S. HRG 114–501

TO EXAMINE THE IMPACTS OF INVASIVE SPECIES ON THE PRODUCTIVITY, VALUE, AND MANAGEMENT OF LAND AND WATER RESOURCES; TO CONDUCT OVERSIGHT ON THE NATIONAL INVASIVE SPECIES COUNCIL'S NEW FRAMEWORK FOR EARLY DETECTION AND RAPID RESPONSE; TO EXAMINE IMPROVED COOPERATIVE TOOLS FOR CONTROL AND MANAGEMENT; AND TO RECEIVE TESTIMONY ON S. 2240, THE FEDERAL LAND INVASIVE SPECIES CONTROL, PREVENTION, AND MANAGEMENT ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON
PUBLIC LANDS, FORESTS, AND MINING

OF THE

COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

ONE HUNDRED FOURTEENTH CONGRESS

SECOND SESSION

APRIL 28, 2016

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THURSDAY, APRIL 28, 2016

U.S. SENATE,
SUBCOMMITTEE ON PUBLIC LANDS, FORESTS, AND MINING,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:30 p.m. in Room SD–366, Dirksen Senate Office Building, Hon. John Barrasso, Chairman of the Subcommittee, presiding.

OPENING STATEMENT OF HON. JOHN BARRASSO, U.S. SENATOR FROM WYOMING

Senator BARRASSO. The Subcommittee will come to order.

The purpose of today's hearing is to examine the ecological impacts of invasive species, to conduct oversight on the National Invasive Species Council's new framework for early detection and rapid response, and to receive testimony on a bill, S. 2240, the Federal Lands Invasive Species Control Prevention and Management Act.

The issue we are here to discuss today is at the heart of many important issues our communities face. Every year out of control invasive species populations cost the United States more than

$100 billion. The number is substantial but it pales in comparison to the ecological damage caused by invasive species.

In my home state of Wyoming we deal with many invasive species that compromise water resources and landscape health. As a result of fragmented land ownership and poor forage management, invasive species, like cheat grass, now infest hundreds of millions of acres. These infestations threaten soil retention and increase the likelihood of fast moving, catastrophic wildfires; they are low quality forage for wildlife and livestock; and, they are an unnecessary burden on our already taxed water supply.

As we all know, catastrophic wildfires destroy wildlife habitat, they contaminate watersheds and they cause unspeakable damage to our landscapes.

Cheat grass infestations make these fires more likely and ultimately worse when they do happen. As an annual grass, cheat grass is the first to return after a fire has decimated the landscape. Other seedlings are pushed out by cheat grass and soon the landscape is overrun. These mono cultures are far more susceptible to future fires and so the cycle continues.

But this does not just happen after a catastrophic wildfire. Although they are not here to provide testimony today, the Fish and Wildlife Service has consistently recognized that cheat grass infestations pose one of the most significant threats to sage grouse habitat conservation efforts.

The worst part is that cheat grass is only one of many invasive species we face. Zebra and Quagga mussels threaten our aquatic ecosystems and cause millions of dollars in damage to dams, to municipal water systems, and to agriculture irrigation systems.

Land and waters are under constant threat from invasive populations. I know from walking/talking with Senator Stabenow, Asian carp has overtaken the Great Lakes and now threaten watersheds downstream.

In 1999 Executive Order 13112 established the National Invasive Species Council. The Council was intended to coordinate invasive species management programs around Federal agencies. Several subsequent reports from the Government Accountability Office describe the Council as widely ineffective, much like the agency's own efforts to stem the tide of invasive species.

The concept of a council is not without merit; however, there is an overwhelming consensus that something must be done to more effectively coordinate agency efforts. Last year attendees at the Western Invasive Weed Summit outlined a set of barriers that hamper their ability to control explosive invasive populations. Among those barriers were lack of coordination and communication among agencies, lack of leadership and accountability among oversight bodies and insufficient monitoring compliance and enforcement. The gaps must be addressed.

That is why I introduced S. 2240, the Federal Lands Invasive Species Control Prevention and Management Act. This bill sets clear targets for reduction of invasive species that, while ambitious, I believe will motivate success with the tools it provides.

As part of the target to achieve an annual five percent reduction in invasive populations, S. 2240 requires annual reports of the successes and failures of management efforts.

It also provides limited categorical exclusions so that when personnel see an area that is at risk for a catastrophic infestation, they are able to react quickly to prevent environmental damage. Land managers want to streamline NEPA approach to the most critical cases so that the processes which are meant to protect our environment are not inadvertently causing damage.

Most importantly, S. 2240 encourages the use of collaborative partnerships to ensure that management efforts are unrestricted by jurisdictional boundaries. Cheat grass does not stop at the fence line. Control efforts should not stop there either.

I want to thank each of our five witnesses for being with us today. I now turn to Senator Franken for his opening remarks.

STATEMENT OF HON. AL FRANKEN, U.S. SENATOR FROM MINNESOTA

Senator FRANKEN. Thank you, Mr. Chairman, for scheduling this hearing on such an important topic.

As you said, invasive species are a significant threat to our national economy, to environmental resources, and to the public health. They cost the United States billions of dollars in damages each year, some research suggests over $120 billion, and they are often remarkably persistent and difficult to keep in check. Many non-native invasive species spread at a rate that far outpaces our ability to contain them, a problem compounded by our limited resources to fight back. This is an issue that, of course, crosses state jurisdictional boundaries and obviously requires coordination at the highest levels.

I commend the Administration for the work they are doing with the National Invasive Species Council to improve federal response and coordination on this issue.

As many of you know, addressing invasive species becomes difficult, increasingly so, as the species becomes more established or widespread. Efficiently leveraging our resources to combat invasive species is critical with an eye toward eradication and long-term control, and the work of the National Invasive Species Council is a step in that direction.

In Minnesota, non-native invasives continue to threaten the health of our forests and aquatic environments, like in Wyoming. Species such as the Emerald Ash Borer, the Gypsy Moth, Zebra Mussels, and Asian Carp are becoming increasingly pervasive and costly. These species have spread quickly and have damaged both my state's natural resources and economy.

From 2014 to 2015 the number of counties in Minnesota affected by the Emerald Ash Borer has almost doubled. This insect infests trees and kills them within three years, and unfortunately today we have few effective controls.

To make things worse, there is climate change, which is already affecting the range and severity of invasive species throughout our country. And I think that it's really important that we consider those impacts.

For example, warmer winters allow the Emerald Ash Borer to continue to spread more rapidly, and other species will follow behind them. I do not think we can fully combat this problem without addressing climate change.

In closing, we are also here today to consider Chairman Barrasso's bill on invasive species. I greatly appreciate his engagement on this issue and wholeheartedly agree that we must develop tools and strategies to get ahead of our problem, a problem that is affecting all of us from Senator Hirono's State of Hawaii, to Minnesota, to Maine.

We might have some differences of opinion on how to do this, but we certainly agree that it is a worthy and important topic that requires a coordinated prevention and response strategy.

I look forward to discussing this issue today in order to move toward a solution to combat the spread of harmful invasive species.

Senator BARRASSO. Thank you for that conclusion and consideration.

Senator FRANKEN. Yes.

Senator BARRASSO. Are there any other members who would like to make a statement?

Senator Hirono.

STATEMENT OF HON. MAZIE K. HIRONO, U.S. SENATOR FROM HAWAII

Senator HIRONO. Thank you very much, Mr. Chairman, for convening this panel and this hearing.

I think Hawaii is known as the invasive species capital of the country, so this is a topic that is really important to us. Certainly the threat of invasive species is something that we, in Hawaii, are all too familiar with.

In fact, the Washington Post just this past Monday published an article asking the question, "Is Hawaii the extinction capital of the world?" To take an excerpt out of the article, I am quoting the article, "Across the Hawaiian Island chain non-native species have been rapaciously destroying native plants and birds, feral cattle and pigs have trampled large patches of forest habitat, other non-native species such as rats and the mongoose devour birds and bird eggs." To quote a Fish and Wildlife Service employee in the article, "Hawaii is the sounding board for the mainland. Our problems are becoming its problems. We're just a concentrated laboratory. When something goes bad here, it goes bad big time."

I agree that more coordination and resources on the federal level are necessary to effectively prevent, control and mitigate invasive species. While I disagree with a number of provisions outlined in S. 2240, I do look forward to working with you, Senator Barrasso, and members of the Committee, to explore ways in which we can strengthen our nation's prevention and response to invasive species.

Thank you.

Senator BARRASSO. Thank you very much, Senator Hirono.

It is now time to hear from our witnesses:

Mr. Glenn Casamassa, who is the Associate Deputy Chief of the Forest Service. Thank you for joining us.

Mr. Mike Pool, the Acting Deputy Director of the Bureau of Land Management. Thank you.

Mr. Doug Miyamoto, who is the Director of the Wyoming Department of Agriculture. We appreciate you being here again.

Dr. George Beck, who is a Professor of Weed Science at Colorado State University. Thank you.

And Dr. Faith Campbell, Vice President of the Center for Invasive Species Prevention. Welcome.

I would like to take a moment to introduce my constituent, Doug Miyamoto. He has served as the Director of the Wyoming Department of Agriculture since 2015. Prior to that he served as the Director and Chief Executive Officer of the Wyoming Livestock Board. He is a native of Wyoming. He is a University of Wyoming alumni, former NRCS employee. He provides an important multifaceted perspective on the issues we face today.

I would ask that each of the witnesses try to keep your testimony within five minutes.

Before turning to you, Mr. Casamassa, I would welcome Senator Risch and I know you have an opening statement.

STATEMENT OF HON. JAMES E. RISCH, U.S. SENATOR FROM IDAHO

Senator RISCH. Thank you very much, Mr. Chairman, I do.

I want to thank you for holding this hearing on a very important issue. I think those of us who live in Western states, particularly, have had some pretty difficult experiences in the area that we are talking about today. The invasive species, be it aquatic or be it land, have been a real and growing problem.

I have a detailed opening statement that I would like to submit, and I would ask unanimous consent that it be placed in the record.

Thank you very much, Mr. Chairman.

Senator BARRASSO. Without objection.

[The information referred to follows:]

Statement
U.S. Senator James E. Risch
Senate Energy and Natural Resources Committee
Subcommittee on Public Lands, Forests and Mining Legislative Hearing
366 Dirksen Senate Office Building
2:30 PM

Chairman Barrasso and Ranking Member Wyden, I speak today in support of S. 2240, the Federal Land Invasive Species Control, Prevention, and Management Act. This legislation will develop federal strategy to manage invasive species in coordination with federal, state, and local efforts, under jurisdiction of the Secretary of Agriculture and the Secretary of Interior.

Invasive species cause a significant amount of damage to our public lands. The U.S. Fish and Wildlife Service estimates this damage to be $120 billion. By coordinating local, state, and federal management efforts of invasive species under the Secretary of Agriculture and the Secretary of Interior, we will better be able to direct funding and resources to prevent or eradicate invasive species on our public lands.

As a rancher and Idahoan, I know firsthand the importance of our public lands and the necessity to keep them healthy and accessible. Invasive species are a contributing factor to the failure for lands to reestablish native species after the occurrence of wildfires. As Idahoans, we see this happen annually within our state. Growing at a rate of 4600 acres per day, invasive species are detrimental to the health of our public lands. This bill will help to protect local, state, and federal lands by bringing public land agencies and non-federal groups together in an organized effort to solve this continuing issue.

This legislation will ensure that the Secretaries of Agriculture and Interior must reduce the invasive species populations on the affected lands by an annual rate of 5-percent. The Secretaries will also be responsible for considering the economic and ecological costs of choosing to implement or not, a strategy to combat invasive species. Lastly, this legislation will make sure that currently allocated funding is managed and used to effectively and efficiently maximize the management of invasive species.

With the coordination of federal, state, and local management of invasive species on our public lands, we will better be able to maintain and increase the health and use of these lands. I urge my colleagues to support this legislation.

The CHAIRMAN. Thank you.
Thank you, Senator Risch.
Mr. Casamassa.

STATEMENT OF GLENN CASAMASSA, ASSOCIATE DEPUTY CHIEF, U.S. FOREST SERVICE, U.S. DEPARTMENT OF AGRICULTURE

Mr. CASAMASSA. Chairman Barrasso and members of the Subcommittee, thank you for the opportunity to testify before you today on the role of the Forest Service in protecting forests and grasslands from invasive species.

The Forest Service is committed to the prevention, detection, control, management and eradication of invasive species and to restoring the structure and function of affected aquatic and terrestrial ecosystems on all lands. As such, the Administration supports the Federal Lands Invasive Species Control Prevention and Management Act.

Invasive species are among the most significant environmental, economic threats facing our nation. Aquatic and terrestrial invasive plants, pathogens, vertebrae, invertebrae, algae and fungi have become established on millions of acres across North America.

These infestations degrade watersheds, reduce forest and rangeland productivity, increase the risk of wildfire and soil erosion, negatively impact human health and safety, threaten native fish and wildlife populations and their associated habitats and undermine the economy at all levels.

Invasive species cause billions of dollars in damage each year in the United States. With internationally recognized land management and scientific expertise, the Forest Service is well-suited to address the many challenges of invasive species. The Forest Service continues to play an important national and international leadership role in advancing the understanding of invasive species' problems.

The wide-ranging authorities of the Forest Service allow us to work with partners and to combat invasive species across all lands, public and private. We also develop methods, tools and approaches through which these harmful exotic species can be detected, prevented, controlled and eradicated.

The Forest Service has a responsibility for the stewardship of over 193,000,000 acres of public lands within the National Forest System. This vast system extends from Alaska to the Caribbean and includes examples of nearly every type of aquatic and terrestrial ecosystem in North America. These lands and waters are under tremendous pressures from aquatic and terrestrial invasives. Effective management of these harmful exotic species that cripple part of the agency's land stewardship responsibility.

The Forest Service invasive species management performance is outcome driven with the focus on treating and destroying priority areas to improve watershed condition and reduce long term impacts. We typically treat nearly 400,000 acres of priority aquatic and terrestrial invasive species infestations annually. Since 2007 the Forest Service has restored more than 2,000,000 acres of national forest lands and waters with very high treatment success rates each year.

To accelerate the expansion of our on-the-ground efforts, an invasive species' management policies for the National Forest System was issued in late 2011. The policy defines and clarifies the authority, scope, roles and responsibilities associated with the National Forest System management activities against aquatic and terrestrial invasive species.

The Forest Service provides a wide range of technical and financial assistance to state natural resource and agricultural agencies, tribal governments and other Federal land management agencies to respond to and manage forest pests that threaten the nation's 851,000,000 acres of rural and urban forest through programs such as our urban and community forestry program.

In 2014 the Forest Service program provided about $1.8 million in essential matching funds and technical assistance to state governments to combat economically significant weed threats to state and private forest lands.

Since the turn of the century the Forest Service, working in partnership with states and other federal agencies, have implemented a national slow-to-spread strategy to minimize the rate of which gypsy moth spreads into uninfested areas. The program has reduced the spread of gypsy moth more than 60 percent from the historical levels of 13 miles per year. In only 12 years this program has prevented impacts on more than 100,000,000 acres.

In Fiscal Year 2015 the Forest Service research and development branch delivered 258 invasive species tools which included a decision support model that estimates the suitability of preemptive quarantine across multiple counties that surround areas infested with the Emerald Ash Borer.

In addition, the Forest Service research and development scientists demonstrated that a fungal pathogen, known commonly as black fingers of death, is very effective in eliminating the cheat grass carryover seed back.

Addressing the invasive species issue is a high priority for the U.S. Forest Service. We believe our collaborative, all lands approach to invasive species management enhances our ability to work together by building on each other's strengths and authorities.

I'd like to thank the Committee and Chairman for your interest in invasive species management, and I welcome any questions you may have at this time.

[The prepared statement of Mr. Casamassa follows:]

TESTIMONY OF
ASSOCIATE DEPUTY CHIEF GLENN CASAMASSA
U.S. FOREST SERVICE
U.S. DEPARTMENT OF AGRICULTURE

BEFORE THE

SENATE ENERGY AND NATURAL RESOURCES COMMITTEE
SUBCOMMITTEE ON PUBLIC LANDS, FOREST AND MINING

CONCERNING

S. 2240, FEDERAL LANDS INVASIVE SPECIES CONTROL, PREVENTION, AND MANAGEMENT ACT

April 28, 2016

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to testify before you today on S.2440, the Federal Lands Invasive Species Control, Prevention and Management Act, and the role of the Forest Service in protecting forests and grasslands from invasive species. The Forest Service is only one of several agencies of the U.S. Department of Agriculture (USDA) committed to the prevention, detection, control, management and eradication of invasive species, and to restoring the structure and function of affected aquatic and terrestrial ecosystems on all lands. As such, the USDA supports the goals and use of collaborative partnerships set out in the bill to improve the management and control of invasive species on public lands and waters. As we have previously testified on similar legislation, we have identified some concerns with the bill as introduced and would like to work with the sponsors and the committee, as well as other agencies, on continual improvement in this challenging management area.

Background

Invasive species are among the most significant environmental and economic threats facing our Nation. Aquatic and terrestrial invasive plants, pathogens, vertebrates, invertebrates, algae, and fungi have become established on millions of acres across North America. These infestations are degrading watershed condition and ecosystem functionality, reducing forest and rangeland productivity, increasing the risk of wildfire and soil erosion, causing declines in recreational use and enjoyment, negatively impacting human health and safety, endangering livestock, and threatening native fish and wildlife populations and their associated habitats, causing declines in property values, and undermining the economy at all levels. Invasive species cause billions of dollars in damage each year in the United States. A 2001 study by Pimentel et al. estimated the total damage from invasive species worldwide at more than $1.4 trillion per year, which, at the time of the study, represented nearly 5 percent of the world economy.

Burgeoning global trade and transportation have facilitated the spread of many species among continents well beyond their native range. With a continued increase in the number of people living in, enjoying, and using forests, grasslands, and water resources, the likelihood of invasive species spreading through transportation and recreational activities is also rising. As a result, many species of invasive plants, pathogens, vertebrates, invertebrates, and other harmful exotic species have been introduced to our Nation's aquatic and terrestrial ecosystems. Many of these have become established within these ecosystems.

Responsibilities and Capabilities of the Forest Service

The Forest Service plays an important role in the Nation's efforts to address the threat of invasive species across the landscape through our National Forest System, State and Private Forestry, Research and Development, and International program areas. In this testimony we will explore how individually and collectively these programs work together to address invasive species threats.

With internationally recognized land management and scientific expertise, the Forest Service is well suited to address the many challenges of invasive species. The Forest Service continues to play an important national and international leadership role in advancing the understanding of the invasive species problem. The wide ranging authorities of the Forest Service allow us to work with partners to combat invasive species across all lands, public and private. We also develop methods, tools, and approaches, through which these harmful exotic species can be detected, prevented, controlled, and eradicated.

At the national, regional, State and local levels the Forest Service works extensively with county, State, Tribal, Federal, and private stakeholders to proactively implement invasive species management activities across the broader landscape. Through an "all lands approach" the Forest Service provides a wide range of technical and financial assistance to help manage invasive species. The Forest Service works closely with State forestry agencies to implement State Forest Action Plans to protect the forest from threats.

The Forest Service has also been a major financial supporter for the establishment of local invasive species cooperatives, including Cooperative Weed Management Areas (CWMAs) and Cooperative Invasive Species Management Areas (CISMAs), for nearly two decades, under the National Fish and Wildlife Foundation's "Pulling Together Initiative" grant program. This Federal grant program led to the establishment and sustainability of dozens of CWMA and CISMA areas across the nation to expand public and private partnerships against invasive species.

In each region of the country, the Forest Service is also a partner in implementing priority invasive species management actions identified in State invasive species management plans, supporting the implementation of the invasive species components of State Wildlife Action Plans, helping to develop local and regional invasive species management strategies, and

providing local support to prevent the spread of invasive species. As an example, the Forest Service plays several important roles in implementing the USDA obligations and priorities under the national Quagga-Zebra Mussel Action Plan, developed through a Federal-State collaboration to prevent and control the spread of these high-risk invasive mussels across the U.S. These partnerships help achieve our agency watershed restoration and protection goals.

The Forest Service also provides interagency leadership and support as a member of the Federal Interagency Committee for the Management of Noxious and Exotic Weeds, the Aquatic Nuisance Species Task Force, and the Federal Interagency Committee for the Management of Invasive Terrestrial Animals and Pathogens. In addition, the Forest Service serves as an active member of the Invasive Species Committee of the Association of Fish and Wildlife Agencies. Through these partnerships the Forest Service continues to expand national and State efforts to address the invasive species threat.

Forest Service Invasive Species Management Activities

As one of the largest Federal land management agencies in the country, the Forest Service has the responsibility for the stewardship of over 193 million acres of public lands within the National Forest System. This vast and nationally significant system extends from Alaska to the Caribbean, and includes examples of nearly every type of aquatic and terrestrial ecosystem in North America. These lands and waters are under tremendous pressures from aquatic and terrestrial invasive plants, algae, pathogens, fungi, vertebrates, and invertebrates. Effective management of these harmful exotic species which threaten the National Forest System and all lands is a critical part of the agency's land stewardship responsibility.

The recognition that national forests and grasslands play a key role in the local, regional, and national battle against aquatic and terrestrial invasive species is reflected by the annual expansion of on-the-ground management efforts to address a wide range of invasive species challenges. To accelerate this expansion, a new national Invasive Species Management Policy for the National Forest System was issued to the field in late-2011. It is viewed as a comprehensive national policy for invasive species management in the Federal land management sector. The new policy defines and clarifies the authorities, scope, roles, and responsibilities associated with National Forest System management activities against aquatic and terrestrial invasive species. A few examples of the requirements in this new policy include:

- Requiring that Forests work closely with local communities, including State, local, and Tribal interests, to address a variety of invasive species challenges across the landscape.
- Increasing program transparency, performance accountability, and management effectiveness against priority aquatic and terrestrial invasive species at all levels.

- Requiring the use of invasive species-free materials and products, and the decontamination of vehicles and equipment to reduce the spread of aquatic and terrestrial invasive species to, and from, national forests and grasslands.
- Prioritizing prevention, and early detection and rapid response, activities to maximize management efficiency over time.

Forest Service invasive species management performance is outcome driven, with a focus on treating and restoring priority areas to improve watershed condition and reduce the long-term impacts of invasive species. To achieve this, national forests and grasslands typically treat nearly 400,000 acres of priority aquatic and terrestrial invasive species infestations annually using an integrated management approach. Since 2007, more than two million acres of lands and waters have been restored to protect against aquatic and terrestrial invasive species across National Forest System lands and waters; with very high treatment efficacy rates each year.

The Forest Service's State and Private Forestry programs provide a wide range of assistance to States, Tribes, and others to better manage private and other public natural resources. The Forest Service provides technical and financial assistance to State natural resource and agricultural agencies, Tribal governments, and other Federal land management agencies to respond to and manage forest pests that threaten the Nation's 851 million acres of rural and urban forests of all ownerships. The Urban and Community Forestry program works with community partners in the detection, monitoring, containment, and when possible, eradication of invasive species and provides funding and technical assistance to States to support canopy restoration and management.

