



# 10 Year Plan for Oregon Project *Healthy Environment Policy Vision*

April, 2012

## **Healthy Environment Outcome:**

*Manage Oregon's air, water, land and wildlife resources to support a healthy environment that sustains Oregon communities, Oregon's economy and the places Oregonians treasure*

Oregon's farms, forests, rangelands, waters and other natural resources provide the basic building blocks that support Oregon's communities and economy. Oregon is known as a national leader in protecting its environment and for fostering a special relationship between its people and its places – natural resources also are key to Oregon's economy. Agriculture, forestry and wood products are Oregon's leading industries after high-tech manufacturing. Managing Oregon's natural resources in a way that recognizes their critical role in providing jobs and supporting rural communities, while protecting the clean water and air Oregonians treasure, is fundamental to Oregon's future.

In response to environmental challenges during the 1960s and '70s, Oregon became a national leader in land use planning, waste reduction and watershed protection. The quality of life made possible by a healthy environment continues to attract new people and businesses to Oregon. Between 1950 and 2009, Oregon's populations increased by 150 percent, while the U.S. population as a whole increased by 102 percent. Projections are that Oregon's population will continue to grow more rapidly than the country as a whole adding about 50,000 people per year, about half a million people over the next ten years. Continued population growth brings with it pressures on the state's environment. Environmental challenges linked to population include inadequate water supplies and poor water quality, especially in urban and agricultural areas. Water quality consistently ranks as the top environmental concern of Oregonians.

Over the last decade, new environmental challenges have emerged in Oregon that are largely independent of population growth. These challenges include the emerging global crisis from a changing climate and the associated changes in Oregon's snowpack-dependent water supplies, flooding, wildland fires and forest health, as well as the spread of invasive species and diseases. Climate change has become the second most important environmental issue to Oregonians, according to recent polling. Oregon has made significant strides toward reducing greenhouse gas emissions by increasing the use of renewable energy and driving less. Significant improvements in technology, cleaner fuels and more efficient use of materials will be needed to improve air and water quality, as well as to meet greenhouse gas reduction goals.

Natural resource activities such as agriculture, forestry and fishing, as well as recreational activities and tourism, are major economic drivers in Oregon's economy. Sustainable management of Oregon's farms, forests and fisheries is not just an environmental issue, it is central to Oregon's economic future. The total combined economic output of Oregon's natural resource industries amounts to over \$55 billion – 37 percent of the state's annual domestic product. Approximately 550,000 Oregonians work in natural

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resource-related fields or jobs supported by those industries, making up over one-third of the state's employment.

Achieving a healthy environment also means paying attention to what happens on Oregon's federal lands. More than half of Oregon's landscape is made up of federal lands, managed by the U.S. Forest Service and the Bureau of Land Management. During the last decade, the resources devoted to managing these lands have declined, resulting in the spread of disease in forests, a significant increase in wildfires and problems with forest roads.

Finally, a key part of Oregon's collective identity lies in the salmon that year after year return to Oregon rivers after their epic journeys to the sea. Oregon has seen many of the species of salmon in the state listed under the federal Endangered Species Act. More listings, including for lamprey and sage grouse, loom on the horizon – reflecting continued stress on Oregon's rivers and streams as well as habitats in eastern Oregon and adjoining states. Putting salmon and other key species back on the road to recovery is also a central piece of this 10-Year Plan.

The first four strategies for the Healthy Environment Policy Vision focus on major substantive outcomes that are important to Oregonians. The fifth strategy, and each of the following sub-strategies contained within it, addresses *how* Oregon can best deliver the substantive outcomes that are key to Oregon's future:

- 1) Improve water and air quality, fish and wildlife habitat.
- 2) Revitalize Oregon's forest products, agricultural and fishing industries as the economic drivers for rural Oregon.
- 3) Reduce exposure to toxins.
- 4) Build great communities for a growing population.
- 5) Improve the effectiveness and efficiency of natural resources management in Oregon, and provide a stable base for addressing existing and emerging resource challenges:
  - Coordinate natural resources management plans to sustain the environmental, economic and social well-being of Oregon for current and future generations.
  - Develop new and more efficient ways to achieve desired environmental outcomes that complement traditional regulatory and enforcement approaches.
  - Empower communities to identify and act on environmental and economic challenges and opportunities associated with the state's natural resources, and develop more effective decision-making tools that foster broader engagement in management decisions.
  - Develop sustainable funding for environmental and natural resources efforts and maintain the role of natural resource industries in Oregon's economy.

The strategies will guide budget investments in supporting Oregon's healthy environment, and in fostering sustainable resource-based investments that are an important part of the state's healthy economy. These strategies are focused on:

- Keeping Oregon a great place to live, work and play.
- Ensuring healthy habitats for fish, wildlife and people.
- Making both the public and the private sectors smarter about where environmental conditions are improving and where they are not, so that Oregon can target limited resources to where they are most needed and where they will have the greatest benefit.

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- Helping communities and businesses create places where people want to live, work and play, that Oregon will be proud to pass on to the next generation.
- Maintaining Oregon's competitive advantages in industries such as growing food, forestry, fiber, agriculture and fisheries.
- Promoting the important role resource-based industries have in supporting the economic health of rural Oregon.

