Legislative and Regulatory Efforts to Control Invasive Species

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Executive Summary

Pennsylvania is a global leader in agriculture, food and lumber production, and its economy depends on environmental conditions that support these industries. Furthermore, the Commonwealth's extensive network of rivers serves both commercial and recreational interests. Invasive species jeopardize land and water, and they threaten the future well-being of the Commonwealth.

Research Background

To gain an understanding of government approaches to dealing with threats from invasive species, this research examined how governments address these threats through the enactment of statutes and the implementation of regulations. To complete the study, the researchers identified existing statutes and regulations, as well as funding streams, related to controlling invasive species at the national and state levels.

At the federal level, this review began by examining public documents from the National Invasive Species Council's existing Management Plans. The research then shifted to identifying and reviewing public documents from Pennsylvania's Invasive Species Council and existing state Management Plans. Much of the project was devoted to the examination of other states' statutory and regulatory efforts to control invasive species, including sources of funding. Finally, the researchers examined international efforts, specifically focusing on Canada and the United Kingdom.

After the evaluation of the broad array of programs, the researchers contacted states with invasive species programs that related to threats in Pennsylvania. The research team sent emails to state agencies to request information regarding budgetary resources devoted to controlling invasive species and any research reports on the effectiveness of the programs.

Finally, the research team completed four case studies related to invasive species identification, suppression, and eradication.

The first two case studies on gypsy moths and invasive weeds were selected based on the researchers' interactions with members of the Governor's Invasive Species Council.

The management of gypsy moths has been ongoing in Pennsylvania since the 1970s and represents the longest continued effort to address an invasive species within the Commonwealth. The emphasis on invasive weeds can be traced to the recent passage of the Noxious Weed Control Law (Act 46 of 2017) and the subsequent advisory role given to the Governor's Invasive Species Council.

The third and fourth case studies on invasive species pathways and rapid response teams were chosen based on a review of the literature on prevention, as well as U.S. Department of Agriculture data and reports. The prevalence of state policies on these topics, as well as conversations with staff at the Pennsylvania Department of Conservation and Natural Resources, informed the case study selection.

Research Findings

Government efforts to control invasive species can be characterized as slow and reactionary. Pennsylvania's efforts fit into this pattern with the Pennsylvania Invasive Species Council being created only in 2004, and with the first comprehensive species management plan implemented before the end of the Rendell administration. The council entered a dormant period during the Corbett administration and was only reinvigorated by Governor Wolf in 2017. Furthermore, Pennsylvania has no dedicated funding streams for addressing outbreaks of invasive species. Rather, when threats arise from invasive species, departments use general fund monies or rely on grants from the federal government until the next budget cycle.

The researchers created a database of invasive species statutes and regulations; the database contains references to 493 statutes and regulations.

The five states with the greatest number of statutes and regulations are: California (25), New York (24), Maine (18), Washington (18), and Wisconsin (18). The two states with the least regulation of invasive species are Alaska (3) and Connecticut (3).

The researchers classified the statutes and regulations according to their goals. Approximately 50 percent of the efforts to address invasive species were related to control, often of specific insects, plants, or aquatic life. Nine percent of the statutes and regulations were focused on prevention, while only 4 percent emphasized eradication. Roughly 18 percent of the efforts had mixed goals (typically, control and prevention) and another 18 percent were classified as other. This last category included the development of administrative structures, including state invasive species councils. While it was difficult to ascertain the date the original statutes and regulations were adopted, it appears that the states with the earliest efforts to control invasive species were Illinois (1919) and Michigan (1929).

An analysis of the statutory and regulatory efforts to control invasive species indicated that there is no uniform approach to addressing them. As stated earlier, government efforts to control invasive species can be characterized as slow and reactionary. Congress has paid sporadic attention to these issues, leaving most efforts to regulatory agencies (typically, the U.S. Department of Agriculture and the U.S. Department of the Interior). Once invasive species are detected, state efforts focus on control; less effort is dedicated to prevention, and little is directed toward eradication.

Policy case studies show the benefits of interagency cooperation and interstate coordination. Management expertise and funding are critical because invasive species do not respect agency or state boundaries. Efforts to control and prevent the spread of invasive species require a holistic approach to be effective.

When reviewing reports from federal and state agencies involved in controlling the spread of invasive species, a common theme emerged – namely, inadequate funding. The federal government provides funding primarily through programs under the U.S. Department of Agriculture. Funding is typically associated with the Farm Bill and directly linked to invasive species that threaten agriculture, while funding to address invasive aquatic species comes from the U.S. Fish and Wildlife Service. Furthermore, federal agency efforts rely on cooperation with their state counterparts. States use a variety of funding mechanisms to support efforts to detect, suppress, and eradicate invasive species. The report details innovative funding schemes from 11 states, including Maryland and New York.

Policy Considerations

Based on the evaluation of existing state statutes and regulations, as well as the four case studies, the researchers identified the following five policy considerations.

1. Provide institutional support and dedicated funding for the Governor's Invasive Species Council, including a statewide invasive species coordinator.

2. Promote interagency cooperation to solve problems with noxious weeds along state highways.

3. Develop regulations for mandatory inspection of watercraft and a timetable for implementation, including a fee structure and personnel needs and costs.

4. Develop a funding mechanism to support early detection and rapid response, and provide agencies with sufficient discretion in accessing the funds*.

5. Consult with the Governor's Office of General Counsel regarding the development of policies related to access to private property to promote early detection and rapid responses to address threats from invasive species.

*Note: On July 1, 2019, Gov. Wolf signed into law the Pennsylvania Farm Bill. The law includes a $4 million Pennsylvania Rapid Response Disaster Readiness Account to provide quick responses to agricultural disasters and to continue the fight against the spread of the Spotted Lanternfly.

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Introduction

Within the scientific community, the study of invasive species did not receive much attention until the publication of Charles Elton's book, *The Ecology of Invasions by Animals and Plants* in 1958. While scientists have expanded upon the ideas of biological invasion developed by Elton, issues related to invasive species have moved into wide-ranging discussions by policymakers that encompass agriculture, commerce, health, and economics.

Pennsylvania is a global leader in agriculture, food and lumber production, and its economy depends on having environmental conditions that support these industries. Furthermore, the Commonwealth's extensive network of rivers serves both commercial and recreational interests. Invasive species jeopardize land and water, and they threaten the future well-being of our Commonwealth.

The invasion by the spotted lanternfly (*Lycorma delicatula*) illustrates the need for policymakers to develop and fund long-term strategies to address current threats from invasive species to better prepare to respond rapidly in the future. The spotted lanternfly first appeared in Pennsylvania (and the U.S.) in 2014 from Southeast Asia. The pests' arrival threatened a range of crops, including grapes, apples, and hops, and forest hardwoods. The Pennsylvania Department of Agriculture joined forces with the U.S. Department of Agriculture (USDA) and researchers at Pennsylvania State University to establish and promote an eradication program. Funding for these efforts largely rested on the back of USDA, which saw a threat to the northeast and mid-Atlantic states. In 2018, the federal government contributed $17.5 million in emergency funding to Pennsylvania while the state allocated only $1.6 million (Merlin, 2018).

History of Legislative and Regulatory Efforts

Federal Efforts

Defining an invasive species from a policymaking standpoint has been a piecemeal enterprise, with policies typically coming after a recognition of an environmental threat. For example, consider the legislative and regulatory action following the identification of the zebra mussel (*Dreissena polymorpha*) in the Great Lakes in 1988. Within two years, Congress passed the Nonindigenous Aquatic Nuisance Prevention and Control Act in 1990 (Pub. L. 101-646) to address the issue of ballast water discharge and the invasion by zebra mussels. This legislation was subsequently amended by the National Invasive Species Act of 1996 (Pub. L. 104-332), which recognized the threat from additional aquatic species (mitten crabs, green crabs, brown mussels and shellfish pathogens). In its "Definitions" section, the 1996 legislation suggested that biological invasion was not limited to aquatic life, but also could include plants and wildlife.

President Bill Clinton, through an executive order, defined the concept "invasive species" as a species that "is not native to the ecosystem under consideration, and its establishment causes or is likely to cause economic, environmental, or human harm" (1999). Executive Order 13112 also created the National Invasive Species Council (Council) to coordinate the efforts of Cabinet-level agencies, specifically the Departments of Agriculture, Commerce, Interior, State, Defense, Treasury, and Transportation, and the Environmental Protection Agency, in eradicating and controlling biological invaders.[1] The council was directed to create a National Invasive Species

[1] The National Invasive Species Council divides invasive species into two primary categories: aquatic and terrestrial. These categories encompass pathogenic invasive species that attack aquatic and terrestrial organisms. For example, viral hemorrhagic septicemia (VHS) is included in the aquatic invasive species classification, while avian influenza is included within terrestrial invasive species. Therefore, control of pathogenic invasive species is often subsumed under legislation and regulation related to the host organism.

Management Plan (Management Plan) within 18 months. The council produced three Management Plans, the first in 2001, the second in 2008, and the third in 2016.[2]

In the final month of his presidency, Barack Obama amended Clinton's executive order through Executive Order 13751, "Safeguarding the Nation from the Impacts of Invasive Species." This executive order maintained the National Invasive Species Council and the Invasive Species Advisory Committee, as well as expanded the membership of the council and clarified its operations. In addition to the Cabinet-level agencies represented under Clinton's executive order, the council added members from: the Department of Health and Human Services, the Department of Homeland Security, the Administrator of the U.S. Agency for International Development, the U.S. Trade Representative, the Administrator of the National Aeronautics and Space Administration, the Director of the Office of Science and Technology Policy, the Director of the Council on Environmental Quality, and the Office of Management and Budget. These changes reflect the growing recognition of the present (and potentially future) threats from invasive species.

Pennsylvania's Efforts

Like the national government, states have been engaged in efforts to control the impact of invasive species. Five years after President Clinton issued Executive Order 13112, Pennsylvania Governor Ed Rendell created the Pennsylvania Invasive Species Council to "guide and coordinate invasive species prevention" (Commonwealth of Pennsylvania, Executive Order 2004-1). The council, under the leadership of the Pennsylvania Secretary of Agriculture, was

[2] See National Invasive Species Council, "Meeting the Invasive Species Challenge: National Invasive Species Management Plan," 2001; National Invasive Species Council, "2008-2012 National Invasive Species Management Plan," 2008; National Invasive Species Council, Management Plan: 2016-2018," 2016. There is a four-year gap in coverage of these plans between 2012 and 2016.

charged with the establishment of the Governor's Invasive Species Council and directed to develop and implement a statewide Invasive Species Management Plan.

While the Department of Conservation and Natural Resources (DCNR) issued the first Invasive Species Management Plan for Pennsylvania in 2004, the Governor's Council developed an Aquatic Invasive Species Management Plan that was submitted to Governor Rendell in December 2006. The aquatic and terrestrial plans were merged into a unified document and issued by DCNR in late 2010/early 2011 (Governor's Invasive Species Council, undated). This is the last plan identified as a comprehensive species management plan according to available public documents.[3]

The council entered a dormant period during the Corbett administration from 2011 to 2015. Governor Tom Wolf reinvigorated the council enacting Executive Order No. 2017-07. Since its recreation, the council has been led by the Deputy Secretary of Agriculture, who has been assisted by an interim coordinator, a staff member from within the department. The agency heads and non-governmental agency members of the council work to promote invasive species research and outreach (Pennsylvania Department of Agriculture, 2018).

Pennsylvania has no dedicated funding streams for addressing outbreaks of invasive species. Rather, when threats arise from invasive species, departments use general fund monies or rely on grants from the federal government[4] until the next budget cycle. For example, in FY 2014-2015, no funding was allocated to addressing the threat from the spotted lanternfly. As the

[3] The Bureau of Forestry with DCNR has produced documents that address specific invasive species. See "Invasive Plant Management for Land Managers," undated, http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_20033074.pdf.

[4] The primary source of grant funding directed toward terrestrial invasive species detection and control is the United States Department of Agriculture. See, for example, United States Department of Agriculture (2018), "Perdue Announces Emergency Funding for Spotted Lanternfly in Pennsylvania," https://content.govdelivery.com/accounts/USDAOC/bulletins/1d917cd. Grant funding for aquatic invasive species programs comes from the Pennsylvania Sea Grant Program which receives federal monies from the National Oceanic and Atmospheric Administration (NOAA).

insect spread throughout southeastern Pennsylvania over the next fiscal year, the Department of Agriculture added $1.5 million to its General Fund appropriation for FY 2015-2016. The area affected by the spotted lanternfly continued to increase, and, consequently, so did the Department of Agriculture's appropriation, reaching $12 million in FY 2018-2019. Illustrating this lack of funding, Pennsylvania has no dedicated budget line-item directed toward the control of the Asian longhorn beetle, an invasive insect present in New Jersey, New York, and Ohio.

International Efforts

The world community has recognized the threat from invasive species for more than 25 years with the adoption of the United Nations Convention on Biodiversity.[5] Efforts in two nation-states show the challenges in confronting invasive species in a systematic fashion.

Canada distinguishes between alien and invasive species. Alien species are those that do not pose an immediate risk and may even provide benefits to an ecosystem while invasive species are those that can cause significant ecological, economic, or environmental damage (Invasive Alien Species in Canada, 2017). In 2004, Canada developed its national strategy to protect its environment issuing the report, *An Invasive Alien Species Strategy for Canada*. The report set target goals, including, "By 2020, pathways of invasive alien species introductions are identified, and risk-based intervention or management plans are in place for priority pathways and species" (Invasive Alien Species Strategies, 2017).

Canada aggressively pursued this strategy at both the national and provincial levels, largely directed at reducing the spread of aquatic invasive species through shipping and fishing channels. The Invasive Alien Species Partnership Program (IASPP) provided nearly $6 million

[5] The United States did not ratify this Convention.

between 2005 and 2012 to projects aimed at the prevention, detection, and management of invasive alien species (Id.). As of 2017, Canada regulates 254 invasive species at the national and provincial levels. However, like initiatives in the U.S., funding for projects is short-lived, leaving voids in areas where critical research still needs to be completed.[6]

The United Kingdom's emphasis on invasive species focuses not only on the British Isles, but also on the Kingdom's Overseas Territories and Crown Dependencies. The Department for Environment, Food, and Rural Affairs (Defra) oversees policy related to invasive species and works with the Joint Nature Conservation Committee (JNCC), a statutory advisor to the government. JNCC addresses the impacts of non-native species, noting that island nations had historically been isolated from predators and competitors (Joint Nature Conservation Committee, 2018).

The JNCC began its efforts directed toward invasive species in 2006 with the publication of its report, Non-native Species in the Overseas Territories: A Review (Varnham, 2006). It also coordinated workshops on non-native species in the overseas territories in 2007, 2009, and 2015 (Joint Nature Conservation Committee, 2018). Defra funded projects in the overseas territories of the Falkland Islands, South Georgia, Tristan de Cunha, St. Helena, and Ascension that focused on maritime invasive species; funding totaled £250,000 during the International Year of Biodiversity (Wolfaardt, 2011). As with the U.S. and Canada, reporting on additional efforts to control invasive species by the United Kingdom is not readily available.

[6] See as an example, "University of Windsor Invasive Species Research Centre Closes," *CBC News*, May 27, 2016, http://www.cbc.ca/news/canada/windsor/university-of-windsor-invasive-species-research-centre-closes-1.3602819.

Goals and Objectives

This research assessed government efforts to control the impact and spread of invasive species.

GOAL 1: Identify existing statutes and regulations, as well as funding streams, related to controlling invasive species at the national and state levels.

Objective 1: Identify and review public documents from the National Invasive Species Council's existing Management Plans and develop a dataset of existing federal legislation, covering both authorization and appropriations, as well as regulations related to invasive species.

Objective 2: Identify and review public documents from Pennsylvania's Invasive Species Council and existing state Management Plans and develop a dataset of existing state legislation, covering both authorization and appropriations, as well as regulations related to invasive species.

Objective 3: Identify and review public documents from the remaining 49 states and develop a dataset of existing statutory and regulatory efforts to control invasive species, including sources of funding.

Objective 4: Review the literature to identify programs in other countries that address invasive species currently present in Pennsylvania; gather English-language information on relevant programs, including budgetary data and evidence of effectiveness.

GOAL 2: Evaluate the outcomes of the statutory and regulatory practices to control invasive species at the state and national levels.

Objective 1: Contact state and federal agencies via email and telephone to determine if any reports have been completed regarding the effectiveness of the programs. Request access to any completed reports for submission with the dataset. Request information on program budgets.

Objective 2: Review existing reports at the state and federal levels to determine the effectiveness of the programs. Contact state and federal agencies to obtain additional information regarding the programs deemed most effective for controlling invasive species.

Objective 3: Develop four policy case studies of the programs most effective at controlling invasive species of particular concern within Pennsylvania.

Objective 4: Develop models for funding programs based upon state, federal, and country programs that address invasive species currently present in Pennsylvania.

Methodology

This research used a mixed-methods approach that included the collection and analysis of data provided by state and national agencies responsible for controlling the spread of invasive species.