We also work closely with sister USDA agencies to coordinate prevention and management of invasive species across all lands. USDA has the largest Federal role in invasive species management because of its responsibility to offer technical assistance to responsible agencies who quarantine goods coming into the country; manage more than 193 million acres of national forests and grasslands; conduct research; and provide technical assistance to the private sector and in large agricultural pest control projects. The USDA Agricultural Research Service (ARS) conducts research in extremely diverse areas involving prevention, control and management of invasive species. For example, ARS provides research in support of action agencies such as the Animal and Plant Health Inspection Service (APHIS), to reduce the rate of introduction of invasive species, and to rapidly detect, identify and eradicate incipient species.

APHIS is a multi-faceted agency with a broad mission area that includes protecting and promoting U.S. agricultural health, regulating certain genetically engineered organisms, administering the Animal Welfare Act and carrying out wildlife damage management activities. APHIS's mission has expanded over the years to include protection of public health and safety as well as natural resources that are vulnerable to invasive pests and pathogens.

The Natural Resources Conservation Service (NRCS) has become a conservation leader for all natural resources, ensuring private lands are conserved, restored, and more resilient to a changing climate. NRCS helps agriculture producers and private landowners tackle invasive species problems in four major ways: technical and financial assistance to manage invasive species; conservation initiatives that work at a landscape scale to address natural resource concerns, including invasive species; Conservation Innovation Grants with partner entities to support development and implementation of innovative approaches and strategies to address invasive species; and Plant Materials Center research geared toward invasive plant species management and restoring areas where invasive plant species have been removed.

The Forest Service Forest Health Protection program directs and implements measures to prevent, detect, contain, and suppress unwanted native and invasive insects, pathogens, and plants affecting trees and forests. Since the start of FY 2014, State and Private Forestry programs have provided $1.8 million in essential matching funds and technical assistance to State governments to combat economically significant weed threats to State and private forest lands. Since 2000, the Forest Service, working in partnership with States and other Federal agencies, has implemented a national Slow the Spread (STS) strategy to minimize the rate at which gypsy moth spreads into uninfested areas. The STS program has reduced the spread of gypsy moth more than 60 percent from the historical level of 13 miles per year. In only 12 years, this program has prevented impacts on more than 100 million acres.

Forest Health Protection and partners from cooperating States conduct an annual collaborative forest pest surveys on over 400 million acres of Federal and cooperative forest land. Additionally, we have developed a pest website (http://foresthealth.fs.usda.gov/portal/Flex/APE) and the annual report, Major Forest Insect and Disease Conditions in the United States (http://www.fs.fed.us/foresthealth/publications/ConditionsReport_2012.pdf), to track and report on invasive insects and diseases affecting our Nation's forests.

In FY 2013, Forest Service Research and Development delivered 193 invasive species tools including the identification of key pathways for invasion by new forest pests; best management practices for significantly reducing invasive plants spread during timber harvesting operations; evaluating the establishment of a biological control agent for emerald ash borer (EAB); and a model of future pest risk that can be used to make prevention efforts more cost effective.

The Forest Service International Programs also work to protect our forests from invasive species damage. For example, the program works with Chinese counterparts who have partnered with us to address one of the most destructive invasive forest pests, the EAB. The Forest Service continues to work with ARS to better understand why the borer is so resilient and pervasive. This will help predict and prevent potential future outbreaks by related wood boring beetles. With an aim of identifying biocontrol mechanisms, a partnership was formed between the Forest Service's Northern Research Station, the ARS and counterparts in China. With support from International Programs, the team is working to find natural enemies of EAB in its native range.

Strategic Approach to Invasive Species Management

To ensure the continued production of needed goods, services, and values from our Nation's terrestrial and aquatic ecosystems, the Forest Service takes a strategic approach for managing invasive species across all program areas. This approach includes prevention, early detection and rapid response, control and management, restoration and rehabilitation, and technical assistance.

Prevention

The most effective strategy to protect forests, waterways, and grasslands from invasive species is to prevent invasive species introduction and establishment. Containing known infestations is also important for blocking the spread of invasive species from infested lands to surrounding areas. We coordinate with Federal and State regulatory agencies to understand pathways for introductions, implement quarantine regulations, survey for invasive species, and educate the public about invasive pest threats and how to prevent the spread of invasive species.

Forest Service researchers in partnership with APHIS are working with industry partners to reduce the introduction of invasives into the U.S. through shipments of wood products and packaging and the live plant trade. Additionally, Forest Service scientists and managers at the Eastern and Western Threat Centers are working closely with domestic and international partners to develop a comprehensive database for prediction, prevention, and proactive management of invasive plants. A public education campaign developed by the Forest Service in partnership with Wildlife Forever recruits hunters, anglers, and recreational boaters to help prevent the spread of aquatic invasive species such as quagga and zebra mussels and Eurasian milfoil.

Early Detection and Rapid Response

As a critical second-line of defense against invasive species threats, the Forest Service develops and implements efficient survey and monitoring tools and technologies to facilitate early detection of aquatic and terrestrial invasive species across the landscape, including in urban areas, and to rapidly assess their potential impact on the environment. Using a coordinated and collaborative approach with local, State, Tribal, and other Federal partners, the Forest Service is then able to respond rapidly to new infestations to eradicate or contain those populations before the can spread.

The Forest Service has supported development of a mapping system used nationally by cooperating agencies and weed management organizations to document distribution of invasive species, and has developed an integrated user interface to efficiently collect and map inventory and treatment information for all terrestrial and aquatic invasive species across the National Forest System. Additionally, Forest Service scientists developed a test capable of detecting the fungal pathogen that causes white-nose syndrome (WNS) in bats. The test is being used to identify infested caves, so that Forest Service and other land managers might selectively restrict access to those caves and mines to help slow the spread of WNS.

Control and Management

The Forest Service directly intervenes to manage populations of invasive species that threaten forest and grassland health and sustainability. Rapid response following early detection is used to eradicate new infestations. If eradication is not feasible, Integrated Pest Management (IPM) and adaptive management techniques are implemented to help maintain ecosystem function. This includes research and management to increase the resilience of threatened ecosystems to mitigate the impacts of pests. Using new research tools, and the authorities and requirements defined within our new Invasive Species Management Policy (Forest Service Manual 2900), the Forest Service coordinates closely with external stakeholders to implement effective control and management activities on millions of priority areas throughout the National Forest System.

For example, the Jackson and Buffalo Ranger Districts of the Bridger-Teton National Forest in Wyoming include the majority of the land within the Jackson Hole Weed Management Association, where the Forest Service identified approximately 7,000 priority acres for early detection and immediate eradication efforts. In total, the Forest Service successfully eradicated 15 priority species from those 7,000 acres. When oak trees started dying in the San Francisco Bay Region, the Forest Service Pacific Southwest Research Station developed a collaborative research response that helped identify the cause—a water mold previously unknown to science. The combined efforts of the Forest Service with APHIS and numerous partners via the California Oak Mortality Task Force have reduced the human-assisted spread of Sudden Oak Death and helped communities in the 14 infested coastal counties in California and Oregon deal with the infestation.

Restoration and Rehabilitation

Restoring landscapes that have been impacted by invasive species or associated management activities is necessary for improving ecosystem integrity and function and may reduce vulnerability to invasive species establishment in the future. Restoring and maintaining the health, functions, and productivity of areas affected by invasive species is consistent with management guidance on restoring national forests and the effective use of native species.

For example, In order to restore cutthroat trout populations to streams, non-native trout are replaced with genetically pure cutthroat populations. After a decade of restoration efforts, Cherry Creek, on the Gallatin National Forest, now contains the largest genetically pure population of this cutthroat trout subspecies in the upper Missouri River drainage area. The Forest Service strives to utilize cost-effective methods; however we note the importance of providing discretion to land managers to choose appropriate methods, in full consideration of a balance of land management objectives. There may be situations in which the lowest cost option for invasive species management is not the best option for achieving multiple objectives on the landscape.

Technical Assistance

The U.S. Forest Service has some concerns that we welcome working with the subcommittee to address. We are concerned with establishing categorical exclusions without input from those most affected by their application, and are concerned that the categorical exclusion in section 5(c) is overly broad and could call into question our collaborative work with partners and other stakeholders. The Forest Service has successfully established categorical exclusions under existing authorities, such as those focused on restoration, and could support a call for a rulemaking to establish any appropriate and necessary categorical exclusions for invasive species. This would enable us to focus on gaps in current categorical exclusions and strengthen our relationships with our partners and other stakeholders.

Conclusion

The invasive species issue is considered a high priority by all program areas of the U.S. Forest Service. We believe the Forest Service collaborative approach to invasive species management enhances our ability to work together by building on each other's strengths and authorities. In addition, our Forest Service personnel work closely with local, county, State, and Tribal governments; Cooperative Weed Management Areas; Cooperative Invasive Species Management Areas; our departmental partners NRCS, ARS and APHIS; and other organizations in the public and private sectors to promote a collaborative approach to mitigate, manage, and if necessary, adapt to aquatic and terrestrial invasive species threats across the landscape.

I would like to thank the Chairman and subcommittee members for your interest in invasive species management, and look forward to working with you to refine some aspects of this bill. I welcome any questions you may have for me at this time.

Senator BARRASSO. Thank you very much.

Before going on to Mr. Pool, I would like to invite Senator Gardner to make an introduction.

STATEMENT OF HON. CORY GARDNER, U.S. SENATOR FROM COLORADO

Senator GARDNER. Thank you, Mr. Chairman, and thank you to the witnesses for your time and testimony today.

Thank you, Mr. Chairman and Senator Franken, for holding this hearing.

I would just like to take a few minutes to introduce Dr. Beck, George Beck, a great professor at Colorado State University (CSU), my alma mater as well. A professor, at the head of the Department, in the Department of Bioagricultural Sciences and Pest Management at CSU. A Professor of Weed Science can take on different meanings in Colorado these days, but you have been in this business longer than the others have been.

So thank you very much for the opportunity to be here and certainly, Mr. Chairman, whether it is Dalmatian toad flax or the Douglass-fir tussock moth, we have significant invasive species to be concerned about throughout the West.

Thank you, Dr. Beck, for being here.

Senator BARRASSO. Thank you, Senator Gardner.

Mr. Pool.

STATEMENT OF MIKE POOL, ACTING DEPUTY DIRECTOR FOR OPERATIONS, BUREAU OF LAND MANAGEMENT, U.S. DEPARTMENT OF THE INTERIOR

Mr. POOL. Good afternoon, Mr. Chairman, Ranking Member, and Members of the Subcommittee. I'm Mike Pool, the BLM's Acting Deputy Director for Operations at BLM. Thank you for the opportunity to discuss this very important issue of invasive species and management across public lands.

The Department shares the sponsor's goal of improving the management and control of invasive species on lands and waters that it manages and appreciates changes made in the bill since similar legislation was introduced in the House.

BLM manages over 245,000,000 acres of public lands, primarily located in 12 Western states, and is deeply committed to preventing the introduction and spread of invasive species that threaten the nation's economy, environment and human health.

Invasive and noxious weeds, like cheat grass, star thistle, Medusa head and salt cedar, exist on over 79,000,000 acres of BLM-managed lands and require significant effort to control and manage.

The formidable challenges imposed by invasive species must be addressed for the BLM to effectively protect and preserve natural, cultural, historic and tribal resources, safeguard traditional uses of public lands, facilitate new economic opportunities and build ecological resilience to national disasters.

The key to invasive species control is addressing the threat in a comprehensive and coordinated manner. Prevention early, detection and rapid response, also known as EDRR, control, coordina-

tion, education and outreach, research and restoration are critical elements for effective management of invasive species.

To prevent and control invasive species, the BLM partners with state and local government agencies, tribes and the private sector to carry out this work. The BLM is proud to have played a role in working with Federal departments, agencies, states and tribes to develop the recently released interdepartmental EDRR framework, and we'll continue to work with all partners to implement the recommendations outlined in the report.

The BLM is implementing many projects on public lands across the West to combat the spread of invasive species. For example, in Colorado the BLM has worked with stakeholders since 2001 to remove over 30 miles of salt-cedar and restore native vegetation along the San Miguel River.

In 2005 the BLM launched the Restore New Mexico initiative to restore disturbed lands on a landscape scale. Through that effort, the BLM has worked with state and local partners to restore over 3,000,000 acres of public land across New Mexico that had been previously denigrated by invasive species and woodland encroachment.

The BLM has also worked on immediate rehabilitation efforts in the aftermath of major wildland fires each year such as the recent Soda fire which burned over 280,000 acres in 2015. These BLM post fire activities include erosion control, soil stabilization efforts, seeding, planting and area closures to protect the recently burned areas. Effective rehabilitation of these areas, including establishment of planted vegetation, can help combat invasive weed species.

Throughout these and numerous other projects BLM has treated millions of acres to address invasive species, concerned threatened and endangered wildlife lands and rehabilitate and restore public lands following natural disasters. These actions result in significant benefits including more desirable recreating conditions, healthier habitat for fish and wildlife, decreased infestation of on both private and public land downstream and educational opportunities with adjacent landowners and outdoor recreationists to address larger scale noxious weed control efforts.

We believe that the BLM does tremendous work on the ground with available resources, and we are always looking for opportunities to better work with our partners to increase our effectiveness and efficiency.

The Department of the Interior—the Department supports the goals of S. 2240, to facilitate Federal efforts to address invasive species across public lands and waters and appreciates the changes included from the earlier iterations of the legislations. We have identified areas in the bill where additional clarity and further discussion with the sponsor and Subcommittee would be helpful.

For example, we would like to work on language to maintain administrative flexibility to allow agencies to prioritize actions to address the most harmful species and adapt a new challenge on some public land.

The Department does not support such an expansive categorical exclusion; however, we would both eliminate an important opportunity for public—which would also eliminate an important oppor-

tunity for public involvement, environmental and cultural review and land management decisions.

Thank you for the opportunity to speak with you today, and I look forward to answering any of your questions.

[The prepared statement of Mr. Pool follows:]

Statement of
Mike Pool
Acting Deputy Director for Operations
Bureau of Land Management
U.S. Department of the Interior
Senate Committee on Energy and Natural Resources
Subcommittee on Public Lands, Forests, and Mining

Hearing to *"Examine the Impacts of Invasive Species on Productivity, Value & Management of Land & Water Resources"*
&
on S. 2240, the Federal Invasive Species Prevention, Control and Management Act

April 28, 2016

Thank you for the opportunity to discuss invasive species management on public lands and to provide the Department of the Interior's views on S. 2240, the Federal Invasive Species Prevention, Control, and Management Act. Invasive species reduce rangeland productivity, increase the risk of wildfires, threaten native plant and wildlife populations and their habitats, and impact recreational opportunities on public lands. The Department shares the sponsor's goals of improving the management and control of invasive species on the lands and waters that it manages and appreciates changes made in the bill since similar legislation was introduced in the House in the 113th Congress. We would like to work with the sponsor and Subcommittee on amendments to resolve some concerns we have identified.

Background

The Bureau of Land Management (BLM) manages over 245 million acres of public lands primarily located in 12 western states and is committed to preventing the introduction and spread of invasive species that threaten the nation's economy, the environment, and in some cases human health directly. Many invasive plants, insects, and other types of animals, pathogens, and parasites are already well-established within the United States. Some of these organisms arrived hundreds of years ago, while others were introduced more recently. Invasive weeds like cheatgrass and salt cedar exist on over 79 million acres of BLM-managed lands and require significant effort to control.

The formidable challenges posed by invasive species must be addressed for the BLM to effectively protect and preserve natural, cultural, historic, and tribal resources; safeguard traditional uses of public lands; facilitate new economic opportunities; and build ecological resilience of plant and animal communities. Invasive species negatively impact the conservation of biodiversity, food and water security, grazing, outdoor recreation, and economic growth. The scale and globalization of trade, travel, and transport is on the rise, and there have been corresponding increases in the number and types of invasive species that are being moved around the world and the rate at which they are moving. Changes in land use and climate are rendering

some habitats, including some of the best-protected, most valuable and even remote natural areas, more susceptible to biological invasion.

Greater Sage-Grouse Conservation, Invasive Species, & Wildland Fire

A significant portion of public lands in the Great Basin region – including portions of Oregon, Idaho, Utah, Nevada, and California – is composed of the sagebrush-steppe ecosystem. This ecosystem is one of the most imperiled in the United States due in part to the presence of invasive species such as cheatgrass and medusahead. Together, invasive species and the effects of prolonged drought and climate change are creating conditions that are leading to larger, more intense rangeland fires across the Great Basin.

Cheatgrass, also known as "downy brome," is a non-native annual grass that is of particular concern because it thrives in highly disturbed habitats, including those areas impacted by wildfire and other land-use activities. The spread of cheatgrass has been especially rapid in parts of the Intermountain West. The sagebrush steppe and bunchgrass regions in the Great Basin, Columbia Basin, and Snake River Plains in Nevada, Utah, Washington, Oregon, and Idaho have proven particularly vulnerable to cheatgrass invasion; the number and size of infestations in these regions has increased dramatically over the last 20 years.

Cheatgrass dries early in the summer and remains highly flammable throughout the fire season, which creates dangerous conditions on the ground. A wind-driven rangeland fire in cheatgrass can easily burn thousands of acres in an hour, destroying homes, livelihoods, and habitat along the way. If left unchecked, cheatgrass often invades sagebrush habitat after rangeland fires, creating conditions for more frequent, intense fires in the future. Native plant and animal communities are not well-adapted to these intense and frequent fires and can suffer significant declines. This in turn allows for more cheatgrass growth in following years. For these reasons, this "fire-and-cheatgrass cycle" is a particularly difficult challenge for land managers. As directed in the Department's Integrated Rangeland Fire Management Strategy, the BLM has joined with fellow DOI bureaus, the U.S. Department of Agriculture, tribes, other federal, state, and local agencies, private industry, and various non-governmental organizations (NGOs) to control current cheatgrass infestations, prevent new invasions from occurring, and restore disturbed habitats.

Healthy rangelands are more resistant to certain invasive species. Therefore, working to maintain rangeland health and – when necessary – stabilizing and restoring areas after fire is critical to successfully breaking the cheatgrass-fire cycle. The increasing frequency and intensity of rangeland fires, and the conversion of sagebrush ecosystems to invasive annual grasses pose major threats to ranchers, tribes, local communities, outdoor recreationists, energy developers, and others who depend on these lands and resources to sustain their livelihoods and quality of life. In 2010, the U.S. Fish and Wildlife Service identified the invasion of non-native annual grasses (such as cheatgrass), coupled with the loss of habitat from the increased frequency and intensity of wildfire, as the primary threat to the greater sage-grouse in the Great Basin.

BLM Actions to Combat the Spread of Invasive Species

The key to invasive species control is addressing the threat in a comprehensive and coordinated manner. Prevention, early detection and rapid response, control, coordination, education and

outreach, research, and restoration are critical elements for effective management of invasive species. To prevent and control the various invasive species that impact BLM lands, the BLM partners with state and local government agencies, tribes, and the private sector. An example of this coordinated approach is through engagement with Cooperative Weed Management Areas (CWMAs). CWMAs help interested parties coordinate efforts and share expertise for managing invasive species in a defined area. By addressing invasive species in this manner, the BLM is able to leverage limited resources to counter the impacts of invasive species across the landscape.

The BLM played a key leadership role in the development of the first National Seed Strategy for Rehabilitation and Restoration that was announced in August 2015. This strategy was developed in coordination with the Plant Conservation Alliance, the Chicago Botanic Garden, fellow DOI bureaus, the U.S. Department of Agriculture, western states, and many other partner organizations. The primary goal of the strategy is to ensure that the right seed gets to the right place at the right time to more effectively restore viable and productive plant communities and sustainable ecosystems. The strategy will also guide ecological restoration efforts and make treated lands more resistant to fire, invasive species, and drought.

The BLM is implementing many projects on public lands across the west to combat the spread of invasive species. For example, in Colorado, the BLM has worked with The Nature Conservancy, the San Miguel County Weed Board, and other interested stakeholders since 2001 to remove over 30 miles of salt cedar and restore native vegetation along the San Miguel River. In 2005, the BLM launched the "Restore New Mexico" initiative to restore disturbed lands on a landscape scale. Through that effort, the BLM has worked with state and local partners to restore over 3 million acres of land across New Mexico that had been degraded by invasive species and woodland encroachment. In Oregon, the BLM has worked with volunteers and the U.S. Forest Service to reduce the acreage infested by nine species of noxious weeds along the Rogue River by 90 percent. Projects like these result in significant benefits, including more desirable recreating conditions; healthier habitat for native plants, fish and wildlife; decreased infestation on both private and public land downstream; and education opportunities with adjacent landowners and outdoor recreationists to address larger-scale invasive plant control efforts.

Further, as part of Secretary Jewell's January 2015 Secretarial Order on Rangeland Fire Prevention, Management, and Restoration, the BLM is using innovative biopesticides to test control of cheatgrass, medusahead rye, and jointed goatgrass on 33 research plots (ranging from 11-50 acres each) located in 7 states. The BLM is working in partnership with the U.S. Geological Survey and the U.S. Fish and Wildlife Service to evaluate the results of these treatments this fall. Depending on whether these treatments are successful, the BLM may expand this type of approach to additional states.

Early Detection and Rapid Response

Preventing the introduction of invasive species is the first line of defense against biological invasion. However, for invasive species that circumvent prevention systems, early detection and rapid response (EDRR) – a coordinated set of actions to find and eradicate potential invasive species before they spread and cause harm – can help stop the next invasive species from becoming established and spreading.

The White House Council on Climate Preparedness and Resilience recognized the impact that invasive species have on ecosystem resilience and identified EDRR as a priority in its October 2014 "Priority Agenda: Enhancing the Climate Resilience of America's Natural Resources." The report called upon the U.S. Department of the Interior, working with other members of the National Invasive Species Council (NISC) – an interdepartmental body created by Executive Order 13112 – states, and tribes to develop a national EDRR framework designed to identify and find invasive species populations while they are still localized and eliminate them before they become widely established and cause significant harm.

In response, the Department of the Interior played a leadership role together with the NISC Secretariat to facilitate the development of the interdepartmental report, "Safeguarding America's Lands and Waters from Invasive Species: A National Framework for Early Detection and Rapid Response" (EDRR Framework), which the Department of the Interior released in February. NISC members' departments and agencies assisted in the report's development, including the U.S. Department of Agriculture, Department of Commerce, the Environmental Protection Agency, State Department, and Department of Defense. The process also engaged multiple and diverse stakeholders from state and tribal governments, academic institutions, and conservation organizations, among others.

The EDRR Framework proposes an organizational structure and guidance to better enable coordination and communication among federal and non-federal entities, ultimately to increase the overall effectiveness of EDRR efforts at all levels. The report contains a series of recommendations on initial high-level actions addressing coordination mechanisms, funding, partnerships, scientific and technical EDRR approaches, and pilot projects. The NISC Secretariat is in the process of charting out immediate next steps and identifying the human and financial resources available to take them. In addition, the President's FY 2017 budget includes $1.5 million for the Department of the Interior to begin implementation of the EDRR Framework, which would strengthen EDRR capacities.

Department Comments on S. 2240

As indicated at the beginning of this statement, while the Department supports the goals of this legislation to support federal efforts to address invasive species across public lands and waters in coordination and cooperation with states, tribes, and other non-federal partners, we have identified areas in the bill where additional clarity and further discussion with the sponsor and subcommittee would be helpful.

