

# the OREGON CONSERVATION STRATEGY

February 2006

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## Recommended Citation

Oregon Department of Fish and Wildlife. 2005. Oregon Conservation Strategy. Oregon Department of Fish and Wildlife, Salem, Oregon.

## Project Funding

Funding for the development of the Conservation Strategy was provided by: The Oregon Nongame Fund (Oregon Nongame Checkoff and donations); Oregon General Fund; Wildlife Conservation and Restoration Program; and the State Wildlife Grant Program.

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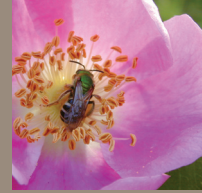
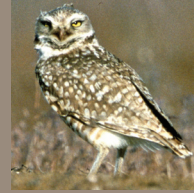
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# FOREWORD

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State and federal agencies, as well as other organizations, have developed and led many plans during the years to guide conservation of Oregon's fish and wildlife and their habitats. Most of these plans have focused on a particular species, area or natural resource. Although wildlife conservation often has been an implicit concern of these plans, many were developed primarily for other purposes.

With the creation of this Oregon Conservation Strategy, Oregon has its first overarching state strategy for conserving fish and wildlife.

The Conservation Strategy is an effort to use the best available science to create a broad vision and conceptual framework for long-term conservation of Oregon's native fish and wildlife, as well as various invertebrates and native plants. As a guide to conserving the species and habitats that have defined the nature of Oregon, this strategy can help ensure that Oregon's natural treasures are passed on to future generations. The Conservation Strategy emphasizes proactively conserving declining species and habitats to reduce the possibility of future federal or state listings. It is not a regulatory document, but instead presents issues and opportunities, and recommends voluntary actions that will improve the efficiency and effectiveness of conservation in Oregon.

Healthy fish and wildlife populations require adequate habitat, which is provided in natural systems and, for many species, in landscapes managed for forestry, agriculture, range and urban uses. The goals of the Conservation Strategy are to maintain healthy fish and wildlife populations by maintaining and restoring functioning habitats, preventing declines of at-risk species, and reversing declines in these resources where possible. These goals fit well with ODFW's statutory obligation

to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations.

However, this is not a management plan for the Oregon Department of Fish and Wildlife. Instead, it is a broad strategy for all of Oregon, offering potential roles and opportunities for residents, agencies and organizations. It incorporates information and insights from a broad range of natural resources assessments and conservation plans, supplemented by the professional expertise and practical experiences of a cross-section of Oregon's resource managers and conservation interests. It is designed to have a variety of applications both inside and outside of state government.

Most important, perhaps, it establishes the basis for a common understanding of the challenges facing Oregon's fish and wildlife, and provides a shared set of priorities for addressing the state's conservation needs. The heart of the Conservation Strategy is a blueprint for voluntary action to address the long-term needs of Oregon's fish and wildlife. The future for many species will depend on landowners' and land managers' willingness to voluntarily take action on their own to protect and improve fish and wildlife habitat.

The strategy outlined in this document considers fish and wildlife from a statewide perspective, establishing a broader context for decisions about the species and habitats in greatest need of conservation attention. It also recognizes that these issues vary in different regions, requiring conservation actions to be tailored to the unique needs of the fish, wildlife and human communities that coexist throughout Oregon. Much good work already is being done by private landowners, water-

shed councils, conservation organizations and agencies like the many soil and water conservation districts. This strategy continues building on the solid foundation these groups have set for Oregon's conservation future.

This document is called a strategy, not a plan, because its purpose is to help people make decisions more strategically about how they can invest time and resources in fish and wildlife conservation. To that end, the Conservation Strategy focuses on a suite of species and habitats, many of them closely linked, that are in greatest need of conservation attention. The strategy provides guidance on the types of actions most likely to benefit these species and habitats, and describes a variety of non-regulatory programs that can help landowners and land managers with implementation.

For agencies and organizations working on a larger scale, the Conservation Strategy highlights specific geographic "Conservation Opportunity Areas" that provide good opportunities to address the conservation needs of high-priority habitats and species. These landscape-scale areas

include both public and private ownerships where targeted investments in conservation actions and incentives for private landowners are likely to generate the greatest long-term benefits for fish and wildlife.

The expanding footprint of human development and 150 years of landscape alteration have left much of Oregon's fish and wildlife at varying degrees of risk. For example, the song of Oregon's state bird, the western meadowlark, is rarely heard in the Willamette Valley any more. A grassland bird still common in eastern Oregon, the meadowlark is not going to be a candidate for listing under the Endangered Species Act any time soon. But the state bird is in trouble across a significant portion of its historic range in Oregon. Like most of Oregon's wildlife, it retains a natural resilience and will respond to improved habitat conditions. However, the meadowlark needs some conservation attention.

For the western meadowlark and dozens of other similarly vulnerable species including fish, amphibians, reptiles, mammals, invertebrates and plants, the Oregon Conservation Strategy offers hope for a more secure future.

## Background and Purpose: *State Comprehensive Wildlife Conservation Strategies and Oregon's Role*

Congress created a non-regulatory State Wildlife Grants Program to provide funding to states for proactive fish and wildlife conservation efforts. All 50 states are participating in the program. The goal of the program is to help maintain healthy fish and wildlife populations, thereby avoiding the costly and controversial regulations that accompany listing of species under the federal Endangered Species Act. Priority must be placed on two major categories: (1) species that are "low and declining" and (2) species that "are indicative of the diversity and health of wildlife of the state." To receive State Wildlife Grant funds, each state fish and wildlife agency must develop a "comprehensive wildlife conservation strategy" that contains eight elements addressing species, habitats, problems, conservation actions, monitoring, strategy review, interagency coordination, and public involvement. State strategies must be developed and submitted to U.S. Fish and Wildlife Service for approval by October 1, 2005.

All state strategies must be approved by the U.S. Fish and Wildlife Service. Guidance provided by the U.S. Fish and Wildlife Service directed states to consider wildlife in a broader sense that includes fish, amphib-

ians, reptiles, mammals, birds, and invertebrates such as butterflies. States were also encouraged to consider native plants. Oregon Department of Fish and Wildlife is the state agency with statutory authority to manage fish and wildlife populations. Other state and federal agencies have jurisdiction over other resources. For example, Oregon Department of Agriculture manages native plant conservation and has responsibility for noxious weeds and insect pests. This Conservation Strategy is intended to be a broad framework for all of Oregon. Therefore, Oregon Department of Fish and Wildlife has coordinated with many agencies in the development of this Conservation Strategy. Priority actions identified in the Conservation Strategy will require continued coordination to build partnerships across jurisdictions and management authorities.

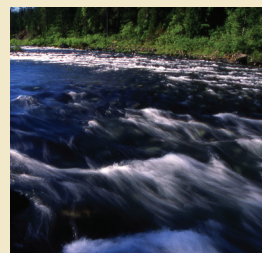


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Most readers will focus their attention on a particular topic, place, or concern addressed by this document, and perhaps find themselves drawn into a broader exploration.

For landowners and land managers who want to improve conditions for at-risk fish and wildlife, it provides a menu of conservation actions.

For agencies and organizations interested in making their conservation investments more effective and efficient, it is a blueprint for more strategic decision-making.

For citizens who value fish and wildlife, and the diversity of Oregon's natural world, it offers insights into complex issues and a doorway into a world where every person can contribute to conservation of Oregon's natural heritage.

Oregon Department of Fish and Wildlife hopes you will participate in this exciting work that celebrates Oregon's heritage and shapes its conservation future.



Marla Rae  
Chair, Oregon Fish and Wildlife Commission

## Organization of this Document

### SECTION A

#### ***Strategy for Action and First Steps***

This is the heart of the Conservation Strategy. It describes a broad, strategic approach to the conservation issues facing Oregon. It highlights many large-scale actions that Oregonians can take to conserve fish and wildlife. It also describes how the Conservation Strategy can be implemented and explores some possible funding sources.

### SECTION B

#### ***Stepping Down from Statewide to Local : Conservation Review and Technical Information***

This provides a greater level of detail about key statewide conservation issues, Oregon's ecoregions, Strategy Habitats, and Strategy Species. The Statewide Perspectives and Approaches chapter also describes the Voluntary Conservation Tools available to landowners and the Conservation Strategy's approach to monitoring.

### SECTION C

#### ***Supporting Information (Appendices)***

This provides additional information in appendix form and includes a discussion of Oregon's existing planning and regulatory framework; a statewide list of Strategy Species; a summary of financial incentive programs for landowners; descriptions of the methods used to determine Strategy Species, Strategy Habitats and Conservation Opportunity Areas; and select references.

## Acknowledgements

**The Conservation Strategy would not have been possible without the assistance and guidance of many individuals, agencies, organizations and others who participated in this process.**

**We would like to express our appreciation to:**

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Dick Bradbury, *Oregon Country Beef and eastern Oregon landowner*; Brett Brownscombe, *Hells Canyon Preservation Council*; Bobby Brunoe, *Confederated Tribes of Warm Springs*; Bruce Dixon, *Tourism Development Solutions*; Katie Fast, *Oregon Farm Bureau*; Ken Faulk, *Small Woodland Association*; Ron Hathaway, *OSU Extension Service*; Peter Kenagy, *NORPAC Foods, Inc. and western Oregon landowner*; Cathy Macdonald, *The Nature Conservancy*; Russ McKinley, Steve Mealey, *Boise Cascade*; Neal Maine, *North Coast Land Conservancy*; Jason Miner, *Oregon Trout*; Brad Nye, *Deschutes Basin Land Trust*; Joe Moll, Mike Running, *McKenzie River Trust*; Meryl Redisch, *Audubon Society of Portland*; Dennis Richey, *Oregon Anglers*; Gil Riddell, *Association of Oregon Counties*; Richard Schmitz, *Oregon Chapter of The Wildlife Society*; Kay Teisl, Kevin Westfall, Micah Wells, *Oregon Cattlemen's Association*; Tony Vecchio, *Oregon Zoo*; Sara Vickerman, *Defenders of Wildlife*; Dave Wiley, *Oregon Hunter's Association*; Ray Wilkeson, *Oregon Forest Industries Council*; Terry Witt, *Oregonians for Food and Shelter*; Brian Wolcott, *Walla Walla Basin Watershed Council*; Ron Yockim, *Douglas County*.

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### **Private Organizations and Private Citizens**

Bobby Cochran, Bruce Taylor, Cheryl Hummon, Rick Brown, *Defenders of Wildlife*; *Native Plant Society of Oregon*; Bruce Newhouse, *Salix Associates*; Camille Reyes, *Burgerville*; Doug and Sharon Sinko, *Myrtle Crest Dairy*; Jack Shipley, *Applegate Partnership*; Jack Southworth, *Country Natural Beef*; Kristen Lambert, *Klamath Basin Rangeland Trust*; Mace Vaughn, *Xerces Society*; Mark Porter, Nils Christoffersen, *Wallowa Resources*; Marko Bey, *Lomakatsi Restoration Project*; Mike Cloughesy, Leslie Lehman, *Oregon Forest Resources Institute*; Molly Gaines, *Haberman & Associates*; Peter Schoonmaker, Wayne Luscombe, *Illahee*; Scott Aycok, *Central Oregon Intergovernmental Council*; Stacy Davies, *Roaring Springs Ranch*; Steve Parrett, *Oregon Water Trust*; Tony Lasher, *The Resort at the Mountain*; Robert Gritsky, *Northwest Wildlife Consultants*; Fred Otle, *rancher*; Mark Knaupp, *farmer*; Pat Voigt, *rancher*; Craig Bienenz, Darren Borgias, Debbie Pickering, Doug Kreuz, Jonathan Soll, Kyle Strauss, Mandy Tu, Phil Shepard, *The Nature Conservancy*.



### **Watershed Councils**

Cyndy Coleman, *Harney Watershed Council*; Daniel Newberry, *Apple-gate River*; Marty King, *Umatilla Basin*; Jeff Oveson, *Grande Ronde Model Watershed*; Todd Miller, *Siuslaw Watershed Council*.

### **Partnerships**

*Oregon Invasive Species Council*.

### **Cities and Counties**

Claire Puchy, *City of Portland*; Eric Wold, *City of Eugene*; Gary Page, *Malheur County*; Janet Greenup, *Morrow County Soil and Water Conservation District*; John Ferdinandsen, *Harney County*.

### **Native American Tribes**

Mark Berry, Bobby Brunoe, Terry Luther, and Clay Penhollow, *Confederated Tribes of Warm Springs*; Howard Crombie, *Confederated Tribes of Coos, Lower Umpqua and Siuslaw*; Mike Kennedy, *Confederated Tribes of Siletz*; Carl Scheeler, Todd Shaw, *Confederated Tribes of the Umatilla Indian Reservation*.

### **State Agencies and Universities**

Stephanie Page, Dan Hilburn, Kathleen Johnson, Nancy Osterbauer, Tim Butler, *Oregon Department of Agriculture*; Gary Lettman, Jennifer Weikel, Marcia Humes, Rick Wagner, *Oregon Department of Forestry*; Bobbi Riggers, Doug Terra, Greg Sieglitz, Ken Bierly, *Oregon Watershed Enhancement Board*; Dave DeSante, *The Institute for Bird Populations*; Elaine Hallmark, *Oregon Consensus Program*; Greg Wolf, *National Policy Consensus Center*; Jay Schleier, *Oregon Parks and Recreation Department*; Jared Rubin, Pete Dalke, *Oregon Department of Environmental Quality*; Mark Sytsma, Mary Pfauth, *Portland State University*; Jim Karr, *University of Washington*; Dave Ganskopp, Jon Bates, Roger Sheley, Tony Svejcar, *Eastern Oregon Agricultural Experimental Center*; Kim Travis, *Oregon Solutions*; Milt Hill, *Oregon Department of Transportation*; Monte Turner, *Division of State Lands*; Paul Adamus, Gary Ivey, Kim Nelson, Adrian Gall, Paul Jepson, *Oregon State University*; Ron Eber, *Department of Land Conservation and Development*; Rex Sallabanks, *Idaho Department of Fish and Game*.

### **Federal Agencies**

Chet Hadley, *Natural Resource Conservation Service*; Christopher Pearl, Elise Elliot-Smith, Jon Bart, Sue Haig, *U.S. Geological Service*; Barb Bresson-Kott, *U.S. Forest Service-Bureau of Land Management*; Dave Peter, Gene Yates, Jane Kertis, Jennifer Lippert, Joan Kittrell, Mark Gomez, Tim Bailey, *U.S. Forest Service*; Kat Beal, *U.S. Army Corps of Engineers*; Jennifer Thompson, Mike Green, Sue Thomas, *U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office*; Verlyn Ebert, Dan Edwards, Chris McKay, Nell Fuller, *U.S. Fish and Wildlife Service, Division of Federal Assistance*.

### **Other Oregonians**

**And all Oregonians who provided comments on the materials and shared with us their vision, hopes and ideas for the future of conservation in Oregon.**

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# STRATEGY

## FOR ACTION AND FIRST STEPS

### Oregon's Unique Natural Heritage

Oregonians have always been proud of the place they live; proud of the diversity of landscapes and people; and proud of Oregon's strong ties to fish and wildlife. The Oregon Plan for Salmon and Watersheds and many other efforts exemplify Oregonians' willingness to get involved with conserving these natural values. Oregon needs a long-term conservation approach that builds on existing efforts and leverages new investments in its natural resources.

