



OISC

OREGON INVASIVE SPECIES COUNCIL

Coordination, Prevention, Education, and Collaboration

Business Plan
July 2008-July 2009

STOP

the invasion

Protect Oregon from Invasive Species



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Executive Summary

The Oregon Invasive Species Council was created by the Oregon Legislature in 2001 to conduct a coordinated and comprehensive effort to keep invasive species out of Oregon and to eliminate, reduce, or mitigate the impacts of invasive species already established in Oregon. Since its inception, the Council has achieved numerous milestones, including the development of risk assessments for several invasive species, a statewide action plan and feral swine action plan, the hosting of a statewide summit on invasive species, and the development of a personal services contract to hire a coordinator part-time to assist with Council with activities, to name a few.

The need for a business plan and strategic plan for the Council has become clear over the past several years, as the Council has conducted activities with numerous federal, state, local, and tribal governments as well as non-profit organizations, industry representatives, academic institutions, and citizen-based groups.

In the winter of 2008, the Council is conducting a statewide assessment of invasive species to:

- identify areas where legislation is needed to fill gaps in statutory authority;
- recommend priority policy issues for agencies to consider;
- identify areas of overlap or redundancy in addressing invasive species;
- enhance coordination of invasive species response programs statewide;
- better define roles and responsibilities for managing invasive species; and
- enable financial supporters of invasive species efforts to allocate funding to the highest priority areas.

The results of the assessment will create the framework for the development of a long-term strategic plan for the Council. In the interim, this business plan serves to provide more short-term guidance and direction for Council activities.

This plan includes the vision and core values of the Council, background information on invasive species in Oregon, significant Council accomplishments to date, a description of the barriers to effectively manage invasive species, outcomes of the statewide invasive species summit, and five overall goals to guide the activities of the Council in the coming year.

Oregon Invasive Species Council

Council Members

Terms Expire 12/31/2008

Chris Guntermann—Oregon Association of Nurseries
Randy Henry—Oregon Marine Board
Bill Reynolds—Bureau of Indian Affairs, Warm Springs

Terms Expire 12/31/2009

Dave Bridgwater—USDA Forest Service
Steve Buttrick—The Nature Conservancy
Don Farrar—Gilliam County Weed Department
Mark Wiegardt—Whiskey Creek Shellfish Hatchery
Marla Harrison—Port of Portland

Agency Representatives

Mark Sytsma (2008 OISC Chair)—Center for Lakes & Reservoirs, Portland State University
Brad Knotts (2008 Vice Chair)—Oregon Department of Forestry
Martin Nugent—Oregon Department of Fish and Wildlife
Sam Chan—OSU Extension Sea Grant
Dan Hilburn—Oregon Department of Agriculture

Others

Lisa DeBruyckere—Oregon Invasive Species Council Coordinator
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A Message From the Chair

The Oregon Invasive Species Council was created by the Oregon Legislature in 2001 to conduct a coordinated and comprehensive effort to keep invasive species out of Oregon and to eliminate, reduce, or mitigate the impacts of invasive species already established in Oregon.

Currently, invasive species management is conducted in a piecemeal and under-resourced fashion. Although invasive species are driven by global economic forces, responses are primarily local. This mismatch of scales is inadequate to protect Oregon from invasive species.

Invasive species management requires numerous strategies to be effective. Increased numbers of introductions and corresponding weakened responsive mechanisms, increasing costs to respond to invasions, and lack of certainty in dealing with invasive species issues calls for a coordinated, well-funded, regulatory, and sustainable approach to dealing with invasive species at county, state, regional, and national levels.

In addition, invasive species management is a weakest-link public good.¹ This means that the private sector cannot be relied upon solely to manage invasive species because the benefits and costs to society are orders of magnitude beyond those to individuals, and the prevention, control, and eradication of an invasive species is only as good as the least effective activity, institution, or agent. Because of these factors, development of an infrastructure to effectively manage invasive species at all scales and involving all entities, and a coordinated approach and infrastructure at the county, state, regional, national, and international levels are necessary for invasive species management efforts to be successful.

Finite organizational budgets and human resources, increasing numbers of invasive species threatening Oregon borders and spreading within Oregon, gaps in legislative authority, and diverse contributions by citizen, non-governmental, local, county, state, and federal organizations drive the need for enhanced communication and coordination of invasive species efforts in Oregon.

This document builds on the outcomes of a statewide invasive species summit held in July of 2008, and serves to provide interim direction and priorities until a statewide assessment of invasive species is completed in 2009. The action items defined in this document aim to improve awareness and coordination of invasive species efforts in Oregon, prioritize invasive species activities for the Council, and position the Council as the coordinator of invasive species efforts in Oregon.

Mark Sytsma, OISC Chair

¹ Perrings, C., M. Williamson, E. B. Barbier, D. Delfino, S. Dalmazzone, J. Shogren, P. Simmons, and A. Watkinson. 2002. Biological invasion risks and the public good: an economic perspective. *Conservation Ecology* 6(1): 1. [online] URL: <http://www.consecol.org/vol6/iss1/art1/>

Purpose of This Plan

- Identify the existing invasive species environment and the overall context for the setting in which the council operates in 2008 and 2009.
- Provide an interim set of goals and strategies until the council conducts a statewide assessment.
- Report on OISC and partner achievements from 2007 to 2008.
- Describe ongoing activities and new Council initiatives that optimize available resources and establish priorities.

Mission, Vision, and Core Values

Mission

Conduct a coordinated and comprehensive effort to keep invasive species out of Oregon and to eliminate, reduce, or mitigate the impacts of invasive species already established in Oregon.

Vision

For the Council to be the driving and coordinating force behind efforts in Oregon that lead to substantive positive changes in the prevention, control, management, reduction, and elimination of invasive species.

Core Values

- We believe, first and foremost, that **preventing introductions** of invasive species is paramount to the health of Oregon's ecosystems, economy, and quality of life. Once introduced, early detection of initial invasions, and then quick, coordinated responses are necessary to control, eradicate, and prevent establishment before it becomes technically or financially impossible.
- We believe elimination, reduction, and mitigation of invasive species impacts will protect Oregon's native plants and animals, support biodiversity, and enhance the quality of life for all Oregonians.
- We believe invasive species will remain a threat to Oregon's economic and environmental future long-term, and thus support comprehensive, sustainable efforts to monitor invasive species, fund control, eradication, and management efforts, and inform and engage the public.
- We believe everyone plays a role in protecting Oregon from the threats of invasive species.
- We believe Council efforts should tie into and build upon existing efforts to protect Oregon's biodiversity.
- We believe the strength of the Council lies in partnering organizations working together to achieve mutually agreed upon goals to seek collaborative solutions.