The healthy environment strategies are interdependent. As an example, strategies to improve water quality depend, in part, on efforts to support sustainable agriculture and forest management. The healthy environment strategies also link closely to the Economy and Jobs and Healthy People strategies, particularly those related to air and water quality, water resources, forest, agriculture and fisheries. Efforts to utilize Oregon's biomass resources link together economic development, energy, air quality, and forest health. Improvements in riparian condition benefits, both water quality and fish habitat, increasing overall watershed health. As Oregon more fully integrates budget and policy actions relating to a healthy environment, it will make it clear how funding choices will affect environmental conditions.

The plan will focus on measuring results in Oregon communities so that citizens have the information needed to participate in and engage in decision-making about the environment. The new budgeting process requires ongoing evaluation of program effectiveness, results and data collection. Ongoing evaluation will inform the decisions of policy makers to fund the priorities that will result in a healthy environment.

Each strategy describes how Oregon will sustainably manage Oregon's natural resources to support a healthy environment that contributes to the state's economy and local communities, while improving the quality of the water and air citizens depend on and protecting the lands Oregonians treasure.

### **Strategy 1: Invest in programs that improve water quality and air quality**

From 1990 to 2004, water quality across Oregon improved dramatically. Today, roughly 50 percent of streams in Oregon have good to excellent water quality. However, the rate of improvement began to decline in 2001, has continued to do so, and the trend is now close to flat. In addition, the percentage of stream sites with significantly deteriorating water quality has begun to rise – now at around twenty percent. Also, there are emerging contaminants that have not been a part of previous monitoring programs that need to be evaluated. To continue to improve Oregon's water quality, programs need to be focused in areas where trends are moving in the wrong direction. Temperature and sediment have been shown to be primary sources of impairment to aquatic life throughout the state. In many cases, this means working with urban, farming and forestry communities to address shade and runoff problems. Maintaining and restoring riparian vegetation provides a host of benefits including temperature and sediment reduction, and enhanced in-stream habitat for fish.

Since the mid-1990s until 2005, all areas of the state met federal air standards. Now, three communities – Klamath Falls, Oakridge and Lakeview – are violating federal air quality standards. Over the next few years, more areas may violate federal standards, which are expected to become more stringent based on the latest health research. A more refined measure of air quality trends – the number of days sensitive populations (children and asthmatics) are breathing air that exceeds the federal standards –

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continues to be of concern in many Oregon communities. In some areas airborne toxics also are at levels where chronic health may be affected. Clean diesel programs, wood stove change-out programs, renewable energy, energy conservation and focused improvements in vehicle efficiency and emissions are keys to further progress while the population continues to increase in Oregon. Targeted efforts, such as developing a plan to meet the federal fine particulate standard in Klamath Falls and an Oregon Solutions project in the Portland area to reduce air toxics, are important to address localized impacts on communities.

Oregon has made progress in reducing greenhouse gas emissions, bringing an upward trend in the 1990s to a relatively flat emissions trajectory in recent years. However, progress toward meeting Oregon's 2020 and 2050 greenhouse gas reduction goals remains challenging, with substantial effort still necessary to bring emissions down to levels 10 and 75 percent below those in 1990, respectively.

To alleviate increasing stress on groundwater resources, Oregon must continue to develop innovative policy solutions that limit or reduce groundwater pollutants from sources such as septic tanks and sumps.

This strategy is designed to improve water and air quality in all parts of the state, and address key threats to threatened and endangered species:

- Develop and sustain a coordinated monitoring system that provides a scientifically sound foundation for developing solutions that will provide the greatest return in environmental benefit. This information will provide feedback to managers and landowners, allowing them to concentrate conservation efforts in areas where conditions have not improved and on the causes of continuing problems.
- Evaluate consolidation of environmental monitoring and analytical functions under a single laboratory.
- Take Oregon's forest, agricultural and water quality programs to a more strategic level, making the best use of limited resources to achieve Oregon's environmental goals.
- Implement Oregon's existing plans in a strategic and coordinated manner to ensure that taxpayers get the most gain with limited resources.
- Work more effectively with private and local partners to ensure cooperative conservation efforts are implemented as efficiently and effectively as possible.
- Advance Oregon's environmental stewardship by moving beyond traditional regulatory "command and control" approaches. For example, local governments are paying farmers and forest land owners to plant and maintain trees and vegetation along streams and rivers, achieving the same levels of cooling that expensive mechanical treatment would. Similar approaches can be used to pay for forest health work to reduce fire risks and costs, and for habitat improvements in areas of new energy development.
- Take a comprehensive, multi-pollutant approach to air and water quality programs – including the reduction of greenhouse gas emissions – to avoid unintended consequences and maximize overall effectiveness.

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### **10-Year Outcomes for Strategy 1: Invest in programs that improve water quality and air quality**

- Reduce the percentage of streams with declining water quality over the next five years, and eliminate areas of decline within ten years – resulting in improving or stabilizing water quality in all parts of the state.
- Focus analytical resources to identify river segments and riparian areas that provide the greatest benefit for protecting beneficial uses and restoring threatened and endangered species.
- Target water quality improvement actions to the specific factors that present the greatest impairment to aquatic life. This will vary by geographic area, but in many areas it is sediment and temperature.
- Reduce the risk of toxic exposure from contaminated lands that pose a threat to water quality by accelerating redevelopment and clean-up.
- Develop and implement clean air plans for all areas that violate federal air quality standards. Reduce the number of days sensitive populations are exposed to air pollution exceeding federal standards over the next five years. Cut the number of days that exceed federal standards by half within ten years.
- Reduce air toxics levels in urban areas for all pollutants that exceed health benchmarks.
- Reduce greenhouse gas emissions that contribute to climate change.