The researchers compiled a list of the relevant state agencies (exclusive of Pennsylvania)[7] dealing with invasive species. After identifying each agency, the researchers collected the information from these agencies, typically from their websites, and prepared an Excel database. The database provides telephone, email, and mailing addresses for each state's departments and agencies that address some facet of invasive species programs. (see Appendix A)

[7] The directory for agency members of the Governor's Invasive Species Council is in Appendix C.

Using resources available through USDA's National Agricultural Library, the National Conference of State Legislators' website and LexisNexis Academic Universe, the research team compiled an Excel database of statutes and regulations dealing with invasive species. Sorted by state, the database identifies the title of the statute or regulation, the statutory or regulatory reference, the goal(s) for the statute or regulation, and the issuing authority (see Appendix B).

After the evaluation of the broad array of programs, the researchers decided to contact states with invasive species programs that related to threats in Pennsylvania. The research team sent emails to state agencies to request information regarding budgetary resources devoted to controlling invasive species and any research reports on the effectiveness of the programs.

Finally, the research team completed four case studies related to invasive species identification, suppression, and eradication. The first two case studies on gypsy moths and invasive weeds were selected based on the researchers' interactions with members of the Governor's Invasive Species Council. The management of gypsy moths has been ongoing in Pennsylvania since the 1970s and represents the longest continued effort to address an invasive species in the Commonwealth. The emphasis on invasive weeds can be traced to the recent passage of the Noxious Weed Control Law (Act 46 of 2017) and the subsequent advisory role given to Governor's Invasive Species Council.

The third and fourth case studies on invasive species pathways and rapid response teams were chosen based upon a review of the literature on prevention, as well as USDA data and reports. The prevalence of state policies on these topics, as well as conversations with staff at the DCNR informed the case study selection.

This section concludes with an assessment of funding mechanisms used by states in their fight against invasive species.

Results

Analysis of Statutes and Regulations

The Invasive Species Statutes and Regulations database contains references to 493 statutes and regulations. The five states with the greatest number of statutes and regulations are: California (25), New York (24), Maine (18), Washington (18), and Wisconsin (18). The two states with the least regulation of invasive species are Alaska (3) and Connecticut (3).

The researchers classified the statutes and regulations according to their goals. Approximately 50 percent (49.8%) of the efforts to address invasive species were related to control, often of specific insects, plants, or aquatic life. Nine percent of the statutes and regulations were focused on prevention, while only 4 percent emphasized eradication. Roughly 18 percent of the efforts had mixed goals (typically, control and prevention) and another 18 percent were classified as other. This last category included the development of administrative structures, including state invasive species councils. While it was difficult to ascertain the adoption date of the original statutes and regulations, it appears that the states with the earliest efforts to control invasive species were Illinois (1919) and Michigan (1929).[8]

Case Study I: Efforts to Control the Gypsy Moth

[8] Illinois passed legislation focusing on insect pests and plant diseases; the legislation gave the State Secretary of Agriculture authority to enter into compliance agreements in attempts to control these invasive species. The Michigan General Assembly passed legislation directed at controlling white pine blister rust, declaring, "the rust to be a dangerous forest pest in all its stages" (Michigan Nursery and Landscape Association, 2019).

The European strain of gypsy moths (*Lymantria dispar)* appeared in the U.S. in 1869, when they were accidentally introduced into Massachusetts, after they escaped from the home of an amateur lepidopterist (Smithsonian Institution, 1999). By 1902, European gypsy moths were prevalent in New England, New York, and New Jersey; the gypsy moth had migrated into eastern Pennsylvania by 1932. Its range now extends as far south as North Carolina with sporadic infestations in the Midwest. Devastation by the gypsy moth reached its peak in the Appalachians in the late 1970s and early 1980s (Penn State College of Agricultural Sciences, Department of Entomology, 2018).

The Asian strain of gypsy moths (appeared in western coastal states following its introduction into North America through Russian cargo ships docking in Vancouver, Canada in 1991. The moths spread into Washington, Oregon, California, and Idaho. Foresters quickly raised concern about their spread as the female can fly longer distances (Pederson and Munson, 2010).

Attacking primarily oak trees, gypsy moths also attack conifers (hemlock and pine), birch, and apple trees (Pennsylvania Department of Conservation and Natural Resources, 2018). Gypsy moths in the caterpillar stage can consume up to one square foot of foliage per day (Pederson and Munson, 2007). This portion of the moth's life cycle occurs early May to mid-July. About every 10 years, the gypsy moth population explodes, causing increased devastation to forests as trees are stripped bare by the caterpillars. Scientists theorize the cycle is dependent on the amount of forest mast, the accumulated seeds of forest trees that serve as the primary source of food for white-footed mice; white-footed mice also eat gypsy moths. When the forest mast is reduced, the population of white-footed mice decline. This reduces the amount of gypsy

moth predators and increases the likelihood of an outbreak (Connecticut Department of Energy and Environmental Protection, 2017).[9]

Starting in the 1940s, efforts to combat the devastation from gypsy moths involved the use of the insecticide DDT to kill the pests. However, evidence quickly mounted that DDT was toxic to a host of other organisms, including bald eagles and honeybees and DDT use was abandoned in the late 1950s. States shifted their efforts, introducing more than 50 other species of insects to control gypsy moths, with varying degrees of success.

At the national level, a three-pronged approach has evolved to combat gypsy moths: detection and eradication, suppression, and transition-zone management (U.S. Department of Agriculture, 2007). The U.S. Forest Service reordered its priorities over the next decade, emphasizing suppression ahead of slowing the spread and eradication (U.S. Department of Agriculture, 2015). The following year, an extensive technical report outlined a detailed integrated pest management strategy for attacking the gypsy moth. The National Gypsy Moth Management Board (NGMMB), a non-profit technical advisory group, assists in coordinating activities among national and state agencies devoted to the eradication of gypsy moths. The board also works to include industry and other non-governmental organizations in these efforts (National Gypsy Moth Management Board, 2018).

Given that the entire state of Pennsylvania is in the gypsy moth quarantine zone, the Bureau of Forestry conducts egg mass surveys to monitor gypsy moth populations every year. The bureau then develops a suppression program when a pre-established threshold is reached. The bureau uses a natural biological insecticide (Btk) and an insect growth regulator,

[9] Another aspect of the gypsy moth and white-footed mouse relationship deserves mention. White-footed mice are a primary host for the bacterium that causes Lyme disease. An outbreak of gypsy moths leads to decreased forest mast that in turn leads to a decrease in the number of white-footed mice. As a result, gypsy moth outbreaks have been associated with declines in the number of cases of Lyme disease.

tebufenozide, to control gypsy moths. DCNR has an online interactive map[10] showing where spraying will occur. In addition to aerial spraying for state forests and state parks, private landowners can request aerial spraying through their county Gypsy Moth Coordinator.[11] Partial funding for gypsy moth spraying on private lands comes from the U.S. Forest Service; participating counties contribute a minimum of 50 percent of the total program cost (DCNR, 2018).

While integrated pest management is one approach to controlling the spread of gypsy moths, additional efforts to prevent their spread are critical as well. States facing challenges from the Asian gypsy moth have developed extensive campaigns to educate the public and help involve them in the process.

Idaho provides an example of this approach. Its Department of Lands conducts surveys each summer and works with private landowners in placing traps on their properties. To prevent an infestation from the European gypsy moth, the Department of Lands will conduct a free inspection of outdoor household articles and recreational vehicles for new residents who have moved to Idaho from the northeastern U.S. (Idaho Department of Lands, 2014).

States on the perimeter of the spread of the European gypsy moth face concerns associated with funding for control and prevention. Funding for gypsy moth suppression programs has involved leveraging resources from national, state, and local governments. The National Gypsy Moth Management Program, under USDA, implemented the "Slow the Spread" (STS) program in 2007 and provided evidence that it was achieving results. According to a 2016

[10] DCNR's map permits users to search by municipality and determine whether spraying for gypsy moths is planned, in progress, or completed. See http://www.gis.dcnr.state.pa.us/maps/index.html?gypsymoth=true.

[11] Each county has an individual designated as its Gypsy Moth Coordinator. Donald Eggen, Forest Health Manager for the Department of Conservation and Natural Resources, noted that some counties do not keep the role up to date if the county is not participating in the current gypsy moth suppression program (D. Eggen, Personal Communication, 2019).

report, the STS "reduced gypsy moths' rate of spread by more than 60 percent, from an average of 13 miles per year to less than 5 miles per year" (National Gypsy Moth Management Program, 2016). At this critical juncture, however, federal and state funding for the program was reduced in 2017, and the program reported an increase in gypsy moth spread (Id.; Gypsy Moth Digest, 2018).[12] In 2018, DCNR received a $160,000 grant from the U.S. Forest Service to combat gypsy moths; three counties (Lackawanna, Lehigh, and Northampton) participated in the program to spray private residential lands, contributing $25 per acre (D. Eggen, Personal Communication, 2019).

An example of the impact of reduced federal (and state) funding can be seen in Elk County. Although the county's Gypsy Moth Suppression Program reported continued defoliation, funding for spraying on private property would not be available for 2017 or 2018 (Elk County, 2016). This message is repeated around the northeastern U.S. and into the Midwest – the lack of consistent federal and state funding is halting efforts to control the gypsy moth.

Case Study II: Control of Invasive Weeds

Pennsylvania began its efforts to regulate invasive weeds in 1862 with the passage of an act that provided for the destruction of Canada thistles, chicory, Johnson grass, and marijuana (P.L. 164, No. 164). The Noxious Weed Control Law repealed this statute in 1982. The General Assembly made only minor changes to the list of invasive species, adding multiflora rose to the

[12] Funding from federal and state sources for gypsy moth suppression varies widely from year to year, owing to the cyclical nature of gypsy moth infestations. Over the last decade, federal funding was at its highest point in 2009 with $3,648,978 directed toward suppression efforts; the low point of federal funding was in 2014 with only $63,185 allocated to gypsy moth suppression. In 2017, federal funding was $622,370.

State funding fluctuates in a similar pattern. The high point of funding from the Commonwealth was in 2008 with $6,119,427 directed toward gypsy moth suppression; the lowest amount spent on suppression was in 2014 at $32,550. In 2017, the Commonwealth directed $1,086,609 toward gypsy moth suppression (Gypsy Moth Digest: Suppression – Treatment Cost Per Year for Pennsylvania, 2018).

list. The legislation did provide for the creation of the Noxious Weed Control Committee, housed within the Pennsylvania Department of Agriculture. Following hearings and the publication of regulations, this committee was granted the authority to expand the list of noxious weeds. From 1982 to 2017, the list was expanded to include jimsonweed, mile-a-minute, shattercane, musk or nodding thistle, bull or spear thistle, goatsrue, giant hogweed, purple loosestrife, and Kudzu-vine ("Noxious Weeds," 2017).

The 1982 statute also provided the Secretary of Agriculture the authority to hold public hearings to designate specific "weed control areas." Once designated, an affected landowner was required to take steps to eradicate the noxious weed. While the statute noted that unreasonable timelines for compliance and unreasonable financial burdens should not result from a designation, failure to comply with the order enabled municipalities to enter the property, mitigate the problem, and then recover all costs from the non-complying landowner (Act 74 of 1982).

In 2017, the Pennsylvania General Assembly enacted the "Controlled Plant and Noxious Weed Act" in 2017 (Act 46 of 2017). The new law classifies noxious weeds into three categories based on the goals associated with suppression and eradication. Class A weeds are present throughout the Commonwealth; the short-term goal is to prevent further spread and long-term eradication. Examples of Class A weeds include Giant hogweed, goatsrue, and Kudzu. Class B noxious weeds are widely established in the Commonwealth and are targeted for suppression; Canada thistle, mile-a-minute, and purple loosestrife fit into this classification. Class C weeds include those listed by the federal government that do not yet exist in Pennsylvania; the act did not list specific Class C weeds ("Pennsylvania's Official Noxious Weeds, July 9, 2018). The 2017 legislation retained provisions allowing the Pennsylvania Department of Agriculture to

require landowners to implement measures aimed at either eradication or suppression of noxious weeds.

The 2017 legislation created the Controlled Plant and Noxious Weed Committee, a successor to the Noxious Weed Control Committee, and gave it the responsibility of developing the list of species covered. The statute specifies the Committee's membership.[13]

The Department of Agriculture implements the Controlled Plant and Noxious Weed Act. As the Department of Agriculture also has oversight of the Governor's Invasive Species Council, it works with this body in the development of lists of noxious weeds and controlled plants for consideration by the Controlled Plant and Noxious Weed Committee. Using the Governor's Invasive Species Council as a starting point allows the inclusion of the voices of industry partners like the Pennsylvania Landscape and Nursery Association (PLNA).

The role of non-governmental organizations is critical in addressing issues involving invasive species. An example of the importance of these organizations and the partnerships that they build can be seen in addressing the threat from purple loosestrife (*Lythrum salicaria*), a noxious weed that thrives in wetlands.

Purple loosestrife was an ornamental flower in the lush gardens of Europe. It appeared in North America in the 1800s when soil filled with its seeds was used as ballast in ships sailing from Europe (Munger, 2002). When the loads of ballast were discarded along the eastern

[13] The membership includes: the Secretary of Agriculture (designated as the chairperson), the Secretary of Conservation and Natural Resources, the Secretary of Environmental Protection, the Secretary of Transportation, the Executive Director of the Pennsylvania Fish and Boat Commission, the Executive Director of the Pennsylvania Game Commission, the chairperson and the minority chairperson of the Senate Agriculture and Rural Affairs Committee, the chairperson and the minority chairperson of the House Agriculture and Rural Affairs Committee, and three people appointed by the Secretary of Agriculture who represent the interest and concerns of the following groups, organizations or industries: a statewide general farm organization, the ornamental, turf and horticultural industry, and a member of an institution of higher education within the Commonwealth (Pa. C.S. Title 3, §§ 1511 -1526).

seaboard, purple loosestrife invaded the wetlands. As it spreads, it creates a dense thicket that threatens wetland habitats for migratory birds and animals.

DCNR provides guidance on controlling purple loosestrife that promotes early detection to prevent infestations. The department recommends chemical, physical, and biocontrol mechanisms for the eradication of purple loosestrife, including the loosestrife leaf beetle (DCNR, n.d.).

In Pennsylvania, the Wildlife for Everyone Foundation[14] developed a partnership with the WHM Group, an environmental consulting firm, to address the spread of purple loosestrife. Biologists from these two organizations determined that, in addition to hand-pulling and using herbicides to address the noxious weed, they would employ a natural predator, the loosestrife leaf beetle (*Galerucella Calmariensis*). The beetle was permitted into the U.S. in 1992; it has been released in 27 states to serve as a natural predator for purple loosestrife (Schroeder, 2018).

Case Study III: Invasive Species Pathways

Invasive species are, by definition, non-native or alien to the geographic locale in question. Thus, invasive species enter a new location via several different pathways. According to the National Invasive Species Council (2007), pathways are "the means by which species are transported from one location to another. Natural pathways include wind, currents, and other forms of dispersal in which a specific species has developed morphological and behavioral characteristics to employ. Manmade pathways are those pathways which are enhanced or created by human activity" (p. 4).

[14] The Wildlife for Everyone Foundation was established in Pennsylvania in 2004. Its mission is to promote wildlife conservation and education in Pennsylvania (Wildlife for Everyone Foundation, 2019).

Furthermore, pathways can be defined as either intentional or unintentional. Intentional pathways "result from deliberate actions to relocate an organism." Unintentional pathways "are man-made pathways that unintentionally move organism," such as nursery stock, produce importation, or ballast water discharge, to name a few (National Invasive Species Council 2007, p. 4).

Of particular concern to this study are human-caused pathways, either intentional or unintentional. The National Invasive Species Council (2007) has identified three primary categories of pathways, including transportation, living industry (living organisms and by-products), and miscellaneous pathways (e.g. intentional release of an invasive species or the natural spread of an invasive species). Components of those pathways addressed in this study include water pathways and highways.

Invasive species spread through numerous means along water pathways. Two notable pathways are boats (e.g. ship hull fouling) and live trade (e.g. bait handling and disposal) (Moser and Leffler, 2010). Ship hull fouling or "the accumulation of microorganisms, plants, algae, and animals," on ship hulls and other equipment can serve as a host to aquatic invasive species (Moser and Leffler, 2010, p. 11). Fouling is especially concerning within the recreational boating community, given that smaller boats are often trailered across watersheds, thus making the control of aquatic invasive species more difficult (Horvath, 2008; Moser and Leffler, 2010; Rothlisberger et al., 2010).

Many states struggle to control aquatic invasive species along water pathways. There are many challenges to controlling aquatic pathways, ranging from the species in question to multijurisdictional waterways. Lake Tahoe, in the western U.S. illustrates how authorities have tackled some of these challenges.

Lake Tahoe is situated on the Nevada and California border, thus requiring a multijurisdictional approach to control aquatic invasive species. Like many waterways in other states, Lake Tahoe has to contend with one of the most prolific aquatic invasive species, the quagga mussel. To combat the introduction and further spread of this invasive species, mandatory inspections have been implemented on all waterborne craft (Waterborne Inspection Program, 2018).