The Silent Invasion: Understanding the Threat of Invasive Species to Oregon's Economy, Environment, and Quality of Life

Introduction

Oregon is an incredibly diverse state, with landscapes that range from temperate rainforest to high deserts. Maintaining healthy ecosystems and biodiversity across these landscapes is important because it allows native plants and animals to adapt to current conditions and evolve in response to changing environmental conditions, including the introduction of invasive species.² Biodiversity supports natural resource industries that produce commodities such as fiber, food, fuel, and building materials. Healthy diverse ecosystems offer other less quantifiable values, such as places of sanctuary, inspiration, and recreation.

Oregon ranks 8th in the nation for its species diversity, or biological wealth—our state is home to 4,136 plants and animals.³ However, Oregon ranks 9th in the nation for the percent of species at risk—almost 11% of Oregon's plants and animals are at risk of extinction. Invasive species are contributing to the decline of many of these native species. Next to habitat loss, invasive species are the second largest contributing

2 Arnold, S. J., J. Kagan, and B. Taylor. 2000. Oregon State of the Environment Report. Summary of Current Status of Oregon's Biodiversity. Chapter 3, 121-126.

3 Bruce A. Stein. 2002. States of the Union: Ranking America's Biodiversity. Arlington, Virginia: NatureServe.



Gypsy moth caterpillar and adult. Photos by Oregon Department of Agriculture.



eBay and Gypsy Moths in Oregon

Gypsy moths (*Lymantria dispar*) are one of North America's most devastating pests. When they reach high population densities they can cause extensive defoliation of trees and shrubs. They were originally introduced into the eastern U.S. in 1869 as part of research for the silk-producing industry; they subsequently escaped, and widespread eradication efforts were made beginning as early as 1890. Millions of acres in the eastern U.S. are defoliated by these creatures each year.

Gypsy moths were largely confined to the eastern U.S., but in 1983, 3 gypsy moths were discovered near the town of Lowell, Oregon. An extensive trapping program was implemented and over 1,900 were caught in the area in 1984. The Oregon Department of Agriculture (ODA) implemented aerial spraying of a biological insecticide in 1985 in an effort to eradicate the moth. Nearly a quarter of a million acres were treated, and spraying continued in 1986. In 1987, extensive trapping revealed no gypsy moths in the area and the pest was deemed eradicated. Since that time ODA has continued monitoring for the moths, deploying over 18,000 traps statewide. Although a few have been caught every year, and limited spraying continues to be carried out, the species has been effectively excluded.

Interestingly, in 2006, 66 moths were caught in Oregon, most of them in Bend, in central Oregon. Further investigation found that this new infestation arrived from Connecticut as an egg mass in a 1967 Chevy purchased through the internet auction site eBay! This illustrates the difficult task that faces policy makers trying to control invasive species. Control of an IS does not end with its eradication. Constant monitoring is required, which has become a routine, albeit challenging task for state agencies dealing with the problem.

factor towards species extinction in the United States and in many parts of the world.

The introduction of new, or non-native, invasive species is a real and persistent threat to Oregon’s native plant and animal communities, some of which are naturally rare.

Invasive species disrupt entire ecosystems. Research shows that invasive plants affect food chain dynamics, alter natural fire regimes, modify soil chemistry, accelerate soil erosion, and reduce water quality. Feral swine (*Sus scrofa*), an expanding but *still containable* invasive in Oregon, is a notorious ecological troublemaker, particularly in streamside habitats. Rooting for vegetation and insects in the moist ground near streams loosens soil, contributing to soil erosion that exacerbates in-stream sedimentation and reduces the suitability of habitat for sensitive aquatic animals like salmon. Even as Oregon invests millions to improve watershed health, feral swine threaten to undermine these efforts, underscoring the need to control populations and prevent future escapes or releases into the wild.

Controlling invasive species is one of the six key issues of statewide concern in the Oregon Conservation Strategy because of economic and environmental threats.⁴ A goal within the strategy is to prevent new introductions of species that have high potential to become invasive, and reduce the scale and spread of priority invasive species infestations. Specifically, the strategy calls for developing early response mechanisms, eradicating invasive species in high priority areas, and collaborating with partners to develop an implementation tool that evaluates the ecological impact and management approaches for high priority invasive species.



Economics

Biological invaders pose tremendous economic costs to communities, states, and the nation. Examples of estimates of the annual cost of invasive species in the USA and Oregon (in 2007 dollars)⁵ include:

USA general estimate	Total direct and indirect use impacts	\$140 billion/year
Noxious weeds (21 species in Oregon)	Production losses, fire damage, control	\$120 million/year
Zebra mussels (Oregon)	Projected control costs to 13 hydropower facilities	\$25 million/year
Sudden Oak Death (Oregon)	Nursery production losses if established; Control costs of current outbreak	\$79-\$304 million/year \$547,000 (monitoring) \$8,774,000 (eradication)
Invasive Plants (Portland, OR)	Removal/revegetation with native species over five years	\$10-31 million/year

According to the economic analysis provided by Cusack and Harte (2008),⁶ an economic approach to invasive species management can provide policymakers at all levels with useful information to make

4 Oregon Department of Fish and Wildlife. 2006. Oregon Conservation Strategy. Oregon Department of Fish and Wildlife, Salem, Oregon.

5 Cusack, C., and M. Harte. 2008. Economics of Invasive Species. Prepared for the Oregon Invasive Species Council. 10pp.

6 Ibid.

important decisions about prevention, eradication, and control. However, they contend that management of invasive species will remain piecemeal, under-resourced, and ineffective until there is increased awareness of the role economics play in driving the issue; there is improved coordination among government agencies; and the public, government agencies, industry and non-governmental organizations are better educated.

