



State of Washington  
DEPARTMENT OF FISH AND WILDLIFE

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February 5, 2024

The Honorable June Robinson  
Chair, Senate Ways and Means  
303 John A. Cherberg Building  
Post Office Box 40438  
Olympia, WA 98504-0438

The Honorable Timm Ormsby  
Chair, House Appropriations  
315 John L. O'Brien Building  
Post Office Box 40600  
Olympia, WA 98504-0600

The Honorable Kevin Van De Wege  
Chair, Senate Agriculture, Water  
Natural Resources, and Parks  
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The Honorable Mike Chapman  
Chair, House Rural Development,  
Natural Resources, and Parks  
132B Legislative Building  
Post Office Box 40600  
Olympia, WA 98504-0600

Dear Chairs Robinson, Ormsby, Van De Wege, and Chapman,

Thank you for making a significant investment in the Washington Department of Fish and Wildlife's capacity to conserve biodiversity in the 2023-25 operating budget. This funding will greatly enhance our ability to implement the State's Wildlife Action Plan, bringing new resources to conserve species like western pond turtles, sharp-tailed grouse, and eulachon as well as take significant strides to partner with local government to protect and restore habitat that Washington's biodiversity depends upon.

Please see attached a progress report for accomplishments and spending plans for this fiscal year. We are eager to work with you in the 2025-27 biennium to request the remaining appropriations to achieve the original four-year investment strategy.

If you have any questions about this report or the Department's efforts in this area, please feel free to contact Tom McBride, WDFW's Legislative Director, at (360) 480-1472.

Sincerely,

Kelly Susewind  
Director

cc: Washington Fish and Wildlife Commission  
Tom McBride, Legislative Director  
Margen Carlson, Director of Conservation Policy  
Nathan Pamplin, Director of External Affairs

# Restoring Washington's Biodiversity

## 2023 Legislative Report



February 5, 2024

Washington Department of  
**FISH & WILDLIFE**

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**Cover photo species and credits** (left to right, top to bottom): tufted puffin, USFWS; Taylor’s checkerspot butterfly, WDFW; bull trout, WDFW; northwestern pond turtle, WDFW; sandhill crane, WDFW; black-tailed jackrabbit, USFWS; Northern spotted owl, USFS; pinto abalone, WDFW; fisher, WDFW; white sturgeon, ODFW; marbled murrelet, USFWS; sage thrasher, USFWS; American badger, WDFW; burrowing owl, WDFW; lynx, NPS; northern leopard frog, Emily Grabowsky; bighorn sheep, WDFW; Columbian sharp-tailed grouse, WDFW; Columbia basin pygmy rabbit, WDFW; Oregon spotted frog, Andy O’Connor; Olympia oyster, Doug Rogers; western snowy plover, USFWS.

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## Executive summary

Habitat loss and degradation, climate change effects, pollution, wildlife diseases, and invasive species threaten Washington's biodiversity. Fish and wildlife are public resources, and it is the Washington Department of Fish and Wildlife's (WDFW) mandate to conserve and protect them for current and future Washingtonians.

In the 2023 Legislative Session, the Washington Department of Fish and Wildlife requested dedicated funding to support implementation of Washington's State Wildlife Action Plan (SWAP), including conservation actions for Priority Habitats and Species (PHS) and Species of Greatest Conservation Need (SGCN). The Legislature provided \$24 million of that request for the 2023-25 biennium, with \$31 million ongoing beginning in the 2025-27 biennium. This funding will increase WDFW's capacity to recover at-risk species and their habitats, develop efforts to evaluate and manage other SGCN, and engage in crucial public education and outreach efforts.

By engaging in a broader scope of conservation, WDFW has a greater opportunity to prevent more species from needing protection under the federal Endangered Species Act (ESA). This can reduce regulatory burdens on local communities and have greater success at recovering Washington's biodiversity.

Washington's SWAP is under revision, with an updated version scheduled for 2025.

This report will primarily elaborate upon key conservation actions that have been implemented, are in progress, or are planned for the \$8 million allocated in Fiscal Year (FY) 24, including actions to recover most-imperiled species, improve protection of habitats/ecosystems, and engage and educate the public on conservation and biodiversity.

# Background

## What is biodiversity?



View of the Golden Doe Valley at the Golden Doe Unit of WDFW Methow Wildlife Area. WDFW photo.

Biodiversity is the full range of life in all its forms. This includes the habitats in which life occurs, the ways that species and habitats interact with each other, and the physical environment and the processes necessary for those interactions. Biodiversity is a measure of how complex, rich, and resilient an ecosystem is.

Biodiversity can be measured in several different ways, including the following:

- **Genetic diversity** – are there enough genetic differentiations that the species is resilient to disease and genetic defects?
- **Species diversity** – how many different species of plants and animals exist within a given ecosystem?
- **Ecological diversity** – how do different species interact with each other, and how do different habitats connect and intertwine with each other?

Generally, biodiversity is viewed as an indicator of how healthy – or damaged – an ecosystem is. A more biodiverse ecosystem is better able to adapt to environmental changes and supports a greater diversity of life, both flora and fauna. Biodiverse ecosystems are responsible for pollination, water purification, nutrient cycling, seed dispersal, pest control, climate regulation, and more. Biodiversity isn't just a concept relegated to nature preserves and parks - it is relevant everywhere on earth, from vast wilderness areas to suburban and urban yards. Washington is no exception. Home to a wide spectrum of ecosystems spanning from temperate rainforests to high alpine meadows to shrubsteppe, Washington

provides habitat for an incredible variety of plant, animal, and fungi species, both common and rare. Many of these species, however, face mounting challenges to survival.

## Tackling biodiversity loss in Washington

WDFW and its partners have been working to recover the Columbia Basin pygmy rabbit, marbled murrelet, northern spotted owl, salmon, Southern Resident killer whale, and a host of other imperiled species. Unfortunately, continued habitat loss and degradation, climate change effects, pollution, invasive species, and disease continue to accelerate biodiversity loss in Washington. Gaps in knowledge about how species and their habitats are responding to these pressures limits the effectiveness of protection and recovery actions.



Fisher release in the North Cascades. WDFW photo.

At the same time, there is hope. We know what works, and where we need to invest additional resources to make real progress. We've had tremendous successes when we've invested in the science and data that helps prioritize actions to reverse species population declines and enhance habitat. For example, fishers — a mammalian carnivore and a large member of the weasel family — once again roam Washington's forests thanks to reintroduction efforts by WDFW and many partners. Northwestern pond turtles have rebounded from population lows thanks to collective efforts to protect their habitat, reestablish lost populations, reduce threats such as invasive bullfrogs, and address shell disease. Through collaboration efforts with private landowners and local communities, shoreline armoring is being reduced throughout Puget Sound, restoring crucial shoreline habitat across the Sound for fish, wildlife, and communities. Increased habitat investments in shrubsteppe ecosystems are giving us a solid foundation to recover pygmy rabbits, ground squirrels, jackrabbits, sharp-tailed grouse, and other species that depend on shrubsteppe habitat.

