Recommendations for Beaver Management on Federal Lands

from the Oregon Fish and Wildlife Commission Beaver Management Work Group

to the

Oregon Fish and Wildlife Commission

Prepared by Kearns & West
For the Oregon Fish and Wildlife Commission

May 2022

KEARNS & WEST

Written by members of the Beaver Management Work Group
Compiled by Jamie Damon and Samantha Meysohn

KEARNS WEST

Strategic Communications and Collaboration
720 SW Washington Street, Suite 305
Portland, OR 97205
503.221.1650
www.kearnswest.com

Cover Photo: Beaver Swamp Trail, Rogue-Umpqua Divide Wilderness, Umpqua National Forest, Photo credit: USFS

Table of Contents

I. Executive Summary 3

II. Overview 3

A. Work Group Formation 3

B. Work Group Participants and Process 3

C. Work Group Mission and Scope of Authority 4

D. Value Statement and Key Question 5

III. Background 6

IV. Objectives 10

V. Guiding Principles 11

VI. Recommendations 12

A. Management of Beaver Modified Floodplain Landscapes 12

B. Improvement in Data Collection and Management Responsiveness 16

C. Understanding and Implementing Best Management Practices Through Monitoring and Researching Limiting Factors 17

D. Oregon Conservation Strategy 17

E. Federal and State Collaboration 18

F. Communication, Outreach, and Education 20

VII. Additional Issues Raised Without Recommendations from the BMWG 21

VIII. Appendix I. Charter, schedule, and information about the meetings 22

I. Executive Summary

The Oregon Fish and Wildlife Commission (Commission) formed a Beaver Management Work Group in the summer of 2020 to develop recommendations for Oregon Department of Fish and Wildlife (ODFW) staff regarding the management of beavers in Oregon. Beaver modified floodplain landscapes can provide benefits for the climate crisis, biodiversity crisis, water supply resilience, and sensitive species conservation and recovery. The 19-member Beaver Management Work Group (BMWG) met from June 2021 through April 2022 and included a diversity of perspectives from across the state. The group was directed by the Commission to focus their discussion on federally managed public lands in Oregon and developed a set of recommendations contained in this report for the Commission to consider.

Photos: North American Beavers (*Castor canadensis*). Photo credit: ODFW

II. Overview

A. Work Group Formation

At the June 12, 2020, Commission meeting, the Commission directed the ODFW staff to "convene a work group to address beaver management in Oregon."[1] On September 24, 2020, the Commission received a petition to initiate rulemaking to consider ending beaver hunting and trapping on federally managed lands. State rules require the Commission to consider the petition within 90 days of receiving it and then either deny the petition or accept the petition and initiate rulemaking in the future.

At their November 13, 2020 meeting, the Commission denied the request for rulemaking but provided further direction to ODFW staff, "to analyze and provide recommendations on beaver management in the context of climate change, habitat, benefits to fish and other species, and water flow, retention and temperature, in close collaboration with the Commission on this issue and use the newly-formed beaver management workgroup as a key part of the public engagement on this issue."[2]

B. Work Group Participants and Process

Participating Commissioners appointed 19 work group members representing scientists, land managers, environmental conservationists, trappers and hunters, and federal partners. The work group included regular participation from Commissioners and ODFW staff. ODFW staff participated in an advisory and information role and did not contribute specific

[1] June 12, 2020, ODFW Commission Meeting Minutes
[2] November 13, 2020, ODFW Commission Meeting Minutes

recommendations. Work group members could designate an alternate to fill in during an absence. The work group met virtually for 12 meetings ranging in length from 2 to 3 hours. The meetings were well attended by work group members and were live-streamed for public viewing. In addition to the full work group, a "sub-group" was formed to help develop and refine agendas including identifying technical and policy information to bring before the full group as well as synthesizing concepts for the full group to consider. The sub-group consisted of four work group members, representing a range of perspectives on the full work group, and met 14 times in between work group meetings. Work group members also participated in two rounds of affinity group conversations, where they joined others with shared interests to talk about the BMWG process and recommendations. In addition, individual work group members were consulted as needed throughout the process. The Work Group Charter, schedule, and information about the meetings are included in Appendix I.

C. Work Group Mission and Scope of Authority

The ODFW Commission gave general direction to the BMWG on its mission and scope of authority (see inset). Through discussion, the group refined their mission and agreed on the mission statement (see inset).

The Commission directed the group to focus on federally managed public lands. Group members discussed the importance of beaver and its habitat throughout Oregon and whether to look at beaver management beyond federally managed public lands but agreed to adhere to the direction from the Commission. The BMWG discussed the potential role of increased and strategic beaver management as a tool to address Governor Brown's Executive Order 20-40 on Climate Change, ODFW's Climate and Ocean Change Policy, the Department's Mission Statement, and ORS 496.012. The group agreed to focus on beaver and habitat for beaver holistically, rather than solely on hunting and trapping restrictions as a management tool.

In addition to the mission statement, the BMWG developed and agreed to a scope of authority to guide their work (see inset).

Private-Public Land Interface

The BMWG was directed to focus on beaver and beaver habitat management on federally managed public lands. The group recognized that efforts to increase beaver modified floodplain landscapes on public lands may have impacts on private lands and did not want to see increases in beaver and landowner conflicts. The group did not include the range of representative

Commission Directive

"…Analyze and provide recommendations on beaver management in the context of climate change, habitat, benefits to fish and other species, and water flow, retention and temperature, in close collaboration with the Commission on this issue and use the newly-formed beaver management workgroup as a key part of the public engagement on this issue." – November 2020 OFW Commission Meeting

Mission

"The Beaver Management Work Group will develop recommendations to the Oregon Department of Fish and Wildlife Commission to consider regarding ODFW policies, practices, and programs relating to beaver management on federally managed public lands in Oregon."

Scope of Authority

"The Work Group will assess current and historical approaches by the ODFW for beaver management on federally managed public land within the agency's scope of authority. The Work Group may include consideration of other local, state, and federal agencies as well as NGO's programs and policies and current and relevant best available science, as they relate to greater coordination, communication, and potential partnerships as they develop recommendations for the Commission."

perspectives across all private landowners to have a comprehensive conversation about impacts to private lands. Private landowners need to be able to manage damage on private lands and are concerned about limitations to their ability to do that. Discussion of beaver management on private lands needs to be done with the appropriate representation from private landowners.

D. Value Statement and Key Question

The BMWG discussed how beaver modified floodplain landscapes, primarily through dam building, have been demonstrated to be more resilient to the impacts of climate change due to the creation of wet meadows contributing to water storage, groundwater recharge, and increased water availability. Beavers have a unique ability to modify their habitat to suit their needs which can provide benefits to other wildlife, fish, and humans. The BMWG recognized that supporting habitat for beavers and increasing beaver population on federally managed public lands can be beneficial to humans and other wildlife through improved ecosystem services, increased economic benefits,[3] increased climate resilience, and enhanced biodiversity conservation benefits. The BMWG shared an appreciation for the intrinsic value of beavers.

Value Statement

"We recognize that beaver inhabited floodplains can have positive benefits for the people, fish, and wildlife of Oregon."