Section 4(b) would require the Department and the U.S. Forest Service to develop plans to achieve, to the maximum extent practicable, an annual five percent net reduction of invasive species populations on Interior and Forest Service managed lands. The Department agrees that setting metrics for control is important but those metrics will vary across species, their populations, ecosystems, and time. They are also informed by knowledge of baseline distributions. We would like to work with the sponsors on language to maintain administrative flexibility to allow agencies to prioritize actions to address the most harmful species and adapt to new challenges on the lands they manage.

We also note that the bill requires a number of additional plans, analyses, reports, and agreements which would be administratively burdensome to carry out and, in some cases, redundant in light of a number of existing cooperative agreements, contracts, and other arrangements we have made with our partners. We look forward to working with the sponsor and the subcommittee to identify those areas where there may be redundancies to ensure that ongoing work can be carried out most efficiently.

Section 5 of the bill establishes program funding allocations for control and management activities, investigations, outreach and public awareness, and administrative costs. The Administration does not support establishing fixed funding percentages into law which would reduce the land management agencies' discretion and flexibility to most effectively and efficiently allocate resources to address evolving challenges posed by invasive species. Because the most cost effective and efficient approach to managing invasive species is to prevent their establishment in the first place, we are particularly concerned that this section, as drafted, would limit the existing ability of land management agencies to adaptively manage invasive species control efforts while also meeting prevention, research, restoration, and partnership goals. Similarly, prevention, early detection, and control efforts for invasive species are informed, improved, and made more efficient through applied research, and we are likewise concerned that this section, as drafted, would limit the existing ability of land management and research agencies to conduct research to meet management goals.

Finally, the Department is also concerned that the environmental, cultural, and other impacts of invasive species control activities would not be adequately considered given the bill's broad categorical exclusion for many invasive species control efforts from environmental analysis under the National Environmental Policy Act (NEPA). The Department does not support such an expansive categorical exclusion, which would both eliminate an important opportunity for public involvement in land management decisions and ignore existing regulatory authority to conduct programmatic NEPA reviews.

Conclusion

The Department appreciates that S. 2240 provides additional recognition of the importance of controlling invasive species on federal lands managed by its bureaus. We look forward to working with Congress to more successfully fight the spread of invasive species and maintain healthy landscapes. Mr. Chairman, thank you for the opportunity to testify on our efforts to combat the spread of invasive species and provide our views on the bill. I would be happy to answer any questions.

Senator BARRASSO. Thanks so much for your testimony.
Mr. Miyamoto.

STATEMENT OF DOUG MIYAMOTO, DIRECTOR, WYOMING DEPARTMENT OF AGRICULTURE

Mr. MIYAMOTO. Thank you, Chairman Barrasso, Senator Franken, Members of the Subcommittee. Thank you for the opportunity to address you today about this important topic.

My name's Doug Miyamoto. I'm the Director of the Wyoming Department of Agriculture, and this topic is particularly pertinent to me because almost half of the land mass of the State of Wyoming is federally administered and invasive species have as much impact on agriculture as they do any other sector.

I'm here to talk about S. 2240, the Federal Land Invasive Species Control Prevention and Management Act. And I really want to emphasize my remarks on four critical components of this legislation that I think, based on our experience, will optimize its chances for success.

First and probably foremost, this proposal mandates local leadership. In my experience farmers and ranchers have a vast amount of knowledge regarding the natural resources in which they live and work. They're also more impacted by any policy decisions that are made regarding those resources. I can point to local communities that have worked tirelessly in Wyoming to draft locally-developed plans for natural resources used ranging from sage grouse habitat to septic system remediation and projects for improved water quality. These agricultural producers are the exact people that time and time again volunteer to serve on their local Weed and Pest District Boards and their local Conservation District Boards to address these problems. I can also point to a huge local commitment from Wyoming. In 2015 alone, the State of Wyoming invested $19 million in local weed and pest programs. My agency alone, the Department of Agriculture, contributed an additional $570,000 through grants and collaborative invasive species management programs.

The second key tenant that I wanted to emphasize today is a consistent commitment that this legislation would provide for our federal partners. Invasive species management simply demands an ongoing presence by all the partners, and S. 2240 provides a realistic level of certainty that our federal partners can maintain a presence and finish the job that they've started.

The third key component is that this is a goal-oriented proposal. The goal of a net five percent reduction in invasive species is identifiable and is trackable, at least to the maximum extent possible. There's also a strategic planning requirement in this proposal that's an essential part of the bill and it identifies specific actions and timing for optimal coordination with other federal agencies, state agencies and local jurisdictions, which I know, will increase our return on investment.

The fourth key component that I would like to highlight, specifically addresses one of our biggest and albeit inadvertent problems and that's the National Environmental Policy Act. And I'll give you a local example to highlight.

In June 2012 there was a fire that started about 30 miles southwest of Laramie, Wyoming called the Squirrel Creek Fire. It burned about 11,000 acres. Ninety percent of those acres were on Forest Service-administered lands.

Prior to the fire starting satellite imagery showed that less than ten percent of the cover was cheat grass. Forest Service initiated the Environmental Impact Statement (EIS) at that time, and the problem is that it took four years for that EIS to be completed. In the four years since the fire started cheat grass occupancy has more than doubled, and so we're now looking at total coverage of more than 25 percent in cheat grass.

I want to contrast that to a fire that ignited just last summer in Northern Wyoming, the Sheep Creek Fire. This fire occurred on mostly state-managed lands, and the topography and land use between these two fires is similar. The topography is the same and the land use is the same. Riverside treatments for cheat grass in the Sheep Creek Fire were applied within four months of the fire and cheat grass is, today, less prevalent than it was before the fire started. The categorical exclusion language of the bill is extremely important. Sometimes these actions require a timeliness that, so far, has been a challenge for us in some instances.

Invasive species simply demand a high degree of collaboration across jurisdictional boundaries. In the case of the Squirrel Creek Fire, Forest Service committed seven percent of the funding despite having jurisdiction for 90 percent of the land. In Wyoming we eagerly await the opportunity to collaborate with our federal partners in an effort where the common goal is invasive species control, prevention and management. I know that these will be universally supported, and I know it will also provide us yet another opportunity to prove that locally led and collaborative conservation works best.

Thank you again for the opportunity to speak with you today about this important topic.

[The prepared statement of Mr. Miyamoto follows:]

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The Wyoming Department of Agriculture is dedicated to the promotion and enhancement of Wyoming's agriculture, natural resources and quality of life.

Statement of Doug Miyamoto, Director, State of Wyoming - Department of Agriculture

Chairman Barrasso and Ranking Member Wyden, as well as other members of the subcommittee on Public Lands, Forests and Mining, thank you for the opportunity to speak with you today. My name is Doug Miyamoto and I serve as the Director of the Wyoming Department of Agriculture. Beyond my appointment as Agency Director, I have over 20 years of working on natural resources issues with the Natural Resources Conservation Service, the Western Governors Association, and the Wyoming Association of Conservation Districts as well as serving as Director for the Wyoming Livestock Board. I appreciate the opportunity to speak with you concerning the issue of invasive species.

I will start by noting Wyoming supports Senate File 2240, and will try to highlight a few of the reasons why in my testimony. This legislation is a needed revision and review on how agencies, and their partners, manage invasive species on Federal lands. We are not alone in our support. Numerous organizations and state governments have supported the concepts of Senate File 2240 through policy statements or letters of support. In a recent press release the National Association of Conservation Districts stated, "The proposed bill would facilitate greater collaboration and cooperation between and across agencies and entities and help alleviate undue barriers to the work of fighting invasive species locally, state-wide, regionally and at the national level."

The problems of invasive species are not endemic to Wyoming, or a certain region of the county. Burmese pythons have invaded South Florida, Asian carp in the Great Lakes, and the carnivorous lionfish along the southeastern coast are just a few of the recognizable issues natural resource managers are facing. Other invaders such as weeds may be less easy to identify and may blend in with the natural landscape. The Tree of heaven in Hawaii, kudzu in the south or leafy spurge near Devils Tower can often be overlooked as nothing more than native plants and wildflowers. However their impacts on agriculture and natural resources is no less severe. Invasive species represent a national threat at a cost of $120 billion every year.

In the western states, local agencies play a critical role in the management of invasive species. Wyoming law requires each county organize and fund weed and pest control districts. These districts assist state agencies and private landowners through cost-share programs. The districts utilize "best management practices" which may include the use of bio-control agents and mechanical control. Collectively, the districts work closely with the University of Wyoming to research new methods of management and control, and coordinate both regionally and nationally on programs such as the PLAYCLEANGO education campaign. In 2015, Wyoming spent roughly $19,000,000 on its weed and pest programs and my agency contributed an additional $570,000 through grants to local collaborative projects.

These districts are the primary cooperator for the federal agencies in our state when it comes to managing invasive weeds on federal lands. Because they are already equipped for spraying noxious weeds, federal agencies such as the Bureau of Land Management, Forest Service, and National Park Service often contract with them on control programs. With federal agencies management over 48% of the lands in our state, these local partnerships are essential to the success of Wyoming's overall program.

Senate File 2240 is not an attack on the failures of federal invasive species programs, and the federal agencies are well aware of the impacts these species have on federal lands. The Chief of the Forest Service has identified invasive species as one of the four critical threats to our Nation's forest ecosystems. The Bureau of Land Management website states, "Nonnative plants are spreading at an alarming rate of 4,600 acres per day on federal lands in the western United States." Senate File 2240 instead gives them the tools to aggressively manage the issue on a landscape scale, while improving their ability to cooperate with programs across jurisdictional boundaries.

For example, in June 2012, the Squirrel Creek fire burned 11,000 acres of land approximately 30 miles southwest of Laramie, Wyoming. Nearly 90% of the land impacted by the fire is managed by the US Forest Service – Medicine Bow National Forest, the other 10% is owned privately or by the state. The fire engulfed portions of the Sheep Mountain Game Refuge which is managed as critical winter habitat for mule deer and elk.

Before the fire, vegetation monitoring using landsat imagery identified small pockets of cheatgrass in small scattered areas, representing less than 10% of the vegetation cover. After the fire, state and county agencies engaged the Forest Service about the need for post-fire cheatgrass management utilizing aerial applications in the rugged terrain to contain any expansion. Due to the pressure from the state and county agencies, the Medicine Bow National Forest drafted the needed Environment Impact Statement. Unfortunately for the winter range, completion of the EIS took four years. Cheatgrass is an annual grass that is prolific seed producer, and its invasion is stimulated by fire. Landsat imagery has shown that during the four years it took the Forest Service to complete the EIS, cheatgrass invaded an additional 2000 acres of the landscape and now represents nearly 25% of the vegetation cover.

Compare this to the Sheep Creek Fire in north central Wyoming last year. This fire burned nearly 1100 acres of federal, state and private lands. A majority of the fire was on the Amsden Creek Wildlife Management Area, another area critical for big game winter range. Yet because the majority of the fire was on state owned lands, post fire cheatgrass treatments were completed four months after the fire. The quick response by the state and county mitigated the potential invasion of cheatgrass onto adjoining lands including the Big Horn National Forest.

NEPA is a roadblock to invasive species management. Whether it is due to the cost, the complication of the process, or simply a lack of trained personnel, it is major reason why the federal agencies are losing the 4,600 acres per day in the west. This is not just the opinion of the states and counties, but also many other professionals in wildlife habitat management. This past year the Western Association of Fish and Wildlife Agencies and the Western Weed Coordinating Committee jointly hosted a symposium on invasive weeds and sage grouse habitat. Attendees included professionals from state, county and federal agencies who identified key barriers to managing invasive weeds in sage grouse core areas. NEPA was identified as one of the primary barriers and the concept of categorical exclusions in critical situations was recommended as a potential solution. Senate File 2240 includes categorical exclusions for invasive species management in critical areas and pathways.

It has been said that a slow plan is better than no plan. The strategic planning component of the bill is an essential part of each federal agencies invasive species program. Section 4 requires each Secretary to develop a strategic plan, "to the maximum extent practicable, for an annual 5 percent net reduction of invasive species on lands managed by the Secretary concerned. The coordination aspect of the strategic planning allows the states and county programs to provide input and suggestions on how these strategies and objectives will be implemented locally. Although the 5% reduction may seem arduous, there is need for a benchmark by which federal agencies can quantify the success and failures of their programs. "A goal is not always meant to be reached; it often serves simply as something to aim at."

Another key component of Senate File 2240 is its emphasis on funding for management and control. This is not to say survey and research are not critical, but if we do not have the means for implementation, then they become useless. Senate File 2240 requires federal agencies to plan for 75% of their invasive species budget for management and control utilizing "integrated pest management options..." In Wyoming we have defined an "integrated management system" by statute as, "the planning and implementation of a coordinated program utilizing all proven methods for containing and controlling undesirable plants and pests, including but not limited to education, preventive measures, physical methods, biological agents, pesticide methods, cultural methods and management;" In other words an integrated management plan does not exclude any proven management tool including Early Detection Rapid Response and prevention.

Federal agencies can no longer watch from the sidelines as invasive species invade federal lands. They need to be an empowered with the resources and policies to support an aggressive program. In the case of the Squirrel Creek fire the planned cheatgrass treatments are estimated to cost $100,000. Due to the critical nature of the habitat for the state's mule deer population, the Wyoming Game and Fish and the Wyoming Wildlife and Natural Resource Trust are providing nearly half of the funding for treatments, another $45,000 will be provided by non-government agencies. However, the Forest Service is only providing $7,000 of the $100,000 cost. In otherwords, the Medicine Bow National Forest will pay only 7% of the bill for control of cheatgrass on lands where 90% is managed by the Forest Service. If it wasn't for the leadership of the state on this project, the treatments may not ever occur.

State and county invasive species programs were not created to management federal government lands. They were created to assist the private landowner with their private property problems. We do it because Wyoming's landscapes are worth preserving and protecting for agriculture, for recreation and for wildlife. We cannot ignore the impacts the largest landowner in our state has on our maintaining our natural landscapes.

Sincerely,
Doug Miyamoto

Senator BARRASSO. Well, thanks so much for your thoughtful testimony, and we appreciate you coming to be with us today.

Dr. Beck.

STATEMENT OF DR. GEORGE BECK, PROFESSOR OF WEED SCIENCE, COLORADO STATE UNIVERSITY

Dr. BECK. Chairman Barrasso and honorable members of the Committee, thank you for the opportunity to testify before you today.

I'm George Beck, and I'm a professor of Weed Science at Colorado State University. Today I represent the Healthy Habitats Coalition. We are a diverse alliance dedicated to improving invasive species management in our country.

In spite of almost three decades of efforts by many organizations working to persuade the Federal Government to do a better job of controlling and managing invasive species, not nearly enough progress has been made.

Zebra mussels are in the Great Lakes, and Asian carp are poised to invade. Cheat grass, knapweed, and tamarisk abound in the West. Burmese pythons, melaleuca and hydrilla are wreaking havoc in Florida. The emerald ash borer is another invasive force. Insects are invading the Northeast and Midwest, and Hawaii is simply overrun with invasive species. All these problems are spurting rapidly in every state as invasive species without exception.

Cheat grass alters habitats so significantly that it is clearly linked to the decline of the greater sage grouse habitat. We possess, however, the knowledge and ability to recover cheat grass infested sage grouse habitat if we would just seize the initiative to do so. For example, Colorado State University weed scientists recently completed a comprehensive study to demonstrate such success. And we have also developed approaches to target and eliminate the cheat grass soil seed reserve which then will provide the greatest opportunity to recover native species habitat.

The invasive species conundrum in our country is not necessarily due to a lack of knowledge rather it is because of chronically poor federal land management agency performance around managing invasive species, and this is a reflection of chronically poor administrative leadership concerning this problem.

Leadership from the National Invasive Species Council is practically non-existent. The recent charge by the Department of the Interior from NISC and their staff to lead the implementation of a national early detection and rapid response program is a significant error. NISC and their staff do not possess the appropriate knowledge base to implement EDRR and their leadership capacity will instantly be in question.

It is highly unlikely the federal agencies will take direction from NISC staff regarding EDRR because staff are not authorized to provide such correction. Quite frankly, NISC could be dissolved and the funds used to operate that body be spent on decreasing population abundance of invasive species and recovering native species habitat.

This poor federal performance is due to several reasons: Inconsistent budgets and non-transparency in the invasive species budgeting process; lack of collaboration, prioritization and on-the-ground

performance with state and local governments; using NEPA as an excuse for an action or justification to postpone making timely management decisions; and, poor administrative leadership leading or developing appropriate invasive species public policy and management and budgetary action.

The solution to these problems have been introduced as bills. S. 2240 works in the Senate and H.R. 1485 in the House. These are entitled the Federal Lands Invasive Species Control, Prevention and Management Act. The bills focus on the major land management agencies. The bills require agencies to develop a strategic plan and foster cooperative agreements with state and local governments, have categorical exclusions that will protect high value sites from invasive species and fully supports and facilitates EDRR. The bills will end years and years of analysis to approve management tools and requires invasive species populations to be decreased a net five percent annually to stay ahead of expansion rates, and it changes spending parameters. Seventy-five percent must go on the ground, not more than 15 percent on education and awareness or excuse me, awareness and research and up to ten percent on administration.

We have multiple supporters for these efforts including an Invasive Species resolution from the Western Governors Association and direct support from Governor Otter of Idaho, former Governor Andrus of Idaho, Governor Martinez from New Mexico and the State of Wyoming.

There's no federal administrative leadership on invasive species. It is up to Congress to provide that leadership and pass S. 2240 and H.R. 1485. Doing so will place our country on the road to begin solving our invasive species problems.

Honorable members, we must stop kicking this can down the road.

Thank you again for the opportunity to share the Healthy Habitats Coalition's thoughts on invasive species management and our country.

[The prepared statement of Dr. Beck follows:]

Effective and Efficient Invasive Species Management; Courage and Commitment

Dr. George Beck
Professor of Weed Science
Colorado State University
Chair, Healthy Habitats Coalition

Chairman Barrasso, Ranking Member Wyden, and Honorable Members, my name is Dr. George Beck. I am a professor of weed science at Colorado State University where I have worked on the management of invasive weed species for over 30 years. Today I represent the Healthy Habitats Coalition, a 501(c)3 entity, which is a diverse coalition of state and county land managers, conservation organizations, private companies, industry and academics such as myself. We have focused on improving invasive species management in our country since a nine state invasive weed summit in 2008.

Invasive species is an insidious issue. These harmful organisms cause numerous detrimental environmental effects and cost Americans over $120 billion annually (Pimentel et al., 2005). Damage worldwide caused by invasive species is valued at $1.4 trillion each year, about 5% of the global economy (Pimentel et al., 2001). The interactions of invasive and imperiled species are of particular concern because invasive species populations expand exponentially and disrupt evolved ecological relationships. For example, cheatgrass (*Bromus tectorum*) and other invasive annual grasses that are native to the Mediterranean region and Asia have invaded the western U.S. and dramatically altered ecosystems. Cheatgrass increases fuel loads on invaded rangeland, which in turn alters wildfire characteristics such as frequency and intensity. These effects are especially damaging when disturbance regimes exceed the variation to which native communities are adapted thus causing plant and animal community changes and ecosystem-level transformations. Such alterations are the hallmarks of invasive species and why they are considered insidious and must be managed.

Cheatgrass' propensity to alter fire regimes poses a major threat to sage-grouse habitat in the western U.S (Crawford et al, 2004). Cheatgrass fueled fires destroys sage-grouse habitat and impacts the survivability of sage-grouse broods (Rhodes et al, 2010) and the link between cheatgrass and other annual grasses and decline of sage-grouse habitat is very clear. As an example, Colorado State University researchers recently completed a comprehensive study to recover cheatgrass infested rangeland for wildlife habitat (Beck 2014; Appendix Tables 1-3). We possess the knowledge and ability to recover these infested areas for sage-grouse habitats if we take the initiative. We also are evaluating a new herbicide, Esplanade, that will allow us to target and eliminate the soil seed reserve of invasive annual grasses, which will provide the greatest opportunity to recover native habitat (Sebastian et al, *in press*)

The Invasive Species Conundrum

The U.S. is vexed with numerous invasive species – Asian carp and zebra mussels in the Great Lakes, cheatgrass, knapweeds and tamarisk in the west, Burmese pythons, melaleuca, and hydrilla in Florida, Emerald ash borers in the Northeast and Midwest … the list is daunting and

continuously getting worse. Invasive species occur in every state and are transported or move across all borders. We must take immediate action to avoid their draconian and magnificent ecological and economic impacts.

The chronic poor performance by Federal land management agencies with regard to managing invasive species prompted the formation of the Healthy Habitats Coalition to develop a national solution for the harm caused by invasive species in our country. Four GAO or OIG reports clearly indict the poor Federal land management performance for invasive species. Federal lands are breeding grounds for invasive species because of inconsistencies for invasive species budgeting; lack of collaboration, on the ground effort, and prioritization with states and local governments; using NEPA as an excuse for inaction or as justification to postpone making management decisions in a timely manner; a general failure to grasp the magnitude of the invasive species problem; and poor Administrative leadership around developing appropriate invasive species public policy, management and budgetary action.

Invasive species lack the biological and ecological relationships that regulate the populations of native species such that the latter rarely are problematic natural resource issues. Personnel in Federal agencies are polarized about managing invasive species, which creates the conundrum where a portion of the workforce is committed to solving this problem while a seemingly much larger portion believes it to be a waste of time, which is ludicrous given the tremendous economic and severe natural resource impacts that these species cause in our country annually! An example of this poor attitude was captured by the Hawai'i Free Press on June 19, 2015 when Ken Werner, PPQ, APHIS Pacific States and Territories was quoted "the truth is, we just don't care that much about invasive species." This attitude is totally unacceptable given the annual $120 billion price tag that American taxpayers absorb much less the $1.4 trillion international problem that equates to 5% of the global economy!

Federal leadership – When President Clinton penned Executive Order 13112 that created the National Invasive Species Council and raised the level of responsible leadership to the Cabinet Secretaries, most people in the invasive species community lauded the effort and thought we would finally resolve the invasive species problem because politically, it was placed at a very high level within the Federal government. We were wrong! All that was accomplished was the politicizing of a biological problem, and even that was insufficient and ineffective. It created opportunity to feign that real accomplishments were being made because meetings were continually held to celebrate meager success at best but no meaningful progress occurred. The Invasive Species Advisory Committee, which continues to meet to this very day, helped develop several national invasive species management plans that were never implemented and made numerous recommendations to Federal agencies that seemingly were always ignored.

The Department of Interior recently charged the National Invasive Species Council with the leadership to implement a national early detection and rapid response program. The concept is where a new invasive species problem that threatens the U.S. is quickly identified and rapidly eradicated from the U.S. location(s). This requires a significant amount of expertise and the courage to use the most appropriate tools to effect eradication and this could be problematic for

NISC and their staff as to my knowledge, they do not possess such expertise and their leadership capacity would then be very much in question. Additionally, NISC staff are not authorized to make decisions and direct Federal Land Management agencies to invoke any chore, much less EDRR – this has been a constant problem for agency personnel that interact with NISC. Demands by NISC staff for their projects to be implemented and completed cause agencies to be overloaded and delay progress and completion of invasive species projects already underway. Furthermore, states will not be in favor of a national EDRR program because of the propensity for most agencies to postpone decisions and a general distrust of the National Invasive Species Council and their staff. The first attempt at developing a national EDRR program was during a 3-day meeting in 2000 in Fort Collins, CO but no consensus was reached other than the federal government should not be in charge of such a program and the overwhelming majority of those in attendance were from Federal agencies!!

