

## **INFORMATIONAL BRIEF**

### **Invasive Species Consequences, Tourism, and Funding Needs in Oregon**

Prepared as “informational” for Committee Work Sessions on HB 4134

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*Oregon Sea Grant serves as a permanent statutory member of the OISC (ORS 570.750).*

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**Note:** *This brief is intended to provide factual context and discussion points for legislative deliberation. It is informational in nature, reflecting documented evidence and professional expertise, not advocacy for or against any policy position.*

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## 1. Consequences of Invasive Species to Oregon's Natural Assets

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### Invasive Grasses, Wildfire Risk, and Human Health

Invasive annual grasses—principally **cheatgrass** (*Bromus tectorum*), **medusahead** (*Taeniatherum caput-medusae*), and **ventenata** (*Ventenata dubia*)—are transforming eastern Oregon's rangelands and increasingly its forested landscapes. These grasses displace native perennial bunchgrasses and sagebrush, forming dense carpets of fine fuel that dry out early in the season and create a self-reinforcing **grass-fire cycle**: invasive grasses promote more frequent and intense wildfires, which in turn eliminate fire-intolerant native plants and open more ground for reinvasion. Research published in the Proceedings of the National Academy of Sciences found that invasive grasses increased fire occurrence by **27 to 230 percent** across invaded ecosystems in the United States.

In Oregon, the consequences are already documented. OSU researchers found that ventenata created fuel loads **50 times greater** than in uninvaded scablands and sage brush habitat in eastern Oregon, transforming formerly fire-resistant terrain into flame corridors. The grass-fire cycle degrades habitat for greater sage-grouse and other sagebrush-dependent wildlife, reduces livestock grazing capacity, and threatens ranchers' livelihoods. BLM is conducting aerial herbicide treatments across southeastern Oregon to combat invasive annual grass expansion.

Wildfire smoke from these fires poses a direct and growing threat to **human health and air quality** across the state—from coastal communities to the Willamette Valley to central and eastern Oregon. A 2025 study published in *Science Advances* (Tang et al.) found that fires in the wildland-urban interface produce disproportionately large health impacts: the fraction of premature deaths caused by these fires is approximately **three times** their share of total fire emissions, because they burn closer to populated areas. Oregon experienced these impacts firsthand: the 2017 wildfire season burned 1.2 million acres and cost **\$454 million** in suppression alone, while the 2020 season's fires and smoke generated widespread evacuations, school closures, and health advisories statewide.

### Salmon, Lamprey, and Freshwater Ecosystems

Oregon's iconic salmon and steelhead runs—central to the state's identity, economy, and tribal cultures—face compounding threats from invasive species that degrade the freshwater habitats these fish depend on for spawning, rearing, and overwintering. The Willamette River basin, home to 75% of Oregon's population, is simultaneously one of the state's most important salmon migration corridors and one of the most heavily invaded.

**Invasive knotweeds** (Japanese, giant, and Bohemian knotweed; *Fallopia* spp.) have colonized riparian corridors in watersheds throughout western Oregon, including the Clackamas, Yaquina, Lincoln County drainages, and the Willamette mainstem. Knotweed forms dense monocultures that displace native streamside vegetation, and unlike native riparian plants, it dies back each winter, leaving stream banks bare and exposed to erosion. The result is degraded spawning and refugia habitat: increased sedimentation, reduced stream shading, loss of woody debris, and warmer water temperatures—all of which directly harm salmon, steelhead,

and other native fish. Knotweed is designated as one of the 100 worst global invasive species and is an Oregon Class B noxious weed.

