nor that of any other participant, will be attributed to quotes or specific comments/feedback.
- **Participation:** Actively participate while holding space for others to participate as well.
- **Perspectives:** Be respectful of multiple backgrounds, interests, and areas of expertise. Avoid the use of acronyms and technical language. Actively listen to other perspectives, even if you are in disagreement with them.
- **Focus:** Help the facilitators keep to the agenda and maintain focus on the issues and objectives. There will be an opportunity to provide written comments to build upon your comments today, if desired.
- **Facilitator & Staff Roles:** Third party facilitators will support engagement in the discussion. CPW staff and other subject matter experts are present to share background information and to listen to discussion; they may not have answers to and/or be able to respond to all questions at this time.
- **Written Comments:** Chat may be used, with discretion, to offer comments relevant to the current discussion item. Please refrain from having separate conversations via chat. There is also an opportunity to provide additional, written comments via CPW's website.

Cross-Sector Focus Groups Meeting Agenda

Meeting start times vary by focus group. The time stamp in the schedule below is relative to the start time. Times are approximate; time allocation across topics may vary based on interests of each group.

0:00	Welcome, Introductions, Purpose, and Discussion Guidelines
0:15	Each topic will start with a brief slide presentation with refresher content and new content/concepts Population Status
0:40	Beaver Restoration
1:10	Harvest Management
1:40	Break
1:50	Coexistence and Conflict Resolution
2:20	Translocation Policy and Protocol
2:50	Final discussion of cross-topic reflections
3:00	Next Steps and Adjourn

Discussion Guidelines

- **Confidentiality & Attribution:** Participants are free to use and discuss information from the focus group. A list of names and organizations of participants will be compiled, however, neither the identity nor the affiliation of the speaker(s), nor that of any other participant, will be attributed to quotes or specific comments/feedback.
- **Participation:** Actively participate while holding space for others to participate as well.
- **Perspectives:** Be respectful of multiple backgrounds, interests, and areas of expertise. Avoid the use of acronyms and technical language. Actively listen to other perspectives, even if you are in disagreement with them.
- **Focus:** Help the facilitators keep to the agenda and maintain focus on the issues and objectives. There will be an opportunity to provide written comments to build upon your comments today, if desired.
- **Facilitator & Staff Roles:** Third party facilitators will support engagement in the discussion. CPW staff and other subject matter experts are present to share background information and to listen to discussion; they may not have answers to and/or be able to respond to all questions at this time.
- **Written Comments:** Chat may be used, with discretion, to offer comments relevant to the current discussion item. Please refrain from having separate conversations via chat.

Technical Advisory Session Agendas

July 30, 3-5 pm: Restoration

All Times are Approximate

3:00p	Welcome, Introductions, Purpose • <i>CPW and facilitator welcomes</i> • <i>Brief introductions:</i> Name, organization, location, and high level description of your work on beaver conservation and management
3:15	Population Status and Management • <i>5-min overview:</i> Colorado beaver population and beaver mortality context and trends • <i>Discussion questions:</i> ○ Are you aware of additional datasets or documentation of historical beaver distribution beyond wetland mapping from the 1970s and 1980s? ○ Are you aware of historical or more recent beaver population studies that may not be readily available online (e.g., printed or scanned reports)? ○ How to improve population and harvest estimates? ○ How to investigate limiting factors for beaver populations?
3:45	Beaver Restoration • <i>5-min overview:</i> Defining beaver restoration; restoration area prioritization; habitat scorecard • <i>Discussion questions:</i> ○ Do you agree with our working definition of beaver restoration in this context? What is missing? ○ What anthropogenic and/or environmental factors are currently limiting beaver occupation of potential habitat (e.g. conifer encroachment in riparian, ungulate overbrowse, etc.)? ○ What are the most important factors CPW and others should use to prioritize potential beaver restoration areas? High-conflict areas? ○ How can COBAM tools best be utilized to prioritize areas for restoration ○ In which scenarios is it appropriate for beaver-based stream restoration to be the primary tool, when is release of beavers needed, both?
4:30	Research Needs ○ What are the greatest research needs related to beaver population status and restoration in Colorado? ○ What factors should CPW utilize to prioritize research for these topics?
4:45	Final Reflections & Vision • <i>Discussion questions</i> ○ What does success look like for beaver population status management and restoration in Colorado in 10 years?
5:00p	Next Steps & Adjourn

August 6, 3-5 pm: Coexistence

All Times are Approximate

3:00p	Welcome, Introductions, Purpose • CPW and facilitator welcomes • Brief introductions
3:05	Coexistence and Conflict Resolution • 5-min overview: Context and best practices • Discussion questions: ○ What practices and model(s) would work best to increase capacity for coexistence in Colorado? What's working elsewhere? What support systems? By whom (e.g., state-supported, NGO-supported, grassroots, etc)? ○ How can Colorado best proactively plan for coexistence alongside restoration efforts? ○ What maintenance is needed for coexistence solutions, particularly considering conditions in Colorado? ○ What would success look like for coexistence and conflict resolution in Colorado? ○ What are the greatest research needs related to beaver coexistence and conflict resolution?
4:30	Follow up on Restoration and Population Status/Management • What coexistence factors should be included in the decision tree for prioritizing restoration efforts?
5:00p	Next Steps & Adjourn

August 20, 3-5 pm: Translocation

All times approximate

3:00p	Welcome, Introductions, Purpose • CPW and facilitator welcomes • Brief introductions
3:05	Translocation Policy and Protocol • 5-min overview: History of translocation; current science and best practices; aquatic disease • Discussion questions: ○ What is the best available science on successful translocation practices? ○ What is the best available science on disease/aquatic pathogen transmission risk and mitigation? ○ What guidelines should be followed to reduce risk of pathogen spread? ○ How should CPW weigh the potential benefits of restoring beavers via translocation with potential unintentional consequences for transmitting pathogens and/or ANS? ○ What are currently available options for holding facilities, and what options should be considered? ○ What are the greatest research needs related to beaver translocation?

4:20	Research Needs • Synthesis of research needs identified throughout this series • What is missing? • What factors should CPW utilize to prioritize research?
4:40	Final Reflections & Vision • <i>Discussion questions:</i> ○ Follow up as needed on prior topics ○ What do you recommend that the strategy seek to accomplish in 5 years? 10 years? What would success look like? ○ How will you or your organization or agency use the strategy?
5:00p	Next Steps & Adjourn

Discussion Guidelines

- **Confidentiality & Attribution:** Participants are free to use and discuss information from the Technical Advisors meetings. A list of names and organizations of participants will be compiled, however, neither the identity nor the affiliation of the speaker(s), nor that of any other participant, will be attributed to quotes or specific comments/feedback.
- **Participation:** Actively participate while holding space for others to participate as well.
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Slide Presentations

Slides presented at the stakeholder engagement meetings during the scoping phase are archived on the [Engage CPW page](#) and can be accessed directly at

[https://drive.google.com/file/d/1vV890U7x3NG53xusBcgJon8EI0J-kqSq/view?usp=drive link](https://drive.google.com/file/d/1vV890U7x3NG53xusBcgJon8EI0J-kqSq/view?usp=drive_link)