### **Strategy 2: Invest in programs that conserve, protect and restore key watersheds, stabilize populations of fish and wildlife species and improve forest and rangeland health**

Oregon state government currently spends approximately \$45 million dollars every two years on protecting and restoring habitat, primarily through programs administered by the Watershed Enhancement Board and the Department of Fish and Wildlife. The Oregon Parks and Recreation Department also invests in preserving key natural areas and parks, roughly about \$33 million this biennium. The Oregon State Police Fish and Wildlife Division assures compliance with laws that protect and enhance the long-term health and equitable utilization of Oregon's fish and wildlife resources and the habitats upon which they depend. Additional investments are made by non-governmental entities, like the Nature Conservancy, and the federal government. Nevertheless, degraded habitat is a key factor leading to declines of salmon as well as terrestrial species such as sage grouse and the Northern spotted owl. Improving and protecting habitat is, of necessity, a long-term effort.

Positive changes can take decades to emerge. Recently, the Oregon Watershed Enhancement Board has begun an effort to develop more targeted investments in habitat restoration. The Oregon Department of Fish and Wildlife has completed its Oregon Conservation Strategy to guide investments in habitat and species restoration, and the Water Resources Department is finalizing the first Oregon plan for use of our water resources – the Integrated Water Resources Strategy (IWRS). Coordinating these efforts will help assure that limited resources are spent in areas where they have the most benefit, and often in ways that have multiple benefits such as water quality improvements, job creation and forest health.

The term “restoration economy” describes the substantial job creation resulting from these investments. Several recent studies show that the employment created through investment in restoration is

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substantial, yielding a higher return on investment than many other public job creation programs, while also delivering environmental benefits.

While investment in restoration is critical, it should not come at the expense of programs or incentives focused on maintaining existing high quality habitats and well-managed farm and forestland. It is more efficient and less costly to maintain quality lands than to restore them after they have been degraded.

This strategy will reduce threats to key habitats of species of concern, and improve the quality of watersheds and terrestrial habitat in key areas of the state. This strategy links directly with strategy 4.

The abundance of wild salmon in Oregon and the Pacific Northwest generally has improved over the past ten years. However, many salmon species still are not at spawning levels that significantly alter the level of extinction risk, and many salmon and steelhead species remain listed as threatened or endangered in Oregon. Non-federal lands make up a large proportion of the habitat of these species, and state, local and private actions are needed to achieve recovery. Federal recovery plans have been completed for most of the salmon and steelhead populations, and state funds should be targeted to implement key actions identified in those recovery plans.

Hatchery management and the operation of the federal Columbia River Power System play important roles in the survival and recovery of salmon passing through the main stem of the Columbia River above Bonneville. Changes in both may be needed, in addition to improvements to habitat, in order for some species to survive. Elsewhere, management of scarce water resources is key both to fisheries and water quality, as well as to Oregon's agricultural industries. Implementation of the Integrated Water Resources Strategy, along with habitat improvements and changes in hatchery and hydrosystem management, will continue the trends of improving the status of federally-listed fish species.

Decades of active fire suppression, combined with a lack of management over the past twenty years has led to increases in disease and the risk of catastrophic fire, particularly on federal lands in eastern and southern Oregon. More recently, a large-scale forest collaborative has started to yield increases in timber production while improving forest health. Supporting and scaling up these collaborative efforts is a strategy both to improve forest health and to provide economic benefits in these parts of Oregon. The Oregon Watershed Enhancement Board provided limited start-up funding for some of these activities in the 2011-13 biennium, but a long-term business model is needed to get to sustained improvements in forest health, along with increases in timber production and preservation of mill infrastructure.

In western Oregon, management of the federal Oregon and California Revested Grantlands (O&C lands) by the Bureau of Land Management (BLM) is critical, not just because of forest health issues, but because the timber from these lands is a major source of revenue for local government and a key driver of local employment. The Oregon Department of Forestry and the Oregon Department of Fish and Wildlife will play important roles in determining how the O&C lands are managed in the long-term. Currently, proposals for management change are pending in Congress, and the BLM has restarted an administrative planning process for these lands that emphasizes "ecological forestry," where the proportion of trees left after harvest is increased significantly.

In eastern Oregon, Oregon's rangelands are threatened by the spread of invasive plant species. Invasive plant species, fire and large-scale development are in conflict with the conservation of habitat for key species, leading to potential additional listings under the federal Endangered Species Act.

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Developing a landscape-level approach to conserving the most important habitat, while accommodating development opportunities, is a major focus for the eastern part of the state.