I served on ISAC for 6 years (from 2002 through 2008) and we even wrote and published a scientific paper carefully outlining what constitutes an invasive species and perhaps more importantly what does not constitute an invasive species. To my knowledge, this paper has not been used by Federal agencies in spite of them being the primary audience for that work conducted on their behalf by a Federal advisory committee. This wasteful use of limited funds continues to this day but NISC has done little if anything about coordinating and fostering cooperative efforts among agencies, states, and local governments as was initially thought with regard to invasive species management. NISC should be dissolved and the funds used to operate that body instead should be spent to decrease the population abundance of invasive species and recover native species habitat!

In previous hearings, the Healthy Habitats Coalition outlined the terrestrial weed problem. Using data collected from Federal land management agencies in 2009 – both acres currently infested at that time and the number of acres treated for weed control – we predicted the acres infested with invasive weeds would double in 2017 (Figures 1 and 2). In 2015, the BLM, reported more than a doubling of the 35 million acres reported in 2009 to over 77 million infested acres in 2015 … 2 years earlier than HHC predicted!

The inaction by Federal agencies is fueled by inconsistent NEPA compliance - the variable interpretation of NEPA by each agency creates a redundant and inefficient waste of public money. Categorical exclusions in S.2240/H.R.1485 will resolve this dilemma by creating a framework of measurable and tactical methods.

Fig 1. Example: Federal Weed Issue in 2009

AGENCY (Big 6)	Infested Acres	Treated & restored acres	Percent T&R	New Acres Annually **	Total Net Infested Acres
BLM	35,000,000	375,000	1.1%	4,155,000	38,780,555
USFS	7,000,000	390,000	5.6%	793,200	7,403,200
NPS	2,600,000	66,000	2.5%	304,080	2,838,080
DOD*	2,500,000	200,000	8%	276,000	2,576,000
APHIS	81,709	27,805	34%	6,469	60,372
FWS	2,300,000	345,000	15%	234,600	2,189,600
Others	Not available	200,000	Not available	Not available	-
Totals	49,481,709	1,603,805	3.2%	5,769,349	53,847,807

FY09 data provided by Federal Agencies
* DOD estimated
* Annual average weed spread rate is 12%.

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Fig 2. HHC Projected the Infested Acres in 2009

Millions of Federal Acres

Year	Elapsed Years	Beginning Infested Acres	Acres Treated & Restored (3.2% of Begin)	Infested Acres After Treatment	12% Annual increase	Year End Infested Acres
2009	1	49.48	- 1.60	= 47.88	+ 5.75	= 53.63
2010	2	53.63	- 1.74	= 51.89	+ 6.23	= 58.12
2011	3	58.12	- 1.89	= 56.23	+ 6.75	= 62.98
2012	4	62.98	- 2.04	= 60.94	+ 7.31	= 68.25
2013	5	68.25	- 2.21	= 66.04	+ 7.92	= 73.96
2014	6	73.96	- 2.40	= 71.56	+ 8.59	= 80.15
2015	7	80.15	- 2.60	= 77.55	+ 9.31	= 86.86
2016	8	86.86	- 2.81	= 84.05	+ 10.09	= 94.14
2017	9	94.14	- 3.05	= 91.09	+ 10.93	= 102.02
2018	10	102.02	- 3.31	= 98.71	+ 11.85	= 110.56

HHC projected a 61.1 million acre increase (doubling) by 2017

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The Invasive Species Solution:

The invasive species problem in America requires a legislative repair and that solution has been outlined by Congress; S.2240 – the Federal Lands Invasive Species Control, Prevention, and Management Act was introduced in 2015 as well as a companion bill in the House, H.R.1485 . The bills focus attention on four Federal land management agencies; the Forest Service, Bureau of Land Management, Fish and Wildlife Service, and National Park Service. Categorical exclusions are a key component of the bills and not only will that help defend affected high value sites and fully support and facilitate Early Detection and Rapid Response efforts, it will end the years and years of analysis to approve use of new management tools that Federal land managers desperately need to be effective and efficient.

S.2240 and H.R.1485 also foster cooperative agreements between Federal agencies, state and local governments, and private entities to manage invasive species collaboratively. The priorities for these cooperative agreements will be determined by state Governors working with federal agencies and will engage all affected parties collectively using appropriate expertise and thus reducing redundancy and capacity barriers..

As an example S.2240 and H.R.1485 require that terrestrial weed management efforts deplete invasive species populations by a net of 5% annually, which in the case for invasive weeds means at least 15% of existing infestations must be decreased annually to stay ahead of the invasive weed expansion rates (Figures 3 and 4). This 5% annual reduction will allow us to successfully manage invasive weed problems as opposed to simply wasting funds. Biologically acceptable net decreases for other invasive taxa will have to be determined and passage of S.2240/H.R.1485 will foster acquisition of that knowledge by creating and using a required strategic plan.

Fig 3. 2009 Solution: Treat & Restore 15% Annually

Millions of Federal Acres (HHC 2009 Estimate)

Year	Elapsed Years	Beginning Infested Acres	Acres Treated & Restored (15% of Begin)	Infested Acres after treatment	12% Annual Increase	Year End Infested Acres
2009	1	49.48	- 7.42	= 42.06	+ 5.1	= 47.16
2010	2	47.16	- 7.07	= 40.09	+ 4.81	= 44.90
2011	3	44.90	- 6.73	= 38.17	+ 4.57	= 42.74
2012	4	42.74	- 6.40	= 36.34	+ 4.35	= 40.69
2013	5	40.69	- 6.10	= 34.59	+ 4.15	= 38.74
2014	6	38.74	- 5.80	= 32.94	+ 3.95	= 36.89
2015	7	36.89	- 5.53	= 31.36	+ 3.76	= 35.12
2016	8	35.12	- 5.26	= 29.86	+ 3.58	= 33.44
2017	9	33.44	- 5.01	= 28.42	+ 3.41	= 31.83
2018	10	31.83	- 4.77	= 27.06	+ 3.25	= 30.30

19.2 million acre decrease over 10 years (39%)

Fig 4. 2016 Solution: Treat & Restore 15% Annually

Millions of Federal Acres (HHC 2015 Estimate)

Year	Elapsed Years	Beginning Infested Acres	Acres Treated & Restored (15% of Begin)	Infested Acres after treatment	12% Annual Increase	Year End Infested Acres
2016	1	100.0	- 15.0	= 85.0	+ 10.2	= 95.2
2017	2	95.2	- 14.2	= 81.00	+ 9.7	= 90.7
2018	3	90.7	- 13.6	= 77.1	+ 9.2	= 86.3
2019	4	86.3	- 12.9	= 73.4	+ 8.8	= 82.2
2020	5	82.2	- 12.3	= 69.9	+ 8.4	= 78.3
2021	6	78.3	- 11.7	= 66.6	+ 8.0	= 74.6
2022	7	74.6	- 11.2	= 63.4	+ 7.6	= 71.0
2023	8	71.0	- 10.6	= 60.4	+7.2	= 67.6
2024	9	67.6	- 10.1	= 57.5	+ 6.9	= 64.4
2025	10	64.4	- 9.7	= 54.7	+ 6.6	= 61.3

33.9 million acre decrease over 10 years (36%)

The bills also improve the efficient use of federally derived public monies by requiring affected Federal agencies to spend at least 75% of their invasive species funds on-the-ground to directly manage the problem while capping awareness and research at 15% of those funds and holding administrative costs to 10% or less. The efficiency and effectiveness of federal expenditures to manage invasive species will be dramatically improved and we know this can occur because of an outstanding model program recently invoked in the southwestern U.S. – Restore New Mexico – where thousands of acres have been recovered from invasive species and other expanding problems. S.2240 and H.R.1485 also will hold Federal agencies accountable for their invasive species efforts and overcome weaknesses and negative attributes identified in GAO and OIG reports.

It is up to Congress to seize control and pass a badly needed legislative repair for the invasive species issue. Simply put, we must create a paradigm shift for invasive species management with an authorization and appropriation generated from required budgets that flow from a strategic plan.

The constant procrastination we have observed for the past 30 years creates the perfect environment for invasive species success. A significant problem exists within most Federal agencies where some land management personnel simply do not care to manage invasive species regardless that such is required by law. We must stop kicking the invasive species management

can down the road. S.2240 and H.R.1485 represent the necessary staging action that will begin to resolve our nation's invasive species problems!!

Literature Cited

Beck, K. George. 2014. Invasive species: Herbicides can facilitate a positive outcome for invasive species and endangered species interactions. Outlooks on Pest Management 25(5): 316-319.

Crawford, John A., Rich A. Olson, Neil E. West, Jeffrey C. Mosley, Michael A. Schroeder, Tom D. Whitson, Richard F. Miller, Michael A. Gregg, and Chad S. Boyd. 2004. Ecology and management of sage-grouse and sage-grouse habitat. J. Range Manage. 57:2-19.

Pimentel, D., S. McNair, J. Janecka, J. Wightman, C. Simmonds, C. O'Connell, E. Wong, L. Russel, J. Zern, T. Aquino, and T. Tsomondo. 2001. Economic and environmental threats of alien plant, animal, and microbe invasions. Agr. Ecosyst. Environ. 84:1-20.

Pimentel, D., R. Zuniga, and D. Morrison. 2005. Update on the environmental and economic costs associated with alien-invasive species in the United States. Ecol. Econ. 52:272-288.

Rhodes, Edward C., Jonathan D. Bates, Robert N. Sharp, and Kirk W. Davies. Fire effects on cover and dietary resources of sage-grouse habitat. J. Wildlife Management 74(4): 755-764.

Sebastian, D.J., J.R. Sebastian, S.J. Nissen, P. Westra, and K.G. Beck. A new herbicide for winter annual grass control on rangeland. Rangeland Ecology and Management, *in press*.

Appendix

Table 1. Cheatgrass control and cover in 2011 and 2012 at Rulison[1].

Treatment	Rate	Cheatgrass % Control 2011	Cheatgrass % Cover 2011	Cheatgrass % Control 2012	Cheatgrass % cover 2012
Non-treated	0	0 d[1]	75 a	0 d	87 a
Journey	1 pt/A	87 b	14 c	64 b	36 b
Landmark	1 oz/A	100 a	0 d	83 a	16 c
Matrix	4 oz/A	100 a	0 d	90 a	9 cd
Plateau	8 fl oz/A	33 c	66 b	18 c	83 a
Spike	0.38 lb/A	100 a	0 d	92 a	6 d

[1] Data subjected to analysis of variance and means followed by the same letter are not different ($P<0.05$).

Table 2. Herbicide by grass species interaction where frequency of seeded grass species in 2012 was dependent upon herbicide treatment used to control cheatgrass in 2010 at Rulison[1].

		Grass Species					
		Bluebunch wheatgrass	Indian ricegrass	Sandberg bluegrass	Sand dropseed	Squirreltail	Western wheatgrass
Site	Herbicide	% Frequency/plot (100 ft^2; 4 x 10 ft rows)					
Rulison	Non-treated	7 e-i	1.8 k-q	2.3 j-q	1.1 n-s	1.4 m-s	0.2 s
	Journey	44 a	3 i-o	8 e-h	2.4 i-q	19 bcd	10 d-h
	Landmark	31 abc	5 g-k	5 g-l	8 e-h	41 ab	11 d-g
	Matrix	41 ab	1 o-s	7 e-i	0.6 qrs	15 cde	6 f-j
	Plateau	4 h-m	0.8 p-s	1.2 n-s	1.5 m-s	1.1 n-s	0.3 rs
	Spike	13 def	0.6 qrs	1.6 l-r	4 h-n	9 d-h	3 i-p

[1] Data subjected to a general linear models mixed procedure producing means and standard errors; means followed by the same letter are not different (P<0.05). Means in red are statistically better than means in non-treated plots within a column.

Table 3. Herbicide by forb species by year of seeding interaction where forb species frequency in 2012 was dependent upon the herbicide used to control cheatgrass in 2010 and the year of seeding[1].

			Forb Species					
			Gooseberry leaf globemallow	Lobeleaf groundsel	Dusty penstemon	Lewis flax	Sulphur buckwheat	Low fleabane
Site	Yr Sd	Herbicide	Frequency/plot (100 ft^2; 4 x 10 ft rows)					
Rulison	2010	Control	0 k	1.7 f-k	0 k	1.7 f-k	0 k	0 k
	2011		7 b-e	5 e-g	7 b-f	4 e-h	0 k	0 k
	2010	Journey	0 k	7 b-e	0 k	26 a	0 k	2 e-j
	2011		0 k	30 a	0.1 jk	10 a-d	0 k	0 k
	2010	Landmark	0 k	5 e-g	0 k	0 k	0 k	13 abc
	2011		0.4 jk	0.7 ijk	0 k	1 h-k	0 k	0 k
	2010	Matrix	0 k	6 b-f	0 k	0 k	0 k	0 k
	2011		0 k	1.4 g-k	8 bcd	17 ab	0 k	0 k
	2010	Plateau	0 k	6 b-f	0 k	4 e-h	0 k	0 k
	2011		19 ab	0.6 ijk	1.3 g-k	1.8 e-k	0 k	0 k
	2010	Spike	0 k	0 k	0 k	0 k	0 k	0 k
	2011		0 k	0 k	0 k	3 d-i	0 k	0 k

[1] Data subjected to a general linear models mixed procedure producing means and standard errors; means followed by the same letter are not different ($P<0.05$). Means in red are statistically better than at least one of the non-treated means within a column.

Senator BARRASSO. Thank you very much, Dr. Beck.
Dr. Campbell.

STATEMENT OF DR. FAITH CAMPBELL, VICE PRESIDENT, CENTER FOR INVASIVE SPECIES PREVENTION

Dr. CAMPBELL. Thank you, Chairman Barrasso and other Members of the Committee, for the opportunity to speak with you today about invasive species management.

I do have a written statement that I've asked be included in the record.

I represent the Center for Invasive Species Prevention and the Natural Areas Association. We believe everyone in this room agrees that invasive species cause enormous damage, that the nation needs a comprehensive invasive species program and that needed federal leadership has fallen short.

The invasive species threat does not have a Teddy Roosevelt or a John Muir, but you can be the John Lacey, the Member of Congress who moves it forward. You can use your powers as Senators to promote strong and comprehensive programs that will praised 100 years from now.

And I'm going to suggest some immediate practical steps that you can take.

First, you can work with your colleagues to amend the Lacey Act, which I just praised John Lacey. One hundred sixteen years ago it was a very forward looking bill, but everything changes in 116 years. The Fish and Wildlife Service needs new authority to apply scientific risk assessments, to act quickly when confronted by an emergency, to regulate imports of all kinds and interstate movement of all animal taxa to deal with wildlife diseases such as West Nile virus and to have clear authority over the regulation of movement of these animals among the 49 continental states.

A second action that you can help on is appropriations. None of the agencies, none of the land managing agencies, nor APHIS, the lead agency on prevention, has adequate funding to carry out its tasks.

You could also conduct oversight hearings at which you bring in the secretaries and assistant secretaries and undersecretaries and ask them about their efforts. I think we all agree that they're the ones with the authority to ramp up these programs, but they don't get the pressure that they should be getting about this.

I suggest three specific topics that you might ask them about. Has the Forest Service implemented its 2011 internal directive amending its manual to integrate invasive species activities across national forest programs, National Forest System programs? Why has neither the Forest Service nor the National Park Service adopted a nationwide regulation governing movement of firewood? And why has the Council on Environmental Quality not, over the last 15 years, met with the National Invasive Species Council to develop NEPA guidance which would solve, I think, many of the problems that have been enumerated here?

And finally, in less than a year you will be holding confirmation hearings for new secretaries, undersecretaries and assistant secretaries at USDA and U.S. Interior Department and I ask you to en-

sure that questions about their plans for managing invasive species are prominent in those hearings.

I do welcome your interest in the invasive species topic, and I congratulate the Healthy Habitat Coalition for a lot of hard work that's brought us to this point. Unfortunately, I do not agree that S. 2240 will provide the necessary changes.

I've outlined some problems with the funding allocation, especially when combined with the five percent reduction goal. I fear that it creates even more overlapping reporting and coordination requirements that might further delay needed actions. I believe that the priorities for dealing with invasive species on national lands should be—should reflect national perspectives, not perspectives of individual state governors. And finally, I think that the NEPA categorical exemption outlined in the bill would expose the environment to additional damage.

I'm ready to answer any questions you might have.

Thank you.

[The prepared statement of Dr. Campbell follows:]

Testimony of Faith T. Campbell, Ph.D.
Vice President, Center for Invasive Species Prevention
Endorsed also by the Natural Areas Association
Before
The Committee on Energy and Natural Resources,
Subcommittee on Public Lands, Forests and Mining
April 28, 2016

Mr. Chairman, on behalf of the Center for Invasive Species Prevention, we greatly appreciate the opportunity to speak to you today about invasive species management in the US. We believe everyone at today's hearing agrees that invasive species cause enormous damage to America's ecosystems and natural resources, our economy in rural and urban areas, and even our health. We agree further with you and the other sponsors of S. 2240 – and many others – that the Nation needs a comprehensive invasive species program that prevents new invasions, as well as more effectively controls existing invaders, including those on public lands under the stewardship of federal agencies. Finally, we agree that Federal leadership is essential – and that the current structure has been unable to provide that leadership.

However, we differ on how best to rectify this failure.

Where does Responsibility Lie?

The staff of the National Invasive Species Council (NISC) does not set policy; the staff carries out the tasks assigned to them by the Council's co-chairs – the Secretaries of the Interior and Agriculture.

We place the responsibility for the lagging federal effort on the secretaries of the Interior and Agriculture, and other decision-makers in these departments, *i.e.*, Assistant and Under secretaries.

Members of Congressional authorization and appropriation committees also play a key role. Invasive species program initiatives operate most efficiently when buttressed by stable long-term funding and guided by solid research and expert staff. Outreach to and engagement with stakeholders is also vitally important to mounting effective ISM prevention and control programs. The Center for Invasive Species Prevention supports the vision of a comprehensive program contained in the manifesto "Tackling the Invasive Species Challenge" endorsed by six members of the National Environmental Coalition on Invasive Species (NECIS). We ask that it be included as part of my testimony.

What Must We Do?

The Center for Invasive Species Prevention joins most invasive species experts in placing top priority on closing the pathways or vectors by which invasive species are introduced and spread. The Energy and Environment Committee has no jurisdiction over our government's principal prevention agency – the USDA Animal and Plant Health Inspection Service (APHIS).

However, the Committee does have jurisdiction over the USDA and Fish and Wildlife Service (FWS or Service), which has legal responsibility for preventing introduction of "injurious" wildlife. The Service's efforts are severely hampered by both inadequacies in the Lacey Act and insufficient funding.

1. Amend the Lacey Act

Members of the Committee could advance their goals of improving protection for resources on public lands by working with their colleagues to strengthen the Lacey Act and to increase funding for its implementation. The Lacey Act was first adopted in 1900. It was forward-looking for its time, setting up a system to regulate introduction of animals to "localities where they have not heretofore existed". One hundred and sixteen years later, the Lacey Act needs to be modernized to strengthen the FWS' ability to make timely, science-based decisions as to whether a candidate for importation is likely to be harmful to the nation's ecosystems and economy. Members of the National Environmental Coalition on Invasive Species are working with other stakeholders and members of Congress to amend the Lacey Act so as to enable the FWS to

- apply scientific risk assessment tools in evaluating species proposed for importation; and
- act quickly when confronted by an emergency.

The amendments should also clarify FWS' authority to regulate

- threats of diseases of wildlife; and
- interstate movement of species already listed as "injurious". [A federal court case, USARK *et al.* v. Sally Jewell *et al.*, has challenged the Service' authority to regulate movement of listed species among the 49 continental states.]

2. Use Congressional Powers to Spur Improvements

The Congress can help create a political climate in which land-managing agencies will choose to improve and enhance their invasive species programs. We suggest:

- Providing higher appropriations;
- Strengthening the Lacey Act in accordance with the points discussed above;
- Conducting oversight hearings at which Secretaries and Assistant/Under secretaries are asked about their efforts to address invasive species. Questions which might be pursued include:
    - Has the USDA Forest Service implemented its 2011 internal directive amending the Forest Service Manual? The directive mandates integration of invasive species activities across National Forest System resource management programs, Forest land use planning activities, project-level planning activities, and other NFS operations.
    - Why has neither the USDA Forest Service nor USDI National Park Service adopted a nation-wide policy restricting visitors from bringing their own firewood to campgrounds? Firewood is widely recognized as an important pathway for the spread of tree-killing insects and pathogens.

  - Has the Council on Environmental Quality collaborated with NISC to develop overall guidance on implementation of the National Environmental Policy Act?
- Ensuring that the Senate confirmation process for nominees to USDI and USDA Secretarial & Assistant or Under Secretarial positions includes strong emphasis on their intentions with regard to invasive species management.

Components of a Comprehensive Program

The land-managing agencies' invasive species programs should embrace landscape-level strategies carried out collaboratively across federal and state agencies and in cooperation with other stakeholders. The NECIS vision document, attached, provides suggestions on program goals and components. Key among the latter are agency actions aimed at preventing introduction and spread of invasive species by movement of such vectors as boats, seed, gravel, pack stock, landscaping plants, etc.

It is important that agencies' invasive species programs be assessed for their efficacy and improvements made when programs fall short. Such assessments require program metrics that measure outcomes, not just "acres treated". Such efficacy metrics are not yet developed; we welcome inclusion of this task in The National Invasive Species Council's Early Detection and Rapid Response Framework.

Comments on S. 2240

We have grave reservations about this bill. Our concerns center on five areas:

- Funding allocations that undercut essential research, outreach, and development and implementation of effective tools to prevent introduction and spread of invasive species;
- The unrealistic goal of 5% net reduction in invasive species populations;
- Creation of overlapping reporting and coordination requirements;
- Priority-setting procedures that do not reflect the national perspective;
- Broad exclusions of projects from NEPA analysis.

Funding allocation

The Center for Invasive Species Prevention questions the funding allocations in the bill because they would undercut vitally important components of comprehensive invasive species programs: research, educational outreach to members of the public who might transport invasive species, and strategic planning. None of these activities is adequately funded at present. The result of requiring that 75% of all funds be allocated to on-the-ground control will be a net increase in invasion because it will strip funding from prevention and other programs that currently limit the spread of new invaders.

Greater clarify about the extent of the allocation formula might partially allay our objections. Specifically, as regards the USDA Forest Service, does the funding allocation apply to all the agency's invasive species efforts? Or does it apply only to the activities on the National Forest System (including National grasslands)? Similarly, as regards the FWS, does the funding allocation apply to the (already minimal) funds used by the Service for Lacey Act listing activities and enforcement?

