Oregon Statewide Strategic Plan for Invasive Species

2017-2027

DEVELOPED BY
Statewide Strategic Plan Working Group of the Oregon Invasive Species Council

"Invasive species funding should be viewed as an absolutely necessary investment to prevent incurring catastrophic losses to Oregon's economy.

"The costs of damaged infrastructure, including hydropower facilities, would be staggering if dreissenid mussels (zebra and quagga mussels) become established in the Columbia River watershed."

– JAS. JEFFREY ADAMS

Figure 1: State and Federal employees check the underside of a boat at Diamond Lake in Oregon on June 10, 2008 for aquatic invasive species. Boats moving from waters infested with aquatic invasive species threaten Oregon's water resources. Without proper cleaning procedures or treatment, boats can move invasive mussels or aquatic weeds between water bodies. Inspection stations at border entry points are a critical prevention strategy to protect Oregon's resources. Credit: © Bob Nichols, United States Department of Agriculture

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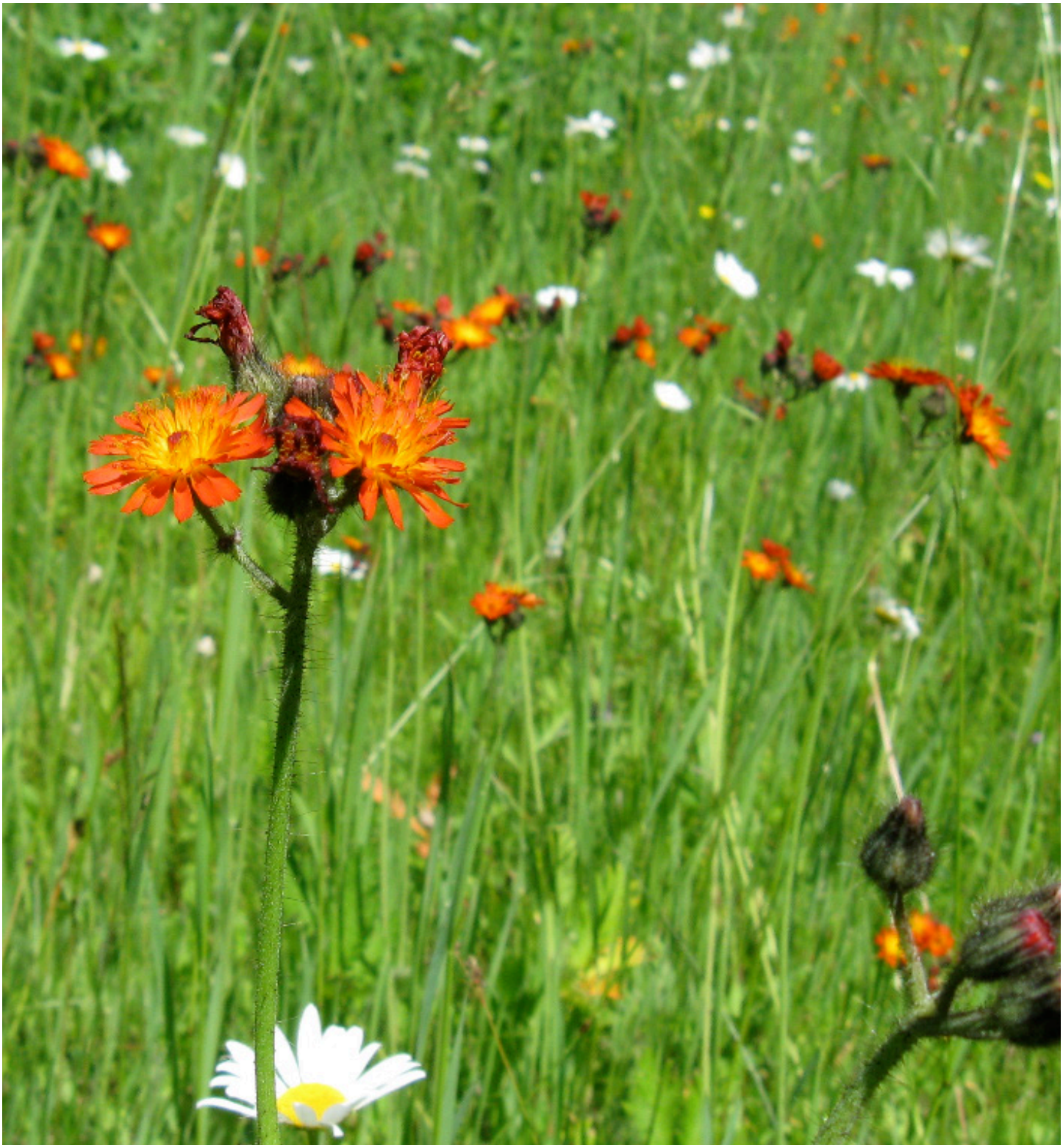

Figure 2: Orange hawkweed's vibrant colors are deceiving. This invasive plant is not a welcome wildflower. Orange hawkweed is one of multiple invasive hawkweeds that create dense mats along roadsides and in pastures and fields, replacing our native Oregon plants and lowering the value of grasslands for grazing animals.
Credit: © Dan Sharrat, Oregon Department of Agriculture

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Figure 3: The Painted Hills are counted as one of the "seven wonders of Oregon" and valued for their cultural significance. The Painted Hills are but one of many important landscapes needing protection from invasive species.
Credit: © Adam Simmons

MESSAGE FROM THE COUNCIL

Dear Oregonians,

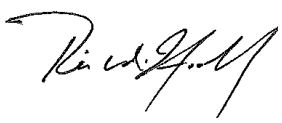
Our state has much to protect. From our coast to our forested mountain ranges, to the rich agricultural valleys, flowing rivers, and high desert rangelands, Oregon is defined by our natural resources and working landscapes.