Administered by the Tahoe Resource Conservation District, "a non-regulatory, grant-funded, local agency" created by the California State Legislature, the inspection program involves participation from Nevada and California authorities (Tahoe Resource Conservation District, 2018). Prior to launching, boat owners must pass an inspection at one of two designated locations: one in Nevada and one in California. Upon passing an inspection, motorized-craft are required to pay a fee, which is based on the vessel size. Furthermore, if vessels are found to be contaminated, an additional decontamination fee is levied (Lake Tahoe Environmental Improvement Program, 2018). According to the Lake Tahoe Environmental Improvement Plan, "no new aquatic invasive species have been detected in Lake Tahoe since the program began 10 years ago" (Waterborne Inspection Program, 2018).

Highways serve as an equally challenging pathway for invasive species management. In particular, highways serve as a critical pathway for invasive weed seeds. Researchers in Australia found that nearly half of all motor vehicles carried seeds (Lonsdale, 1994). However, motor vehicles do not represent the only means by which highways serve as invasive species pathways. The National Cooperative Highway Research Program (NCHRP) identifies several ways in which invasive species spread, including the inadvertent introduction of invasive seeds into a highway corridor during construction via equipment, as well as the "use of mulch,

imported soil, water, or gravel and sod" (NCHRP, 2006, p. 3). Invasive plants may even be "deliberately planted as part of erosion control, landscape, and wildflower projects" (Id.). The introduction of invasive weed seeds is compounded by off-highway and other recreational vehicles (e.g. ATVs), which may be transported across geographic locales, further spreading the invasive seeds (Taylor, Mangold, and Rew, 2017).

Although highways are a significant pathway for invasive species, state Departments of Transportation are faced with numerous obstacles to combat the spread of invasive species. It is not solely a lack of funds that limits invasive species management by state Departments of Transportation, but right-of-way restrictions, competing or ambiguous government priorities, and even the lack of guidance from other state authorities. Right-of-way restrictions involve the element of private property and reflect obstacles concerning private property rights and governmental takings, similar to those facing inspection and treatment within Early Detection and Rapid Response frameworks. For example, due to right-of-way limitations, Florida was only able to treat invasive species within the right-of-way and was subsequently faced with the species returning from untreated property adjacent to the right-of-way (NCHRP, 2006).

Yet within these constraints, states have adopted several strategies for invasive species management along highway pathways. One such strategy is the implementation of an Integrated Roadside Vegetation Management Program (IRVM). Similar to an Integrated Pest Management Program (IPM), IRVMs use several different control methods while targeting a variety of species. Control methods are tailored to the location and species in question, thus being an adaptable approach to invasive species management. IRVMs recognize that there is no "one size fits all" policy to controlling invasive species.

The NCHRP identified Iowa and Minnesota for their IRVM programs, with Iowa being one of the first states to adopt an IRVM program in 1988 (Iowa Department of Transportation, n.d.). The Iowa IRVM emphasizes the use of self-sustaining, native plants along highway corridors and prioritizes the eradication of invasive plants (NCHRP, 2006). Likewise, Minnesota's IRVM program emphasizes planting native vegetation along highways for environmental, economic, and aesthetic benefits. Perhaps most important, Minnesota's IRVM encourages the participation of multiple stakeholders, including those with "expertise in landscape architecture, maintenance, design, construction, biology, horticulture, utilities, and public relations, as well as …general citizens" (NCHRP, 2006, p. 16). This reflects a common theme among best practices for invasive species management – collaboration among stakeholders.[15]

The case of managing aquatic invasives along water pathways in Lake Tahoe illustrates the importance of collaboration. Pathways are often not isolated within a single state (e.g. interstate highways, rivers, and watersheds), thus multi-jurisdictional responses are necessary. Within the context of highway pathways, NCHRP research found at least "twenty-five percent of responding DOTs work with another agency" (NCHRP, 2006, p. 73). Many state Departments of Transportation work directly with their state Departments of Agriculture, Natural Resources, Environmental Conservation or equivalent agencies (NCHRP, 2006).

States are not limited to working with other state or local agencies, but with non-governmental organizations. For example, as part of its Adirondack Park Invasive Plant Program (APIPP) the State of New York has partnered with numerous NGOs to manage aquatic and

[15] To date, there are no comprehensive evaluations of the success of IRVM programs. By their continuation and prevalence, it is implied that the programs are achieving some modest level of success.

plant-based pathways threatening Adirondack Park, including The Nature Conservancy, recreation clubs, landowners' associations, and garden clubs to name a few (Adirondack Park Invasive Plant Program 2018; NCHRP, 2006).

Several states have reported the benefits of managing invasive species pathways, both ecologically and financially. As previously indicated, California and Nevada reported stopping the spread of new invasive species in Lake Tahoe because of the mandatory watercraft inspection program (Waterborne Inspection Program, 2018). State Departments of Transportation have realized success in managing highway pathways, including cost savings related to invasive weed management programs in Arizona, Iowa, and Louisiana (NCHRP, 2006). Notably, an integrated weed management program adopted by the Wyoming DOT and county weed partners culminated "in the lowest herbicide expenditures by any DOT in the nation (i.e. less than $1 million in herbicide expenditure annually on a 7,000 mi[le] system)" (NCHRP, 2006, p. 85).

The federal government's involvement with highway invasive species control is primarily limited to: 1) statutory compliance with federal laws, and 2) federal funding of state departments of transportation operations. Executive Order 13112 mandates federal agencies avoid actions that may increase the likelihood of an invasive species problem. Additionally, the executive order directs federal agencies to restore native habitats and species within invaded ecosystems. Moreover, the Federal Highway Administration implementation guidelines for the executive order recommend certain prevention strategies, including mapping the severity of invasive plants along statewide rights-of-way (ROW), inspection and cleaning of highway construction vehicles, and the use of invasive free top-soil (NCHRP, 2006).

However, widespread federal involvement appears to be limited in terms of highway invasive species control. Highway invasive species control is driven mainly by states. Of the

primary reasons for highway invasive species control, states cite internal polices as the predominant factor, more so than Executive Order 13112 or the directives of the Federal Highway Administration. Further illustrating the arguably limited involvement from federal agencies, state Departments of Transportation report one of the most common obstacles for highway invasive species control is the limited availability of federal highway funds. Thus, state governments appear to be the central driving force in highway invasive species management (NCHRP, 2006).

Case Study IV: Early Detection and Rapid Response

Preventing the introduction of invasive species is the most effective means of protecting native ecosystems and industries vital to a state's economy. However, preventive measures have their limitations, and governments are often left with the task of controlling or eradicating a species after it has been introduced (European Environment Agency, 2010; NCHRP, 2006). Thus, an effective invasive species management program includes the use of early detection and rapid response strategies (EDRR) (European Environment Agency 2010).

Given the complexities of European governance, multiple governing bodies and commissions drive the development of invasive species policies. Development of the European Environment Agency's EDRR framework follows a similar trajectory. In 2003, the Council of Europe adopted the European Strategy on Invasive Alien Species, which recommended European nations actively share pertinent information to aid in the early detection of invasive species. The need to address invasive species was addressed formally by the European Commission in 2008 in its communication, "Towards an EU Strategy on Invasive Species" (Commission of the European Communities, 2008). The Commission recommended the development and establishment of an early warning system as part of this communication. The

Council of European Ministers endorsed these recommendations at its 2,953rd meeting in Luxembourg in 2009.

Subsequently, the G8 Environment Ministers recommended member nations develop an early warning system. Previous calls to develop an EDRR framework were expressed by the European Union in the Commission's communication, "Halting the Loss of Biodiversity by 2010 and Beyond: Sustaining Ecosystem Services for Human Well-Being," in 2006. Responding to the calls from these various stakeholders, the European Environment Agency published its recommendation for invasive alien species control, with emphasis on EDRR, in 2010 in its report "Towards an Early Warning and Information System for Invasive Alien Species Threatening Biodiversity in Europe" (European Environment Agency, 2010).

Often considered the "second line of defense" after prevention, EDRR is critical to controlling invasive species during the initial stages of species introduction (Colorado Department of Agriculture, 2016).

The steps involved in effective early detection and rapid response framework are: 1) to identify potential invasive species (those yet to be detected within the state, but likely to be introduced) and 2) to determine the various economic, ecological, and human health impacts of a species' introduction (see U.S. Forest Service, undated; Washington Invasive Species Council, 2009). Pertaining to the identification of potential invasive species, the U.S. Forest Service serves as an example, having developed an Early Warning System (EWS) for threats posed to forest health. The first steps of this EWS are to identify potential threats. In conjunction with identifying potential threats, the EWS identifies possible pathways through which the species may be spread (e.g. waterways), other likely environmental influences (e.g. climatic changes),

and particularly vulnerable ecosystems (e.g. areas currently damaged by invasive species) (United State Forest Service, undated).

A second component of an EDRR framework may include an assessment of the various impacts an invasive species may have on the state. Washington State employs an "Early Action Assessment Tool" as a component of its EDRR framework (Washington Invasive Species Council, 2009). The goals for this tool are "1) identifying the most problematic invasive species in or near to the state and 2) prioritizing [Washington Invasive Species] Council actions" (Washington Invasive Species Council, 2009, p. 1). The Assessment Tool takes a comprehensive approach to the potential impacts of invasive species introduction by evaluating "ecological impacts, economic impacts, human health impacts, invasive potential, and difficulty of control" (Washington Invasive Species Council, 2009)

The Assessment Tool's comprehensive nature is enhanced by evaluating the current ability to prevent/take early action related to the introduction of a new species. This metric evaluates "regulatory barriers to prevent entry into and transport within Washington," "the degree to which control is mandated," and "current efforts for education and outreach," among other criteria measured (Washington Invasive Species Council, p. 6, 2009). These measures enable lawmakers and regulators to evaluate more than just the economic, ecological, and human health impacts of invasive species introduction, but to identify regulatory obstacles that may prevent effective EDRR implementation, thus illustrating the need for appropriate regulatory change.

The core of early detection involves routine monitoring throughout an area, particularly those deemed most vulnerable to infestation and host to those species identified as most likely to be introduced into the state (Wittenberg and Cock, 2001). The U.S. Forest Service's EWS offers

an example of such monitoring. The EWS includes two classes of early detection surveys: aerial and ground surveys and special detection surveys. Aerial and ground surveys establish baseline data that can be monitored systematically over time (U.S. Forest Service, undated, p. 16). Special detection surveys target locations likely to host the introduction of new invasive species (e.g. surveys targeting areas prone to gypsy moth infestations) (U.S. Forest Service, undated, p. 17).

An example of such monitoring is found in Texas. A targeted monitoring program, designed to detect the introduction of the European gypsy moth along vulnerable pathways, led to the detection of a related species, the Asian gypsy moth. Discovery of the Asian gypsy moth resulted in a timely response from both federal and state authorities. While the response faced challenges from property owners over the use of insecticides on private property, the overall response was deemed a success, due to the early detection and rapid response of federal and state authorities. Without special detection surveys targeting known gypsy moth pathways, the response to the introduction of the Asian gypsy moth may have been inadequate (Porter, 2007).

With a robust early detection system in place involving both routine and targeted surveys, states have a better chance of effectively addressing the introduction of a new invasive species. However, relying upon the formalities of the early detection system does not guarantee success. A critical component of rapid response is collaboration among all involved stakeholders (Porter, 2007).

The introduction of the Asian long-horned beetle, first discovered by a private citizen in the State of New York, offers a valuable study in inter-agency collaboration. The Asian long-horned beetle can pose a significant risk to trees and forests. Responding to the discovery of the Asian long-horned beetle, the U.S. Department of Agriculture's Animal Plant and Health Inspection Service (APHIS) served as the coordinating authority to eradicate the pest. APHIS

coordinated efforts among state and local authorities, including the New York Department of Agriculture and Markets and the New York City Department of Parks and Recreations (Porter, 2007).

The collaboration between APHIS, the State of New York, and New York City was beneficial in two ways. First, the response to the Asian long-horned beetle requires intensive resources. Thus, the ability to harness the resources, both financial and human, from multiple agencies contributed to a greater degree of success than if a single agency was to combat the species. Second, the involvement of the federal government resulted in a novel approach – employing "smokejumpers" from the U.S. Forest Service. Smokejumpers are parachute-based firefighters, adept at tree climbing. The smokejumpers helped to determine if trees were infested with the Asian long-horned beetle by climbing trees and examining the canopy. Without a multi-agency response, New York City may not have been as well positioned to address the Asian long-horned beetle.

Similarly, the previously mentioned case study from Texas illustrates the advantages of inter-agency collaboration. As with the Asian long-horned beetle in New York, APHIS took an active role in working with state authorities in Texas, including the Texas Department of Agriculture and the Texas Forest Service. While collaboration can present challenges to those agencies involved, APHIS had developed an Asian gypsy moth response strategy prior to detection in Texas, thus making a coordinated response more proactive (Porter, 2007).

While responses in Texas and New York were deemed successful by the Environmental Law Institute, both states were presented with the challenge of involving private citizens in the response efforts. Both cases involved the invasive species being present on private property. In Texas, there was significant public resistance to the use of chemical pesticides to eradicate the

Asian gypsy moth. However, an alternative treatment[16] was offered by officials in Texas, which was eventually accepted by landowners and environmental interests, due to officials actively engaging and educating property owners to seek their cooperation (Porter, 2007).

Likewise, in New York, consent from property owners was required as part of a comprehensive response strategy. Given that the Asian long-horned beetle burrows in trees, effective response required inspection and treatment of trees on private property. New York law required numerous public notice provisions prior to inspection, including media contacts and individual notification. Moreover, inspecting and removing trees on private property raised civil liberties concerns over search and seizure and governmental takings (Porter, 2007).

Regardless of the species in question, if response efforts involve private property, the timeliness, and thus effectiveness, of the response may be in jeopardy due to resistance from private citizens and to agency compliance with regulatory and procedural statutes. Public outreach campaigns, citizen engagement/education, and flexibility in agency responses may contribute to a successful EDRR outcome (see Porter, 2007; Westbrooks and Bargeron, 2011; Wittenberg and Cook, 2001).

Funding for Detection, Suppression, and Eradication of Invasive Species

When reviewing reports from federal and state agencies involved in controlling the spread of invasive species, a common theme emerged – namely, inadequate funding.

The national government provides funding primarily through programs under the U.S. Department of Agriculture. Funding is typically associated with the Farm Bill and directly linked

[16] The alternative treatment consisted of a pheromone treatment that would disrupt the mating cycle of the Asian gypsy moth. Whereas the bacterial pest control (which was opposed by landowners) needed to be applied in March, the pheromone could be applied in April for effective control. After application of the pheromone, the Texas Forest Service did not find additional Asian gypsy moths during trap surveys and declared the treatment a success (Porter, 2007).

to invasive species that threaten agriculture (U.S. Department of Agriculture, undated). Funding to address invasive aquatic species comes from the U.S. Fish and Wildlife Service, which provides competitive grants to state agencies and researchers.[17] According to agency personnel in Pennsylvania and New Jersey, funding to address insect and plant invasive species typically is done through intra-agency allocations and grants (personal communication, June 12, 2018 and December 18, 2018).

Two examples illustrate help illustrate that cooperation between national and state governments is critical in the management of invasive species: in early 2018, USDA provided $17.5 million in emergency funding to the Pennsylvania Department of Agriculture to contain the impact of the spotted lanternfly in southeastern Pennsylvania (USDA, 2018); and the Great Lakes Commission and the U.S. Fish and Wildlife Service joined forces to create the Invasive Mussel Collaborative to promote the development of coordinated management strategies for eradicating zebra mussels (Great Lakes Commission, undated).

States have developed a wide range of strategies to enhance funding for their efforts to detect, suppress, and eradicate invasive species.

California

In 2014, California implemented an $8 fee per motorized watercraft and dedicated the funds to aquatic invasive species programs. This fee provides 48 percent of the state's budget directed toward combatting aquatic invasive species (Washington Aquatic Invasive Species Funding Advisory Committee, 2016).

[17] Examples of the types of grant programs funded can be found in the document, "Regional Panel Highlights of Activities and Recommendations for the Aquatic Nuisance Species Task Force Meeting, November 3-5, 2015." https://www.anstaskforce.gov/Meetings/2015_November/11-12-Mid-Atlantic-Activities-and-Recs.pdf.

Idaho

Idaho has imposed fees on motorized ($10) and non-motorized ($7) watercraft since 2009. Fees for motorized watercraft are higher for non-residents ($22). Local conservation partners run watercraft inspection stations; 60 percent of the aquatic invasive species funding is dedicated to these efforts (Washington Aquatic Invasive Species Funding Advisory Committee, 2016).

Maine

Maine implemented a fee attached to an annual sticker requirement for motorized watercraft, including jet skis and sailboats equipped with motors. The Maine Department of Environmental Protection and the Maine Department of Inland Fish and Wildlife received this dedicated sticker revenue to apply to "costs related to invasive plant inspections, prevention, containment, eradication and management activities" (Frisman, 2006).

Maryland

Under the direction of the Maryland Department of Natural Resources, the Invasive Species Matrix Team has worked since 2007 to address threats from invasive species, particularly those associated with the Chesapeake Bay. After the Maryland General Assembly passed the State Invasive Species Act of 2015, a workgroup concluded that Maryland's efforts to eradicate aquatic invasive species would benefit from a consistent source of funding (State of Maryland, 2015). To date, Maryland has not imposed any fees on watercraft registrations.