The strategies for a healthy environment will ensure Oregon's forest products, agricultural and ranching industries play an important role in the economic future of rural communities – creating jobs and investment. These strategies link closely with the Economy and Jobs 10-Year Plan outcome area:

- Increase levels of timber harvest from federal lands to take pressure off of private and state forest lands, allowing Oregon's timber infrastructure to thrive and adapt. This strategy is particularly important in eastern Oregon where private lands are not sufficient to supply the mill capacity established around federal timber supply; today only eight operating lumber mills remain from the 42 that were running in 1988.
- Expand opportunities for biomass production as a means of supporting the forest products industry and forest health.
- Continue Oregon's state and local land use programs that have been effective in conserving working forest and farm lands. Data from the Oregon Department of Forestry shows that close to 98 percent of lands in western and eastern Oregon that were in active forest or farm use in the 1980s remain productive. Nevertheless, changing ownership patterns where forest lands are increasingly held as real estate investments, rather than for timber revenue, threaten to undermine this key industry.
- Hold the proportion of non-federal lands in active timber and agricultural use steady, avoiding the trend in other states where rural lands have been sold and developed largely for absentee owners, exacerbating already costly fire protection and other public service demands. The Board of Forestry has identified current and future risks of forest fragmentation and the conversion of forests to non-forest use as the primary, overarching challenge to sustainable forestry and keeping working forests working.
- Leverage emerging market opportunities for Oregon forestry and agriculture.
- Continue to manage commercial fisheries to sustain long-term levels of value. Oregon's diverse marine habitat supports commercial fisheries that annually contribute more than \$398 million in personal income to Oregon – about 7 percent of all income earned along the Oregon coast.
- Recognize and promote the value to local communities from recreational uses, such as hunting, fishing and wildlife viewing, which brings about \$2.8 billion a year to Oregon, mostly in rural areas.

**10-Year Outcomes for Strategy 2:** Invest in programs that conserve, protect and restore key watersheds, stabilize populations of fish and wildlife species, and improve forest and rangeland health

- Demonstrate how investment in habitat restoration and protection correlate with federal recovery plans, or applicable state conservation plans within five years.
- Develop a statewide monitoring plan that would allow cross-jurisdictional sharing of habitat and watershed improvement data.
- Show improving trends in the 11 at-risk habitats identified in the Oregon Conservation Strategy.
- Show improving trends in the quality of habitat in a majority of key watersheds within ten years.

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- Manage critical or key habitat for terrestrial species of concern under landscape plans that meet federal or state guidelines.
- Increase in the percent of time in-stream flows, protecting fisheries and water quality are met.
- Improve the population trends for keystone species – salmon, sage grouse and Northern spotted owl.
- Take federal, state, tribal, local or private action to address major threats to species survival within five years.
- Delist some species currently listed as threatened or endangered under the State Endangered Species Act within ten years.
- Continue to increase the acreage of large-scale forest collaborative in eastern and southern Oregon over the next five years. Pursue a new, stable plan for management of the O&C lands.
- Address large areas of extreme fire risk or forest health problems within ten years.
- Develop collaborative forest projects on a sustained basis to support Oregon mills and employment. A co-benefit of this strategy is job creation and retention. Develop a landscape level plan for conserving key habitat in eastern Oregon, and securing the ability to continue key existing economic activity and allow new development.
- Enhance ballast water protection to reduce the risk of introducing new invasive species.
- Reduce conversion of commercial forestlands to non-forest uses through transfer of development rights and other strategies.

### **Strategy 3: Reduce Oregonians' exposure to toxics**

Toxics are a concern to Oregonians because of the risks they pose to human and ecological health. To effectively reduce those risks, Oregon needs to understand what the relative risks are and where and how those risks are occurring. This includes identifying which toxics are present in Oregon's environment and people, and what the exposure pathways are. Once Oregon understands these and other factors strategies can be developed that can effectively reduce risk, including greater emphasis on prevention, which is the most cost-effective way of reducing toxics in the environment.

Recent testing provides data to show why there are public health concerns relating to toxics in drinking water in rural private wells. In the Department of Environmental Quality groundwater testing, 24 percent of 1156 wells sampled for arsenic exceeded the Environmental Protection Agency's established Maximum Contaminant Level (MCL) of 10 parts per billion. 67 percent of wells sampled in Malheur County contained the pesticide Dacthal with concentrations up to 32 times the Health Advisory level. Another recent U.S. Geological Survey study revealed that 33 percent of rural wells in the Willamette Valley contain pesticide contamination, with 15 different pesticides detected.

Oregonians are exposed to toxics through the air, water, products and other sources. There is a lack of comprehensive data about Oregonians' exposure to toxins. However, some studies have shown concern about exposure from consumer products and the use of pesticides. There also have been studies indicating localized levels of exposure to airborne toxics of concern in Portland and other areas. Certain airborne toxics such as benzene and diesel exhaust are of statewide concern, and localized toxic algae blooms are of concern in particular areas.

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This strategy will seek to:

- Improve Oregon's collective knowledge of what toxins pose the greatest risk to human and ecological health.
- Give communities and individuals better information so that they can make informed choices in their use of products and develop strategies to control localized airborne toxics.
- Establish collaborative partnerships, as has been done in the pesticide stewardship partnerships, to bring parties and stakeholders together so that they are informed by better information to develop and implement practical and effective solutions.
- Identify and keep track of emerging contaminants and their potential adverse effects on humans and the environment.