Increasingly, invasive species - whether introduced by deliberate or unintended actions - present one of the most serious current threats to our economy, ecosystems, infrastructure, and natural heritage. Some nuisance species have already caused significant economic and environmental damage in Oregon, but many others are knocking at our door. Waiting to react to new invaders after they have already become established is an ineffective and costly gamble that Oregon cannot afford to take.

To tackle these ongoing threats, we are pleased to present this statewide strategic plan for invasive species management in Oregon. This plan is the product of the input and engagement of many colleagues across the state working to protect Oregon from invasive species. The plan is organized around key invasive species management objectives that are meant to guide a comprehensive approach over the next ten years, from the perspective of the entire state, not just the Oregon Invasive Species Council or any other single agency. Such a perspective is not only statutorily mandated, but also reflects the reality that successful resistance to invasive species is dependent on a comprehensive and collaborative approach.

In issuing this statewide strategic plan, the Council reaffirms its dedication and commitment to prevent and mitigate the harm caused by invasive species in Oregon. We are certain that the plan will advance progress in protecting Oregon from the adverse and often irreversible impacts of biological invasions for the benefit of all of our fellow Oregonians.

Respectfully,



Rian vanden Hooff
2016 Chair, Oregon Invasive Species Council (OISC)

Jas. Jeffrey Adams
Chair, OISC Strategic Plan Working Group

Figure 4: Brett Brownscombe, one of the Governor's Natural Resources Policy Advisors, moderates a panel discussion about invasive species priorities among natural resource agency leads and Oregon Invasive Species Council (OISC) representatives. The OISC hosted a summit in September 2016 to bring together decision-makers and invasive species professionals to network and provide input into the statewide strategic planning process.
Photo: © Jessica Riehl, Samara Group

EXECUTIVE SUMMARY

As globalization increases and the world becomes more accessible, invasive species pose a threat to key sectors of Oregon's economy that depend upon natural resources and native ecosystems. Agriculture, forestry, tourism, and water resource infrastructure, including hydropower facilities, are at serious risk of being adversely impacted by invasive species. Because invasive species are a constant threat and the pressure is unrelenting, proactive and coordinated management is necessary to sustain Oregon's working landscapes and economic viability. Unchecked, invasive species individually and collectively have the potential to imperil public health and transform ecosystems, resulting in widespread economic and environmental devastation. Once introduced and established, many invasive species cannot be eradicated, and the invasion itself becomes irreversible.

In addition, millions of species could be harmful to Oregon in ways we have not begun to assess. Preventing new introductions of invasive species, and removing and managing existing invasive species, require constant vigilance. This task is possible only with the active cooperation of a strong network of diverse partners.

In 2001, the Oregon Legislature established the Oregon Invasive Species Council ("OISC" or "Council") to conduct a comprehensive and coordinated effort to prevent, detect, control and eliminate invasive species harming the region's economy, health, and natural resources. The Council's governing statute also acknowledges the robust network of stakeholders that helps with the work of the Council: "The Invasive Species Council has a strong network of local, state, federal, tribal and private entities that actively and cooperatively combat the threat posed by harmful invasive species." ORS 570.750(4). Incorporating input from a broad stakeholder network in this plan and the accompanying action plan has provided the basis for recommendations that are both sound and strategic.

Figure 5: Nicole Brooks, Customs and Border Protection Officer and Oregon Invasive Species Council Member, facilitates a small group discussion about statewide strategic planning and immediate actions that should be prioritized to achieve our common goals during the 2016 Invasive Species Summit.
Credit: © Jessica Riehl, Samara Group

Summary of Objectives

I. Prevention

It is critical that we prevent the introduction and establishment of invasive species. Our strategies include endorsement of pathway management, enhancement of law enforcement, promotion of research, sharing of best management practices, and engagement in cooperative partnerships.

II. Early Detection & Rapid Response

Our next line of defense from invasive species establishment is early detection of entering or small populations and capacity to rapidly and effectively respond. Our strategies include collaborative networks of detectors and responders, promotion of risk evaluation, facilitation of rapid response teams, and ensuring local species prioritization.

III. Control & Management

It is necessary to contain, control, and manage invasive species, once established in Oregon, for long-term protection of our resources. Our strategies include containment, management along pathways in and out of affected areas, increasing funding and resources dedicated to our long-term protection of resources, identification of new eradication methods, and integration of a systems approach to ensure ecosystem recovery and resilience.

IV. Education & Outreach

Every Oregonian shares responsibility for protecting Oregon from invasive species. Our strategies include increasing awareness for all Oregonians, which includes leveraging partner resources, coordinating educational materials, building public support, and involving historically underrepresented audiences.

V. Coordination & Leadership

Invasive species do not abide by political or jurisdictional boundaries and management efforts are not centrally organized. Our strategies include maintaining an information clearinghouse, facilitating communication networks, ensuring adequate funding is available for management efforts, engaging in collaborative planning with diverse stakeholders, evaluating effectiveness, and coordinating closely with State of Oregon officials.