Minnesota

Minnesota developed its dedicated funding stream for aquatic invasive species in 1991. Given its extensive lake system, Minnesota devotes substantial resources to aquatic invasive species programs. Since 2015, the state has set its appropriation at $10 million annually (Minnesota Department of Revenue, Aquatic Invasive Species Aid Prevention, 2017). Fees on motorized watercraft ($1.67) generate 22 percent of these funds. Revenue from a portion of fishing licenses accounts for another 9 percent of this funding (Washington Aquatic Invasive Species Funding Advisory Committee, 2016).

Nevada

In 2013, Nevada imposed fees on motorized and non-motorized watercraft. Residents pay $10 (motorized) and $5 (non-motorized) for an aquatic invasive species sticker; non-residents' fees are doubled (Washington Aquatic Invasive Species Funding Advisory Committee, 2016). Nevada collects civil penalties associated with aquatic invasive species violations; these funds go to the Wildlife Fund Account to offset eradication and restoration costs (State of Maryland, 2015).

New Hampshire

New Hampshire instituted an annual boat registration fee that is partially based on the size of the vessel. Fees range from $24 for vessels up to and including 16 feet to $92 for vessels over 45 feet (N.H. Rev. Stat. Ann. § 270-E:5.I). An additional $9.50 fee is dedicated to lake restoration and preservation (N.H. Rev. Stat. Ann. § 270-E:5.II.a). The fee provides funding to the New Hampshire Department of Environmental Services for herbicide application, as well as

grants for education, outreach, and inspection of recreational gear for invasive plants and animals.

New York

Since 1993, New York has dedicated a portion of its realty transfer tax to funding its Environmental Protection Fund (EPF) (New York State, "History," undated). In 2017, the EPF awarded $1.7 million to 35 projects addressing invasive species in New York (New York State, Invasive Species Rapid Response and Control Grant Program, undated).

Washington

Currently, Washington imposes a $2 fee on motorized watercraft that supports implementation of its aquatic invasive species management plan (Washington Aquatic Invasive Species Funding Advisory Committee, 2016). The current debate in Washington involves fees for commercial shipping vessels, given that the Northwest Seaport Alliance (Seattle and Tacoma) is the fourth busiest port system in the U.S. (Inbound Logistics, 2015).

Wisconsin

Wisconsin taxes motorboat gas revenues; the tax is dependent on the type of motorboat and the type of fuel. Recreational motorboats, which use gasoline or undyed diesel fuel, are subject to fuel taxes (currently $0.31 per gallon). Commercial motorboats are not subject to the fuel tax (State of Wisconsin, Department of Revenue, 2017). The funds collected in Wisconsin are administered by the Department of Natural Resources through its Aquatic Invasive Species

(AIS) grant program. The program focused on watercraft inspection, purple loosestrife biological control, and education.

Wyoming

Wyoming imposes annual fees on watercraft since 2010. For residents, the fee for a motorized watercraft is $10, and the fee for a non-motorized watercraft is $5. Non-residents pay more with fees of $30 and $15, respectively. These fees account for 33 percent of Wyoming's funding to combat aquatic invasive species (Washington Aquatic Invasive Species Funding Advisory Committee, 2016).

Conclusions and Policy Considerations

As the analysis of the statutory and regulatory efforts to control invasive species shows, there is no uniform approach to addressing the issues. Congress has paid sporadic attention to these issues, leaving most efforts to regulatory agencies (typically, USDA and the U.S. Department of the Interior). Once invasive species are detected, states' efforts focus on control; less effort is dedicated to prevention and little is directed toward eradication.

Policy case studies show the benefits of inter-agency cooperation and interstate coordination. Management expertise and funding are critical because invasive species do not respect agency or state boundaries. Efforts to control and prevent the spread of invasive species require a holistic approach to be effective.

Policy Consideration 1: Provide institutional support and dedicated funding for the Governor's Invasive Species Council, including a statewide invasive species coordinator.

While the Governor's Invasive Species Council will celebrate 20 years of existence in 2019, the council has faced challenges and had little to no visible presence from 2011 to 2015. The reinvigoration of the council by Governor Tom Wolf has brought agency heads and non-governmental stakeholders to the table to engage in collaborative problem solving. This approach has yielded results and collaboration in developing a job description for a statewide invasive species coordinator. The position was advertised as a permanent, full-time civil service position in December 2018, under the job title, "Plant Inspection Program Specialist." Continued support from the Governor's Office and continuing funding for the coordinator position are essential to the success of the council.

Policy Consideration 2: Promote interagency cooperation to solve problems with noxious weeds along state highways.

As bureaucracies develop, agencies create policy and program silos, reducing their ability to solve problems collaboratively. An example of this emerged during discussions with staff at DCNR. Staff noted that several invasive weed species are prevalent along state highways. Roadwork and mowing disturb the ground by mixing soil layers and opportunistic weeds take advantage of this ("Backcountry Road Maintenance and Weed Management," 2013).

Because of this, efforts to control invasive weeds along state roads, particularly the timing of mowing, need to be coordinated between DCNR and PENNDOT. Noxious weeds along state highways could be combatted further by requiring road construction contractors to certify that their equipment and any fill brought into an area is "seed-free."

Policy Consideration 3: Develop regulations for mandatory inspection of watercraft and a timetable for implementation, including a fee structure and personnel needs and costs.

Pennsylvania requires all boats powered by a gasoline, diesel, or electric motor, even for auxiliary power, to be licensed. Licenses cover a 2-year period; the highest price license is $52 for motorboats over 20 feet in length. Unpowered boats may apply for a launch or mooring permit for $22 for 2 years.

While the Pennsylvania Fish and Boat Commission promotes education about aquatic invasive species through its "Clean Your Gear" campaign, Pennsylvania does not have mandatory inspection of watercraft, either motorized or non-motorized (Pennsylvania Fish and Boat Commission, 2018). As demonstrated by the example from Lake Tahoe, the implementation of mandatory inspections has effectively deterred the spread of aquatic invasive species.

Even though the number of licensed watercraft in Pennsylvania has declined over the last decade from 338,002 in 2009 to 306,412 in 2018 (Pennsylvania Fish and Boat Commission, 2018), an increase of $3 per license would generate almost $920,000 for an inspection program.

Policy Consideration 4: Develop a funding mechanism to support early detection and rapid response and provide agencies with sufficient discretion to access the funds.

Agencies' staff within Pennsylvania have expertise to address concerns raised by invasive species. Agencies need to retain discretion so they can act when new invasive species appear. Agencies' efforts should be supported by funding for early detection and rapid response. Funding could follow the New York model, using a portion of the realty transfer tax. Following a recommendation from Michigan (2017), the ideal fund would promote "short-term response actions while long-term solutions are planned" (p. 20). The fund balances would accrue from year to year rather than lapsing at the end of the fiscal year.

Policy Consideration 5: Consult with the Governor's Office of General Counsel regarding the development of policies related to access to private property to promote early detection and rapid responses to address threats from invasive species.

While the 2017 Controlled Plants and Noxious Weeds Act provides the Pennsylvania Department of Agriculture the power to declare noxious weed control areas and require landowners to comply with control orders, this does not provide sufficient support for entry onto private lands for early detection and rapid response. Requesting guidance from the Governor's Office of General Counsel about the development of policies related to access could help prevent legal challenges related to unreasonable searches, privacy rights, and regulatory takings.

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Appendix A

Invasive Species State Contacts, 2018

State	Department/Agency/Address	Phone	Email
Alabama	Department of Agriculture and Industries 1445 Federal Drive Montgomery, AL 36109-0336	334-240-7100	Ask-me@agi.alabama.gov
	Department of Conservation and Natural Resources 64 N. Union Street, Room 474 Montgomery, AL 36130	334-242-3165	Not available
Alaska	Department of Fish and Game P.O. Box 115526 1255 W. 8th Street Juneau, AK 99811-5526	877-468-2748	Dfg.dsf.InvasiveSpecies@alaska.gov
Arizona	Department of Agriculture 1688 W. Adams Street Phoenix, AZ 85007	602-452-4373	mkillian@azda.gov
	Game and Fish Department 500 W. Carefree Highway Phoenix, AZ 85086-5000	602-942-3000	customerservice@azgfd.gov
	University of Arizona Aquatic Nuisance Species	Not Available	kevfitz@aag.arizona.edu
Arkansas	Department of Agriculture 1 Natural Resources Drive Little Rock, AR 72205	501-225-1598	info@agriculture.arkansas.gov
California	Department of Fish and Game P.O. Box 944209 Sacramento, CA 94244-2090	916-653-4875	invasives@wildlife.co.gov
	Department of Food and Agriculture 1220 N Street Sacramento, CA 95814	916-654-0466	Not Available
Colorado	Department of Agriculture 1700 Broadway, Suite 220 Denver, CO 80290	303-894-2200	Christi.Lightcap@state.co.us
	Department of Natural Resources 1700 Broadway, Suite 220 Denver, CO 80290	303-894-2200	Not Available
Connecticut	Department of Agriculture 450 Columbus Boulevard, Suite 701 Hartford, CT 06103	860-713-2500	Not Available

Delaware	Department of Agriculture 2310 South DuPont Highway Dover, DE 19901 Department of Natural Resources and Environmental Control 89 Kings Highway Dover, DE 19901	302-698-4524 302-739-9912	Not Available Craig.Phoads@state.de.us
Florida	Department of Agriculture and Consumer Services Plaza Level 10, The Capitol 400 S. Monroe Street Tallahassee, FL 32399	800-435-7352	Not Available
Georgia	Department of Agriculture 19 Martin Luther King, Jr. Drive, SW Atlanta, GA 30334	404-656-3600	Gary.black@agr.georgia.gov
Hawaii	Department of Agriculture 1428 S. King Street Honolulu, HI 96814 Department of Land and Natural Resources Kalanimoku Building 1151 Punchbowl Street Honolulu, HI 96813	808-973-9560 808-587-0400	Hdoa.info@hawaii.gov dlnr@hawaii.gov
Idaho	Department of Agriculture P.O. Box 790 Boise, ID 83701 Department of Parks and Recreation P.O. Box 83720 Boise, ID 83720-0065	208-332-8500 208-334-4199	info@isda.idaho.gov inquiry@idpr.idaho.gov
Illinois	Department of Agriculture P.O. Box 19281 Springfield, IL 62794-9281 Department of Natural Resources One Natural Resources Way Springfield, IL 62702-1271	217-782-2172 217-782-6302	Not Available DNR.ANS@illinois.gov
Indiana	Department of Natural Resources 402 West Washington Street Room W160A Indianapolis, IN 46204	317-232-4200	PAC@dnr.IN.gov
Iowa	Department of Natural Resources 502 West 9th Street, 4th Floor Des Moines, IA 50319-0034	515-725-8200	Not Available

Kansas	Department of Agriculture, Plant Protection, and Weed Control Program Manhattan Office 1320 Research Park Drive Manhattan, KS 66502	785-564-6700	Not Available
Kentucky	Department of Agriculture 105 Corporate Drive Frankfort, KY 40601	502-573-0282	Not Available
Louisiana	Department of Agriculture and Forestry P.O. Box 631 Baton Rouge, LA 70821 Department of Wildlife and Fisheries P.O. Box 98000 2000 Quail Drive Baton Rouge, LA 70898	225-922-1234 225-765-2800	info@ldaf.louisiana.gov Not Available
Maine	Department of Agriculture, Conservation, and Forestry 22 State House Station, 18 Elkins Lane Augusta, ME 04333 Department of Marine Resources 21 State House Station Augusta, ME 04333-0021	207-287-3200 207-624-6550	DACF@Maine.gov Not Available
Maryland	Department of Agriculture 50 Harry S. Truman Parkway Annapolis, MD 21401 Department of Natural Resources 580 Taylor Avenue Tawes State Office Building Annapolis, MD 21401	410-841-5700 410-260-8367	Not Available Customerservice.dnr@maryland.gov
Massachusetts	Department of Agricultural Resources 251 Causeway Street, Suite 500 Boston, MA 02114-2151	617-626-1700	Not Available
Michigan	Department of Agricultural and Rural Development P.O. 30017 Lansing, MI 48909 Department of Environmental Quality Constitution Hall 525 West Allegan Street P.O. Box 30473 Lansing, MI 48909-7973	800-292-3939 800-662-9278	MDA-Info@Michigan.gov Deq-assist@michigan.gov
Minnesota	Department of Agriculture 625 Robert Street North Saint Paul, MN 55155-2538 Department of Natural Resources 500 Lafayette Road St. Paul, MN 55155	651-201-6000 651-296-6157	Not Available Info.dnr@state.mn.us

	Pollution Control Agency 520 Lafayette Road St. Paul, MN 55155	651-296-6300	Info.pca@state.mn.us
Mississippi	Department of Agriculture and Commerce MDAC Main Office P.O. Box 1609 Jackson, MS 39201	601-359-1100	Not Available
Missouri	Department of Agriculture P.O. Box 630 1616 Missouri Boulevard Jefferson City, MO	573-751-4211	aginfo@mda.mo.gov
Montana	Department of Agriculture 302 N. Roberts Street Helena, MT 59601 Montana Fish, Wildlife, and Parks 1420 East Sixth Avenue P.O. Box 200701 Helena, MT 59620-0701	406-444-3144 406-444-2535	agr@mt.gov fwpgen@mt.gov
Nebraska	Department of Agriculture 301 Centennial Mall South P.O. Box 94947 Lincoln, NE 68509-4947 Game and Parks Commission 2200 N. 33rd Street Lincoln, NE 68503	402-471-2341 402-471-0641	Agr.webmaste@nebraska.gov Not available
Nevada	Department of Wildlife 6980 Sierra Center Parkway #120 Reno, NV 89511	775-688-1500	ndowinfo@ndow.org
New Hampshire	Department of Agriculture, Markets, and Food P.O. Box 2042 Concord, NH 03302-2042 Department of Environmental Services P.O. Box 95 Concord, NH 03302-0095 Fish and Game Department 11 Hazen Drive Concord, NH 03301	603-271-3551 603-271-3503 603-271-3421	Not Available Not Available info@wildlife.nh.gov
New Jersey	Department of Agriculture P.O. Box 330 Trenton, NJ 08625 Department of Environmental Protection P.O. Box 420 Trenton, NJ 08625	609-633-2954 609-777-3373	ContactAg@ag.state.nj.us Not Available

New Mexico	Department of Agriculture MSC 3189, Box 30005 Las Cruces, NM 88003-8005 Department of Game and Fish P.O. Box 25112 Santa Fe, NM 87504	575-646-3007 505-476-8000	Not Available ispa@state.nm.us
New York	Department of Agriculture and Markets 108 Airline Drive Albany, NY 12235 Department of Environmental Conservation 625 Broadway Albany, NY 12233-0001	800-554-4501 518-402-9522	Not Available contact@dec.ny.gov
North Carolina	Department of Agriculture and Consumer Services 1001 Mail Service Center Raleigh, NC 27699-1001	919-707-3000	Not Available
North Dakota	Department of Agriculture 600 E. Boulevard Avenue Dept. 602 Bismarck, ND 58505-0020 Game and Fish Department 100 N. Bismarck Expressway Bismarck, ND 58501-5095	701-328-2231 701-328-6300	ndda@nd.gov ndgf@nd.gov
Ohio	Department of Agriculture 8995 East Main Street Reynolds, OH 43068-3399	614-728-6201	agrcommunications@agri.ohio.gov
Oklahoma	Department of Agriculture P.O> Box 528804 Oklahoma City, OK 73152 Department of Wildlife Conservation P.O. Box 53465 Oklahoma City, OK 73152	405-521-3864 405-521-3851	Investigative.services@ag.ok.gov Not Available
Oregon	Department of Environmental Quality 700 NE Multnomah Street, Suite 600 Portland, OR 98232-4100 Department of Agriculture 1207 NW Naito Parkway, Suite 104 Portland, OR 97209-2832 Department of Forestry 2600 State Street Salem, OR 97310 Department of Fish and Wildlife 4034 Fairview Industrial Drive SE Salem, OR 97302	503-229-5696 503-986-4550 503-945-7200 503-947-6000	DEQinfo@deq.state.or.us info@oda.state.or.us forestryinformation@oregon.gov adfw.info@state.or.us