The BMWG discussed that beavers' impacts on the landscape are not all positive all the time for everyone. Members of the group cautioned an increased beaver population does not necessarily equate to increased dam building or all positive landscape benefits since beavers do not always build dams. Without the use of damage mitigation and coexistence strategies, an increased beaver population can create issues of road flooding, crop damage for neighboring landowners, clogged culverts, and debris flows downstream. In addition, beavers can create burrows undermining stream banks and levees. Property damage and agricultural impacts are the primary reason beavers carry a "predatory animal" statutory classification[4] on private lands in Oregon allowing for beaver take for damage control. Despite these potential negative impacts, Oregon landowners generally appreciate the positive benefits that come from beavers.[5]

Through discussion, the BMWG developed and agreed to the following Value Statement: We recognize that beaver inhabited floodplains can have positive benefits for the people, fish, and wildlife of Oregon.

In addition to the value statement, the BMWG outlined the following key question: If beaver modified floodplain landscapes are not as prevalent on federally managed land as they could be, why? And what can we or should we do to address this?

[3] Economic Benefits of Beaver information provided to the BMWG
[4] ORS 610.002
[5] Needham, M. D., & Morzillo, A. T. (2011). Landowner incentives and tolerances for managing beaver impacts in Oregon. Final project report for Oregon Department of Fish and Wildlife (ODFW) and Oregon Watershed Enhancement Board (OWEB). Corvallis, OR: Oregon State University, Department of Forest Ecosystems and Society.

III. Background

Context

Oregon is experiencing the impacts of a changing climate. Impacts include increases in water temperatures, increases in the frequency and intensity of wildfires, changes in the timing and quantity of available freshwater, and increases in non-native invasive species and diseases, among others.[6] At the same time, biodiversity loss threatens the health of the planet and human well-being.[7] The effects of climate change and the biodiversity crisis mean further strain on natural ecosystems and the ecological services they provide.[8]

Water scarcity in Oregon is a major challenge for people and the environment. Longstanding drought and extreme wildfires have put immense stress on all landscapes.[9] Conflicts escalated in the Klamath basin between tribal nations and farmers because of limitations of water for salmon and agriculture in 2021.[10] Decreased winter snowpacks and earlier springtime snowmelt decrease the available water in the streams for wildlife and agriculture. Warmer water temperatures, drier conditions, disconnected floodplains, and depleting groundwater storage negatively impact fish populations.

In Oregon, incision and drainage have further impacted the hydrologic cycle. Land-use and management activities have both increased erosion rates and increased sediment transport rates. The net effect is disconnected floodplains, loss of early-seral riparian habitats, more fire-prone landscapes, stream incision, water table lowering, and sediment accumulation in the estuaries.[11]

During the 1800s, the beaver population was dramatically reduced through unregulated, market-driven trapping to meet the demand of European and Eastern Americans for fur.[12] Following the establishment of state wildlife agencies and professional wildlife management, beavers have recovered to some degree throughout their range.[13] There are differing estimates for historic populations[14] and no agreed-upon way to estimate current beaver populations.[15]

Role of Beaver

Research has shown that beaver modified floodplain landscapes create conditions that can improve resiliency to climate change and support high levels of biodiversity. With food and resource habitat components required by beaver, the species can modify landscapes that improve water retention, improve water quality, increase carbon storage, increase wildfire resilience, and support biological diversity.

---

[6] 2021 Climate Change Adaptation Framework
[7] The Post-2020 Global Biodiversity Framework
[8] Potential Climate-Related Economic Costs to Oregonians information provided to the Beaver Management Work Group
[9] OPB article on Climate Change and Drought in Oregon
[10] WBUR article on Water Crisis in the Klamath River Basin
[11] Michael Pollock presentation to the Beaver Management Work Group
[12] ODFW's Beaver Factsheet
[13] ODFW's Beaver Factsheet
[14] Jimmy Taylor presentation to the Beaver Management Work Group
[15] 2020 Furbearer Regulation Presentation

Scientific studies have documented that beaver modified floodplain landscapes can:

- Improve water retention and quality for aquatic systems, as well as neighboring agricultural land users. [16]
- Increase subsurface water storage through connecting streams to floodplains causing increases in summer water flows and cooler stream temperatures.
- Increase carbon sequestration through restoring wetland and riparian vegetation.[17]
- Create wetlands and ponds that can act as firebreaks and provide refugia for wildlife and livestock and contribute to the resiliency of landscapes to fire.[18]
- Support high levels of biological diversity through the creation of complex aquatic, riparian, and wetland habitats important to many terrestrial and aquatic Oregon Strategy Species. [19]
- Increase important habitat through the creation of beaver ponds and alcoves for Coho and other salmonid species.[20]

Beaver modified floodplain landscapes can be beneficial to a wide array of terrestrial and aquatic species. Beavers are known as ecosystem engineers and are considered a keystone species. Beavers are managed through the Furbearer program in the Wildlife Division. Adaptation to address managing beavers and habitat for beavers to include broader considerations of the conservation, social, and economic benefits of beaver modified floodplain landscapes is a key consideration of the Beaver Working Group report. ODFW has policies and mandates in place to support adjustments in the management of beaver and beaver habitat. Examples of these policies include:

- ODFW is required to implement the coequals of wildlife management including, "To make decisions that affect wildlife resources of the state for the benefit of the wildlife resources and to make decisions that allow for the best social, economic and recreational utilization of wildlife resources by all user groups" (see call-out box for complete ORS 496.012).
- The Oregon Plan for Salmon and Watersheds encourages the protection of beaver ponds[21] (2012).
- The mission statement of ODFW (last reviewed and updated in 2015) is:
  "To protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations." Agency Principles include, "Develop effective relationships based on trust and confidence," and "Provide proactive and solution-based fish and wildlife management based on sound science."

---

[16] Pollock, M.M., G.M. Lewallen, K. Woodruff, C.E. Jordan and J.M. Castro (Editors) 2017. The Beaver Restoration Guidebook: Working with Beaver to Restore Streams, Wetlands, and Floodplains. Version 2.0. United States Fish and Wildlife Service, Portland, Oregon. 219 pp.

[17] Jimmy Taylor presentation to the Beaver Management Work Group

[18] Brett Roper presentation to the Beaver Management Work Group

[19] 2020 Furbearer Regulation Presentation

[20] Pollock, M.M., G.M. Lewallen, K. Woodruff, C.E. Jordan and J.M. Castro (Editors) 2017. The Beaver Restoration Guidebook: Working with Beaver to Restore Streams, Wetlands, and Floodplains. Version 2.0. United States Fish and Wildlife Service, Portland, Oregon. 219 pp. and 2020 Furbearer Regulation Presentation

[21] Anlauf-Dunn, K.J. and K.K. Jones. 2012. Stream Habitat Conditions in Western Oregon, 2006-2010. OPSW-ODFW-2012-5, Oregon Department of Fish and Wildlife, Salem.