Pathways of Invasion

Oregon has been the unfortunate recipient of non-native, invasive species that arrived with the help of people who either intentionally or accidentally introduced these organisms (Table 1). In some cases, non-native species were brought here for reasons that seemed beneficial or benign at the time. Early European-American settlers planted Scotch broom (*Cytisus scoparius*) as an ornamental, but did not anticipate the extent of the ecological and economic damage the plant would cause. Scotch broom, now a designated noxious weed in Oregon, chokes out conifer seedlings and other desirable plants in forestlands, costing Oregon nearly \$50 million annually.

Table 1. Examples of invasive species and the pathways they used to invade Oregon.

Pathway	Examples from Oregon
Ballast water	Asian copepod
Aquaculture, farm escapes	Nutria
Aquaria releases	Chinese Mystery Snail, Eurasian Milfoil
Vehicular transportation	Gypsy Moth, invasive weeds
Illegal stockings	Northern Pike, Tiger Muskee
Pathogens spread to vulnerable species	<i>Pasturella</i> (domestic sheep)
Horticultural trade	Sudden Oak Death (nursery stock)
Seafood packing and disposal	Wire Weed, Japanese Eel Grass
Past government programs	Atlantic Salmon
Recreation (boat hulls, hiking boots)	Parrotfeather, New Zealand Mud Snail
Intentional introductions	Scotch Broom, English Ivy
Food trade	Asian Clam, Bullfrogs
Escaped garden plants	Japanese Knotweed, Gorse
Fishing bait releases	Tui Chub (Diamond Lake)
Domestic animals become feral	Swine, Monk Parakeet
Biological control introductions	<i>Rhinocyllis</i> Weevil (attacks native thistles)
Moving and depositing fill in wetlands	Reed Canarygrass
Contaminants in seed	Patterson’s Curse, Yellowstar Thistle
Wood packing material	Various wood borers and bark beetles
Aircraft	Japanese Beetle
Ships	Wrinkled Dune Snail
Railroads	Imported Fire Ant

Many invasive species are introduced unwittingly by people, escaping detection until it is too late to control their prolific expansion and devastating effects. The pathogen responsible for the deaths of countless Port-Orford cedar (*Chamaecyparis lawsoniana*) trees in Southwest Oregon and millions in foregone timber revenue was likely introduced to the region by vehicle tires or boots contaminated with spores. Port-Orford cedar is an important streamside tree, providing cooling shade and in-stream woody debris for fish. Continuing die-offs of Port Orford cedar are likely to ripple through the riparian and freshwater ecosystems of southwestern Oregon.

Noxious weeds such as Yellow Starthistle (*Centaurea solstitialis*) and Spotted Knapweed (*Centaurea maculosa*) likely arrived from infested areas as contaminants in alfalfa seed, a crop grown for livestock forage, or in discarded soil used as ballast in ships.

As the pace of globalization and cross-border trade increases, the risk of introducing non-native species via numerous pathways is expected to rise as well. Many new species will likely arrive as stowaways in agricultural commodities, seafood, livestock, wood products, packing materials, and nursery stock imported into the state by land, air, or ship freight. Federal agricultural inspectors at Portland International Airport reported nearly 700 interceptions of pests from 2000 to 2004, underscoring the role of ports as likely points of introduction for new species.

The activities of people also carry the risk of introducing or spreading invasive species. Mud on the soles of hiking boots or treads of off-road vehicles can contain seeds of noxious weeds. Oregon's rivers and lakes are vulnerable to the risk of undesirable aquatic invertebrates arriving, such as the highly invasive zebra mussel—an invader from Asia to the Great Lakes. It latches onto boat wells, hulls, motors, or trailers in waters infested with its larvae. The liberation of pet amphibians, reptiles, or mammals into backyards or aquarium fish into local streams is another avenue for species introductions.

Benefits of Biological Control of Tansy Ragwort in Oregon

Tansy ragwort (*Senecio jacobaea*) was introduced into the United States from Europe for its medicinal qualities. It has become widely distributed throughout Oregon and other western states, achieving high densities on valuable pastures. The plant produces pyrrolizidine alkaloids that are toxic to cattle and other livestock, and used to cause millions of dollars of losses from livestock deaths along with reducing pastureland productivity.

The state of Oregon designates the tansy ragwort as “noxious” and has implemented a biological control program for it. Cinabar moths and ragwort flea beetles, which effectively attack the seeds, leaves, and roots of the tansy ragwort, were released. The biological control program provides an estimated annual benefit of \$6 million, with a minimum benefit to cost ratio of 13:1. The annual benefit includes \$4.4 million in reduced livestock deaths, \$1.52 million in increased productivity of pastures, and \$1.02 million in reduced herbicide use.

Radtke H and Davis S. (2000). Economic analysis of containment programs, damages, and production losses from noxious weeds in Oregon. Report prepared for Oregon Department of Agriculture, plant division, noxious weed control program.



Tansy ragwort. Photo: Oregon Department of Agriculture.



The Best Offense is a Good Defense

The most critical step in addressing new invasive species problems is to know they exist.⁷ Early detection and rapid response (EDRR) and prevention are among the most efficient and effective ways reducing the costs of invasive species.⁸ Education is a primary process driving EDRR and prevention. Enhanced education of the public, government agencies, industry and non-governmental organizations, is needed to strengthen all invasive species efforts.

Global Climate Change

Global temperatures and sea levels may continue to rise over the next century. Oregon is vulnerable to the effects of climate change because its natural systems and much of the economy is dependent on water.⁹ Reductions in snow pack and earlier spring runoff affect agriculture, municipal water systems, native fish and wildlife, recreation, and summer hydropower sales. Global climate change may challenge Oregon to deal with water allocation rights, water quality issues, increased risk of wildland fires, and the associated increase in costs.

Global climate change would increase risk to marine ecosystems as well. Storm surges, sea level rise, increased salinity in estuaries, and decreased coastal ocean productivity are just a few examples of how climate change would affect our oceans and coasts.

Invasive species are likely to spread in response to changes in climate.¹⁰ Preparing for climate change challenges Oregonians to innovate, plan, implement, research, conduct monitoring, and govern to keep pace with climate change. Local, state, and federal government agencies, the private sector, non-profit organizations, and individuals need to incorporate climate change preparation into their plans and activities, particularly as it relates to surveillance.