Rhode Island	Department of Environment Management 235 Promenade Street Providence, RI 02908	401-222-4700	Not Available
South Carolina	Department of Agriculture 1200 Senate Street, Suite 500 Columbia, SC 29201 Department of Natural Resources P.O. Box 167 Columbia, SC 29202-0167	803-734-2210 803-734-4007	Not Available Not Available
South Dakota	Department of Agriculture 523 East Capitol Avenue Joe Foss Building, 3rd Floor Pierre, SD 57501 Game, Fish, and Parks 523 East Capitol Avenue Pierre, SD 57501	605-773-5425 605-223-7660	agmail@state.sd.us Not Available
Tennessee	Department of Agriculture 440 Hogan Road Nashville, TN 37220	615-837-5103	TN.Agriculture@tn.gov
Texas	Department of Agriculture P.O. Box 12847 Austin, TX 78711-2847 Commission on Environmental Quality P.O. Box 13087 Austin, TX 78711-3087	512-463-7476 512-239-1000	Pub.info@texasagriculture.gov ac@tceq.texas.gov
Utah	Department of Agriculture and Food 350 N. Redwood Road, P.O. Box 1465 Salt Lake City, UT 84114-6500 Division of Wildlife Resources 1594 W. North Temple, Suite 2110 Box 146301 Salt Lake City, UT 84114-6301	801-538-7100 801-538-4700	agriculture@utah.gov Not Available
Vermont	Agency of Agriculture, Food and Markets 116 State Street Montpelier, VT 05620-2901 Department of Environmental Conservation 1 National Life Drive Montpelier, VT 05602	802-828-2430 800-974-9559	AGR.Helpdesk@vermont.gov Not Available
Virginia	Department of Agriculture and Consumer Services P.O. Box 1163 Richmond, VA 23218 Department of Conservation and Recreation	804-786-3501 804-786-6124	Not Available pco@dcr.virginia.gov

	600 East Main Street Richmond, VA 23219-2094		
Washington	Department of Agriculture 1111 Washington Street SE Olympia, WA 98504-2560 Department of Fish and Wildlife P.O. Box 43200 Olympia, WA 98504-3200 Department of Natural Resources 1111 Washington Street SE Olympia, WA 98504	360-902-1800 360-902-2200 360-902-1000	Not Available Not Available fmd@dnr.wa.gov
West Virginia	Department of Agriculture 2811 Agriculture Drive Charleston, WV 25305-0170	304-558-3550	Not Available
Wisconsin	Department of Agriculture, Trade, and Consumer Protection P.O. Box 8911 Madison, WI 53708-8911 Department of Natural Resources 101 S. Webster Street P.O. Box 7921 Madison, WI 53707-7921	608-224-5012 888-936-7463	Not Available Not Available
Wyoming	Department of Agriculture 2219 Carey Avenue Cheyenne, WY 82002-0100 Game and Fish Department 5400 Bishop Blvd. Cheyenne, WY 82006	307-777-7321 307-777-4600	wda1@wyo.gov Not Available

Appendix B

Legislative and Regulatory Provisions Related to Invasive Species

Alabama

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Japanese Beetle Quarantine	Alabama Administrative Code, Chapter 80-10-4	Pests	Control	Executive Agency
Sweet Potato Weevil Quarantine	Alabama Administrative Code, Chapter 80-10-5	Pests	Control	Executive Agency
Imported Fire Ant Quarantine	Alabama Administrative Code, Chapter 80-10-6	Pests	Control	Executive Agency
Phony Peach Disease Quarantine	Alabama Administrative Code, Chapter 80-10-7	Other	Control	Executive Agency
Brown Garden Snail Quarantine	Alabama Administrative Code, Chapter 80-10-8	Pests	Control	Executive Agency
Boll Weevil Eradication	Alabama Administrative Code, Chapter 80-10-12	Pests	Eradication	Executive Agency
Noxious Weed Rules	Alabama Administrative Code, Chapter 80-10-14	Weeds	Control	Executive Agency
Rules for Pine Shoot Beetle Quarantine	Alabama Administrative Code, Chapter 80-10-15	Pests	Control	Executive Agency
Rules to Establish Quarantine Against the Citrus Greening Disease (CG) Also Known As Huanglongbing Disease and the Asian Citrus Psyllid (ACP)	Alabama Administrative Code, Chapter 80-10-19	Other	Control	Executive Agency
Restrictions on Possession, Sale, Importation, and/or Release of Certain Animals and Fish	Alabama Administrative Code, Chapter 220-2-26	Other	Control	Executive Agency

Alaska

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Noxious weed, invasive plant, and agricultural pest management and education	Alaska Statutes Title 3 Chapter 5 Section 27	Weeds	Control	Legislative Branch
Ballast Water Discharge	Alaska Statutes Title 46 Chapter 3 Section 750	Aquatic	Prevention	Legislative Branch
Plant Health and Quarantine	Alaska Administrative Code Title 11 Chapter 34	Weeds	Prevention, Control	Executive Agency

Arizona

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Dangerous Plant Pests and Diseases	Arizona Revised Statutes, Title 3, Chapter 2, Article 1	Other	Control, Eradication	Legislative Branch
Aquatic and Invasive Species	Arizona Revised Statutes, Title 17, Chapter 2, Article 3.1	Aquatic	Control	Legislative Branch
Eradicating Noxious Plants	Arizona Revised Statutes, Title 48, Chapter 19, Article 3, 48-2997	Weeds	Control, Eradication	Legislative Branch
Alternative Plan to Eradicate Noxious Plants	Arizona Revised Statutes, Title 48, Chapter 19, Article 3, 48-2998	Weeds	Control, Eradication	Legislative Branch
Plant Services Division	Arizona Administrative Code, Title 3, Chapter 4	Other	Control	Executive Agency
Aquatic Invasive Species	Arizona Administrative Code, Title 12, Chapter 4, Article 11	Aquatic	Control	Executive Agency

Arkansas

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Plant Disease and Pest Control	Arkansas Code Annotated, Title 2, Subtitle 2, Chapter 16	Other	Prevention, Control, Eradication	Legislative Branch
Regulations for Sudden Oak Death	Arkansas Administrative Code, 003.11.04-001E	Other	Control	Executive Agency
Public Nuisance Declared	Arkansas Administrative Code, 209.02.01-005	Other	Prevention, Control	Executive Agency
Imported Fire Ant Quarantine	Arkansas Administrative Code, 209.02.01-006	Pests	Control	Executive Agency
Arkansas Boll Weevil Eradication	Arkansas Administrative Code, 209.02.05-004	Pests	Eradication	Executive Agency

California

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Importation, Transportation, and Sheltering of Restricted Live Wild Animals	California Fish and Game Code, Division 3, Chapter 2, Article 1	Pests	Prevention	Executive Agency
Infected or Diseased Fish	California Fish and Game Code, Division 6, Part 1, Chapter 4	Aquatic	Control	Executive Agency
Grass Carp	California Fish and Game Code, Division 6, Part 1, Chapter 5, Article 4	Aquatic	Prevention, Control	Executive Agency
Marine Aquaria Pets	California Fish and Game Code, Division 6, Part 3, Chapter 2, Article 19	Aquatic	Control	Executive Agency
Exotic Species Introductions	California Food and Agricultural Code Division 1, Part 1, Chapter 3, Section 403	Other	Prevention, Control	Executive Agency
Newly Discovered Pests	California Food and Agricultural Code, Division 4, Chapter 4	Pests	Control, Eradication	Executive Agency
Invasive Pest Planning	California Food and Agricultural Code Division 4, Chapter 4.5	Pests	Planning, Prevention	Executive Agency
Cotton Pest Control	California Food and Agricultural Code, Division 4, Chapter 9, Article 5	Pests	Control	Executive Agency
Glassy-Winged Sharpshooter	California Food and Agricultural Code Division 4, Chapter 9, Article 8.5	Pests	Planning	Executive Agency
Hydrilla	California Food and Agricultural Code, Division 4, Chapter 9, Article 9	Weeds	Prevention, Control, Eradication	Executive Agency
Cotton Pests Abatement Districts	California Food and Agricultural Code, Division 4, Part 1, Chapter 10	Pests	Planning	Executive Agency
Weed-Free Areas	California Food and Agricultural Code, Division 4, Part 4, Chapter 1, Article 1	Weeds	Planning	Executive Agency

Noxious Weeds Management	California Food and Agricultural Code, Division 4, Part 4, Chapter 1, Article 1.7	Weeds	Control	Executive Agency
Africanized Honey Bees	California Food and Agricultural Code, Division 13, Article 16	Pests	Control	Executive Agency
California Seed Law: General Provisions	California Food and Agricultural Code, Division 18, Chapter 2, Article 2	Weeds	Prevention	Executive Agency
California Seed Law: Regulations	California Food and Agricultural Code, Division 18, Chapter 2, Article 4	Weeds	Prevention	Executive Agency
Labelling of Seeds	California Food and Agricultural Code, Division 18, Chapter 2, Article 8	Weeds	Prevention	Executive Agency
Ballast Water	California Harbors and Navigation Code, Section 132	Aquatic	Prevention	Executive Agency
Ballast Water from Tankers	California Public Resources Code, Division 20, Chapter 3, Article 7, Section 30261	Aquatic	Prevention	Legislative Branch
Ballast Water from Tankers	California Public Resources Code, Division 20, Chapter 8, Article 2, Section 30707	Aquatic	Prevention	Legislative Branch
Marine Invasive Species Act	California Public Resources Code, Division 36	Aquatic	Prevention, Control	Legislative Branch
Insect Pest Control	California Code of Regulations, Title 3, Division 4, Chapter 3, Subchapter 5	Pests	Control, Eradication	Executive Agency
Rodent and Weed Control and Seed Inspection	California Code of Regulations, Title 3, Division 4, Chapter 5	Weeds	Prevention	Executive Agency
Weed Free Areas and Weed Eradication Areas	California Code of Regulations, Title 3, Division 4, Chapter 6	Weeds	Classification, Eradication	Executive Agency
Pesticides and Pest Control Operations	California Code of Regulations, Title 3, Division 6	Pests	Control	Executive Agency

Colorado

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Quarantine for Late Blight	8 Colorado Code of Regulations 1203-13	Other	Control	Executive Agency
Quarantine Imposed Against All Life Stages of the Emerald Ash Borer	8 Colorado Code of Regulations 1203-24	Pests	Control	Executive Agency
Rules Pertaining to the Administration and Enforcement of the Colorado Noxious Weed Act	8 Colorado Code of Regulations 1206-2	Weeds	Control, Eradication	Executive Agency
Aquatic Nuisance Species	Colorado Revised Statutes, Title 33, Article 10.5	Aquatic	Prevention, Control, Eradication	Legislative Branch
Pest and Weed Control	Colorado Revised Statutes, Title 35, Article 5.5	Pests, Weeds	Control, Eradication	Legislative Branch

Connecticut

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Control of Nonnative Invasive Plant Species	General Statutes of Connecticut, Chapter 445i, Section 22a-339g	Weeds	Control	Legislative Branch
Invasive Plants Council	General Statutes of Connecticut, Chapter 445i, Section 22a-381	Other	Control	Legislative Branch
Control of Aquatic Plants and Animals	General Statutes of Connecticut, Chapter 490, Section 26-22	Aquatic	Control	Legislative Branch

Delaware

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Plant Pests Law	Delaware Code Title 3 Chapter 11	Weeds	Prevention, Control, Eradication	Legislative Branch
Seeds	Delaware Code Title 3 Chapter 15	Weeds	Prevention	Legislative Branch
Noxious Weed Control	Delaware Code Title 3 Chapter 24	Weeds	Control, Eradication	Legislative Branch
Nuisance Plants	Delaware Code Title 3 Chapter 27	Weeds	Prevention, Control	Legislative Branch
Possession of Mammals or Reptiles Exotic to Delaware	Delaware Code Title 3 Chapter 72	Pests	Prevention, Control	Legislative Branch
Exotic Avian Species	Delaware Code Title 3 Chapter 81	Pests	Prevention, Control	Legislative Branch
Pest Control Compact	Delaware Code Title 3 Chapter 90	Pests	Control	Legislative Branch
Non-Native Wildlife	Delaware Code Title 7 Chapter 7 Subchapter VIII	Pests	Prevention, Control	Legislative Branch
Giant Reed Grass Control	Delaware Code Title 7 Chapter 38	Weeds	Control, Eradication	Legislative Branch
Regulations for Noxious Weed Control	Delaware Administrative Code Title 3 (801)	Weeds	Prevention, Control	Executive Agency
Rules and Regulations for the Control and Suppression of the White Pine Blister Rust	Delaware Administrative Code Title 3 (803)	Other	Control	Executive Agency
Exotic Animal Regulations	Delaware Administrative Code Title 3 (903)	Pests	Control	Executive Agency
Non-Native/Invasive Wildlife	Delaware Administrative Code Title 7 (3923)	Pests	Prevention, Control	Executive Agency

Florida

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Aquatic Plant Control	Florida Statutes, Title 28, Chapter 369, Part 1	Aquatic	Prevention, Control, Eradication	Legislative Branch
Introduction or Release of Plant Pests, Noxious Weeds, or Organisms Affecting Plant Life	Florida Statutes, Title 35, Chapter 581.083	Weeds	Control	Legislative Branch
Noxious Weeds and Infected Plants or Regulated Articles	Florida Statutes, Title 35, Chapter 581.091	Weeds	Control	Legislative Branch
Boll Weevil Eradication	Florida Statutes, Title 35, Chapter 593, Part 1	Pests	Eradication	Legislative Branch
Florida Nursery Stock and Certification Fee	Florida Administrative Code, Chapter 5B-2	Other	Control	Executive Agency
Plant Quarantine and Certification Entry Requirements	Florida Administrative Code, Chapter 5B-3	Other	Prevention, Control	Executive Agency
Oak Wilt Disease	Florida Administrative Code, Chapter 5B-26	Other	Control	Executive Agency
Seed Potato Pests	Florida Administrative Code, Chapter 5B-33	Pests	Control	Executive Agency
Lettuce Mosaic	Florida Administrative Code, Chapter 5B-38	Other	Control	Executive Agency
Phytophagus Snails	Florida Administrative Code, Chapter 5B-43	Pests	Prevention, Control	Executive Agency
Boll Weevil Eradication	Florida Administrative Code, Chapter 5B-52	Pests	Eradication	Executive Agency
Pests of Honeybees and Unwanted Races of Honeybees	Florida Administrative Code, Chapter 5B-54	Pests	Control	Executive Agency
Dogwood Anthracnose	Florida Administrative Code, Chapter 5B-55	Other	Control	Executive Agency
Introduction or Release of Plant Pests, Noxious Weeds, Arthropods, and Biological Control Agents	Florida Administrative Code, Chapter 5B-57	Weeds	Control	Executive Agency
Aquatic Plant Importation, Transportation, Non-	Florida Administrative Code, Chapter 5B-64	Aquatic	Control	Executive Agency

Nursery Cultivation, Possession, and Collection				
Aquatic Plant Control Permits	Florida Administrative Code, Chapter 68F-20	Aquatic	Control	Executive Agency
Funding for Aquatic Plant Management	Florida Administrative Code, Chapter 68F-54	Other	Other	Executive Agency

Georgia

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Pest Control Compact	Georgia Code Annotated, Title 2, Chapter 7, Article 4	Pests	Control	Legislative Branch
Boll Weevil Eradication	Georgia Code Annotated, Title 2, Chapter 7, Article 5	Pests	Eradication	Legislative Branch
Feral Hogs	Georgia Code Annotated, Title 2, Chapter 7, Article 7	Pests	Control	Legislative Branch
Phony Peach Disease Quarantine	Administrative Rules and Regulations of the State of Georgia, Chapter 40-4-13	Other	Control	Executive Agency
Emerald Ash Borer Quarantine	Administrative Rules and Regulations of the State of Georgia, Chapter 40-4-25	Pests	Control	Executive Agency
Limitations on Noxious Weed Seeds	Administrative Rules and Regulations of the State of Georgia, Chapter 40-12-4	Weeds	Prevention	Executive Agency
Boll Weevil Eradication	Administrative Rules and Regulations of the State of Georgia, Chapter 40-24	Pests	Control	Executive Agency

Hawaii

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Noxious weed rules	Administrative Rules - Title 4 - Chapter 68	Weeds	Control, Eradication	Executive Agency
Plant and non-domestic animal quarantine plant import rules	Administrative Rules - Title 4 - Chapter 70	Other	Control	Executive Agency
Plant and non-domestic animal quarantine non-domestic animal import rules	Administrative Rules - Title 4 - Chapter 71	Other	Control	Executive Agency
Plant and non-domestic animal quarantine microorganism import rules	Administrative Rules - Title 4 - Chapter 71A	Other	Control	Executive Agency
Plant and non-domestic animal quarantine plant interstate rules	Administrative Rules - Title 4 - Chapter 72	Other	Control	Executive Agency
Non-indigenous aquatic species	Administrative Rules - Title 13 - Part IV	Aquatic	Control	Executive Agency
Prohibited acts	Revised Statutes - Title 11 - Chapter 152-3	Other	Control	Legislative Branch
Noxious weed control and eradication	Revised Statutes - Title 11 - Chapter 152-6	Weeds	Control, Eradication	Legislative Branch
Release and confiscation of harmful aquatic life	Revised Statutes - Title 12 - 187A-6.5	Aquatic	Control	Legislative Branch
Alien aquatic organisms	Revised Statutes - Title 12 - 187-32A	Aquatic	Control	Legislative Branch
Invasive Species Council	Revised Statutes - Title 12 - Chapter 194	Other	Other	Legislative Branch
Introduction of aquatic life and wildlife	Revised Statutes - Title 12 - 197-3	Aquatic	Other	Legislative Branch
Landowner's liability for access to control invasive species	Revised Statutes - Title 28 - Chapter 520	Other	Control, Eradication	Legislative Branch