WDFW and our partners have demonstrated that when there is adequate funding and a collaborative, science-based plan, we can be effective at overcoming conservation challenges. Some successes in

Washington include recovering the bald eagle and peregrine falcon, increasing populations of snowy plover and Taylor's checkerspot butterfly, delisting brown pelican and stellar sea lion, and down-listing canary rockfish and American white pelican. We often know what to do, but unfortunately, our progress to date has not kept pace with the problem.

Many at-risk species' populations continue to decline, and WDFW has much work to do to achieve our conservation recovery goals and our mission to "preserve, protect and perpetuate" fish and wildlife. Historically, this work has been difficult to achieve in part due to lack of dedicated funding allocated to non-game species and habitat protection. Work focused on wildlife species that people hunt (also known as game species) often benefits from permanent funding sources to support research, ongoing monitoring, and management. The rest of the state's biodiversity work has been chronically underfunded for many years, leaving the Department and policy makers with science gaps, incomplete data on fish, wildlife, and habitat conditions; and the inability to comprehensively implement actions that recover species and habitats or prevent their declines. This biodiversity funding marks a turning point in closing the gap on implementing critical conservation actions to restore biodiversity in Washington.

## Washington's State Wildlife Action Plan



Cummings Creek at WDFW's W.T. Wooten Wildlife Area. WDFW photo.

WDFW uses a comprehensive strategy called the State Wildlife Action Plan (SWAP) for conserving the state's SGCN and their habitats. The SWAP is part of a nationwide effort to develop plans that 1) objectively assess the status of each state's wildlife and habitats, 2) identify key problems they face, and 3) outline the actions needed to conserve them over the long term. A guiding principle of the SWAP is to identify actions needed to conserve wildlife and their habitats before species become too rare and restoration efforts too costly. WDFW is currently in the process of drafting an important and federally-mandated update to the Washington SWAP, due in 2025.



Washington's SWAP informs WDFW's conservation priorities and actions statewide and focuses on supporting the state's 268 Species of Greatest Conservation Need (SGCN) and the habitats they depend on. SGCN include species that are state or federally listed as threatened, endangered, or sensitive, as well as additional species that need conservation attention. The SWAP also informs WDFW's Priority Habitats and Species program and provides tools and informational resources to support collaborative conservation initiatives across a range of organizations and states.

With the appropriation of this biodiversity funding, WDFW will have more capacity to implement identified conservation actions for SGCN in Washington, as well as to increase the Department's knowledge about SGCN populations and close critical data gaps on many of these species.

## The path forward



White River Unit in the Chelan Wildlife Area. Photo by Alan L. Bauer.

Our spending plan focuses on what we know works to stem biodiversity loss. **For the 2023-2025 biennium, the Department is investing \$13.5 million in species conservation, \$8.6 million in habitat conservation, and \$1.9 million in policy and outreach.**

The results of these investments will positively impact not only species and habitats, but the human and economic health of Washington. By investing in biodiversity restoration, Washington is preventing costly future species listings and regulatory burdens, ensuring the health of agricultural pollinators, protecting the habitats that provide us with clean air and water, and ensuring that Washington's current and future generations can enjoy the landscapes and wildlife that make our state special. These investments provide the best opportunity to avoid a greater investment toward biodiversity loss in the future. Washington cannot afford to continue this trajectory of devastating biodiversity decline.

## Species conservation

With 268 SGCN in Washington, species conservation is a critical component of the Department's work to restore biodiversity. In 2023, WDFW implemented known recovery actions like disease treatments for northwestern pond turtles and captive rearing of imperiled island marble butterflies, supported partners like Puget Sound Restoration Fund to implement conservation actions, and surveyed, monitored, and conducted research to inform conservation action, including aquatic biodiversity studies using environmental DNA technology. This year, the Department laid the foundation for completing important recovery work in years to come.

### Implementing known recovery actions

With the support of this funding, the Department invested in the staff and equipment needed to address population threats and implement numerous recovery actions for species across Washington, including pinto abalone, Olympia oyster, Columbia Basin pygmy rabbit, sharp-tailed grouse, Washington ground squirrel, and northern leopard frog. This work could include conservation translocations and reintroductions, disease treatments, addressing threats such as invasive species, and collaborating with land management staff and partners to protect and restore habitat for SGCN. New staff will implement these actions and produce foundational documents like recovery plans, develop and nurture conservation partnerships, provide statewide technical expertise, and implement recovery actions.



A WDFW regional diversity biologist surveying a field of sagebrush with a known pygmy rabbit population. WDFW photo.

The Department has hired a regional diversity biologist for the North Central region to implement projects and programs, provide technical expertise, and develop and deliver local conservation projects, with a focus on species like northern leopard frogs, pygmy rabbits, greater sage-grouse, and more. In August 2023, WDFW also created the Marine Coastal Flyway section, hiring the Marine-Coastal-Flyway section manager with biodiversity funding. This new section in the Department's Wildlife Diversity

division encourages better coordination in response to conservation concerns for marine, nearshore, and coastal SGCN (primarily birds and mammals). In addition, it participates in the Pacific Flyway Council to make progress alongside other western states and the U.S. Fish and Wildlife Service (USFWS) on common priorities.

## **Pinto abalone**



WDFW biologists on a dive conducting pinto abalone restoration work. WDFW photos.

The pinto abalone, a large, herbivorous marine snail, serves an essential role in kelp forests as grazers, allowing new kelp to settle and grow. Unfortunately, Washington’s pinto abalone population has been in decline, leading to a state endangered listing in 2019. This funding supports the Department’s partnership with Puget Sound Restoration Fund to implement the Pinto Abalone Recovery Plan, including reintroduction throughout Puget Sound and monitoring survival of reintroduced snails.

With the funding, the Department has also successfully hired three new pinto abalone biologists whose primary duties will be monitoring restoration sites, scouting new locations to release captive-raised juvenile abalone, conducting surveys to find wild abalone, conducting education and outreach, and helping at the pinto abalone hatchery. These new biologists are currently undergoing training in anticipation of 2024 field work. This new field team will greatly expand WDFW’s capacity to reach our restoration goals for this iconic endangered species.

## **Island marble butterfly**

Thought to be extinct since 1908, the island marble butterfly was re-discovered by biologists during a prairie survey in San Juan Island National Historical Park in 1998, and a few years later on Lopez Island. However, it has not been seen on Lopez Island since 2006. The island marble is an incredibly rare, federally-listed endangered butterfly, and is at high risk. WDFW and many partners are working together to conserve and protect island marble butterflies through a variety of conservation measures and agreements, primarily through habitat protection and restoration. With biodiversity funding, WDFW

is supporting the Woodland Park Zoo's program to raise island marble butterflies in captivity and then release them into the wild. While captive rearing has been led by the National Park Service (NPS) in the past, leveraging the Zoo's expertise and infrastructure paired with WDFW support will help make this captive rearing program even more effective, and allows NPS to focus on habitat improvements. With support from the funding, the Zoo will also be creating a husbandry plan for island marble captive rearing, which will help ensure long-term safeguards, expanded research, and increased redundancy for this critical rearing program.