In the Willamette Valley's side channels, sloughs, oxbow lakes, and backwater habitats—critical overwintering refugia for juvenile Chinook salmon and rearing habitat for native fish—**invasive ludwigia** (creeping water primrose; **Ludwigia hexapetala** and **L. peploides**), a non-native aquatic ornamental from South America, is forming dense floating and emergent mats that block sunlight, deplete dissolved oxygen as they die back in winter, displace native aquatic vegetation, and impede fish movement. At Delta Ponds in Eugene, the City has documented that ludwigia directly threatens juvenile Chinook salmon overwintering habitat; the plant doubles its biomass in 15 to 20 days and can choke entire waterways. Infestations now extend from Eugene through Willamette Mission State Park near Salem to Smith and Bybee Wetlands in North Portland—spanning the length of the Willamette's floodplain. The plant likely entered Oregon's waterways through the aquarium and ornamental water garden trades. In a five-year span, treatment has scaled from one project to **13 large-scale projects** throughout the Willamette Valley. The **Willamette Aquatic Invasives Network**—a coalition of agencies, tribes, watershed councils, and nonprofits including Willamette Riverkeeper—has formed to coordinate response and develop a comprehensive aquatic invasive species action plan for the basin, with USGS providing satellite-based mapping of ludwigia spread and OWEB grant funding supporting multi-year treatment.

In the **Coquille River watershed** of southwestern Oregon, illegally introduced **smallmouth bass** are preying on migrating wild juvenile fall Chinook salmon. ODFW has identified smallmouth bass as "**the primary reason**" behind the continued decline of the system's Chinook population over the last seven years. The predatory bass also prey on native coho, steelhead, crawfish, sculpin, dace, and culturally important **Pacific lamprey**. ODFW has permanently authorized spearfishing and bait use to encourage angler removal of smallmouth from the system, and has partnered with the Coquille Indian Tribe on electroshocking removal—but the bass continue to thrive in the warm-water conditions.

**Pacific lamprey** (*Entosphenus tridentatus*), an ancient anadromous species that has survived on Earth for over 400 million years, hold deep cultural and spiritual significance for Oregon's tribal nations. Tribes have harvested lamprey since time immemorial for food, ceremony, and medicine. Lamprey counts at Bonneville Dam have declined from historic levels of 400,000 adults to fewer than 20,000 in recent years. Threats include passage barriers, habitat degradation, non-native predators, and the riparian habitat loss caused by invasive vegetation. The U.S. Fish and Wildlife Service classifies Pacific lamprey as a tribal trust species, and restoration efforts are being led through the Pacific Lamprey Conservation Initiative in partnership with Columbia River basin tribes.

### **Invasive Freshwater Mussels (Zebra, Quagga and Golden Mussels)**

Oregon's waterways remain free of established invasive freshwater mussel populations, but the threat is immediate. In 2023, quagga mussel larvae were detected in the Snake River near Twin Falls, Idaho—the **first detection in the Columbia River basin**. Idaho has since spent over **\$9 million across three years** of chemical treatments, resulting in thousands of fish killed (including 48 white sturgeons up to 35 years old) without confirmed eradication. Detections

recurred in September 2024 and again in 2025, despite the infested area shrinking from 7.2 to 3.5 miles.

Columbia River basin studies estimate ~**\$500 million in economic impacts to the PNW region. Oregon, Idaho and Montana estimate \$72–\$122 million in annual mitigation costs alone in their respective states** from an invasive mussel infestation, excluding fish and wildlife impacts. The mussels clog hydroelectric facilities, irrigation infrastructure, and municipal water systems, and encrust boat hulls, docks, and marina infrastructure—directly affecting the recreational boating that is an important draw for both residents and visiting tourists. An emerging concern is the threat to **data center cooling systems**: Oregon and neighboring states in the Columbia River basin host a **rapidly growing concentration of data centers** that are highly dependent on reliable freshwater sources for cooling. Invasive mussels are well documented to obstruct water intake pipes, heat exchangers, and cooling infrastructure, and the risk extends to data center facilities drawing from waterways beyond the Columbia basin as mussel-fouled boats move between water bodies. Oregon's watercraft inspection stations are the primary line of defense.

### **European Green Crab (a.k.a. the five-spined shore crab, green crab)**

Green crabs (*Carcinus maenas*) have been documented in Oregon estuaries since the late 1990s. Following warming ocean conditions since 2013–2015, populations have expanded substantially in Coos, Netarts, Tillamook, and Yaquina bays. Green crabs are aggressive generalist predators that consume young oysters, clams, and other shellfish, and destroy eelgrass habitat providing nursery areas for commercially important species including Dungeness crab.

