

Conservation Compass: Navigating Decision-Making in Conservation

Effective conservation is founded on scientific integrity, data, and information. Effective conservation is also influenced by values and big picture issues: conservation themes that overlay more localized issues, human engagement and behavior, and the relationships among humans and the natural environment.

These conservation concepts and values are introduced here as “Compass Points” to guide conservation actions throughout SWAP. Like a compass heading in the backcountry, these provide direction at different points along the way without specifying a path to take to get to our destination of resilient plant, fish, and wildlife populations and their habitats.

In this SWAP, Conservation Compass Points are conservation principles to improve the pace, scale, and effectiveness of conservation.

Compass Points will be visible throughout the plan by place/geography (e.g. specific ecoregions) and influence species, habitats, and systems conservation actions.

The SWAP Compass Points are

- increase the pace and scale of biodiversity conservation
- start ‘upstream’ to identify and address issues
- acknowledge conservation complexity and ‘gnarly’ problems
- document and report progress as an important part of success
- promote scientific integrity and transparency
- expand and continue engagement
- prioritize actions that address climate resilience, connectivity, and OneHealth
- facilitate effective voluntary conservation action
- value inter-governmental conservation opportunities at all scales,
and
- monitor, learn, adapt and communicate.

Increase the pace and scale of biodiversity conservation

People in Washington are connected by our lands and waters, and by a sense of place that feeds us literally and culturally, traditionally and in new ways every day. Beneficial connections among people, fish and wildlife, plants and habitats, air, water, and soils create a natural collaboration that supports us when we eat, breathe, drink, work and play in all that Washington offers.

Washington State has recognized strong connections among the full range of life in all its forms - [biodiversity](#) - and our healthy and vibrant Washington communities, economy, and recreation opportunities. In 2002, the Legislature directed the State to “develop a comprehensive framework to safeguard Washington’s rich biodiversity heritage for the benefit of current and future generations.” The resulting [Biodiversity Conservation Strategy](#) (Washington Biodiversity Council 2007) paired well with Washington’s first State Wildlife Action Plan (Washington Department of Fish and Wildlife, WDFW 2005).

“Tremendous population growth and development, increasing land-use conflicts, and increasing lists of species and ecosystems that are of concern suggest that we are losing ground.” - Washington Biodiversity Council 2007

Net migration accounted for about 69.5 percent of Washington’s human population growth between 2010 and 2024 (WA OFM 2025). Our state’s population over-topped 8 million residents in 2024 and has been steadily increasing in the last decade by 1.1 percent to 1.8 percent per year; the population grew by 15.5 percent between 2010 and 2022.

Unmanaged or inappropriately managed land use, policy and priority shifts that do not consider or value conservation, climate change, wildfire, water availability, sea level rise, ecosystem shifts, and habitat disconnections all change or reduce the available landscape for species, their habitats, and the benefits humans derive from nature. NatureServe (2023) reports that in the United States, 34% of plant species and 40% of animal species in the United States are at risk of extinction and that 41% of ecosystems are at risk of range-wide collapse. In the same report, more than 18% of assessed ecosystems in Washington state are at risk. Losses in habitat availability, usability, and connectivity influence species’ ability to adapt and/or recover.

Those threats have not changed much in the last 25 years although community awareness, public support, partnerships, and opportunities have improved (Dietsch et. al. 2018). Many of the recommendations in the 2007 BCS continue to be relevant today: landscape approach to conservation, enhancing voluntary incentives for conservation by private landowners, and engaging citizens in monitoring and conservation action.

Since publication of the second edition of the SWAP (WDFW 2015), conservation, natural resources management, and development communities have developed better tools to understand the pace and scale of species and habitat impacts and larger-scale effects of climate change, industrial growth, invasive species and diseases, and human population growth and associated development. We aren’t necessarily doing the wrong things for conservation; we’re just not doing enough of the right things at a scale and pace to stay ahead of habitat loss, system degradation, and species loss.

In 2023, the conservation community and the state Legislature agreed that new solutions are needed to conserve biodiversity, improve conditions for resilient and sustainable habitats in a cumulative way, better preserve opportunities to stabilize and recover declining fish and wildlife populations, and conserve ecological functions that support us all (WDFW 2024). We need to exceed current efforts to protect and restore ecosystems across the state by identifying options to galvanize, incentivize, or in some circumstances require projects to increase biodiversity and/or resilience in affected ecosystems.

This SWAP presents biodiversity conservation strategies at statewide and ecoregional scales to expand focus on existing single-species or single-resource protection programs to one that supports many scales – sites to landscapes – of related conservation work that also improve ecosystem services valued by people (e.g., timber production, flood control, water quality and quantity, recreation, creativity).

Non-habitat interventions (e.g. hatcheries, predator management, reintroductions, captive rearing) may provide critical support to species on the brink of losing genetic and life history diversity or may help preserve human rights/needs/cultural heritage while systems recover. These interventions must be paired with systems-level restoration, habitat enhancement, and natural process protections and improvements. Our ability to stem the tide of natural system and species loss and improve habitat and species sustainability relies on the **collaboration among conservationists and communities where that work needs to occur. This collaboration is necessary to increase the pace and scale of conservation: do the best we can together, more quickly, in the right places.**

Start ‘upstream’ to identify and address issues

To create long-term and sustainable improvement in habitats and systems that support species and people, conservation challenges must be addressed as far ‘up-stream’ as possible: identify root causes of existing issues and think about early warning signs for potential problems, rather than just reacting or responding to manage ‘down-stream’ symptoms and consequences.