7 Federal Interagency Committee for the Management of Noxious and Exotic Weeds. 2003. A National Early Detection and Rapid Response System for Invasive Plants in the United States. 24pp.

8 Cusack, C., and M. Harte. 2008. Economics of Invasive Species. Prepared for the Oregon Invasive Species Council. 10pp.

9 The Governor's Climate Change Integration Group. 2008. Final Report to the Governor. A Framework for Assessing Rapid Climate Change. 68pp.

10 Middleton, B.A., 2006, Invasive species and climate change: U.S. Geological Survey Open-File Report 2006-1153, 2 p.

Significant Accomplishments by the Oregon Invasive Species Council and Partner Organizations 2007-2008

Accomplishments through July of 2008:

- ✓ None of the organisms on the 100 Worst List became established in Oregon in 2007 or the first six months of 2008.
 - The 100 Worst List is a list of the 100 most dangerous invaders threatening to enter Oregon. The list can be accessed at http://www.oregon.gov/OISC/most_dangerous.shtml.
- ✓ Partner organizations launched an invasive species awareness and engagement campaign. The goal of the campaign is to educate Oregonians about invasive species; foster an environment for Oregonians to adopt practices to help prevent the spread of invasive species; generate awareness of the threat of invasive species to Oregon's economy and environment; and develop simple messages.

Estimated Cost of Zebra Mussels to Hydropower Facilities on the Columbia

The Zebra mussel (*Dreissena polymorpha*) was introduced into the great lakes via ballast water discharged by ships arriving from Europe. Zebra mussels form large, dense populations that may reduce available food and oxygen for native species, along with completely choking out native mussel and clam species. They colonize and clog water intake pipes, water filtration equipment, and power generating facilities, causing negative financial impacts of over \$1 billion per year.*

They have since spread into most of the aquatic ecosystems in the eastern United States, and in the absence of effective prevention measures, are expected to invade most freshwater ecosystems in the country. Once zebra mussels are detected in a water body, eradication is usually impossible, and people must live with the damage to economic, recreational, and environmental resources. Because this species has gained a strong foothold over such a wide geographic area, eradication of this species is now thought to be impossible. That is why taking action to keep zebra mussels out of Oregon is critical. Zebra mussels have not yet been detected in Oregon, but, state agencies are on high alert, and studies on the estimated impacts of this species have been carried out. One such study estimated the potential control costs (maintenance and turbine cleaning) for 13 hydropower facilities on the Columbia river for Zebra mussels to be in the region of \$27 million annually.

Recently, the quagga mussel, a relative of the zebra mussel, has been found in western states, and may be even more aggressive and destructive than its cousin.

*Phillips S. (2005) Potential economic impacts of zebra mussels on the hydropower facilities in the Columbia river basin. Report prepared for the Bonneville power administration February 2005.



Zebra mussels. Photo: Randy Westbrooks, U.S. Geological Survey, Bugwood.org.



The campaign includes:

- *Silent Invasion*, a one-hour documentary on invasive species in Oregon that Oregon Public Broadcasting produced and launched on April 22, 2008.
- 10 Oregon Field Guide segments in 2008-2009, each featuring an invasive species.
- *GardenSmart Oregon*, a 50-page full-color publication showcasing 20 invasive species, and native and non-native options that can be planted in their place.
- SOLV-led weed pulls throughout Oregon.
- The Statesman Journal ran a series of front-page articles on invasive species for months leading up to and during the campaign.
- The Statesman Journal and Oregon Public Broadcasting developed invasive species sections to their websites, and Oregon Public Broadcasting developed and launched an online version of the 1-866-INVADER hotline (www.oregoninvasiveshotline.org) for the public to report sightings of invasive species, including the ability to upload photos.
- The Nature Conservancy is developing an early detection, rapid response program for Oregon.
- Conduct a statewide assessment of invasive species in Oregon.
- Conduct research on the barriers to public participation in invasive species efforts.
- Oregon Sea Grant produced a full-color publication called, "On the lookout for aquatic invaders—Identification Guide for the Pacific Northwest." The 71-page publication identifies numerous freshwater and marine organisms, plants, and fish in the Pacific Northwest.

The statewide awareness and engagement campaign is garnering national attention because of its scope, level of participation across geopolitical lines, and variety of activities and outcomes.

- ✓ The Council took its first step in implementing a strategic plan for the State of Oregon by obtaining the funding to contract with a coordinator part-time (funding for one year was matched by The Nature Conservancy).
 - Lisa DeBruyckere was hired via a personal services contract. Major assignments include fundraising, organizing the statewide summit, organizing the affairs of the council, producing publications and reports, facilitating sessions, making presentations on behalf of the Council, coordinating with neighboring states, and coordinating special events.
- ✓ The Council developed this business plan, the first step toward the development of a strategic plan (2009).
- ✓ The Council has, to date, raised \$65,500 towards the \$100,000 statewide assessment, and is working with the Oregon Department of Agriculture to submit a policy option package for the 2009 legislative session that provides sustainable long-term funding for the Council.