Figure 6: Wheat field in Marion County, Oregon. Wheat field crops in Oregon were valued by the USDA at over $215 million[1], and wheat was six in the list of Oregon's top 20 commodities in 2015.
Credit: © Ian Sane, via Flickr

The Problem of Invasive Species

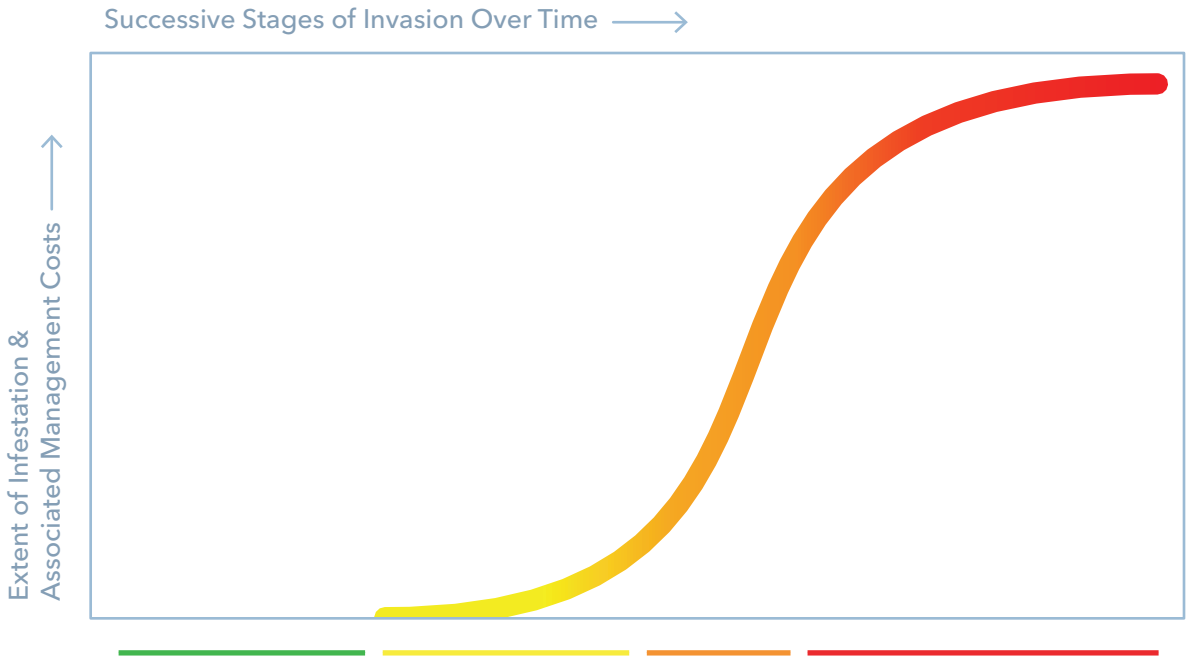
As globalization increases and the world becomes more accessible, invasive species pose a threat to key sectors of Oregon's economy that depend upon natural resources and native ecosystems. Agriculture, forestry, tourism, and water resource infrastructure, including hydropower facilities, are at serious risk of being adversely impacted by invasive species. Because invasive species are a constant threat and the pressure is unrelenting, proactive and coordinated management is necessary to sustain Oregon's working landscapes and economic viability.

> Invasive species are defined as "non-native organisms [plants, animals, and microbes] that cause economic or environmental harm and are capable of spreading to new areas of the state."
>
> –ORS 570.750

Invasive species are defined by Oregon Statute as "non-native organisms that cause economic or environmental harm and are capable of spreading to new areas of the state." ORS 570.750. Although only a small fraction of non-native species (including plants, animals, and microbes) are destructive, the economic losses caused by invasive species have proven to be extremely costly in affected states. In the absence of effective prevention, invasive species represent a form of biological pollution that can spread exponentially. Once established, a single invasive species (for example, English ivy) can cost millions of dollars in lost economic activity, in addition to requiring millions more for control and management[2].

Unchecked, invasive species individually and collectively have the potential to imperil public health and to transform ecosystems, resulting in widespread economic and environmental devastation. Attempts to restore damaged resources can be extensive and expensive. Invasive species disrupt the ability of Oregon industries to market their products or services, causing loss of business and existing jobs. Once introduced and established, many invasive species cannot be eradicated, and the invasion itself becomes irreversible. For all those reasons, it is critical that the state of Oregon invest in effective invasive species interventions.

The Invasive Species Curve



	Prevention	Eradication	Containment	Long Term Management
Population:	Not present in Oregon	Small localized	Rapid increase	Widespread and abundant
Strategy:	Most effective and inexpensive point of intervention	Eradication most feasible with rapid response protocols	Eradication feasible with abundant resources	Eradication unlikely; long term sustained resources needed to limit effects and protect resources

Figure 7: This diagram, derived from several depictions of the invasive species curve, was created by the Oregon Invasive Species Council to help managers understand how to assess the risk presented by different stages of invasion.

Figure 8: Shipping in Portland, Oregon. In 2015, Vigor Industrial received the "Protecting Northwest Industry Award" for notifying the Oregon Department of Environmental Quality of contaminated ballast water in their newest drydock[3], the Vigorous (pictured above). Credit: © Jessica Riehl, Samara Group

Pathways into Oregon

We live in a time in which commerce from every corner of the globe crosses our state borders and enters into Oregon. Travel, transportation, movement of goods and trade across Oregon borders are every-day occurrences. The market for international and domestic goods enhances the risk that certain pests will enter the state. In balancing limited resources, invasive species managers struggle to resist the constant pressure created by various species known to present serious risks to Oregon. Millions of species could be harmful in ways we have not begun to assess. Preventing new introductions of invasive species and removing and managing existing invasive species requires maintaining constant vigilance, which in Oregon is aided by the active cooperation of diverse partners. Local, state, federal, tribal, and private organizations must work together to monitor the human-induced and environmental pathways by which invasive species move into and within Oregon.