The Requirement that Invasive Species be Reduced by 5% Annually

The 5% annual net reduction in invasive species on federal lands is not a reasonable goal. First, it does not recognize that each agency must manage hundreds of species and that management tools are inadequate for many of them (see below re: priority-setting). Given the inherent difficulties, invasive species control on federal lands should be focused on targeted actions to conserve and protect threatened native ecosystems. Furthermore, combining the 5% reduction mandate with the 75% funding requirement will spur each land management agency to focus exclusively on lands under its control rather than address species on the landscape scale – as we believe we all think is best. This will result, at best, in patchwork responses that fail to permanently solve the problem even in areas subjected to repeated treatment.

Coordination Obligations

While we concur that coordination among the many entities engaged with invasive species is important, we worry that overlapping coordination and reporting requirements will increase delays and bureaucratic burdens. Each agency is responsible for managing hundreds of invasive species ranging from brown algae (*e.g.*, sudden oak death) to feral hogs, fish to terrestrial plants. Those species are at different stages of invasion at various locations; and their impacts differ across ecosystem types. The partners appropriate to dealing with these diverse situations will differ – and should not be mandated by law.

Setting Priorities

Furthermore, given that the bill's goal is to "improve the control and management of invasive species that threaten and harm Federal land", we suggest that the priorities should be set based on the national perspective. Goals should be established by taking into account, *inter alia*:

- The natural and other resources at risk (actual and projected impacts) to the various invasive species;
- The stage of invasion – there is more bang for the buck if the agency can stop the invasion early rather than try to reduce the extent of widespread invader;
- The availability of effective tools (although we support experiments and research to develop new tools); and
- The likelihood of successful restoration (will one invader be replaced by another?)

The federal agency must be free to address an invasive species even when the state where that invasive species is located has chosen not to take action, based on the agency's assessment of the threat to resources on its lands – or those of other national land-managing agencies. For example, the USDA Forest Service is and should try to address three wood-boring beetles in southern California that threaten hardwood trees, including those making up much of the region's riparian forests.

Furthermore, protection of resources on federal lands often requires addressing invasive species on non-federal lands or waters. Most invaders enter the country and first establish on non-federal lands or waters. Examples include `ohi`a wilt, emerald ash borer, sudden oak death, garlic mustard, zebra and quagga mussels, feral pigs … Does S. 2240 assist or hinder agencies' efforts to work with partners to address invasive species before they reach vulnerable federal lands?

Categorical Exclusion from NEPA

A Categorical Exclusion is defined in the National Environmental Policy Act (NEPA) as "a category of actions which do not individually or cumulatively have a significant effect on the human environment". (40 CFR 1508.4). This tool is open to use for invasive species control and indeed is used by such agencies as the Federal Highway Administration (23 CFR 771.117(c)) where appropriate. Invasive species control actions, including but not limited to application of chemical pesticides, can be expected to have a significant effect on the human environment. These harms could include take of threatened and endangered species, unintended harm to ecosystem structure and function, and health risks to our children, sensitive individuals, and communities at large through placement of chemicals in water supplies and over and around schools and "other similar, valuable infrastructure." NEPA is a critical tool to ensure that these harms are considered in advance. We therefore consider an attempt to create a CE by legislation undermines public health and safety and is inappropriate.

We suggest that the appropriate ways to address roadblocks arising from NEPA compliance are for the Council on Environmental Quality to work with the National Invasive Species Council to draft the long-overdue NEPA guidance; and for the agencies to prepare programmatic environmental impact statements assessments that can serve as the foundation for site-specific environmental assessments.

The National Invasive Species Council's Early Detection and Rapid Response Framework

The Center on Invasive Species Prevention strongly supports development of a more robust and coordinated national early detection and rapid response effort. We are somewhat concerned that the Framework outlines yet another planning and coordinating process. We consider the most important component to be Recommendation 2, which calls for convening policy-level agency leaders to explore the current funding situation and develop a plan to provide additional resources. We suggest that it would be appropriate for the Committee to ask the Council that status of efforts to

- Convene these officials to begin the effort to provide adequate funds;
- Designate a National Early Detection-Rapid Response Coordinator
- Establish the National Early Detection-Rapid Response Task Force and asked agencies to identify their own ED/RR liaisons to participate in the Task Force?

If these steps have not yet been taken, what have been the barriers? Can Congressional oversight help overcome them?

Thank you for the opportunity to present our views. I will be pleased to answer any questions.

Ecological Society of America, Environmental Law Institute, National Association of Exotic Plant Pest Councils, National Wildlife Federation, The Nature Conservancy, The Wildlife Society

Tackling the Challenge of Invasive Species

A Coordinated and Comprehensive National Response

National Environmental Coalition on Invasive Species

The National Environmental Coalition on Invasive Species (NECIS) is a national partnership of major environmental organizations and professional societies that is dedicated to strengthening the nation's response to invasive species, with special emphasis on preventing future introductions of harmful species.

Invasive species impose huge costs on our environment and economy, and the current federal response is hampered by inadequate authority, capacity, and coordination. The nation needs a comprehensive response that prevents new invasions as well as more effectively controls existing invaders. Federal leadership is essential to such a comprehensive program, as is increased capacity at federal, state, regional, and local levels.

NECIS believes that the nation's top priority for invasive species must be closing pathways by which additional harmful species enter the country and spread. Until these pathways are closed, managing established infestations will be a never-ending burden due to a constant stream of new introductions. Preventing harmful new invasions is the most effective—and cost-effective—method for protecting the nation from the growing threat posed by invasive species.

On-the-ground work to control and manage invaders already here is another important component of a comprehensive national response. Management of existing invaders has suffered from insufficient resources, coordination, and priority-setting in recent years. Increased funding to states or other regional entities would provide much-needed support to combat invasive species across entire landscapes. Broader and more aggressive efforts to control existing invaders, and thereby improve the health of our nation's habitats, is a solid investment, but should not be at the expense of other aspects of a comprehensive national response, including securing our borders from new invasions.

Recommendations for a Comprehensive National Response

- Risk assessments should be required before allowing the importation of new species into the country, which will significantly reduce the incidence of harmful new invasions and their associated economic and environmental costs.
- Improve the efficiency and effectiveness of federal invasive species programs by clarifying authorities and responsibilities, and ensuring that priorities and strategies are aligned. This could be accomplished in part through a strengthened National Invasive Species Council.
- Modernize the "Injurious Wildlife" sections of the Lacey Act to provide agencies with more agile processes for regulating the importation and transport of harmful invasive species; close legislative and administrative loopholes to ensure all potential invaders fall under the statutory authority of relevant agencies.
- Enhance funding for invasive species control and management projects, and strategically prioritize these investments to emphasize efforts capable of controlling and stopping the spread of invasives at landscape scales.
- Ensure that federal actions do not inadvertently promote the introduction or spread of harmful invasive species; use caution when promoting non-native species for biofuels, bioenergy, or other purposes.
- Provide sufficient resources to agencies to effectively carry out their responsibilities for invasive species prevention, early detection and eradication, and control and management.
- Adopt metrics to gauge the effectiveness of efforts to prevent the introduction and spread of new invasives and to achieve long-term control or removal of existing invaders.
- Support robust research and outreach programs, which are essential to improving the efficacy of federal, state, and local invasive species prevention and control efforts.

Gaps and Overlaps in Responsibilities

Responsibility for preventing unintended species introductions is spread among several federal agencies, based on legislative mandates:

- USDA Animal and Plant Health Inspection Service (APHIS) - invasive plants; plant pests; parasites & diseases of livestock and poultry
- US Fish and Wildlife Service (FWS) - invasive vertebrate animals and some invertebrates
- Coast Guard and Environmental Protection Agency - organisms transported in ballast water
- Centers for Disease Control – organisms posing threats to human health
- DHS Customs and Border Protection - general authority over all incoming people, goods, and vehicles.

Responsibility for on-the-ground control and management of invasive species is spread among numerous agencies at multiple levels, often limiting the effectiveness of these efforts. For example:

- Federal land-management agencies—USDA Forest Service, National Park Service, Bureau of Land Management, US Fish and Wildlife Service, and others—address invasive species on their own properties to varying degrees
- USDA and state agricultural agencies regulate noxious weeds, although noxious weed lists are often incomplete and inconsistent across states
- State agencies receive federal grant funding for invasive species management, but these efforts are often underfunded, cumbersome, and patchy. Some states have no organized invasive species programs.

No agency, however, has clear authority for regulating the introduction and spread of some types of potentially invasive organisms including:

- Diseases of wildlife that don't affect livestock or poultry (e.g., whitenose syndrome of bats; chytrid fungus of amphibians)
- Invertebrates that are not plant pests and are in taxonomic groups for which authority is not currently granted by the Lacey Act (e.g., horseshoe crabs)
- Pests that attack only dead plants (e.g., termites)
- Pests that are nuisances to humans but do not spread disease or attack agricultural plants.

A Focus on Pathways

An effective national invasive species response must include authorities, policies, and actions intended to prevent introductions of additional non-native species, to detect and quickly respond to new invaders, and to contain or manage already established invasive species. Our collective experience leads us to focus on *pathways or vectors of introduction and spread*, rather than trying to prevent introductions of *particular species.*

Most introductions of new species to the United States occur either in cities and suburbs, where imported goods arrive and are disseminated, or at ports, such as coastal estuaries and the Great Lakes. Once a species has entered the United States, however, eradication and control methods need to combine measures addressing both pathways of human-assisted movement (e.g., firewood, boat trailers) and the species' particular biological characteristics and life histories –which determine how managers can detect and eradicate the organism.

None of the existing "prevention" programs has achieved an adequate level of success. APHIS has considerable authority under the Plant Protection Act, and the bulk of federal prevention resources, yet the agency's staffing and funding are still inadequate to fully implement programs for which the agency is responsible. The FWS Lacey Act program is severely hampered by weak legislative authority and completely inadequate resources.

Role of Regulatory Agencies

Agencies responsible for preventing introductions or eradicating or containing early-stage invasions should have the following powers:

- Statutory authority to regulate both potentially invasive organisms and the pathways or vectors by which they are moved
- Statutory authority to regulate import and interstate movement of invasive organisms or their vectors
- Official reporting, communication, and outreach capacity
- Clear authority for responding to incursions and a suitable command structure to manage the response. Models for such response structures include the Interagency Fire Program, Centers for Disease Control, and oil spill emergency response
- Sufficient resources to enable timely completion of program components, including:
  - ✓ Evaluation and risk analysis of potentially invasive species and pathways
  - ✓ Promulgation of regulations for movement of invasive species and articles/conveyances that transport them
  - ✓ NEPA compliance
  - ✓ Inspection of shipments
  - ✓ Engagement with affected stakeholders
  - ✓ Enforcement and prosecution
  - ✓ Outreach and extension programs (e.g., to encourage compliance)
  - ✓ Research to improve risk analysis, prediction, detection, and control measures
  - ✓ Detection networks, deployment of appropriate tools targeting key pathways or vectors, and engaging stakeholders
  - ✓ Response to new outbreaks, including detection and eradication.

Role of Resource Management Agencies

Resource management agencies have a primary role for minimizing the impact of invasive species on lands and waters under their jurisdiction. To be effective, this important work should embrace landscape-level strategies carried out collaboratively across federal and state agencies and with other implementers, such as county weed districts, and private property owners. Effective invasive species control programs within resource management agencies should aim to:

- Reduce or eradicate invasive species populations, while encouraging recovery of native species and maintaining or restoring the utility of the lands or waters for intended purposes
- Prevent introduction of new invasive species to lands or waters under their jurisdiction
- Detect the presence of and respond rapidly to eradicate or control new potentially invasive species
- Limit the spread of invasive species on lands or waters under their jurisdiction, and to adjacent properties; and
- Educate users of their lands and waters to gain cooperation in limiting the spread of invasives.

To achieve this, effective invasive species containment programs operated by federal resource agencies should include the following components:

- Prevention (see relevant section above; statutory or regulatory authority is usually limited to the lands or waters under the agency's jurisdiction)
- Early detection programs and rapid response powers (see relevant section above; include appropriate staffing and funding)
- Strategic management guidelines for effective landscape-level control that limits the spread of invasive species;
- Coordination with other federal, state and local agencies;
- Funding to support coordinated landscape-level responses
- Staff and funding to conceive, plan, and either conduct or oversee management actions
- Research and development (in-house or external) focused on understanding the invasion process, developing detection and management tools, monitoring, etc.
- Education and outreach efforts to inform the public of the threat of and need to control invasive species; and
- Assistance to and support for prevention agency efforts (e.g., USDA Forest Service research assistance to APHIS on Asian longhorned beetles).

Performance Metrics

Invasive species programs should be held accountable for performance through the development and application of appropriate metrics. Developing appropriate performance metrics can be difficult, however, and should balance simple activity measures, such as "acres treated" with metrics linked directly to outcomes and program effectiveness. A successful suite of metrics would:

- Assess efforts to prevent species introduction and spread
- Assess activities that target pathways or vectors
- Assess the effectiveness of treatments in eradicating or reducing the target invasives

Potential additional metrics include, but are not limited to:

- Rate of new invasions; possibly categorized by type of invader or geography
- Acres infested and changes in infestations over time Acres protected, based on projections of future spread avoided by eradication
- Economic impact of invasive species
- Number of species intercepted.

Need for Enhanced and Sustained Effort

NECIS welcomes increased attention to the immense challenge of invasive species and their costs to the nation's environment and economy. Mounting an adequate national response to the problem of invasive species is a long-term effort, and requires institutional and financial commitments commensurate with the scale of the threat. Invasive species do not confine themselves to short-term project funding horizons, and control of any particular invasive can require a concerted and long-term effort. Monitoring of invasion pathways or vectors and the interdiction of potential new invaders require on-going attention. Invasive species initiatives operate most efficiently when buttressed by stable long-term funding and guided by solid research and expert staff. Outreach to and engagement with stakeholders is also vitally important to mounting effective invasive species prevention and control programs.

As these recommendations emphasize, many levels of government and society have important roles to play in tackling the nation's invasive species problem, and there is insufficient investment at virtually all of these levels. Simply shifting resources from one sector to another, however well intentioned, could have the effect of seriously undermining essential work and inadvertently increasing the scope and scale of the nation's invasive species problems. Indeed, funding allocations should be driven by priorities and program effectiveness, based on clear performance metrics, rather than by pre-determined percentage allocation. Instead, what is needed is a new model for increasing overall investments in invasive species prevention and control at federal, state, and local levels.

Truly tackling the mounting threats from invasive species will require scaled-up investments in a well-coordinated and comprehensive national response that integrates prevention of new invasions with strategic efforts to control and manage existing invaders.

Senator BARRASSO. Well thank you so much for your testimony, Dr. Campbell.

Mr. Miyamoto, thanks for being here. Thanks for traveling from Wyoming to Washington. I appreciate the commitment and the proactive approach that you and the rest of the Wyoming agencies have taken to control invasive species and to prevent ecological damage.

In your testimony you provided an example of an unintended consequence of a slow, cumbersome NEPA process. You talked about the cheat grass and going from 10 percent to over 25, waiting four years. It is clear that a 48-month delay in applying necessary treatments like the one that you mentioned is unacceptable in any circumstance, but particularly when it is clear that invasives will soon cause catastrophic damage to the ecosystem.

So in your experience do you believe that agencies, like the one that you oversee, would actually overuse this categorical exclusion in this bill?

Mr. MIYAMOTO. Chairman Barrasso, I do not believe that agencies would overuse a categorical exclusion. When you're an agency such as the Wyoming Department of Agriculture or others like it, one of the responsibilities that you have to undertake is you have to know what the consequences of your actions will likely be in addressing some of these natural resource problems. These are oftentimes complicated situations, and you have to get multiple experts in the room to try to determine if what you're going to do is going to have a net benefit on the resource.

So I think that is undertaken, particularly in the case where you're responding to something like fire. All of the outcomes are weighed, and you're simply managing as best you can to avert disaster. So I don't think the categorical exclusion would be used to a fault.

Senator BARRASSO. Okay.

Mr. Pool, your agency has published an estimate that invasive species spread approximately, I think, 4,600 acres a day on federal lands alone in the Western United States. Is that accurate?

Mr. POOL. Mr. Chairman, I would have to confirm that figure, and I will be glad to do so.

[The information requested was not provided as of the time of printing.]

Senator BARRASSO. Okay, that would be great because I appreciate that the Department of the Interior recently published their new Early Detection and Rapid Response Plan. A key part of that protocol is the response is rapid. That is the rapid response component of this. The document reads, "The comprehensive set of EDRR, Early Detection and Rapid Response, actions from coordination and planning, to monitoring and eradication must be effectively and efficiently implemented."

We would all agree with that desire.

If one or more actions are not implemented or implemented inadequately, examples as the response is too slow, then the Early Detection and Rapid Response activities will fail and the invasive species will continue to spread, and that is what we have seen. So in reality the BLM and other agencies should have been responding quickly and efficiently all along.

Can you talk a little bit about when does the BLM plan to implement this Department of the Interior's new EDRR recommendations and how does the agency plan to decrease reaction times? Then I am going to ask Mr. Casamassa the same question.

Mr. POOL. Mr. Chairman, I think a tool that's worked very effectively for the BLM, given the number of acres that are affected by noxious plants, we felt that our NEPA process which is basically a programmatic environmental assessment that can cover a large province, that involves the public, that explains alternatives, that talks about various method treatments, has been a very effective tool for us.

So we can address large areas with that one tool, and should we move into any type of application then we can simply go, for what we call, a determination of NEPA adequacy. It's not a laborious analysis. It's pretty much check the box and based upon what we plan to do. That tool has served us well in cooperation with our state, government entities, working with tribes, working with industry, working with our grazing permitees and working with the conservation/environmental community. It served us well.

Just to reflect a little bit on use of the—for example on many of our fuel reduction projects to reduce catastrophic wildfire. We were challenged in the courts, and it was determined that the degree of our environmental analysis was inadequate.

We turned that around, we, the BLM. We trained our practitioners in the field to improve upon the preparation, a programmatic environmental assessments more comprehensive. We think it's more informative with the public, and those tools have served us well in carrying out large project type application in terms of reducing invasive upon public land.

Senator BARRASSO. Mr. Casamassa, same thing from the standpoint of the Forest Service?

Mr. CASAMASSA. Yeah, Chairman Barrasso, the Forest Service uses, for one thing, I'd start out with as far as an emergency response. Underneath the burned area emergency response, we do take actions immediately after a fire on those more significantly burned areas to ensure that invasive species and erosion of highly steep toils is taken care of. So I think we have that tool in our tool belt to actually be able to address some immediate, specific needs.

We do have the wherewithal through the early detection and rapid response to have more of a consistent approach when it comes to looking at specific populations of invasives on the forests and using our forest plan as the umbrella to guide us when it comes to the management area of prescriptions and the stand ins and guides by which we would apply any kind of pesticide is that something that we have in place right now.

We do recognize that under some categorical exclusions right now in our present authorities we've been very effective in focusing efforts on restoration, and we could support a call for rulemaking to establish, perhaps, an appropriate, necessary categorical exclusion for invasive species. This would enable us, I think, to kind of fill in the gap between those categorical exclusions that we have presently versus the ones that we would need specifically for invasive species.

Senator BARRASSO. Senator Franken.

Senator FRANKEN. Thank you, Mr. Chairman, again, for this hearing.

I want to ask about a couple things. Climate change is one of them, and I noticed that in the testimonies there was very little discussion of that. I think Mr. Pool was the only one in your written testimonies to briefly acknowledge the connection between climate change and invasive species.

It is no secret that climate change has strong, well-established connections to invasive species on land and in water. Climate change is creating more favorable conditions, helping them spread in new areas, environments, and it seems to me that any plan to combat invasive species must also address the effects of climate change. It is concerning to me that that was more or less ignored in your testimony.

So I would ask Mr. Casamassa and Mr. Pool, what are your agencies doing to address these concerns about climate change and invasive species?

Mr. CASAMASSA. Yes, Senator Franken, we do recognize that the climate is changing and that it is having an impact on the National Forest System lands as well as all lands. We do know now that on average each fire season is probably around between 70 and 80 days longer than it has been in the past.

We are presently looking at ways to change, perhaps, our management prescriptions to ensure that there is more restoration and resilient forests that we're managing.

Senator FRANKEN. You are spending so much of the budget fighting the fires that you have less budget to maybe do that kind of management.

Mr. CASAMASSA. Well certainly that in addition to, perhaps, the ever increasing fire season, the cost of fire suppression continues to increase. And it does take up over 50 percent of our operating budget which provides us with less funding to allocate toward restoration and ensuring that forests are resilient against climate change.

Senator FRANKEN. Mr. Pool.

Mr. POOL. Yes, Senator, I share the same views as the Forest Service and the Department of the Interior. We recognize that there are climate change influences that are affecting Western rangelands. We also evaluate large scale conditions and trends.

More recently, we're working in various prescriptions, adaptability, mitigation into some of our sage grouse policies in terms of improving upon habitat conservation and the sustainability of those populations.

So we want to be adaptable as we work through trending conditions, and we want to come up with the right set of mitigations that can hopefully preclude the negative influences and trends of climate change.

Senator FRANKEN. Okay, thank you.

I want to bring up the NEPA review process because Dr. Campbell brought it up and Dr. Beck brought it up and Mr. Pool, you brought it up. So just go ahead and discuss it, you three.

Dr. Campbell, what are your concerns regarding this legislation in terms of NEPA review?

Dr. Beck, you brought that up as sometimes you were saying that is an excuse. You feel like the NEPA review is an excuse, if I heard you correctly.

Mr. Pool, you discussed the NEPA review as a necessary tool.

I will start with Dr. Campbell because you expressed your concerns.

Dr. CAMPBELL. Thank you, Senator Franken.

The procedure, the methods, that one uses to control any invasive species and I spend most of my time on tree killing insects and pathogens, not invasive plants, but it's true in all cases all those activities carry their own environmental downsides. And it is the belief of the organizations that I represent that those analyses need to be done so as to make sure that the cure is not worse than the disease to begin with.

I do think that agencies can find ways to streamline this process. The large programmatic Environmental Impact Statements have served not just the land management agencies but others, APHIS, for example, quite well in setting up situations so that they can move quite quickly when a new outbreak is detected somewhere. They've already laid out the options and the pros and cons of them.

It is very frustrating, I've been in this business almost as long as George has, that the Council on Environmental Quality has stonewalled efforts by the Invasive Species Council to come up with some government-wide guidance and the Council staff is not in a position to force EQ to cooperate.

Senator FRANKEN. Yes, I hope I didn't open a can of worms here, but it seems like a can of worms if it is worth exploring for the other two?

Senator BARRASSO. If you would like, go ahead.

Senator FRANKEN. I do not want open——

Senator BARRASSO. Then we will go to Senator Hirono.

Senator FRANKEN. Yes, sorry.

Senator BARRASSO. No, go ahead, finish what you wanted.

Senator FRANKEN. Well I just would like a comment from Dr. Beck and from Mr. Pool.

Dr. BECK. Thank you for that question, Senator Franken.

NEPA is a very important process, but when the process gets in the way of biology that's very difficult to accept. And but I think Wyoming has one of the best examples of unintended consequences associated with that.

And a lot of times things sound very good on paper. We're going to take time. We're going to do this, but when you need to act now. I mean, if there's a fire, you're not going to do a NEPA analysis to make sure you're doing everything correct. You're going to get in there and get the job done.