Understand the ‘headwaters’ of the issue – keep going upstream asking questions until you can really understand what you need to fix for a durable solution, until you can see what is creating a barrier to your

Working ‘Upstream’ Example



Northern Leopard Frogs (NLF) have all but disappeared from their historic range in Washington state.

A “downstream” solution would be to *only* reintroduce frogs where they used to occur.

An “upstream” solution also improves habitat sustainability, removes invasive species, and works with land and water managers to ensure long-term stability in the habitats required by NLF.

In the NLF recovery work, the reintroduction is paired with upstream solutions to improve progress and the effectiveness of the reintroduction.

progress – is it technical (need more information) or is it adaptive (cultural, social, or system influences) or both?

Acknowledge conservation complexity and ‘gnarly’ problems

Conservation actions are the most important parts of the SWAP: a collection of informed opportunities to improve the status and sustainability of species, habitats and systems. Actions included in the SWAP may be in progress now, need support for next steps or better decisions, or don’t have a clear starting block and need framing to take the first steps. Some actions are harder, riskier, more urgent, or complex: these are ‘gnarly’ problems – challenging or expansive situations in which a “simple” site-based technical solution (e.g. breed and release more, plant more habitat, move them out of the way) isn’t going to be wholly effective in the long-term. Solutions may be more difficult because the causes (upstream) are unclear, it’s difficult to identify which first actions would be most helpful (decision-support needed), or the issue or proposed solution reveals conflict.

Often, ‘gnarly’ problems are influenced by values and tradeoffs, need a system-level approach, and require social and cultural support before ever getting to the ecological or technical work. These tougher solutions often have more risk: failure is possible, testing and learning will need to be part of the project plan, available information may be insufficient and new information may come from nontraditional sources, documentation and communicating progress are necessary and take more time, and decision-making transparency is essential. Knowledge, shared priorities and direction, optimism and grace are helpful but sometimes conflicts are deeply embedded in culture, economy, or social values that project biologists and working groups are not well-equipped to address. In those situations, a conservation action may be “conflict resolution” or “coalition building” before defining new or further action on the ground.

Document and report progress as an important part of success

All conservation actions are constrained. Human capacity, funding, technical knowledge, social or cultural understanding or support, tools or practices, and time are a few examples of limiting resources that require project teams to pause and/or adapt. The complex solutions we need for long-term conservation durability span years (e.g., time representing several generations of the target species or established and stable habitats) and results do not often come in available or consecutive funding cycles. Governments include a public service duty and non-government/community partners are accountable to their supporters to prudently use those resources. Documenting and communicating progress, effectiveness, failure, and change are important steps in that responsibility and demonstrate commitment to a successful result.

Promote scientific integrity and transparency

Sustainable fish and wildlife rely on habitat and ecosystem health, some of which we can see and study to understand and some of which will always be a mystery. Conservation action often must be based on what we *can* know – even if that knowledge is incomplete – before species or their habitats are unrecoverable or lost, and the best information is

supported by scientific integrity, well-applied science – policy interface, guidance from communities of practice, monitoring and adaptation, and documentation.

Science provides critical insights for conservation decision-making, offering data, models, and projections that help assess risk, evaluate options and inform conservation. Actions (decisions) in response to scientific findings ultimately depend on the ability to apply those findings and may include assessments of risk tolerance, opportunity, policy, and cultural values. Science informs but does not prescribe action; data, information, models, and reports state what we think we know, can help us evaluate and propose next steps, and identify uncertainty. That information can also be used to test potential consequences of action or inaction. A final decision may also depend on weighing potential benefits and trade-offs, and it's important that the decision-making process and outcomes are transparent.

WDFW is committed to implementing a robust science-policy interface. The science-policy interface (SPI) includes the social processes between scientists and decision-makers (defined broadly) , and is intended to facilitate productive exchanges, joint construction of knowledge, and transparent and inclusive natural resources decision-making (van den Hove 2007).

The most important attributes of an effective SPI include saliency, credibility, and legitimacy (IUCN 2010):

- *Saliency* (or relevance) reflects the ability of the SPI to be responsive to issues on which decision-makers focus and over which they have some control.
- *Credibility* reflects the believability of jointly constructed knowledge to interested parties, that is, the extent to which affected participants perceive SPI products (facts, theories, ideas, models, and scenarios) as valid.
- *Legitimacy* reflects perceived fairness, as measured by how well the SPI has considered stakeholders' divergent values and beliefs, and the degree to which the SPI is unbiased in its conduct and fair in its treatment of opposing views and interests.

Further support for a purposeful science-policy interface is articulated in the Fish and Wildlife Commission's Science Integrity Policy (adopted March 2025). The Science Integrity Policy describes expectations of Commissioners and agency staff when conducting, managing, applying, and communicating scientific findings and activities. The policy describes behaviors that ensure scientific process and findings that inform decisions are credible, transparent, and unbiased. The policy states:

Scientific integrity is the adherence to professional practices, ethical behavior and the principles of honesty and objectivity when conducting, managing, using the results of and communicating about science and scientific activities. Inclusivity, transparency and protection from inappropriate influence are hallmarks of scientific integrity (National Science Foundation 2024).

Scientific integrity is a model of behavior, and a series of practices grounded in ethical principles and professional standards. It focuses on how science is conducted and communicated, ensuring that the process and findings are credible, transparent, and unbiased.

As a model of behavior, scientific integrity means that individual scientists, institutions, and policymakers uphold these principles in how they gather, analyze, and present information, while fostering an environment where trust in science is built through ethical conduct.