"In simple terms, a pathway is the way in which an invasive species enters into and moves about within Oregon."

–SHAWNA BAUTISTA, US FOREST SERVICE,
2016 OREGON INVASIVE SPCECIES COUNCIL MEMBER

Understanding Pathways

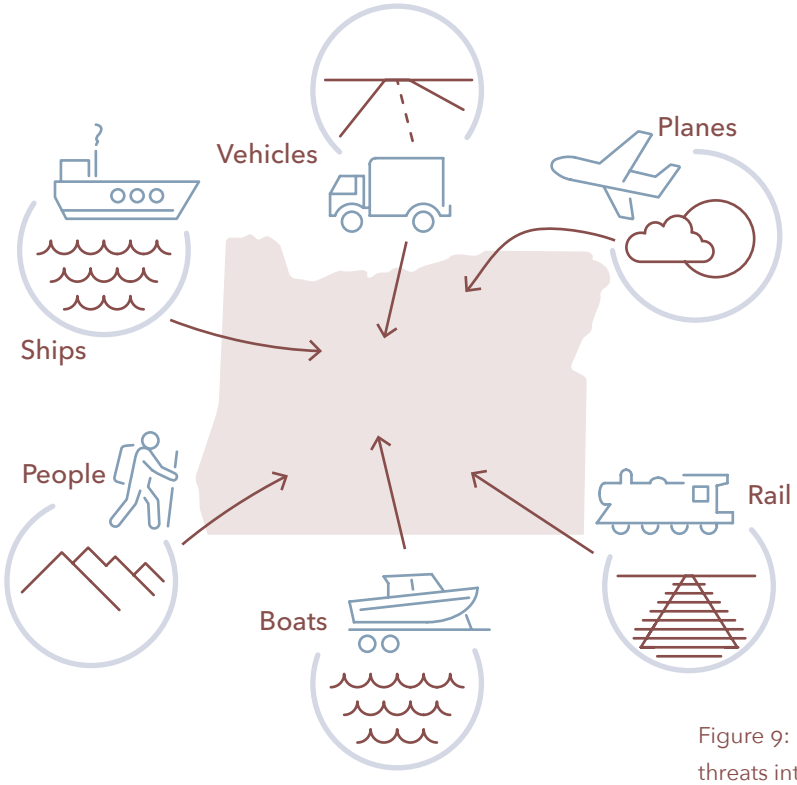


Figure 9: Understanding pathway threats into and within Oregon.

A pathway is the way in which an invasive species enters into or moves about within Oregon. There are many different pathways and vectors for introduction and movement, including **human activity** (e.g., trade, industry, recreation), **transport** (e.g., boats traveling on a trailer, vehicle tires, hiking boots), and varying **environmental systems** (e.g., wind, water movement, erosion)[4]. Some pathways and invasive species threats are well understood, although there are many that could be harmful in ways as yet unknown.

Oregon is strategically implementing a **Pathways Management Approach** that includes assessment, evaluation, and collaboration to address threats across complex pathway variables. Pathways management provides a common leverage point for intervention and diverse partner cooperation.