Idaho

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Rules Governing Deleterious Exotic Animals	Idaho Administrative Code 02.04.27	Pests	Prevention, Control	Executive Agency
Rules Governing the Pure Seed Law	Idaho Administrative Code 02.06.01	Weeds	Prevention	Executive Agency
Rules Governing Invasive Species	Idaho Administrative Code 02.06.09	Pests	Prevention, Control, Eradication	Executive Agency
Rules Governing the Pale Cyst Nematode	Idaho Administrative Code 02.06.10	Pests	Prevention, Control	Executive Agency
Rules Governing European Corn Borer	Idaho Administrative Code 02.06.11	Pests	Control	Executive Agency
Noxious Weed Rules	Idaho Administrative Code 02.06.22	Weeds	Control	Executive Agency

Illinois

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Bees and Apiaries Act--Exotic Strains	Administrative Code - Title 8 - Part 60.50	Pests	Eradication	Executive Agency
Illinois Noxious Weed Law	Administrative Code - Title 8 - Part 220	Weeds	Control, Eradication	Executive Agency
Insect Pest and Plant Disease Act	Administrative Code - Title 8 - Part 240	Other	Control	Executive Agency
Injurious Species	Administrative Code - Title 17 - Part 805	Other	Other	Executive Agency
Fox Chain O'Lakes Aquatic Plant Management	Administrative Code - Title 17 - Part 895	Aquatic	Control	Executive Agency
Lake Michigan Aquatic Plant Management	Administrative Code - Title 17 - Part 897	Aquatic	Control	Executive Agency
Pest Control Compact Act	State Law - Chapter 45 - 45 ILCS 5	Pests	Other	Legislative Branch
Insect Pest and Plant Disease Act	State Law - Chapter 505 - 505 ILCS 90	Pests	Quarantine	Legislative Branch
Illinois Noxious Weed Law	State Law - Chapter 505 - 505 ILCS 100	Weeds	Eradication	Legislative Branch
Illinois Exotic Weed Act	State Law - Chapter 525 - 525 ILCS 10	Weeds	Control	Legislative Branch

Indiana

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Noxious Weed Seeds; Prohibitions	Administrative Code - Title 360 - 360 IAC 1-1-5	Weeds	Other	Executive Agency
Control of Pests and Pathogens	State Law - Title 14 - Chapter 4	Pests	Control	Legislative Branch
Purple Loosestrife and Multiflora Roses	State Law - Title 14 - Chapter 12	Weeds	Control	Legislative Branch
Weed Control Board	State Law - Title 15 - Chapter 7	Weeds	Eradication	Legislative Branch
Destruction of Detrimental Plants	State Law - Title 15 - Chapter 8	Weeds	Eradication	Legislative Branch
Control of Johnson grass	State Law - Title 15 - Chapter 9	Weeds	Control	Legislative Branch
Invasive Species Council	State Law - Title 15 Chapter 10	Other	Other	Legislative Branch

Iowa

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Agricultural Seeds	Administrative Code - Title 21 - Chapter 40	Weeds	Other	Executive Agency
Crop Pests	Administrative Code - Title 21 - Chapter 46	Pests	Control	Executive Agency
Noxious Weeds	Administrative Code - Title 21 - Chapter 58	Weeds	Control	Executive Agency
Restrictions on Introduction and Removal of Plant Life	Administrative Code - Title 571 - Chapter 54	Weeds	Control	Executive Agency
Aquatic Invasive Species	Administrative Code - Title 571 - Chapter 90	Aquatic	Other	Executive Agency
Crop Pests	State Law - Title V - Chapter 177A	Pests	Eradication	Legislative Branch
Agriculture Seeds	state Law - Title V - Chapter 199	Aquatic	Other	Legislative Branch
Noxious Weeds	State Law - Title VIII - 317.1A	Weeds	Other	Legislative Branch

Kansas

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Biological Control Plan	Administrative Regulations - Article 8 - 4-8- 41	Other	Control	Executive Agency
Pest freedom Standards	Administrative Regulations - Article 8 - 4-15-10	Pests	Other	Executive Agency
Commercial Sale of Fish Bait	Administrative Regulations - Article 17 - 115-17-2	Aquatic	Control	Executive Agency
Black Stem Rust	State Laws - Article 7 - 2-712	Other	Other	Legislative Branch
Noxious Weeds; Control and Eradication; Listing	State Laws - Article 13 - 2-1314	Weeds	Control, Eradication	Legislative Branch
Noxious Weeds; Declaration of Multiflora Rose; Bull Thistle as Noxious Authorized	State Laws - Article 13 - 2-1314b	Weeds	Other	Legislative Branch
Control of Noxious Weeds; Control Districts	State Laws - Article 13 - 2-1315	Weeds	Other	Legislative Branch
County Weed Supervisors to determine extent of infestation	State Laws - Article 13 - 2-1318	Weeds	Other	Legislative Branch
Control and eradication of noxious weeds	State Laws - Article 13 - 2-1319	Weeds	Other	Legislative Branch
Notification of owner of lands infested with noxious weeds	State Laws - Article 13 - 2-1331	Weeds	Other	Legislative Branch
Notice of entry upon lands to Control weeds	State Laws - Article 13 - 2-1332	Weeds	Other	Legislative Branch
County option for discount program to Control noxious weeds	State Laws - Article 13 - 2-1333	Weeds	Other	Legislative Branch
Disposition of plant pests	State Laws - Article 21 - 2-2116	Weeds	Other	Legislative Branch
Plant pest emergency response fund	State Laws - Article 21 - 2-2129	Other	Other	Legislative Branch

Kentucky

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Noxious Weed Seed	Kentucky Administrative Regulations, Title 12, 1:120	Weeds	Other	Executive Agency
Importation, Possession; Live Fish	Kentucky Administrative Regulations, Title 301, 1:122	Aquatic	Control	Executive Agency
Asian Carp and Scaled Rough Fish Harvest Program	Kentucky Administrative Regulations, Title 301, 1:152	Aquatic	Control	Executive Agency
Cabinets Duties Concerning Blight-Resistant Chestnut Tree Seedlings	Kentucky Revised Statutes, Title 12, Chapter 149.015	Weeds	Control	Legislative Branch
Forest Pest Control	Kentucky Revised Statutes, Title 12, Chapter 149.610	Pests	Control	Legislative Branch
Release of Hog or Pig into the Wild Prohibited	Kentucky Revised Statutes, Title 12, Chapter 150.186	Pests	Control	Legislative Branch
Department to Eradicate Noxious Weeds and Invasive Plants on Rights-of-Way	Kentucky Revised Statutes, Title 15, Chapter 176.051	Weeds	Control	Legislative Branch
Establishment of Quarantines	Kentucky Revised Statutes, Title 21, Chapter 249.040	Other	Prevention	Legislative Branch
Landholder to Cut Canada Thistles	Kentucky Revised Statutes, Title 21, Chapter 249.180	Weeds	Control	Legislative Branch
Canada and Nodding Thistle Eradication Areas	Kentucky Revised Statutes, Title 21, Chapter 249.183	Weeds	Eradication	Legislative Branch
Thistles a Public Nuisance in Eradication Area	Kentucky Revised Statutes, Title 21, Chapter 249.187	Weeds	Other	Legislative Branch
Thistle Eradication on Highway and Utility Rights-of-Way	Kentucky Revised Statutes, Title 21, Chapter 249.195	Other	Control, Eradication	Legislative Branch

Louisiana

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
List and Limitations of Noxious Weed Seed	Louisiana Administrative Code, Title 7, Part XIII, Section 109	Weeds	Prevention, Control	Executive Agency
Plant Protection and Quarantine	Louisiana Administrative Code, Title 7, Part XV	Weeds	Control	Executive Agency
Coast wide Nutria Control Program	Louisiana Administrative Code, Title 76, Part V, Section 123	Other	Control	Executive Agency
Invasive Aquatic Noxious Plants	Louisiana Administrative Code, Title 76, Part VII, Chapter 11	Aquatic	Prevention, Control	Executive Agency
Boll Weevil Eradication Law	Louisiana Revised Statutes, Title 3, Chapter 12, Section 1601	Pests	Eradication	Legislative Branch
Chinese tallow; declaration as a noxious plant; destruction	Louisiana Revised Statutes, Title 3, Chapter 12, Section 1791	Weeds	Other	Legislative Branch
Formosan Termite Initiative	Louisiana Revised Statutes, Title 3, Chapter 12, Section 3391	Pests	Control	Legislative Branch
Nutria Control Cost-Sharing	Louisiana Revised Statutes, Title 56, Section 281	Other	Control	Legislative Branch
Exotic fish; importation, sale, and possession of certain exotic species prohibited; permit required; penalty	Louisiana Revised Statutes, Title 56, Section 319	Aquatic	Prevention, Control	Legislative Branch
Designation and taking of exotic fish	Louisiana Revised Statutes, Title 56, Section 319.2	Aquatic	Control	Legislative Branch
Conducting fishing operations so as not to destroy nests or natural hiding places of young fish; prohibited importation; Control and regulation of noxious aquatic plants; permit; penalty	Louisiana Revised Statutes, Title 56, Section 328	Aquatic	Prevention, Control	Legislative Branch

Louisiana Aquatic Invasive Species Council	Louisiana Revised Statutes, Title 56, Section 360.1	Aquatic	Other	Legislative Branch
The Louisiana Aquatic Invasive Species Task Force	Louisiana Revised Statutes, Title 56, Section 360.2	Aquatic	Other	Legislative Branch
Powers, duties, functions, and responsibilities of the Louisiana Aquatic Invasive Species Council and Task Force	Louisiana Revised Statutes, Title 56, Section 360.3	Other	Prevention, Control, Eradication	Legislative Branch

Maine

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Hemlock Woolly Adelgid Quarantine	Code of Rules - 01 001 - Chapter 266	Pests	Control	Executive Agency
Pine Shoot Beetle Quarantine	Code of Rules - 01 001 - Chapter 268	Pests	Control	Executive Agency
Gypsy Moth Quarantine	Code of Rules - 01 001 - Chapter 271	Pests	Control	Executive Agency
European Larch Canker Quarantine	Code of Rules - 01 001 - Chapter 272	Other	Control	Executive Agency
Criteria for Listing Invasive Terrestrial Plants	Code Rules - 01 001 - Chapter 273	Other	Other	Executive Agency
White Pine Blister Rust, Quarantine on Currant and Gooseberry Bushes	Code of Rules - 01 669 - Chapter 1	Weeds	Control	Executive Agency
Importation of live Marine Organisms	Code of Rules - 13 188 - Chapter 24	Aquatic	Control	Executive Agency
Products Controlled - Definitions	State Laws - Title 7 - Subchapter 11: seeds: 7	Other	Other	Legislative Branch
Quarantines	State Laws - Title 7 - Chapter 409	Other	Quarantine	Legislative Branch
Pest Control Compact	State Laws - Title 7 - Chapter 410	Pests	Control	Legislative Branch
Integrated Pest Management	State Laws - Title 7 - Chapter 413	Pests	Control	Legislative Branch
Forest health and Monitoring	State Laws - Title 12 - Chapter 803	Weeds	Control/Quarantine	Legislative Branch
Watercraft and airmobile	State Laws - Title 12 - Chapter 935	Aquatic	Control	Legislative Branch
Lake and river protection sticker required	State Laws -Title 12 - Section 13058	Aquatic	Control	Legislative Branch
Aquatic nuisance species Control	State Laws -Title 38 - 410-N	Aquatic	Control	Legislative Branch
Prevention of the spread of invasive aquatic plants	State Laws- Title 38 - 419-C	Aquatic	Control	Legislative Branch
Program to Prevent infestation of and to Control Invasive Aquatic Plants	State Laws - Title 38 - Chapter 20-A	Aquatic	Control	Legislative Branch
Invasive Aquatic Plants and Nuisance Species Control	State Laws - Title 38 - Chapter 20-B	Aquatic	Control	Legislative Branch

Maryland

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Plant Disease Control	Maryland Code, Agriculture, Title 5, Subtitle 3	Weeds	Control, Eradication	Executive Agency
Weed Control	Maryland Code, Agriculture, Title 9, Subtitle 4	Weeds	Control	Executive Agency
Multiflora Rose Management	Maryland Code, Agriculture, Title 9, Subtitle 7	Weeds	Control	Executive Agency
Nutria Management Plan	Maryland Code, Agriculture, Title 10, Subtitle 202.1	Pests	Control	Executive Agency
Population Control of Mute Swan	Maryland Code, Agriculture, Title 10, Subtitle 211	Pests	Control	Executive Agency

Massachusetts

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Seeds, apples and potatoes	Code of Regulations - 330 CMR - 6	Weeds	Control	Executive Agency
Plant quarantine	Code of Regulations - 330 CMR - 9	Weeds	Control	Executive Agency
Spread or growth of plants of water chestnut	State Laws - Chapter 128 - Section 20A	Weeds	Control	Legislative Branch
European corn borer infestation	State laws - Chapter 128 - Section 31	Weeds	Control	Legislative Branch
Green crabs	State Laws - Chapter 130 - Section 37A	Pests	Control	Legislative Branch
Suppression of moths, caterpillars, worms and beetles and any invasive plant or animal species	State Laws - Chapter 132 - Section 11	Pests	Control	Legislative Branch
interference with suppression or eradication of Asian long horned beetle, oak wilt or any public nuisance	State Laws - Chapter 132 - Section 12	Pests	Other	Legislative Branch

Michigan

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Black Stem Rust	Administrative Code - 617	Other	Control	Executive Agency
Aquatic Nuisance Control	Administrative Code - 3101	Aquatic	Other	Executive Agency
Noxious Weeds	State Laws - Chapter 247 - Act 359 of 1941	Weeds	Control, Eradication	Legislative Branch
White Pine Blister Rust	State Laws - Chapter 247 - Act 313 of 1929	Other	Control, Eradication	Legislative Branch
Insect Pest and Plant Disease	State Laws - Chapter 247 - Act 189 of 1931	Pests	Control	Legislative Branch
Insect Pests and Plant Diseases	State Laws - Chapter 247 - Act 72 of 1945	Pests	Control	Legislative Branch
Transgenic and Nonnative Organisms	State Laws - Chapter 324 - Act 451 of 1994	Pests	Other	Legislative Branch

Minnesota

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Invasive Species Management Program for Aquatic Plants and Wild Animals	Minnesota Statute 84D.02	Aquatic	Other	Legislative Branch
Destruction of Noxious Weeds	Minnesota Statute 160.23	Weeds	Eradication	Legislative Branch
Pesticide Control	Minnesota Statute 1505.0830	Other	Control	Legislative Branch
Invasive Species Minnesota Administrative Rules	Minnesota Administrative Rules, Chapter 6216	Other	Prevention	Executive Agency
Aquatic Plants and Nuisances Minnesota Administrative Rules	Minnesota Administrative Rules, Chapter 6280	Aquatic	Control	Executive Agency

Mississippi

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Control pine beetle epidemics and other timber insects and pests	Mississippi Code Annotated, Title 49, Chapter 19-7	Pests	Control	Legislative Branch
Plants, Plant and Bee Diseases	Mississippi Code Annotated, Title 69, Chapter 25	Weeds	Control	Legislative Branch
Pest Control Compact	Mississippi Code Annotated, Title 69, Chapter 26	Pests	Other	Legislative Branch
Mississippi Boll Weevil Management Act	Mississippi Code Annotated, Title 69, Chapter 37	Pests	Eradication	Legislative Branch
Plant Diseases, Insects and Weeds	Mississippi Administrative Code, Title 2, Subpart 3, Chapter 1	Pests, Weeds	Other	Executive Agency
Boll Weevil Containment Maintenance Rule	Mississippi Administrative Code, Title 2, Subpart 3, Chapter 13	Pests	Control, Eradication	Executive Agency

Missouri

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Missouri Plant Law Quarantines	Missouri Code of State Regulations, Title 2, Division 70, Chapter 11	Weeds	Control	Executive Agency
Boll Weevil Eradication	Missouri Code of State Regulations, Title 2, Division 70, Chapter 13	Pests	Eradication	Executive Agency
Noxious Weed Rules	Missouri Code of State Regulations, Title 2, Division 70, Chapter 45	Weeds	Other	Executive Agency
Insect Pests and Weeds	Missouri Revised Statutes, Title 17, Chapter 263	Pests, Weeds	Prevention, Control, Eradication	Legislative Branch
Seeds, Fertilizers, and Feeds	Missouri Revised Statutes, Title 17, Chapter 266	Weeds	Control	Legislative Branch

Montana

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Creation of New Boards	Montana Code Annotated 2017, Title 7, Chapter 1, Part 2	Other	Other	Legislative Branch
Control of Forest Diseases and Insect Pests	Montana Code Annotated 2017, Title 76, Chapter 13	Pests	Control	Legislative Branch
Importation, Introduction and Transplantation of Wildlife	Montana Code Annotated 2017, Title 78, Chapter 5	Other	Control	Legislative Branch
Quarantines and Pest Management Standards	Administrative Rules of Montana, Title 4, Subchapter 4.12.13	Pests	Control	Executive Agency
Aquatic Invasive Species Management	Administrative Rules of Montana, Title 12, Subchapter 12.5.7	Aquatic	Control	Executive Agency
Exotic Wildlife	Administrative Rules of Montana, Title 12, Subchapter 12.6.22	Pests	Other	Executive Agency
Noxious Weed Management	Administrative Rules of Montana, Title 36, Subchapter 36.11.445	Weeds	Control	Executive Agency