The key actions for successfully implementing Strategy 3 include:

- Understand risks from toxics in Oregon. Use all available information and expertise, and fill data gaps through assessments and monitoring.
- Prioritize the toxic chemicals that pose the greatest risk.
- Communicate risks from toxics to stakeholders and the public to build a common understanding for the need to reduce the risks.
- Develop and expand collaborative partnerships, such as the pesticide stewardship partnerships and related technical assistance programs, to encompass more watersheds, land use diversity, water media (e.g., groundwater), and additional assistance and outreach tools.
- Implement state programs to reduce toxics, such as the Department of Environmental Quality's (DEQ) toxics reduction strategy and the Oregon interagency toxics reduction strategy by building the supporting policies, infrastructure and resources agencies need.
- Implement federal programs to reduce toxics in a manner that supports the other strategies in the Healthy Environment Policy Vision.
- Provide incentives and innovation tools to accelerate investments in "green chemistry" and to strengthen the demand for safer alternatives to toxic chemicals.
- Monitor results and adapt by doing more of what is working or doing less of what is not working.
- Seek co-benefits by reducing toxics in a manner that also reduces conventional pollutants and greenhouse gases, supports livable communities and addresses environmental justice concerns.

### **10-Year Outcomes for Strategy 3: Reduce Oregonians' exposure to toxics**

- Reduced use of chemicals on DEQ's Focus list for toxics in common consumer products.
- Developed and implemented risk reduction and outreach plans in fifteen areas determined to have highest potential for human health exposure to Focus List chemicals through domestic drinking water wells.
- Doubled the percentage of Oregonians that have access to hazardous waste disposal within 50 miles of their homes.
- Decreased the number of incidents reported for suspected environmental exposures to toxics in 2008, by 50 percent.

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### **Strategy 4: Build great communities for a growing population**

Oregon is projected to add another half million people over the next ten years. To maintain quality of life, Oregon needs to reinvigorate existing communities and develop new areas for people to live and work. Building great communities means different things in different parts of the state, but in the parts of Oregon that are growing it will require investment in both physical and “green” infrastructure. Transportation facilities, water supply, sewage treatment systems and parks are all key elements to the backbone of Oregon’s communities.

The systems for planning, financing and maintaining Oregon’s urban areas are under severe stress, and are close to frozen. The process for management of urban growth boundaries is in need of significant simplification, while continuing to direct growth in efficient ways to make the best use of limited public funds. Local government tools to finance public systems have been limited significantly by state tax policy. Federal support for these systems also has declined rapidly, both for capital and operating dollars.

One of the things that makes Oregon unique is its magnificent scenic and recreational resources. The Columbia River Gorge Scenic Area, and other recreational lands and facilities, give Oregon its special character of close association between its people and its landscapes and vistas.

Maintaining and preserving these landscapes is key to Oregon’s environmental and social future, and also plays an important role in Oregon’s tourism industries:

- Continue to invest in new recreational areas and facilities. Seek investments that provide multiple benefits and that strengthen the links between Oregonians and their lands.
- Simplify Oregon’s regulatory systems and improve the level of public engagement in the decision-making process for managing urban growth. Develop new tools to coordinate planning with infrastructure investments.
- Assure that new urban development is designed to maintain or enhance water quality and riparian conditions.

Recent federal census information shows that Oregon communities have grown more efficiently than cities in other states, reducing public service costs and helping create positive places for people to live, work and play:

- Continue to support great places to live in Oregon – 7.5 percent of lottery revenues in Oregon are dedicated to state and local parks. This is leading to new park acquisitions and a reduced backlog of maintenance at existing parks. Nevertheless, Oregon ranks 30<sup>th</sup> in the nation in state park acreage per 1,000 people, at the same time it ranks second nationally for the number of park visitors per acre – indicating that the state’s limited area of parks are intensively used.
- Simplify Oregon’s regulatory systems and improve the level of public engagement in the decision-making process. Although trends are generally positive, paying for infrastructure and an overly complex regulatory system, both pose challenges for the next ten years. Oregon’s plan for a healthy environment will help focus and coordinate resources for growing communities to create desirable places to live, work and play, while conserving working farms and forests.

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- Utilize resources from new urban growth and development to maintain or enhance water quality and riparian conditions, instead of having new development contribute to additional environmental problems.
- Increase the use of green infrastructure in urban areas to improve quality of life and environmental outcomes. Forestlands in the urban areas maintain green infrastructure, mitigate climate by deflecting reflection in cities, and provide clean water. Urban farms provide open space and locally-sourced foods. Natural swales can be used to manage storm water discharge.

### **10-Year Outcomes for Strategy 4: Help to build great communities for a growing population**

- Oregon's funding for investment in new parks and recreational facilities is guided by a strategic plan that focus on meeting the recreational needs of a growing population, while also helping to preserve special landscapes that are threatened by development.
- The process for managing urban growth boundaries has been simplified, so that communities can focus on planning for their future and understand the costs and benefits of their choices.
- State investments in transportation, sewer, water and parks has been coordinated with land use plans so that costs are minimized and benefits are maximized.
- The efficiency of urban growth in Oregon continues to increase at least the same rate that it did between 2000 and 2010 in terms of land area per resident.
- Deploy small-scale, on-site distributed energy generation at the community level to demonstrate the feasibility of moving to greater energy resilience and reduced need for large-scale generation and transmission.
- Growing Oregon communities are planning their future development patterns to reduce greenhouse gas emissions and reduce reliance on the automobile.