This Oregon Conservation Strategy celebrates Oregon's natural heritage by articulating goals and identifying actions that conserve and restore Oregon's species, habitats and ecosystems. It is not a regulatory document but instead presents issues, opportunities, and recommended voluntary actions that will improve the efficiency and effectiveness of conservation in Oregon. The recommendations within the Conservation Strategy can be used to address species and habitat conservation needs, expand existing partnerships and develop new ones, and provide a context for balancing Oregon's conservation and development priorities.

Oregon is a 96,000-square-mile melting pot of traditions, cultures, ecological regions, geological formations and political ideologies. The state's natural, historical, and cultural features attract people from around the world to the deepest gorge--Hells Canyon; the deepest lake--Crater Lake; the largest geological fault in North America--Steens Mountain; the richest find of prehistoric fossils--the John Day Fossil Beds; 300 miles of rugged coastline; and 38 champions from the National Registry of Trees.

Geologically, Oregon is in a constant state of change. Colliding tectonic plates, volcanoes, glaciers and erosion mold and sculpt the Oregon landscape. The state's climate is shaped by its mountains. Storms arrive from the ocean, dumping 60-200 inches of rain annually in coastal areas and releasing most of the rest along the peaks of the Cascades. By the time the clouds reach the east side of the mountains, towns like Madras receive just 10 inches of rain per year. Varied climate and topography produce 1,500 different types of soils, representing most of the six soil categories found in the United States.

Oregon's history and identity are tightly tied to its natural resources. Place names like Beaverton, Bear Creek, Cape Falcon, Fox Hollow, Goose Lake and Troutdale speak to Oregonians' strong historic ties to fish and wildlife. Native Americans, fur trappers, pioneers, and today's bird-watchers and hunters all have appreciated sharing this landscape with wild creatures. In 2001, fish and wildlife-related activities contributed \$2.1 billion to the state's economy through fishing, hunting, and wildlife watching.

Oregon's varied geology, soil, and climate support a unique collection of species and habitats, which help define the state's culture and economy. Oregon's prosperity depends on use of land for agriculture, timber, industry, ranching and outdoor recreation. These working landscapes, along with wilderness and other natural areas, provide the rich mix of habitat that supports Oregon's fish and wildlife.

But, there are significant challenges to maintaining Oregon's fish and wildlife habitats. Some habitats have been fragmented or degraded by construction of towns and roads, alteration of river

### Strategy for Action: Summary and First Steps

systems, or intensive land management practices. Other areas have been completely converted to other uses. While not all land conversion results in habitat loss, the changes people have made to habitats can isolate fish and wildlife habitats into increasingly smaller patches, limit the functions that habitats provide for species, and ultimately make it more difficult for ecosystems to provide the services that define Oregon's history, culture, and economy.

Improvements in land management practices are beginning to improve habitat conditions. For example, historic overgrazing is declining as improved management techniques for rangelands are implemented. Important habitat areas are more often considered before roads and buildings are constructed, and water users are increasingly working together to restore more natural hydrologic systems in Oregon's rivers and streams.

Oregonians are working to sustain the state's fish and wildlife, but emerging challenges will require new adaptations. Oregon's population is growing, increasing the demand for housing, services and amenities. There were more than 3.5 million Oregonians in 2003, and the trend

indicates steady, rapid growth. The state's famous quality of life, in great part due to its mild climate, coastline, spectacular vistas, outdoor recreation, and cities known for their livability will no doubt entice more people. The Willamette Valley is home to 70 percent of Oregon's people and the population is expected to nearly double in the next 50 years. Bend, Medford, Ashland and Brookings are experiencing even greater population booms.

This Conservation Strategy provides an adaptive and comprehensive framework for continued positive action and new innovation. Building upon previous plans, it provides a menu of recommended voluntary actions and tools to help inspire local communities, landowners, and citizens to define their own conservation role.

Oregonians have long demonstrated their willingness to work together for the common good. Tapping that spirit will encourage new alliances, partnerships, coordination, and collaboration between agencies, tribes, organizations, businesses, and landowners to take care of Oregon's unique natural treasures.

The Conservation Strategy uses the concepts "sustainable" and "sustainability," as defined in Oregon Revised Statute 184.421(4): "Sustainability means using, developing and protecting resources in a manner that enables people to meet current needs and provides that future generations can also meet future needs, from the joint perspective of environmental, economic and community objectives."

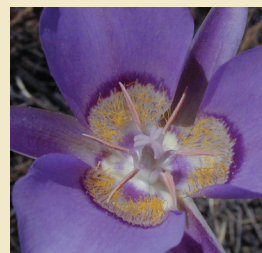


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## Pulling Together to Make a Difference: a Collaborative Approach to Conservation

Over the past three decades, a growing number of Oregonians have recognized that the state's landscape has changed, affecting the fish and wildlife populations that depend on it. Past efforts to conserve fish and wildlife have mostly been crisis-driven, focused on individual species, and contingent upon available funds. Now, conservation partners have a clearer understanding that nature works on many scales and that a strategic and comprehensive approach is needed to address species and their habitats across broad landscapes as well as at local sites. Nationally and in Oregon, people are seeking ways to be more effective. Only by engaging every Oregonian and working together in the spirit of cooperation will Oregon achieve long-term fish and wildlife conservation.

### ***A Solid Foundation: Oregon's Existing Planning, Regulatory, and Voluntary Framework***

Oregon already has a conservation framework in the form of plans, regulations, and grass-roots voluntary efforts. These processes have built the knowledge base, standards, and relationships that set the stage for creating a statewide conservation strategy. The Conservation Strategy works to promote integration and innovation within Oregon's existing conservation framework.

**Plans** - Numerous planning efforts by a variety of entities have identified priority species, habitats and actions within Oregon. These plans have all differed in their purposes, goals, and scales of analysis. Some examples of large-scale planning efforts include the Oregon Plan for Salmon and Watersheds, Northwest Power and Conservation Council Subbasin Plans, and The Nature Conservancy's Ecoregional Assessments.

**Regulations** – State and federal laws govern issues such as water quality, air quality, land use, and species protection. For example, the legal and institutional framework for maintaining private forestland in economically viable use is already in place through the Oregon Board of Forestry's Forest Program for

Oregon, the Forest Practices Act, and statewide planning Goal 4, Forest Lands. Within the Forestry Program for Oregon, one of seven central Oregon Board of Forestry strategies is to “contribute to the conservation of diverse native plant and animal populations and their habitats in Oregon's forests” (Strategy E).

**Voluntary Efforts** – From counting birds during the annual Christmas Bird Count to planting willows in riparian areas, watershed councils, non-profit organizations, private landowners and other interested citizens already are contributing voluntarily to conserving Oregon's fish and wildlife through both organized and individual efforts.

The Oregon Conservation Strategy builds on these efforts to provide a framework for a cohesive, statewide, non-regulatory approach to habitat and species conservation. Implementation of the Conservation Strategy will require coordination between the state and federal agencies that implement existing regulations, as well between a variety of groups that implement plans. Implementation of the Conservation Strategy can also support and expand existing voluntary efforts. For more information on Oregon's existing planning and regulatory framework, see Appendix II.

### ***Oregon's Conservation Strategy: What It Is and What It Can Do***

The Conservation Strategy is intended to provide a long-term, big-picture “blue print” for conserving Oregon's natural resources to maintain or improve environmental health for today and for future generations. It outlines how and where the state and its conservation partners, including landowners and land managers, can best focus this work. The Conservation Strategy is intended to:

- Encourage voluntary conservation and recognize contributions already made by landowners, land managers and other entities

- Expand the successful voluntary approach of the Oregon Plan for Salmon and Watersheds to maintain and restore upland areas for improved watershed function.
- Provide a wide range of voluntary conservation tools, so local communities and landowners can choose what is appropriate for their situations and goals
- Increase the efficiency and conservation benefits of existing voluntary incentive programs, and also identify additional needs
- Synthesize existing plans and credible, peer-reviewed information to provide a larger context (ecoregional and statewide) in which to address the state's conservation needs
- Leverage limited conservation resources, such as money, equipment and time in a more efficient and effective manner by:
  - Focusing conservation actions on the species and habitats of greatest conservation priority
  - Identifying areas where conservation activities will provide the greatest benefit at the landscape scale
  - Increasing coordination, collaboration, and partnership to produce cumulative benefits
- Demonstrate how local conservation actions fit into a broader regional or statewide perspective
- Prevent species from becoming imperiled, thereby reducing the risk of future species listings that could result in additional regulations for Oregon's businesses and industries
- Provide a common conservation vision to guide state and federal agencies toward effective coordination and fewer conflicts
- Increase coordination between states to address issues of common concern
- Provide a role for every interested Oregonian, from local neighborhood clean-ups to large-scale habitat restoration projects to citizen-based monitoring
- Provide guidance and coordination to preserve and restore the services provided by healthy ecosystems that benefit all Oregonians
- Demonstrate Oregon's commitment to conserve its species and habitats
- Assist Oregon in managing its landscapes to safeguard Oregon's high quality of life and natural resources – one of Oregon's strengths in attracting and retaining businesses
- Serve as a long-term strategy for the next decade and beyond, while still remaining a dynamic, living approach that will be adjusted as new information and insights are gained.

### **Oregon's Conservation Strategy: What it is Not**

The Conservation Strategy is not regulatory. It works within the existing legal structure and is not a substitute for regulations. It does not, and will not, challenge, change or expand regulations. It will not add new regulations.

The Conservation Strategy is not a substitute for existing planning efforts. It synthesizes and builds upon existing planning efforts to weave them into a statewide framework for action. It also highlights ways to expand, enhance and improve conservation work.

The Conservation Strategy is not restrictive. It will not impose limits or new requirements on private landowners or public land users. It is not intended to impose additional rules, fees or processes. It instead encourages voluntary action and collaboration.

The Conservation Strategy is not an Oregon Department of Fish and Wildlife management plan. Rather, it is intended to be a conservation tool for all Oregonians. The issues identified in this document are often complex and cannot be solved by any one agency or entity. They require cooperative, coordinated approaches for long-term success.

### **The National Approach**

The emphasis of each state strategy is on voluntary measures and collaboration. A state strategy that imposed additional regulation or adversely affected the state's economy and communities would not meet the intent or objectives of the State Wildlife Grants Program. Each strategy must address factors affecting the health of the nation's fish and wildlife, particularly those species in greatest need of conservation. The goal is to manage fish and wildlife populations and their habitat as a public trust, maintained as a national heritage.

Each strategy must contain eight elements addressing species, habitats, problems, conservation actions, monitoring, strategy review, interagency coordination, and public involvement.



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<b>Required Eight Elements</b>		<b>Oregon's Approach</b>	<b>Locate More Information</b>
<b>1</b>	Gather information on the distribution and abundance of fish and wildlife species.	Identify "Strategy Species," those most in need of conservation, and summarize key information about them.	Strategy Species summary descriptions, pages 319 to 374.
<b>2</b>	Describe location and relative condition of key habitats and community types essential to conservation of these species.	Identify "Strategy Habitats" to conserve a broad suite of species that reflect the diversity of fish and wildlife in the state, and map Conservation Opportunity Areas for "Strategy Habitats," areas where conservation activities would have the greatest benefit and chances of success.	A. Information on habitat requirements of Strategy Species is found in the tables, pages 319 to 374. B. Information on Strategy Habitats is found on pages 257 to 311. C. Conservation Opportunity Areas are mapped and described within the Ecoregions Chapter pages 111 to 255.
<b>3</b>	Describe problems which may adversely affect these species or their habitats. Identify information needed to improve conservation of species and habitats.	Describe "limiting factors" for Strategy Species and Habitats, and "data gaps" where information is needed.	The six key conservation issues pose limiting factors to many species and habitats and are discussed on pages 36 to 64. In addition, information on limiting factors are identified for: A. Strategy Species (pages 319 to 374). B. Strategy Habitats (pages 257 to 311). C. Ecoregions (pages 111 to 255).  Data gaps are identified for: A. Strategy Species (pages 319 to 374). B. Strategy Habitats (pages 305 to 307).
<b>4</b>	Describe necessary conservation actions for species and habitats.	Outline conservation actions for Strategy Species and Habitats.	Conservation actions are identified for: A. Key conservation issues (pages 36 to 64). B. Strategy Species (pages 319 to 374). C. Strategy Habitats (pages 257 to 311). D. Ecoregions (pages 111 to 255).
<b>5</b>	Propose ways to monitor the effectiveness of these conservation actions and ways to adapt actions as information or conditions change.	Describes an approach for monitoring within an adaptive management framework.	Monitoring is discussed on pages 98 to 109.
<b>6</b>	Describe procedures to review the Conservation Strategy at regular intervals (not to exceed 10 years).	Describe how reviews and updates will occur.	Review and revision is discussed on page 32.
<b>7</b>	Coordinate with federal, state, and local agencies and tribes that manage significant land and water areas or administer significant programs that affect species and habitat conservation.	Coordinate extensively with federal, state, county, and local governments; tribes; non-governmental organizations; and landowner groups in developing the Conservation Strategy.	How these agencies and groups were involved in developing the Conservation Strategy is described on page 6. How Oregon Department of Fish and Wildlife will continue to work with agencies and groups is described on page 32 and 101.
<b>8</b>	Engage the public in planning and implementing the Conservation Strategy.	A. Seek guidance from a Stakeholder Advisory Committee: a broad-based, geographically balanced committee representing working landscapes [agriculture range and forest], conservation groups, hunting and fishing interests, tourism interests, local governments, and organizations working with landowners "on the ground." B. Seek public input through public presentations. Distribute paper and web-based draft versions of the Conservation Strategy and provide opportunities for public comment. Incorporate public comment into the final version. C. Engage Oregonians throughout the state as the Conservation Strategy is implemented.	How the public was involved in developing the Conservation Strategy is described on page 6. How Oregon Department of Fish and Wildlife will continue to engage Oregon's citizens is described on pages 29 and 90.

## **Oregon's Collaborative Approach**

### **Developing the Draft Conservation Strategy**

ODFW involved as many people and entities as possible during development of the Conservation Strategy. ODFW specialists talked to hundreds of citizens, biologists, agency personnel, and elected officials to gather information and perspectives while developing the draft Conservation Strategy, using three primary collaborative forums: a Stakeholder Advisory Committee, a Technical Advisory Committee, and meetings and workshops.

The Stakeholder Advisory Committee was established as a broad-based, geographically-balanced guide to help develop the draft Conservation Strategy. The committee was comprised of 27 individuals representing the state's agriculture, forestry and rangeland management interests, as well as conservation, fishing and hunting, tourism, local governments, landowners, and groups and organizations that work with landowners on conservation and restoration efforts.

The Oregon Department of Fish and Wildlife contracted with Triangle Associates to organize and facilitate the Stakeholder Advisory Committee meetings. Triangle Associates convened nine Stakeholder Advisory Committee meetings that were held between September 2004 and June 2005. The committee reviewed draft material and provided recommendations on key conservation issues, Conservation Opportunity Areas, voluntary conservation tools, monitoring, and implementation. The meetings were open to the public, and time was provided at the end of each meeting for public comment.

The Technical Advisory Committee was established to help with methodologies and the selection of Strategy Species and Habitats. This committee included experts representing the timber industry, universities, consulting ecologists, conservation organizations, tribes and agencies.

ODFW field staff provided biological expertise, knowledge of local habitats, issues and opportunities, and examples of successful conservation projects and partnerships from their regions.