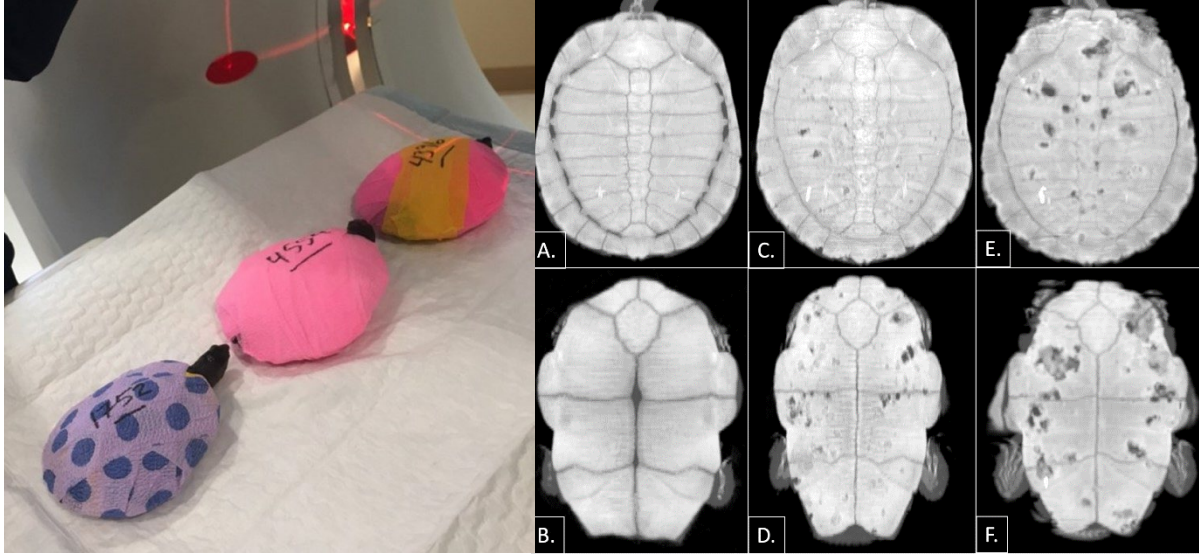
## Northwestern pond turtle



Northwestern pond turtle hatchlings. WDFW photo.

State endangered northwestern pond turtles (more commonly known as western pond turtles) are one of just two species of turtles native to Washington. WDFW and partners have been working to recover this species since the 1990s, and because of recovery efforts, the species has grown from two populations with less than 200 individuals to six populations with more than 800 individuals. However, in recent years, a shell disease has emerged as a major concern that has affected a substantial number of turtles in Washington.

As enabled by the biodiversity funding, WDFW has been able to provide more robust support to partners like the Oregon Zoo and Woodland Park Zoo to provide treatments for turtles with the disease, as well as funding more computed tomography (CT) scans to more accurately and quickly determine the true prevalence and severity of the disease. Any turtle that goes into treatment for shell disease receives a CT scan, allowing veterinarians to more effectively treat turtles.



Left: Western pond turtles wrapped being CT scanned for shell disease lesions. Right: CT scan images showing shell disease lesions. WDFW photos.

The biodiversity funding will continue to support western pond turtle recovery and shell disease treatment, while giving the Department an opportunity to evaluate the effectiveness of disease treatment on recovery efforts for this species. The funding is also allowing WDFW and partners to enhance our efforts to control invasive American bullfrogs at occupied pond turtle sites. Bullfrog predation on turtle hatchlings is one of the most critical threats inhibiting northwestern pond turtle recovery.

## Western snowy plover



Left: Western snowy plover on beach during a WDFW plover survey. Right: Western snowy plover eggs seen on a beach during a WDFW plover survey. WDFW photos.

The Pacific coast population of the western snowy plover is listed as threatened under the Endangered Species Act (ESA) and as endangered in Washington. These small, sand-colored birds lay eggs that are disguised as rocks directly on the dry sand of coastal beaches, blending in perfectly with their habitat. Snowy plovers face many threats, such as habitat loss or changes, predators like crows and ravens, and human disturbance through regular beach recreation activities. WDFW has undertaken actions to monitor and protect snowy plovers for many years, but there is still much to learn about the birds.

In October 2023, through the biodiversity funding, the Department hired a new species lead for coastal and colonial waterbirds. This position is spearheading work on western snowy plover and a host of other native shorebirds and waterbirds, including SGCN like the marbled godwit, rock sandpiper, state endangered sandhill crane, and state sensitive American white pelican. This year, WDFW is undertaking a multi-partner effort with financial support from the U.S. Fish and Wildlife Service (USFWS) to understand the specific impact of predator management on recovering snowy plover populations. In collaboration with USFWS, Washington State Parks, the Shoalwater Bay Indian Tribe, and Ecostudies Institute, this biodiversity-funded species lead and other WDFW biologists will be collecting data on plover numbers, nest success, predator sightings, and measures of beach usage on the sandy beaches of Pacific and Grays Harbor counties. This research will inform our conservation efforts and hopefully shed light on effective actions to continue to grow the population of snowy plovers in the state.

## Taylor's checkerspot butterfly



Left: Taylor's checkerspot larvae released at Scatter Creek Wildlife Area. Right: An adult Taylor's checkerspot butterfly. WDFW photos.

The Taylor's checkerspot butterfly is a state and federally listed endangered species historically found in prairies and grasslands from southeastern Vancouver Island, British Columbia through western Washington, and into the southern Willamette Valley in Oregon. Today, the butterfly is restricted to 11 known populations, eight of which are in Washington.

A captive rearing and reintroduction program has been ongoing in Washington for the past 18 years to support the Taylor's checkerspots. In this program, the butterflies are raised in captivity until the eggs grow into caterpillars. Then, the captive-raised juveniles are released back into native habitat to support growth of the population. The biodiversity funding enabled WDFW to step in and support an emergency action to conduct captive rearing in Clallam County, which helped to enhance the population at a critical time of historic population lows.

## Jackrabbits

Eastern Washington's native but increasingly rare white-tailed and black-tailed jackrabbits have both been identified as candidates for listing as endangered or protected in Washington. Very little is known about these elusive shrubsteppe species due to a historical lack of funding for surveys and research. However, best available information indicates that population numbers of both species are low, and populations are sparsely distributed due to the loss, degradation, and fragmentation of habitat, among other factors. To help inform conservation action for these species, WDFW needs to better understand current population size and distribution, habitat use patterns, wildfire vulnerability, and more.





Left: A white-tailed jackrabbit in the wild. Right: Black-tailed jackrabbit. USFWS photos.