The SWAP provides well-vetted information – informed by expertise, references, resources, plans, reports, and data – to identify, scope, inspire, and implement conservation actions. These actions are crafted by a network of ecologists, biologists, peers, and communities. Being transparent about the information considered and why helps maintain trust and accountability. When conservation action decision-makers clearly communicate the scientific basis for actions, uncertainties they face, and influences and constraints on applying the information, this can demonstrate that management decisions are scientifically robust and aligned with policy priorities.

Expand and continue engagement

Conservation doesn't happen without people. Durable and effective conservation solutions need people's support and participation (AAAS n.d., Bassler et. al. 2008, Sterling et. al. 2017, Conservation Measures Partnership 2025). Gaining social support begins with an effort and willingness to understand a place including its politics, culture, patterns of human use, and local values, not just the ecological foundations of what we need to do for species, habitats, and systems. Engaging people effectively in conservation can

- identify multiple perspectives, potential partners, and affected stakeholders,
- reveal information, opportunities, barriers, and potential sources of conflict,
- improve equitable access to resources (sites, staff, funds) and outcomes,
- create shared objectives, acquire consent, and continue communication,
- empower stakeholders to identify and be responsible for the outcomes,
- share the success and accomplishment,
- improve accountability for decisions and actions, and
- influence longer-term funding to maintain progress and apply lessons learned.

The most durable conservation solutions include human social and cultural values alongside ecological function and species/habitat restoration and conservation. A broad spectrum of western scientific, indigenous, and local ecological knowledges can be helpful to define a future vision and achieve desired outcomes.

The SWAP lays out conservation actions that depend on *people* to make good choices: where ecological knowledge meets peers, experts, governments, organizations, and

regional and local communities at the table. The perfect recipe for conservation success does not exist in science and information alone (Clifford et. al. 2022). It is important for people to be able to see the relationship of proposed conservation to their existing work and values for better conservation outcomes.

Champions are important catalysts but cannot sustain an effort alone. Diverse people need to believe in the work and support it. We encourage people to start taking action based on their existing circumstances and experiences– what and who they know, who is working on it now, what information is available and vetted, who are the potential partners, and how could social or cultural issues they’re already interested in be connected to the conservation problem or action? Exploring connections among people is a fundamental part of conservation, and can lead to campaigns, products, and partnerships that build on those connections. Ask “Who can help? Who needs to know? Who might be affected and what do they care about? What other questions should I ask? Who makes the decisions? What will we do if there is conflict?” Document partnerships, strategies, ideas, and progress from the beginning.

Washington is well-positioned to work at all scales: natural resources managers promote the importance of landscape and system conservation actions for resilient and sustainable species and habitats; communities are engaged in local and regional planning that includes care for the natural world and/or locally relevant conservation solutions; and Washington has a strong network of active conservation allies: Tribes, land trusts, hunters and anglers, resource agencies, wildlife watchers, outdoor enthusiasts, conservation organizations, community organizers, and more. Several initiatives are leading the way with multiple partners and at many scales (i.e. Washington Shrubsteppe Restoration and Resiliency Initiative, Pacific Northwest Coast Landscape Conservation Design, Yakima Basin Integrated Plan). The *potential* to share interests, access information and resources, and scale conservation action is unprecedented.

Many of Washington’s natural resources-related agencies – local, state, and federal – have missions and/or goals that are supportive of species and habitat conservation *and* human enjoyment and use of natural resources. When humans’ alteration of the system could put a species or habitat at risk, action should be taken to avoid, minimize, or compensate for the harm. Humans are part of the ecosystem, and ecosystem-based management approaches seeks to ensure those impacts are not grossly exploitative or detrimental to the ability of the system to sustain life and meet the needs of its human and non-human inhabitants. Care should be taken that historically underrepresented or marginalized communities do not have inequitable access to the benefits or inequitable share of the burden of environmental harms.

This SWAP revision’s engagement approach – presentations, events, opportunities, and surveys – is captured in [Appendix TBD](#).¹ WDFW serves the whole public and engagement is intended to foster good governance through transparency, communication, and public

¹ All appendices will be created for the final draft of the SWAP. These products are not complete or organized into appendices yet, so this text is a placeholder.

service; foster SWAP implementation effectiveness; and actively create and maintain innovative and enduring conservation (The Nature Conservancy 2022), Antioch University 2020, TED® Talk 2010). Engagement and influence of many conservation partners and groups is evident throughout the conservation actions presented in the SWAP, not just in the outreach events conducted during the revision.

Prioritize actions that address climate resilience, connectivity, and OneHealth

While there are many actions and approaches that are important in biodiversity conservation, three key conservation themes are woven throughout the actions proposed in the SWAP in support of system, habitat and species conservation: climate resilience, connectivity, and [OneHealth](#). These foundations can support the life-sustaining systems and habitats that enable species' adaption and recovery.

Climate Resilience

“This is the ability of communities and ecosystems to adapt and withstand adverse effects of climate change, promoting preparedness, response, and recovery.” – Science4Data 2024

Climate change is reshaping natural resource management in Washington. The ecosystems, species, and natural processes that have historically structured fish and wildlife management are now subject to accelerated change, creating unprecedented challenges. Climate change is not a distant or isolated issue, but a pervasive stressor that intersects with every aspect of species and habitat management. It demands a shift in approach to natural resource management and conservation—one that moves beyond historical baselines and centers adaptation, resilience, and long-term planning.