ODFW also gained information on species status and monitoring priorities through three workshops. Two workshops brought experts together to discuss species status and were held in partnership with Oregon State University's Natural Heritage Information Center. In addition, the International Association of Fish and Wildlife Agencies and Oregon Department of Fish and Wildlife sponsored an all-bird workshop to identify current efforts, gaps, and priorities for bird monitoring in Oregon. Ideas from the workshop provided a foundation for the Monitoring Chapter.

Many agencies and groups provided guidance, content, and review of draft materials. Contributing partners in this process included Oregon Watershed Enhancement Board, U. S. Fish and Wildlife Service, Oregon Department of Agriculture, Oregon Department of Forestry, Oregon State University's Department of Fisheries and Wildlife, Defenders of Wildlife, The Nature Conservancy, and Oregon State University's Oregon Natural Heritage Information Center.

A complete list of stakeholders, technical advisors, and cooperators can be found in the Acknowledgements section on page *iv* to *v*.

### **Review of the Draft Conservation Strategy**

The draft Conservation Strategy was distributed widely for public comment during the review process. The document was posted on ODFW's Web site, with a link for providing comments on-line. More than 600 paper and electronic (CD) copies were distributed to:

- Every county library, as well as other public libraries in the state
- All county Boards of Commissioners
- All Soil and Water Conservation Districts
- All watershed councils
- Every ODFW field office
- Experts from a variety of conservation-related fields, including planning, research, forestry, agriculture, ranching and hydro-power
- State and federal natural resource agencies, and state agencies working on tourism and economic and community development.

Dozens of local governments, organizations, agencies and tribes were sent electronic announcements to let them know how to obtain a copy of the draft Conservation Strategy or view it on-line. The announcement provided contact information for questions and was also posted to several electronic list serves.

ODFW made presentations to local governments; county natural resource advisory committees, tribes, and watershed councils, as well as agricultural, forestry and range management organizations, conservation organizations, and other state and federal agencies.

Internal review occurred throughout the process of Conservation Strategy development, with ODFW staff throughout the agency providing information and insight.

Comments and edits were incorporated into the draft document sent to the Oregon Fish and Wildlife Commission in August 2005.





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## Statewide Conservation Issues

The Stakeholder Advisory Committee helped Oregon Department of Fish and Wildlife identify six key conservation issues, large-scale issues that present the greatest threats to fish and wildlife populations and their habitats throughout Oregon. They form the framework for the Conservation Strategy. The following table summarizes goals for reducing and reversing the impact of these factors, as well as the actions that Oregonians can take to address each of these issues. These issues are discussed in greater detail in the Statewide Perspectives and Approaches Chapter (pages 35 to 109).

### **Six Key Conservation Issues, Goals and Actions**

**Overall Goals for the Conservation Strategy:** maintain healthy fish and wildlife populations by maintaining and restoring functioning habitats, prevent declines of at-risk species, and reverse any declines in these resources where possible. Reducing and reversing the impacts of these key conservation issues can contribute significantly to these goals, while also contributing to healthy human communities.

### **Overall Recommended Actions for all Key Conservation Issues:**

These actions apply to all six key conservation issues. For all recommended actions, implementation will depend on cooperative efforts by a variety of entities and may be contingent upon funding, statutory authority, and other factors. Actions need to be compatible with local priorities and local comprehensive plans and land use ordinances and other applicable state, federal, and local laws. Actions on federal lands need to undergo federal planning processes prior to implementation to ensure consistency with existing plans and management objectives for the area. In many cases, these actions are already occurring and should be continued or expanded. For example, Oregon Department of Fish and Wildlife and landowners have done extensive work to address fish passage. In other cases, new actions are identified. Ideally, new actions should be implemented, monitored and adapted accordingly. Actions:

- a. Work with community leaders and agency partners to ensure planned, efficient growth, and to preserve fish and wildlife

habitats, farmland, forestland, rangeland, open spaces, and recreation areas.

- b. Use, expand, and improve financial incentive programs and other voluntary conservation tools to support conservation actions taken by landowners and land managers.
- c. Develop new voluntary conservation tools to meet identified needs.
- d. Promote collaboration across jurisdictional and land ownership boundaries.
- e. Work creatively within the existing regulatory framework, seeking new opportunities to foster win-win solutions.
- f. Inform Oregonians of conservation issues and the actions everyone can take that will contribute to Oregon's collective success.

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### **ISSUE 1: Land Use changes**

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Converting from one type of land use to another – whether changing from agricultural areas to urban development, or from unmanaged native vegetation to intensively managed areas – can impact fish and wildlife habitat, reduce habitat patch size, and decrease connectivity between habitat patches. Oregon's increasing human population will increase demands for residential and commercial uses, resulting in future land use changes.

**Goal:** Manage land use changes to conserve farm, forest and range, open spaces, natural recreation areas, and fish and wildlife habitats.

#### **Actions:**

- 1.1. Conserve Strategy Habitats using voluntary, non-regulatory tools such as financial incentives, conservation easements, landowner agreements and targeted acquisition.
- 1.2. Encourage strategic land conservation and restoration within Conservation Opportunity Areas.

- 1.3. Work cooperatively within existing land use planning processes to conserve Strategy Habitats, and optimize use of transferred development rights, conservation banking and other market-based tools to meet land use goals.
- 1.4. Create a system for tracking land use changes over time.
- 1.5. Support local land use plans and ordinances that protect farm and forestlands and other fish and wildlife habitats in urban and rural areas.

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## ISSUE 2: Invasive Species

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Invasive species are species not native to ecosystems to which they have been intentionally or accidentally introduced and whose introduction causes or is likely to cause economic or environmental harm. Many non-native species have been introduced to Oregon. While not all non-native species are invasive, some crowd out native plants and animals and become a serious problem. They alter habitat composition, increase wildfire risk, reduce productivity, or otherwise disrupt natural habitat functions.

**Goal:** Prevent new introductions of species with high potential to become invasive, and reduce the scale and spread of priority invasive species infestations.

### Actions:

- 2.1. Focus on prevention through collaborative efforts and increased public awareness and reporting.
- 2.2. Develop early response mechanisms to facilitate swift containment of new introductions, using site-appropriate tools.
- 2.3. Establish system to track location, size and status of infestations of priority invasives.
- 2.4. Focus on eradication of invasive species in Strategy Habitats and other high priority areas where there is a clear threat to ecosystems and a high probability of success.
- 2.5. Work with the Department of Agriculture, the Invasive Species Council and other partners to develop an invasive species implementation tool that evaluates the ecological impact and management approaches for invasive species identified as priorities in the Conservation Strategy.
- 2.6. Develop and test additional techniques to deal with invasives and share information with landowners and land managers.

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## ISSUE 3: Disruption of Disturbance Regimes

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People have altered historic natural disturbance regimes, sometimes creating a cascade of unintended effects. Fires have been suppressed, increasing forest tree density and fuel loads. As a result, wildfires have increased in intensity, placing both human and wildlife habitat at risk. Flooding has been controlled to a great extent by dams, dikes and revetments (hardened banks), which has altered floodplain function.

**Overall Goals:** Restore natural processes such as fire and flood cycles to sustain and enhance habitat functions in a manner compatible with existing land uses. Encourage efforts to increase understanding of historic natural disturbance regimes.

### Fire Regimes

**Goal:** Reduce uncharacteristically severe wildfire, and restore fire or use site-appropriate techniques that mimic the effects of fire in fire-dependant ecosystems.

### Actions:

- 3.1. Use wildfire risk classification maps to identify local zones with greatest risk of uncharacteristically severe wildfire and prioritize for further action.
- 3.2. Collaborate with landowners and other partners in these zones to lower risk of wildfires while maintaining wildlife habitat values, and to choose the sites and landscapes for fuel reduction.
- 3.3. Seek and support cost-effective methods for reducing fuels, especially innovative approaches that contribute to local economies.
- 3.4. Using site-appropriate prescriptions, carefully reintroduce natural fire regimes as part of an overall wildfire risk reduction and habitat restoration program in locations where conflicts such as smoke and safety concerns can be minimized.
- 3.5. Use site-appropriate tools such as mowing, brush removal, tree cutting, and controlled grazing to mimic effects of fire in fire-dependent habitats.
- 3.6. Develop tools that evaluate trade-offs between short term loss of wildlife habitat values and long term damage to habitat from wildfires.
- 3.7. Evaluate effects of forest management practices that reduce wildfire risk to wildlife habitat values.

**Flood Regimes**

**Goal:** Maintain and, where feasible, restore floodplain functions such as aquifer recharge, water quality improvements, soil moistening, natural nutrient and sediment movements, animal and seed dispersal, gravel transport and recruitment, and habitat variation.

**Actions:**

- 3.8. Restore floodplain function by: reconnecting rivers and streams to their floodplains, restoring stream channel location and complexity, removing dikes and revetments, allowing seasonal flooding, restoring wetland and riparian habitats, and/or removing priority high-risk structures within floodplains.
- 3.9. Work with power companies, agencies, irrigation districts and municipalities to time water releases to replicate natural flood cycles.
- 3.10. Identify and restore important off-channel habitats and oxbows cut-off by previous channel modification.

**ISSUE 4: Barriers to Fish and Wildlife Movement**

People have built communities, roads, dams and other structures that act as barriers to the movement of fish and wildlife. These barriers reduce total habitat, create challenges to animal dispersal and reproduction and make wildlife more vulnerable to injury and death.

**Goal:** Provide conditions suitable for natural movement of animals across the landscape.

**Actions:**

- 4.1. Continue working with Oregon Watershed Enhancement Board, Oregon Department of Transportation, U.S. Forest Service, U.S. Bureau of Land Management, and other partners to inventory, prioritize and remove fish passage barriers, leveraging current work done by Oregon Department of Fish and Wildlife's Fish Passage Task Force to expand implementation of fish passage priorities.
- 4.2. Maintain and restore habitat to ensure aquatic connectivity and terrestrial corridors in priority areas, such as Conservation Opportunity Areas and urban centers.
- 4.3. When planning aquatic passage projects, consider the needs of other aquatic species and terrestrial wildlife, as well as fish.
- 4.4. Continue to screen ditch and pump water diversions to protect fish using funds from Oregon's Fish Screening and Passage Cost Sharing Program and working with state and federal funding partners.

- 4.5. Work with Oregon Department of Transportation, county transportation departments, and other partners to identify and address key areas of wildlife mortality on highways and consider animal movements when planning new roads.
- 4.6. Identify, maintain and restore important stop-over sites for migratory birds.

**ISSUE 5: Water Quality and Quantity**

Recent droughts have heightened awareness of the inter-related issues of water quality and quantity. Water quality and quantity problems can greatly impact aquatic species, and are linked to increasing intensities of land use practices, changes in land use, and growing demand for water.

**Overall Goal:** Maintain and restore water quality and quantity to support fish and wildlife and habitats in balance with economic and social needs of local communities.

**Water Quality**

**Goal:** Maintain or restore water quality in surface and groundwater to support a healthy ecosystem, support aquatic life and provide fish and wildlife habitat.

**Actions:**

- 5.1. Reduce runoff from impervious surfaces.
- 5.2. Restore wetlands and riparian areas to increase filtration of sediments and contaminants.
- 5.3. Implement water quality improvement projects and management frameworks.
- 5.4. Monitor structural, compositional, and functional parameters of aquatic habitats for changes in water quality.
- 5.5. Maintain and restore native vegetation throughout watersheds, including upland areas, riparian corridors and floodplains.

**Water Quantity**

**Goal:** Maintain or restore sufficient stream flows to support aquatic species and Strategy Habitats.

**Actions:**

- 5.6. Work with Oregon Water Resources Department and the Oregon Department of Environmental Quality to develop tools to maintain in-stream flow (e.g., water markets and water banks).
- 5.7. Seek opportunities to restore aquifer recharge and maintain groundwater.

- 5.8. Use established indicators to monitor watershed function and determine thresholds for action.
- 5.9. Work with Water Resources Department and other partners to establish priorities and implement projects to restore stream flow.

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#### **ISSUE 6: Institutional Barriers to Voluntary Conservation**

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In some cases, institutional barriers prevent landowners from implementing projects that will benefit fish and wildlife. These barriers include the difficulty of obtaining multiple permits, cumbersome requirements for financial assistance, and rules originally passed for one purpose that block another one. In addition, lack of technical assistance or awareness of available programs can be a barrier to landowner participation.

**Goal:** Share information, streamline processes, and seek creative programs that support voluntary conservation actions.

**Actions:**

- 6.1. Streamline permitting processes for habitat restoration projects and application processes for financial incentive programs.
- 6.2. Resolve conflicting regulations that hinder conservation and restoration of Strategy Habitats.
- 6.3. Improve coordination and delivery of incentives programs to more effectively serve landowners and more strategically address needs of Strategy Species and Habitats.
- 6.4. Improve data management, coordination and sharing between various conservation partners to support voluntary conservation.
- 6.5. Expand technical assistance and delivery of services to landowners through outreach and stakeholder involvement.

In addition to these six issues, the Stakeholder Advisory Committee identified global warming as an important issue that could potentially impact fish and wildlife populations in the future. There is a growing consensus in the scientific community that the Earth's climate is changing, but the impacts of these changes on Oregon's ecosystems are not as clear. Global warming could potentially change the distribution and composition of habitats, especially in coastal, alpine and subalpine areas.

Global warming also could potentially interact with some of the key conservation issues, making these issues more complex or their effects more unpredictable. For example, changes in temperatures and weather systems resulting from global warming potentially could reduce overall water supplies, affect how invasive species colonize and spread, and/or increase the intensity or frequency of wildfires or floods. In general, actions to address the key conservation issues will need to be adapted as conditions change and as knowledge increases. Global warming may create some "changing conditions" that require an adaptive management approach.

Oregon Department of Fish and Wildlife considered global warming to be beyond the scope of this Conservation Strategy. Global warming is currently being addressed at a larger scale through the West Coast Governors' Global Warming Initiative and through other planning efforts. In response to the West Coast Governors' Global Warming Initiative, Governor Kulongoski and the Oregon Department of Energy convened the Governor's Advisory Group on Global Warming. The Advisory Group presented its recommendations in the report, Oregon Strategy for Greenhouse Gas Reduction (<http://egov.oregon.gov/ENER-GY/GBLWRM/Strategy.shtml>). The report contains recommendations for energy efficiency, transportation, renewable energy, electric generation and other topics. For a brief overview of the global warming issue and current planning efforts, see Appendix VI.

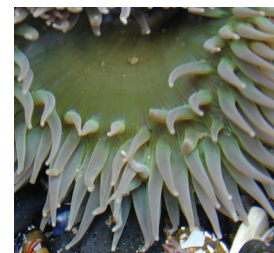
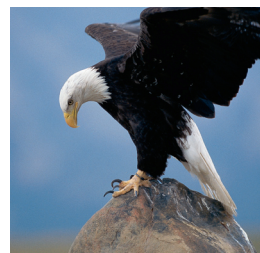


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## A Summary of Strategy Habitats and Species

### ***The “Filter” Approach to Conservation Planning***

All state strategies are required to identify priorities based on (i) “low and declining species” and (ii) “species that are indicative of the diversity and health of wildlife of the state.” To achieve this, the Conservation Strategy follows a “coarse filter” (habitat) – “fine filter” (species) approach to conservation planning. Coarse-filter conservation efforts capture a larger number of species by casting a wide net over the landscape. Conservation actions focused on the maintenance of natural habitats are likely to benefit a wider range of organisms than conservation actions developed for single species. It is the best way to maintain diverse and healthy wildlife communities. In addition, conserving larger areas of terrestrial or freshwater habitat preserves system-wide ecological processes critical to the viability of the ecosystems and the survival of wildlife species inhabiting them. These services benefit people as well. Strategy Habitats are the “coarse filters.”