Example of Invasions

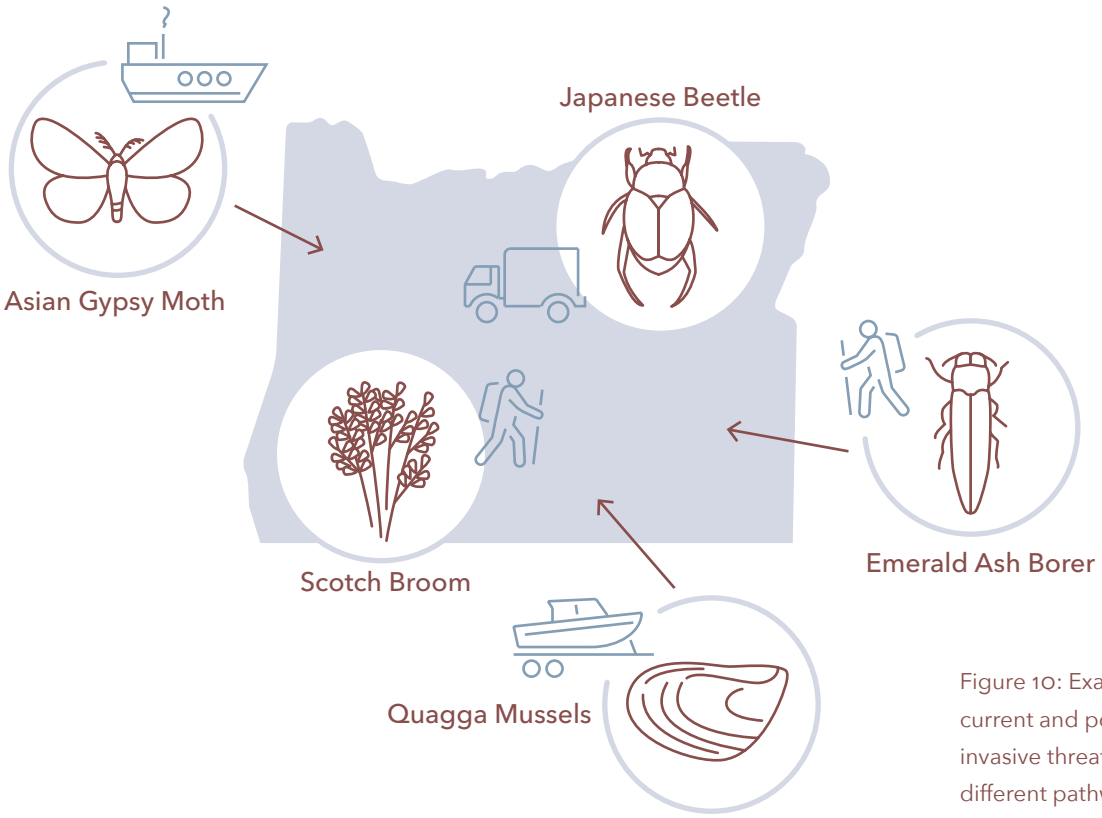


Figure 10: Examples of current and potential invasive threats along different pathways.

To maximize the efficacy of a **Pathways Management Approach** for invasive species, it is helpful to examine the ways in which invasive species move into and throughout Oregon. There is a corresponding feature story under each of the objectives to demonstrate pathways, invasive species threats, and current efforts in Oregon. The objective of this plan is to develop collaborative and cooperative strategies to manage both pathways and species-specific threats.

Oregon's Invasive Species Champions: Public & Private

There is no one central authority for managing invasive species. State agencies, federal agencies, non-governmental organizations, private entities, and regional organizations all play critical roles in controlling identified invasive species, monitoring specific pathways (e.g., shipping & ballast water, trade & cargo) and protecting major sectors of Oregon's economy (e.g., agriculture, forestry). On the state level, each Oregon agency with a major invasive species program has a separate statutory role or mission.

The Oregon Invasive Species Council's role is to convene and coordinate Oregon's leaders engaged in invasive species issues. The statutory responsibility of the OISC as a state agency is to engage in a comprehensive planning effort that focuses on a coordinated, statewide perspective. That focus on statewide strategic planning also distinguishes the Council's role from the roles of other agencies.

For a list of invasive species leaders in Oregon and information about how to get involved with the Council, visit the OISC website[5].

Oregon Invasive Species Council

In 2001, the Oregon Legislature established the Oregon Invasive Species Council to conduct a comprehensive and coordinated effort to prevent, detect, control, and eliminate invasive species harming the region's economy, health, and natural resources.

The Oregon Legislature specified in ORS 570.755 several mandatory responsibilities for the OISC:

1. **Maintaining an invasive species hotline for public reporting (see www.oregoninvasiveshotline.org or 1-866-INVADER)**
2. **Educating the public about invasive species**
3. **Developing a statewide plan for invasive species**
4. **Providing grants or loans for educational projects or eradication efforts**

The Council is comprised of 17 members: five represent state natural resource agencies with significant statewide invasive species management programs, two represent higher education institutions involved in invasive species research and education, and ten at-large members are drawn from diverse stakeholder groups, including non-governmental organizations, industry, education, and federal, regional, and local government partners. Council operations are supported by a coordinator and are dependent on a combination of state-appropriated funds, grant funding and contributions from partnering groups/agencies.

The Council administers an emergency control fund that is intended to provide resources necessary for rapidly responding to new invasive species discovered within the state. Originally, this fund was proposed as a $5 million dollar bond resource that the state could access for quick deployment of control and containment resources. The emergency control fund was established in 2009 with $350,000 and has since been used very sparingly in order to conserve the fund for true emergencies.

INTRODUCTION

The Oregon Legislature required the Council to produce a statewide plan for invasive species and simultaneously declared the Council to be a "leader for the conducting of a coordinated and comprehensive effort" to prevent the entry of invasive species. In 2015, the OISC initiated the task of consolidating its previous plans in order to develop a comprehensive Statewide Strategic Plan for Invasive Species.

Oregon Invasive Species Council Timeline

1999 National Invasive Species Council established by Executive Order (EO) 13112

2001 Oregon Invasive Species Council (OISC) formed by the Oregon Legislature

2005 The Council developed the "Oregon Invasive Species Action Plan." The first of its kind for Oregon, this plan described Council members' roles and responsibilities for the state and identified the top 100 most dangerous invaders threatening Oregon[6].

2010 The Council produced the "Statewide Management Assessment of Invasive Species in Oregon[7]." This Assessment report provided a detailed description of the state of invasive species in Oregon, including economic implications, and it included survey results from stakeholders across the state, and twelve prioritized recommendations for the Council to enhance invasive species management efforts in the state.

2012 The Council produced an updated "Oregon Invasive Species Council Action Plan" for 2012 – 2016[8]. This document included a four-year action plan for council-specific activities and five goals: coordination/cooperation, funding, policy, public awareness and outreach, and research and monitoring.

2015 Statewide Strategic Plan for Invasive Species
The Council began the planning process in September of 2015 to develop a combined statewide strategic plan and action plan with the five objectives: Prevention, Early Detection & Rapid Response, Control & Management, Education & Outreach, and Coordination & Leadership.