From the species level to the ecoregional level, climate change is altering the patterns and processes that sustain biodiversity. Climate change intensifies existing threats and introduces new stressors. Species' physiological limits are being tested as shifting temperatures, altered hydrology, and changing seasonal cues affect survival, reproduction, and migration. Habitat structure, function, and availability are shifting, some becoming more fragmented and/or unsuitable to the species they have historically supported. Climate-driven disruptions impact food timing and availability, intensity and frequency of disturbances (wildfire and drought), and can favor invasive species. Addressing climate change in conservation requires a framework that considers these interconnected changes at several scales to support strategies that are adaptive and forward-looking.

Understanding *why* species and ecosystems are vulnerable to climate change is a critical first step in developing effective conservation strategies. Climate vulnerability for species and ecosystems is based on the climate sensitivity, exposure, and adaptive capacity. Some species are highly sensitive to temperature shifts, while others struggle with repeated exposure to habitat loss due to altered hydrological cycles, increased fire frequency, or sea level rise. Likewise, species with low adaptive capacity—those with specialized habitat need or limited dispersal ability, for example—face higher vulnerability to the impacts of climate change. Identifying the underlying mechanism of a species' or ecosystem's climate

vulnerability enables practitioners to target management efforts where they are most needed: protect climate refugia, enhance habitat connectivity, or implement restoration actions that support resilience. WDFW incorporated climate change vulnerability assessments into Chapter 5 of the 2015 SWAP (WDFW 2015, EcoAdapt 2015) analyzing sensitivity, exposure, and adaptive capacity across species and habitats. These assessments highlighted species at greatest risk due to factors such as physiological limitations, habitat specialization, and low dispersal ability. From this work, WDFW developed climate-related fact sheets for many habitat types (e.g. shrubsteppe, riparian, eastside and westside forests) and species; identified climate resilience risks and opportunities (Shirk et. al. 2021) in agency work; collaborated with Washington Department of Ecology on a state-level Climate Resilience Strategy (2024); and continues to grow a responsive and useful climate action body of work (e.g. culvert designs, stream suitability modeling, wildfire response and post-fire restoration information). Washington DNR developed their Plan for Climate Resilience in 2020, and the DNR Natural Heritage Program applied the NatureServe Climate Change Vulnerability Index for Species (WA DNR 2020 - 2024) to assess species' exposure, sensitivity, and adaptive capacity and predict relative vulnerability to climate change. This and a great deal of new information is considered by Subject Matter Experts and the conservation community in the 2025 SWAP to identify SGCN, important habitats, and actions for their conservation.

Climate change challenges conservation success because it influences the things we know about species, habitats, systems and the things we know how to do (restoration, reintroductions, habitat and species management). Climate change adaptation and resiliency information – how best to respond, what we are learning about impacts and responses – is rapidly evolving. While it is good news that bright minds are working on these tough questions and providing sound information to frame better conservation work, it also requires conservation project managers to more deliberately build in monitoring and a process to adapt to new information.

Adapting to climate change requires rethinking conservation tools and strategies that were built on the assumption of stable climatic conditions. In many cases, conservation must shift from static, preservation-focused approaches towards dynamic, process-based approaches that anticipate and accommodate change. This shift requires integrating climate science into all decision-making processes—ensuring that assumptions about species ranges, habitat suitability, and physical ecological processes that shape habitat structure and associated ecological function reflect future climate projections instead of historical climate norms.

Connectivity among habitats and systems

Ecological connectivity is a broad conservation term for the unimpeded movement of species and flow/function of natural processes, and it has profound impacts on biodiversity (Arkilanian et. al. 2020). In Washington, the conservation community usually thinks of *habitat* – lands and waters – connectivity as the element we can most readily see, influence, and measure. We often think of connectivity as being most important for species that move long distances; it's also important for less mobile species.

For fish and wildlife species, habitat connectivity provides the ability to move safely through their range and environments – land, freshwater, estuaries, and marine – to find food, reproduce, and migrate and is essential at many scales: daily movement, seasonal movement (e.g. foraging or calving grounds, ocean to river spawning), dispersal of the next generation, colonization of new areas, gene flow and exchange, and response to broader changes in the environment such as urban expansion or ecosystem shifts due to wildfire, drought, or sea level rise. Landscape to local connectivity is also essential for plant communities, habitats, and system natural functions: plant gene flow, pollination, and seed dispersal; disease resistance; natural restoration in response to disturbance; hydrologic (surface and groundwater) functions, quality, and quantity; and riparian and floodplain functions, to name a few.

Washington’s conservation communities have worked on habitat connectivity issues, information gathering, analyses and modeling, and best practices for decades at species, ecoregion, state and transboundary scales; in response to landscape scale habitat loss, wildfire, and climate change; and to inform land use, restoration, and conservation priorities (examples include Washington Wildlife Habitat Connectivity Working Group 2007 – present, Arid Lands Initiative 2009 – present, Washington State Department of Transportation 2023, WDFW 2024, WDFW 2025). Many products have provided good foundations for actions. Because the conservation recommendations cross many jurisdictions, land and water management types, and are influenced by local support, progress relies heavily on collaborative, voluntary action.

One Health

The term “One Health” emerged around 2009 and gained more recognition in Washington state between 2016 to 2019 with a re-energized One Health Collaborative: Washington Department of Health, Washington State Department of Agriculture, Washington State

Figure 1. One Health - Washington Department of Health and U.S. Center for Disease Control



Department of Fish and Wildlife, and the U.S. Department of Agriculture – Animal and Plant Inspection Service (APHIS). One Health is a cooperative effort across disciplines working locally, nationally and globally to improve the health of our ecosystem, including humans, animals, plants, and our environment (U.S. CDC 2024, WaDoH 2023).