- The National Oceanic and Atmospheric Administration (NOAA) Fisheries' Oregon Coast Coho Recovery Plan (2016) supports, "a combination of voluntary and regulatory mechanisms [to]… change beaver management to allow beavers to build more dams in Oregon Coast coho rearing habitat."[22]
- The Requirements for Relocation of Beaver in Oregon (2017) describes, "the requirements and process within Oregon for relocating beaver on public and private lands." [23]
- A signed memorandum of understanding between ODFW and the United States Fish and Wildlife Service (USFWS) (2018) supports coordination with partners, "to support the conservation and ecological recovery of beaver within their native range." [24]
- The ODFW Ocean and Climate Change Policy (2020) guides ODFW to lead; "This leadership will focus on providing good science, implementing appropriate stewardship actions, enhancing cross-agency coordination of natural resource management to achieve a balanced climate adaptation response…" and, "Provide leadership toward a coordinated statewide and regional response that minimizes the impacts of changing climate and ocean conditions on Oregon's natural resources and the communities, culture and economies reliant on them, and allows for sustainable use of natural resources in the future." [25]
- The newly formed Habitat Division (2021) within ODFW will result in an increased focus on habitat management and thus strengthening the perspective of species management by the Fish and Wildlife Divisions.
- The Climate Change Adaptation Framework (2021) further directs state agencies to, "expand and restore riparian buffers and stream channel wetlands where needed to improve riparian function and water quality, increase stream flow, reduce flood damage, and provide habitat for fish and wildlife. Restore watershed health, resiliency, and capacity for natural water storage. Focus conservation and restoration on upper watersheds, which are key to protecting water quantity and quality throughout a watershed." [26]

ORS 496.012:

It is the policy of the State of Oregon that wildlife shall be managed to prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits for present and future generations of the citizens of this state. In furtherance of this policy, the State Fish and Wildlife Commission shall represent the public interest of the State of Oregon and implement the following coequal goals of wildlife management:

(1) To maintain all species of wildlife at optimum levels.

(2) To develop and manage the lands and waters of this state in a manner that will enhance the production and public enjoyment of wildlife.

(3) To permit an orderly and equitable utilization of available wildlife.

(4) To develop and maintain public access to the lands and waters of the state and the wildlife resources thereon.

(5) To regulate wildlife populations and the public enjoyment of wildlife in a manner that is compatible with primary uses of the lands and waters of the state.

(6) To provide optimum recreational benefits.

(7) To make decisions that affect wildlife resources of the state for the benefit of the wildlife resources and to make decisions that allow for the best social, economic and recreational utilization of wildlife resources by all user groups. [1973 c.723 §6; 1993 c.659 §2; 2001 c.762 §6]

[22] NMFS (National Marine Fisheries Service). 2016. Recovery Plan for Oregon Coast Coho Salmon Evolutionarily Significant Unit. National Marine Fisheries Service, West Coast Region, Portland, Oregon

[23] Relocation of Beaver in Oregon

[24] Oregon Department of Fish and Wildlife/US Fish and Wildlife Service. 2018. Joint Memorandum of Understanding on "Beaver Management in Oregon". June 25, 2018.

[25] ODFW Ocean and Climate Change Policy

[26] 2021 Climate Change Adaptation Framework

The management of beaver modified floodplain landscapes is not always solely within ODFW's authority. Managing landscapes across jurisdictions requires close coordination and collaboration with land managers. The BMWG recognizes the need for increased collaboration with state, federal, and NGO partners (see "Collaboration" in the Guiding Principles section below).

The BMWG recognizes ODFW's primary responsibility for species management is to "prevent serious depletion of any indigenous species and to provide the optimum recreational and aesthetic benefits for present and future generations of the citizens of this state."[27] To meet this requirement, the Commission is charged with representing the public interest, and implementing the seven coequal management objectives. The BMWG offers the following recommendations to provide a greater understanding of beaver populations and habitat resource components to support beaver populations and develop management approaches consistent with the guidance outlined above.

Given the growing understanding of the role of beaver and beaver modified floodplain landscapes regarding watershed-wide ecological, social, recreational, and economic factors and goals, the current management and monitoring practices could be improved to achieve the relatively new statutory and policy obligations the department faces regarding beaver. Current management could be improved by:

- Better understanding beaver populations: scientists and wildlife managers do not have a comprehensive understanding of the beaver population in Oregon nor is there an agreed-upon method to model beaver populations.[28]
- Collecting and analyzing furtaker harvest data at a finer geographic scale beyond the current county-scale summaries.
- Considering economic and non-harvest recreational goals.

The BMWG sees an opportunity to collect more information and at a more meaningful geographic scale to better understand the beaver population, habitat resource needs for the species, and dam building behaviors that create beaver modified floodplain landscapes and urges the consideration of additional research and resources to fund these data and knowledge gaps related to beaver management in the state of Oregon.

Limiting factors that impact beaver modified floodplain landscapes vary across the state. The BMWG supports ODFW to further research the limiting factors to understand the impacts of different management strategies. The BMWG recognizes that ODFW can take action now to implement and examine large-scale beaver management strategies that would potentially benefit the creation and maintenance of beaver modified floodplains on federally managed public lands using an adaptive management framework. The Fish and Wildlife Cooperative Research Unit at Oregon State University (OSU) is internationally recognized as a leader in structured decision making for natural resource management and exists to support expanding the State's management capacity. ODFW currently collaborates with the OSU Fish and Wildlife Cooperative, and should continue to leverage this opportunity.

[27] ORS 496.012

[28] 2020 Furbearer Regulation Presentation

To support the long-term prioritization of restoring beaver modified floodplain landscapes, the identification and categorization of species and habitats can help to support initiatives and direct investment for ODFW, state agencies, and federal agencies as well as non-profit partners.

Currently, the Conservation Strategy Species categorization[29] focuses on sensitive and data gap species with the proactive intent to prevent future threatened and endangered species listings. The goals of the Conservation Strategy are to maintain healthy fish and wildlife populations by maintaining and restoring functioning habitats, preventing declines of at-risk species, and reversing declines in these resources where possible. Beavers are widely distributed and abundant, and have the ability to modify two identified strategy habitats for other more vulnerable species, which is key to securing and prioritizing funding to support beaver habitat restoration projects. Beaver modified floodplains can provide improved habitat conditions for 50+ Oregon Conservation Strategy Species including ESA-listed fish.[30] ODFW has an opportunity to explore a different categorization for beaver or beaver modified floodplains to support directing and prioritizing beaver habitat restoration efforts.

Beaver modified floodplain landscapes can provide benefits for the people and wildlife of Oregon, however, as with any structural habitat modification, there is potential for both positive and negative outcomes. Changes to habitat can provide benefits to some wildlife species and create negative consequences in other situations. Modification of floodplains can impact infrastructure on public land affecting access and management and influencing downstream habitats and landowners. Beavers can also have negative impacts on private and other public lands. Clearly communicating about the roles of beavers and how to address beaver-caused damage can further support human-beaver coexistence. Providing education and supporting efforts for non-lethal or appropriate methods to address damage could be beneficial. ODFW can use its position as the interface with the state's outdoor recreation community (such as working with the Oregon Conservation and Recreation Fund committee) to provide accurate policy, statutory, and educational information on beaver populations and behavior.