Nebraska

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Noxious Weed Control; Cities and Villages; Provide funds	Nebraska Revised Statute 2-946.02	Other	Control	Legislative Branch
County Weed District Board	Nebraska Revised Statute 2-953.01	Other	Control	Legislative Branch
Noxious Weed Control Fund; Authorized; Noxious Weed Cash Fund; Created; Use; Investment	Nebraska Revised Statute 2-958	Other	Control	Legislative Branch
Noxious Weed and Invasive Plant Species Assistance Fund; Created; Use; Investment	Nebraska Revised Statute 2-958.01	Other	Control	Legislative Branch
Aquatic Invasive Species, Defined	Nebraska Revised Statute 37-206.01	Aquatic	Other	Legislative Branch
Aquatic Invasive Species; Wild or Nonnative Animals; Importation, Possession, or Release; Prohibition; Violation; Penalty	Nebraska Revised Statute 37-524	Aquatic	Control	Legislative Branch
Wild Pigs; Animals of the Families Tayassuidae and Suidae; Prohibited Acts; Destruction; When; Penalty	Nebraska Revised Statute 37-524.01	Pests	Control	Legislative Branch
Aquatic Invasive Species; Prohibited Acts; Penalty; Impoundment of Conveyance	Nebraska Revised Statute 37-524.02	Aquatic	Control	Legislative Branch
Aquatic Invasive Species; Rules and Regulations	Nebraska Revised Statute 37-524.03	Aquatic	Control	Legislative Branch

Aquatic Invasive Species; Wildlife; Legislative Branch Intent	Nebraska Revised Statute 37-547	Aquatic	Other	Legislative Branch
Aquatic Invasive Species; Wildlife; Prohibited Acts; Violation; Penalty; Release, Importation, Commercial Exploitation, and Exportation Permits; Fees; Commission; Powers and Duties	Nebraska Revised Statute 37-548	Other	Other	Legislative Branch
Invasive Species; Defined	Nebraska Revised Statute 37-1402	Other	Other	Legislative Branch
Nebraska Invasive Species Council; Created; Members; Expenses; Game and Parks Commission; Rules and Regulations; Meetings	Nebraska Revised Statute 37-1403	Other	Other	Legislative Branch
Nebraska Invasive Species Council; Duties	Nebraska Revised Statute 37-1404	Other	Other	Legislative Branch

Nevada

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Control of Forest Insects and Diseases	Nevada Revised Statutes, Title 47, Chapter 527.130 et seq.	Pests	Control	Legislative Branch
Exterior Quarantine Against Japanese Beetle	Nevada Administrative Code, 554.162 et seq.	Pests	Control	Executive Agency
Exterior Quarantine Against European Corn Borer	Nevada Administrative Code, 554.230 et seq.	Pests	Control	Executive Agency
Exterior Quarantine Against Potato Late Blight	Nevada Administrative Code, 554.755 et seq.	Pests	Control	Executive Agency
Interior Quarantine Against Africanized Honey Bees	Nevada Administrative Code, 554.805 et seq.	Pests	Control	Executive Agency
Prohibited Noxious Weed Seeds	Nevada Administrative Code, 587.173	Weeds	Control	Executive Agency
Restricted Noxious Weed Seeds	Nevada Administrative Code, 587.175	Weeds	Control	Executive Agency

New Hampshire

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Wolf Introduction Prohibited	New Hampshire Revised Statutes, Title 18, Chapter 207:61	Pests	Prevention	Legislative Branch
White Pine Blister Rust Control Areas	New Hampshire Revised Statutes, Title 19-A, Chapter 227-K:7	Other	Control	Legislative Branch
Integrated Pest Management Program	New Hampshire Revised Statutes, Title 40, Chapter 430:50 et seq.	Pests	Other	Legislative Branch
Invasive Species	New Hampshire Code of Administrative Rules, Invasive Species	Other	Other	Executive Agency

New Jersey

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Quarantines	Administrative Code - Title 2 - Chapter 20	Other	Control	Executive Agency
Noxious Weed Seeds	Administrative Code - Title 2 - Subchapter 4	Weeds	Other	Executive Agency
Gypsy Moth	Administrative Code - Title 2 - Chapter 23	Pests	Control	Executive Agency
Registration and certificate required to raise and breed nutria; fee; form and contents of application	State Laws - Title 4 - 4:2A-3	Other	Control	Legislative Branch

New Mexico

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Aquatic Invasive Species	New Mexico Administrative Code, Title 19, Chapter 30, Part 14	Aquatic	Prevention, Control	Executive Agency
Pecan Weevil Exterior Quarantine	New Mexico Administrative Code, Title 21, Chapter 17, Part 28	Pests	Control	Executive Agency
Pink Bollworm Permanent Plow down	New Mexico Administrative Code, Title 21, Chapter 17, Part 31	Pests	Control	Executive Agency
Red Imported Fire Ant Interior Quarantine	New Mexico Administrative Code, Title 21, Chapter 17, Part 33	Pests	Control	Executive Agency
Cotton Boll Weevil Quarantine	New Mexico Administrative Code, Title 21, Chapter 17, Part 42	Pests	Control	Executive Agency
Exotic Pests and Foreign Animal Diseases	New Mexico Administrative Code, Title 21, Chapter 30, Part 4	Pests	Other	Executive Agency

New York

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
NY Consolidated Law, AGM, Article 9	NY Consolidated Law, AGM, Article 9	Weeds	Prevention	Legislative Branch
NY Consolidated Law, ENV, Article 9, Title 13	NY Consolidated Law, ENV, Article 9, Title 13	Pests	Prevention, Control, Eradication	Legislative Branch
NY Consolidated Law, ENV, Article 9, Title 17	NY Consolidated Law, ENV, Article 9, Title 17	Other	Other	Legislative Branch
NY Consolidated Law, AGM, Article 11	NY Consolidated Law, AGM, Article 11	Pests	Education	Legislative Branch
NY Consolidated Law, ENV, Article 11, Title 5	NY Consolidated Law, ENV, Article 11, Title 5	Aquatic	Prevention	Legislative Branch
NY Consolidated Law, AGM, Article 14	NY Consolidated Law, AGM, Article 14	Weeds	Prevention, Control, Eradication	Legislative Branch
NY CRR, Title 1, Chapter 3, Subsection C	NY Consolidated Law, AGM, Article 14	Weeds	Prevention, Control	Executive Agency
NY CRR, Title 6, Chapter 1, Subchapter J, Part 180.9	NY Consolidated Law, AGM, Article 11	Aquatic	Prevention, Control	Executive Agency
NY CRR, Title 6, Chapter 2, Part 192	NY Consolidated Law, ENV, Article 9, Title 13	Pests	Prevention, Control	Executive Agency

North Carolina

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Uniform Boll Weevil Eradication Act	North Carolina General Statutes, Chapter 106, Article 4F	Pests	Eradication	Legislative Branch
Plant Pests	North Carolina General Statutes, Chapter 106, Article 36	Weeds	Control	Legislative Branch
Protection of Forest Against Insect Infestation and Disease	North Carolina General Statutes, Chapter 106, Article 76	Pests	Control, Eradication	Legislative Branch
Authority of the Wildlife Resources Commission in Regulation of Inland Fishing and the Introduction of Exotic Species	North Carolina General Statutes, Chapter 113, Article 22: 113-292	Other	Prevention, Control	Legislative Branch
Aquatic Weed Control	North Carolina General Statutes, Chapter 113A, Article 15	Aquatic	Control, Eradication	Legislative Branch
Noxious Weeds	North Carolina Administrative Code, Title 2, Chapter 48A.1702	Weeds	Other	Executive Agency
Noxious Weed Seed List	North Carolina Administrative Code, Title 2, Chapter 48C.0102	Weeds	Other	Executive Agency
Noxious Aquatic Weed List	North Carolina Administrative Code, Title 15A, Chapter 02G.0602	Aquatic/ Weeds	Other	Executive Agency
Possession of Certain Species of Wildlife Resources	North Carolina Administrative Code, Title 15A, Chapter 10B.0123	Other	Prevention, Control	Executive Agency
Release of Mute Swans	North Carolina Administrative Code, Title 15A, Chapter 10B.0125	Pests	Prevention, Control	Executive Agency
Feral Swine	North Carolina Administrative Code, Title 15A, Chapter 10B.0223	Pests	Control	Executive Agency
Boll Weevil	North Carolina Administrative Code, Title 2, Chapter 48A.0600	Pests	Control	Executive Agency
Imported Fire Ant	North Carolina Administrative Code, Title 2, Chapter 48A.0700	Pests	Control	Executive Agency
Gypsy Moth	North Carolina Administrative Code, Title 2, Chapter 48A.1500	Pests	Control	Executive Agency

North Dakota

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Noxious Weed Control	North Dakota Century Code, Title 4.1-47	Weeds	Control	Legislative Branch
Aquatic Nuisance Species	North Dakota Century Code, Title 20.1-17	Aquatic	Prevention, Control	Legislative Branch
Feral Swine	North Dakota Century Code, Title 36	Pests	Control, Eradication	Legislative Branch
Pest Prevention	North Dakota Administrative Code, Title 7-04-01	Pests	Control	Executive Agency
Noxious Weed Control	North Dakota Administrative Code, Title 7-06	Weeds	Control	Executive Agency
Aquatic Nuisance Species	North Dakota Administrative Code, Title 30-03-06	Aquatic	Control	Executive Agency
Transplanting or Introduction of Fish, Fish Eggs, Game Birds, or Game Animals into North Dakota	North Dakota Administrative Code, Title 30-04-04	Other	Control	Executive Agency

Ohio

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Ohio Revised Code, Title 9, Chapter 901.50	Ohio Revised Code, Title 9, Chapter 901.50	Other	Other	Legislative Branch
Ohio Revised Code, Title 9, Chapter 907	Ohio Revised Code, Title 9, Chapter 907	Weeds	Prevention	Legislative Branch
Ohio Revised Code, Title 9, Chapter 927.70	Ohio Revised Code, Title 9, Chapter 927.70	Weeds	Prevention, Control	Legislative Branch
Ohio Revised Code, Title 9, Chapter 927.701	Ohio Revised Code, Title 9, Chapter 927.701	Pests	Prevention, Control	Legislative Branch
Ohio Revised Code, Title 9, Chapter 927.71	Ohio Revised Code, Title 9, Chapter 927.71	Weeds	Control	Legislative Branch
Ohio Revised Code, Title 9, Chapter 971.33	Ohio Revised Code, Title 9, Chapter 971.33	Weeds	Control	Legislative Branch
Ohio Revised Code, Title 55, Chapter 5579.04	Ohio Revised Code, Title 55, Chapter 5579.04	Weeds	Control	Legislative Branch
Ohio Revised Code, Title 55, Chapter 5579.05	Ohio Revised Code, Title 55, Chapter 5579.05	Weeds	Other	Legislative Branch
Ohio Revised Code, Title 55, Chapter 5579.08	Ohio Revised Code, Title 55, Chapter 5579.08	Weeds	Control	Legislative Branch
Ohio Administrative Code, Chapter 901:5-37	Ohio Revised Code, Title 55, Chapter 5579.04	Weeds	Other	Executive Agency
Ohio Administrative Code, Chapter 901:5-42	Ohio Revised Code, Title 9, Chapter 927.52	Weeds, Pests	Prevention, Control	Executive Agency
Ohio Administrative Code, Chapter 901:5-43	Ohio Revised Code, Title 9, Chapter 927.52 and 927.71	Other	Prevention, Control	Executive Agency
Ohio Administrative Code, Chapter 901:5-48	Ohio Revised Code, Title 9, Chapter 927.52 and 927.71	Other	Prevention	Executive Agency

Ohio Administrative Code, Chapter 901:5-52	Ohio Revised Code, Title 9, Chapter 927.52 and 927.701	Pests	Prevention, Control	Executive Agency
Ohio Administrative Code, Chapter 901:5-57	Ohio Revised Code, Title 9, Chapter 927.52927.71	Pests	Prevention, Control	Executive Agency
Ohio Administrative Code, Chapter 901:5-58	Ohio Revised Code, Title 9, Chapter 927.52 and 927.71	Pests	Prevention, Control	Executive Agency
Ohio Administrative Code, Chapter 901:5-30	Ohio Revised Code, Title 9, Chapter 901.50	Other	Other, Prevention	Executive Agency

Oklahoma

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Boll Weevil Eradication Act	Oklahoma Statutes Citation, Title 2, Chapter 1, Article 3, Section 3-50.1	Pests	Eradication	Legislative Branch
Quarantines	Oklahoma Statutes Citation, Title 2, Chapter 1, Article 3, Section 3-32.9	Other	Control	Legislative Branch
Legislative Branch Finding on Noxious Weeds	Oklahoma Statutes Citation, Title 2, Chapter 1, Article 3, Section 3-220	Weeds	Control	Legislative Branch
Feral Swine Control Act	Oklahoma Statutes Citation, Title 2, Chapter 1, Article 6, Section 6-601	Pests	Control	Legislative Branch
Controls on Noxious Aquatic Plants	Oklahoma Statutes Citation, Title 29, Chapter 1, Article 6, Section 6-601	Aquatic	Control	Legislative Branch

Oregon

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Ballast Water Management	Administrative Rules - Chapter 340 - Division 143	Aquatic	Control	Executive Agency
Pest and Disease Control	Administrative Rules - Chapter 603 - Division 52	Pests	Control	Executive Agency
Hay and Seed	Administrative Rules - Chapter 603 - Division 56	Weeds	Other	Executive Agency
Prohibited and restricted noxious weed seed	Administrative Rules - Chapter 603 - 603-056-0205	Weeds	Other	Executive Agency
Introduced pests	Administrative Rules - Chapter 629 – 051	Pests	Control	Executive Agency
Importation, possession, confinement, transportation, and sale of nonnative wildlife	Administrative Rules - Chapter 635 - Division 56	Other	Control	Executive Agency
Vector control	Revised Statutes - Title 36 - Chapter 340	Other	Other	Legislative Branch
Insect and disease control; forest practices	Revised Statutes - Title 44 - Chapter 527	Pests	Other	Legislative Branch
Weed control	Revised Statutes - Title 46 - Chapter 569	Weeds	Control, Eradication	Legislative Branch
Plant pest and disease control; invasive species	Revised Statutes - Title 46 - Chapter 570	Weeds, Pests	Other	Legislative Branch

Pennsylvania

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Restrictions on transport, sale, importation or release of non-native injurious fish	Pa. C. S. Title 30, Section 2508	Other	Prevention, Control	Legislative Branch
Noxious weeds	Pa. Code Chapter 110, Section 110.1	Weeds	Other	Legislative Branch
Noxious Weed Control Law	Pa. C.S. Title 3, Section 1511 - 1526	Weeds	Other	Legislative Branch
Seizure of Noxious Weeds	Pa. C.S. Title 3, Section 7104	Weeds	Other	Legislative Branch
Inspections and Testing	Pa. C.S. Title 3, Section 7109	Other	Prevention, Control	Legislative Branch
Definitions	Pa. C.S. Title 3, Section 7102	Other	Other	Legislative Branch
Powers and Duties of Secretary	Pa. C.S. Title 3, Section 7111	Other	Other	Legislative Branch
Unlawful Seed Sales	Pa. C.S. Title 3, Section 7105	Other	Control	Legislative Branch

Rhode Island

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Label Requirements	Rhode Island General Laws, Title 2-6-3	Other	Prevention	Legislative Branch
Prohibitions	Rhode Island General Laws, Title 2-6-4	Other	Prevention	Legislative Branch
Removal of Injurious Plants	Rhode Island General Laws, Title 2-15-5	Weeds	Control	Legislative Branch
General Plant Pest Act	Rhode Island General Laws, Title 2-16	Weeds	Control	Legislative Branch
Interstate Pest Control Compact	Rhode Island General Laws, Title 2-16.1	Pests	Control, Eradication	Legislative Branch
Diseases and Parasites	Rhode Island General Laws, Title 2-17	Other	Control	Legislative Branch
Ballast Water	Rhode Island General Laws, Title 46-17.3	Aquatic	Control, Other	Legislative Branch
Agriculture and Resource Marketing	Rhode Island Code of Regulations Title 250 Chapter 40	Other	Control	Executive Agency