However, not all species are best represented by coarse-filters. For example, species dependent on multiple habitats at different times during their life cycle, those that occur in a small geographic area, those with highly specialized needs, or those that travel across a large geographic area may require special attention. To ensure that the needs of “low and declining species” were addressed, Strategy Species include rare and/or at-risk fish, wildlife, invertebrates, and plants. Strategy Species are the “fine filters.”

In addition, the Conservation Strategy examines vulnerable animal concentrations and “Specialized and Local Habitats” that address particular landscape features. Used together, this “coarse filter/fine filter” approach is designed to best account for a wide variety of species and habitats in need of conservation attention.

For information on how Strategy Species and Habitats were selected, see the Appendix IV (Methods).

### ***A “Big-Picture” View of Strategy Habitats***

Strategy Habitats were determined in a two-step process. First, maps of current vegetation were compared to that which occurred during the year 1850 to determine vegetation types that had high degrees of loss since European settlement. Vegetation types with a high degree of historic loss were evaluated for historic importance at the ecoregional scale, ecological similarity, amount of remaining habitat managed for conservation values, known limiting factors, ecological similarity, and importance to Strategy Species. For more information on the methods used to develop the vegetation maps see Appendix IV.

Using the year 1850 as a baseline provides a reference point to determine changes in vegetation since European settlement. It is a single point in time, so does not show how vegetation varied in the past due to fire, long-term climate change or other factors. The 1850 maps represent a baseline for analysis and not a target to re-create. Returning to pre-settlement conditions is neither possible nor desirable. This is particularly true at large scales. Instead, the baseline vegetation maps can provide insight into why certain species may be declining and can help determine priorities for restoration projects.

The number of Strategy Habitats per ecoregion range from five in the Columbia Plateau ecoregion to seven in the Coast Range ecoregion. Aquatic, riparian and wetlands are Strategy Habitats for all eight ecoregions in Oregon. Other common Strategy Habitats occurring in more than one, but not all ecoregions, include grasslands, oak woodlands, ponderosa pine woodlands, and sagebrush steppe and shrublands.

### ***“Big Picture” Recommended Actions for Conserving Strategy Habitats***

Many of the Strategy Habitats have been reduced in size and connectivity or degraded in function by factors such as invasive species and altered disturbance regimes. As a result, addressing the six key conser-

vation issues through the actions identified previously on pages seven to 10 are the most important steps to benefit Strategy Habitats.

In addition, where Strategy Habitats are in degraded conditions, it may be appropriate to restore certain elements at the local level to benefit fish and wildlife. These elements may include native vegetation composition, vegetation structure, and/or functions. It is important to note that general ecology and conservation issues within these habitats vary across the state, so conservation actions must be tailored to local conditions, issues and goals. Many local communities, watershed councils and other partners have created watershed assessment and restoration plans. Implementation of watershed plans at the local level will greatly benefit Strategy Habitats and Species.

### **A “Big-Picture” View of Strategy Species**

Each species has its own requirements for food, shelter, and reproduction. Habitat changes – such as alterations in vegetation composition or structure, in the distribution of habitat types across the landscape, and in the disturbance regimes that shape these elements – will result in changes in the fish and wildlife species associated with those habitats. Such changes can have negative consequences for species with specialized or complex habitat requirements. Identifying these vulnerable species allows conservation actions to be targeted at the most at-risk species.

The decline in some Strategy Species is linked to the loss of Strategy Habitats. For example, ponderosa pine forest—included as Strategy Habitats in the Blue Mountains, East Cascades, and Klamath Mountains ecoregions—support Strategy Species like the flammulated owl, Lewis’ woodpecker, and white-headed woodpecker. Strategy Species also include species that are not closely associated with Strategy Habitats, but are declining for a variety of reasons.

Information on special needs, limiting factors, data gaps, and recommended conservation actions for individual Strategy Species are included in the Species chapter (pages 313 to 375). Strategy Species include 17 amphibians, 62 birds, 65 fish, 59 invertebrates, 18 mammals, 60 plants, and 5 reptiles (total = 286).

### **“Big Picture” Recommended Voluntary Actions for Conserving Strategy Species**

Because the six key conservation issues have broad effects on many of Oregon’s species, there are some common actions that can benefit fish and wildlife. Some general themes are presented below. These themes demonstrate “big picture” approaches and are not intended to serve as

guidelines or prescriptions. How these actions may be implemented at a particular site will depend on local conditions; federal, state and local planning requirements; management goals; and the requirements of individual species.

### **All Strategy Species**

- If habitat needs are not fully understood, determine habitat requirements and appropriate actions to maintain or restore habitat, as resources and funding allow.
- Maintain and restore Strategy Habitats and habitat characteristics identified for individual Strategy Species.
- Minimize fragmentation, remove fish passage barriers, and improve connectivity between habitat patches.
- Manage land use practices (e.g., building construction, road construction and maintenance, recreation, agriculture, forest management, grazing, mining, fuel treatment, prescribed fire) to be compatible with species conservation at priority sites. This may involve altering the timing of activities, providing exclosures or buffers, or using innovative practices.
- Manage off-highway vehicle use to minimize disturbance to wildlife during critical periods and direct off-highway vehicle use away from sensitive habitats such as wetlands and montane grasslands.
- Manage rock features such as cliffs and talus to avoid conflict with recreational use and rock removal, particularly where known bird nest sites, bat roost sites, or rare amphibian or invertebrate populations occur.
- Develop more specific management plans or strategies for species or habitats without such plans (e.g., bats, turtles, rocky shores, and estuaries).
- Monitor to determine population trends and their causes.
- Monitor for diseases, particularly non-native diseases of concern (e.g, West Nile Virus, Chronic Wasting Disease, Infectious Salmon Anemia).
- Continue efforts to provide accessible water to wildlife in arid areas and support use of animal escape devices in water developments.
- Provide outreach and education that help resolve or minimize wildlife/human conflicts in urban and rural areas.
- Manage key invasive species that compete with, prey upon, or otherwise impact Strategy Species at priority sites. In addition, promote prevention, early detection, inventory, and early eradication of species with a high potential to be invasive.

**Amphibians**

- Maintain water levels and vegetation buffers at major breeding sites.
- Install amphibian-friendly culverts or drift fences at problem road crossings near major breeding sites.
- Manage recreation to minimize impacts to sensitive shoreline sites and inform the recreating public about the importance of minimizing shoreline impacts.
- Manage vegetation where vegetation height and density interferes with breeding.
- Control bullfrogs and invasive fish at priority sites.
- Maintain downed wood, especially large logs.

**Birds**

- Minimize disturbance near nest sites during the breeding season.
- Where feasible, maintain large-diameter hollow trees and tall, newly dead snags. Where safety regulations prevent snag maintenance or where snag numbers are below desired levels, create snags from green trees and retain high-cut stumps.
- Minimize insect control near priority nest sites.
- For some species in some areas, use nest box programs as a stop-gap measure until suitable nest sites are available. Maintain and monitor nest boxes.
- Work cooperatively with landowners to delay mowing and other field management until after grassland birds have fledged. Similarly, plan prescribed fire to prevent impacts to bird nesting, reproduction and migration.
- Encourage wind turbine and communication tower designs that minimize or eliminate impacts to wildlife.
- Maintain suitable conditions for prey species in order to conserve avian predators. For example, a matrix of grasslands and low brush benefits jackrabbits, which are prey for ferruginous hawks.

**Fish and Aquatic Invertebrates**

- Maintain and restore high water quality and quantity.
- Maintain riparian cover and other factors that maintain water temperatures favorable to aquatic species.
- Minimize sedimentation.
- Maintain and restore channel complexity and aquatic habitat quality.

- Minimize contact with introduced fish that could lead to hybridization, competition, and disease issues.
- Improve fish passage at priority barriers and remove barriers where possible.
- Minimize impact of water draw-down on aquatic species.

**Mammals**

- Provide travel corridors between habitat blocks.
- Maintain downed wood, especially large logs. Increase levels of downed wood, if determined to be deficient.
- Where feasible, maintain large-diameter hollow trees and tall, newly dead snags. Where safety regulations prevent snag maintenance or where snag numbers are below desired levels, create snags from green trees and retain high-cut stumps.
- Manage rock features such as cliffs to avoid conflict with recreational use and rock removal.
- Complete bridge replacement and maintenance when bats are absent.
- Use site- and species-appropriate techniques to minimize human disturbance during critical periods and/or at critical areas (for example, use gates and seasonal closures at known bat maternity and winter roosts).
- Encourage wind turbine and communication tower designs that minimize or eliminate impacts to wildlife.
- Maintain and restore suitable conditions for prey species in order to conserve mammalian predators.

**Plants**

- Survey likely habitat for additional populations.
- For some grassland and sagebrush steppe plants, work cooperatively with landowners to time mowing, grazing and other activities around plant reproduction needs.
- Control key invasive plants.
- Collect and store seeds for long-term seed-banking.
- Develop and test propagation methods.

**Reptiles**

- Provide basking structures such as rocks and logs.
- Maintain and restore off-channel aquatic habitats and grasslands.
- Maintain and restore suitable nesting areas.

- Protect important nesting and hibernating sites from human disturbance during critical times.
- Prevent introduction of non-native turtles. Control invasive turtles and bullfrogs at priority sites.

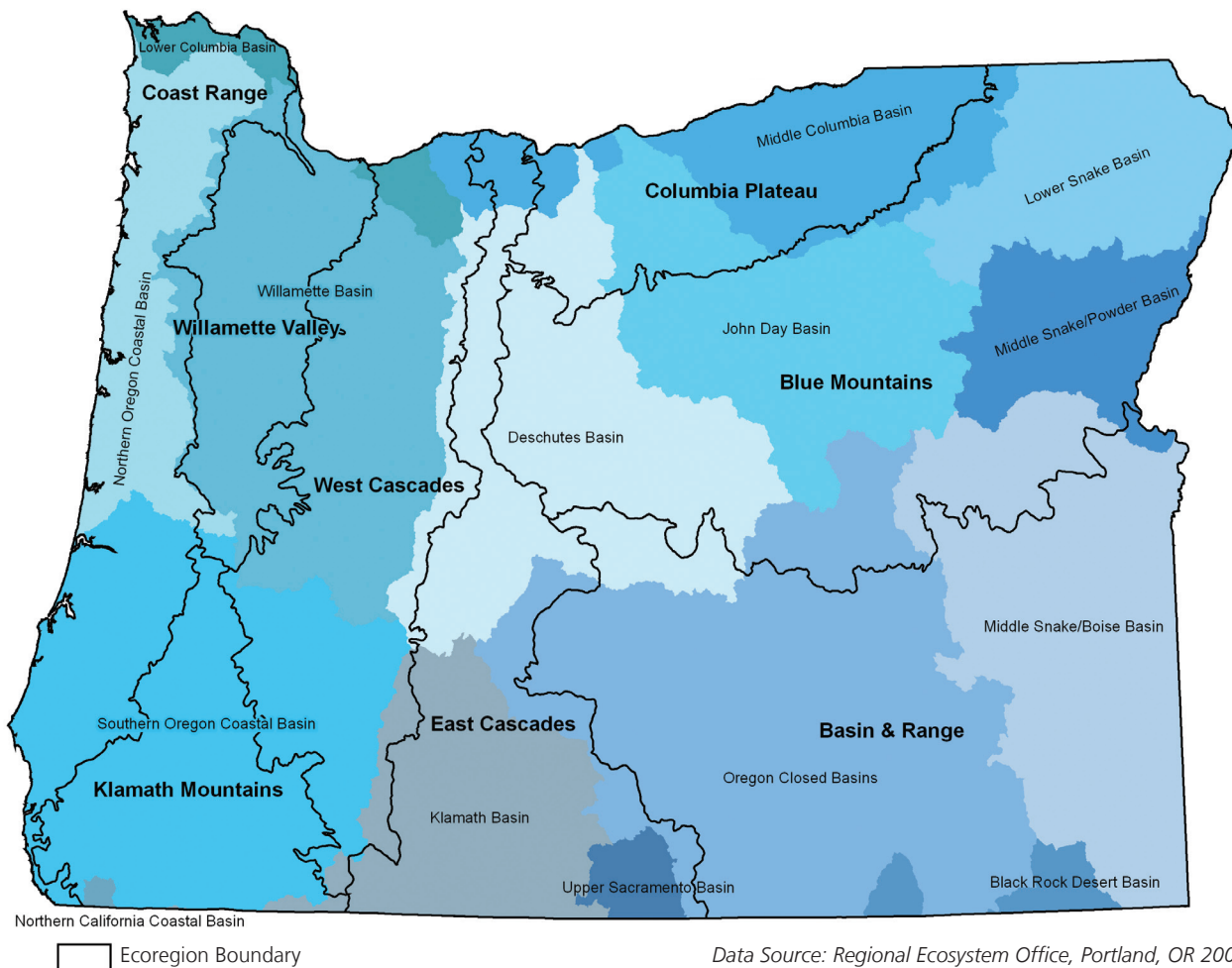
**Terrestrial Invertebrates**

- Maintain and restore high native plant diversity, including host plants for at-risk butterflies.
- Maintain woody debris.
- Investigate species-specific habitat requirements and use these to guide management actions.