Collaboration and transparency are key to implementing any recommendations. Since the recommendations included in this report focus on federally managed public lands, there is an added emphasis on opportunities for how ODFW can collaborate with federal agencies outlined below. On federally managed public lands, federal agencies are responsible for managing the habitat. ODFW is responsible for managing the wildlife species. The recommendations to increase beaver modified floodplain landscapes on federal lands span both jurisdictions and therefore will be significantly more effective if implemented collaboratively. Federal agencies are sensitive about directing the state's management, and state agencies find it challenging to direct priorities specific to the state's needs. However, existing memorandum of understandings (MOUs) and overlapping shared goals have resulted in both state and federal entities voicing support to the BMWG for increasing strategic collaboration efforts regarding maximizing beaver modified floodplains.

IV. Objectives

The focus of this report is on maximizing beaver modified floodplain landscapes on federally managed public lands for the benefit of all Oregonians in response to the ODFW Commission's directive "to

[29] Oregon Conservation Strategy

[30] 2020 Furbearer Regulation Presentation

analyze and provide recommendations on beaver management in the context of climate change, habitat, benefits to fish and other species, and water flow, retention, and temperature, in close collaboration with the ODFW Commission on this issue and use the newly-formed beaver management workgroup as a key part of the public engagement on this issue."

This BMWG report is about addressing the suite of management options available to look holistically at beaver and beaver habitat management on federally managed public lands. As such, the report does not focus solely on issues relating to trapping including trapping closures or maintaining the ability to trap. In addition, the report does not propose "doing nothing", or making no changes to current beaver management, while waiting for additional data to be collected. The BMWG has identified critical objectives to improve the management of beaver and beaver habitat as quickly as possible. The recommendations include the use of various management tools within the existing regulatory frameworks to meet those objectives. The BMWG outlines the following objectives for the recommendations:

- Maximize beaver modified floodplain landscapes and ecosystem benefits on federally managed public lands.
- Improve the scale and breadth of data collection to provide for informed management responsiveness.
- Refine the targeting of management practices through monitoring and research to continue to increase their ability to identify and address limiting factors.
- Communicate benefits and opportunities, as well as appropriate regulatory and policy parameters to the public.

V. Guiding Principles

The BMWG identified two overarching principles to address in all management scenarios: **collaboration and informed adaptive management.**

Collaboration

The BMWG supports ODFW in its responsibility to initiate and lead greater collaboration with federal land managers and others to achieve the objectives outlined in this report.

Collaboration is needed across land management and differing jurisdictions. ODFW is directed through the Climate Policy to act as a leader for collaboration across entities to engage diverse expertise, and capacity with federal land managers, non-profits, universities, and other agencies to 1) delegate tasks, 2) fulfill their obligation to act as a state leader in wildlife and habitat issues, and 3) increase transparency and data sharing to build support and understanding for management approaches by relevant and concerned interest groups. Collaboration is the key to addressing ODFW limits of authority, funding, and capacity.

Since beaver will move on and off federally managed public lands, it is important that ODFW work closely with adjacent landowners or managers to provide information about the potential benefits and co-existence strategies to address risks resulting from beavers on adjacent lands.

Adaptive Management

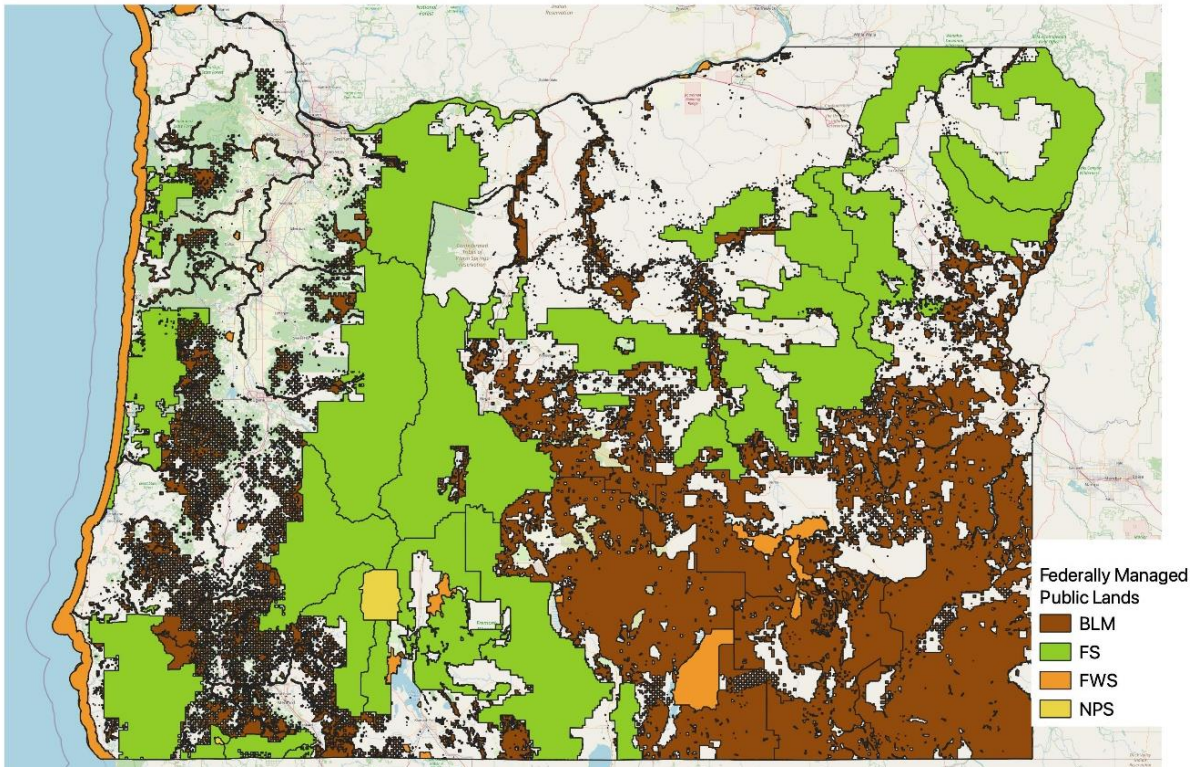
The BMWG supports ODFW to utilize an adaptive approach for the management recommendations outlined below. ODFW should make changes to management, monitor effects at appropriate temporal and spatial scales to determine the efficacy of the changes, and actively alter management in response to the impacts.

For all the following recommendations, ODFW should undertake wildlife management with a forward-looking approach that allows for nimble adaptive measures in the context of climate change and quickly changing conditions. Such a forward-looking approach requires the implementation of management changes now, to put in motion ecological processes better able to handle future risks and conditions and maximize benefits for all Oregonians. Beavers can help address climate change impacts through their ability to modify landscapes that benefit themselves and other species. ODFW and its Commission should continue to use the department's policies including a precautionary approach to beaver and habitat management while gathering more robust data and research. Such an approach would favor the implementation of actions to advance conservation goals if outcomes are uncertain, while also supporting gathering more robust data.