Figure 11: Ivy pull volunteers in the Tualatin River watershed. High school student volunteers pose for a photo after pulling ivy during Tualatin's Put Down Roots annual holiday weed pull and tree planting in 2015.
Credit: © Jessica Riehl, Samara Group

Statewide Strategic Plan

This Statewide Strategic Plan for Invasive Species ("Statewide Strategic Plan") is informed by the terms 'statewide' and 'coordinated and comprehensive' set forth in the Oregon statutes to describe the Council's role in protecting Oregon from invasive species:

> "The Invasive Species Council shall "[d]evelop a **statewide** plan for dealing with invasive species. The plan should include, but need not be limited to, a review of state authority to prevent the introduction of invasive species and to eradicate, contain or manage existing invasive species." ORS 570.755(2)(f) (emphasis added).

> "The Invasive Species Council is a leader for the conducting of a **coordinated** and **comprehensive** effort to prevent the entry of invasive species into this state and to eliminate, reduce and mitigate the effects of invasive species present in this state." ORS 570.750(3) (emphasis added).

This statewide strategic plan sets forth long-term strategies over a period of 10 years. Every two years, the Council will produce an updated action plan to guide implementation of the statewide strategic plan by Oregon agencies and other entities involved in invasive species control. The original planning process spanned 15 months of collaborative effort among Council members, the Council's Advisory Group, stakeholders, and other entities engaged in invasive species issues.

The Council's governing statute also acknowledges the stakeholders that support the overarching mission of invasive species control: "The Invasive Species Council has a strong network of local, state, federal, tribal and private entities that actively and cooperatively combat the threat posed by harmful invasive species." ORS 570.750(4). Collaborative planning and sharing of expertise produces recommendations that are robust and also more likely to be implemented.

Objectives

The 2017-2027 Statewide Strategic Plan for Invasive Species is organized around the following five Objectives:

I. Prevention

- Prevent the introduction and establishment of invasive species to reduce their impact on the environment, economy, and health of Oregon.
- Maintain exclusion of harmful invasive species.

II. Early Detection & Rapid Response

- Strengthen and expand the capacity to identify, report, and effectively respond to newly discovered invasive species of all taxa.

III. Control & Management

- Minimize the harmful impacts of established invasive species populations through containment, reduction, and effective management.
- Prevent the spread of established invasive species.

IV. Education & Outreach

- Ensure all Oregonians have an understanding of the impacts of invasive species and what role they can play in preventing and controlling invasive species.

V. Coordination & Leadership

- Maximize cross-organizational effectiveness and collaboration.
- Coordinate a comprehensive invasive species network in the state and region to deal with invasive species spanning jurisdictional boundaries.
- Leverage funding opportunities and elevate the understanding of threat and risks of invasive species.

OBJECTIVE I

Prevention

- **Prevent the introduction and establishment of invasive species to reduce their impact on the environment, economy and health of Oregon.**
- **Maintain exclusion of harmful invasive species.**

Numerous human-mediated pathways lead into the state, including global modes of transport via air and water, trade across state lines, highways, personal travel and tourism. Prevention is the most effective point of intervention: intercepting an invasive species threat before it causes economic and/or environmental harm.

Some invasive species pathways are well-known, given the experience of other states. Predicting whether a species from outside Oregon will represent an invasive threat for Oregon is not, however, as simple as identifying a particular species that has caused detrimental impacts in other regions. New invasions by different species may use the same pathways to gain entry into Oregon. Rather than focusing efforts on one species at a time, it is more effective and economical to invest in pathway-based prevention strategies.

Figure 12: A maginified view of Quagga mussels on a marina support structure now above the waterline. Credit ©: J. N. Stuart via Flickr.

Prevention Strategies

1. Endorse pathway management to prevent introduction and establishment of new species into Oregon and to contain further spread of invasive species established within geographically-limited areas of Oregon.

2. Enhance enforcement by Oregon agencies of existing legal authorities that prevent introduction and spread of invasive species; evaluate changes needed to incorporate pathway approach into existing legal authorities.

3. Promote research on advantages of pathway approach; recommend prevention actions that utilize a pathway approach.

4. Identify, compile, and share best management practices (BMPs) for pathways by which invasive species enter Oregon and move about within the state.

5. Engage in cooperative partnerships at the local, national, and regional levels to aid in effective prevention.

FEATURE 1:

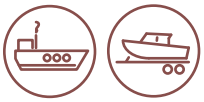
Zebra and Quagga Mussels

Situation: Zebra and quagga mussels form dense freshwater colonies that attach to nearly any submerged surface. These colonies obstruct water pipes, underwater equipment, and cause extensive environmental damage to ecosystems. Management techniques are costly and do not effectively eradicate species.

Impact: Hydropower and drinking water infrastructure, irrigation pumps, recreational boating and ecosystem decline.

Cost: "The estimated [one-time] cost for a hypothetical zebra mussel mitigation strategy… at 13 select hydroelectric projects [in the Columbia River Basin], was $23,621,000[9]."

Pathways: Transported through ballast water and movement of equipment from water bodies with mussel populations.



Prevention: Thorough inspecting, cleaning, and drying of potentially contaminated watercraft. Operation of five boat inspection stations by the Oregon Department of Fish and Wildlife.

Fact: In 2015, Oregon Department of Fish & Wildlife's Watercraft Inspection Team, funded by the Oregon State Marine Board, inspected over 12,000 boats for invasive species and decontaminated 269 watercraft carrying aquatic invasive species. Eighteen of those watercraft had invasive mussels.

OBJECTIVE II

Early Detection & Rapid Response (EDRR)

- **Strengthen and expand the capacity to identify, report and effectively respond to newly-discovered invasive species of all taxa.**

When invasive species arrive in Oregon, it is critical that they be detected early. Equally important, there must be sufficient resources and capacity available to deploy quickly and effectively to eliminate or contain the invasion.