One Health is a collaborative and interdisciplinary approach for optimizing health outcomes that recognizes the interconnection between animals, people, and their shared environment (Figure 2). Using a One Health framework can establish an early warning system and apply proactive actions to protect the health and resiliency of our wildlife in face of unknown cumulative effects and more readily respond to related horizon issues. Such a framework includes prevention, preparedness, surveillance, and coordinated outbreak investigation(s), response(s), and recovery efforts. Including this framework in the lays the groundwork for a One Health approach to help ensure healthy, resilient, future-ready wildlife populations in Washington. Within this One Health Framework, a Determinants of Health model can be adapted to fish and wildlife health, with the goal of robust species' populations with the capacity to satisfy daily needs of survival and adapt to or cope with a changing environment – in other words, resiliency (Wittrock et al. 2019). This approach recognizes the array of factors that influence healthy populations and can be used to highlight key actions to address future health risks.

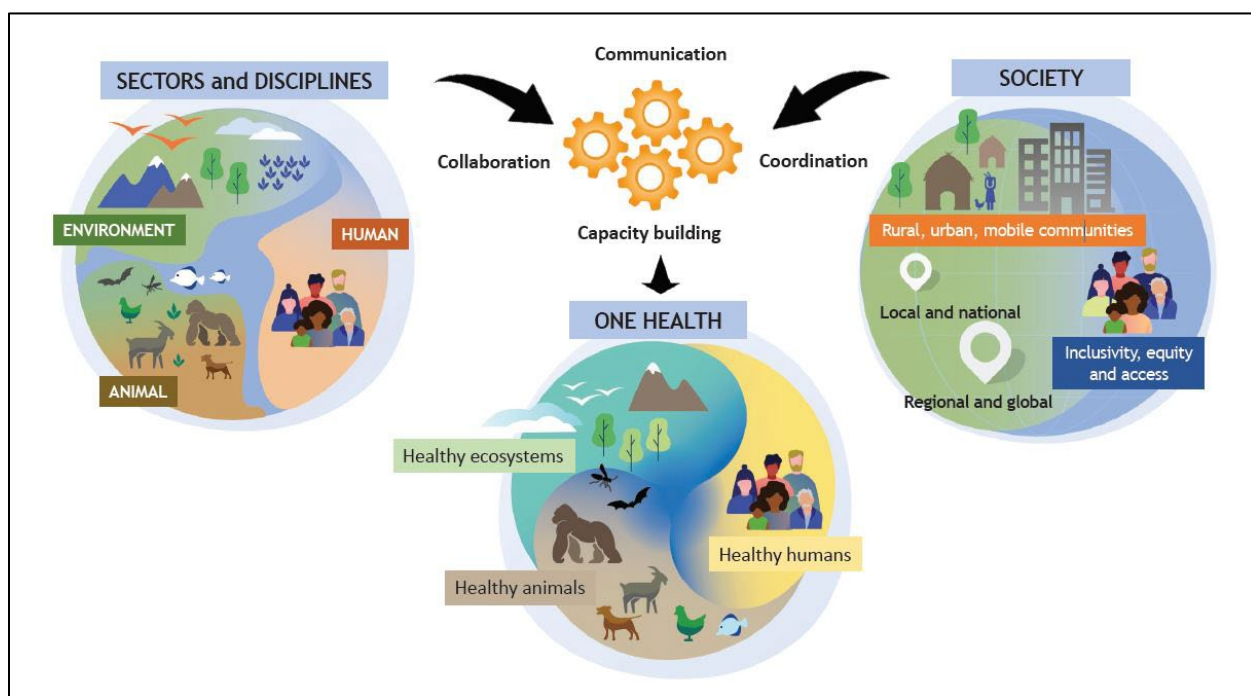


Figure 2. OneHealth depends on coordination, communication, collaboration, and capacity (World Health Organization n.d.)

While often thought of as a management framework for diseases, three components of OneHealth are most relevant in plant, fish, and wildlife conservation: **ecosystem services** (Romanazzi et. al. 2023), **diseases that affect wild species**, and **invasive species**. The OneHealth approach recognizes the interconnection among people, animals, plants, and

their shared environment. This section is only a brief discussion of the topic and then current issues will be related to species and habitats in relevant geographies.

Ecosystem services. Paragraph in development

Plant, fish, and wildlife diseases. In a post-pandemic era, the role of zoonotic disease in wildlife, human and ecosystem health cannot be ignored. This is apparent in the face of the ongoing H5N1 highly pathogenic avian influenza virus outbreak in wildlife not only here in Washington, but nationally and internationally where avian influenza has spread from wild birds to wild mammals and to poultry, cattle, and humans. Diseases, especially in concert with other stressors such as climate change and increased global mobility of people and animals and animal products, are likely to increase in prevalence posing new and unknown threats to Washington’s wildlife, humans, and ecosystems.

A number of new and emerging fish and wildlife diseases are known to occur in Washington (e.g. white-nose syndrome in bats; avian influenza or ‘bird flu’; chronic wasting disease of deer, elk, or moose; elk hoof disease; snake fungal disease; whirling disease in some fish species) and we strive to mobilize monitoring, research, and public action in our responses. Even before diseases are detected, it is increasingly important to monitor for facilitating conditions and emergence of new and spreading pathogens, as well as to maintain a level of preparedness among first responders to ensure timely and effective response when diseases are detected. While our SWAP is focused on addressing known risks and threats to species conservation, it is important that we plan for “horizon issues”, which may not be completely understood at this time yet could threaten species and ecosystems.