VI. Recommendations

A. Management of Beaver Modified Floodplain Landscapes

The BMWG recommends that ODFW expand its management focus on beavers and beaver habitats to maximize the beneficial impacts of beaver modified floodplain landscapes on federal lands. The BMWG recognizes that not all areas benefit from increased beaver presence and recommends ODFW account



Federally Managed Public Lands in Oregon; Sources: USGS and Open Street Map

for the potential negative impacts of beavers on the landscape, resulting from the presence of infrastructure on historically modified beaver floodplains. The BMWG recognizes that ODFW has limited capacity for data collection to inform management actions that include habitat and landscape-level considerations. However, collaborative data collection opportunities exist to assist expanding their management focus and data collection strategies. To accomplish this, the BMWG recommends the following strategies below to accompany direct management actions.

Develop Priority Areas

The BMWG recommends that ODFW work with federal partners, academic researchers, and other beaver restoration practitioners to identify the appropriate landscape analysis tools to prioritize areas for basic beaver habitat resources to allow for more modified floodplains and connected floodplains on federally managed public lands. To determine the priority areas, ODFW should collaboratively develop criteria based on the potential for net benefits: where cost/benefit is assessed considering the full suite of ODFW management obligations and informed by the likelihood of success and potential risks. Such analysis must not just weigh the holistic costs of actions or inactions based on current conditions, but also on future conditions and needs.

The BMWG recommends that ODFW continuously assess streams and river reaches to determine their potential to support beaver modified floodplain landscapes and work with federal partners and others to identify areas for beaver habitat investments. ODFW should engage additional external scientific expertise on an ongoing basis to ensure the best and most appropriate models are used. Suitable and intrinsic habitat on federally managed public lands can be determined using existing models. According to the 2020 Furbearer Regulation Presentation, ODFW currently supports protecting beaver ponds through restoration coordination and considers intrinsic potential. The BMWG recommends that ODFW increase internal collaboration to accomplish shared goals.

Priority Area Criteria and Considerations

The BMWG recommends that ODFW develop criteria for identifying priority areas through engaging additional external scientific expertise and coordinating with federal partners. ODFW should work with OSU and the U.S. Geological Survey Cooperative or ODFW Research Division to define the appropriate metrics of success for the management of floodplains by beaver. When identifying priority areas, factors such as the following should be considered:

- Basic habitat resource needs for beaver,
- Extent of beaver habitat modification expected based on intrinsic habitat potential,
- Appropriate slope, valley confinement, and vegetation for dam building behavior,
- Critical fish habitat,
- Oregon Conservation Strategy Species,
- Oregon Conservation Strategy Conservation Opportunity Areas (COAs),
- Overlap with Oregon Coastal Coho Recovery plans,
- Overlap with Watershed Council Plans, and
- Overlap with Critical Environmental Concern or Wild and Scenic Rivers.

Management Approaches

The BMWG recognizes that ODFW has sufficient justification to take immediate and direct actions to maximize beaver modified floodplain landscapes in priority areas on federally managed public lands and

to be the leader in ensuring that collaborative, concurrent monitoring is undertaken to understand the impacts of these management actions.

Management decisions to help achieve the objectives could include:

- Address the habitat needs for beaver by working with federal partners to:
    - Support riparian habitat restoration that has the specific aim of enabling beaver to manage floodplains such as:
        - Facilitate restoration,[31] permitting, and planning for beaver restoration,
        - Engage with habitat assessment processes to establish criteria, and
        - Engage with permittees to help meet objectives in priority areas.
- Support ongoing work to move beaver from private lands to unoccupied suitable beaver habitat in priority areas to establish beneficial beaver presence.
- Assess modifications to the hunting and trapping regulations to meet objectives within priority areas including:
    - Changing the method, magnitude, location, and season of take.
    - Setting bag limits and/or allowing for take only where beaver density is high.
    - Closing areas to harvest where beavers are being translocated onto federal land, where habitat restoration action is occurring and where beaver are either effectively managing floodplains and their gains need to be supported, or where beaver are not adequately managing floodplains, and their recovery and improvement need to be supported.
    - Identifying the specific geographic area and duration of closures.
- Work with trappers to determine how trappers could assist to meet objectives in priority areas.

Photo: Beaver Modified Riparian Habitat, Photo credit: Greg Shine

[31] Restoration should consider the optimal native plants for beaver habitat and water storage.

Monitor for Effectiveness

The BMWG recommends that ODFW take the lead in working with state and federal land managers to develop standardized data collection methods and metrics to ensure collaboration on monitoring with partnering agencies and organizations. Developing consistent collection protocols are critical for allowing multiple agencies to contribute to monitoring efforts in a consistent, repeatable fashion that will allow for valid comparisons and analyses across landscapes and management actions. Such replicable analyses are fundamental to providing an increased understanding of the population and landscape impacts of beaver modified floodplain landscapes over time.

Examples of metrics could include:

- Area and quality of floodplain habitat as indicated by vegetation productivity (e.g., Normalized Difference Vegetation Index) or vegetation diversity (e.g., native plant community),
- Habitat modification appropriate to meet target species requirements (Oregon Conservation Strategy species),
- Population numbers, colony sizes, recruitment, etc., and
- Dam building activity (including tracking the number of dam.

Beavers do not always build dams in seemingly suitable and unoccupied areas for a variety of reasons. Reasons may include decreases in the food supply, invasion of less edible species (e.g., conifers, reed canary grass, or alder), increased predator populations or vulnerability to predators, other physical constraints such as excessive unit stream power/incision, or unsuitable bank materials or loss of legacy beaver "infrastructure", disease, or a combination of factors. In addition, not all beavers build dams, and some dams are ephemeral. Beaver dam life expectancy varies depending upon the environmental conditions, land management practices, and watershed characteristics. – Michael Pollock, Presentation to Beaver Management Work Group

Periodic Review

The BMWG recommends that ODFW identify appropriate timeframes, for example, every 3-5 years, to conduct a periodic review at a watershed scale that is ecologically meaningful and to refine management actions to increase beaver modified floodplain landscapes on federally managed public land.

Program Management

The BMWG recommends continued investment to increase capacity, resources, and infrastructure within ODFW, particularly regarding the implementation of the recommendations contained in this report. The BMWG recognizes the need for expanding ODFW staff capacity and encourages ODFW to collaborate with a variety of partners to identify and increase funding and beaver-related coordination between the Fish, Habitat, and Wildlife Divisions within ODFW and across other state agencies, with federal partners, and other entities. The BMWG understands that beavers don't recognize land ownership/management boundaries and ODFW management actions in partnership with federal agencies on federally managed land may have positive and negative impacts to private and other lands.

The BMWG recommends the creation of a standing Advisory Group, with membership approved by the Commission, to help guide the implementation of these recommendations and the creation of a Beaver Modified Floodplain Landscape Management Plan. The Advisory Group should include scientific experts (ecologists, hydrologists, biologists, etc.), and state and federal agency partners. ODFW should also

engage the Fish and Wildlife Cooperative at Oregon State University or the Oregon Beaver Forum (former Beaver Work Group) to provide further science support for management.