Through the biodiversity funding, WDFW has developed a new one-and-a-half year research project in partnership with Washington State University, Hanford Nuclear Site, and Yakima Training Center to trap and collar both species of jackrabbits and study their movements and habitat use patterns. Trapping will begin in January 2024, with pass-through funding provided to WSU for a graduate researcher to lead the study. Staff time will be donated by the Hanford Nuclear Site and Yakima Training Center to assist in trapping, tagging, and collaring rabbits. Collars will remain on rabbits for two to three months and then automatically fall off the animals so researchers can collect the collars and the data they collected. GPS data collected from these collars will help determine habitat use patterns, daily and seasonal movements, and home range sizes, and allow researchers to investigate how the rabbits use habitat in areas adjacent to agricultural lands or places previously impacted by wildfire. This information will be developed into ArcGIS maps and will inform population surveys and future conservation work.

This project, combined with increased jackrabbit camera monitoring work, will help make much needed progress on WDFW’s conservation assessments of these chronically understudied state candidate species. Information gathered can help WDFW implement more efficient and impactful conservation work for these native Washington jackrabbits.

## Columbian sharp-tailed grouse

The Columbian sharp-tailed grouse is a Washington state endangered bird and the rarest subspecies of sharp-tailed grouse. They are also excellent indicators for the overall health of shrubsteppe ecosystems; if grouse are thriving, shrubsteppe is thriving. Washington populations may have once numbered in the hundreds of thousands, but today, the total population is less than 600 birds. These remaining birds occupy less than five percent of their historical range in seven remnant populations in Douglas, Lincoln, and Okanogan counties.



Sharp-tailed grouse with radio transmitter, translocated from British Columbia to Okanogan County. WDFW photo.

A population of Columbian sharp-tailed grouse in southern British Columbia (B.C.), however, is doing well thanks to some unique, temporary habitat. Grasslands and shrubsteppe is the sharp-tailed grouses' typical habitat, with its abundant perennial bunchgrasses and forbs and low density of tall vegetation. The grouse is not often found in timberlands, but researchers have found that the birds are utilizing timber stands in the years following a disturbance — like timber harvest or a wildfire — that results in habitat characteristics more appealing to the birds. When the trees regrow five to 15 years later, the grouse move on and seek out more suitable habitat in other locations.

With support from the biodiversity funding, WDFW and partners are working together to bolster Washington's sharp-tailed grouse population by relocating birds from B.C. to Washington to augment the endangered population. Besides simply increasing the number of birds, bringing grouse from Canada to Washington aims to increase the genetic diversity of the endangered population, improving its chance of recovery. The Department is currently in discussions with B.C. about the possibility of future translocation opportunities.

## Supporting partners to implement conservation actions



WDFW Puget Sound Shellfish Policy Coordinator Chris Eardley and Puget Sound Restoration Fund Biologist Brian Allen survey oysters on Quilcene Bay. WDFW photo.

WDFW can accomplish more conservation work through partnerships than we could ever accomplish alone. The biodiversity funding allocated in FY24 allowed the Department to explore new avenues to work together with others to complete important actions for species recovery.

The decision package for this biodiversity funding expressed the Department’s intent to develop a Wildlife Diversity Grant Program to facilitate implementation of prioritized recovery actions. The grant program will allow conservation partners the opportunity to apply for a maximum grant of \$200,000 in state funding per year, with a total grant pool of approximately \$1 million. Initially, this grant program will prioritize projects that implement known identified recovery and conservation actions for state listed and candidate species within the scope of the Wildlife Diversity Division. This scope does not include fish, aquatic invertebrates, wolves, and game species.

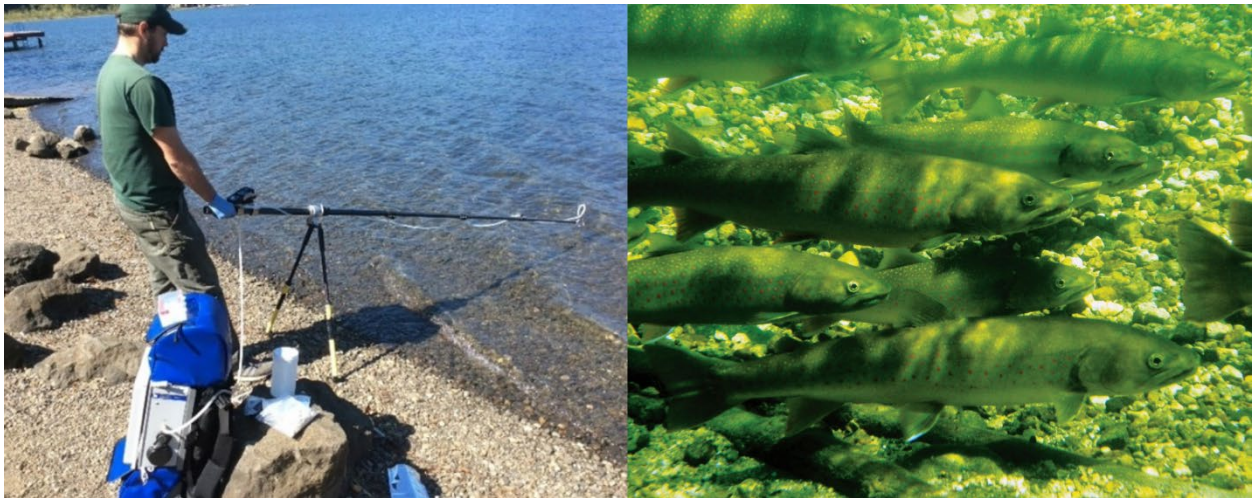
In October 2023, WDFW hired the Department’s new assistant wildlife diversity division manager, who will directly manage the now-funded Wildlife Diversity Grant Program. The assistant division manager will develop a grant proposal application and review process, and support WDFW staff and partners who are managing and implementing conservation projects in Washington. The funding also allowed the Department to hire a Management Analyst 4 – Project Manager position that will track biodiversity grants and contracts, and support project leads and partners.

In 2023, the agency also finalized two contracts with Puget Sound Restoration Fund (PSRF) to provide \$250,000 in pass-through funding to PSRF per biennium for Olympia oyster restoration and \$900,000 in pass-through funding per biennium to partners like PSRF and Puget Sound tribes to support critical pinto abalone production and restoration collaboration.

## Survey, monitor, and conduct research to inform conservation action

Filling knowledge and data gaps on SGCN is crucial to successful conservation efforts. In order to implement conservation action, we must first understand species distribution, abundance, baseline natural history, and the mechanisms driving species declines. With the biodiversity funding, WDFW's Wildlife Program is hiring four positions in FY 24 focused on helping the Department enhance and expand knowledge and data of SGCN, with a focus in the 2023-25 biennium on SGCN with an existing foundation of data and information. New positions will include a data steward biologist, two SGCN research scientists, and an IT support application developer. These positions will support development of survey protocols and tools and will conduct applied research to advance recovery for listed and candidate species. In the 2025-27 biennium, continued funding would allow the Department to invest in surveying, monitoring, and researching the 130 SGCN that WDFW currently has little to no data about.

### Aquatic biodiversity study



Left: WDFW technician sampling for eDNA. Right: A school of bull trout, an SGCN that the aquatic biodiversity study will shed more light on. WDFW photos.