Photo © Tupper Ansel Blake

**The Relationship of Ecoregions to Basins in Oregon**



Data Source: Regional Ecosystem Office, Portland, OR 2002  
U.S. Environmental Protection Agency



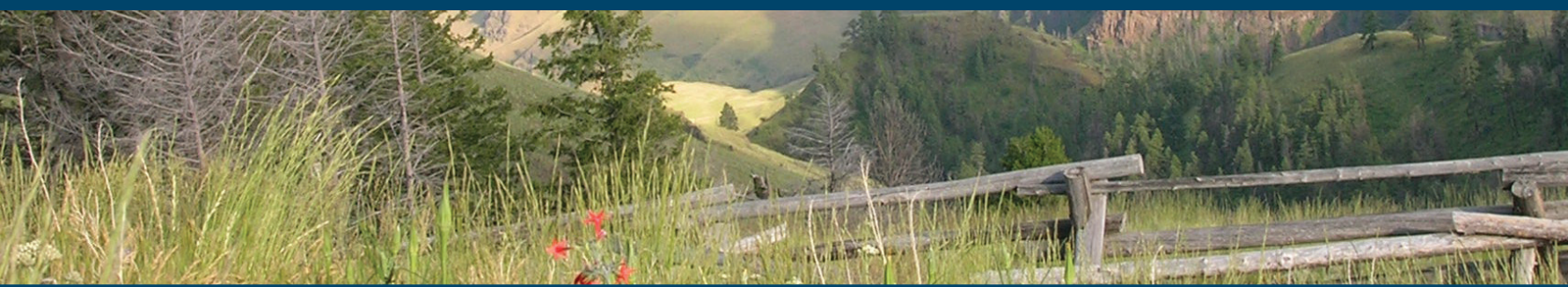


Photo © Martin Nugent

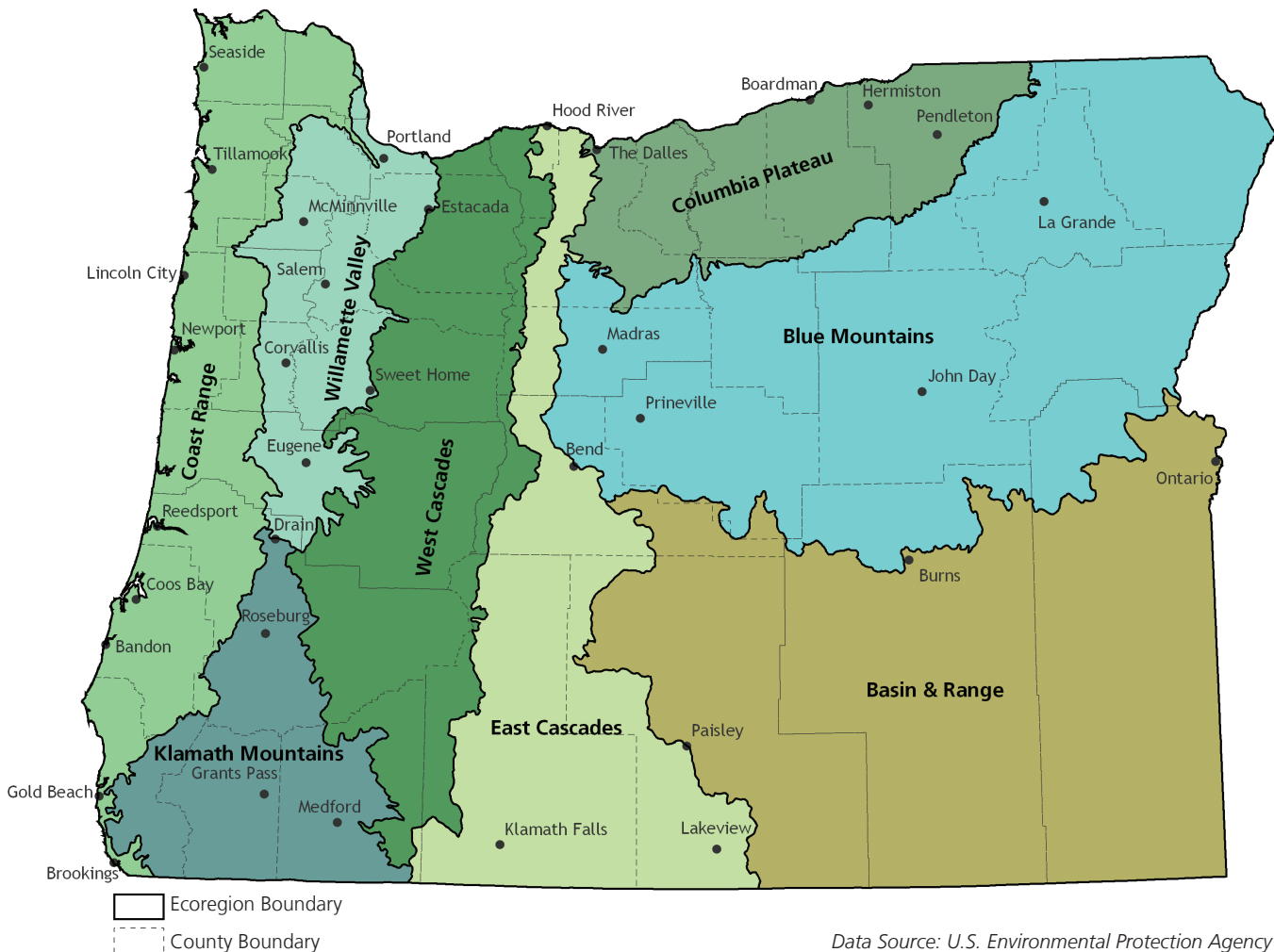
## An Ecoregional Approach to Conservation

Oregon's diverse landscape ranges from lush rainforests to deserts. Similarly, each community's residents perceive, value and manage their natural resources in ways unique to their respective regions. To capture this regional diversity and local knowledge, the Conservation Strategy examines Oregon's eight ecoregions. Ecoregions are portions of the state with similar climate and vegetation. The Conservation Strategy

uses the Environmental Protection Agency's Level III Ecoregion map ([http://www.epa.gov/wed/pages/ecoregions/or\\_eco.htm](http://www.epa.gov/wed/pages/ecoregions/or_eco.htm)), but combines the Snake River Plain with the Northern Basin and Range.

Ecoregions are discussed more fully in pages 111 to 255. Within each ecoregion description, the Conservation Strategy explores the environ-

### Ecoregions of Oregon



ment and issues, identifies limiting factors and opportunities, identifies Conservation Strategy Species and Habitats, and describes actions to consider.

Below are snapshots of Oregon's eight ecoregions. The six key conservation issues generally apply across the state to all ecoregions. Thus, the actions identified to address these issues are important throughout Oregon. However, ones particularly important within an ecoregion are highlighted, along with some ecoregion-specific issues.

### **Blue Mountains Summary**

Although named for its largest mountain range, the Blue Mountains ecoregion is a diverse complex of mountain ranges, valleys, steep river canyons, and plateaus, with habitats ranging from dry sagebrush steppe to high alpine peaks. Much of the mountainous land is publicly-owned and managed for multiple resources. Broad alluvial-floored river valleys support ranches surrounded by irrigated hay meadows or wheat fields. Large towns include La Grande, Baker City, Pendleton, Redmond, and part of Bend.

Over the years, fire suppression, historic overgrazing, timber harvest, mining, agriculture, and, more recently, invasive species and development have altered fish and wildlife habitats. As a result, Strategy Habitats identified for the Blue Mountains ecoregion include ponderosa pine woodlands, grasslands, sagebrush steppe and shrublands, aspen woodlands, wetlands, riparian, and aquatic habitats.

Of the Conservation Strategy's six key conservation issues, invasive species, altered disturbance regimes and land use changes are of greatest concern in the Blue Mountains. Fire is the primary concern for altered disturbance regimes, although floodplain function is an issue in some valleys, particularly at lower elevations. Other actions for the Blue Mountains include working cooperatively with land managers and off-highway vehicle groups to direct use to maintained trails in low-impact areas and to improve enforcement of existing off-highway vehicle rules.

### **Coast Range Summary**

Oregon's Coast Range is known for its dramatic scenery. Its habitats range from open sand dunes to lush forests and from tide pools to headwater streams. The Coast Range's mild, moist climate creates conditions for highly productive temperate rainforests, which are important for local ecosystems and economies. Forestry remains the primary industry in the interior portion of the ecoregion. Coastal towns are hubs for fishing, shellfish and transporting products. The largest urban area on the coast is Coos Bay/North Bend. Many coastal towns are growing, with growth driven by arriving retirees and increasing tourist visits.

Steep terrain and transportation needs have concentrated towns near estuaries, increasing the demands on these systems.

Strategy Habitats identified for the Coast Range ecoregion include coastal dunes, estuaries, grasslands, late successional conifer forests, oak woodlands, riparian, wetlands, and freshwater aquatic habitats.

Restoration of aquatic habitat complexity (i.e., woody debris), salmon rearing habitats, fish passage, and natural hydrological regimes through removal of artificial obstructions are concerns in the Coast Range ecoregion. Of the Conservation Strategy's six key conservation issues, land use changes and invasive species are of greatest concern in the Coast Range ecoregion. In addition to addressing these issues, actions proposed for the Coast Range include:

- Working with community leaders and agency partners to ensure rapid responses to and preparedness for oil and other hazardous spills.
- Increasing education and outreach for recreationalists and associated businesses. Where needed, direct activities to particular seasons or away from sensitive habitat.

### **Columbia Plateau Summary**

The floods, silt and winds that drift across the Columbia Plateau have created ideal conditions for agriculture. Dryland wheat is an important commodity here, and this ecoregion produces most of Oregon's grain. Over 80% of the ecoregion's population is located in the portion of this ecoregion within Umatilla County, including Pendleton and Hermiston.

Conservation opportunities for native vegetation are limited because it is difficult to maintain connectivity between isolated high-quality habitat patches. Meeting water demands for agriculture, irrigation, domestic livestock, as well as fish and wildlife populations, is challenging. Water quantity influences water quality, particularly in summer months when flows are reduced. Eighty-four percent of the Columbia Plateau ecoregion is privately owned. Thus, voluntary cooperative approaches are key to long-term conservation.

Strategy Habitats identified for the Columbia Plateau ecoregion include: grasslands, sagebrush steppe, riparian, wetlands, and aquatic habitats.

Of the Conservation Strategy's six key conservation issues, water quality and quantity and invasive species are of greatest concern in this ecoregion. In addition to addressing these issues, actions for the Columbia Plateau include encouraging participation in and support for programs such as the Natural Resources Conservation Service Conservation

Reserve Program, which promote practices that can offset or minimize soil erosion and that can provide habitat for fish and wildlife.

### **East Cascades Summary**

The East Cascades ecoregion varies dramatically from its cool, moist border with the West Cascades ecoregion to its dry eastern border where it meets sagebrush country. Terrain ranges from forested uplands to marshes and agricultural fields at lower elevations. Tourism, recreation, forestry, and agriculture support a diverse economy.

Development and land management practices have affected habitats. For example, timber harvest practices, historic overgrazing and fire suppression have altered the distribution and structure of much of the ecoregion's historic habitats. Urban and rural residential development is another emerging conservation issue, with implications for the loss of big game winter range and development within riparian zones. Along with development, Highway 97 traffic volume continues to increase, creating a major barrier to wildlife movement.

Strategy Habitats in the East Cascades ecoregion include ponderosa pine woodlands, oak woodlands, riparian, wetlands, and aquatic habitats.

Of the Conservation Strategy's six key conservation issues, invasive species, altered disturbance regimes, water quality and quantity, and land use changes are of greatest concern in the East Cascades ecoregion. For altered disturbance regimes, fire is the primary concern, although floodplain function is an issue in some valleys, particularly at lower elevations. In addition to addressing these issues, some actions for the East Cascades include:

- Working with community leaders and agency partners to identify wildlife migration corridors and to fund and implement site-appropriate mitigation measures such as drift fences to overpasses or underpasses when planning transportation projects.
- Increasing education and outreach for recreationalists and associated businesses. Where needed, direct activities to particular seasons or away from sensitive habitat.

### **Klamath Mountains Summary**

The Klamath Mountains ecoregion contains wide ranges in elevation, topography and climate -- from the lush, rainy west to the dry, warmer interior valleys to cold, snowy mountains. The Klamath-Siskiyou region of southwest Oregon and northwest California is recognized internationally for its global biological significance and is considered a world "Centre of Plant Diversity" by the World Conservation Union.

The Klamath Mountains ecoregion has the second fastest-growing human population in Oregon behind the Willamette Valley. Much of the population growth is concentrated in valleys along the Interstate 5 corridor. Demands for choice building sites often coincide with good quality habitat.

Overall, forest habitats are challenged by decades of fire suppression, and by "checkerboard" ownership patterns that can make resource planning particularly challenging. Grasslands in the Klamath Mountains ecoregion are home to many endemic and at-risk plant communities, but are potentially impacted by invasive grasses and by conversion to development. Recent indicators suggest that water quality and riparian conditions in the ecoregion are improving, although these remain concerns in some areas. Many of the improvements can be attributed to local collaborative conservation efforts via watershed councils and other groups.

Strategy Habitats identified in the Klamath Mountains ecoregion include: ponderosa pine, oak, and pine-oak woodlands; late successional mixed conifer forests; grasslands; riparian; wetlands; and aquatic habitats.

Of the Conservation Strategy's six Key Statewide Conservation issues, land use changes, altered disturbance regimes, water quality and quantity, and invasive species are of greatest concern in the Klamath Mountains. For altered disturbance regimes, fire is the primary concern, although floodplain function is an issue in some valleys, particularly at lower elevations. In addition to addressing these issues, actions in the Klamath Mountains could include planning mineral extraction activities to minimize potential impact on species and habitat by focusing extraction efforts in areas with existing roads and minimizing disturbance to sites with rare plant concentrations.

### **Northern Basin and Range Summary**

Situated in the rain shadow of the Cascades Mountains, the Northern Basin and Range is Oregon's driest ecoregion. It is characterized by extreme ranges in daily and seasonal temperatures. Runoff from precipitation and mountain snowpack often flows into low, flat playas where seasonal shallow lakes and marshes provide important stopover sites for migrating birds due to the rich source of invertebrate prey. Sagebrush communities dominate the landscapes in this arid ecoregion.

The Northern Basin and Range is sparsely inhabited, but local communities have vibrant cultural traditions and a strong sense of place. The Bureau of Land Management manages most of the land in the ecoregion. Livestock and agriculture form the foundations of the

regional economy. Uncontrolled livestock grazing in the decades before enactment of the Taylor Grazing Act of 1934 caused serious long-term ecological damage throughout the ecoregion. Rangeland conditions have substantially improved since then in most areas. Although grazing is managed sustainably in many parts of the ecoregion, impacts remain in some areas and recovery has been slow in others. Water is a scarce resource in the Northern Basin and Range where it is often fully allocated to storage and other uses. Associated water quality is impacted by high temperatures and in some areas by bacteria, contaminants, and aquatic invasive plants.

Strategy Habitats identified for the Northern Basin and Range ecoregion include big sagebrush shrublands, aspen woodlands, riparian, wetlands, and aquatic habitats.

Of the Conservation Strategy's six key conservation issues, invasive species, water quality and quantity, and altered disturbance regimes, primarily fire, are of greatest concern. Invasive annual plants and wildfires interact, creating a fire cycle that results in domination by invasives. In addition to addressing these issues, some actions for the Northern Basin and Range include:

- Working cooperatively with land managers and off-highway vehicle groups to direct use to maintained trails in low-impact areas and improve enforcement of existing off-highway vehicle rules.
- Continuing to proactively manage livestock grazing and restore degraded habitats, including minimizing grazing during restoration of highly sensitive areas, such as wetlands and riparian areas.

### **West Cascades Summary**

Of all of Oregon's ecoregions, the West Cascades is considered the healthiest by several indicators. For example, this ecoregion has the highest water quality in the state and the fewest problems with water allocation and quantity. Very few species have been extirpated from this ecoregion, and there has been considerable effort toward recovering threatened and endangered species. Much of the remnant late successional forests on public land are managed with an emphasis on biodiversity under the Northwest Forest Plan. The Northwest Forest Plan identifies conservation priorities for species affected by loss and fragmentation of large patches of late successional forests, assessing over 1,000 species. However, the adaptive management component of the Northwest Forest Plan has not been fully implemented. (See the Northwest Forest Plan description in Appendix II.

Strategy Habitats in the West Cascades include late successional conifer (Douglas-fir) forests, oak woodlands, grasslands, wetlands, riparian, and aquatic habitats.

Of the Conservation Strategy's six key conservation issues, altered disturbance regimes (primarily fire) and invasive species are of greatest concerns. In addition to addressing these issues, some actions for the West Cascades include:

- Maintaining current management for a diverse array of species and habitats.
- Continuing implementation of existing plans, and explore options for implementing the adaptive management component of the Northwest Forest Plan.

### **Willamette Valley Summary**

The Willamette Valley ecoregion has the fastest-growing human population in Oregon and densest population. It supports the states' three largest urban centers (Portland, Salem, Eugene). The 2050 population is projected to be approximately 4 million—nearly double the 2000 population. The ecoregion houses Oregon's economic engines: Six of the top ten agricultural-producing counties and 16 of the top 17 private sector employers.