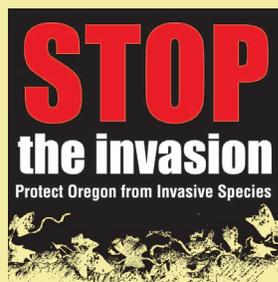
- The statewide assessment will identify areas where legislation is needed to fill gaps in statutory authority for the effective management of invasive species; suggest priority policy issues that state agencies should consider when developing new policies and management plans; identify areas where there is overlap or redundancy in addressing invasive species; enable invasive species managers, landowners, and other stakeholders to increase coordination, plan projects strategically, and better understand the legal framework; enable financial supporters of invasive species projects to allocate dollars to highest priority areas for combating invasive species and to fill gaps in management; point out what is working in various parts of Oregon so that successful efforts can be replicated elsewhere; and define roles and responsibilities for managing invasive species.
- The ODA policy option package includes requests for \$200,000 General Fund, \$200,000 Other Fund spending authority, and \$350,000 Federal Fund spending authority. This will allow the Council to apply for federal grants and have matching state dollars.
- ✓ The Council is taking a proactive, coordinated approach to the development of legislative concepts for the 2009 session, ensuring all Council members and agencies are jointly supporting the concepts.
 - Legislative concepts include:
 - Makes the sale or purchase of hunts for feral swine on public or private land illegal. Makes knowingly allowing feral swine to roam on private property illegal.
 - Aquatic invasive species stopping authority and funding for border check stations (zebra and quagga mussels)
 - Reorganization of Plant Quarantine and Noxious Weed Control statutes.
 - Clarification of the OISCs legal and financial status and addition of the Department of Environmental Quality to the Council.
- ✓ The Council hosted an Oregon Invasive Species Summit July 22, 2008 to bring agency and industry leaders together to develop a shared understanding of the threat of invasive species to Oregon's natural resources, economy, and quality of life, and develop shared solutions and commitments to minimize those threats.
 - A total of 175 people attended the summit, and described issues and solutions in five major theme areas: Coordination/Cooperation, Funding, Policy, Public Awareness, and Research and Monitoring. A report was produced for the Governor, and the Council is developing specific policy and funding recommendations in a letter to the Governor in October of 2008.
- ✓ The Council officially (by statute) added the Oregon Department of Forestry as an agency representative to the Council.
- ✓ The Council voted to add the Oregon Department of Environmental Quality as an agency representative to the Council in 2009.

The Barriers to Effectively Managing Invasive Species

In preparation for the statewide summit, the Council identified barriers to effectively managing invasive species in Oregon:

The OISC has identified the following barriers to properly managing invasive species in Oregon:

- 1. After-the-fact regulations.** We tend to introduce regulations and implement control mechanisms well after a species has been established. In addition, regulations tend to be developed for the last emergency rather than an anticipated crisis. In most cases, regulatory authority for early detection and rapid response is limited. Oregon is lagging behind significantly in regulations to protect the state from invasive species, especially when compared to regulations of neighboring states such as Washington and Idaho.
- 2. Lack of knowledge.** In many cases, little information is known about an invasive species, and more importantly, little research has been conducted on ways to effectively minimize the threat. There is a lack of understanding of the pathways that facilitate the introduction of new species as well as little information on the impacts of existing and potential invasive species.
- 3. Competing Priorities.** Federal and state agencies or local governments with the legal authority and responsibility to manage invasive species also have other responsibilities that sometimes hinder their ability to regulate or manage an infestation as needed.



4. Regulatory obstacles. Existing environmental regulations lack emergency clauses resulting in slow responses by natural resource managers to new infestations. Lack of clear authority exists between federal and state agencies, and between state agencies. In addition, there are differing priorities within the region—Oregon’s weed list for eastern Oregon doesn’t align with eastern Washington’s weed list, for example.

5. Inadequate funding and non-existent emergency funding. The state lacks funding for early detection and rapid response as well as adequate funds to battle invasive plants and animals already here and causing problems. Oregon lacks dedicated, stable funding to enhance long-term invasive species programs and coordination among the many organizations that contribute to invasive species efforts. And it especially lacks emergency funding, similar to the type of funding used to fight wildfires in Oregon. Also, it should be noted that funding is not correlated with trends in travel and trade, i.e., as travel and trade increases, there has not been a corresponding increase in funding to deal with the increasing potential spread of invasive species.

6. Species control versus pathway restrictions. We design precautions to prevent unwanted species and management efforts toward specific species rather than pathways. Thus, when a new species is introduced, we lack a *system* to check the invasive plant, animal, or organism. For example, a program to stop a species brought here in ballast water will not address the introduction of new stowaway species that arrive on boat hulls. If we managed the pathway, we could shut down introduction routes. Case in point: The State of Washington has new legislation and funding mechanisms (a boater registration surcharge) that makes it illegal for boaters to transport any aquatic plant or animal on a boat or boat trailer. The Washington Department of Fish and Wildlife now has two enforcement officers working to prevent this “avenue” of species introduction by inspecting recreational boats, and cleaning “dirty” boats in state-sponsored wash stations. Oregon lacks this critically important legislation and the accompanying infrastructure to clean “dirty” boats.

7. A lack of infrastructure in Oregon to prioritize, coordinate, collaborate, and fund invasive species efforts. The OISC statute, ORS 561.685, established the Council to create and maintain appropriate Internet sites, toll-free telephone numbers, or other means of communication for statewide use in reporting sightings of invasive species; encourage the reporting of invasive species sightings by publicizing means of communication made available by the Council; forward reports of invasive species sightings to appropriate agencies; produce educational materials and press releases concerning invasive species; conduct educational meetings and conferences; develop a statewide plan for dealing with invasive species; solicit proposals and review applications for grants or loans to further projects providing education about invasive species; and provide grants or loans to agencies, organizations or individuals for eradicating new invasions. The Council is authorized to establish an advisory committee, and has a revolving trust account to process all monies received for invasive species efforts. However, the infrastructure to easily process grants, coordinate the efforts of numerous agencies and partner organizations (staffing, budget), does not exist.

8. A public that, for the most part, is unaware of invasive species. The nation and Oregon are feeling the effects of a strained economy, and significant issues relative to health care, education, the global marketplace, and international strife. Invasive species have not risen in prominence compared to these other issues, at least relative to the “average” Oregonian. In addition, some invasive species potentially become charismatic megafauna because of lack of knowledge and opportunities for exploitation and use. Case in point: In some states such as Arkansas, the public can introduce feral swine onto private property, despite documented cases of disease transmission from feral swine to humans. Hunters enjoy the increased hunting opportunity (see graphic below: Photos courtesy of Arkansas Game and Fish Commission).

Summit Outcomes

As part of the campaign and to help coordinate an effective government response to invasive species in Oregon, the Oregon Invasive Species Council coordinated and hosted a statewide invasive species summit on July 22, 2008 in Salem, Oregon. About 175 people attended the summit, which was designed to bring federal and state agency and industry leaders and legislators together to describe the obstacles to successfully dealing with invasive species in Oregon, and generate strategies to address those barriers.