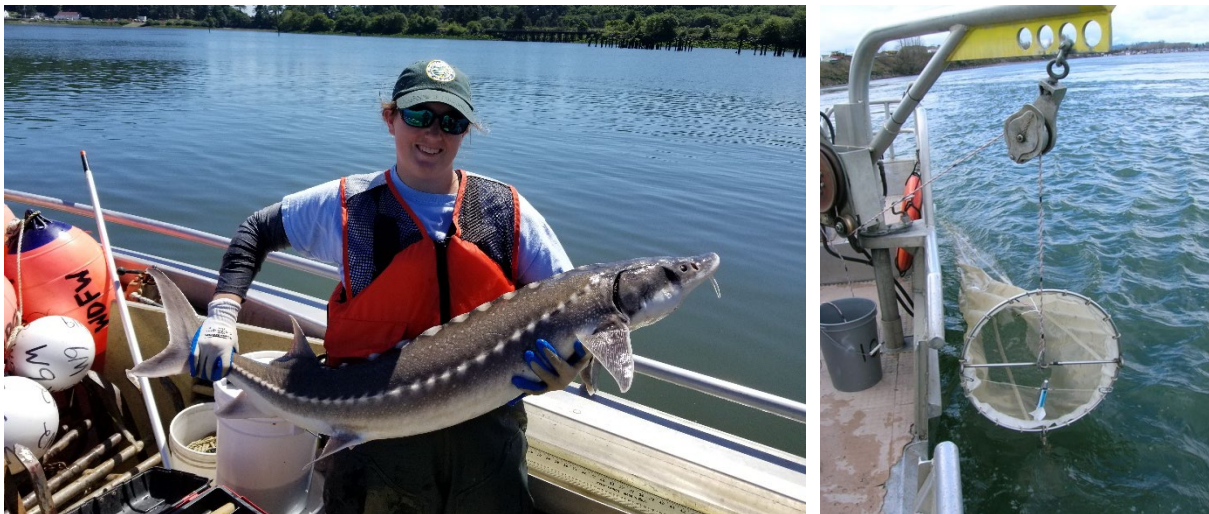
Twenty-four of Washington's SGCN are fish and shellfish that utilize freshwater rivers, lakes, and streams to spawn and rear. Limited survey capacity and low visibility in freshwater environments have made some of these species hard to detect, meaning WDFW has limited information on their distribution and abundance. Although several species-specific surveys have been completed over the years, a comprehensive, standardized survey of the aquatic fauna in the streams and small rivers of Washington has never been accomplished. Consequently, there is no central data set of freshwater fish and shellfish species, especially associated with any habitat characteristics, that is easily searched and indexed to help inform the SWAP, help inform species-specific questions, or help with permitting instream work. As developmental pressures increase on Washington's streams and rivers, having such data will be crucial for staff when completing environmental review for planned development.

With support from the biodiversity funding, WDFW's inland fish program is conducting an aquatic biodiversity study utilizing environmental DNA (eDNA) analysis. With initial staff hired in late 2023, we

will begin a phased implementation of the project beginning in spring 2024. With new technology and survey methodologies, we will be able to survey for various freshwater SCGN at once and increase the Department's baseline biological data so we can track populations and effectiveness of recovery actions over time. The eDNA team will be greatly expanded in FY 25 as the study ramps up.

### **Sturgeon and eulachon (smelt) stock assessment surveys**

White sturgeon and eulachon (commonly known as smelt) are two SCGN fish that have both had carefully managed fisheries. WDFW hopes to continue conservation work on these species in conjunction with our partners at Oregon Department of Fish and Wildlife and the Cowlitz Indian Tribe to enable future generations to participate in these unique fishing opportunities while sustaining these species and the crucial roles they play in their ecosystems.



Left: WDFW staff on a white sturgeon stock assessment survey. Right: A plankton net deployed to collect eulachon larvae and conduct an SSB survey. WDFW photos.

WDFW has conducted sturgeon monitoring in the Columbia River basin for several decades to better understand the populations of this fascinating and long-lived fish, but the Department has lacked the resources to monitor other areas. The biodiversity funding has enabled the expansion of these surveys into the Puget Sound and coastal areas. Sturgeon have been known to live and perhaps even spawn in these areas, but WDFW has not had the resources to properly survey them. Through the biodiversity funding, we are actively recruiting for a biologist in WDFW's Southwest Region to lead and implement these surveys, and have already hired a Southwest Region research scientist working on the design of these surveys. We are also actively recruiting for a scientific technician to process genetic data for white sturgeon.

These expanded white sturgeon surveys will give WDFW much better data on the species' distribution, abundance, size and age structure, and spawning in coastal and Puget Sound areas. This improved data will allow WDFW to better assess the conservation needs of sturgeon in these areas and will help inform future management of this species.

Federally threatened Columbia River smelt are a fascinating fish known for their dramatic runs as they return to the Columbia River, with a popular and unique recreational dip netting fishery open when conditions permit. Although millions of eulachon can return to the Columbia River, fishing opportunities may not open every year. Smelt runs on the Columbia River are often also biodiversity hot spots, bringing many different species together to feed on the smelt, including sea lions, native bird species, salmon, and the occasional whale. Smelt spawning stock biomass surveys and sampling (SSB surveys) are a critical component of determining the approximate run size, sex ratios, age structure, and more. The team that surveys smelt is now funded by the biodiversity funding whereas in the past, funding has come from various non-state sources like NOAA Fisheries. Having state funding ongoing for these surveys will allow WDFW to more effectively manage this species and fishery for generations to come.

### **Northern spotted owl augmentation feasibility assessments**



Left: Northern Spotted Owl adult, USFS photo. Right: A fledgling northern spotted owl. Photo by James Herndon.

Northern spotted owls are barreling towards local extinction in Washington within the next decade. A combination of barred owl management and habitat protection will be needed to slow the decline of the population in the immediate future. A draft Environmental Impact Statement from the U.S. Fish and Wildlife Service for barred owl management is currently under review; however, modeling suggests that the northern spotted owl will be slow to recover even with barred owl management.

Northern spotted owl populations are fragmented and some of the remaining owl pairs may be approaching reproductive decline. Research suggests that population augmentation can increase the rate of northern spotted owl population recovery when used in tandem with barred owl management. Assessing the feasibility, including associated costs, of implementing a northern spotted owl captive rearing and translocation program in Washington is urgently needed.

Beginning January 2024, WDFW biologists will be conducting feasibility assessments funded by the biodiversity funding. Biologists will use a forecasting model to determine if or how conservation translocations could increase the persistence of northern spotted owls in Washington.

The model will identify potential sites for conservation translocations, simulate northern spotted owl abundance and distribution responses to barred owl management, and simulate the results of different conservation translocation and barred owl management scenarios.

## Habitat conservation



Leque Island Estuary Restoration Project at Port Susan Bay and the Stillaguamish River. WDFW photo.

WDFW’s work with SGCN spans across Washington’s nine ecoregions, from the lush Northwest Coast to the arid Columbia Plateau to the vast expanses of wilderness of the North Cascades. Without healthy and resilient habitats, SGCN in Washington cannot be recovered to achieve healthy populations.