The majority of the Willamette Valley ecoregion has been altered by development. The Willamette River has been disconnected from its floodplain and much of the Valley's historic habitats have been fragmented. About 96 percent of the Willamette Valley ecoregion is privately owned, presenting challenges to conservation management. Thus, voluntary cooperative approaches are key to long-term conservation.

Strategy Habitats identified for the Willamette Valley ecoregion include: oak woodlands, grasslands, wetlands, riparian, and aquatic habitats.

Of the Conservation Strategy's six key conservation issues, land use changes, altered disturbance regimes (both fire and floodplain function) and invasive species are of greatest concerns. In addition to addressing these issues, some actions include:

- Maintaining and restoring fish and wildlife habitats in urban centers.
- Conserving, restoring and reconnecting high value habitats.

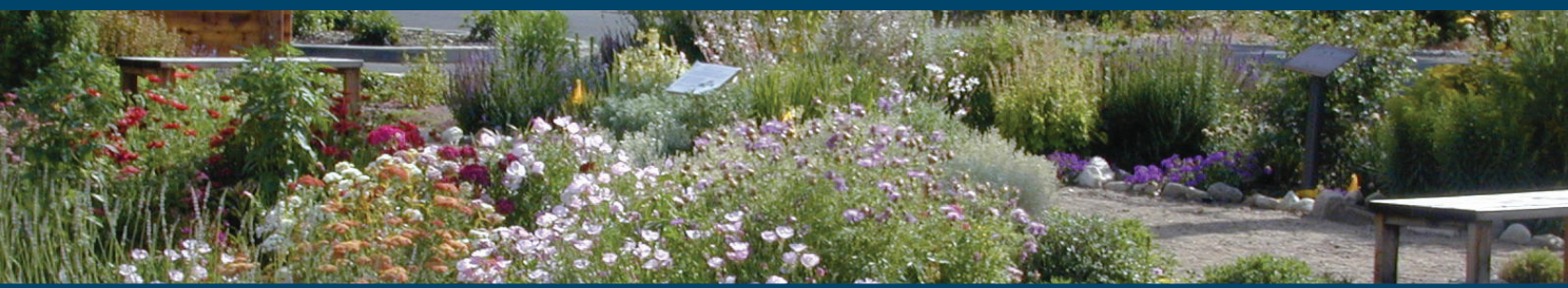


Photo © Bruce Newhouse

## A Place for People and Wildlife: Conservation in Urban Areas Summary

Urban landscapes can support diverse and valuable habitats for fish and wildlife, and there are successful examples of communities throughout Oregon weaving greenspaces and habitat into their planning and development. These habitats are home to many common species, but may also be important for species at risk, including some of the Strategy Species described in this document. Stream and river corridors, nature parks, and homes and businesses landscaped with native vegetation all provide habitat within an urban setting.

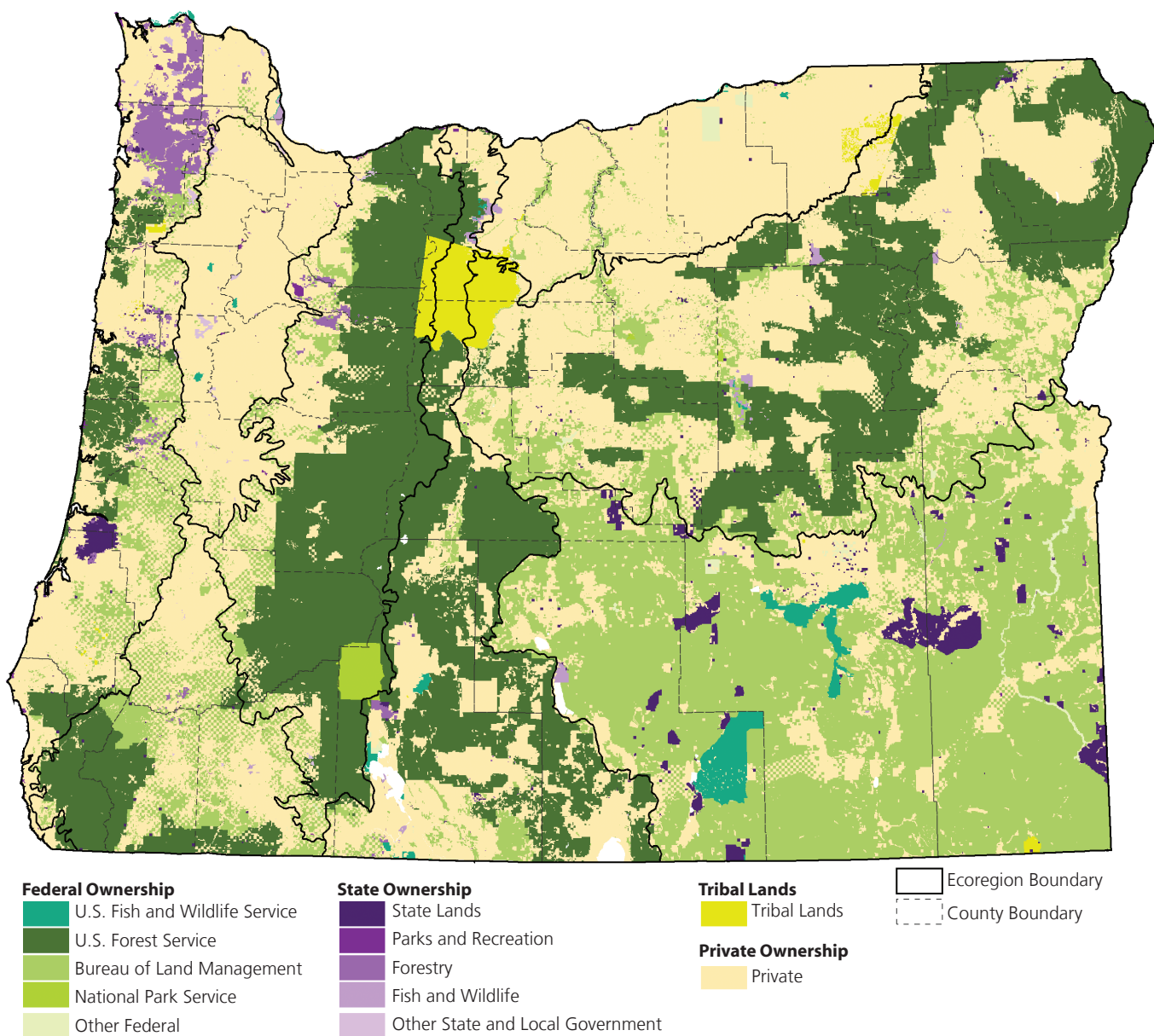
Every Oregonian can contribute to the conservation of wildlife and habitats in their own backyard or neighborhood. Creating backyard habitat, or “Naturescaping”, provides important places for wildlife to feed, nest, and find shelter from the weather. People can also help by volunteering for restoration projects in their local parks.

As cities continue to grow in Oregon, incorporating natural resources into the infrastructure of development and community open spaces will help ensure that wildlife can survive and thrive. The ability for people to interact with wildlife in their own backyard or neighborhood also contributes to their understanding of the value of the natural world, connects people to the watershed they live in, and improves the quality of life Oregonians enjoy. Urban habitats are discussed in more detail on pages 65 to 69. Important conservation actions for urban areas include:

- Plan for growth and development to incorporate the protection of large, functional and connected habitats as “green infrastructure.”
- Consider a range of program options and trade-offs for habitat and urban development, incorporating economic, social, environmental and energy criteria.
- Use multiple tools to meet conservation goals, which can include planning, restoration, acquisition, on-the-ground actions, grants, education/information, property tax reduction programs, technical assistance, volunteer programs, and recognition programs.
- Integrate fish and wildlife habitat conservation and restoration into other natural resource conservation efforts (e.g., water quality programs, open space acquisitions).
- When planning redevelopment projects, look for opportunities to restore habitats, increase connectivity and improve floodplain function.
- Incorporate habitat features and functions into the built environment (wildlife road crossings, rooftop gardens and nests, artificial habitat structures).
- Promote “Naturescaping” and landscaping with native plants.
- Prevent the introduction of those non-native species with high potential to be invasive and control priority invasives.
- Integrate information about habitats and species from state and federal natural resource agencies and conservation groups into local and regional planning efforts.
- Learn about effects of urbanization on watersheds and test management actions. Consider and use new information as it becomes available.
- Increase understanding of how urban systems can be designed to help sustain fish and wildlife populations with a high level of public support and involvement.
- Educate residents about Oregon’s natural heritage, show people real-world examples of important habitats and projects, and build an appreciation that will lead to citizen actions and support for conservation.
- Recognize the positive contributions that individuals, businesses and industry have made locally.
- Promote programs designed to manage stormwater so it closely mimics natural flow patterns and cleanses runoff before it is released to natural water bodies. Discourage dumping into storm drains.

- Work across multiple jurisdictions, recognizing the uniqueness of each local community and the needs of various landowners. Seek methods to achieve cooperation and coordination. Promote the exchange of information.
- Support habitat improvement projects geared towards the needs, opportunities and high level of public interest in carrying out environmentally beneficial projects in urban areas.
- Create cost-share funding opportunities for conservation planning and project implementation. Provide technical and financial support for projects.
- Support and expand existing programs to provide proactive, seasonally-appropriate information on preventing and resolving conflicts with wildlife.
- Consider impacts to off-channel, shallow water and in-stream habitat while providing recreation opportunities.
- Monitor change in urban ecosystems using broad-scale indicators in urban settings.

### Land Ownership



Data Source: Oregon Department of Forestry, 2004



Photo © Avi Hesterman

## Where to Start?

### **Strategic Opportunism: Every Acre Counts**

Landowners and land managers throughout Oregon can contribute to conserving fish and wildlife by maintaining, restoring, and improving habitats. Conservation actions that benefit Strategy Species and Habitats are important regardless of location, size, or ownership.

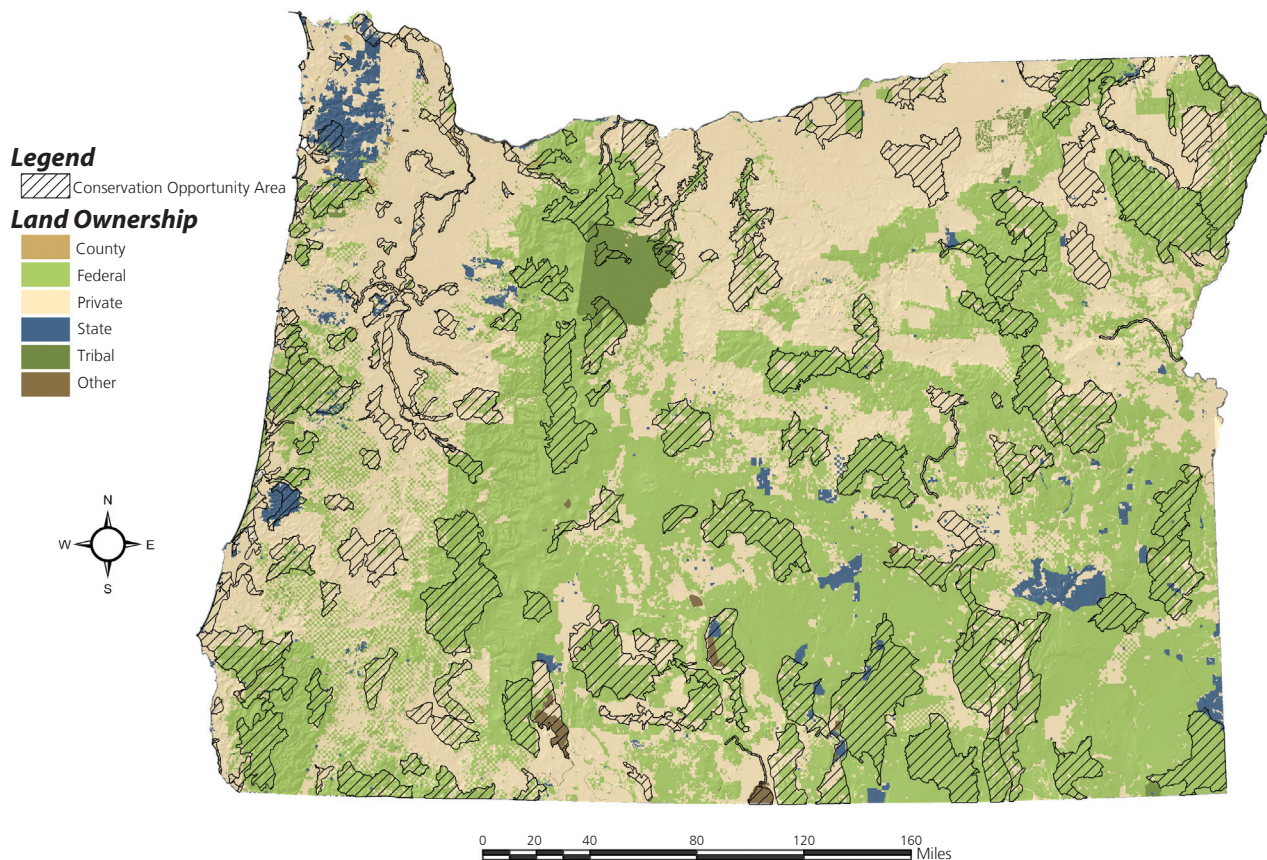
Because the Conservation Strategy takes an entirely voluntary approach, implementing conservation actions will often happen opportunistically, as shaped by landowner interest and funding availability. However, opportunistic conservation doesn't have to be random. By focusing actions on the priorities identified in this document, conservation actions can be strategic wherever they occur.

### **Prioritizing Landscapes: Conservation Opportunity Areas**

Although conservation actions taken throughout the state can help fish and wildlife, focusing investments on priority landscapes can increase likelihood of long-term success over larger areas, improve funding efficiency, and promoting cooperative efforts across ownership boundaries. Conservation Opportunity Areas are landscapes where broad fish and wildlife conservation goals could best be met. Working in these landscapes can increase effectiveness of conservation actions at larger scales than can individual projects scattered throughout the state.

Conservation Opportunity Areas were developed to guide voluntary actions. These are not regulatory boundaries, and there are no regulatory

### **Statewide Conservation Opportunity Areas**



### Strategy for Action: Summary and First Steps

requirements attached to them. Land use or other activities within these areas will not be subject to any new restrictions as a result of these delineations. This map and the associated data should only be used in ways consistent with these intentions.

Over time, voluntary conservation actions consistent with local priorities and existing plans will be carried out within these Conservation Opportunity Areas by a variety of partners (e.g., landowners, land managers, watershed councils, local land trusts, Soil and Water Conservation Districts, and so on). The impact of these conservation actions on Strategy Species and Habitats will be monitored. Through this process, additional information will be gained on the habitat elements of importance to Strategy Species. Conservation Opportunity Areas, along with the rest of the Conservation Strategy, will continue to be refined as data gaps are filled and as the landscape continues to change.

In the Ecoregion Chapter (beginning on page 111) there are maps of Conservation Opportunity Areas for each of Oregon's eight ecoregions. These are the primary areas ODFW will promote as investment priorities for voluntary conservation tools. There is a profile for each one that describes the area's special features, key species and habitats, other planning efforts that identified the area as a priority, and land ownership by category. For implementation, Conservation Opportunity Area maps will be incorporated into a web-based system with links to

relevant background information and conservation actions identified in the Conservation Strategy.