What we're saying is invasive species is a very similar process, and clearly in Senator Barrasso's bill this is outlined with categorical exclusions is a very small area that is being considered for an exception to NEPA so this job can be done. So early detection and rapid response is done correctly. And that's incredibly important because prevention is probably one of the most important things we have going for us, well for invasive species management. So when NEPA either by design or by use becomes a stumbling block that becomes unacceptable.

Senator FRANKEN. Thank you.

Mr. Pool, do you have anything to add?

Mr. POOL. Sure.

So I mentioned previous there's two—there is which we address NEPA. There's the non-fire restoration type, prevention or actions and then there's the areas where we are responsive to the catastrophic effects of wildfire.

As it relates to the catastrophic effects of wildfire, we have strike teams. It's an immediate response to get into the area and there is no NEPA requirement there.

Now, if we're going to treat the area longer term, 280,000 acres or longer, then we would come back in and address the appropriate NEPA analysis and mitigations and actions we need to take. But when you get into non-fire related project management we're talking hundreds, if not thousands, of acres similar to what happened, what New Mexico undertook. You want to inform the public. You want them to be part of the solution. And so you address a range of alternatives. For any given province we may elect to go with mechanical treatments, we may go with chemical applications and we may also use prescribed fire. All of those can have different consequences in trying to address infestations and the mitigations associated with it.

So we have, over a number of years, working with partners, we think we've been successful using NEPA as a very effective tool.

Senator FRANKEN. Okay, thank you.

And I apologize.

Senator BARRASSO. No, no, that is quite alright.

Senator Hirono?

Senator HIRONO. Thank you very much.

A question for Mr. Casamassa.

The bill that is before us, S. 2240, mandates that no less than 75 percent of funds appropriated be used for on the ground control management and management of no more than 15 percent be used for investigations, outreach and public awareness and no more than 10 percent be used on administrative costs. So these are pretty prescriptive.

Let me just cite what is happening in Hawaii with regard to Rapid Ohia Death. It is a pathogen on Hawaii Island that is currently ravaging our native Ohia trees. It is so new that the majority of the expenditures to date have been directed toward research on both the identification and spread of the disease, as well as public outreach to contain the pathogen to Hawaii Island. As you know we have a chain of islands, and we hardly need to have this spread to the other islands. We do not currently have known treatments or control options.

Do you see the program funding allocations identified in this bill supporting work on Rapid Ohia Death under the circumstances that I have described and other new forest diseases? Do you think that the funding allocations allow agencies to collect the necessary intelligence to control invasive species or do you think that more flexibility is needed to work on invasive species on a case-by-case basis?

Mr. CASAMASSA. Well Senator, certainly the way that the allocation is prescribed in the Senate bill 2240, is something that is a

bit prescriptive. We have looked at the way that our funding now goes to and is allocated to various components of the overall program, and it is somewhat in line with those numbers.

However, it would be advantageous, given the fact that on certain situations we may need to do something different than that allocation prescribes, and it would be advantageous for the agency to have the flexibility to allocate the resources where we think would be most appropriate.

Senator HIRONO. Does anyone else want to weigh in on this particular aspect of the bill?

Dr. BECK. Yes.

Senator HIRONO. Dr. Beck.

Dr. BECK. Yes.

As I look at the bill there's, kind of, like reading the back of the page first. If you look at the back of the bill it clearly states in there that this, these new bills, would not usurp any previous invasive species, I guess, it's not statutes, but the ability for other agencies, for example, to do what they've been doing all along. So at Interior, USGS is typically considered to be the research arm, and in USDA it's usually the Agricultural Research Service. So to answer your question about these pathogens there's at least two entities there that could be doing the research independent then of what the Forest Service would be doing to help solve——

Senator HIRONO. Excuse me, my time is running out.

So basically my concern was that the provisions of the percentages were really prescriptive and may not help in a particular situation, that was my question, because we all want the same thing. We want to get rid of the invasive species. So that was my question. Okay, let me move on.

Mr. Pool and/or Mr. Casamassa, S. 2240 directs the secretaries to choose the least costly option to effectively control and manage invasive species. It further exempts the secretaries from conducting an environmental assessment, or an EIS.

A number of you have already talked about the NEPA concern. I have a concern that the least costly option would often time result in the use of pesticides, and in Hawaii we have major concerns about the use of pesticides on our islands. Our fear is that exempting certain activities from having to do any EA or an EIS would jeopardize the health and well-being of the public.

Mr. Pool, do you have a sense of the amount of pesticide required to achieve a five percent reduction in invasive species that cover lands owned and/or managed by BLM?

Mr. POOL. Yeah, I don't have a sense, Senator, as to the analogy that you present on why. I think I could take those questions back to both Park Service and Fish and Wildlife Service, and I think they could provide you probably more information on that.

Senator HIRONO. The major concern is that the least expensive often will be something like use of pesticides, and the people in my state would be very concerned about that.

Ms. Campbell, if you do not mind, Mr. Chairman, if I could just——

Senator BARRASSO. Yes, please go right ahead, Senator Hirono.

Senator HIRONO. Thank you so much.

Ms. Campbell, the bill also requires a strategic plan for invasive species programs to achieve an annual five percent net reduction of invasive species populations. That sounds like a worthy goal except that we may not be able to really objectively get to that.

There are a lot of insects such as the red imported fire ant and coconut rhinoceros beetle as well as forest pathogens such as the Rapid Ohia Death where estimating the population is challenging. Do you have any concerns about the agency's ability to define populations, measure said populations, measure a five percent reduction in populations and verify those measurements as required by the strategic plan under this bill?

Dr. CAMPBELL. Aloha, Senator Hirono.

Senator HIRONO. Aloha.

Dr. CAMPBELL. Thank you for the question.

The issue of dealing with invasive species that move around, insects, as you mentioned and the pathogen, particularly this very alarming one attacking Ohia trees. And I think it's probably true of the aquatic ones as well.

Trying to find them, as you said, detect them, to delimit, as APHIS would say, the extent of the infestation is often beyond the scientific capabilities of the agencies for several years, much less than finding tools that will actually contain them or control them. So I do think that it's unrealistic to expect to be able to reach a five percent reduction.

I think it also needs to be said that all these land managing agencies are confronted by hundreds of different kinds of invasive species, that are at different stages of invasion, at different parts of the lands and waters that they manage and the appropriate tools may or may not be available if science takes a while to come up with these.

And I'm afraid that a five percent reduction requirement will put a lot of pressure on the agencies to focus on those that are—for which we have tools and which are more easily measured which might be the invasive plants and take resources away from other invaders that are at least as damaging and which we could get a handle on if there were adequate research and strategic planning. And if I might divert just a moment. ARS and USGS do a lot of really useful research but so does the Forest Service, and I would hate to see it reduced.

Thank you.

Senator HIRONO. Well I know that there are scarce resources for all of our agencies. Thank you very much.

Dr. Beck, I could not help but note that in your testimony you quote someone from Hawaii for the—to give the example that the federal workers are not committed to protecting us from invasive species. So I just would like to say that I do not think that represents the majority of federal employees.

Thank you.

Thanks, Mr. Chairman.

Senator BARRASSO. Thank you, Senator Hirono.

Well Dr. Beck, additional follow up.

You raise some, I felt, alarming figures in the testimony regarding the role that a lack of agency accountability can play. So I appreciate that you said there is a reason for hope.

You indicated that there is a body of knowledge to recover landscapes overrun by invasive populations by using the technology requires an initiative that federal agencies sometimes do not apply. It seems that the National Invasive Species Council (NISC) has failed in its coordination role. Despite promises to a House Committee last year the National Invasive Species Council has still not released an updated national management plan.

Are you familiar with the Department of the Interior's new EDRR plan?

Dr. BECK. Chairman Barrasso, I have read a little bit about it, probably as much as there's been released to the public.

EDRR is an exceptionally important on prevention again, it is the cornerstone of invasive species management. Another part of prevention that sometimes doesn't get observed is brought up in your bill and that is the containment of something that's already here also is preventing it from spreading elsewhere.

I think the Early Detection and Rapid Response is so critically important that within the bounds of our country, I think that the states probably best suited to take the lead on that. But the Federal Government has a very, very important, a critical role for things coming in from abroad and frankly, that is not done very well.

I was on an Invasive Species Advisory Committee for six years and one of our tours was in addition to Hawaii, but we went to a port in Miami and that was just the standard theme is that there's not enough inspection. We don't catch enough, so the opportunity for prevention is not working as well.

So the leadership on EDRR is very important, but I just don't see it happening out of the National Invasive Species Council. I think there's conflict between NISC and the agencies.

Senator BARRASSO. Okay, because I am just thinking about your significant experience both at the state and the federal level, and you are questioning, the opinion you have in the Department of the Interior's new plan if it is going to really make them any more effective.

Dr. BECK. The potential certainly is there. It could be made more effective. There's not enough being done now to give more on a charge like this.

I think what will end up happening is that's all that will be done. And not enough prevention of movement elsewhere of things that we already have will take it on the chin, if you will.

Senator BARRASSO. Okay, thank you, Dr. Beck.

Senator Hirono, do you have any additional questions?

Senator HIRONO. Oh yes——

Senator BARRASSO. Yes, but if you would like to go at this point.

Senator HIRONO [off mic]:——

Senator BARRASSO. Okay.

I appreciate you staying, but Senator Hoeven has arrived and I think he does have some questions, if it is okay with you?

Thank you.

Senator HOEVEN. Thank you, Mr. Chairman, and I would like to thank all of the witnesses for appearing today.

I hope I pronounce your name right having just arrived. Is it Casamassa?

Mr. CASAMASSA. Yes, that's correct, Senator.

Senator HOEVEN. Alright.

So our North Dakota cattle ranchers are constantly having to battle invasive species and noxious weeds like leafy spurge, Canadian thistle, toad flax are real problems on the grasslands and of course, that affects our cattle ranchers who are raising their herds out there.

So can you talk about the Forest Service's efforts to collaborate with our North Dakota ranchers on those grasslands to fight these invasive species and preserve the health of the grasslands?

Mr. CASAMASSA. Yes, Senator.

The, you know, certainly working with the Grazing Association and the individual permitees on specific pastures within specific allotments and over, over a large area that is the grasslands both on the Dakota prairie grasslands and a number of different grasslands in Colorado and Wyoming, is part of the overall way that we ensure that we reduce the impacts of invasive species and that we are ensuring that there is adequate forage both now and into the future.

So the livestock industry, the Grazing Association and individual permitees play an important role in ensuring that we're working across the mixed ownership to combat invasive species.

Senator HOEVEN. How do you see Chairman Barrasso's bill assisting in that collaborative effort, working with the locals?

Mr. CASAMASSA. I certainly think that, you know, the ability to collaborate and leverage resources across all lands is critical and key to our ability to either control or eradicate invasive species. That is a key critical cornerstone to the way that we're going to, at least, arrest some of the impacts to invasive species.

Senator HOEVEN. Do you see working through that with MOUs between the ranchers and U.S. Forest Service or how would you implement that? How would you do it?

Mr. CASAMASSA. I'd certainly start with right now the foundational piece of how we work with the Grazing Association is through allotment management plans, our forest plans, potentially Memorandums of Understanding, collection agreements with local, county, state and other federal entities that have some ownership within a particular grassland based on the mixed ownership. So it could be a wide array of methods and tools that we would use to ensure that we're collaborating and that we are, you know, we're working toward common goals.

Senator HOEVEN. Mr. Pool, a question to ask you in regard to BLM. What reports are you currently submitting to Congress and with what frequency and what are the delays that you are seeing and what are the primary causes of those delays?

Mr. POOL. I would have to get back with you, Senator, on the reports that we're providing at this level in Congress.

[The information requested was not provided as of the date of printing.]

Can you clarify the other part of your question?

Senator HOEVEN. Well basically as it regards to this legislation and how you would be trying to expedite or address some of the reporting issues on BLM lands.

Mr. POOL. I think we're going to have to work with you and the Committee and Subcommittee members and talk about our reporting requirements. I mean, we want to be responsive. We have a wealth of data that we can easily compile and provide to you.

Senator HOEVEN. Okay. Well, that is fine. If you would get back to me on that, that would be great.

Mr. POOL. Sure.

[The information referred to was not provided as of the date of printing.]

Senator HOEVEN. Alright, thank you.

Mr. Chairman, thank you.

Senator BARRASSO. Thank you, Senator Hoeven.

If there are no further questions, I just think it is important to note, Dr. Campbell, that I think your perspective in the tools that this bill provides are not mutually exclusive or even at odds. I think it is clear that prevention is the least costly and the most effective way to address new invasive species.

Prevention is a key part of S. 2240, a concept which is included in the mandated funding for control and management programs.

In their letter of support of this bill, the National Association of Conservation Districts urged inclusion of other relevant secretaries and departments to ensure that port activity and foreign invasive species could be appropriately managed. They said that preventing introduction is only one piece of the puzzle. The established population of invasive species must be contained and reduced.

I want to thank all the witnesses for your time and your testimony today.

If there are no further questions members may submit written follow up questions for the record. The hearing record will be open for two additional weeks.

Senator BARRASSO. The hearing is adjourned.

[Whereupon, at 3:40 p.m. the hearing was adjourned.]

APPENDIX MATERIAL SUBMITTED

II

114TH CONGRESS
1ST SESSION

S. 2240

To improve the control and management of invasive species that threaten and harm Federal land under the jurisdiction of the Secretary of Agriculture and the Secretary of the Interior, and for other purposes.

IN THE SENATE OF THE UNITED STATES

NOVEMBER 4, 2015

Mr. BARRASSO (for himself, Mr. ENZI, Mr. RISCH, and Mr. CRAPO) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

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A BILL

To improve the control and management of invasive species that threaten and harm Federal land under the jurisdiction of the Secretary of Agriculture and the Secretary of the Interior, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Federal Land Invasive Species Control, Prevention, and Management Act".

SEC. 2. PURPOSE.

The purpose of this Act is to ensure the effective management of Federal land, including National Monu-

ments and National Heritage Areas, to protect from invasive species important natural resources, including—

(1) soil;

(2) vegetation;

(3) archeological sites;

(4) water resources; and

(5) rare or unique habitats.

SEC. 3. DEFINITIONS.

In this Act:

(1) CONTROL.—The term ''control'', with respect to an invasive species, means the eradication, suppression, or reduction of the population of the invasive species within the area in which the invasive species is present.

(2) ECOSYSTEM.—The term ''ecosystem'' means the complex of a community of organisms and the environment of the organisms.

(3) ELIGIBLE STATE.—The term ''eligible State'' means any of—

(A) a State;

(B) the District of Columbia

(C) the Commonwealth of Puerto Rico;

(D) American Samoa;

(E) Guam; and

(F) the United States Virgin Islands.

(4) INVASIVE SPECIES.—

(A) IN GENERAL.—The term ''invasive species'' means an alien species, the introduction of which causes, or is likely to cause, economic or environmental harm or harm to human health.

(B) ASSOCIATED DEFINITION.—For purposes of subparagraph (A), the term ''alien species'', with respect to a particular ecosystem, means any species (including the seeds, eggs, spores, or other biological material of the species that are capable of propagating the species) that is not native to the affected ecosystem.

(C) INCLUSION.—The terms ''invasive species'' and ''alien species'' include any terrestrial or aquatic species determined by the relevant tribal, regional, State, or local authority to meet the requirements of subparagraph (A) or (B), as applicable.

(5) MANAGE; MANAGEMENT.—The terms ''manage'' and ''management'', with respect to an invasive species, mean the active implementation of any activity—

(A) to reduce or stop the spread of the invasive species; and

(B) to inhibit further infestations of the invasive species, the spread of the invasive species, or harm caused by the invasive species, including investigations regarding methods for early detection and rapid response, prevention, control, or management of the invasive species.

(6) PREVENT.—The term ''prevent'', with respect to an invasive species, means—

(A) to hinder the introduction of the invasive species onto land or water; or

(B) to impede the spread of the invasive species within land or water by inspecting, intercepting, or confiscating invasive species threats prior to the establishment of the invasive species onto land or water of an eligible State.

(7) SECRETARY CONCERNED.—The term ''Secretary concerned'' means—

(A) the Secretary of the Interior, with respect to Federal land administered by the Secretary of the Interior through—

(i) the Bureau of Indian Affairs;

(ii) the Bureau of Land Management;

(iii) the Bureau of Reclamation;

(iv) the National Park Service; or

(v) the United States Fish and Wildlife Service; and

(B) the Secretary of Agriculture, with respect to Federal land administered by the Secretary of Agriculture through the Forest Service.

(8) SPECIES.—The term "species" means a group of organisms, all of which—

(A) have a high degree of physical and genetic similarity;

(B) generally interbreed only among themselves; and

(C) show persistent differences from members of allied groups of organisms.

SEC. 4. FEDERAL EFFORTS TO CONTROL AND MANAGE INVASIVE SPECIES ON FEDERAL LAND.

(a) CONTROL AND MANAGEMENT.—Each Secretary concerned shall plan and carry out activities on land directly managed by the Secretary concerned to control and manage invasive species—

(1) to inhibit or reduce the populations of invasive species; and

(2) to effectuate restoration or reclamation efforts.

(b) STRATEGIC PLAN.—

(1) IN GENERAL.—Each Secretary concerned shall develop a strategic plan for the implementation of the invasive species program of the Secretary concerned to achieve, to the maximum extent practicable, an annual 5-percent net reduction of invasive species populations on land managed by the Secretary concerned.

(2) COORDINATION.—Each strategic plan under paragraph (1) shall be developed—

(A) in coordination with affected—

(i) eligible States;

(ii) political subdivisions of eligible States; and

(iii) federally recognized Indian tribes; and

(B) in accordance with the priorities established by 1 or more Governors of the eligible States in which an ecosystem affected by an invasive species is located.

(3) FACTORS FOR CONSIDERATION.—In developing a strategic plan under this subsection, the Secretary concerned shall take into consideration the economic and ecological costs of action or inaction, as applicable.

SEC. 5. PROGRAM FUNDING ALLOCATIONS.

(a) CONTROL AND MANAGEMENT.—Of the amount appropriated or otherwise made available to each Secretary concerned for a fiscal year for programs that address or include invasive species management, the Secretary concerned shall use not less than 75 percent for on-the-ground control and management of invasive species, including through—

(1) the purchase of necessary products, equipment, or services to conduct that control and management;

(2) the use of integrated pest management options, including pesticides authorized for sale, distribution, or use under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.);

(3) the use of biological control agents that are proven to be effective to reduce invasive species populations;

(4) the use of revegetation or cultural restoration methods designed to improve the diversity and richness of ecosystems; or

(5) the use of other effective mechanical or manual control method.

(b) INVESTIGATIONS, OUTREACH, AND PUBLIC AWARENESS.—Of the amount appropriated or otherwise made available to each Secretary concerned for a fiscal

year for programs that address or include invasive species management, the Secretary concerned may use not more than 15 percent for investigations, development activities, and outreach and public awareness efforts to address invasive species control and management needs.

(c) ADMINISTRATIVE COSTS.—Of the amount appropriated or otherwise made available to each Secretary concerned for a fiscal year for programs that address or include invasive species management, not more than 10 percent may be used for administrative costs incurred to carry out those programs, including costs relating to oversight and management of the programs, recordkeeping, and implementation of the strategic plan developed under section 4(b).

(d) REPORTING REQUIREMENTS.—Not later than 60 days after the end of the second fiscal year beginning after the date of enactment of this Act, each Secretary concerned shall submit to Congress a report—

(1) describing the use by the Secretary concerned during the 2 preceding fiscal years of funds for programs that address or include invasive species management; and

(2) specifying the percentage of funds expended for each of the purposes specified in subsections (a), (b), and (c).

SEC. 6. PRUDENT USE OF FUNDS.

(a) COST-EFFECTIVE METHODS.—In selecting a method to be used to control or manage an invasive species as part of a specific control or management project, the Secretary concerned shall prioritize the use of the least-costly option, based on sound scientific data and other commonly used, cost-effective benchmarks, in an area to effectively control and manage invasive species.

(b) COMPARATIVE ECONOMIC ASSESSMENT.—To achieve compliance with subsection (a), the Secretary concerned shall require a comparative economic assessment of invasive species control and management methods to be conducted.

(c) CATEGORICAL EXCLUSIONS.—

(1) IN GENERAL.—An invasive species control or management project or activity described in paragraph (2) is categorically excluded from the requirement to prepare an environmental assessment or an environmental impact statement under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) during the period for which the Secretary concerned determines that the project or activity is otherwise conducted in accordance with applicable agency procedures, including any land and resource management plan or land use plan applicable to the area.

(2) DESCRIPTION OF PROJECTS AND ACTIVITIES.—A project or activity referred to in paragraph (1) is a project or activity that, as determined by the Secretary concerned—

(A) is, or will be, carried out on land or water that is—

(i) directly managed by the Secretary concerned; and

(ii) located in a prioritized, high-risk area; and

(B) involves the treatment of any land or waterway located within 1,000 feet of—

(i) any port of entry to the United States, including—

(I) a water body or waterway;

(II) a railroad line;

(III) an airport; and

(IV) a roadside or highway;

(ii) a water project;

(iii) a utility or telephone infrastructure or right-of-way;

(iv) a campground;

(v) a National Heritage Area;

(vi) a National Monument;

(vii) a park or other recreational site;

(viii) a school; or

(ix) any other similar, valuable infrastructure.

(d) RELATION TO OTHER AUTHORITY.—

(1) OTHER INVASIVE SPECIES CONTROL, PREVENTION, AND MANAGEMENT AUTHORITIES.—Nothing in this Act precludes the Secretary concerned from pursuing or supporting, pursuant to any other provision of law, any activity regarding the control, prevention, or management of an invasive species, including investigations to improve the control, prevention, or management of the invasive species.

(2) PUBLIC WATER SUPPLY SYSTEMS.—Nothing in this Act authorizes the Secretary concerned to suspend any water delivery or diversion, or otherwise to prevent the operation of a public water supply system, as a measure to control, manage, or prevent the introduction or spread of an invasive species.

SEC. 7. USE OF PARTNERSHIPS.

(a) IN GENERAL.—Subject to the requirements of this section, the Secretary concerned may enter into any contract or cooperative agreement with another Federal agency, an eligible State, a political subdivision of an eligible State, or a private individual or entity to assist with the control and management of an invasive species.

(b) MEMORANDUM OF UNDERSTANDING.—

(1) IN GENERAL.—As a condition of a contract or cooperative agreement under subsection (a), the Secretary concerned and the applicable Federal agency, eligible State, political subdivision of an eligible State, or private individual or entity shall enter into a memorandum of understanding that describes—

(A) the nature of the partnership between the parties to the memorandum of understanding; and

(B) the control and management activities to be conducted under the contract or cooperative agreement.

(2) CONTENTS.—A memorandum of understanding under this subsection shall contain, at a minimum, the following:

(A) A prioritized listing of each invasive species to be controlled or managed.

(B) An assessment of the total acres or area infested by the invasive species.

(C) An estimate of the expected total acres or area infested by the invasive species after control and management of the invasive species is attempted.

(D) A description of each specific, integrated pest management option to be used, including a comparative economic assessment to determine the least-costly method.

(E) Any map, boundary, or Global Positioning System coordinates needed to clearly identify the area in which each control or management activity is proposed to be conducted.

