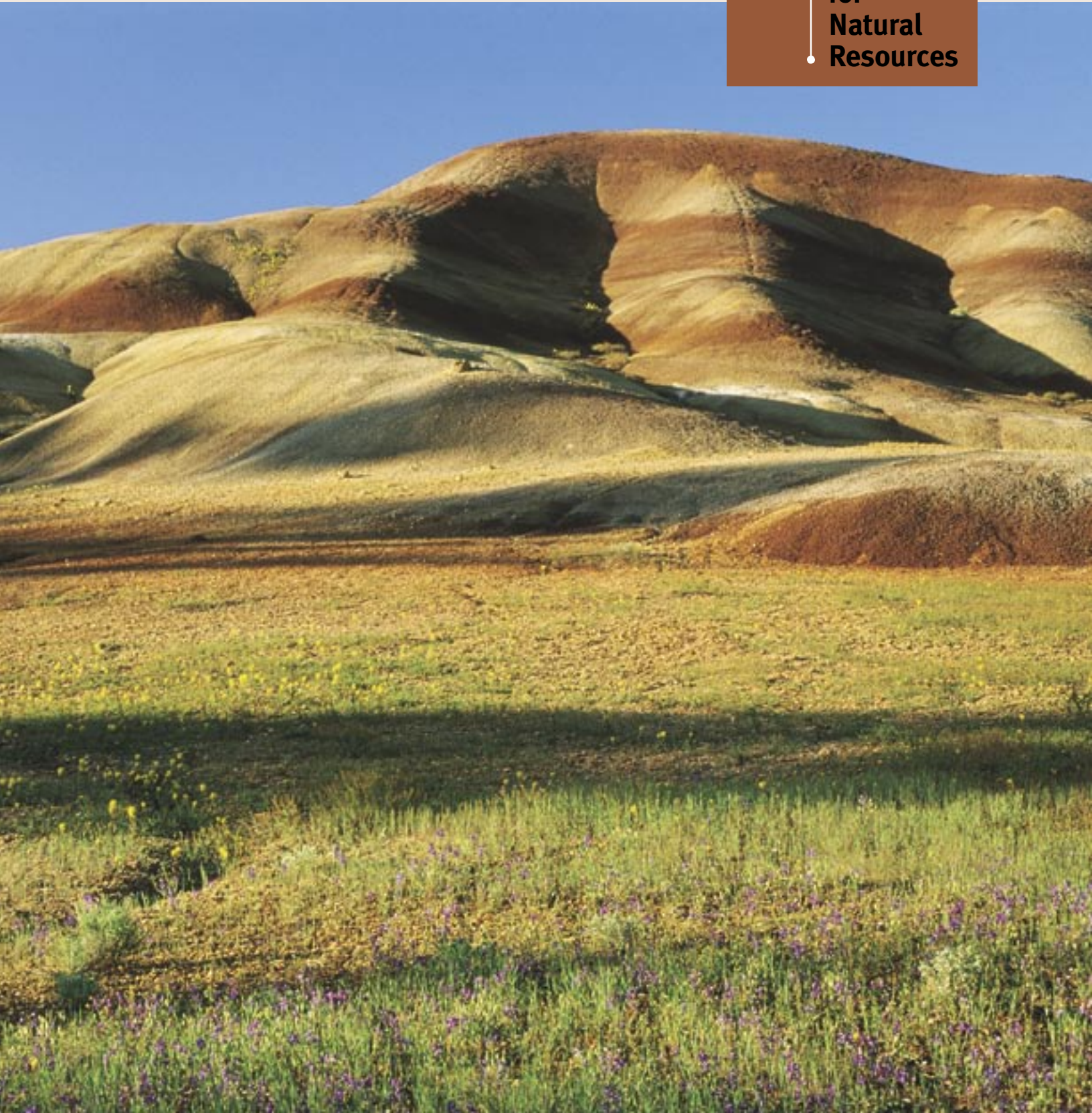
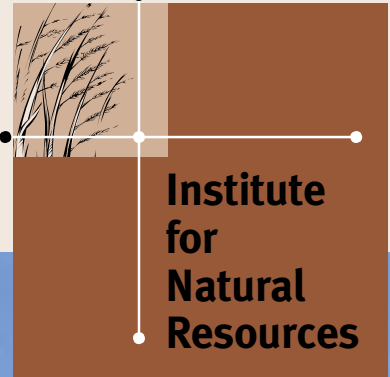