### **Strategy 5: Improve the effectiveness and efficiency of natural resources management in Oregon, and provide a stable base for addressing existing and emerging resource challenges**

The first four strategies for the Healthy Environment policy vision focus on major substantive outcomes that are important to Oregonians. The fifth strategy, and each of the following sub-strategies contained within it, addresses *how* Oregon can best deliver the substantive outcomes that are key to Oregon's future:

#### **Strategy 5.1 Coordinate natural resources management plans to sustain the environmental, economic and social well-being of Oregon for current and future generations**

For generations, the natural resources of Oregon have sustained its people. The streams, forests, ocean, grasslands and geologic features of Oregon have been a source of food, shelter, warmth, livelihood and recreation. The quality of the land, waters and air has made Oregon a desirable place to live and work. Much of the direction needed to guide the work of state agencies already exists in plans developed over the past ten years. However, these plans, and efforts to implement them, need to be

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coordinated, prioritized and aligned so that limited resources are used more strategically in areas where trends are moving in the wrong direction.

State-adopted natural resource plans include the:

- Oregon Conservation Strategy
- Oregon Strategy for Greenhouse Gas Reductions
- 2011 Forestry Program for Oregon
- Oregon Plan for Salmon and Watersheds
- The Integrated Water Resources Strategy
- Statewide Comprehensive Outdoor Recreation Plan
- Wetland Conservation Strategy
- Oregon Climate Change Adaptation Framework
- Water Quality Management Plans
- Columbia River Gorge Management Plan
- Oregon's Ten-Year Energy Plan
- Species Management Plans
- Invasive Species Management Plans
- Oregon Environmental Literacy Plan

These plans were or are being developed through extensive public processes and stakeholder input and have been adopted by various governing boards and commissions.

This strategy directs agencies to link plans, align implementation efforts and develop interagency opportunities to support local, regional and statewide partnerships. Additionally, this strategy reinforces the need to fund implementation (see Strategy 5.4) as well as the development of tools and monitoring systems to support decision-making.

### **Strategy 5.2 Develop new and more efficient ways to achieve desired environmental outcomes that complement traditional regulatory and enforcement approaches**

Environmental compliance has a direct effect on whether Oregon will achieve its desired healthy environment outcomes. Improving compliance rates not only helps ensure healthy people and a healthy environment, but also levels the playing field for Oregon businesses and the regulated community. A level playing field promotes business growth in Oregon. A focus on facts and data that reveal the sources of environmental problems will ensure that businesses are treated fairly and that environmental outcomes are achieved through appropriate compliance strategies. Through effective enforcement, compliance is gained which directly relates to desired environmental and natural resource outcomes.

Water quality is an area where compliance is complex. Large "point-sources" of discharges are more easily controlled than thousands of individual "non-point sources," such as individual farms, homes and roads. Compliance also is of concern in the state's fish and wildlife laws, and in terms of water rights, where one land owner's actions can directly affect their downstream neighbors. Continued investment in environmental compliance including outreach, education and technical assistance, can help maintain the social contract that makes Oregon a special place to live, work and play.

Getting to the environmental outcomes Oregonians' desire is not going to happen if the only tools used are regulatory. While regulatory standards and controls get Oregon part of the way there, they do not effectively address problems that result from widespread actions that are not well understood to be the

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source of an environmental problem. For example, when people fertilize their lawns and wash their cars in their driveway, they don't associate those actions with water quality problems, but non-point source pollution from urban runoff is a major continuing cause of water pollution.

The traditional command and control approach to environmental problems are often not the least expensive way to fix the issue. For example, rather than spending tens of millions of dollars to upgrade sewage treatment plants, or build water treatment plants, communities and industries have paid land owners to plant trees or protect lands in ways that achieve the same, or better results. As Oregon reaches the limits of what water and air pollution controls can accomplish, Oregon needs to develop new tools which support small actions that result in big environmental impacts.

Oregon has a long and well-deserved reputation for using innovative approaches for natural resource management. Under this strategy, Oregon will seek new and more efficient ways to reach environmental outcomes to complement traditional regulatory methods. Oregon will continue to support strong local and regional coordination, and leadership in its resource stewardship.

For example, Oregon has implemented thousands of incentive-based, voluntary environmental restoration projects with local landowners across the state. In addition, numerous entities subject to monetary penalties for environmental law violations have elected instead to do supplemental environmental projects to improve air and water quality and in-stream flows, reduce hazardous waste or assist with environmental emergency preparedness. Oregon is also a leader in the development of policies and metrics needed to implement payment for ecosystem services approaches that offer significant alternatives for natural resource management.

Oregon enjoys a national reputation for including citizens in critical public decision-making processes. As part of its commitment to include citizens in public natural resource decisions, the state provides mechanisms to quickly and consistently resolve conflicts. Oregon's conflict resolution forums include the Land Use Board of Appeals (LUBA), the Land Conservation and Development Commission (LCDC), the Energy Facility Siting Council (EFSC), and the Columbia River Gorge Commission (Gorge Commission).

These bodies are empowered to resolve disputes on a wide range of natural resource and economic development issues. They provide fast, consistent and inexpensive alternatives for parties that would otherwise be forced to resort to litigation. Without these strategic "solution forums" conflicts would further strain the limited resources of Oregon courts and would lead to increased costs and time frames for Oregon businesses and property owners.