The BMWG recommends that ODFW engage with multiple project scale beaver work groups that currently exist across the state to help achieve the objectives outlined in this report.

B. Improvement in Data Collection and Management Responsiveness

Harvest reporting

The BMWG recommends that ODFW improve harvest reporting criteria for data collection on beaver populations. ODFW should adjust the geographic scale of harvest reporting to match beaver population dispersal scale and modify the geographic scale, sex, and age reporting accordingly to better and more clearly inform population and demographic questions useful for refining and directing management. The Harvest Reporting cards would be utilized by furbearer trappers when they obtain a trapping license from ODFW.

Suggested furbearer reporting changes could include the following:

- Reporting the date the beaver was taken
- Gathering data at a finer spatial unit than at the county level, such as at the unit scale developed in the improved management framework
- Indicating the habitat type (e.g., tributary/dam-pond-complex/river/lake)
- Recording the number of individuals taken
- Land ownership field (state, Forest Service (FS), Bureau of Land Management (BLM), or private lands for furbearer take)
- Sex information to further understand male to female ratios
- Measurement (total length or weight)
- Voluntary submission of molar samples to further understand population age structure
- Voluntary reporting for predatory animal trapping.

Beaver Monitoring

The BMWG recommends that ODFW improve and strengthen stream and habitat surveys and reporting structures to specifically and consistently document beaver activities in a way that allows valid assessment of management changes using consistent and standardized survey protocols.

ODFW should also engage with external groups to identify additional methods for monitoring beaver populations and dams in representative watersheds through recreational and environmental organizations and universities.

Understanding impacts of trapping and hunting closures on the population and ecosystem health

The BMWG recommends that ODFW work with federal partners to collaboratively assess the impacts of the various scales of existing closures on federally managed lands in light of other concurrent conditions and management actions. Currently, there are 16 harvest closures on federally managed public lands that have been in place for 30 years or more.[32] Closures range from entire forests within county boundaries, to specific watersheds, to discrete streams. The closures have not been scientifically evaluated to understand the effects of the closures. It is important for the state and federal agencies to work together and monitor areas currently closed to harvest to understand how beaver populations and

[32] Federal Partners presentation to the Beaver Management Work Group

riparian landscapes have changed. It is critical for ODFW to work with federal partners to evaluate areas where changes in trapping regulations may be beneficial for beaver as well as to meet shared land management objectives. Federal land managers are responsible for monitoring the habitat quality trends, and the state is responsible for monitoring the beaver population status. It is important for the state and federal agencies to work together and monitor areas closed to trapping to understand how beaver populations and riparian landscapes have been impacted.

C. Understanding and Implementing Best Management Practices Through Monitoring and Researching Limiting Factors

"Limiting factors" are those which have a substantial enough impact on beavers to limit their population or impair their ability to manage floodplains on a temporal, spatial, or qualitative scale in line with desired management objectives. In the case of beaver management recommendations, "limiting factors" also refers specifically to those factors that can be changed: not static intrinsic landscape features such as geography. All limiting factors must be identified and addressed to achieve desired outcomes. Removing only one barrier will not achieve desired outcomes if others are still present; however, actions can be prioritized by addressing the most significant limiting factor first. The ability to address any limiting factors should be used as justification to collaborate and inspire the removal of other limiting factors.

Photo: Beaver Translocation, Ochoco National Forest, 1936. Photo credit: USFS

The BMWG recommends that ODFW identify and assess limiting factors to inform management actions. Limiting factors for beaver presence at a given location may include such things as habitat condition and availability,[33] stream incision, disease, harvest/take, and predation. Research could be done to compare landscapes across the state, conduct stream restoration activities with or without trapping, study impacts of predation or disease management programs, or study other management options. Research partners could include federal agencies such as the U.S. Geological Survey, academic institutions, wildlife organizations, and other non-governmental organizations.

D. Oregon Conservation Strategy

The BMWG identified the need to explore the role of beaver and beaver created habitats within the Oregon Conservation Strategy to help leverage funding and prioritize beaver restoration projects for ODFW, state and federal agencies, and other partners. The BMWG identified that potentially listing beaver and/or beaver modified floodplain landscape habitats in a new designation under the Oregon Conservation Strategy could help leverage funds and resources; however, the group did not discuss the possibility in greater detail and recognized there are concerns and considerations that need greater exploration with stakeholders.

Within the Oregon Conservation Strategy, ODFW should assess the feasibility of:

- Listing "beaver modified floodplains" as a Strategy Habitat,
- Listing beaver as a Data Gap Species, and

[33] Oregon Conservation Strategy Riparian Habitats and Flowing Water and Oregon Conservation Strategy Wetlands

- Exploring ways for beaver to help implement the Oregon Conservation Strategy since beaver create habitats utilized by strategy species.

An opportunity exists for adopting changes relating to designations in the Conservation Strategy in preparation for the documents review in 2023.

E. Federal and State Collaboration

The BMWG recommends that ODFW and FS, BLM, USFWS, NOAA Fisheries, and other appropriate federal agencies as well as relevant county/local governments collaborate to develop a road map for implementing these recommendations on federally managed public lands.

The focus of the BMWG is on federally managed lands with the potential to benefit from beaver modified floodplain landscapes. There are many opportunities to strengthen the working relationship between ODFW and federal agencies to identify shared goals and address common issues that are beneficial to increase beaver modified floodplain landscapes including but not limited to:

- Collaborate to identify priority areas (see page 13)
- Identify the role of beaver and beaver modified floodplain landscapes to address the shared goals across agencies of improving watershed condition, riparian restoration, and improved aquatic function to benefit ESA-listed species and identified Threatened and Endangered species and Species of Special Concern.
- Identify the interagency role and designation of beavers across state and federal agencies.
- Address the importance of beaver modified floodplain landscapes in ODFW comments on forest plan revisions with federal agencies including consideration of beaver as a Focal Species, Management Indicator species, and/or Species of Special Concern.
- Strengthen the state's Conservation Strategy as it relates to beaver and beaver modified floodplain landscapes including consideration of beaver as a Conservation Strategy Species and beaver modified floodplain landscape habitats as a priority habitat.
- Use Good Neighbor Authority to build capacity to address shared goals including data collection to inform habitat restoration work and projects that increase habitat suitability to increase the potential for beaver colonization of unoccupied areas for habitat restoration.
- Consider working with the Oregon Department of Forestry to include beaver habitat restoration work in their Good Neighbor Authority timber sale implementation on Forest Service lands and including beaver habitat restoration as part of their risk reduction project planning on Forest Service lands.
- Recognize the role of beaver modified floodplain landscapes in actions to address climate change.
- Understand the role beaver and beaver modified floodplain landscapes could have in overall landscape health and resiliency to climate change including fire resiliency, water retention, and resiliency to insect infestation.
- Continue to strengthen project scale coordination and collaboration including beaver habitat restoration and beaver relocation.
- Consider the impact on beaver habitat and look for opportunities to improve beaver habitat at the project scale across agencies.
- Identify shared stewardship goals including the nexus of key state and federal priorities and how they benefit beaver and beaver modified floodplain landscapes.
- Identify priority landscapes for wildfire risk reduction[34] where collaborative beaver habitat management could improve conditions.
- Improve coordination and collaboration across state, county, and local government agencies to meet shared goals and identify opportunities for investment.