Non-native invasive species. Non-native species are defined as invasive when they cause harm to the environment, economy, or human health. They generally require management by people to be prepared and prevent, detect, monitor, eradicate, or manage the invasive species. These species often compete with or disrupt native species and can also alter a habitat or ecosystem and hinder its ability to recover from disturbance (Washington Invasive Species Council n.d.). This can also cause disproportionate harm to other members of an ecological community. A good example of this is the pervasive introduced cheat grass in eastern Washington which not only can replace native grasses in disturbed areas but can also amplify ignition and effects of wildfire, burning hotter and more destructively. The SWAP offers actions that preserve habitat function and support its protection and recovery. When faced with invasive species, we may find that bolstering the underlying ecosystem is not sufficient for restoring a healthy function, so one-time or ongoing intervention may be needed to support the system’s ability to recover. For example, noxious weed control may be an important near-term or ongoing intervention while native plant and animal populations recover.

Facilitate effective voluntary conservation action

The SWAP is not regulatory. Although it can be informative for management, guidance, policies, and regulations, the plan relies on people taking the information and recommendations from the SWAP and choosing to apply them. The actions in the SWAP

will point to vetted resources and information to *support* – not direct – the conservation decisions of formal working groups, agencies, conservation partners, governments and Tribes, interested communities and jurisdictions, and inspired landowners and land trusts. The SWAP provides ideas for engagement and outreach, partnerships, and private lands stewardship to influence and contribute to habitat connectivity, climate resilience, species and habitat health, sustainability and recovery. Voluntary action is powerful because conservation solutions are often more durable when people are committed to the desired outcomes, and in some circumstances incorporating conservation action into requirements and regulations can help ensure we avoid unintended consequences and tradeoffs for species and their habitats. Toward this end, the SWAP also makes connection with [WDFW's Priority Habitats and Species](#) which provides accepted science and tools for land use planning and proactive conservation considerations in project development. These efforts will be evident in the conservation actions for specific geographies in the SWAP.

Value inter-governmental conservation opportunities at all scales

While state government in Washington provides stewardship of the SWAP through WDFW, this state includes a network of tribes, state and federal resources agencies, and 39 county governments and communities that span from the Pacific Ocean across the Cascades through the Columbia Basin. All of these entities have natural resources management and stewardship roles in some way.

Since time immemorial, Indigenous People have lived in the Pacific Northwest and hunted, fished, and gathered natural resources, traditional foods, and medicinal plants to support their diverse cultures. They were the original occupants and stewards of this land that all Washingtonians enjoy today. Twenty-nine (29) federally recognized tribes reside within Washington state of which 21 are treaty tribes and the additional are executive order tribes (or recognized by act of the U.S. Congress). There are several additional out-of-state tribes that have traditional and ceded lands in Washington, and there are at least 8 tribal groups that do not have federal recognition within the boundaries of Washington State. Informed by painful history of colonization, abrogated treaties, infringement of civil rights, and the salmon protests of the 1960s, the Northwest Tribes and WDFW have an ongoing commitment of respect, unity, and alliance to collaboratively conserve and manage aquatic and terrestrial resources statewide and practice sound science to guide management decisions. Those relationships are documented by the Centennial Accord and re-affirmed with the Millenium Agreement to implement Treaties and achieve mutual goals (WGOIA n.d.). Conservation efforts benefit from the expertise and leadership Tribes bring to this work.

State and federal resources agencies create resource management plans, gather and curate resources data, synthesize and deliver information, plan and implement conservation actions and initiatives that enhance state-federal cooperation and resources management on public lands.

As mentioned previously, WDFW is a contributor to local land use planning, providing conservation information through the Priority Habitats and Species program and technical

guidance on conservation issues to local governments implementing the Washington Growth Management Act.

Washington shares borders, waters, and natural resources with our international neighbor Canada and state neighbors Idaho and Oregon. The Pacific Ocean and shorelines require conservation collaboration across states (California, Oregon, Washington, Idaho, and Alaska) and nations (Tribes, Canada, US federal agencies) and more broadly through the Western and Central Pacific Fisheries Commission, of which the US is one of 26 member countries (NOAA 2025). The Columbia River is of state, national, and international commercial, recreational, and natural importance as the largest river flowing into the Pacific Ocean from North America (USBoR 2021) and the Columbia River Gorge is the largest national scenic area in the United States (USGS n.d.).

Washington also stewards important habitats for migratory species – birds, whales, fish – that travel to and from central and south America, along western state coasts, Canada, and Alaska. We are, by nature of our regional and national relationships, contributors to the [US Department of State bilateral cooperation on fisheries, Canada – Mexico – U.S. Trilateral Committee for Wildlife and Ecosystem Conservation and Management, Joint Statement of Cooperation on the Georgia Basin and Puget Sound Ecosystem trans-boundary Salish Sea conservation](#), partnerships in many regional and international conservation working groups such as Partners in Flight, several Joint Ventures, and Association of Fish and Wildlife Agencies initiatives (including State Wildlife Action Plans), just to name a few. More specific examples tied to conservation initiatives will be in the Statewide and relevant ecoregion sections of the SWAP.