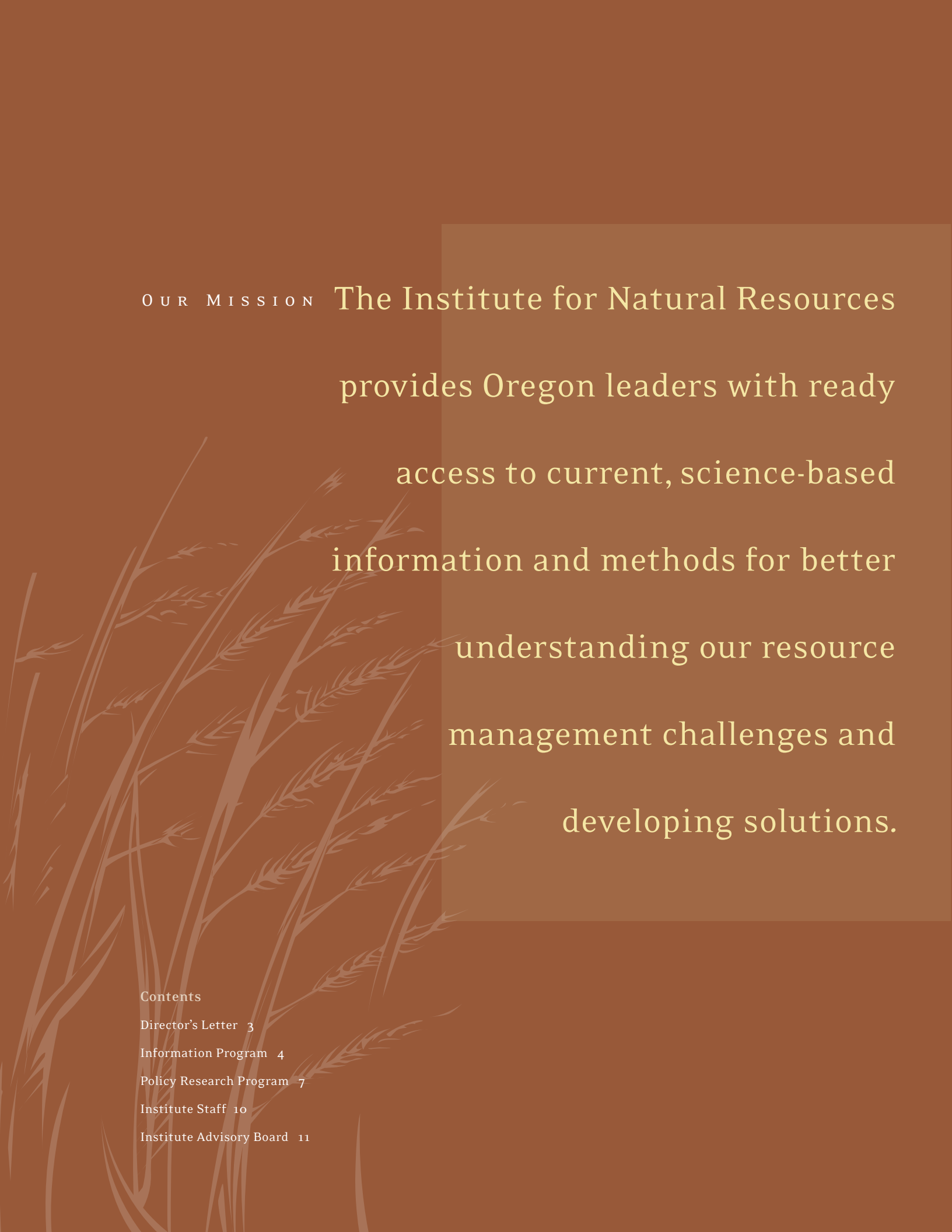