This strategy will consider alternative approaches to help attain desired environmental outcomes that effectively balance environmental, community and economic needs. Potential actions to carry out this strategy include:

- Improving the efficiency of existing regulatory programs and processes.
- Expanding the use of supplemental environmental projects in lieu of penalties.
- Focusing priorities for incentive-based approaches to support local conservation efforts.
- Capturing the value of land and water conservation improvements as a means of avoiding hard equipment costs for treatment of air and water discharges.

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### **Strategy 5.3 Empower communities to identify and act on environmental and economic challenges and opportunities associated with the state's natural resources, and develop more effective decision-making tools that foster broader engagement in management decisions**

Natural resource issues and challenges require fact-based science and information to guide decision-making. At the same time, Oregon's future depends on broadly engaging all Oregonians, including traditionally underrepresented communities, in understanding environmental challenges and opportunities and participating in decisions about how to respond to them. Information technology has evolved to provide interactive spatial information that is available to, and understandable by, every Oregonian. By using emerging decision support tools, communities affected by natural resources decisions can engage in decisions more effectively and have a direct role in determining their future.

Engaging citizens will help state and local policy-makers better focus their efforts and resources on outcomes that are valued by the communities directly affected by management decisions.

This strategy directly affects the outcome of having Oregon's natural resources managed sustainably in support of a healthy economy and environment. It also supports the Economy and Jobs, Healthy People, Safety and Improving Government outcomes. As Oregonians become more engaged and focused on this key strategy, the state will be more successful in achieving its goals.

Oregonians hold a passion for the state's natural resources. Often that has led to conflict over management of natural resources resulting in acrimonious relationships, costly regulatory programs and reduced economic output of Oregon's natural resource base. The goal of this strategy is to engage communities in developing a shared vision of what environmental outcomes they want to focus on, and to provide resources and support to those communities to achieve results. One model that may be used is the Regional Solutions Teams currently based around the state. This strategy will involve working more closely with co-managers in particular parts of the state – tribal and local governments, as well as federal agencies – so that the outcomes are the result of collaboration and a common vision, without regard to lines on a map.

Oregon, with its rich natural resource economies, strong conservation ethics, but declining funding for resource management, must invest in the tools to engage people in sound strategic decisions. This strategy links to Strategies 1 and 2, as the monitoring and decision-support tools are critical if Oregon is to assure water and air quality is improving in all parts of the state, and the state is conserving and protecting key habitats.

Implementing this strategy requires: investment in applied research and monitoring of earth systems and natural resources; maintenance of data and information (including demographic information using US Census data); and sharing information in a transparent and user-friendly way. This work is broad-reaching and involves all natural resource agencies as well as the Oregon Department of Transportation, the Department of Administrative Services, the Oregon University System, and non-governmental organizations such as The Nature Conservancy and Ecotrust.

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**Strategy 5.4 Develop sustainable funding for environmental and natural resources efforts and maintain the role of natural resource industries in Oregon’s economy**

The preceding strategies all depend on having adequate resources for implementation, including public engagement. At the same time, since the 1999-2001 biennium, while general fund investment in all state agencies has risen just over 31 percent, the investment in natural resource agencies has declined by 2.5 percent.

**CHANGE IN SPENDING**  
**1999-2011**

Natural Resources				All Other Oregon Programs			
Fund Type	Dollars in Millions		Percent Change	Fund Type	Dollars in Millions		Percent Change
	1999	2011			1999	2011	
General Fund – NR	151	147	-2.5percent	General Funds – All	10,126	13,298	+31.33percent
Lottery Funds – NR	84	182	+116.7percent	Lottery Funds – All	504	957	+89.9percent
Other Funds – NR	685	1,112	+62.3percent	Other Funds – All	13,200	27,687	+109.8percent
Federal Funds – NR	145	305	+110.0percent	Federal Funds – All	5,700	14,021	+146percent
Total	1,065	1,745	+64percent	Total	29,530	55,963	+90percent
Total Adjusted for Inflation (CPI 1999-2011=35percent)			+29percent				+55percent

The shift away from the general fund to lottery and federal funds is leading to structural problems in achieving desired environmental outcomes. Lottery funds are constitutionally dedicated to restoration and parks, and federal funds are beginning to decline rapidly. Several program areas dependent on the general fund are at risk as the allocation of these funds to environmental and natural resources program area continues to decline. This strategy seeks to achieve a diversified and sustainable way to pay for the environmental and resource outcomes that Oregonians desire.

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Oregon's natural resource programs receive less than one percent of the state's general fund revenues, yet oversee the economic sector that generates almost 40 percent of Oregon's gross domestic product and value. This narrow and downward-trending funding is combined with non-general fund sources including fees, commodity revenues and federal funds which can only be used for specific purposes – creating a funding environment that frequently limits success in achieving Oregon's desired environmental outcomes.

Without stable funding, state agencies are cobbled in their ability to deliver long-lasting solutions to Oregon's many natural resource challenges. By diversifying funding for natural resource agencies to include a balance of general fund, federal, lottery and other investments, natural resource agencies can better assist communities in achieving long-lasting environmental and economic outcomes.