The conservation action recommendations were identified through existing plans, spatial analysis, and expert review. They are not meant to be exhaustive, so other actions will also be appropriate, as influenced by local site characteristics and management goals. Actions need to be compatible with local priorities and local comprehensive plans and land use ordinances and other applicable state, federal, and local laws. Actions on federal lands need to undergo federal planning processes prior to implementation to ensure consistency with existing plans and management objectives for the area.

Selection of Areas was based on a computer-based (Geographic Information System) analysis and used a three-step process comprised of a computerized site selection program, validation of the results using expert opinion, and peer review. For more information on the methods used to select Conservation Opportunity Areas, see the Methods description (Appendix IV).

Conservation actions in areas that are not identified as Conservation Opportunity Areas can still be extremely beneficial, especially since some areas are important for connecting the existing pieces of the conservation network.



Photo © Bruce Newhouse





Photo © Bruce Campbell

## How to Get the Job Done: Conservation Tools

### ***Volunteer Conservation is the Conservation Strategy's Primary Focus***

Nature provides services to communities and economies, such as clean drinking water, habitat connectivity and replenished soil. These services are difficult and expensive to replicate artificially. For instance, a single farm can provide a variety of benefits including agricultural products, flood management, habitat connectivity and nutrient recycling. These contributions benefit society at large. Compensation for them helps the farmer.

Forty-six percent of Oregon land is privately owned. Private land contributes greatly to Oregon's fish and wildlife conservation: many fish and wildlife species use habitats on private land and some species are dependent on habitats found primarily on private land. Achieving the goals of this Conservation Strategy will depend on voluntary efforts by landowners and land managers across Oregon. In order to involve private landowners in a pro-active approach to conservation, voluntary cooperative tools and programs are critical. Thus they are a central focus of this Conservation Strategy.

Publicly owned lands also are important to species and habitat conservation in Oregon, and some voluntary conservation tools apply to public lands as well as private lands. Some public lands could provide greater conservation benefits through restoration efforts or changes in management activities. Coordination of land uses and management activities on adjacent lands is important for both private and public landowners because species, habitats, and water tend to ignore property boundaries. Floods, droughts, diseases, wildfires, and invasive species cross property boundaries, requiring that people coordinate efforts to effectively conserve ecological and economic interests.

There are dozens of voluntary programs that contribute to habitat conservation. Some programs are administered by state agencies, while others are federally funded or offered by private organizations. Volun-

tary programs for habitat conservation generally fall into one or more of these categories:

- Direct funding
- Tax benefits (income tax credits, income tax deductions, property tax benefits)
- Certification programs and other marketing approaches
- Conservation commodity trading programs (e.g., water rights acquisition and leasing; pollution credits; transfer of development rights)
- Conservation banking
- Information, training, and technical assistance
- Land acquisition, conservation easements, and land exchanges
- Landowner recognition
- Regulatory assurances for the federal Endangered Species Act
- Regulatory and administrative streamlining

Descriptions of the primary programs available in Oregon are in Appendix III.

Each landowner's circumstance has unique variables that will influence which voluntary conservation tools would be most appropriate. These variables include: landowner interests and priorities; habitat and species present; habitat quality and quantity; program purpose, criteria and requirements; and long-term costs and benefits. Some landowners will weigh the pros and cons of growing habitat instead of more conventional agricultural crops or making exchanges that shift land from private to public ownership. Ideally, Oregonians collectively will provide the financial incentives to make habitat conservation an economically viable option for willing landowners.

Currently, however, some statewide programs do not provide persuasive incentives for landowners and do not address high priority conservation goals with a multi-species or habitat approach. When con-

sistent with program intent and legislative direction, these tools can be adjusted to ensure that their delivery is strategic and that they address high priority fish and wildlife conservation needs across Oregon.

### ***Building upon Success: Some Recommendations for Improving Current Incentive Programs***

Ideally, effective programs would be adaptable to the needs of individual landowners, unique ecological conditions and strategic conservation goals. For landowners, effective programs would be easy to access, understand, and offer desired benefits. They would offer options for customizing programs to specific parcels of land. For species and habitats, effective programs would be consistent with statewide and local conservation goals, cluster efforts and effects across scales, and provide long-term conservation benefits. In addition, programs should provide for monitoring to measure effectiveness and encourage adaptation.

The following list identifies ten of the biggest opportunities to help prioritize efforts and leverage resources. For some programs, state or federal legislation directs incentive program priorities. Although any modifications to these programs will need to work within the legislative intent, there are opportunities to increase conservation benefit while meeting programs' primary purposes.

- 1. Focus on conservation goals** –Align incentive programs with regional and statewide conservation goals, plans, and priorities.
- 2. Focus on multiple key habitats and species** – Increase the breadth of habitats and species addressed in existing incentive programs.
- 3. Be strategic rather than opportunistic in program delivery** – Focus investments on Strategy Habitats, Strategy Species, and in Conservation Opportunity Areas. Cluster efforts where habitats or issues cross ownership boundaries. However, make some programs available to interested landowners across the state, including those outside of priority areas.
- 4. Provide monitoring of ecological outcomes** – Learn what works and adapt accordingly at both the project and programmatic levels.
- 5. Improve coordination between agencies, programs, and partners** – Build upon existing partnerships between agencies to strengthen coordination, review programs, streamline processes, assist landowners, and share information.
- 6. Provide adequate funding** –Develop stable long-term state and federal funding sources. Carefully prioritize efforts to make best use of existing funds. Take advantage of underutilized federal programs available to Oregon.

- 7. Increase program participation** – Increase landowner involvement by including them in decision-making processes, increasing flexibility, and conducting outreach to increase awareness.
- 8. Simplify complex administrative processes** – Where possible, improve administrative efficiency, simplify paperwork, standardize application forms and processes between programs, streamline processes, increase assistance to landowners in filling out forms and meeting regulatory requirements, empower landowners to manage projects through training and networking, and ensure deadlines are reasonable for landowners.
- 9. Provide more technical support** – Build upon existing programs to provide biological and administrative advice and assistance.
- 10. Look for ways to increase staffing** – Provide adequate funding to attract and retain program delivery staff over time.

Coordination of existing programs will be the best way to expand the capacity of programs to include a growing number of interested landowners and local organizations. Oregon Department of Fish and Wildlife will look for opportunities to coordinate with other regulatory agencies to improve regulatory certainty and administrative streamlining for incentive programs. Mechanisms should be developed to coordinate existing voluntary incentive programs within the state. To the extent possible, a central location (“one-stop shopping”) should be developed where landowners could go to get information on a variety of different programs. Technical assistance in permitting or designing restoration projects make it more likely that voluntary programs that appeal to landowners will get used. Investment in local organizations like watershed councils – critical players in Oregon’s habitat conservation – is a means for providing locally adapted technical assistance, information and training, and project management. Ultimately, agencies need to improve existing programs and fill in gaps with new programs to link efforts on public lands with stewardship on private lands.

### ***Recommendations for New or Expanded Voluntary Conservation Tools***

For effective implementation of this Conservation Strategy, Oregon needs to develop new programs to meet statewide conservation goals while addressing complex local and statewide social and economic issues. Some programs will need additional funding or staff. All new programs will require creativity, partnerships, and a commitment to improving voluntary conservation tools and programs. Some recommendations for new voluntary conservation tools include:

- 1. Develop business opportunities and other market-based approaches.** - A conservation marketplace is appearing in the

state. There are new business opportunities for landowners to market products that in turn help conserve the state's fish and wildlife resources. Native plant nurseries, juniper products, sustainably managed timber, organic produce, and certification programs are making conservation profitable. In some areas, removing encroaching small-diameter trees can restore habitats with historically open understories, while reducing the risk of uncharacteristically severe wildfire by reducing fuel loads and removing ladder fuels. Developing markets for these small-diameter trees can create jobs, contribute to local economies, and help pay for restoration. Strategic investment in restoration projects such as culvert replacement and invasive species control could also support job creation in some rural areas, while meeting fish and wildlife conservation goals. These efforts can be further promoted and expanded. They can also serve as role models for new innovative economic and marketing approaches.

## 2. **Expand conservation banking to a statewide approach -**

Conservation banks can benefit landowners and developers, while providing a means for attracting investment in high priority habitats and meeting local land use goals. In this approach, habitat values are converted to credits that serve as currency between investors and landowners. The number of credits held by each bank is based on acreage, habitat quality, and level of restoration. Traditionally, banks have been a means for developers or transportation departments to mitigate for impacts to regulated resources like wetlands or listed species. Depending on local considerations, on-site mitigation may be the most appropriate approach in order to benefit the impacted populations and local habitats. Also, existing state and federal regulations require on-site mitigation in some circumstances. However, off-site mitigation may be appropriate to achieve larger-scale habitat conservation goals. Conservation banks could be expanded for broader uses at larger scales. As an example, the Willamette Partnership is forming a conservation banking system in the Willamette Basin that they hope will serve as a prototype for Oregon.

## 3. **Seek funding opportunities for Oregon's Flexible**

**Incentives Account** - Voluntary conservation tools require adequate funding, and new tools need start-up investments. In 2001, the Oregon Legislature created a Flexible Incentives Account to provide flexibility in funding innovative projects that implement statewide, regional, or local conservation plans. The account can receive private or public funds, and is administered by the Oregon Watershed Enhancement Board. To date, no funds have been committed to the Flexible Incentives Account.

However, there are opportunities to fund the Flexible Incentives Account through donations, business partnerships, and pooling resources. If funded, this account could be used to launch new programs or support revision of existing programs to meet statewide priorities.

## 4. **Develop and expand local citizen-based partnerships -**

Unorthodox partnerships—people working together across disciplines, ideologies, economic strata and geography—are boundless sources of inspiration and energy. Such partnerships have formed to cooperatively address local natural resource issues, sometimes as an alternative approach to years of conflict. These partnerships can engage citizens, strengthen communities, increase information sharing, help plan and implement conservation projects, and come up with innovative solutions.

## 5. **Support local multi-purpose approaches -** Local governments play a role in assessing and conserving habitats, under statewide planning goals. Maintenance and restoration of natural areas can also meet community needs for recreation and quality of life. Programs such as the West Eugene Wetlands can meet multiple objectives, including wetland mitigation, fish and wildlife habitat, recreation, flood management, water quality, and education programs.

## 6. **Provide "One-Stop Shopping" for delivery of incentive programs -** Incentive programs are administered by an array of agencies and organizations. Each program has its own purpose, priorities and processes. Many programs require meeting certain regulations, and restoration work often requires permits, sometimes from several agencies. No single agency or organization provides knowledge of or access to the full selection of programs. Some landowners are unaware of programs, while others are confused and frustrated by the wide array programs and agencies.

Due to logistical and legal limitations, a statewide system of centralized funding and technical assistance may be difficult to achieve. However, there is a need and opportunity to coordinate programs, identify common goals, reduce redundancy and resolve conflicts between programs. Through "one-stop shopping" agency staff, extension agents, local organizations, and/or consultants could serve as liaisons between programs and landowners, providing technical and administrative assistance as needed.

## 7. **Create a statewide registry for tracking conservation actions and programs -** A statewide registry will allow agencies and conservation partners to track, analyze and understand levels and patterns of participation in habitat conservation pro-

grams. It can be used to streamline reporting processes, target funding to address unmet conservation priorities, recognize landowners, and evaluate program success. Ideally, it should include a database and mapping capability, be accessible through the Internet, and protect the privacy of landowners by providing non-identifying information. The first step would be to establish a spatially-explicit database of the existing conservation network composed of national, state and local protected areas plus restoration, mitigation and other projects that enhance fish and wildlife habitat and ecosystem integrity. This database would be then continually amended with a state-level registry of conservation actions, as they occur.

- 8. Develop new incentive programs or expand existing ones to fill identified needs** - Currently, not all Strategy Habitats can be conserved through existing landowner assistance programs. For example, there are few financial assistance programs for forestland or urban landowners. Similarly, there is currently no program that supports landowners who provide ecosystem services, such as using fields for floodwater management. Some programs could be modified or expanded to fulfill these needs, while still maintaining their original purposes. However, in some cases new programs may be needed to support landowners doing voluntary conservation.



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## Monitoring for Success: Recommendations

Monitoring is an essential element of successful implementation. Understanding the breadth of activities occurring, the outcomes they have produced, and the effectiveness of those outcomes allows ODFW and conservation partners to adapt to changing conditions and new knowledge. Monitoring the success of conservation actions in the short term and changes in land use, land cover, and habitat conditions in the long-term will help project managers increase the efficiency and effectiveness of conservation investments.

The Conservation Strategy's monitoring approach builds from existing monitoring efforts to track the effectiveness of conservation actions over time, and follow the medium and long-term trends in conditions of Strategy Habitat and populations of Strategy Species, either directly or through appropriate indicators. Here are some primary recommendations for monitoring actions taken within the Conservation Strategy's framework:

### ***Fish and Wildlife Monitoring Team***

Monitoring needs for the Conservation Strategy are larger and more complex than any single agency or organization can sustain. Many on-going monitoring efforts by groups and agencies already address some Strategy Species and Habitats. However, they are not always coordinated with other similar efforts. In order to make best use of these existing monitoring plans and efforts, Oregon Department of Fish and Wildlife will establish a multi-partner Fish and Wildlife Monitoring Team provide guidance for needed monitoring and assessments.

The Fish and Wildlife Monitoring Team approach will build upon the on-going work to increase coordination between groups and to focus any new monitoring activity on gaps in current efforts. For example, the team will coordinate with Oregon Watershed Enhancement Board's Oregon Plan monitoring efforts, which focus on aquatic and riparian habitat. The team will also coordinate with the Oregon Board of Forestry's efforts to identify indicators that could provide information about the status of native plants and animals on forestlands.

The Fish and Wildlife Monitoring Team would share their recommendations and protocols to agencies, organizations, academia and others looking for opportunities to incorporate Strategy Species and Habitat monitoring into their existing efforts.

The team should include representatives from federal, state, and local agencies; fish and wildlife user groups; tribes, conservation organizations; and forestry, agriculture, industry, and transportation interests. Their expertise and perspectives on monitoring would provide the groundwork for establishing and maintaining a database and data management system that can be used by a variety of data collectors and managers.

Potential tasks of the Fish and Wildlife Monitoring Team include:

- Developing a list of potential indicators (including species) and specific criteria to link indicators to Strategy Species and Habitats and evaluate these indicators for suitability, practicality and cost-effectiveness.
- Identifying monitoring priorities, including a list of Strategy Species and indicators to monitor.
- Compiling existing monitoring protocols, developing new monitoring protocols for those species or species groups lacking existing protocols and providing these protocols to potential users.
- Developing or reviewing protocols and other guidance for citizen scientists on how to monitor.
- Synthesizing information from Conservation Strategy monitoring efforts to determine the status of Strategy Species and Habitats. Providing this information to natural resource specialists, land managers, decision makers and other interested parties (e.g., information users or clients).
- Identifying ways to streamline and enhance data management and usability, and developing standards for data collection and management.

### **Portals of Information on the Web**

Develop and maintain user-friendly web portals similar to the Willamette Explorer (<http://willametteexplorer.info/>) and North Coast explorer (<http://northcoastexplorer.info/>) that provide information on current applied research findings, data on species and habitats presented in a variety of formats geared to different audiences (decision-makers, citizens, natural resource professionals). Design portals to allow for data sharing between conservation partners.

### **Citizen-based Monitoring**

Oregon Department of Fish and Wildlife will explore options to identify those parts of its monitoring program suitable for citizen participation; collaborate with citizen and conservation groups to promote and implement citizen-based monitoring; and work with partners such as universities, non profits and landowners to provide training and access to selected databases for citizen contributions.