OREGON STATE UNIVERSITY  
Institute for Natural Resources  
2004–2005 Annual Report





OUR MISSION The Institute for Natural Resources  
provides Oregon leaders with ready  
access to current, science-based  
information and methods for better  
understanding our resource  
management challenges and  
developing solutions.

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The Institute for Natural Resources (INR) hit stride in 2004-2005, working on a wide array of policy research projects and laying the foundation for an integrated natural resource information system for Oregon.

Our greatest challenge was obtaining state financial support for FY 2007. In this difficult budget year, the Oregon Legislature budgeted \$250,000 for core support. This vote of confidence will allow us to expand our services to Oregon policy makers and citizens.

I'd like to highlight some major lessons we've learned this year.

**Leverage.** We demonstrated that investments in INR can leverage additional research funding. INR worked with the Kiewit Center in the College of Engineering to obtain a \$200,000 EPA grant to install idle-free technology at truck stops on the I-5 corridor. The EPA funds enabled OSU to work with the Oregon Department of Energy and the Climate Trust to access over \$325,000 in additional money.

**Partnerships.** INR worked with more faculty in more colleges this year and built new working relationships with groups like the Oregon Solutions program at Portland State University, the Institute for Policy Research and Innovation at University of Oregon and the Natural Resources Law Institute at Lewis & Clark College. And we've learned from other collaborative research and development efforts about how to build effective multi-disciplinary teams and connect them to Oregon's business community.

**Science and Public Policy.** Working on Salmon Anchor Habitat policy on Northwest Oregon forests, sediment transport at the mouth of the Columbia River and impacts of aggregate mining on farmland, we've learned that faculty can help synthesize technical information for decision makers, but the interaction between policy makers and scientists requires careful design to assure appropriate framing of questions, good communication about uncertainty and clear expectations for all participants.

**Information Systems.** Completion of the Willamette Explorer and the North Coast Explorer taught us a lot about what users want when they talk about "one place" to get natural resource information. Working with the OSU Libraries and

the talented team at the University of Oregon's Infographics Laboratory has helped us put web site users first, building the graphic design and categories needed to help lay people get the information they want and need.

**Public Service.** Demand for INR's services continues to grow. The Legislature, state agencies, the Governor's office and the Board of Higher Education have all called on INR to help them frame issues from renewable energy and global warming to sustainability and economic development opportunities.

Under OSU's 2007 Strategic Plan, INR plays a role in several strategic initiatives. INR will share facilities, equipment and personnel with the new Institute for Water and Watersheds. INR will also assume responsibility for OSU's sustainability newsletter and website, supporting the Provost's Sustainability Council.

As we begin a new fiscal year, we look forward to working with an even broader group of faculty, policy makers and interested citizens to stimulate new collaborative problem solving, integrate data and make it readily accessible, streamline decision making and break down the traditional silos that divide academics, agencies and the public and thwart innovation.



Gail Achterman  
Director



# Information Program

The Institute's Information Program integrates and provides comprehensive information about Oregon's natural resources and environment to support effective decision-making at local, state and regional levels.

The Oregon Natural Heritage Information Center collects, manages, maintains, and analyzes biological information to improve and support decision making.



## Oregon Explorer

We are awash in natural resources data. Satellites, weather stations, and river and air monitoring networks contribute to the flood. Regulatory reporting and ongoing field studies feed it. Decision-makers and citizens need to make sense of it.

If information overload and information access are the problem, the new Oregon Explorer, a natural resources digital library and web portal, provides a solution. INR is developing the Oregon Explorer in collaboration with Oregon State University Libraries

and other partners including the InfoGraphics Lab and the Institute for a Sustainable Environment at the University of Oregon, the Oregon Watershed Enhancement Board, the Department of Administrative Services and other state agencies.

The goal is to provide easy, rapid access to reliable, up-to-date information about natural resources, empowering citizens through information. User needs and preferences are key. More than just a data repository, Oregon Explorer will enable users to pose questions to experts and tailor maps and search results to their concerns. New search tools allow users to define what they are looking for and create profiles to make repeat searches simpler.

Two prototypes provide a glimpse of what Oregon Explorer will offer. The North Coast Explorer ([www.northcoastexplorer.info](http://www.northcoastexplorer.info)) went online this year, focusing on watersheds and fisheries. It was designed to demonstrate effective access to digital spatial datasets and river basin statistics. The Willamette Basin Explorer ([www.willametteexplorer.info](http://www.willametteexplorer.info)) is broader, including geology, agriculture, conservation activities, and land use and future scenarios tied to resource management policies.