Monitor, Learn, Adapt, and Communicate

Conservation action implementation is guided by monitoring and appropriate adaptation to new information, making changes that are beneficial to project effectiveness and progress toward the stated/desired conservation outcome. Conservation progress takes time and adjustments to approach may be needed before seeing success. The general cycle of plan, do, check, and adjust reflects the need and value to purposefully track the results of our actions and adjust our assumptions and actions based on this learning. We seek coordinated implementation and effectiveness monitoring of SWAP conservation actions, as well as information and data sharing among implementors of these actions. This enables partners to consider and adapt to new and documented information, thereby improving the success of our collective actions over time. As we are able to document the implementation of the SWAP as a whole, we will build a catalogue of monitoring and adaptation actions which will better inform conservation practices and the next revision.

References This Section

American Association of the Advancement of Science

<https://www.aaas.org/resources/communication-toolkit/what-public-engagement>

(accessed November 2024).

Antioch University. 2020. Five Principles of Co-designing Conservation WITH (not for) the Community. Conservation Psychology Institute Webinar Series (March 10, 2020)

<https://commonthread.antioch.edu/5-principles-of-co-designing-conservation-with-not-for-the-community-conservation-psychology-institute-webinar-series/> (accessed October 2024)

Arid Lands Initiative. 2009 – present. Science and Products for priority areas, ecosystem viability, and decision support tools. <https://aridlandsinitiative.org/our-projects/the-science/> (accessed April 2025).

Arkilanian, A, Larocque, G. Lucet, V, Schrock, D. Denépoux, C. and A. Gonzalez. 2020. A review of ecological connectivity analysis in the Region of Resolution 40-3. Report presented to the Ministère de la faune, de la forêt et des parcs du Québec for the New England Governors and Eastern Canadian Premiers working group on ecological connectivity. 79 pages. https://ecologicalconnectivity.com/sites/default/files/2021-07/Connectivity-Analysis-40-3_Report.pdf (accessed April 2025).

Bassler et. al. 2008 and PennState College of Agricultural Sciences

<https://aease.psu.edu/research/centers/cecd/engagement-toolbox/engagement/why-community-engagement-matters> (accessed November 2024)

Clifford, K. R., A. E. Cravens, and C. N. Knapp. 2022. Responding to Ecological Transformation: Mental Models, External Constraints, and Manager Decision-Making. BioScience Vol 72: Issue 1 (pages 57-70).

Conservation Measures Partnership. 2025. Open Standards for the Practice of

Conservation. <https://conservationstandards.org/wp-content/uploads/sites/3/2025/03/CMP-Open-Standards-Report-v5.0-v4.pdf> (specifically Key Principles and Considerations, p 15; accessed April 2025).

Dietsch, A.M., A.W. Don Carlos, M.J. Manfredo, T.L. Teel, and L. Sullivan. 2018. State report for Washington from the research project entitled “America’s Wildlife Values.” Fort Collins CO: Colorado State University, Department of Human Dimensions of Natural Resources.

EcoAdapt. 2015. Climate Vulnerability Assessment Cheat Sheet.

https://ecoadapt.org/data/documents/EcoAdaptVulnerability-AdaptationCheatSheet_2015.pdf (accessed April 2025).

<https://aridlandsinitiative.org/our-projects/the-science/>

National Oceanic and Atmospheric Administration. 2025. International Fisheries in the Pacific (website): <https://www.fisheries.noaa.gov/pacific-islands/international-affairs/international-fisheries-pacific> (accessed April 2025).

National Science Foundation (NSF). 2024. Scientific Integrity Policy (NSF 24-007). <https://www.nsf.gov/pubs/2024/nsf24007/nsf24007.pdf> (accessed April 2025).

NatureServe. 2023. Biodiversity in Focus: United States Edition. <https://www.natureserve.org/bif> (accessed December 2024).

Romanazzi, G.R., R. Koto, A. De Boni, G.O. Palmisano, M. Cioffi, and R. Roma. 2023. Cultural ecosystem services: A review of methods and tools for economic evaluation. Environmental and Sustainability Indicators. Volume 20. 100304. <https://www.sciencedirect.com/science/article/pii/S2665972723000818> (accessed April 2025).

Shirk, A., Morgan, H., Krosby, M., Raymond, C., Mauger, G.S., Helbrecht, L. 2021. Preparing Washington Department of Fish and Wildlife for a changing climate: assessing risks and opportunities for action. A collaboration of the Washington Department of Fish and Wildlife and University of Washington Climate Impacts Group. <https://wdfw.wa.gov/sites/default/files/publications/02554/wdfw02554.pdf> (accessed April 2025).

Sterling, E.J., E. Betley, A. Sigouin, A. Gomez, A. Toomey, G. Cullman, C. Malone, A. Pekor, F. Arengo, M. Blair, C. Filardi, K. Landrigan, A.L. Porzecanski. 2017. Assessing the evidence for stakeholder engagement in biodiversity conservation. Biological Conservation 209: 159-171 (May 2017). <https://www.sciencedirect.com/science/article/pii/S0006320717302069> (accessed April 2025).

TED© Foundation. 2010. TEDx Talk: Brene Brown – The Power of Vulnerability (June 2010) https://www.ted.com/talks/brene_brown_the_power_of_vulnerability (accessed 23 October 2024)

The Nature Conservancy (Adam Bloom). 2022. Five Conservation Projects Focused on Long-term Success. <https://www.nature.org/en-us/what-we-do/our-priorities/protect-water-and-land/land-and-water-stories/conservation-projects-long-term-success/> (accessed October 2024)

U.S. Bureau of Reclamation (USBoR). 2021. Water Reliability in the West - 2021 SECURE Water Act Report, *excerpt*: Columbia River Basin section. Prepared for the United States Congress. Bureau of Reclamation, Water Resources and Planning Office. Denver, Colorado <https://www.usbr.gov/climate/secure/docs/2021secure/basinreports/ColumbiaBasin.pdf> (accessed April 2025)

U.S. Census Bureau. 2024. QuickFacts: Washington (population, percent change V2023). <https://www.census.gov/quickfacts/fact/table/WA/PST045223> (accessed December 2024).