The Department’s Habitat Program is investing biodiversity funding in crucial projects and staff to ensure habitats are restored and protected, a critical step towards restoring Washington’s biodiversity. The Department is investing in creating and implementing strategic plans for critically important habitats like shrubsteppe, modernizing standards and guidance for protecting and restoring Priority Habitats, and expanding capacity to help people follow those standards by providing technical assistance and ensuring regulatory compliance.

The Department continues to integrate standards into land use regulations, like increased WDFW contributions to building collaborative water supply and policy solutions statewide. We are increasing the pace and effectiveness of restoration with a focus on watershed restoration, salmon, and biodiversity, and have made critical staff investments in responding to spills and protecting orcas.



## Creating and implementing strategic habitat plans

The biodiversity funding package enables the Department to hire new employees who provide dedicated capacity to create and implement strategic plans addressing key habitat issues in Washington, such as responding to sea level rise on Puget Sound shorelines, siting energy projects and transmission to minimize impacts, and contributing to shrubsteppe protection and restoration. In FY24, the Department will hire seven new positions to support the various aspects of strategic planning for habitat restoration and protection.



Shrubsteppe habitat in the North Central region. WDFW photo.

To date, WDFW has hired one management analyst and is recruiting for three others to coordinate and facilitate business functions with WDFW's Habitat Program, including project/portfolio management, data management, and analyst support. An IT App Development position will go to recruitment in the second half of FY24, designed to provide support for Habitat Program's growing initiatives and data needs.

WDFW is actively recruiting for one environmental planner to help coordinate the Washington Shrubsteppe Restoration and Resiliency Initiative (WSSRI). The WSSRI Long-term Strategy will be submitted to the Legislature in March, which outlines a comprehensive roadmap to conserve and support the wildlife and people of the shrubsteppe landscape. WDFW is complimenting the Legislature's initial investment in shrubsteppe in the 2021-23 biennium with this biodiversity investment for the

2023-25 biennium. The WSRRRI program manager and three additional strategic positions for other habitats are to be hired in early FY25. These positions increase the dedicated strategic planning efforts within Habitat Program, with new staff leading planning processes and initiatives that improve results, address issues and opportunities, and serve as a connection point between different levels of management. The decision package also provides ongoing funding for an existing position focused on the Department's work on Intensively Monitored Watersheds (IMW), along with a scientific technician to be hired in FY25 to support IMW work.

## **Modernizing standards and guidance for protecting and restoring habitats**

We need standards and guidance to inform the public about what methods and best practices will reliably achieve desired habitat protection and restoration outcomes in Washington. With the support of the biodiversity funding, the Department is making multiple investments to modernize standards and guidance for protecting and restoring habitats.

The Department has recently hired a habitat connectivity biologist and will soon be offering a new shrubsteppe biologist position, both experts in our Priority Habitats and Species (PHS) Section. These positions will create and update standards and guidance, develop and manage spatial data to support program delivery, and build and maintain best available science management recommendations. In addition, the Department is adding two new PHS expert positions to be hired in FY25.



WDFW staff conducting fish passage inventory and assessment training in the Coastal Region. WDFW photo.

Matched with funding from the Washington Department of Transportation, Brian Abbott Fish Barrier Removal Board, and other contracts, the biodiversity funding is also helping support two existing environmental engineer positions. One position is focused on Fish Passage, including Water Crossing Design Guidance updates, while the other position is focused on in-seam structures such as large dams, fishways, and tide gates. The Department is also utilizing funding for updates to technical guidance documents, developing standards, and expanding services.

## **Helping people follow standards**

With work ongoing to modernize standards and guidance, it is critical to provide assistance and incentives to customers, the public, and partners to help them follow these standards and guidance that will reliably protect and restore habitat. In October 2023, the Department hired an assistant regional habitat program manager in the Southwest Region to help set district policy, ensure policy alignment in regulatory work, supervise regional staff, and support district teams.

WDFW has recently filled two regional habitat biologist positions and will be hiring two additional biologists to support the regional staff. WDFW is also interviewing for two compliance inspector positions, with a compliance division section manager position description approved and the role filled by existing staff in an acting capacity. The compliance division manager will supervise compliance inspectors statewide, oversee quality assurance and control processes, acts as a liaison between Habitat and Enforcement programs, and is the lead on internal and external outreach and coordinating effectiveness monitoring.

In addition to these significant investments in staff capacity made possible through the biodiversity funding, the Department is also investing in a social marketing survey to identify which services will incentivize or remove perceived barriers to actions like building farther from shorelines and protecting and restoring native vegetation. This will inform improvements to the suite of financial incentives we offer through [Shore Friendly](#), including loans to stimulate owners' active engagement.

## **Integrating standards into land use and other regulations**

The Department recognizes the importance of partnering with local government and others to integrate habitat standards into regulations that achieve results at large scales. Local governments use comprehensive plan update processes to manage growth and development while providing for the protection and restoration of important habitats within their jurisdictions. We are in the final stages of hiring for three environmental planner positions to support these comprehensive plan updates. These positions use knowledge of growth management and habitat needs to advocate for fish and wildlife protection in light of development activities.

The Department is also utilizing water policy funding to focus two water policy staff on WDFW water policy priorities without the limitations imposed by previous fund sources. This has increased WDFW's contributions to collaborative water supply and policy solutions across the state, including in the Walla Walla, Nooksack, Chehalis, and Wenatchee watersheds. It has also provided capacity for our water

policy team to coordinate more closely with WDFW's Water Science Team on intersecting policy and science issues.

## Increasing the pace and effectiveness of restoration



WDFW Columbia Basin Wildlife Area, Upland Restoration Unit. WDFW photo.

As climate change and development continue to impact habitats and threaten biodiversity across Washington, it is imperative that WDFW increase the pace and effectiveness of habitat restoration on both private and public lands. Using our knowledge of the most effective restoration techniques, we are committed to working with communities to increase support for the best restoration projects in the right places.

To help fulfill that commitment, we have hired one and are actively recruiting for one restoration specialist position that will support restoration projects in specific locations by working with stakeholders, partners, and landowners to identify, design, and implement restoration projects in the places that will have the greatest benefit to species and ecosystems. These specialists support watershed restoration with a focus on salmon and biodiversity, with one position in the Snake River region and the other in the Upper Columbia River.

In FY25, we will be hiring two additional restoration specialists with one focused on coastal watershed biodiversity and the other focused on shrubsteppe restoration. These positions will be supported by four biologist positions to be hired in FY25.

## Responding to spills and protecting orcas



An oil spill close to Ocean Shores in 2015. WDFW's Oil Spill team helped with clean-up. WDFW photo.

Oil spills can have devastating consequences for endangered species like Southern Resident killer whales, sea otters, and many more. With support from the biodiversity funding, WDFW hired a statewide expert on oil spill response and permitting to advance the agency's capacity in oil spill preparedness, emergency response drills, and 24/7 on-call response to spills. With this added capacity, the Department can address and mitigate effects of oil spills on wildlife and habitats. The Department is also investing funding in FY24 and FY25 to pilot and evaluate emerging methods for deterring orcas and other marine mammals from approaching contaminated areas.