By January 2006, the Oregon Explorer will provide a starting access point for a variety of information resources, including databases, documents, photos, maps, GIS data layers, and satellite imagery. The Oregon Explorer will complement the rich existing information resources of state and federal agencies, local governments and tribes. INR will work in close cooperation with them to assure that all efforts complement a shared strategy for natural resources information access.



*Western Snowy Plover*

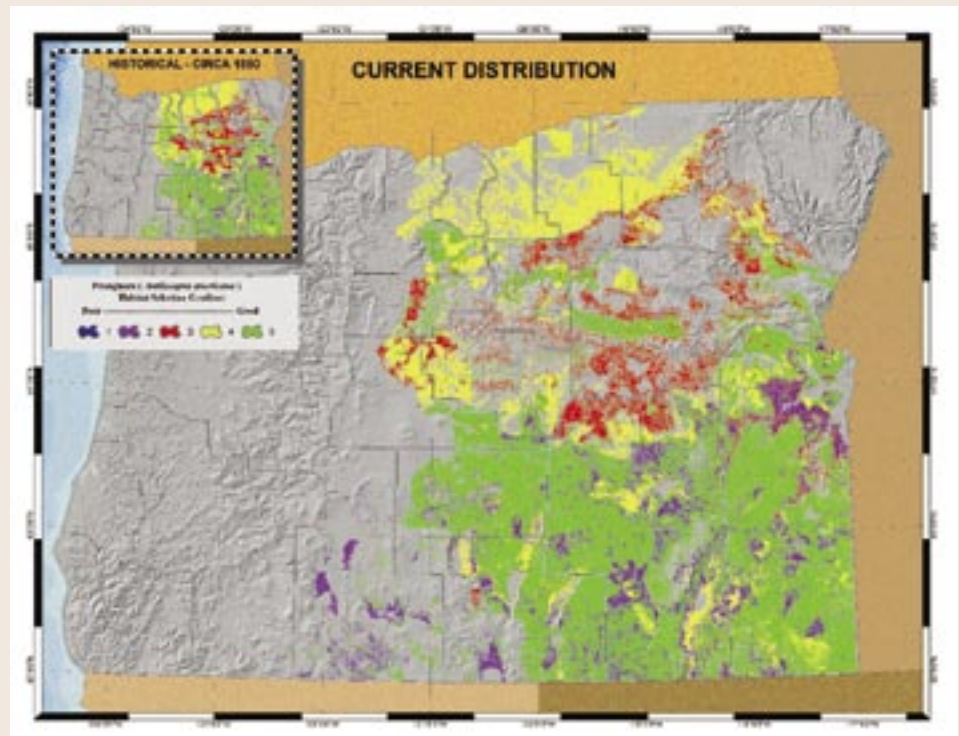
### **Western Snowy Plover Recovery Project Named Conservation Project of the Year**

Coastal populations of the threatened Western snowy plover have been declining over the last 30 years, largely due to habitat loss, increased predation, and human disturbance. Working collaboratively with a wide range of federal, state and non-governmental partners, the Oregon Natural Heritage Information Center (ORNHIC) coordinates a coast-wide monitoring and recovery project for this shorebird. In March 2005, this project received the Conservation Project of the Year award from the U.S. Forest Service and BLM for making a major contribution to the recovery and conservation of the Western snowy plover. Eleanor Gaines, the ORNHIC project manager, was recognized for her coordination efforts.



Above: Pronghorn antelope

Right: Pronghorn antelope distribution in Oregon



## ODFW Comprehensive Wildlife Conservation Strategy

The Comprehensive Wildlife Conservation Strategy is an ambitious effort to synthesize the best available data, science, and knowledge into a broad vision and conceptual framework for long-term conservation of Oregon's native wildlife. It was developed by the Oregon Department of Fish and Wildlife (ODFW) staff and partners, with funding from the U.S. Fish and Wildlife Service. The heart of the strategy is a blueprint for voluntary action to address the long-term needs of Oregon's wildlife. Many species' futures depend on landowners' and land managers' willingness to take action on their own to protect wildlife habitat.