Oregon's Dungeness crab fishery—approximately **\$91 million** in the 2021–22 season—depends on the eelgrass habitat that green crabs destroy. Eelgrass beds serve as critical nursery areas for juvenile Dungeness crab; loss of this habitat reduces recruitment into a fishery that supports both commercial fleets and recreational crabbing, one of the Oregon coast's most popular visitor activities. Green crabs also prey directly on juvenile oysters and clams, threatening a commercial oyster industry that provides essential ecological services—adult oysters provide water quality and ecosystem services by filtering up to 50 gallons of water per day, supporting overall estuarine health. Ongoing studies by Oregon State University, Portland State University and ODFW in Coos Bay and Netarts Bay are validating increasing concerns from oyster growers about green crab impacts on oyster production.

### **Emerald Ash Borer (EAB)**

The emerald ash borer, first confirmed in Oregon in 2022, is now present in at least five counties: Multnomah, Washington, Clackamas, Yamhill, and Marion. EAB is widely regarded as **the most destructive forest pest in North America**, having killed hundreds of millions of ash trees in the eastern United States. Infested trees typically die within two to five years.

Oregon ash (*Fraxinus latifolia*) dominates western Oregon riparian corridors—floodplains, stream banks, and low-elevation wetlands. Loss of these trees threatens water quality, stream temperature regulation, and habitat for ESA-listed salmon and steelhead. Portland's 2024 street tree inventory identified approximately 9,724 ash street trees at risk. Ash trees in urban landscapes provide shade, cooling, and enhanced property values. Eradication is no longer

considered possible; the Oregon Department of Forestry's SLAM (SLOW Ash Mortality) strategy focuses on delaying spread, protecting high-value trees, and planning for replanting.

### **Additional Threats of Note**

**Japanese beetle (*Popillia japonica*)**, discovered in significant numbers in the Portland metropolitan area in 2016, feeds on more than 300 plant species including roses, grapes, hops, blueberries, and ornamentals. Over eight years (2017–2025), ODA's eradication program achieved a **92% reduction in trapped beetle numbers—from nearly 24,000 to approximately 1,919**. However, **the 2025 Legislature was unable to fund continuation**, and California has revoked Oregon's pest-free status, restricting nursery exports from the state's nearly **\$1.3 billion** nursery and greenhouse industry. In response, the **OISC committed close to half a million dollars from its Invasive Species Control Account** as bridge funding—substantially depleting the reserve that enables rapid response to new invasive species detections. This depletion is a central rationale for the funding mechanism in HB 4134.

**Spotted lanternfly (*Lycorma delicatula*)** has not yet been detected in Oregon but feeds on over 70 plant species including grapevines, hops, and stone fruits. **Invasive noxious weeds** already cost Oregon an estimated **\$80 million annually** in personal income losses from just 25 state-listed species; the Tualatin Soil and Water Conservation District estimates potential losses of **\$1.8 billion annually** if left unchecked.

## **2: How Invasive Species May Impact Livability, Tourism, Events and Lodging in Oregon**

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Oregon's tourism industry generated **\$14.3 billion in direct travel spending** in 2024, supporting 121,000 jobs and producing \$691 million in state tax revenue (Travel Oregon/Dean Runyan Associates, 2024). The outdoor recreation sector accounts for over **\$8.4 billion annually** and approximately 73,000 jobs (U.S. Bureau of Economic Analysis, 2023 data). Invasive species threaten the ecological systems that underpin this economy.

### **Wildfire Smoke and Tourism**

Invasive grasses in eastern Oregon and beyond are accelerating the grass-fire cycle that produces larger and more frequent wildfires—and the resulting smoke has become a direct and recurring threat to Oregon's tourism economy. **Travel Oregon documented \$51 million in tourism revenue losses from the 2017 wildfire season alone, with the food, beverage, and lodging industry absorbing nearly \$28 million of that loss.** The Oregon Shakespeare Festival in Ashland—whose audiences are 85% tourists—lost \$2 million in revenue from canceled performances during the 2018 fire season, and Crater Lake National Park saw a 14% drop in July–August visitation that same year.