Summit attendees described five main concerns relative to invasive species in Oregon, and suggested potential solutions to address those concerns:

Coordination/Cooperation—Oregon needs leadership and communication/cooperation across agencies, enhanced political will to balance strategic and local issues, effective memorandums of understanding with federal agencies, and increased non-governmental participation. Solutions include clearly identifying roles of all agencies, a comprehensive inter-agency strategic plan, an effective Early Detection-Rapid Response Program, an effective outreach program, creation of regional invasive lists, coordinated and efficient tracking of data on invasives, and, where possible, lessening unnecessary duplication of effort by targeting groups or suites of species versus species-specific efforts.

Funding—There is a need for stable, flexible funding as well as emergency funding dedicated to long-term monitoring, coordinated management, strategic control, and enforcement efforts. Solutions include collecting user fees, enforcing existing fines, creating vanity plates, using lottery and Measure 66 dollars, and taxing the vectors (containers, tires, etc.).

Policy—Oregon lacks a comprehensive policy dealing with invasive species, including a lack of focus on pathways and vectors, and checkpoints at ports of entry. There are gaps and overlaps in enforcement jurisdiction. Solutions include stronger laws, clarification of noxious weed listing criteria, a statewide assessment, and legislative committees to deal with invasives.

Public Awareness—Oregonians lack knowledge about invasives and their effect on the environment and the economy. They don't understand their personal responsibility, they fear government involvement, they are confused by the plethora of information on invasives, there is no clear statement of the invasive species problem, and social norms need to shift. Solutions include a sustained multi-media campaign, better distribution of existing materials and use of existing programs, and required curriculum in the schools.

Research and Monitoring— There is no statewide baseline assessment and monitoring system, no transparent and logical risk assessment tool for prioritizing, no integrated database/information sharing system, no forum to share information and research needs, and no comprehensive statewide rapid response strategies for invasive species (note: there are response plans for a few species). Solutions include development of an incident command system to respond to new invasions, professional training on invasive species, creation of a joint federal/state program to identify priorities for research, and development of integrated monitoring programs.

At the conclusion of the summit, a report was given to the Governor and the Council is in the process of developing policy and funding recommendations to the Governor to enhance invasive species efforts throughout Oregon. In addition, the Council is using the five theme areas as the foundation for its business and strategic plans.

Our Long-Term Objectives

This document is an interim plan that includes short-term objectives and actions as the Council conducts a statewide assessment of invasive species. Long term, the Council seeks the following outcomes:

- New invasive species do not enter Oregon and do not become established.
- If invasive species do enter Oregon and establish, they are quickly detected and eradicated before they spread.
- The damage caused by new invasive species that have established and spread is minimal.
- The public is an active, informed, and supportive participant in a statewide system of invasive species prevention, detection, and management.
- Emergency and sustainable long-term funding for invasive species is created.
- Legislation is created to further protect Oregon from invasive species.

To continue the momentum of the statewide awareness and engagement campaign, further the outcomes of the statewide invasive species summit, and address the barriers to effectively managing invasive species in Oregon (see below), the Oregon Invasive Species Council is proposing the following priority activities from July of 2008 to July of 2009. In the fall of 2009, a longer-term (5-year) strategic plan will be developed for the Council and the state that identifies unified, properly funded, and broadly supported invasive species prevention, monitoring, and control efforts.

Goal 1- Coordination/Cooperation

To promote cooperation, coordination, and communication among government agencies, tribal governments, industry, nonprofit organizations, citizen groups, and landowners relative to invasive species activities in Oregon.

Oregon needs improved communication/coordination at the intra-agency, interagency, and regional levels. There is no one authority/responsible for coordination or information sharing, nor is there a legislative mandate or adequate funding for coordination. A holistic structure is needed to balance both strategic and local approaches across agencies. Although several agencies have “some authority,” there is no central leader to guide resource allocation (personnel and operational dollars) for prioritized invasive species monitoring, management, and control efforts. Such efforts require coordination, consistent enforcement and penalties, clear leadership, a mechanism for local implementation, increased non-governmental participation, and memorandums of understanding among federal and state agencies.

Action Items:

1. At the conclusion of the summit in July of 2008, begin development of a strategic plan that assigns priorities to invasive species efforts in Oregon. Government agency directors, advisory committee organizations, and other stakeholders will sign off on the plan,

demonstrating support for the results of the summit and corresponding priorities.

2. Conduct a statewide assessment of invasive species to provide a statewide review of legislative authority and activity as it applies to all invasive species, and provide a statewide review of local on-the-ground roles, responsibilities, and activities.
3. Work with The Nature Conservancy to develop an effective early detection, rapid response program may will ultimately be coordinated by the Council.
4. Support the development of an invasive species database summit to address the need for a standardized database of invasive species in Oregon.
5. Support the efforts of watershed councils, cooperative weed management areas, and others as they contribute to invasive species efforts in Oregon.
6. Support the Oregon Board of Forestry in their development and implementation of a Board work plan on invasive species.
7. Support the following during the 2009 legislative session by finalizing legislative concepts, participating and testifying in board and commission meetings of individual agencies that are furthering the legislative concepts through their organizations, and working with individual legislators to discuss the specifics of each legislative concept and provide any additional supporting documentation legislators need throughout the process:
 - a. *Inspection Authority*—All watercraft entering Oregon will be required to stop for a brief inspection for quagga and zebra mussels and other aquatic invasive species.
 - b. *Border Inspection Station Funding*— Border check stations are being proposed in an effort to prevent the spread of zebra and quagga mussels and other aquatic invasive species.
 - c. *Oregon County Weed District Funding*—Enforcement of noxious weeds is the responsibility of the counties (ORS 570); however no dedicated funding source has been established for this service, and most counties lack weed control programs.
 - d. *Feral Swine Funding*—Establishing base funding for feral swine eradication efforts is a priority, along with strengthening the laws and rules that govern feral swine.
 - e. *Plant Quarantine Laws*—The Oregon Department of Agriculture is developing legislative proposals that consolidate and update Oregon’s plant quarantine and weed control laws.
 - f. *Emergency Funding*—A concept to establish an emergency fund to ensure rapid response for new detections of invasive species.
 - g. *Sudden Oak Death Funding*—Funding for current and expanded Sudden Oak Death eradication in Curry County.
8. Host an Invasive Species Day at the Capitol during the 2009 Legislative Session, including booths from partner and advisory committee member organizations.
9. Invite the media to OISC field trips to discuss invasive species threats, problems, and prevention. Announce the findings of the summit (i.e., the report to the Governor) during this press tour, and seek opportunities to engage the Governor’s office.
10. Partner with Washington and Idaho invasive species councils and organizations in California to

share research results and leverage financial and staff resources.