The Strategy will serve as a user's guide to conserving the species and habitats that have defined Oregon, and help us find ways to pass these treasures on intact to future generations. The Strategy emphasizes

being proactive in conservation of declining species and habitats, to reduce the possibility of future federal or state listings. Hopefully, it will provide the basis for a common understanding of the challenges facing Oregon's wildlife, and shared priorities for addressing Oregon's conservation needs.

The planning effort has its foundation in a thorough assessment of the status of species and habitats. Much of this assessment was developed by the Oregon Natural Heritage Information Center of the Institute for Natural Resources for ODFW. For the last two years, ORNHIC worked hard to develop, update and analyze information to:

- *Create updated distributions of all native wildlife species in Oregon;*
- *Create new habitat suitability models and maps for all wildlife species;*
- *Update ODFW's Sensitive Species list;*

- *Create a new map of lands currently designated to conserve fish, wildlife and habitats;*
- *Provide new statewide existing and historic vegetation and wildlife habitat coverages;*
- *Develop information on introduced exotic pests and weeds in Oregon.*

This new information was essential to identify the species and habitats of greatest conservation concern, a key requirement of the strategy.

The information was also used to identify specific geographic "conservation opportunity areas" that provide good opportunities to address conservation needs of high-priority habitats and species.

# Policy Research Program

The Institute for Natural Resources' Policy Research Program provides one place where citizens facing complex natural resource issues can access the talent of the Oregon University System and obtain unbiased, independent expert advice. INR identifies appropriate faculty or graduate students and recruits interdisciplinary and multi-organizational research teams to help solve natural resource problems.

INR focuses on developing and testing methods to connect the best available science to policy making, quantifying status and trends related to Oregon's natural environment and developing long-term monitoring and indicator systems.

## Endangered Species Act and Federalism

Passage of the Endangered Species Act (ESA) in 1973 gave the federal government a powerful new role in fish and wildlife management, which had been largely a state government function historically. Congress is now actively reviewing the ESA and a key issue is the state role in species conservation.

INR helped Stanford Law School's Environmental and Natural Resources Law and Policy Program plan a forum on **Endangered Species Act and Federalism: Effective Species Conservation Through Greater State Commitment**. The Forum brought together forty leading national ESA experts and practitioners

along with key congressional staff to develop new approaches to species conservation building on state local knowledge and expertise. The group forwarded recommendations for regulatory action, funding and improved state-federal teamwork to Congressional ESA leaders for their consideration.

INR prepared a detailed case study of the Oregon Plan for Coastal Coho to illustrate the challenges of federalism in the ESA context. The case study was made available to all Forum participants and to the Oregon Watershed Enhancement Board, Oregon Sea Grant and the Oregon Coastal Management Program, who funded its preparation.



*Coho salmon are native to North America and range throughout temperate waters of the northern Pacific Ocean*



## Governor's Advisory Group on Global Warming/Idle Free Truck Stops

Governor Ted Kulongoski asked Gail Achterman of INR to serve on his advisory group on global warming, co-chaired by OSU's Jane Lubchenco and Northwest Naturals' President, Mark Dodson. The advisory group assessed Oregon's contribution to greenhouse gas emissions and developed a sensible strategy for reducing them. The group's report, **Oregon Strategy for Greenhouse Gas Reductions**, was adopted unanimously by the diverse 27-member advisory board in December 2004. It relied on the scientific consensus statement developed by over 70 scientists at a conference hosted by INR in June. The Governor adopted five high priority recommendations in April 2005.

The Advisory Group recognized that by reducing greenhouse gas emissions, Oregon can help solve this major international problem. Doing so also presents business opportunities to Oregonians developing and marketing renewable energy solutions and new energy technologies. One of the new technologies is truck stop electrification.