U.S. Centers for Disease Control and Washington Department of Health. 2024. What is One Health? <https://doh.wa.gov/community-and-environment/one-health#What> (accessed 24 December 2024).

U.S. Geological Survey. N.d. Columbia River Gorge National Scenic Area *in* Geology and Ecology of National Parks, Northwest Region. <https://www.usgs.gov/geology-and-ecology-of-national-parks/northwest> (accessed April 2025).

USAFacts. 2024. Our Changing Population: Washington (last updated July 2022). <https://usafacts.org/data/topics/people-society/population-and-demographics/our-changing-population/state/washington/> (accessed December 2024).

Washington Biodiversity Conservation Council. 2007. Washington Biodiversity Conservation Strategy: Sustaining Our Natural Heritage for Future Generations. <https://rco.wa.gov/wp-content/uploads/2019/07/BiodiversityConservationStrategy.pdf> (accessed February 2024).

Washington Department of Ecology. 2024. Washington State Climate Resilience Strategy. Publication No. 24-01-006. Olympia WA. <https://apps.ecology.wa.gov/publications/summarypages/2401006.html> (accessed April 2025).

Washington Department of Fish and Wildlife (WDFW). 2005. Washington’s Comprehensive Wildlife Conservation Strategy. <https://wdfw.wa.gov/publications/00727> (accessed April 2025).

Washington Department of Fish and Wildlife (WDFW). 2015. State Wildlife Action Plan. <https://wdfw.wa.gov/publications/01742> (accessed April 2025). See also <https://wdfw.wa.gov/species-habitats/at-risk/swap>

Washington Department of Fish and Wildlife (WDFW). 2024. Restoring Biodiversity: Legislative Report. <https://wdfw.wa.gov/sites/default/files/publications/02481/wdfw02481.pdf> (accessed April 2025).

Washington Department of Fish and Wildlife. 2024. Washington Shrubsteppe Restoration and Resiliency Initiative: Long-Term Strategy 2024 – 2054. <https://wdfw.wa.gov/publications/02489> (accessed April 2025).

Washington Department of Fish and Wildlife. 2025. Washington Habitat Connectivity Action Plan (in progress). <https://wdfw.wa.gov/species-habitats/habitat-recovery/connectivity/action-plan> (accessed April 2025).

Washington Department of Health (Wa DoH). 2023. One Health Needs Assessment Report, Washington State (Publication 420-524, 2023). <https://doh.wa.gov/sites/default/files/2023-09/420-524-OHNARreport.pdf> (accessed April 2025).

Washington Department of Natural Resources. 2020 – 2024. Climate Change Vulnerability Index Reports for Selected State Rare Plan Species: Phases 1 – 4. <https://www.dnr.wa.gov/NHPclimatespecies> (all reports are linked by species and in phase reports cited on this page, accessed April 2025).

Washington Governor’s Office of Indian Affairs (WGOIA). N.d. State – Tribal Relations / Centennial Accord (webpage with multiple resources) <https://goia.wa.gov/relations> and

Institutionalizing the Government – to – Government Relationship in Preparation for the New Millennium. <https://goia.wa.gov/relations/millennium-agreement/agreement> (accessed November 2024)

Washington Invasive Species Council. N.d. About Invasive Species <https://invasivespecies.wa.gov/invasive-species/> (accessed April 2025).

Washington Office of Financial Management (WA OFM). 2025. Components of population change 2010 – 2024 <https://ofm.wa.gov/washington-data-research/statewide-data/washington-trends/population-changes/components-population-change> and Total population and percent change, 1990 – 2024 <https://ofm.wa.gov/washington-data-research/statewide-data/washington-trends/population-changes/total-population-and-percent-change> (updated January 2025, accessed April 2025).

Washington Office of Financial Management. 2024. (news article) <https://ofm.wa.gov/about/news/2024/06/washington-state-tops-8-million-residents-2024> (accessed December 2024).

Washington State Department of Transportation. 2023. Wildlife habitat connectivity: highlights. <https://wsdot.wa.gov/about/data/gray-notebook/gnbhome/environment/wildlifehabitatconnectivity/default.htm> (accessed April 2025).

Washington State Legislature. 2002. House Bill Report ESSB 6400: An Act Relating to Biodiversity Conservation. <https://apps.leg.wa.gov/documents/billdocs/2001-02/Pdf/Bill%20Reports/House%20Historical/6400-S%20BRH%20APP.pdf> (accessed February 2024).

Washington State Legislature. 2002. Senate Bill Report ESSB 6400: Developing a statewide biodiversity conservation strategy. <https://app.leg.wa.gov/documents/billdocs/2001-02/Htm/Bill%20Reports/Senate/6400-S.FBR.htm> (accessed April 2025).

Washington Wildlife Habitat Connectivity Working Group 2007 – present. Resources and Information: Tools and Products. <https://waconnected.org/resources-and-information/> (accessed April 2025).

Wittrock J, Duncan C, Stephen C. 2019. A determinants of health conceptual model for fish and wildlife health. J Wildl Dis. 55(2):285-297. <https://pubmed.ncbi.nlm.nih.gov/30289339/> (accessed April 2025).