Non-native plants, animals and microbes arrive in Oregon through many different pathways. Although only a small number may become invasive, quick action is essential to eradicate individuals while the population is small. Unchecked, invasive species can reproduce very quickly, often with devastating effects. Without sufficient resources to rapidly eradicate or contain newly discovered species within the state, the economic and environmental effects of established invasive species can be extreme, long-lasting, and irreversible.

To prevail against the constant and unremitting invasive species pressure, we must strengthen and expand the capacity to identify, report and effectively respond to newly discovered invasive species of all taxa. But because a species-specific process can significantly slow down the response, an approach that focuses on pathways is more flexible and more likely to stop a new invasive species from becoming permanently established.

Figure 13: Adult Japanese beetles feeding on roses. Credit: Whitney Cranshaw, Bugwood.org

Early Detection & Rapid Response (EDRR) Strategies

1. Develop diverse early detection and rapid response networks emphasizing pathways, cross-jurisdictional partnerships and sharing information.

2. Promote research that evaluates risks of emerging invasives and identifies current best practices for early detection and rapid response.

3. Facilitate comprehensive development of rapid response plans and capacity of collaborative response teams.

4. Support targeted survey and monitoring efforts that uses a pathway analysis.

5. Support local prioritization of species of concern related to environments at risk and the pathway management approach.

FEATURE 2: Japanese Beetle

Situation: Japanese beetles have been found multiple times in Oregon and each time were eradicated successfully. The beetles have caused extensive damage on the East coast. They consume over 300 different plant species. If they establish in Oregon, homeowners and crop producers would experience ongoing defoliation events, rising pest control costs, and increased pesticide use.

Impact: Ornamental and agriculture plants, commercial crops, turf grass.

Cost: "If Japanese beetle becomes established in Oregon…the economic impact to all crops, commodities, and other related businesses could be over $34 million[10]."

Pathways: Transported via cargo trucks and planes coming from infested parts of the eastern U.S. and through human movement of soils and plants containing beetle larvae.

EDRR: Oregon Department of Agriculture has traps placed throughout Oregon, which they regularly monitor for insect species. In the summer of 2016, 372 Japanese beetles were found in these traps in NW Portland, indicating the presence of a breeding population.

OBJECTIVE III

Control & Management

- **Minimize the harmful impacts of established invasive species populations through containment, reduction and effective management.**
- **Prevent the spread of established invasive species.**

Many non-native species have made their way into Oregon and become established within discrete areas. It is important to control the invasion through containment and reduction in order to minimize the harmful impacts of well-established invasive species populations. The function of control and management is to limit the spread of established invasive species and simultaneously explore new ways to eradicate the invasive species from Oregon.

Some non-native species have been identified as dangerous invasive species, because they are destructive to Oregon crops or other resources. Invasive species may cause economic, structural and environmental harm and can be spread via a variety of common pathways to other places in Oregon.

Figure 14: Scotch broom and French broom infestation, South Jetty, Florence, OR. Credit ©: Eric Coombs, Oregon Department of Agriculture.

OBJECTIVE III

Control and Management Strategies

1. Control spread of invasive species once established in Oregon focusing on pathways into and out of affected areas.

2. Identify and secure sufficient funding for effective invasive species control.

3. Evaluate existing control methods, prioritize efforts, and identify new techniques for greater control and efficacy of management.

4. Ensure ecosystem recovery processes are an essential component of control and management treatments to restore resilience in the system and reduce need for on-going management.

FEATURE 3:
Scotch Broom

Situation: Scotch Brrom was orginally introduced to Oregon as an ornamental and to stablize stand dunes. It produces thousands of long-lived seeds and establishes quickly in disturbed areas. These traits allow it easily to infest landscapes displacing native species. In 2014, it was estimated to cover 1,500,000 acres of Oregon; eradication is highly unlikely.

Impacts: Native plant and habitat loss, labor intensive removal.

Cost: Total loss of economic activity in Oregon valued at $39 million[11].

Pathways: Transported on the shoes of people walking through infested areas, movement of soil, and on the tires of off-road vehicles.

Control & Management: Unwanted populations require labor-intensive mechanical removal of the entire plant and use of broad-spectrum herbicides. The introduction of beetles endemic to Scotch Broom's native range has been shown to decrease seed production and plant productivity, which help limit the further spread of the plants.

OBJECTIVE IV

Education & Outreach

- **Ensure all Oregonians have an understanding of the impacts of invasive species and what role they can play in preventing and controlling invasive species.**

Every Oregonian shares responsibility for protecting Oregon from invasive species. To increase public awareness, education and outreach is critical. To protect Oregon from invasive species, the general public must understand the wide-ranging impacts of invasive species and the role that we each play in preventing and controlling invasive species. Outreach to diverse audiences, coupled with inclusive engagement on a variety of issues, will help to achieve and sustain the goals outlined in this plan.

Figure 15: Nearly mature Emerald ash borer larva feeding on cambium, the internal tissue of a tree. This destructive forest pest causes defoliation and death of ash trees in 22 states. Credit ©: David Cappaert, Bugwood.org

OBJECTIVE IV

Education & Outreach Strategies

1. Expand awareness of invasive species through improved communication tools that effectively reach the Oregon public and messaging that resonates with Oregonians.

2. Collaboratively develop educational materials with network partners to pool expertise and resources.

3. Promote focused, inclusive outreach and engagement to build public support and involvement among historically under-represented audiences.