South Carolina

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Boll Weevil Eradication	South Carolina Code of Laws Unannotated Title 46, Chapter 10	Pests	Eradication	Legislative Branch
Pest Control Compact	South Carolina Code of Laws Unannotated Title 46, Chapter 11	Pests	Control	Legislative Branch
Seeds; Plants; Seed and Plant Certification	South Carolina Code of Laws Unannotated Title 46, Chapter 21	Weeds	Control	Legislative Branch
Noxious Weeds	South Carolina Code of Laws Unannotated Title 46, Chapter 23	Weeds	Prevention, Control	Legislative Branch
Forest Pest Outbreaks	South Carolina Code of Laws Unannotated Title 48, Chapter 29	Pests	Control	Legislative Branch
Aquatic Plant Management	South Carolina Code of Laws Unannotated Title 49, Chapter 6	Aquatic	Other	Legislative Branch
Importation of Wildlife	South Carolina Code of Laws Unannotated Title 50, Chapter 16	Other	Other	Legislative Branch
Noxious Weeds	South Carolina Code of State Regulations, Chapter 5, Article 12, 5-462	Weeds	Control	Executive Agency
Designation of Plant Pests	South Carolina Code of State Regulations, Chapter 27-135	Weeds	Other	Executive Agency

South Dakota

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Pest Control Activities	South Dakota Codified Laws, Title 38 – 20	Pests	Control	Legislative Branch
Weed and Pest Control	South Dakota Codified Laws, Title 38 – 22	Weeds, Pests	Other	Legislative Branch
Plant Quarantine and Treatment	South Dakota Codified Laws, Title 38 - 24A	Weeds	Control	Legislative Branch
Control and mitigation of damage by forest insects and diseases	South Dakota Codified Laws, Title 41 - 20 – 24	Pests	Control	Legislative Branch
Weed Seed Standards	South Dakota Administrative Rules Chapter 12:36:03	Weeds	Prevention, Other	Executive Agency
Plant Quarantine	South Dakota Administrative Rules Article 12:51	Weeds	Control, Other	Executive Agency
Regulated Nonnative Plant Species	South Dakota Administrative Rules 12:51:03:01	Weeds	Control, Other	Executive Agency
Weed and Pest Control	South Dakota Administrative Rules Article 12:62	Weeds, Pests	Other	Executive Agency
Introduction of Nonnative Fish into State Waters Prohibited	South Dakota Administrative Rules Article 41:07:01:11	Aquatic	Prevention	Executive Agency
Aquatic Nuisance Species	South Dakota Administrative Rules Article 41:10:04	Aquatic	Control, Other	Executive Agency

Tennessee

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Pest Control	TCA Title 43, Chapter 6	Pests	Control, Eradication	Legislative Branch
Exotic Animals	TCA Title 70, Chapter 4, Part 4	Pests	Prevention, Control	Legislative Branch
Seed	Rules of the Tennessee Department of Agriculture, Division of Marketing, Chapter 0080-05-06	Weeds	Prevention, Control	Executive Agency
Emerald Ash Borer Quarantine	Rules of the Tennessee Department of Agriculture, Division of Regulatory Services, Chapter 0080-06-10	Pests	Control	Executive Agency
Thousand Cankers Disease	Rules of the Tennessee Department of Agriculture, Chapter 0080-6-11	Other	Control	Executive Agency
Imported Fire Ant Quarantine	Rules of the Tennessee Department of Agriculture, Plant Industries Division, Chapter 0080-06-19	Pests	Control	Executive Agency
Common Pine Shoot Beetle (Exterior Quarantine)	Rules of the Tennessee Department of Agriculture, Division of Plant Industries, Chapter 0080-6-20	Pests	Control	Executive Agency
Boll Weevil Eradication	Rules of the Tennessee Department of Agriculture, Plant Industries Division, Chapter 0080-6-22	Pests	Eradication	Executive Agency
Plant Pest Regulations	Rules of the Tennessee Department of Agriculture, Division of Plant Industries, Chapter 0080-06-24	Weeds	Control	Executive Agency
Rules and Regulations Governing Quarantine of Sudden Oak Death	Rules of the Tennessee Department of Agriculture, Division of Regulatory Services, Chapter 0080-06-26	Other	Control	Executive Agency
Rules and Regulations of Live Wildlife	Rules of the Tennessee Wildlife Resources Agency, Wildlife Resources, Chapter 1660-1-18	Other	Other	Executive Agency

Texas

Title	Statutory or Regulatory Reference	Invasive Category	Goals	Issuing Authority
Inspection, Labeling, and Sale of Agricultural and Vegetable Seed	Agriculture Code Chapter 61	Weeds	Prevention	Legislative Branch
Mexican Fruit Fly Control	Agriculture Code Chapter 72	Pests	Control	Legislative Branch
Citrus Diseases and Pests	Agriculture Code Chapter 73	Other	Control	Legislative Branch
Fire Ant Control	Agriculture Code Chapter 77	Pests	Control, Eradication	Legislative Branch
Noxious Weed Control Districts	Agriculture Code Chapter 78	Weeds	Control	Legislative Branch
Forest Pest Control	Natural Resources Code Chapter 152	Pests	Control	Legislative Branch
Exotic Harmful or Potentially Harmful Fish and Shellfish	Parks and Wildlife Code Chapter 66, Sec. 66.007	Aquatic	Prevention, Control	Legislative Branch
Removal of Harmful Aquatic Plants	Parks and Wildlife Code Chapter 66, Sec. 66.0071	Aquatic	Control	Legislative Branch
Exotic Harmful or Potentially Harmful Aquatic Plants	Parks and Wildlife Code Chapter 66, Sec. 66.0072	Aquatic	Prevention, Control	Legislative Branch
Boll Weevil Eradication Program	Texas Administrative Code Title 4 Chapter 3	Pests	Eradication	Executive Agency
Quarantines and Noxious and Invasive Plants	Texas Administrative Code Title 4 Chapter 19	Weeds	Control	Executive Agency
Citrus Quarantines	Texas Administrative Code Title 4 Chapter 21 Subchapter A	Other	Control	Executive Agency

Harmful or Potentially Harmful Exotic Fish, Shellfish, and Aquatic Plants	Texas Administrative Code Title 31 Chapter 57 Subchapter A	Aquatic	Prevention, Control	Executive Agency
Introduction of Fish, Shellfish, and Aquatic Plants	Texas Administrative Code Title 31 Chapter 57 Subchapter C	Aquatic	Control	Executive Agency
Aquatic Vegetation Management	Texas Administrative Code Title 31 Chapter 57 Subchapter L	Aquatic	Prevention, Control	Executive Agency

Utah

Title	Statutory or Regulatory Reference	Invasive Category	Goals	Issuing Authority
Utah Seed Act	Utah Code Chapter 16	Weeds	Prevention	Legislative Branch
Utah Noxious Weed Act	Utah Code Chapter 17	Weeds	Control	Legislative Branch
Aquatic Invasive Species Interdiction Act	Utah Code Chapter 27	Aquatic	Prevention, Control	Legislative Branch
Diseases, Inspections and Quarantines	Utah Administrative Code, Rule R58-2	Other	Control	Executive Agency
Handling of Aquatic Animals and Premises Confirmed to Be Infected With a Listed Pathogen in R58-17-15(D)	Utah Administrative Code, Rule R58-11	Aquatic	Control	Executive Agency
Importation of Aquatic Animals or Aquaculture Products Into Utah	Utah Administrative Code, Rule R58-17-13	Aquatic	Prevention, Control	Executive Agency
Utah Seed Law	Utah Administrative Code, Rule R68-8	Weeds	Prevention	Executive Agency
Utah Noxious Weed Act	Utah Administrative Code, Rule R68-9	Weeds	Control	Executive Agency
Quarantine Pertaining to the European Corn Borer	Utah Administrative Code, Rule R68-10	Pests	Prevention	Executive Agency
Quarantine Pertaining to Gypsy Moth - Lymantria Dispar	Utah Administrative Code, Rule R68-14	Pests	Control	Executive Agency

Quarantine Pertaining to Japanese Beetle, (Popillia Japonica)	Utah Administrative Code, Rule R68-15	Pests	Prevention	Executive Agency
Aquatic Invasive Species Interdiction	Utah Administrative Code, Rule R657-60	Aquatic	Prevention, Control	Executive Agency

Vermont

Title	Statutory or Regulatory Reference	Invasive Category	Goals	Issuing Authority
Pest Survey, Detection, and Management	Vermont Statutes Title 6 Chapter 84	Pests	Control	Legislative Branch
Aquatic Nuisance Control	Vermont Statutes Title 10 Chapter 50	Aquatic	Prevention, Control	Legislative Branch
Infestation control; agreements with owners	10 V.S.A. 2663	Other	Control	Executive Agency
Placing fish in waters	10 V.S.A. 4605	Aquatic	Prevention	Executive Agency

Virginia

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Tree and Crop Pests	Code of Virginia, Title 3.2, Chapter 7	Weeds	Control	Legislative Branch
Noxious Weeds	Code of Virginia, Title 3.2, Chapter 8	Weeds	Control	Legislative Branch
Nuisance Birds	Code of Virginia, Title 3.2, Chapter 9	Pests	Other	Legislative Branch
Seeds	Code of Virginia, Title 3.2, Chapter 40	Weeds	Other	Legislative Branch
Authority of locality to control certain noxious weeds	Code of Virginia, Title 15.2-902	Weeds	Control	Legislative Branch
Nonindigenous Aquatic Nuisance Species Act	Code of Virginia, Title 29.1, Article 7	Aquatic	Control	Legislative Branch
Virginia Imported Fire Ant Quarantine for Enforcement of the Virginia Pest Law	Virginia Administrative Code, Title 2VAC5-315	Pests	Control	Executive Agency
Regulations for the Enforcement of the Noxious Weeds Law	Virginia Administrative Code, Title 2VAC5-317	Weeds	Control	Executive Agency
Rules and Regulations for the Enforcement of the Virginia Pest Law - Thousand Cankers Disease	Virginia Administrative Code, Title 2VAC5-318	Pests	Control	Executive Agency

Rules and Regulations for the Enforcement of the Virginia Pest Law - Virginia Gypsy Moth Quarantine	Virginia Administrative Code, Title 2VAC5-330	Pests	Control	Executive Agency
Rules and Regulations for the Enforcement of the Virginia Seed Law - Noxious Weed Seeds	Virginia Administrative Code, Title 2VAC5-390-20	Weeds	Other	Executive Agency
Noxious or Objectionable Weeds	Virginia Administrative Code, Title 2VAC10-10-60	Weeds	Other	Executive Agency

Washington

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Integrated Pest Management	Washington Administrative Code, Title 17.15	Pests	Define goals	Executive Agency
Insect Pests and Plant Diseases	Washington Administrative Code, Title 17.24	Other	Exclusion	Executive Agency
Control of Spartina and Purple Loosestrife	Washington Administrative Code, Title 17.26	Weeds	Control, Eradication	Executive Agency
Forest Insect and Disease Control	Washington Administrative Code, Title 76.06	Pests	Control, Eradication	Executive Agency
Ballast Water Management	Washington Administrative Code, Title 77.120	Aquatic	Prevention	Executive Agency
Fish and Wildlife Invasive Species	Washington Administrative Code, Title 77.135	Other	Other	Executive Agency
Aquatic Noxious Weed Control	Washington Administrative Code, Title 90.48.445	Aquatic	Control	Executive Agency
Aquatic Plant Management Program	Washington Administrative Code, Title 90.48.447	Aquatic	Control	Executive Agency
Eurasian Water Milfoil - Pesticide 2, 4-D Application	Washington Administrative Code, Title 90.48.448	Aquatic	Control	Executive Agency
Quarantine - Agricultural Pests	Washington Administrative Code, Title 16-470	Pests	Control	Executive Agency
Barberry and Black Stem Rust	Washington Administrative Code, Title 16-472	Other	Control	Executive Agency
European Corn Borer	Washington Administrative Code, Title 16-478	Pests	Control	Executive Agency
State Noxious Weed List and Schedule of Monetary Penalties	Washington Administrative Code, Title 16-750	Other	Other	Executive Agency
Noxious Weed Seed and Plant Quarantine	Washington Administrative Code, Title 16-752	Weeds	Control	Executive Agency
Aquaculture Disease Control	Washington Administrative Code, Title 220-370-180	Aquatic	Other	Executive Agency
Invasive/Nonnative Species	Washington Administrative Code, Title 220-640	Other	Other	Executive Agency
Ballast Water	Washington Administrative Code, Title 220-650	Aquatic	Control	Executive Agency
Insect and Worm Control	Washington Administrative Code, Title 332-32	Pests	Control	Executive Agency

West Virginia

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Quarantines and Other Orders; Plants or Plant Products Entering State	West Virginia Code, Chapter 19, Article 12-6	Weeds	Prevention	Legislative Branch
Permit Required to Sell, Transport, etc., Plant Pests or Noxious Weeds	West Virginia Code, Chapter 19, Article 12-14	Weeds	Control	Legislative Branch
Interstate Compact on Pest Control	West Virginia Code, Chapter 19, Article 12B-1	Pests	Control	Legislative Branch
West Virginia Noxious Weeds Act	West Virginia Code, Chapter 19, Article 12B-1	Weeds	Control	Legislative Branch
Protection of Forests Against Destructive Insects and Diseases	West Virginia Code, Chapter 20, Article 3-19	Pests	Control	Legislative Branch
West Virginia Plant Pest Act Rule	West Virginia Code of State Rules, Title 61-14	Pests	Control	Executive Agency
Rules Dealing with Noxious Weeds	West Virginia Code of State Rules, Title 61-14A	Weeds	Control	Executive Agency

Wisconsin

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Invasive Species Council	Wisconsin Statutes and Annotations 15.347.18	Other	Other	Legislative Branch
Invasive Species	Wisconsin Statutes and Annotations 23.22	Other	Control	Legislative Branch
Nuisance Weeds	Wisconsin Statutes and Annotations 23.235	Weeds	Control	Legislative Branch
Aquatic Plants	Wisconsin Statutes and Annotations 23.24	Aquatic	Control	Legislative Branch
Control of detrimental fish	Wisconsin Statutes and Annotations 29.424	Aquatic	Control	Legislative Branch
Importation of fish	Wisconsin Statutes and Annotations 29.735	Aquatic	Prevention	Legislative Branch
Transportation of aquatic plants and animals	Wisconsin Statutes and Annotations 30.07	Aquatic	Control	Legislative Branch
Report on control of aquatic nuisance species	Wisconsin Statutes and Annotations 30.1255	Aquatic	Control	Legislative Branch
Noxious weeds	Wisconsin Statutes and Annotations 66.0407	Weeds	Control	Legislative Branch
Plant inspection and pest control authority	Wisconsin Statutes and Annotations 94.01	Pests	Control	Legislative Branch
Abatement of pests	Wisconsin Statutes and Annotations 94.02	Pests	Control	Legislative Branch
Plant Inspection and Pest Control	Wisconsin Administrative Code and Register ATCP 21	Weeds	Control	Executive Agency
Release, importation and transportation of fish	Wisconsin Administrative Code and Register NR 19.05	Aquatic	Prevention	Executive Agency
Control of detrimental fish	Wisconsin Administrative Code and Register NR 20.38	Aquatic	Control	Executive Agency
Zones of Infestation of forest pests	Wisconsin Administrative Code and Register NR 35	Pests	Control	Executive Agency
Invasive species identification, classification, and control	Wisconsin Administrative Code and Register NR 40	Other	Prevention, Control	Executive Agency
Aquatic Plant Management	Wisconsin Administrative Code and Register NR 107	Aquatic	Control	Executive Agency
Invasive and Nonnative Aquatic Plants	Wisconsin Administrative Code and Register NR 109.07	Aquatic	Control	Executive Agency

Wyoming

Title	Statutory Reference	Invasive Category	Goals	Issuing Authority
Weed and Pest Control	Wyoming Statutes Title 11 Chapter 5	Weeds	Control	Legislative Branch
Seeds	Wyoming Statutes Title 11 Chapter 12	Weeds	Prevention	Legislative Branch
Aquatic Invasive Species	Wyoming Statutes Title 23 Chapter 4 Article 2	Aquatic	Prevention	Legislative Branch
Weed and Pest Control Act of 1973	Administrative Rules Department of Agriculture Chapter 42	Weeds	Prevention, Control	Executive Agency
Regulation for Importation, Possession, Confinement, Transportation, Sale and Disposition of Live Wildlife	Administrative Rules Game and Fish Commission Chapter 10	Other	Prevention	Executive Agency
Regulation for Aquatic Invasive Species	Administrative Rules Game and Fish Commission Chapter 62	Aquatic	Prevention, Control	Executive Agency

Appendix C

Member Agencies of the Governor's Invasive Species Council, 2019

State Agencies
Secretary of Agriculture (Chair)
Secretary of Conservation and Natural Resources
Secretary of Environmental Protection
Secretary of Transportation
Secretary of Health
Executive Director of the Fish and Boat Commission
Executive Director of the Game Commission

Non-Governmental Organizations
Western Pennsylvania Conservancy
The Nature Conservancy
PennAg Industries Association
Pennsylvania Landscape and Nursery Association
Pennsylvania State University
Pennsylvania Sea Grant
University of Pennsylvania
Pennsylvania Farm Bureau
Pennsylvania Lake Management Society
Pennsylvania Parks and Forests Foundation
Transportation Sector, Philadelphia Regional Port Authority
Pennsylvania Association of Conservation Districts
County Commissioners Association of Pennsylvania
Pennsylvania State Association of Township Supervisors

Source: Pennsylvania Department of Agriculture, <https://www.agriculture.pa.gov/Plants_Land_Water/PlantIndustry/GISC/Pages/Council-Members.aspx>.

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