11. Work with state and regional partners, including the invasive species councils of Idaho and Washington, as well as organizations in California, to develop regional policy recommendations.
12. Continue to work with the National Invasive Species Council on regional and national initiatives.
13. Support efforts to develop an online database of invasive species in Oregon, including photos and information on each species, that can be printed “on demand.”
14. Review the organizational structure of the Council to ensure we maximize efficiency and effectiveness.

Goal 2 — Funding

To ensure long-term sustainable funding and the development and use of an emergency fund to adequately address the threat of invasive species to Oregon’s economy, environment, and quality of life.

Oregon needs stable, flexible funding as well as emergency funding to address long-term monitoring, coordinated management, strategic control, and enforcement efforts. A statewide strategic plan is needed to prioritize strategies that lead to allocation and optimization of finite resources, focus on achievable problems, implement a state-led Early Detection-Rapid Response program, and differentiate between problems that are better dealt with at the state versus local levels. Existing funding restrictions limit staffing and outreach efforts and result in overreliance on volunteers and competition for resources in programs that are already stretched thin.

Action Items:

1. Explore opportunities to secure grants on an ongoing basis for the OISC.
2. When any level of funding is secured, seek opportunities to partner with other organizations to leverage those funds.
3. Strengthen the legislative statute relative to the financial and operational structure of the Council within the Oregon Department of Agriculture.
4. Conduct a crosscutting budget analysis on natural resource agencies’ spending on invasive species as part of a statewide assessment.
5. Explore opportunities to leverage state funding with industry and other sources to develop sustainable funding and an emergency fund that is replenished on a regular basis.
6. Support financial-based concepts during the 2009 legislative session:
 - *Border Inspection Station Funding*— Border check stations are being proposed in an effort to prevent the spread of zebra and quagga mussels and other aquatic invasive species.

- *Oregon County Weed District Funding*—Enforcement of noxious weeds is the responsibility of the counties (ORS 570); however no dedicated funding source has been established for this service, and most counties lack weed control programs.
- *Feral Swine Funding*—Establishing base funding for feral swine eradication efforts is a priority, along with strengthening the laws and rules that govern feral swine.
- *Emergency Fund*—Establishing an emergency fund to allow for rapid response to early detection of invasive species.
- *Sudden Oak Death Funding*—Funding for current and expanded Sudden Oak Death eradication in Curry County.
- Eradication policy option package for Oregon Department of Agriculture.
- Operating funds for the Oregon Invasive Species Council.
- Expansion of Natural Heritage Program to include invasive species.
- Enhanced support for Department of Environmental Quality ballast water program.
- Post-invasive species awareness and action campaign surveys
- Surveillance of aquatic nuisance species in the Columbia River.
- State Aquatic Nuisance Species Plan Coordinator

7. Support initiatives in the Governor’s Climate Integration Group Framework for Addressing Rapid Climate Change report, specifically:

- 6.7. Limit non-climate stresses, such as invasive species.
- Funding to conduct research on invasive species, particularly the implications of invasive species relative to agriculture and forestry (4.2.7).

Goal 3 — Policy

To identify gaps in Oregon’s legislation, and to promote new and enhanced regulations to protect Oregon from the spread of invasive species and new introductions.

Oregon lacks a comprehensive policy dealing with invasive species. Oregon relies on “after-the-fact” regulations, some existing laws may actually serve as barriers, and lack of market considerations in regulations hampers effectiveness. There is a lack of focus on pathways/vectors (i.e., Internet sales jurisdiction and/or enforcement), and there are overlapping enforcement jurisdictions, and gaps, or areas where jurisdiction has not been identified. “Boundary issues” are a result of geographical and political issues, and are compounded by conflicting interests, priorities, and authorities.

Action items:

1. Recommend to the Governor incorporating an ongoing forum for invasive species as part of his natural resources policy cabinet.
2. Support the passage of legislation during the 09'-11' legislative session that makes the sale or purchase of hunts for feral swine on public or private land illegal, and makes knowingly allowing feral swine to roam on private property illegal. Provide stopping authority and funding for aquatic invasive species border check stations (zebra and quagga mussels).
3. Support Department of Environmental Quality's task force recommendations to enhance the ballast water program.
4. Conduct a statewide assessment of invasive species.
5. Contribute to the development of an incident command system to respond to new invasive species.

Goal 4 — Public Awareness and Outreach

To instill in all Oregonians and those visiting or conducting business with the state an appreciation, awareness, and understanding of the threat invasive species has to Oregon's economy, environment, and quality of life, ultimately leading to actions that lessen the threat.

There is a need to develop clear messages about invasive species to specific target audiences. There are "entrenched constituencies" within the public, both "knowing and unknowing,"—i.e., some people like or value certain invasive species—and in general, the public lacks knowledge about invasive species and their effect on the environment. The public receives mixed confusing messages instead of definitive success stories that include clear, achievable, prioritized goals that focus on important areas and habitats that warrant protection in the immediate future, and that quantify the "do nothing" alternative, i.e., the impacts of invasive species. A social paradigm shift is necessary to obtain social acceptance of procedural activities to deal with invasive species. One group noted the importance of creating citizen-based tools to encourage monitoring and prevention.

Action Items:

1. Promote oregoninvasiveshotline.org via news releases, other websites, and via partner organizations.
2. Secure funding for, and then create, an interpretive display on invasive species.
3. Use the results of the Awareness Survey and Focus Groups to develop strategies and messages to connect with Oregonians on invasive species issues.
4. Continue to explore opportunities for the *Oregonian* to become engaged in invasive species issues.
5. Revive *Invasive Species Awareness Week*.
6. Develop base materials, including talking points, for OISC members to give presentations on

invasive species as part of a speaker's bureau.

7. Report SOLV weed pulls in 2009 as part of phase II of the awareness and engagement campaign.
8. Follow up initial survey results from phase I of the campaign to determine if people have gained awareness of invasive species efforts as a result of the campaign.
9. Host the annual awards banquet in February of 2009 in concert with the statewide early detection, rapid response program, and write a press release announcing award winners.
10. Improve local attendance at OISC meetings by advertising meetings in local media.
11. Develop consistent marketing of invasive species in Oregon by developing a committee of agency and academic representatives to mutually agree on templates for posters, pamphlets, websites, etc. related to outreach.