(F) A written assurance that each partner will comply with section 15 of the Federal Noxious Weed Act of 1974 (7 U.S.C. 2814).

(3) COORDINATION.—If a partner to a contract or cooperative agreement under subsection (a) is an eligible State, political subdivision of an eligible State, or private individual or entity, the memorandum of understanding under this subsection shall include a description of—

(A) the means by which each applicable control or management effort will be coordinated; and

(B) the expected outcomes of managing and controlling the invasive species.

(4) PUBLIC OUTREACH AND AWARENESS EFFORTS.—If a contract or cooperative agreement under subsection (a) involves any outreach or public

awareness effort, the memorandum of understanding under this subsection shall include a list of goals and objectives for each outreach or public awareness effort that have been determined to be efficient to inform national, regional, State, or local audiences regarding invasive species control and management.

(c) INVESTIGATIONS.—The purpose of any invasive species-related investigation carried out under a contract or cooperative agreement under subsection (a) shall be—

(1) to develop solutions and specific recommendations for control and management of invasive species; and

(2) specifically to provide faster implementation of control and management methods.

SEC. 8. COORDINATION WITH AFFECTED LOCAL GOVERNMENTS.

Each project and activity carried out pursuant to this Act shall be coordinated with affected local governments, in accordance with section 202(c)(9) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1712(c)(9)).

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U.S. Senate Committee on Energy and Natural Resources
Subcommittee on Public Lands, Forests and Mining
Hearing on April 28, 2016 regarding Invasive Species and S. 2240
Questions for the Record Submitted to Mr. Glenn Casamassa

Questions from Senator John Barrasso

Question 1: While the Department of Interior's new Early Detection, Rapid Response plan does not necessarily apply to agencies outside the purview of DOI, does the Forest Service intend to adopt certain portions of that plan? If so, when do you expect your agency to begin using elements of the EDRR plan?

The National Early Detection and Rapid Response (EDRR) Framework was called for in the President's Priority Agenda for Enhancing the Climate Resilience of America's Natural Resources, and applies broadly across all federal agencies including the Forest Service. The Forest Service played a major role in the design and development of the Framework as a member of the interagency team led by the Department of the Interior. Elements of the Framework were consistent with the approaches taken by the Forest Service; not just on the lands and waters we manage within the National Forest System, but on all lands through cooperative programs implemented with our local, state, and tribal partners. Although the national EDRR Framework complements and mirrors some of the EDRR efforts already underway within the Forest Service, our efforts and capacity are limited. We are hopeful that the funding mechanisms called for by the President to implement the national EDRR Framework will energize and maintain EDRR across invasive species more broadly and provide the necessary financial capacity for a stronger and more integrated EDRR system across the United States to address emerging invasive species.

Question 2: Using the categories provided in S.2240 (and those used by National Invasive Species Council reporting methods), how are the Forest Service's invasive species management funds distributed?

Management funding for invasive species is integrated and distributed through multiple programs to address invasive species impacting and threatening the lands and waters of the National Forest System. These funds support Education/Awareness, Prevention, Early Detection and Rapid Response (EDRR), Control/Management, and Restoration/ Rehabilitation. Our cooperative efforts with private, local, state, federal, tribal, and international partners complements the activities occurring on National Forests and Grasslands. Technical and financial assistance programs managed under our State and Private Forestry, Research and Development, and International Programs are currently directed to a wide range of invasive species concerns. Based on the funding allocation approach outlined in S. 2240, Forest Service activities for control/management, restoration/ rehabilitation, EDRR, and prevention would be combined or grouped under a broad general category for "Control and Management", this should not alter the way the Forest Service prioritizes these activities or how we collaborate and coordinate with our state, tribal, and federal partners. Prevention and EDRR activities would remain priority actions against new or small infestations of aquatic and terrestrial invasive species, followed closely by control and containment activities for established populations. The

U.S. Senate Committee on Energy and Natural Resources
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restoration component of S. 2240 is consistent with Forest Service policy against invasive species, and would remain an important part of our comprehensive integrated management program. Similar to the overall funding allocations reported for the agencies under the Department of Agriculture, the overall percentage of funding allocated for the combination of prevention, EDRR, control, and restoration activities within the Forest Service has ranged on average between 71.5% and 75.0%, between 2011-2015.

Question 3: In response to my questions, you indicated the Forest Service does have a rapid-response capability to respond to/implement immediate treatment after a wildfire. Does the agency have the same sort of ability after an area of critical concern for invasive species infestation is identified?

Similar to wildfire, we regard the threat of invasive species to be very high, posing significant risks to the environment, human health, and the economy. The ability to respond rapidly to any invasive species threat is dependent on the operational capacity at the local level, the biological peculiarity of the infestation, and whether the local management unit has an appropriate science-based plan articulating the proposed federal action(s) necessary to implement against the targeted invasive species. With wildfire, the Forest Service has established authorities and capacity to respond rapidly during and following a wildfire incident; including categorical exclusion authorities under NEPA. However, unlike the ability to address wildfire problems and take actions during and post-fire suppression activities, the Forest Service does not have a similar authority for the use of categorical exclusions against all invasive species. Such an authority could be used, when the specific parameters have been established for appropriate use of such an authority, to respond rapidly and take action against invasive species in both aquatic and terrestrial settings; preventing the spread of new invasive species populations, and containing and reducing established populations. We would be interested in working with the committee to outline the parameters and other appropriate criteria for the use of categorical exclusion authority against the broader suite of invasive species. This would enable us to focus on gaps in current categorical exclusions and strengthen our relationships with our partners and other stakeholders.

Question 4: In his testimony, Wyoming Department of Agriculture Director Miyamoto provided the example of the Squirrel Creek Fire west of Laramie, Wyoming. In his example, he provided figures that 90 percent of the fire burned on Forest Service land, yet the agency provided only 7 percent of the funding necessary to reclaim and restore the landscape. Please provide a justification for the agency's lack of responsibility in this instance.

Agency funding limitations within the fiscal year greatly impact our ability to fully meet the management needs on the ground against invasive species under law and policy. We recognize the need to restore areas degraded by the wildfire and that the risk of invasive species establishing in those burned areas can further degrade the ecosystem. Yet, the

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competing resource management needs on Forest Service lands and waters, and the current approach to budgeting for wildland fire make it difficult to provide adequate support for all needs within our annual agency funding constraints. Wildfire suppression and restoration activities are not fully funded and often require a reprioritization of funding from other resource management areas within the agency to pay for wildfire activities.

Question 5: How often does the agency work with private partners (industry or universities) to conduct invasive species trials on Forest Service lands? What requirements are these projects required to fulfill? If the trial demonstrates it can effectively control or reduce an invasive population, does the agency contract with that partner to further treat federal lands, or adopt the technology for future use?

Although there are many cooperative research efforts with universities and the private sector, particularly on Forest Service experimental areas and research stations, we do not track the number of those activities. The results of the research or trials are often published in the scientific literature or otherwise made available to managers. The tools, technologies, and approaches developed from the scientific community, has provided Forest Service managers with a wide range of effective management options. In most cases, each of these options are evaluated on their merit and applicability to the specific situation. Land managers are required to follow both law and policy when making choices about the most effective and appropriate method/approach based on site conditions. For decades, the Forest Service has utilized the products developed by the scientific community within every aspect of our integrated pest management programs against invasive species, including adopting tools and techniques for biological control, cultural control, chemical/pesticide use, and mechanical/physical control in both aquatic and terrestrial settings.

Question 6: The agency raised concerns that the Categorical Exclusion contained in this bill may "call into question [y]our collaborative work with partners and other partners". Despite this, the agency has said that support exists for a call to establish a Categorical Exclusion rulemaking process. Why would the agency's prefer an internal rulemaking process when the bill clearly establishes a formalized platform for ongoing coordination among relevant stakeholders?

The Forest Service is encouraged by the proposed categorical exclusion authority for invasive species. We would be interested in working with the committee to outline the parameters and other appropriate criteria for the use of categorical exclusion authority against the broader suite of invasive species. This would enable us to focus on gaps in current categorical exclusions and strengthen our relationships with our partners and other stakeholders. This authority, when combined with existing Forest Service authorities, such as those focused on state and local cooperation and restoration would strengthen our ability to rapidly respond to high-risk invasive species threats across a

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broader landscape. By working closely with our partners in the public and private sectors, we strive to build invasive species management programs that capitalize on an all lands collaborative that increases effective action. In addition, the categorical exclusion authority provided in S. 2240 would complement the recent authority provided in the Farm Bill for addressing invasive forest insects and diseases in priority areas.

Question 7: How much of your agency's budget is spent on controlling or reducing invasive species populations?

FY2013 summary budget reports within USDA identified approximately $120 million per year for invasive species activities across all Forest Service program areas, including financial support to our state and tribal partners, research activities, and annual land management operations across the Nation Forest System. Within this funding, approximately $60 million was allocated for EDRR, Control, and Restoration activities. This funding is integrated within a wide range of resource program areas across the Forest Service. Some examples of this integration include, activities against invasive pigs that are supported by funds appropriated for wildlife management; activities against invasive weeds are supported by fire management and rangeland vegetation management; activities against zebra mussels or invasive fish are supported by fisheries and aquatic ecology programs; and activities against invasive forest insects and diseases are conducted using funds provided by Forest Health Protection.

Question 8: How much of your agency's budget is spent on preventing introduction of new invasive species populations?

FY2013 summary budget reports within USDA identified approximately $120 million per year for invasive species activities across all Forest Service program areas, including financial support to our state and tribal partners, research activities, and annual land management operations across the Nation Forest System. Within this funding, approximately $27 million was used for Prevention activities.

Question from Senator Joe Manchin III

Question: One of the invasive species that we are dealing with in West Virginia is the Emerald Ash Borer (EAB), an exotic beetle native to Asia, which was originally introduced in Michigan in 2002. This beetle feeds on and eventually kills its host tree, ash, a common and important tree for West Virginia's economy. In 2009, EAB was found in high tourist areas in my state including the New River Gorge National River. The species was introduced when tourists from Michigan inadvertently introduced the species as they were vacationing in the Mountain State, and rather than purchase firewood locally, folks would bring firewood infested with EAB with them.

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One of the provisions of Senator Barasso's bill prevents no more than 15% of the appropriated available funds to be used for investigations, development activities, and efforts to educate the public on the spread or proper removal of invasive species.

Thinking long-term, because what I want is for an invasive species such as EAB to be eradicated and to never return again, how important are public education campaigns in ensuring that an invasive species is stopped from spreading, eradicated and never reintroduced?

The Forest Service shares Senator Manchin's concern regarding the risk and impact of Emerald Ash Borer (EAB) to the State of West Virginia, and the continual problem of accidental spreading of this invasive insect through infested wood. When addressing invasive species such as EAB, and other invasive species which can be accidentally spread by human activities, one of the necessary components of a successful campaign against these invaders is to raise awareness about the threat and educate the public about best practices they can use to prevent the spread into new areas. We work closely with private, state, tribal, and federal partners to fund education and awareness programs about EAB and many other invasive species. Although we see prevention through education as extremely important, and a necessary part of our "first line" of defense against invasive species, it is challenging to connect prevention messages that effectively change behavior and completely prevent the accidental introduction of an invasive species. Since the prevention line-of-defense is porous to some extent, state and federal agencies at all levels tend to emphasize operational programs for "early detection and rapid response" (EDRR) to quickly eradicate new or small infestations before they become established and spread. Strengthening EDRR programs can have a positive effect on our ability to contain the spread of EAB and other invasive species; and is a cost effective approach which can provide positive economic opportunities in local communities. We continue to support education and awareness programs, while emphasizing the critical need to detect, control, and eliminate invasive species in priority areas.

Prevention of invasive species is the most cost effective management strategy. Federal agencies need to continue and enhance current prevention outreach efforts with the public and with staff. Two successful national invasive species prevention campaigns that are gaining traction are "Stop Aquatic Hitchhikers: Clean, Drain, Dry" and "PlayCleanGo: Stop Invasive Species in their Tracks". Both education and outreach campaigns target outdoor recreationists and promote awareness, understanding, and cooperation by providing a clear call to action to be informed, attentive and accountable for stopping the spread of invasive species.

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Questions from Senator John Barrasso

Question 1: In your testimony, you discussed BLM's concerns that the limited Categorical Exclusion found in S.2240 would remove public comment from your invasive management process. This Categorical Exclusion would be applied only to those critical cases where immediate action is required to prevent ecological damage, cases which have been compared to wildfires. When the BLM "strike teams" take action to prevent further wildfire damage, is public comment considered before the agency acts?

Response: The BLM seeks and considers public comments when a programmatic post-fire emergency stabilization and burned area rehabilitation plan is developed. The BLM's programmatic post-fire plans include environmental review, are developed with full public participation, and list a suite of management treatments for restoring fire-damaged landscapes and resources. Public comments are evaluated and incorporated into the analysis as appropriate. To resolve cross-jurisdictional issues efficiently, the BLM has found it is important to involve Federal, state, and local government, and local landowners in programmatic fire planning efforts before an emergency situation occurs.

The BLM does not currently have categorical exclusions for invasive species management. The categorical exclusions created by S.2240 could limit the public's ability to provide input into the BLM's invasive species management process. Though the bill's proposed invasive species treatment application areas may provide land managers with increased flexibility, such an expansive exclusion could eliminate an important opportunity for public input in the land management decision process.

Question 2: Using the categories provided in S.2240 (and those used by National Invasive Species Council reporting methods), how are the BLM's invasive species management funds distributed?

Response: The BLM provides funding to its state offices, which in turn distribute it to local field offices to facilitate priority on-the-ground projects. These projects include Early Detection and Rapid Response (EDRR), implementing weed treatments, conducting weed inventories, evaluating and monitoring treatments, providing education and outreach, and implementing research and restoration efforts to improve public lands and waters. The BLM works closely with Federal, state, and local partners to set these priorities. Recently, priority focus has been on the health of sagebrush ecosystems and reducing hazardous fuels.

The BLM's national Weed Program leverages its base funding internally with other national resource programs, such as the Riparian, Forestry, and Recreation Programs to expand our on-the-ground invasive species management work. The agency also partners with state,

local, and other Federal agencies, through Cooperative Weed Management Areas (CWMAs), to further stretch these funds.

Question 3: In response to questioning, you discussed a tool which has "worked very well for the BLM". You asserted that a programmatic Environmental Impact Statement (EIS) that is able to cover a large area has been the agency's preferred approach. While you were not able to confirm figures your agency has published here, it is clear that the BLM does not currently have an effective tool to address established invasive species populations. When do you expect to implement the Department of Interior's new Early Detection, Rapid Response plan, and how do you expect the EDRR plan to impact your agency's operations?

Response: The BLM implements control and management activities, as well as EDRR activities, each requiring different approaches and resources (e.g., human, technical, financial). Control and management activities target invasive species populations that are well-established and widespread, and require a substantial long-term investment. EDRR focuses on finding and eradicating newly introduced populations of potentially invasive species before they have a chance to spread and cause harm.

EDRR is a primary component of the BLM's Partners Against Weeds Strategy and will continue to be a priority for the BLM. The BLM worked closely with the Department, National Invasive Species Council (NISC) Secretariat, other Federal agencies, and stakeholders to help develop the interdepartmental report, *Safeguarding America's Lands and Waters from Invasive Species: A National Framework for Early Detection and Rapid Response* [EDRR Framework]. Currently, the NISC Secretariat is charting out immediate next steps to begin implementing the report's recommendations and identifying the human and financial resources available for implementation. The President's FY 2017 Budget request for $1.5 million for the Department to support implementation of the EDRR Framework would strengthen EDRR capabilities.

The BLM will continue to partner on current EDRR initiatives and assist the NISC Secretariat and the Department in implementing the EDRR Framework. For instance, the BLM currently collects invasive species management data using GIS tools and captures them spatially, inputting them into the BLM's National Invasive Species Information Management System (NISIMS). A public web portal for NISIMS, currently in development, will allow BLM employees and the public to input the geospatial locations of inventory data and proposed and completed invasive species treatments. NISIMS will facilitate implementation of the EDRR Framework by helping the BLM measure project success, maximize lessons learned, and identify cost effective best management practices to be used for future invasive species management projects.

Question 4: In the same response, you raised concerns that use of Categorical Exclusions in the past solicited legal challenges, from which the result was that the environmental assessment was insufficient. Has the agency conducted any trial or evaluation to determine the result of inaction in critical situations where immediate response to a threat was necessary? If so, did the results of that evaluation demonstrate that the ecological outcome would have been worse had the agency not used the Categorical Exclusion?

Response: From 2003 to 2009, the BLM had authority to use categorical exclusions to apply prescribed fire on up to 4,500 acres, various mechanical treatments, including the removal of invasive weeds on up to 1,000 acres, and to reissue grazing permits consistent with previous specifications (*see* Instruction Memorandum No. 2003-221). During this period, the BLM implemented thousands of acres of restoration and hazardous fuels reduction treatments utilizing the categorical exclusion authority. In 2009, the BLM discontinued the use of categorical exclusions for fuels reduction, certain vegetation activities, and grazing permit issues. The BLM issued Instruction Memorandum No. 2009-199 due to a Stipulated Settlement Agreement between the BLM and the Western Watershed Project (WWP) to settle WWP v. Lane, No. 07-cv-394-BLW, a lawsuit filed in the U.S. District Court for the District of Idaho. On July 27, 2009, the District Court for the District of Idaho approved and adopted the Agreement and granted a Joint Motion for Dismissal in WWP v. Lane. The instruction memorandum discontinued the use of three categorical exclusions that included invasive plant removal when the activity is necessary for the management of vegetation on public lands, including the use of pesticides. The BLM has not conducted analysis demonstrating that any ecological outcomes would have been worse had the agency not used the categorical exclusion.

Question 5: In the same answer, you indicated that one of the outcomes of the litigation was that BLM employees received additional training for EIS preparation. On average, how long did preparation of an EIS take prior to the additional training, and did completion time (from inception to treatment on-the-ground) decrease following the training?

Response: The BLM does not currently track this information at the national level. In general, employees who have recently completed NEPA training are more efficient at identifying issues for analysis, crafting alternatives to effectively address those issues, articulating analytical assumptions, and conducting the environmental analysis.

Question 6: How often does the agency work with private partners (industry or universities) to conduct invasive species trials on BLM lands? What requirements are these projects required to fulfill? If the trial demonstrates it can effectively control or reduce an invasive population, does the agency contract with that partner to further treat federal lands, or adopt the technology for future use?

Response: Under Section 307(a) of the Federal Land and Policy Management Act (FLPMA), the BLM can enter into a Memorandum of Understanding (MOU) for several purposes, including management and protection of public lands. The BLM has entered into MOUs with industry, universities, and Cooperative Weed Management Areas (CWMAs) to identify and set up research and demonstration plots on Federal and private lands to evaluate new treatment approaches. The BLM currently partners with over 75 CWMAs, which consist of state, county, and other federal agencies, as well as private land owners.

The BLM has a very specific set of requirements for research and demonstration projects -- outlined in Instruction Memorandum No. 2015-137 -- and has established policy guidance for using pesticides and herbicides in research and demonstration plots on BLM-managed public lands. This past fall, the BLM established 15 field office-specific studies in seven states at a maximum of 50 acres per field study site using the biopesticide *Pseudomonas fluorescens* strain D7 for the management of downy brome/cheatgrass, medusahead rye, and jointed goatgrass.

One of these study sites includes a post-fire rehabilitation effort associated with the Soda fire. This year, the BLM will evaluate these research and demonstration sites in coordination with university extension specialists to measure the effectiveness of *Pseudomonas fluorescens* strain D7. Depending on the results, the BLM may expand this approach to public lands in other states.

Question 7: The BLM has expressed concern about the ambitious target of an annual 5 percent reduction of invasive species, but supported the concept of assigning metrics to assess success. What alternative metrics would the BLM suggest, how/by whom would those targets be developed, and what sort of incentive would the BLM prefer to ensure the agency would remain motivated to achieve a substantive, meaningful reduction?

Response: Metrics must be defined on a context-specific basis because invasion dynamics change through time and across space and are influenced by numerous external factors that governments cannot control (e.g., weather, fires, floods). A standard metric of an annual five percent net reduction of invasive species populations would not provide sufficient administrative flexibility to allow agencies like the BLM to prioritize actions to address the most harmful species and adapt to new challenges on the lands they manage. In addition, accurately evaluating metrics requires having a baseline of those invasive species populations that are prioritized for control; however, the ability of agencies to inventory and track infestations varies, as do the units by which those infestations are measured (e.g., by acres or by populations).

Metrics developed by agencies, based on their respective resource management objectives, priority species, priority locations, and capabilities would enable more flexibility to assess performance. Furthermore, as new data, tools, and technologies become available, agencies can adjust metrics accordingly. The Department is leading an effort involving the BLM and other Interior land management agencies to evaluate the invasive species control performance measures in its Strategic Plan and remains motivated to utilize available resources as efficiently and effectively as possible to achieve a substantive, meaningful reduction in invasive species populations.

The BLM will continue to emphasize EDRR through inventory and monitoring efforts, followed by immediate control of infestations that are coordinated across jurisdictional boundaries so that entire weed and invasive species infestations are treated. By using this approach the BLM is reducing the "net" rate of spread of infestations.

Question 8: How much of your agency's budget is spent on controlling or reducing invasive species populations?

Response: Based on current assessments over 79 million acres of BLM-managed public lands are infested by noxious and invasive weeds. Because certain invasive species, such as cheatgrass, are an annual plant and can increase tenfold in a given year, estimating exact acres is not currently possible. In 2015, the BLM received $7.7 million for invasive species -- primarily from the Rangeland Management Program -- and leveraged an additional $9 million dollars from range improvement funds and from the wildlife, riparian, recreation, and fire programs for a total of $16.7 million to control and manage invasive species.

Question 9: How much of your agency's budget is spent on preventing introduction of new invasive species populations?

Response: The BLM integrates prevention measures activities through both policy actions and best management practices at the project development, project planning, and re-vegetation stages of our on-the-ground efforts to control and manage invasive species. In 2015, a total of $1.4 million was dedicated to those efforts in addition to $300,000 dedicated to public education and awareness of invasive species. By informing people of the impacts that invasive species have on the public lands and waters, they can help in preventing and limiting the spread of invasive species.

Question from Senator Mazie K. Hirono

Question: *Impacts of Least Costly Option*

S. 2240 directs the Secretaries to choose the least costly option to effectively control and manage invasive species. It further exempts the Secretaries from conducting an environmental assessment or an environmental impact statement (EIS) for this method of control.

I have concerns that the least costly option would oftentimes result in the use of pesticides. A lot of people in Hawaii are concerned about the use of pesticides on our islands and I fear that not requiring an environmental assessment or EIS would jeopardize the health and wellbeing of the public as well as the long-term viability of public lands. Do you have a sense of the amount of pesticide required to achieve a 5 percent reduction in invasive species that cover lands owned and/or managed by BLM and the Forest Service? Additionally, if the Secretaries chose to not voluntarily conduct an environmental assessment or EIS for use of a pesticide on an invasive, is there concern within the agencies that this would open you up to lawsuits should something go wrong?