In Central Oregon, wildfire smoke has driven measurable declines in lodging tax collections—down 6.5% during smoky months—with lower room rates and cancellations during what should be peak season. **More than 70% of prospective visitors to southern Oregon reported that wildfire smoke was a factor in deciding when or whether to visit.** The health impacts compound the tourism effects: smoke-related air quality advisories prompt visitors to cancel outdoor activities, shorten trips, or avoid Oregon altogether. A 2025 study in *Science Advances* found that wildland-urban interface fires produce disproportionate health impacts because they burn closer to populated areas. As invasive grasses expand the grass-fire cycle across Oregon's rangelands and increasingly into forested areas, these tourism and public health consequences are projected to grow.

### **Fisheries, Salmon, and Recreational Angling**

Boating, fishing, and RVing contribute approximately **\$1.2 billion** in economic value statewide. Oregon's salmon and steelhead runs are foundational to the state's tourism identity—drawing anglers, wildlife viewers, and cultural tourists from around the world. Invasive knotweeds degrading spawning and refugia habitat in western Oregon watersheds, *Ludwigia* choking the Willamette River side channels that juvenile Chinook depend on for overwintering, and illegally introduced smallmouth bass preying on juvenile Chinook in the Coquille River all compound existing pressures on these iconic species. Dreissenid mussels, if established in the Columbia River basin, would disrupt plankton-based food webs—a pattern documented in the Great Lakes where mussel infestations contributed to recreational fishery declines. Tribal fisheries and cultural practices, including the harvest of Pacific lamprey at Willamette Falls, depend on healthy freshwater ecosystems increasingly threatened by invasive species.

### **Coastal and Estuarine Recreation**

Oregon's coast is among the most-visited regions in the state. Visitors come for clamming, crabbing, tide pooling, kayaking, wildlife viewing, and beach recreation. Green crab invasion of estuaries threatens eelgrass beds that support bird populations and scenic marine environments, potentially reducing the quality of experiences that visitors and tourism operators depend on.

### **Forests, Rivers, and Scenic Landscapes**

Emerald ash borer threatens Oregon ash along riparian corridors throughout western Oregon. Widespread tree mortality would affect shade, streamside habitat, and scenic values in state parks, trails, and rivers used for hiking, paddling, and camping. The Mediterranean oak borer, newly detected in six Oregon counties in late 2025, adds another dimension of risk to the state's hardwood landscapes. Invasive knotweeds along stream banks degrade the riparian corridors that define Oregon's river recreation experience, while invasive plants such as Scotch broom, Japanese knotweed, and Himalayan blackberry degrade rangelands, trail systems, and wilderness areas.

### **Urban Landscapes, Gardens, and Horticulture**

Japanese beetle threatens ornamental plantings, park landscapes, and garden tourism. Portland's International Rose Test Garden—one of the city's most-visited attractions—features plant species that Japanese beetles readily damage. **Oregon's nursery and greenhouse industry, valued at nearly \$1.3 billion**, is both a major economic sector and a contributor to the urban and suburban landscapes that enhance quality of life and attract residents and visitors. The beetle's characteristic skeletonizing of foliage diminishes the quality of urban green spaces that draw visitors and generate significant municipal revenue.

### **Tourism Revenue and Lodging Tax Context**

Approximately **63–65% of Oregon's state lodging tax is paid by out-of-state visitors**. The outdoor recreation industry generates **\$16 billion in consumer spending** annually when broader supply chain activity is included (Oregon State University Center for the Outdoor Recreation Economy). Oregon's current statewide lodging tax rate is 1.5%. HB 4134 proposes a 1.25 percentage-point increase to 2.75%. For reference, the national median state lodging tax rate is approximately 5–6%.

### 3: Priorities the OISC and its Members Cannot Adequately Address Without Dedicated Funding

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The Oregon Invasive Species Council (OISC) coordinates statewide efforts across multiple agencies, tribes, industry groups, and nonprofits. The following priorities illustrate areas where current resources are insufficient.