Goal 5 — Research and Monitoring

To promote systems, forums, and processes that result in efficient and cost-effective methods of research and surveillance of invasive species in Oregon.

Oregon needs a statewide baseline assessment and monitoring system; a transparent and logical risk assessment tool for prioritizing; an integrated database/information sharing system; best management practices; a forum to share information and research needs, science and best management practices; formulation of rapid response strategies for invasive species; a transparent and logical risk assessment tool for prioritizing; coordinated research in Oregon and regionally; and research that evaluates the potential impacts of invasives and development of control measures to eradicate or contain them.

Action Items:

1. Support the development of statewide invasive species surveys and an invasive species database through the Natural Heritage Program.
2. Support research on detection and surveillance of invasive species to better anticipate threats and strategically prevent their negative consequences.
3. Support the Marine Bioinvasives Conference in 2009.
4. Develop OISC guidelines for writing letters of support for research and monitoring of invasive species to ensure the mission, vision, and core values of the Council are considered.

Appendix A - Existing Management Infrastructure

Several planning efforts are already underway to protect Oregon from biological invaders. In addition, the state seeks to prevent the introduction of undesirable invasive species under existing and proposed (2009) regulations. The following efforts provide a solid foundation for mitigating the problem and help put the issue into context for conserving Strategy species and habitats.

✓ Invasive Species Action Plan—Prepared by the Oregon Invasive Species Council and updated occasionally, this Action Plan describes the 100 worst plants, animals and microbes threatening to invade Oregon and summarizes Council activities and educational outreach efforts of the previous year. In addition, the Action Plan reviews the legal roles of state agencies responsible for enforcing rules on invasive species rules and identifies gaps in legal authority. In 2008, the Action Plan will be replaced with a one-year business plan, followed by a longer-term (5-year) strategic plan.

✓ Invasive Species Report Card—Each year the Oregon Invasive Species Council evaluates the state's progress in preventing the entry and establishment of invasive species on the list of 100 worst offenders. The Council's report card also summarizes key interceptions of invasive species, important developments in other states and Council activities during the previous year.

✓ 100 Worst List—Prepared by the Oregon Invasive Species Council and updated annually, this list describes the 100 worst plants, animals, and microbes threatening to invade Oregon.

✓ Oregon Noxious Weed Strategic Plan—Developed in 2001 with oversight from the Oregon Department of Agriculture, this plan is the outcome of a working group convened to increase public awareness of noxious weeds and make strategic recommendations for their effective management. The Plan details the geographic and economic scale of the noxious weed problem in the Oregon. Most importantly, the Plan spells out 10 specific objectives and strategies intended to help stakeholders effectively manage noxious weeds across the state.

✓ Oregon Aquatic Nuisance Species Management Plan—This plan, developed by Portland State University—Center for Lakes and Reservoirs, addresses the ecological and economic implications of non-native organisms in Oregon's marine, estuarine, and freshwater ecosystems. The plan recommends six objectives, including improvements to the coordination of interagency management efforts, emphasis on prevention, early detection and eradication of new aquatic invasions and the importance of education. Gaps in capacity and programs are identified, as are specific strategies for achieving the objectives and the government agencies associated with their implementation. This 2001 plan is being updated in 2008.

✓ Ballast Water Management Administrative Rules—In 2001, the Oregon legislature passed a bill restricting ballast water discharges in Oregon's waters, thereby reducing introductions of non-native, potentially harmful aquatic organisms. Ballast water is a key vector for the arrival of new species and accounts for a disproportionate number of aquatic nuisance species now inhabiting the Lower Columbia River. The Oregon Department of Environmental Quality enforces rules on ballast water discharge, including mandatory, pre-arrival reporting of open sea exchanges of ballast water for most vessels.

✓ Wildlife Integrity Administrative Rules—The Oregon Department of Fish and Wildlife enforces rules regulating the importation and possession of non-native wildlife species to protect native wildlife from the harm they might cause. As many as 96 non-native fish and wildlife species are known to occur in the state, and 62 percent have established breeding populations in the wild. Non-native wildlife can be a detriment to native species by competing for limited resources, cross-breeding and compromising genetic integrity critical to evolving new survival strategies in natives, carrying diseases and damaging important

habitat. Rules are in place for non-native wildlife classified as in prohibited, controlled, and noncontrolled lists. Exemptions exist for domestic and farm animals.

✓ Oregon Conservation Strategy—This statewide strategy focuses on habitat restoration and maintenance to address the needs of Oregon’s wildlife species. The strategy:

- o highlights specific actions that can conserve Oregon’s fish and wildlife when the chances of success are greatest;
- o provides information about species and habitats in every region in Oregon, and the issues affecting their present and future health;
- o provides practical information for landowners and land managements, agencies and organizations, and individuals;
- o is a cost-effective approach to conservation.

✓ Pest Risk Assessments — The OISC, Portland State University, Oregon State University, and Oregon Department of Agriculture have evaluated the risk of establishment and potential impacts of several invaders, including Feral Swine, Monk Parakeet, Chinese Water Spinach, Japanese Beetle, Sudden Oak Death, Butterfly Bush, Saltmeadow Cordgrass, and many other species.

✓ Other documents and governing bodies that deal with elements of invasive species—The Oregon Plan for Salmon and Watersheds (State of Oregon), West Coast Governor’s Agreement, Noxious weed rules (Oregon Department of Agriculture), forest pest statutes and rules (Oregon Department of Forestry), and the State Weed Board have elements of invasive species goals and objectives.

✓ Adjacent states and their efforts—The states of Washington and Idaho have invasive species councils. California has an invasive plant council and an invasive species program within the Habitat Conservation Branch of the California Department of Fish and Game. The State of Washington has conducted a statewide assessment and is in the midst of completing their first invasive species strategic plan. Idaho held an invasive species summit in 2004, has completed a statewide assessment, and completed an invasive species action plan in 2005.

✓ Local Efforts —Numerous counties, municipalities, and other local governments are actively working to control and eradicate invasives.