### **Charting Conservation Actions**

The registry of conservation actions discussed previously (under How to Get the Job Done: Voluntary Conservation Tools, page \_\_) will be an important tool for monitoring what kinds of projects are implemented, where they are occurring, what habitats or species are potentially benefiting, and if conservation goals are being met.

### **Strengthen Data Management Capacities**

A critical component of any monitoring program is effective data management. Quality data are needed to evaluate the effects of conservation actions on species and habitats and make appropriate adjustments, if necessary. Some important first steps for data management include:

- Identifying critical data collection activities and associated data management efforts and determining effective methods for providing permanent, consistent data management infrastructure. For example, survey Fish and Wildlife Monitoring Team, ODFW staff, and partners to (1) identify key datasets necessary

for implementing conservation actions and determining success through monitoring, (2) inventory current data collection activities relevant to the Conservation Strategy, (3) identify any gaps in current efforts.

- Adopting and using standards for database design, metadata development, and acquisition protocols (e.g., on-going efforts in ODFW's Natural Resource Information Management Program; Federal, Oregon Geographic Information Council, and Nature-Serve standards).

### **Track and report results**

Monitoring the effectiveness of conservation actions and adapting these actions to respond appropriately to new information or changing conditions requires that results be tracked and reported. The following steps can be taken in partnership with the Fish and Wildlife Monitoring Team, ODFW's Natural Resource Information Management Program, Oregon Natural Heritage Information Center, Oregon Watershed Enhancement Board, and other partners.

- Identify how progress will be measured (that is, specific metrics to be used such as number of acres restored, number of stream miles improved, or number of landowners given technical assistance).
- Implement consistent procedures for data entry so that progress reporting can be done through queries to a database. Where possible, develop tools to automate the reporting process.
- Design web-based data tools to ensure consistent data entry by multiple partners, maintain data integrity, and improve data sharing. The web-based portals are one way this could be achieved.

For an in-depth discussion of monitoring see the Monitoring discussion, pages 98 to 109.





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## Conservation Strategy Implementation and Review

A foundation of cooperative projects, incentive programs, and voluntary efforts currently exists throughout Oregon. This foundation is wide, strong, and enduring. The Conservation Strategy is a broad framework, a strategic look at what needs to happen to conserve Oregon's species and habitats. Much is already being done, but there remains much more to do.

Conservation Strategy implementation brings all of these people and programs together, to provide a vision and a structure for existing efforts and to build a network of actions and achievements that moves Oregon toward the overall Conservation Strategy goals.

This effort will not be successful without the participation and support of Oregonians. A great deal of work and vision has gone into creating this document, with help from many partners and stakeholders, and the goals outlined here reflect their energy and enthusiasm. The Conservation Strategy will live and thrive through actions, partnerships and a new way of doing business.

Oregon Department of Fish and Wildlife reached out to stakeholders and technical experts in developing this document and talked with state and federal agencies, local governments, tribes and other constituents. Outreach is a key part of the Conservation Strategy, both to let people know about the opportunities, and to begin building the framework for this collaborative approach to conservation in Oregon. The Conservation Strategy encourages flexible and adaptive programs that work at the local level, where the best work happens. The Conservation Strategy also strives to balance conservation with other social, economic and community values, and looks for ways to make conservation a valuable asset for local economies.

### Goals for Conservation Strategy Implementation

1. Create sustainable partnerships by building upon current successes and forging new relationships.
2. Create an approach that is collaborative and synergistic.
3. Be strategic in scope, but provide for local opportunities.
4. Break down organizational or institutional barriers.
5. Provide incentives, technical support, outreach and a toolbox for landowners.
6. Synthesize existing data.
7. Collect and use new data to track success over time, learn, and adapt.
8. Document change in habitats and species over time through monitoring.
9. Promote data management and information sharing through tools such as web-based portals.

### **First Steps in Achieving the Goals**

#### **Everyone Can Help**

Every Oregonian can have a role in implementing the Conservation Strategy. The key first step is to let people know about conservation needs, provide them with a menu of possible actions, and give them the technical or financial tools to help them take action. Some example opportunities include:

- Landowners and conservation groups can identify Strategy Species or Habitats of interest to them and begin working on conservation actions discussed in the statewide, ecoregion, habitat, and species chapters.
- Citizen-based monitoring has a role in developing, implementing and monitoring conservation actions. People can get involved in the many on-going citizen-based monitoring projects in communities and through schools.
- Academic institutions can assist with filling research needs and data gaps, conduct monitoring and provide results that can be used for adaptive management and analysis.

### Oregon Department of Fish and Wildlife Action Items

Oregon Department of Fish and Wildlife will take the lead role in promoting the Conservation Strategy and in coordinating cooperative efforts to implement the first steps. ODFW biologists have strong relationships with agency partners, especially at the local level. However, there are opportunities to increase coordination and cooperation between multiple agencies, and with tribes and a variety of citizen groups.

During the first two years after the Conservation Strategy's approval, ODFW will:

- Develop a prioritized "step-down plan" for implementation at various levels (that is, statewide, ecoregional and local) in coordination with staff throughout the agency, recognizing existing workloads and priorities.
- Evaluate, and restructure if necessary, the current efforts and plans within ODFW's Wildlife Diversity Program to institutionalize the Conservation Strategy as a guiding document.
- Coordinate with various ODFW programs to seek opportunities to further the Conservation Strategy's goals. Example opportunities include:
  - Working with ODFW's Wildlife Management Area staff to incorporate Conservation Strategy priorities into management area plans and habitat projects, as well as address issues such as invasive species.
  - Working with ODFW fish hatchery staff to develop potential habitat and outreach projects at hatcheries.
  - Working with ODFW divisions and programs to integrate the Conservation Strategy into other plans such as game management plans and fish conservation plans.
  - Continuing the coordination and, where appropriate, consolidation of existing landowner assistance programs, including tax incentive programs.
- Develop informational materials about the Conservation Strategy targeted to specific audiences, such as private landowners, watershed councils, and local governments. Use a variety of outreach tools to get the word out (e.g., update the ODFW website; give presentations to landowner groups, watershed councils, civic groups, and other interested people; and provide printed materials to agencies, tribes and other partners).
- Meet with agencies, tribes and groups (including industry, fish and wildlife users, conservation, and civic). Build upon existing partnerships and forge new relationships to:
  - Inform agencies, tribes and groups about the Conservation Strategy's goals, approach, and recommended actions.

- Explore options for increasing coordination between agencies to reach shared goals.
  - Incorporate the Conservation Strategy into on-going Oregon Plan for Salmon and Watersheds activities.
  - Enhance coordination with state and federal agencies regarding planning, habitat restoration, and species conservation on public lands and waterways. In particular, work with state and federal land management agencies during the development and updating of land management plans to identify conservation issues that affect Strategy Species and Habitats and actions that can be taken to address these conservation issues.
  - Explore options and partnerships for implementing the registry of conservation actions and web-based "bulletin board" for Conservation Opportunity Areas.
- Work within the existing legal and institutional framework governing private and state forestlands to coordinate Conservation Strategy implementation with the Oregon Department of Forestry and the Oregon Board of Forestry. Oregon Department of Fish and Wildlife will coordinate with the Oregon Department of Forestry and the Oregon Board of Forestry as they implement Oregon Forestry Program for Strategy E. Implementation of Strategy E will require consideration of economic, social and environmental needs. The Conservation Strategy can provide some of the biological information used to help establish policy targets during implementation of Strategy E. Once policy targets are established, the information in the Conservation Strategy can be helpful in evaluating habitat conditions and setting priorities.

### Priority Cooperative, Multi-partner Implementation Steps

The issues facing Oregon's fish and wildlife are diverse and complex. Addressing those issues will take coordinated, cooperative actions. Many of the recommended actions in this Conservation Strategy ideally will involve a variety of conservation partners. These partners may range from a private landowner restoring a stream on his land to a business owner promoting "conservation certified" products to a citizen's group monitoring bird populations. In addition a variety of local, state and federal agencies administer funds and programs, manage lands, plan, restore habitats, and implement existing laws and regulations, all of which will be important for reaching conservation goals. Some important multi-partner actions include:

- Establish the Fish and Wildlife Monitoring Team to develop the monitoring approach, standards and reporting format. The team will also examine funding needs for monitoring and maintenance, which are often the under-funded portions of a



project that are difficult to sustain over time. Although the Fish and Wildlife Monitoring Team will be organized and maintained by Oregon Department of Fish and Wildlife, it will involve many partners.

- Develop appropriate tools to track and report results.
- Develop a registry of conservation actions for tracking success. Meet with various groups to introduce the Conservation Strategy and talk about opportunities to track the good work they are doing.
- Create a web-based "Bulletin board" for Conservation Opportunity Areas to help landowners and local biologists:
  - Determine priority areas and actions for those areas.
  - Get information on land use, land cover and ownership.
  - Discuss on-going work (what's working, what's not), share ideas, and get advice.
  - Find contractors used for restoration, seed sources, and other technical assistance.
- Develop a program for conducting outreach to private landowners in Conservation Opportunity Areas identified in the Conservation Strategy.
- Develop an invasive species implementation tool that evaluates the ecological impact and management approaches for invasive species identified as priorities in the Conservation Strategy. Potential partners include The Nature Conservancy, Oregon Natural Heritage Information Center, the Oregon Invasive Species Council, county weed boards, federal land management agencies, Oregon Department of Agriculture, Portland State University and other groups with an interest in this issue.
- Work with local groups and landowners to identify and develop specific projects. Work with existing incentive programs and funding sources to initiate on-the-ground projects.
- Begin developing tools for landowners, such as guides similar to the "Woodland Fish and Wildlife" series, which provide a practical advice for landowners and land managers interested in providing fish and wildlife habitat on their properties. Provide a toolbox for private landowners on tips (e.g., "best management practices") for working in various Strategy Habitats, projects that help Strategy Species, and available incentive programs.
- Develop cooperative approaches to address conservation issues that extend across land ownership boundaries and jurisdictions (e.g., invasive species and uncharacteristic severe wildfire).
- In coordination with the Oregon Institute for Natural Resources and the Oregon State Library, expand the "Oregon Explorer" sites to include "ecoregional portals" that provide information about Strategy Species and Habitats, and other ecoregion specific information.
- In coordination with various state agencies (i.e., Oregon Department of Transportation, Oregon Department of State Lands, Oregon Department of Energy), explore options for establishing regional "conservation banks" that could be used to meet mitigation requirements in a manner that benefits Strategy Species and Habitats.
- In coordination with OSU's Institute for Natural Resources, Oregon Progress Board and various agencies, implement the newly-established Oregon Benchmark to measure the amount and distribution of natural habitats in each of Oregon's eight ecoregions and track changes in natural habitats over time.
- Improve coordination between conservation incentive programs and simplify and expedite landowners' access to these programs by:
  - Identifying common goals
  - Exploring options for developing a coordinated application form that landowners could use for multiple incentive programs
  - Identifying technical assistance priorities at a local or regional scale
  - Combining resources to provide technical assistance specialists who can assist landowners by:
    - Recommending property-specific conservation actions
    - Matching incentive programs with the landowners' habitat and economic needs
    - Providing technical assistance on project planning, permit and grant application assistance, and project implementation
  - Identifying the most effective locations for housing technical assistance specialists (i.e., extension offices, Soil and Water Conservation District offices, Natural Resource Conservation Service offices, Oregon Department of Fish and Wildlife offices, etc.)
  - Working through the Governor's Regulatory Streamlining Initiative and other means to look for opportunities to streamline the permitting process and identify and address conflicting regulations or those that hinder habitat conservation and restoration projects.

### **Funding the Conservation Strategy**

The Conservation Strategy is ambitious and requires creative partnerships to fund its implementation. Oregon Department of Fish and Wildlife and its partners will look for additional funding. This may include:

- Working with state and federal agencies, non-governmental agencies and others to obtain additional funding for Conservation Strategy implementation by:
  - Identifying opportunities for using funds from existing conservation programs to implement the Conservation Strategy
  - Pursuing underutilized funding sources
  - Using State Wildlife Grant dollars to leverage funds from other sources
  - Obtain matching funds for State Wildlife Grants
  - Seek funding opportunities, particularly from private partners, for the Flexible Incentives Account so that it can be used for conservation actions that implement the Conservation Strategy
  - Work with all conservation partners to increase the involvement of business and industry in habitat conservation efforts across the state.
- Working with U.S. Fish and Wildlife Service, Division of Federal Assistance, to explore options for:
  - Providing a “programmatic” match for State Wildlife Grant Funds as opposed to a project-by-project match.
  - Simplifying documentation requirements for “in-kind” match

### **Conservation Strategy Review and Revision**

States must update their Strategies “at intervals not to exceed 10 years” to meet the criteria established by Congress.

#### **Two-year Progress Report**

Following federal approval, Oregon Department of Fish and Wildlife will report to the Oregon Fish and Wildlife Commission on the Conservation Strategy every two years. This internal review will be tied to ODFW’s biennial budgeting process and will occur within the context of federal reporting requirements.

The report will assess:

- Whether ODFW is meeting internal implementation goals
- Roadblocks to implementation
- Statewide progress in meeting Conservation Strategy goals
- Results of monitoring and data management programs

- Need for adaptive management based on results, data, conservation actions, changes in habitats and species distributions
- Any recent administrative and fiscal changes to the program

#### **Five-year Cooperative Review**

Every five years, a more extensive external review will be conducted with public input and the involvement of partners, stakeholders, technical experts, the Fish and Wildlife Monitoring Team and academia. This process will not require a rewrite of this document, but will rather serve as a valuable means to incorporate the latest knowledge and make any needed course corrections.

This process will:

- Update Strategy Species’ status
- Update Strategy Habitat data and mapping
- Assess success in achieving implementation goals
- Evaluate effectiveness of monitoring
- Evaluate the effectiveness of voluntary conservation tools and conservation actions
- Assess statewide progress in meeting Conservation Strategy goals

This review will recommend:

- Adjustments to Strategy Species and Habitat lists, if warranted
- Revisions to conservation actions and tools where appropriate
- Adaptive management actions to increase or enhance effectiveness in meeting Conservation Strategy’s implementation goals

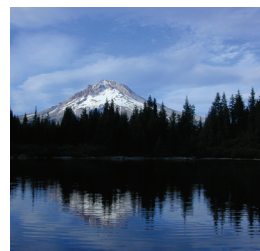


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## Conclusions: Looking to the Future

Clearly, Oregon's landscapes and ecosystems are diverse. Yet, there is a common link across ecoregions, over mountains, and between communities: Oregonians are connected to their rich natural heritage. This Conservation Strategy represents a comprehensive approach to fish and wildlife conservation in the state. The strategies, actions, and opportunities presented here can be used by a broad range of conservation partners, working either on their own land, in their watershed, or across the state. This work should continually adapt to changing conditions and emerging knowledge. Oregon Department of Fish and Wildlife will lead implementation of the Oregon Conservation Strategy. But, the Strategy belongs to all Oregonians. There are opportunities for every citizen, every organization and every partner to step up, volunteer, and work with others to conserve and restore Oregon's fish and wildlife.

Implementation of the Conservation Strategy will require a broad coalition of partners to achieve success down the road. Oregon Department of Fish and Wildlife will continue to talk with and listen to

Oregon's diverse citizens and organizations. Developing the Conservation Strategy is just the beginning of the conversations.



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