FEATURE 4:

Emerald Ash Borer

Situation: Emerald ash borers are damaging ash trees in 22 states, causing complete defoliation and tree death. It has been identified as the most destructive forest insect in recent history. Infected trees can be difficult to identify and treat, making eradication or control difficult.

Impacts: Defoliation, tree loss, reduced property value, costly removal.

Cost: $49 million, the estimated cost to replace public ash trees in Portland, Oregon[12].

Pathways: Transported via moving infested wood such as for firewood or wood products.

Education & Outreach: A nationally targeted outreach campaign called "Don't Move Firewood" is designed to keep Emerald ash borer and other wood-residing invasive species from invading pristine areas through movement of firewood.

OBJECTIVE V

Coordination & Leadership

- **Maximize cross-organizational effectiveness and collaboration.**
- **Coordinate a comprehensive invasive species network in the state and region to deal with invasive species spanning jurisdictional boundaries.**
- **Leverage funding opportunities and elevate the understanding of threat and risks of invasive species.**

Invasive species do not abide by political or jurisdictional boundaries. Moreover, at the current time, responsibility for invasive species management in the United States is not centrally organized or coordinated. Rather, authorities and duties are typically formulated for each specific level and jurisdiction of government. Thus, it is essential that all governmental efforts be coordinated to maximize cross-organizational effectiveness, identify gaps and redundancies, and maintain a comprehensive invasive species network in the state and region.

Figure 16: The 2016 Asian gypsy moth inter-agency eradication team including both state and federal partner organizations.
Credit ©: Thomas Sheehan, Oregon Department of Agriculture

OBJECTIVE V

Coordination & Leadership Strategies

1. Establish and maintain an online information clearinghouse for invasive species.

2. Facilitate communication networks for sharing information and responding to invasive species threats.

3. Ensure adequate funding is available to effectively prevent, control, and manage the introduction and spread of invasive species.

4. Engage in collaborative planning to prioritize efforts

5. Evaluate effectiveness of current invasive species programs and make recommendations for improvement.

6. Coordinate invasive species issues among state agencies with guidance from the Governor's Natural Resource Office

FEATURE 5:

Asian and European Gypsy Moth

Situation: The Asian gypsy moth is closely related to the European gypsy moth, a well known pest in the eastern United States. The European gyspy moth has been known to defoliate as much as 12.9 million acres of forest in the eastern United States in one year. The Asian gypsy moth females have the capability to fly, allowing them to disperse faster than the European gypsy moth.

Impacts: Defoliation, nursery stock quarantines, water quality, human health.

Cost: If a quarantine were to be put in place due to contaminated nursery stock it would adversely and seriously affect the $830 million dollar nursery industry and the $104 million dollar Christmas tree industry[13].

Pathways: Transported via egg masses on international and domestic cargo.

Coordination and Leadership:
In 2016, ODA conducted an extensive outreach and educational campaign to inform residents of Portland about an upcoming eradication. The highly effective campaign combined art, participatory process, stakeholder engagement, design workshops, and on-the-ground outreach to help residents understand the impact of treatment.

Figure 17: Garlic mustard removal along Skyline Boulevard in NW Portland. Collaborative detection and rapid response efforts have been critical to the success of controlling and containing an aggressive noxious weed across a patchwork of private property. Credit: © Michelle Delepine, West Multnomah Soil and Water Conservation District

MOVING FORWARD

The Pathway Approach

The unrelenting threat of invasive species is daunting, but implementing strategic management actions will in some cases prevent, and in most other cases significantly reduce the adverse impacts on Oregon's economy and environment. Rather than basing invasive species defense on ad hoc reactive responses alone, more efficient and cost-effective invasive species management approach will require instituting proactive prevention programs and building sustained responsive capacity. With so much at stake, it is imperative that we come together as a state to protect Oregon's economy, agriculture, natural resources, and overall health.

Collaboration

The function of the Statewide Strategic Plan for Invasive Species is to articulate cohesive objectives, strategies, and coordinated actions to synergize invasive species programs throughout the state over the next 10 years. The Statewide Action Plan includes a list of recommended actions from the Oregon Invasive Species Council for all levels of government in Oregon[14], as well as NGOs, industry partners, and diverse stakeholders. The recommendations are particularly aimed at Oregon's key invasive species decision-makers, managers, researchers, and educators. They are intended to be implemented at some point during the 10-year span of the Statewide Strategic Plan in order to meet the Objectives.

Summary of Strategic and Action Plans

The recurrent theme of the Statewide Strategic Plan is the need for top-down support of invasive species programs with increased funding and enhanced capacity, effective coordination across jurisdictions, and an increased awareness and sense of personal responsibility from the public. With coordinated and comprehensive action, and with the support of stakeholders, those goals are attainable.

GLOSSARY

Early detection, rapid response: a guiding principle with the goal of eliminating newly introduced invasive species before they become well established and spread.

Introduction: arrival or release of a non-native species into Oregon outside of captivity.

Invader: an invasive species.

Invasive species: non-native organisms that cause economic or environmental harm and are capable of spreading to new areas of the state.

Legal authorities: Oregon statutes and regulations.

Non-native: a species not native to our region (typically defined as the state of Oregon or the Pacific Northwest) from another country or from another region of the United States.

Pathway: the route or the manner in which a non-native species arrives in or travels through Oregon.

Vector: sometimes used to describe the manner in which or mechanism by which species arrive or the carrier of species; in this document 'Pathway' subsumes 'Vector'.

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OREGON INVASIVE SPECIES COUNCIL