With work currently in the planning phase, WDFW's oil spill team has submitted a grant proposal to the National Fish and Wildlife Foundation that includes training and research on improved techniques for whale deterrence and increases management capacity by expanding response.

# Policy and Outreach

## State Wildlife Action Plan Coordinator

The SWAP is at the core of the Department’s efforts to stem biodiversity loss in Washington. It provides the blueprint to the state’s conservation work and helps shape priorities for conserving the species and habitats that need it most. With the biodiversity funding, the Department successfully hired the SWAP Coordinator position at the start of FY24 to spearhead the 2025 SWAP update. This position now reports to WDFW’s Director of Conservation, enabling agency-wide collaboration on the 2025 update. Work on the update is well underway and the SWAP coordinator is playing a critical role in keeping this project organized and on-track. The 2025 update will be the most informed, comprehensive, and effective version of the SWAP yet, and will further enhance the Department and partners’ efforts to restore biodiversity in Washington.

## Conservation Education



Left: Teachers on a professional development outing in shrubsteppe habitat organized by WDFW’s conservation education team. Right: Volunteer and participant at a WDFW bat house building workshop. WDFW photos.

According to the Association of Fish and Wildlife Agencies, conservation education is “one of the most vital tools for enhancing public understanding and appreciation of fish and wildlife management while shaping long-term conservation and enjoyment of natural resources.”

WDFW is building out a regionally based fish and wildlife conservation education program to support the next generation and their families to foster lifelong stewardship for the natural world and a commitment to protecting and restoring biodiversity. One core component of this is developing conservation education curriculum and making these curricula available to Washington schools.

Research shows that the younger children are exposed to nature, wildlife, and outdoor activities, the more likely they are to become natural resource stewards. For this reason, the curriculum program is focused specifically on developing content for students in kindergarten through fifth grade. This approach complements the [Outdoor School For all Funding](#) and ensures a continuum of nature education through sixth grade.

The biodiversity funding created a permanent conservation education curriculum coordinator position. The curriculum program has engaged 60 second grade students, created a training for informal educators and multiple teacher trainings on State of Salmon and Washington Wildlife curriculum units, and more.

In early 2024, the curriculum coordinator will organize and lead four additional professional development and training opportunities for teachers related to conservation education. The coordinator will also collaborate closely with Bellevue, Wenatchee, and Spokane school districts to embed conservation curricula like State of Salmon and continue developing new curricula, including units on pollinators, European green crab, and salmon.

With support from the biodiversity funding, the conservation education section is continuing a partnership with the Washington State Office of Superintendent of Public Instruction to develop Next Generation Science Standards-aligned lesson plans focused on fish and wildlife conservation for kindergarten through fifth grade students. The Department is also beginning work in spring 2024 to implement a small grant program to cover transportation for at least 50 Title I school classrooms to take fieldtrips to WDFW wildlife areas and fish hatcheries.

## **Habitat at Home**

The biodiversity funding secured ongoing funding for a Habitat at Home coordinator at WDFW. The Habitat at Home program aims to teach urban communities how to increase biodiversity through planting native plants, coexisting with wildlife, and choosing stewardship behaviors. The program's unique focus on urban communities seeks to make biodiversity relevant and important to the majority of Washington's population. The program coordinator's current and upcoming work includes managing a winter wildlife speaker series between December and May and a college sustainability series program and container garden workshop; creation of GIS resource maps; and development of community Habitat at Home signage, stormwater pond biodiversity signage, program newsletters, and more.

The Habitat at Home program is an effective tool in bringing communities, homeowners, and renters closer to biodiversity issues and developing public interest and commitment to protecting and restoring biodiversity in Washington, one Habitat at Home at a time.

## **Communications**

In addition to conservation education and Habitat at Home outreach and education efforts, the Department has a strong and ongoing need for effective messaging and storytelling on mounting biodiversity loss in Washington. The biodiversity funding supported the creation of an ongoing,

permanent Biodiversity Communications Specialist position. Communications focus on conveying the benefits of biodiversity and the threats and challenges for sustaining wildlife in the state, while also reporting to the Legislature on the status and progress of the biodiversity funding package.

The biodiversity communications specialist will create and develop written, photo, video, and social media content about this critical conservation work, with an emphasis on SGCN, underloved and underrepresented species, and the critical habitats and ecosystems they depend on. The specialist is also working closely with WDFW policy experts on the nexus between the biodiversity and climate crises as they relate to fish and wildlife management and conservation. Additionally, the specialist is developing public-facing resources to increase awareness of biodiversity issues, such as a biodiversity web content, and is exploring interactive data visualizations about SGCN, biodiversity corridors, ecoregions, and more.

## **WDFW governance assessment**

One-time funding (\$300,000) was appropriated by the Legislature to the Ruckleshaus Center to review the Department's obligations as the trustee of state fish and wildlife on behalf of all Washingtonians, including reviewing the governance structure, the funding model, and accountability and transparency in decision-making.



## Appendix

### **Biodiversity Appropriation Language as pulled from 2023 Legislative Budget.**

(32)(a) \$8,000,000 of the general fund-state appropriation for fiscal year 2024 and \$15,000,000 of the general fund-state appropriation for fiscal year 2025 are provided solely for the protection, recovery, and restoration of biodiversity, the recovery of threatened and endangered species, and a review of the department of fish and wildlife. Examples include habitat protection and restoration, technical assistance for growth management act planning, fish passage improvements, conservation education, scientific research for species and ecosystem protection, and similar activities. Funding in this subsection may include pass-throughs to public, nonprofit, academic, or tribal entities for the purposes of this subsection.

### **Figure: Species of Greatest Conservation Need by Ecoregion**

*(adapted from 2022 biodiversity decision package fact sheet)*

*View on next page*

# Species of Greatest Conservation Need (SGCN) by Ecoregion

Ecoregions provide a useful framework for cooperating with federal agencies, neighboring states, and Canadian provinces on conservation planning and implementation. Focusing conservation effort in the higher priority conservation areas within each ecoregion will have the most benefit for the greatest number of wildlife species and habitats of concern.

The following provides an overview of each ecoregion and examples of SGCN that need immediate support. Please note: Some species may live in more than one ecoregion.

## Northwest Coast



Washington's westernmost and wettest ecoregion extends from ocean depths to the Olympic Mountains' glaciated peaks. To the north, Cape Flattery is the lower 48 states' most northwestern point. To the south, the mouth of the Columbia River marks the ecoregion's southern border in WA.

### Example species to support:

- Olympic mudminnow
- Pinto abalone
- Snowy plover



## Puget Trough



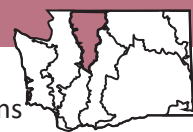
Flanked by forested foothills and freshened by many rivers, the Puget Sound ecoregion is home to more than 75% of the state's human population. This ecoregion runs the length of Washington, rising to about 1,000 feet elevation between the Cascade Mountains on the east and the Olympic Mountains and Willapa Hills on the west.