[34] Brett Roper presentation to the Beaver Management Work Group

Beavers are large, semiaquatic rodents. The two existing species are the North American beaver (*Castor canadensis*) and the Eurasian beaver (*C. fiber*). Beavers spend most of their time in aquatic habitats, especially when they have access to forage from the water. On land, beavers are slower and more susceptible to predation. Their bodies are adapted to aquatic life more so than land; they can hold their breath for long periods, their nostrils and ears have valves that close underwater, and a membrane covers and protects their eyes underwater.

Beavers are a relatively long-lived rodent and can reproduce through the age of 18. Beavers are social animals and live in family units or "colonies". A typical colony is comprised of two adults, two sub-adults, and two young. In some instances, the range of individuals in a colony can be anywhere from a single individual to as many as 18 beavers in a colony (called "super colonies"); the range depends on density-dependent factors. Beavers are territorial and socially monogamous.

Beaver home ranges are wide and are affected by many factors. For example, beavers occupying a river will have more linear home ranges and a series of connected wetlands will have less linear home ranges. The average home range is approximately 1.5km. Dispersal of sub-adults generally occurs with the birth of kits and/or high runoff and is assumed to be density dependent. Movement can also occur when there are changes to habitat conditions such as impacts to water, a reduced forage base, and when an individual loses a mate and must look for a new one.

There is significant variation in population density and studies have shown that colonies/km^2 range from near 0 to 4.6 (Hill 1982, Novack 1987). Many factors affect population density such as trapping, water quality, habitat suitability, areas available for new colonization, length of habitation time relative to available resources, episodic diseases, local predation events, and territoriality. When evaluating changes in beaver populations, there are intrinsic and extrinsic factors to consider. – *Jimmy Taylor, Presentation to the Beaver Management Work Group*

Photo: Beaver Dam, Ochoco National Forest, 1935. Photo credit: USFS

F. Communication, Outreach, and Education

Photo: Pond levelers and flow devices can help land managers coexist with beavers. Photo credit: Randy Comeleo

The BMWG identified areas of ODFW's webpage and literature that could more clearly communicate and share information about the value of beaver modified floodplain landscapes and protections for beaver.

Communications

The current ODFW "Living with Wildlife: American Beaver" document is out of date and contains confusing language around the designation of beaver as a predatory animal on grazing leases on public lands. Recommended re-wording of the statutory description of beavers' designation provided in ODFW documentation is provided below.

The BMWG recommends that ODFW update the "Living with Wildlife: American Beaver" document with accurate and up-to-date information including clarifying the classification of beaver on federal land to read, "Beaver is classified as a furbearer and is only classified as a predatory animal on private lands. On public lands (including public land used under grazing lease or permit), take requires a furtaker permit." This clearer description of the existing legal classification of beaver should be mirrored in all regulatory and public documents.

Furthermore, the ODFW website has multiple interfaces for the public to locate information about managing beavers and could be updated to better communicate the broader ecological, recreational and aesthetic importance of beaver modified floodplains to beaver, wildlife, and the public.

Education and Outreach

The BMWG recommends that ODFW continue to work with others to engage in educational campaigns to publicize the benefits of beaver modified floodplains, the potential negative impacts of beavers on landowners, the connection of beaver with watershed health, and clarification of regulations and classifications regarding beaver hunting and trapping on federally managed public land. Education should also include information about methods for mitigating or avoiding potential damage to infrastructure or natural resources on historic beaver modified floodplain landscapes.

In the 2018 USFWS/ODFW MOU, it was outlined that ODFW should, "provide education and outreach to landowners on the role of beavers in restoring waterways and diverse ecosystems, the potential benefit of beavers for land and water management, and options for beaver management." ODFW should share information with private landowners adjacent to public lands on how they can reduce beaver impacts and coexist with beavers. ODFW is encouraged through the USFWS/ODFW MOU to continue to communicate regarding tools and assistance to landowners such as the Riparian Lands Tax Incentive Program, The Conservation Reserve Enhancement Program, USFWS Partners for Fish and Wildlife and Coastal Program, as well as property protection measures such as "pond levelers," "beaver deceivers," fencing, and other exclusion methods. The BMWG recommends that ODFW increase these efforts, particularly in coordination with adjacent landowners/land managers to federally managed public lands.

VII. Additional Issues Raised Without Recommendations from the BMWG

The following are issues raised in work group meetings that did not have full work group support to move forward as consensus recommendations:

- Trapping closures/limitations addressed either more or less than currently outlined in the report
- Disagreement about available data connecting negative impacts of trapping to Oregon's beaver population.
- Conflicting or lack of scientific data and research showing that reducing beaver hunting and trapping in Oregon would increase beaver populations and/or the number of beaver modified floodplains in Oregon.
- Lack of data to show trapping/hunting as a major contributor to beaver mortality as opposed to natural predation and disease.
- The broad range of limiting factors or contributors to mortality of beaver has not been adequately discussed, identified, or represented.
- Whether hunting and trapping of beavers on federally managed public land for fur and recreation adequately considers the inherent value of beaver and/or concerns for animal welfare.
- Humane treatment of animals and animal welfare considerations should inform beaver management.
- Which ODFW division/program is most appropriate to manage beaver.
- The appropriate category and/or special status of beaver.
- Greater coordination with private landowners to better understand beaver population dynamics that impact beaver modified floodplain landscapes on federally managed public lands.
- Coordination with private animal damage control operators to report lethal removal reporting and to identify potential areas where translocation could be used to reduce conflict.
- The damaging effects beavers can cause on the landscape were not adequately addressed.

VIII. Appendix I. Charter, schedule, and information about the meetings

Oregon Department of Fish and Wildlife Commission

Beaver Management Work Group

Charter

Mission/Purpose

The Beaver Management Work Group will develop recommendations to the Oregon Department of Fish and Wildlife Commission to consider regarding ODFW policies[35], practices, and programs relating to beaver management[36] on federally managed public lands in Oregon.

Scope of Authority

The Work Group will assess current and historical approaches by the ODFW for beaver management on federally managed public land within the agency's scope of authority. The Work Group may include consideration of other local, state, and federal agencies as well NGO's programs and policies and current and relevant best available science, as they relate to greater coordination, communication, and potential partnerships as they develop recommendations for the ODFW Commission.