Emissions of greenhouse gases from cars and trucks account for one-

*OSU Dean of Engineering, Ron Adams with Governor Ted Kulongoski receiving a check from EPA Program Director at Jubitz Truck Stop in Portland. Back row: Stephanie Hallock, Director, Oregon Department of Environmental Quality; Michael Burnett, Director, Climate Trust*

third of Oregon's total greenhouse has emissions. The Advisory Group recommended that specific goals be set to reduce truck idling at truck and safety stops. This recommendation matched the Governor's commitment to the West Coast Diesel Emission Reduction Collaborative with California and Washington which seeks to outfit truck stops all along I-5 with electrified truck hook-ups.

An Oregon Solutions Team was convened by INR, at the Governor's request, to guide truck idling reductions in Oregon. The goal is to equip 600 parking spaces at truck stops along I-5 in Oregon with idle reduction systems. INR worked with the Kiewit Center in the College of Engineering, the Oregon Department of Energy and the Climate Trust to obtain a \$200,000 grant from EPA to start the electrification process, demonstrate how it works and evaluate the impacts. The EPA grant leveraged over \$325,000 in additional Climate Trust and Department of Energy funds. Truck stops in Phoenix, Canyonville, Coburg and Portland will participate.

## Near Shore Columbia Sediment Management

Beach sands along the northern Oregon and southwest Washington coasts are disappearing. To address the problem, the Lower Columbia Solutions Group initiated the Columbia River Nearshore Beneficial Use Project. The project engages public and



private-sector representatives in a collaborative process to explore how lower Columbia River maintenance dredge material could be used to supplement the sand supply at the mouth of the Columbia River. Ideally, these sediments could rebuild the beaches and help protect the South Jetty from wave impacts. The jetty is deteriorating and if it were to fail, Columbia River shipping could be severely restricted.



The Lower Columbia Solutions Group came to INR for help in answering scientific questions associated with the Nearshore Project. INR helped design and conduct joint workshops with citizens, policy makers and scientists. The scientific workshop focused on scientific issues identified by citizens and policy makers such as wave and current patterns off the mouth of the Columbia River, how sediment moves, and impacts to biological communities. Among the scientific experts who participated were Oregon State University researchers Dan Cox, Tuba Ozkan-Haller and Professor Emeritus William Pearcy. The following day, findings from the scientific workshop were shared with policymakers, resources practitioners, and interested stakeholders.

Workshop outcomes will be used by the Nearshore Project group and its partner organizations to inform discussions about how to proceed and to recommend policies and activities to address erosion and resource protection along the northern Oregon coast.

Reports are available at <http://inr.oregonstate.edu/columbia-river.html>.

## Sustainable Plant Research and Outreach (SPROut)

Plants do more than look pretty and feed us. They filter water, retain soil, cool the land and provide wildlife habitat. And what better way to understand and apply these benefits than through a program called SPROut, short for Sustainable Plant Research and Outreach?

Supported by funds from the U.S. Department of Agriculture, SPROut showcases ways to use plants for sustainable development and environmental quality. It serves as a clearinghouse for information about similar projects elsewhere in Oregon and northern California. In short, SPROut projects put plants to work.

A few examples:

*•Drought tolerant sedum and sempervivum cover a pump house roof at the Oregon Garden. They form mats that keep soil in place, reduce storm runoff and cool the building. The colorful roof has become one of the Oregon Garden's most popular exhibits.*

*•Treated wastewater from the City of Silverton flows through terraced ponds of ornamentals at the Oregon Garden before rejoining Brush Creek. SPROut monitors water quality to track system performance.*

*•Barley straw may help reduce undesirable algae growth in ponds. In cooperation with Patrick Hayes, professor in the OSU Dept. of Crop and Soil Science, SPROut is studying the biological and physical benefits of this Oregon farm product.*

SPROut developed research priorities at an October, 2004 Sustainable Plant Workshop attended by nursery industry leaders, local government officials and researchers from throughout the Pacific Northwest. The priorities include water and wastewater remediation, phytoremediation (removal of contaminants from soils and water), urban stormwater management, native plant restoration and riparian areas.

INR director Gail Achterman serves on the SPROut research council, a body that includes representatives of public and private organizations. She coordinates OSU participation in SPROut projects through research and proposal review. INR led the scientific review of all projects proposed for funding by SPROut research and demonstration grants.

SPROut project reports—including descriptions of individual plant research demonstrations and a review of beneficial plant manipulation efforts throughout the world—are available on the INR Website at [http://inr.oregonstate.edu/reports\\_index.html](http://inr.oregonstate.edu/reports_index.html).