### Example species to support:

- Island marble butterfly
- Olympia oyster
- Streaked horned lark



## North Cascades



Rare alpine daisies and thousand-year-old cedars are found in the North Cascades ecoregion, which contains some of the largest expanses of wilderness in the lower 48 states. This ecoregion includes the Cascade Mountains north of Snoqualmie Pass and west of the Cascade crest northward into British Columbia.

### Example species to support:

- Westslope cutthroat trout
- White-tailed ptarmigan
- Wolverine



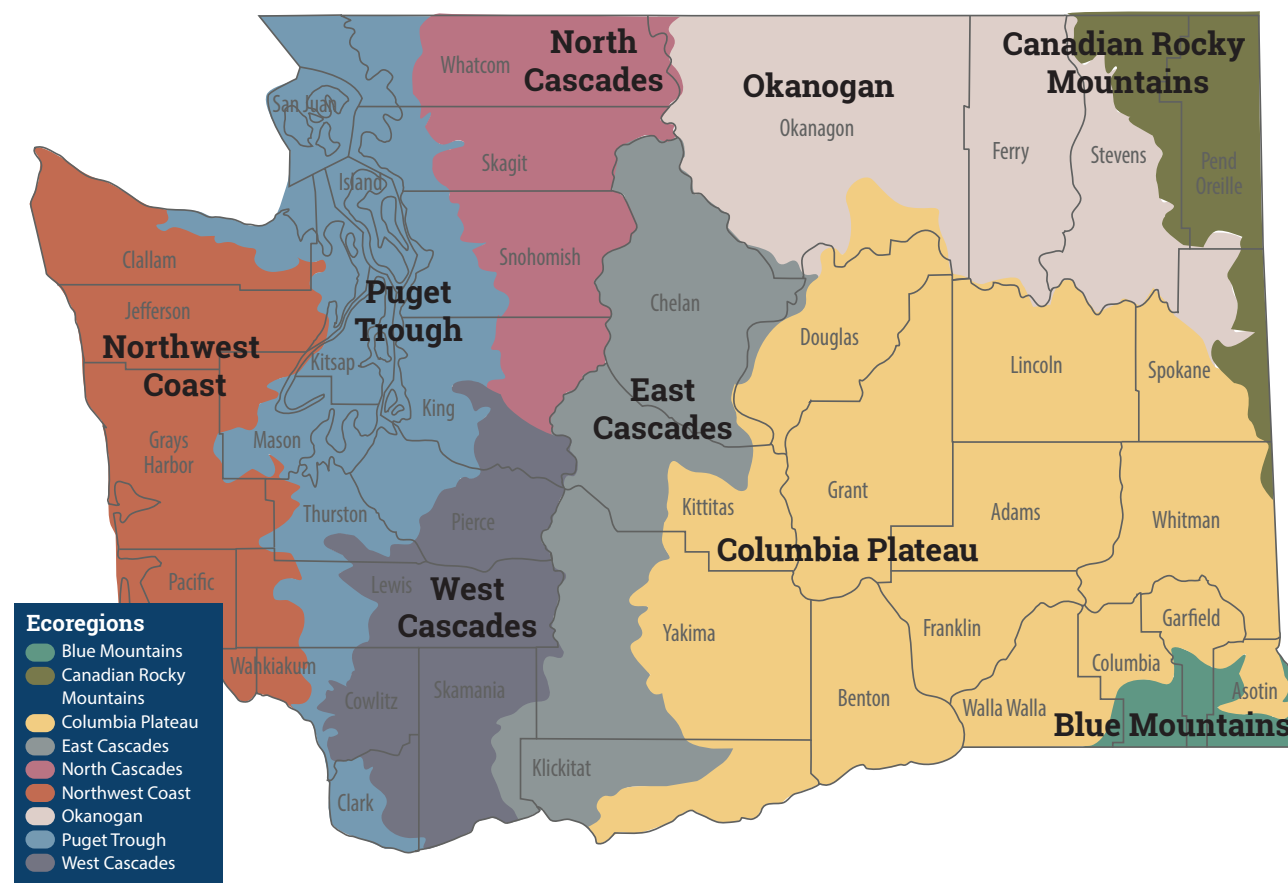
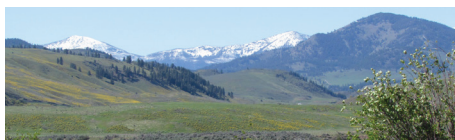
## West Cascades



Rumbling volcanoes, ancient forests, and a wealth of amphibian diversity are found in the West Cascades ecoregion which encompasses the westside midsection of the great Cascades cordillera. In Washington, the West Cascades run southward from Snoqualmie Pass to the Columbia Gorge, the only lowland divide in the range.

### Example species to support:

- Fisher
- Pacific lamprey
- Western pond turtle



**Ecoregions**

- Blue Mountains
- Canadian Rocky Mountains
- Columbia Plateau
- East Cascades
- North Cascades
- Northwest Coast
- Okanogan
- Puget Trough
- West Cascades

## East Cascades



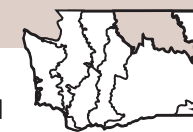
On the dry side of the Cascades lies one of Washington's most diverse ecoregions, with open stands of ponderosa pine and Garry oak that abut the edge of the shrubsteppe. Crossing the Columbia River, this mountainous ecoregion continues south through the length of Oregon.

### Example species to support:

- Cascade red fox
- Hoary bat
- Western ridged mussel



## Okanogan



In north-central Washington, the Okanogan ecoregion is a broad highland area separating the North Cascades and the Northern Rockies. Scenic river valleys, like the Methow, the Okanogan, and the Colville, run north to south.

### Example species to support:

- Lynx
- Redband rainbow trout
- Sharp-tailed grouse



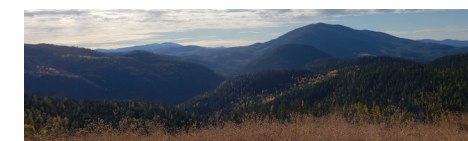
## Canadian Rocky Mountains



The western edge of the Rocky Mountains forms this ecoregion in Washington's northeastern corner. Made up primarily of the Selkirk Mountains, the ecoregion is bounded by the Okanogan ecoregion on the west and touches to the Columbian Plateau ecoregion on its southwestern edge. As some of Washington's wildest country, this ecoregion is sparsely populated.

### Example species to support:

- Mountain whitefish
- Suckley's cuckoo bumble bee



## Columbia Plateau



Two major rivers, the Columbia and the Snake, dominate the dramatic dry landscape of Washington's largest ecoregion, which is also home to an inland sea of sagebrush and the state's fertile agricultural heartland.

### Example species to support:

- Monarch butterfly
- Northern leopard frog
- White sturgeon
- Sagebrush sparrow
- Jackrabbits



## Blue Mountains



As the smallest ecoregion in Washington, the rugged Blue Mountains in the state's extreme southeastern corner have a rolling high plateau dotted with ponderosa pine forests, vestiges of Palouse prairie, and steeply cut rimrock canyons.

### Example species to support:

- Bull trout
- Rocky mountain tailed frog