Work Group Membership

The Work Group is composed of the following members:

Name	Affiliation
Leland Brown	Oregon Chapter of The Wildlife Society
Jimmy Taylor (alternate for Leland Brown) Aug 2021 – Jan 2022	*Oregon Chapter of The Wildlife Society*
Michael O'Casey (alternate for Leland Brown) June - Aug 2021; Jan -April 2022	*Oregon Chapter of The Wildlife Society*
Drenda Howatt (as of November 2021)	Association of Oregon Counties
Jefferson Jacobs	Oregon Natural Desert Association
Samantha Bruegger (through November 2021)	WildEarth Guardians
Danielle Moser	Oregon Wild
Brian Posewitz	Humane Voters Oregon
Scott Beckstead (as of November 2021)	Center for a Humane Economy
Lizzy Pennock (alternate for Scott Beckstead)	*WildEarth Guardians*
Ernie Niemi	Natural Resource Economics
Darren Bollen	Bureau of Land Management
Emily Johnson (alternate for Darren Bollen as of April 2022)	*Bureau of Land Management*
Josh Chapman	US Forest Service

[35] Policies include Executive Order 20-04 on Climate Action

[36] Management includes but is not limited to trapping and hunting

Name	Affiliation
Brian Staab (alternate for Josh Chapman)	*US Forest Service*
Wayne Elmore	Full Stream Consulting/retired BLM
Boone Kauffman (through December 2021)	Illahee Sciences International/Oregon State University
Robert Beschta (alternate for Boone Kauffman)	*Oregon State University*
Chris Jordan	National Oceanic and Atmospheric Administration Fisheries
Amy Patrick	Oregon Hunters Association
Tyler Dungannon (alternate for Amy Patrick)	*Oregon Hunters Association*
Lauren Smith	Oregon Farm Bureau
Kyle Williams (alternate for Lauren Smith)	*Oregon Forest & Industries Council*
Stan Steele	Oregon Trappers Association
Becky Hatfield-Hyde	ODFW Commission
Jill Zarnowitz	ODFW Commission
Greg Wolley (through November 2021)	ODFW Commission
Mary Wahl (as of December 2021)	ODFW Commission
Derek Broman	ODFW Wildlife Biologist
Brian Wolfer (alternate for Derek Broman)	*ODFW Wildlife Biologist*
Tom Stahl	ODFW Fish Biologist
Shannon Hurn	ODFW Deputy Director
Kevin Blakely (alternate for Shannon Hurn)	*ODFW Deputy Administrator*

Support

The Beaver Management Work Group is supported by a facilitation team from Kearns & West. Agendas and meeting materials will be developed by the project team with input from the work group, comprised of the facilitation team, ODFWC representatives, and lead ODFW staff and may include materials developed by work group members. Agendas and materials will be distributed by the facilitation team to the Work Group the week prior to a meeting. Meeting summaries will be distributed to the Work Group within one week after each meeting.

The facilitation team will coordinate with Work Group members by email and phone to schedule meetings, coordinate logistics, and distribute meeting information and materials. Work Group members will do their best to respond to requests for scheduling and other coordination in a reasonable amount of time.

Meeting Guidelines

The Work Group will meet up to twice a month for (on average) two hours. The group may consider longer work sessions and field meetings as appropriate (exact schedule below).

Due to COVID-19, meetings will be held via teleconference until restrictions are lifted.

Meeting attendance is considered a priority and Work Group members are expected to notify the project team in advance if they cannot attend. Work Group members can designate an alternate to attend on their behalf with advance notice to the project team.

Work Group members agree to the following guidelines:

- Fully participate in Work Group meetings. Communicate with the project team in advance if unable to attend. If you have an alternate, prepare them for attending the meeting and follow up with them afterwards.
- Come prepared for meetings. Read materials in advance of the meetings. Contact the project team for questions or additional assistance.
- Participate in an open and mutually respectful way. Share ideas, views, and information on topics and issues related to the mission/purpose of the group and within the group's scope of authority.
- Serve as a liaison to your larger community of interest. Share information from the community of interest you represent, including their concerns, ideas, and experiences. Keep your communities of interest informed on the work of the Work Group and bring input back to the full group. Remember we are working on behalf of all Oregonians.
- Act in good faith. Treat each other with respect and acknowledge the unique and varied experiences and knowledge each work group member brings with them. Work to understand differences in opinions, ideas, and approaches to address issues. Work toward shared understanding among the members. Work group meetings are considered a safe space to have an open dialogue.
- Strive for a balance of speaking time. Be mindful of sharing time and space with your fellow Work Group members.
- Leave baggage from past groups at the door. Come prepared to learn something new and build connections that help not only Oregon's beaver but Oregon's wildlife and communities.

Decision Process

The Work Group will strive for consensus on their recommendations using a consensus scale system.

Option 1: Use green, yellow, and red cards to indicate their level of support as follows:
Green Support (the proposal, recommendation and/or moving forward) – no need to speak further on the topic.
Yellow Questions or outstanding concerns to share, or support with reservations.
Red No support/propose alternative.

Option 2: Use fingers to convey level of support as follows:
1 finger- Support (the proposal, recommendation and/or moving forward) – no need to speak further on the topic.
2 fingers - Questions or outstanding concerns to share, or support with reservations.
3 fingers - No support/propose alternative.

When the group is considering supporting a recommendation and members express support and support with reservations (a green, yellow, one, or two), then there is consensus support. As the recommendations are being developed, every effort will be made to consider all perspectives, as that is the value of the work group. The group should strive to address each other's concerns and suggestions through discussions. If members continue to not be supportive, they will be asked to propose alternatives or suggestions for how to move forward.

ODFW staff and Commission would like to be able to support the recommendations and will participate in the discussions and share their concerns and suggestions for the group to address. ODFW Staff are charged with making a staff report to the commission

Public Input and Presentations to the ODFWC

The Work Group has been appointed by and serves at the will of the Oregon Fish and Wildlife Commission. As such, information about the Work Group including media inquiries, will be managed by the communications team at the ODFW in compliance with state agency communication protocols. Commissioners may respond directly to the media unless directed to defer to specific staff regarding specific issues.

All materials distributed and considered by the Work Group will be made public via the ODFW website.

Public notice of presentations about the Work Group to the ODFWC and opportunities for input at ODFWC meetings will be made publicly available as part of regular communications to the public about ODFWC meetings.

Work Group members may be asked to consider presenting updates and outcomes from the Work Group to the ODFWC.

Work Plan and Schedule

	June	July	Aug	September		October		Nov	Dec	Jan	Feb	Mar	April	May
Beaver Work Group Meetings & Topics ★ = *Subgroup meetings*	28	22	18	13	29	13	27	17	8	21	24		13	13
Charter, Mission & Scope	■													
ODFW - current management		■												
Federal agencies - current management			★★★											
Beaver modified habitat – value statement; pros/cons and metrics				★										
Population, limiting factors & range of management options					★									
Beaver Biology & Ecology 101 discussion with research experts						★								
Habitat & management on federal land - case studies							■							
Emerging recommendations ideas & framework								★						
Recommendations draft 1									★★					
Recommendations refinements/draft 2										★★				
Recommendations refinements/draft 3											★★			
Recommendations refinements/draft 4												★		
Work Group Recommendations and Report Materials finalized													■	
ODFW Commission Presentation and Public input														■

Meeting Information

The Beaver Management Work Group met 12 times over the 12-month process. Videos and meeting summaries are available for all meetings on the ODFW Website. Please find the links below

- June 28, 2021
- July 22, 2021
- August 18, 2021
- September 13, 2021
- September 29, 2021
- October 13, 2021
- October 27, 2021
- November 17, 2021
- December 8, 2021
- January 21, 2022
- February 24, 2022
- April 13, 2022