The state's ability to leverage its work together with non-governmental sources (foundations and other non-profits) is also increasingly important in achieving the outcomes Oregonians want for their environment, economy and communities. With stable, long-term funding, agencies can better participate in ongoing public and private investments to restore, protect and maintain a healthy environment.

Evidence of the importance of achieving diverse and sustainable funding sources is visible today in the challenges facing Oregon's natural environment, communities and the state agencies that deliver natural resource services. Best practice demonstrates that when funding sources can be diversified and made sustainable over the long-term, particularly when collaboration is involved, results are more effective and long-lasting. Multiple examples exist of other states' approaches to sustainable funding for environmental programs and how that funding has led to the achievement of broadly-shared environmental priorities.

While this strategy is not necessarily going to solve the near-term fiscal challenges, it is fundamental to the long-term success of achieving the higher level outcomes. Non-governmental resources are also an increasingly important part of the overall societal effort in these areas – making collaboration and coordination (see Strategy 4) all the more important. Achieving sustainable funding requires and allows for a public conversation about environmental values and the ability to be strategic in the long-term. Sustainable funding also provides a social and political environment that encourages additional and ongoing private and public investment in restoring, protecting and maintaining a healthy environment.

The current funding levels and trends for programs in the healthy environment area are shown in the "Change in Spending" table on page 15. The agencies that are particularly dependent on general fund dollars for support are the Water Resources Department, the Department of Land Conservation and Development, the Columbia River Gorge Commission, and the Land Use Board of Appeals. The Department of Forestry and the Department of Environmental Quality also receive substantial general fund support. Agencies that receive significant federal funding as a percentage of their total budgets include the Department of Fish and Wildlife, the Department of Land Conservation and Development, and the Watershed Enhancement Board.

Through this strategy, Oregon will examine two main potential courses of action. First, the state will look at certain limited opportunities to reorganize the work of these agencies. Initial investigation indicates that cost savings would not be a driving force for such efforts, but that there may be some ways to increase effectiveness. Second, the state will explore other board-based means to provide a portion of

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the funding for these programs, one that is related to the values and outcomes the programs are designed to deliver.

**10-Year Outcomes for Strategy 5:** Improve the effectiveness and efficiency of natural resources management in Oregon, and provide a stable base for addressing existing and emerging resource challenges

- Complete a high-level framework that identifies the linkages and interaction between the natural resource plans, and provides a single source for identifying agencies and strategies for key issues.
- Provide overall prioritization for implementation actions and identify areas where coordination must occur. The Natural Resources Cabinet, with oversight from the Governor will provide this guidance.
- Using the high-level framework, integrate the plans within ten years to create a unified “living” plan that is updated regularly through engagement with Oregonians about their priorities as well as scientific input to identify areas of multiple benefits and key risks across resources.
- Provide funding to implement the strategies.
- Collaborate on climate-specific research and the development of adaptive strategies for the risks associated with changes in coastal systems, fire and flooding, water quality and quantity, and for aquatic and terrestrial habitats over the 10-year budget cycle.
- Develop at least four new initiatives for incentive-based environmental improvements over the next five years.
- Demonstrate over the next ten years that these incentive-based systems, along with more traditional regulatory systems, are effectively delivering the environmental outcomes described in Strategies 1 and 2, and that the overall cost of achieving these outcomes has been reduced.
- Create a coordinated approach to conservation easements that meets best management practices and prioritizes state investments in high priority areas.
- Develop at least two specific programs that help create markets for ecosystem services, and that support private landowners producing those services over the next five years.
- Encourage innovative strategies such as water quality trading to focus on restoring riparian areas rather than investing in expensive treatment plant infrastructure.
- Streamline regulatory processes to foster participation in voluntary cooperative conservation efforts over the next five years.
- Explore better integration of a strong recreation and tourism economy with efforts to preserve key natural, cultural and historic resources.
- Evaluate several specific alternatives for reorganization to improve the effectiveness of programs. Cost savings are not expected to be a significant outcome.
- Maintain the percentage of general fund dollars going to the environment and natural resources within 10 percent of its average for the last ten years.
- Evaluate other broad-based sources of funding for programs to protect the environment, including sources used in other states, and a wide range of interests. If the outcome is positive, move to transition a portion of the funding for this program area from the general fund, and other or federal funds, to the new source.

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- Seek the participation of co-managers to participate in state natural resource planning and priority-setting.
- Evaluate alternate sources of funding for natural resource agencies linked to ecosystem services.
- Develop a single system for monitoring water and habitat quality within five years.
- Regularly assess the status of species of concern, in cooperation with federal agencies and Oregon tribes.
- Provide public access to information and mapping of critical fish and wildlife habitats and connectivity at a landscape scale, to inform landowners, local communities, businesses and decision makers on opportunities to balance conservation objectives with economic investments.
- Develop a system over the next five years for regularly engaging communities in identifying key environmental outcomes that reflect the community's local conditions and values, and work to align state and local efforts to achieve those outcomes.
- Work with federal agencies to develop and implement a coordinated all lands approach that improves community influence over federal forest management and allocation of federal incentives.
- Provide decision support tools to evaluate landscape-level opportunities and challenges.
- Evaluate several specific alternatives for reorganization to improve the effectiveness of programs. Cost savings are not expected to be a significant outcome.
- Seek the participation of co-managers to participate in state natural resource planning and priority-setting.