*Renee Stoops of the Oregon Garden, on the Garden's green roof.*

## Institute for Natural Resources Staff



### Corvallis

**Pictured left to right:** Lisa Gaines, Erica Kleiner, Seth Crawford, Kuuipo Walsh, Renee Davis-Born, Julie Bain, and Lindsey Mitchell. Not Pictured: Denise Lach and Jeff Behan.



### Portland

**Pictured left to right (standing):** Eric Scheuering, Eleanor Gaines, Arne Buechling, Theresa Koloszar, John Hak, and Cliff Alton. Pictured left to right (sitting): Gail L. Achterman and Jimmy Kagan. Not Pictured: Sue Vrilakas, John A. Christy, Claudine Tobalske and Annie Weiland.

Institute for Natural Resources

## Advisory Board

### Find us on the web at:

Institute for Natural Resources  
[inr.oregonstate.edu](http://inr.oregonstate.edu)

Oregon Natural Heritage Information Center  
[oregonstate.edu/ornhic/](http://oregonstate.edu/ornhic/)

### For downloadable pdfs of ORNHIC publications:

*Rare, Threatened and Endangered  
 Species of Oregon*

[oregonstate.edu/ornhic/2004\\_t&e\\_book.pdf](http://oregonstate.edu/ornhic/2004_t&e_book.pdf)

*Roiparian and Wetland Vegetation of Central and  
 Eastern Oregon*

[oregonstate.edu/ornhic/crowe2004.pdf](http://oregonstate.edu/ornhic/crowe2004.pdf)

*Native Freshwater Plant Associations of  
 Northwestern Oregon*

[oregonstate.edu/ornhic/christy2004.pdf](http://oregonstate.edu/ornhic/christy2004.pdf)

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**Elaine Brong**  
 Oregon-Washington State Director  
 U.S. Bureau of Land Management  
 Portland

**James Brown**  
 Interforest, LLC  
 Salem

**Ralph Brown**  
 Curry County Commissioner and  
 commercial fisherman  
 Gold Beach

**Jim Carnahan**  
 Vice President  
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 Bend

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 Governor's Natural Resources Policy Director  
 Salem

**Rick Gustafson**  
 Principal  
 Shiels, Oblatz, Johnson  
 Portland

**Miles Hemstrom**  
 Portland Forestry Science Laboratory  
 Portland

**Michael Hibbard**  
 Professor  
 University of Oregon  
 Department of Planning, Public Policy  
 & Management  
 Eugene

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 Allied Solutions by Kupillas  
 Medford

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 Executive Director  
 The Wetlands Conservancy  
 Tualatin

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 Salem

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**Barte Starker**  
 Executive Vice President  
 Starker Forests  
 Corvallis

**Mark Systma**  
 Professor  
 Center for Lakes and Reservoirs  
 Portland State University  
 Portland

**Sara Vickerman**  
 Director, West Coast Office  
 Defenders of Wildlife  
 West Linn

**Duncan Wyse**  
 President  
 Oregon Business Council  
 Portland

### Ex Officio Members

**Karyle Butcher**  
 University Librarian  
 OSU  
 Corvallis

**Thayne Dutson**  
 Dean  
 OSU College of Agricultural Sciences  
 Corvallis

**George R. Holdren (Rich)**  
 Senior Associate Vice President  
 for Research  
 OSU  
 Corvallis

**Scott Reed**  
 Dean  
 OSU Extension Service  
 Corvallis

**Hal Salwasser**  
 Dean  
 OSU College of Forestry  
 Corvallis

**Institute for Natural Resources**

210 Strand Agriculture Hall

Corvallis, Oregon 97331-2208

Phone: 541.737.9918

Fax: 541-737-1887

Web: [inr.oregonstate.edu](http://inr.oregonstate.edu)

**Portland Office/Oregon Natural  
Heritage Information Center**

1322 S.E. Morrison Street

Portland, Oregon 97214-2423

Phone: 541-731-3070

Fax: 541-731-3070

Web: [oregonstate.edu/ornhic/](http://oregonstate.edu/ornhic/)