#### Early Detection and Rapid Response Capacity

The Japanese beetle program illustrates a recurring challenge: invasive species programs funded through one-time appropriations are inherently vulnerable. **Oregon's eradication effort achieved a 92% population reduction** but ended when the 2025 Legislature did not continue funding. California immediately revoked Oregon's pest-free status.

The OISC in 2024-2025 responded by deploying **close to half a million dollars from its Emergency Control Account** as bridge funding, significantly depleting the reserve that enables rapid response to new invasive species detections statewide. This account functions as Oregon's first line of financial defense—providing immediate resources before longer-term funding can be secured through the Legislature, federal agencies, industry, or local partners. **The invasive species allocation within HB 4134 is designated in part to replenish this account.**

Without stable funding, Oregon cannot maintain early detection and education networks for emerging threats such as spotted lanternfly and Asian longhorned beetle. Pre-invasion spending is estimated to be **25 times lower** than post-invasion expenditure (Cuthbert et al., 2022).

#### Watercraft Inspection and Invasive Mussel Prevention

Oregon's watercraft inspection program is the primary defense against zebra and quagga mussels. **Idaho's experience since 2023—over \$9 million spent**, massive fish kills, no confirmed eradication—illustrates the cost of reactive response. The Columbia River basin's hydroelectric, irrigation, and municipal water infrastructure faces hundreds of millions of dollars in potential damage if mussels become established. A single contaminated vessel entering Oregon through a gap in inspection coverage could trigger an irreversible infestation.

#### Green Crab Management on the Oregon Coast

Oregon's estuaries are experiencing renewed green crab population expansion. ODFW, research, tribal and industry partners are exploring active control efforts, but scaling trapping and monitoring across multiple bays requires resources beyond current budgets. The shellfish aquaculture industry, Dungeness crab fishery, and estuarine ecosystem services all depend on managing this invasion before it becomes further entrenched.

#### Emerald Ash Borer Response Coordination

The SLAM strategy requires coordinated action across state agencies, local governments, tribal nations, and private landowners to slow EAB spread, protect priority trees, and develop biocontrol approaches. Without dedicated funding, the pace of response will lag behind the pace of spread.

## **Statewide Coordination, Education/Outreach, and Federal Matching**

The OISC is the only entity in Oregon specifically charged with coordinating invasive species efforts across jurisdictional boundaries. Its functions include the Oregon Invasive Species Hotline, keeping the Invasive Species Threats and Opportunities Primer for Oregon Policy Makers current, Invasive Species Information Hub, interagency working groups, and a much requested invasive species education grant program to heighten awareness and prevention and public education campaigns such as “Clean, Drain, Dry” (minimize risks of aquatic invasive species hitchhikers through boating and wildland fire fighting equipment) “Play, Clean, Go” (minimize risks of spreading invasive species from recreational activities) , “Don’t Let it Loose” (minimize risks from pet releases), “Squeal on Feral Pigs” (reduce risks from wild pigs) and “Don’t Move Firewood.” (minimize impacts to forest and urban landscape health and reduce fire risks caused by hitchhiking pests and diseases through infested firewood). These require stable operational support. In addition, many federal conservation grants require state matching funds; without a reliable funding strategy, Oregon risks losing federal dollars to other states. ODFW officials have noted that unmet match requirements have historically caused Oregon to leave federal conservation funding on the table.

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**Summary:** Invasive species pose documented and growing threats to Oregon’s natural assets—from salmon and lamprey habitat to coastal estuaries, from riparian corridors to eastern Oregon rangelands—and to the economic infrastructure, cultural heritage, and ecological systems that underpin a \$14.3 billion tourism industry. Invasive grasses are accelerating a wildfire cycle whose smoke already costs Oregon tens of millions in tourism revenue and poses measurable public health risks statewide. The research literature consistently shows that prevention and early response cost substantially less than managing established invasions. The OISC’s Emergency Control Account—recently depleted by close to half a million dollars to bridge the Japanese beetle program—is the state’s primary mechanism for rapid response while longer-term funding is assembled. The invasive species allocation within HB 4134 is designated in part to replenish this account and to fund the priorities identified in this brief.

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