Response: The least costly options are not necessarily the best quality options for a Federal agency to choose, even when it comes to controlling and managing invasive species. The BLM's policy is that pesticides can be an appropriate management approach, but should be used only after considering the alternatives and incorporating them into the overall management plan through an Integrated Pest Management (IPM) approach. Before the BLM approves any proposed pesticide for use on public lands, human health and environmental risk assessments are prepared to assess potential risks associated with that particular pesticide. These risk assessments are in addition to the ones required in the registration of a particular pesticide by the U.S. Environmental Protection Agency.

The BLM also prepares an environmental analysis under the National Environmental Policy Act (NEPA) to consider environmental consequences of the use of pesticides on Federal lands and, if necessary, prepares an Environmental Impact Statement (EIS). While most EISs are at a programmatic scale, site-specific NEPA analysis is still required. The analysis may also require Endangered Species Act Section 7 consultation with the US Fish and Wildlife Service and/or National Marine Fisheries Service at the local level.

Wyoming DEPARTMENT OF Agriculture

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The Wyoming Department of Agriculture is dedicated to the promotion and enhancement of Wyoming's agriculture, natural resources and quality of life.

May 23, 2016

U.S. Senate Committee on Energy and Natural Resources
Attn. Darla Ripchensky, PMP
Chief Clerk
U.S. Senate Committee on Energy and Natural Resources
304 Dirksen Senate Office Building
Washington, DC 20510

Chairman Barrasso and Subcommittee,

Thank you again for the opportunity to testify in front of the Subcommittee on Public Lands, Forests and Mining during their hearing regarding invasive species and S. 2240 on April 28, 2016. I am writing this letter to respond to specific questions posed by Senator Barrasso. My responses are as follows:

Questions from Senator John Barrasso

Question 1: How often does the Wyoming Department of Agriculture interact with federal agencies to coordinate invasive species control/prevention/management efforts? Please describe the process and indicate where the process could be improved.

Response 1: The Wyoming Department of Agriculture interacts with federal agencies on invasive species issues on several levels. The first, and most critical, is on the local level with the federal agency district personnel. Our office provides technical assistance where needed on collaborative projects that involve county Weed and Pest Control Districts and federal agencies.

The Wyoming Department of Agriculture also has organized an interagency state working group that meets regularly to discuss state-wide invasive weed and pest issues and also allows the agencies to give programmatic updates. This working group is unofficial in its organization and unfunded. Federal agencies such as the Bureau of Land Management and USDA-APHIS-Plant Protection and Quarantine are regular contributors, while other agencies such as the US Fish and Wildlife Service and the US Forest Service are more sporadic in participation.

The Wyoming Department of Agriculture also works closely with many inter-agency land management working groups to promote invasive species programs. This includes local Sage Grouse working groups, and the Governor's Forestry Taskforce.

Coordination efforts on the state and local level could be improved if the federal agencies designated district and agency personnel to serve together as a working group, with the task of planning invasive species programs. Often local districts appoint personnel as the invasive species coordinator but only as a secondary duty to their job. Due to uncertainty in federal agencies' budgets and thus project priorities, local planning for invasive species projects are nearly void of any long-term goals, thus making coordination difficult. The federal agencies have a tendency to forego planning long-term objectives for invasive weed management in favor of short-term projects that are reactionary to major events such as fire, or public pressure.

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The Wyoming Department of Agriculture is dedicated to the promotion and enhancement of Wyoming's agriculture, natural resources and quality of life.

Question 2: Are you aware if federal agency personnel in Wyoming communicate with your Department, the University of Wyoming, Wyoming Conservation Districts, or tribal officials when developing their approach to invasive species management activities?

Response 2: Wyoming, as with many of the western states, have well established state, county and University programs that are knowledgeable in land management planning and reclamation. Most of the federal agencies in the state know this and will reach out when in need of assistance in program development and implementation. Federal agency personnel stationed in Wyoming typically collaborate very well with their local government counterparts. Local officials are ready to assist the federal agencies with their land management planning, and are often the catalysts to agency efforts.

However, the ability of local experts to assist is often limited by the federal agencies' budgets, policies, regulations or a combination of all three. As mentioned before, long-term planning for invasive species on federal lands is often missing or is reactionary to problems long-ignored. This is compounded by the fact that agency policies or regulations such as NEPA often restrict the ability of the agencies to implement any expert-recommended "best management practices".

Question 3: It is clear that state agencies are best equipped, have the best on-the-ground expertise, and well-trained personnel for invasive species management programs. In the case of the Squirrel Creek Fire, or other fires that burned on multi-jurisdictional lands, did the relevant federal agencies actively coordinate on-the-ground response with you, your Department, or other relevant land-administers?

Response 3: Many of the federal agency employees recognize the threat invasive species pose on federal lands, and when situations such as the Squirrel Creek fire occur they usually are willing partners for weed management activities. Their reliance on county programs is typically because they are simply under-equipped, undermanned and underfunded to aggressively manage invasive species on a landscape scale. Additionally, invasive species control is not effective when it's only implemented after a major event. Long-term planning that includes surveillance, mapping and treatments can help mitigate future catastrophes. With the resources the states and counties already have in place, not to mention the willingness to help, the federal agencies have the ability to improve their management capabilities with little effort or overhead.

Thank you for the opportunity to respond to questions regarding the important topic of invasive species control on federal lands. I hope that my responses are helpful in providing an illustration of the Wyoming Department of Agriculture's experiences in collaborating with our local and federal partners for invasive species control. If you have further questions, please do not hesitate to contact me at 307-777-6569.

Sincerely,

Doug Miyamoto
Director, Wyoming Department of Agriculture

U.S. Senate Committee on Energy and Natural Resources
Subcommittee on Public Lands, Forests and Mining
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Submitted to Dr. George Beck
From the Honorable John Barrasso

Question: Given your significant expertise, how often have you or your academic peers been contacted by federal agencies when they have developed their invasive response protocols? If so, what was the result of that communication?

Dear Senator Barrasso

I visited with several academic colleagues from the western states including Wyoming, Montana, Idaho, Washington, Utah, Hawaii, and California. Only Dr. Joe DiTomaso from the University of California-Davis had input into any federal land management agency invasive species management plan. Dr. DiTomaso wrote an invasive species management plan for the U.S. Forest Service and upon visiting with him, all he could tell me was the plan was in the hands of the Forest Service and he did not know the outcome. The remainder of my colleagues from the land grant universities in the states mentioned above, like me, have spent considerable time over the years (for me, the past 31 years) training federal land management agency personnel about invasive species and their management. Outside of the Forest Service, no federal land management agencies have sought assistance or feedback on the invasive species management plans they may have developed. It is apparent to me and to the Healthy Habitats Coalition that land management agency administrators in Washington DC and at regional and state levels have a cavalier attitude about invasive species management and continually re-direct invasive species management funds to other projects of personal concern. The only possible exception to this conclusion is the U.S. Forest Service and they are embracing invasive species management and are prepared to address and accept the challenges presented in S.2240. The only way to assure adoption and compliance with the philosophy and requirements of S.2240 by the BLM, USFWS, NPS, BOR, and BIA is to pass and implement S.2240 and H.R.1485.

U.S. Senate Committee on Energy and Natural Resources
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Submitted to Dr. George Beck
From the Honorable Joe Manchin III

Question: S. 2240 requires each secretary to develop a plan which will achieve an annual five percent net reduction of invasive species while also being required to prioritize the least costly method, which is not a net average.

My understanding is that proper management of invasive species is a multi-step, multi-year endeavor.

In West Virginia, the New River Gorge National River is infested with EAB, making thousands of acres of forest habitat susceptible to death. As a result, park staff is treating ash trees in designated areas of importance. Insecticides are injected into the trunk of the ash trees, killing EAB and preventing re-infestation for a few years. This is only a temporary solution to keep some ash trees alive until a permanent solution is found.
One method of eradicating an invasive species is the use of prescribed controlled burns, which is expensive in the short-term; however it is a highly effective method.

Dr. Beck, is the annual 5 percent net reduction requirement achievable, especially in light of the bill's proposed requirements on use of funds?

Dear Senator Manchin

You are correct, invasive species management is a multi-step, multi-year endeavor and as such, is not a simple process. Your description of what is occurring in West Virginia to help resolve the Emerald Ash Borer problem is encouraging - it is reassuring to hear that the National Park Service is doing a good job to manage this very challenging invasive species in West Virginia. EAB is such a threat that in many U.S. locations, land managers and land owners are being advised to avoid planting ash trees until a solution is found that is affordable and effective on a wide geographic scale. The annual 5% net reduction that is called for in S.2240 likely is being met with this methodology in West Virginia and the NPS staff that are doing the work should be able to make population estimates of EAB that are present. Insect populations have been monitored for decades in fruit and nut production as part of Integrated Pest Management solutions to determine when it becomes necessary to treat for a particular insect pest so to keep their populations below a biological and economic threshold that is functional to keep producers in business to provide these crops to American consumers and other clientele around the world.

The 5% net population reduction required under S.2240 was calculated based upon expansion rates of invasive weeds, which varies from 4 to about 25% per year. We determined if land managers would target at least 15% of their weed infested acres annually, they would likely achieve a net 5% decrease in their populations as this would place their efforts beyond average

expansion rates. The 5% decrease is not necessarily species by species but is for *all* invasive species and the requirement is hedged by including the statement "… to the extent practicable." If expansion rates of an invasive species are unknown, clearly, that will have to be determined before a 5% net reduction can be achieved for that species. The spending requirements still will allow for adequate research to address that issue. For example, if an Agency has an annual invasive species budget of $50 million, this would equate to having $7.5 million annually to do research and awareness. I have written numerous research proposals over the past 30 years in my career at Colorado State University and the budgets for these over a 3 to 4 year period rarely exceeded $150,000 to $250,000 total. Thus, a Federal Agency with a $50 million invasive species budget would have ample funds to research their needs to effectively manage targeted invasive species. There would be prioritization for certain, as that must occur because all cannot be resolved in a single year anyway! Humans have been battling invasive species – particularly weeds – for hundreds if not thousands of years (it is clear that weeds co-evolved with humans) and we must continue to do so because of the tremendous impacts invasive species cause – they are not typical pest problems.

Currently, Federal Agencies are making very insufficient progress managing invasive species on the lands and waters they manage on behalf of Americans and these insufficient efforts in turn then exacerbate these same problems for state and local government. All levels of government should be and must be engaged such that all efforts complement one another. There are clearly exceptions to the above statement but these tend to be localized such as the outstanding effort you describe at the New River Gorge National River in West Virginia by the National Park Service. The driving force behind the population reduction requirements and the spending requirements outlined in S.2240 is the overwhelmingly inadequate effort and level of success put forth by the Federal Land Management Agencies across our country, which dramatically overshadows the few outstanding successes demonstrated by the Federal Government.

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April 28, 2016
Before the Committee on Energy and Natural Resources' Subcommittee on Public Lands, Forests and Mining
United States Senate
Hearing on: Examining the impacts of invasive species on the productivity, value, and management of land and water resources; to conduct oversight on the National Invasive Species Council's new framework for early detection and rapid response; to examine improved cooperative tools for control and management; and to receive testimony on: S. 2240 (Barrasso), to improve the control and management of invasive species that threaten and harm Federal land under the jurisdiction of the Secretary of Agriculture and the Secretary of the Interior, and for other purposes.

Mr. Chairman, Members of the Committee; I am honored and wish to express my gratitude for this opportunity to inform you and the people you represent on what I and others in my profession recognize as an extremely important issue, often unknown and sometimes overlooked or perceived as inconsequential by a significant portion of both our citizenry and our elected representatives.

In my personal research endeavors, I have worked, and continue to work very closely with the Agricultural Research Service Centers in Reno, NV and Burns, OR. Our partnerships are providing new and exciting research focused on fire and invasive species in the Intermountain West, and how to mitigate these challenges. As a specific example, a significant body of published, peer reviewed scientific literature has formed over the past ten years that addresses the beneficial role that targeted, well managed livestock grazing can have on the management of fine fuels and invasive species. This is the central point of my testimony today.

But first, I must provide some context. The ecosystem process of herbivory or grazing is often promoted and understood with a negative connotation, especially livestock grazing when it is practiced on public lands. Indeed, a quick search engine word search of *livestock grazing* will provide any number of negative responses written in superlative language. However, almost never do these publications and opinions describe the kind of grazing that is being castigated as a villain. This is also unfortunately true in portions of scientific literature. The process of grazing has three components, timing, duration, and intensity. In other words, when are the animals grazing an ecosystem, how long are they grazing it, and how intensely are they grazing it while they are there? If the three components are applied in an inappropriate way, there can be negative effects. But, when these three components are in balance with the management objectives and growth stages of the plant communities that are being grazed, some very beneficial ecosystem services become a product of the grazing practice.

If we were to substitute the term surgery in place of livestock grazing, we notice that the terms are similar in their application. Targeted, well managed surgery performed at the appropriate

time, intensity, and duration, can have a profound beneficial effect on the health of the patient. But surgery performed at the wrong time, intensity, and duration can and has created serious harm. Knowing the tradeoffs or risks between good and bad surgery however, will never incite the public to declare that surgery is altogether bad, and that it has to be stopped immediately in all its forms! Why is livestock grazing viewed with contempt by many while surgery is seen as a blessing?

The body of research that I mentioned earlier and have attached to this testimony, addresses two issues of significant concern. Wildfire and invasive weeds have been on the forefront of the conversation for more than two decades in the Intermountain West, most recently in the form of sage grouse habitat concerns. Wildfire has been universally identified as the most challenging threat to the sagebrush ecosystem, and invasive annual grasses comprise a significant portion of that risk. A landscape scale approach is needed to remediate the threat potential. The only, truly landscape scale tool that land managers have at their disposal is a better understanding and practice of fuels management. And the only application that can bring a landscape scale infrastructure to that remediation is targeted livestock grazing. Given this, I and others have sought to understand the role that targeted livestock grazing can play in fuels and invasive species management.

Recent, joint Nevada Agriculture Experiment Station and Agriculture Research Service Center (Burns and Reno) research has demonstrated how targeted livestock grazing can beneficially affect fine fuel characteristics and change the dominance of invasive annual grasses at a landscape scale. Implementation of this new, cutting edge research will require a paradigm shift in the way public lands are managed in the Great Basin and public lands in other western states as well. Science is demonstrating that targeted livestock grazing can reduce the amount of fuel, reduce flame lengths, break up the continuity of fuel, decrease the spatial extent of burns, and at the same time reduce the mortality of perennial grass plants subjected to wildfire. All of these effects are beneficial for sage grouse and other sagebrush obligate wildlife species, not to mention the cost savings associated with fire suppression, and the buffering of economic fallout endured by rural communities in the wildland-urban interface resulting from post-fire management directives and grazing moratoriums. All of these fire related issues have been addressed with published research by rangeland ecologists working in the Great Basin.

The invasive annual grass, Cheatgrass, has become dominant on over 100 million acres across the Intermountain West. Its presence in sagebrush and salt desert shrub communities has contributed to all sorts of degradation, but primarily it alters normal fire regimes and through its competitive nature comes to dominate the plant communities it invades. Its arrival and movement across the landscape has been phenomenal, and its competitive ability that allows it to become dominant is well known.

After many years of speculation, new research is telling us how we got to this point. We have now discovered the underlying cause that allows the competitive abilities of Cheatgrass to be expressed. For the last several decades, we have used grazing systems that were developed for use in perennial grass ranges. These grazing systems work well when they applied to perennial grass systems. With the advent of Cheatgrass invasion, sagebrush grasslands in the Great Basin can no longer be described as perennial grass systems. Instead they should now be recognized as

mixed perennial-annual grass systems. The grazing systems and other management techniques that have been used for the past four or five decades are inappropriate for the ecosystems to which we have applied them. When this misapplication was combined with substantial indiscriminant reductions in authorized AUM consumption, the situation grew worse, not better. Through our management approach, we have created the perfect environment for Cheatgrass to dominate. Why does Cheatgrass have such a competitive advantage over perennial grasses under the current management scenario? It is because the management systems actually protect Cheatgrass from being grazed, leading to a buildup of carryover fuels from one year to the next. Cheatgrass has become dominant because we have not accounted for the amount of litter or fuel left on the ground at the end of the grazing season. Cheatgrass requires litter or ungrazed fuels in order to expand its dominance. The more litter or ungrazed fuels we leave on the ground at the end of the grazing season going into fall, the more Cheatgrass will increase over time. If someone instructed me to devise a plan that would maximize Cheatgrass production and dominance in the Great Basin, the only thing I would do differently that what has been done over the past 40 years, is remove all the domestic animals from Cheatgrass invaded areas. Almost every management action employed over the last four decades has unknowingly fostered the Cheatgrass explosion.

The good news is that research has demonstrated how to reverse the Cheatgrass explosion across the landscape. It has demonstrated how to reduce the amount, continuity, and height of fine fuels. It has shown us how to reduce the mortality of perennial bunchgrasses that compete with Cheatgrass after wildfires. We do this through a new management paradigm that considers and reduces the amount of fine fuels that are left after the traditional or authorized grazing season. We must begin to more precisely manage the standing, carryover fuels during the fall. Targeted, fall livestock grazing is the key, and an Agriculture Experiment Station-Agriculture Research Service partnership has opened this door through new research.

If we continue our present management course, refusing to integrate this new research into NEPA planning documents and Land Use Plans at all levels, we cannot expect anything except a continued expansion and dominance of Cheatgrass and the subsequent wildfire regimes that accompany it.

The Dust Bowl of the 1930s can serve as a model for how environmental challenges in far off, out of the way places can have significant impacts on the lives and livelihoods of people that live and work remote distances away from the center of the challenge. The Dust Bowl happened at the nexus of global politics, agriculture, economics, land disposal policy, the birth of mechanization, and a limited understanding of the ecosystems being converted to crop agriculture. However, the basic cause of the problem was the imposition of an agricultural system on an ecosystem for which it was wholly unsuited. That does not mean that small grain agriculture cannot be conducted in a sustainable way in the Southern Plains. It has been successfully and sustainably conducted over the past 75 years since the Dust Bowl. The agricultural management systems that were developed to mitigate the disaster were appropriately suited to the Southern Plains ecosystem. New research of that time included terracing, contour plowing, and other soil and water conservation practices that stabilized the soil and reversed the ecological disaster. President Roosevelt's administration implemented the new science.

In an op-ed article I wrote this past year, I compared the circumstances of the Dust Bowl with what I have termed the Cinder Bowl in the Great Basin. The similarities between the circumstances that led to the Dust Bowl and what is going on today in the Great Basin, are striking. If we as a society continue to manage the Great Basin in the status quo of the past four or five decades, there will be a Cinder Bowl. We can only hope that it will not take the appearance of smoke from Nevada settling in over the National Mall as it did when President Roosevelt found dust from Oklahoma on his desk in the Oval Office.

It is frustrating when researchers see new scientific discoveries being ignored by the very entities that are legally mandated to use the best available science. There is evidence that the status quo is being not only honored but mandated by some managers and administrators that provide biological opinions for federal land management agencies. In the Final Environmental Impact Statement for sage grouse in Nevada, section 2.6.3, states "There are currently no science-based studies that demonstrate that increased livestock grazing on public lands would enhance or restore GRSG (greater sage grouse) habitat or maintain or increase GRSG abundance and distribution." It is unclear whether this is a blatant disregard of new fuels management and invasive species research, or if it is honest ignorance and a lack of professionalism. In either case, it is unacceptable. I and others believe that it is completely unacceptable for a Federal agency such as the Fish and Wildlife Service to state without reservation that wildfire is the greatest threat to the sagebrush ecosystem and simultaneously exclude any and all references to fuels and invasive species management through targeted livestock grazing. The body of research that I have introduced today, was introduced in the Nevada State Preferred Alternative of the Nevada Sage Grouse FEIS, yet completely ignored. It is my sincere desire that Federal land management agencies stay abreast of, and implement new and current research that can benefit the public trust. If they ignore or place themselves in a position denying the implementation of new science, I assure you, smoke and ash from the Cinder Bowl *will* come to Washington D. C.

New Nevada Agriculture Experiment Station and Agriculture Research Service Publications addressing fine fuel and invasive species management:

Svejcar, T., et al. (Perryman, Stringham). 2014. Western Land Managers will Need all Available Tools for Adapting to Climate Change, Including Grazing: A Critique of Beschta et al. *Environmental Management*, 53:1035-1038.

Schmelzer, L., B. Perryman, B. Bruce, B. Schultz, K. McAdoo, G. McCuin, S. Swanson, J. Wilker, and K. Conley. 2014. Case Study: Reducing cheatgrass *(Bromus tectorum L.)* fuel loads using fall cattle grazing. *Professional Animal Scientist*, 30:270-278.

Trowbridge, W., Albright, T., Ferguson, S., Li, J., Perryman, B. L., Nowak, R. S. 2013. Explaining patterns of species dominance in the shrub steppe systems of the Junggar Basin (China) and Great Basin (USA). *Journal of Arid Lands,* 5:415-427.

Davies, K.W., J.D. Bates, C.S. Boyd, and T.J. Svejcar. 2016. Prefire grazing by cattle increases postfire resistance to exotic annual grass (Bromus tectorum) invasion and dominance for decades. *Ecology and Evolution*, doi: 10.1002/ece3.2127

Davies, K.W., C.S. Boyd, J.D. Bates, and A. Hulet. 2016. Winter grazing can reduce wildfire size, intensity, and behavior in a shrub-grassland. *International Journal of Wildland Fire* 25:191-199.

Davies, K.W., C.S. Boyd, J.D. Bates, and A. Hulet. 2015. Dormant-season grazing may decrease wildfire probability by increasing fuel moisture and reducing fuel amount and continuity. *International Journal of Wildland Fire* 24:849-856.

Davies, K.W., J.D. Bates, T.J. Svejcar, and C.S. Boyd. 2010. Effects of long-term livestock grazing on fuel characteristics in rangelands: an example from the sagebrush steppe. *Rangeland Ecology & Management* 63:662-669.

Davies, K.W., M. Vavra, B. Schultz & N. Rimbey. 2014. Implications of longer term grazing rest in the sagebrush steppe. *Journal of Rangeland Applications*. 1:14-34.

Dyer, K. J., B.L. Perryman and D.W. Holcombe. 2009. Fitness and nutritional assessment of greater sage grouse *(Centrocercus urophasianus)* using hematologic and serum chemistry parameters through a cycle of seasonal habitats in northern Nevada. *J. Zoo and Wildlife Medicine.* 40:18-28.

Dyer, K.J., B.L. Perryman, and D.W. Holcombe. 2010. Site and age class variation of hematologic parameters for female greater sage grouse *(Centrocercus urophasianus)* of northern Nevada. *J. Wildlife Diseases*. 46:1-12.

Freese, E., T. Stringham, G. Simonds, and E. Sant. 2013. Grazing for Fuels Management and Sage Grouse Habitat Maintenance and Recovery: A Case Study from Squaw Valley Ranch. *Rangelands* 35(4):13–17.

Gruell, George E. and Sherman Swanson. 2012. Nevada's Changing Wildlife Habitat: An Ecological History. University of Nevada Press, Reno. 178 pp.

Swanson, S., S. Wyman, and C. Evans. 2015. Practical Grazing Management to Maintain or Restore Riparian Functions and Values. *Journal of Rangeland Applications*, 2:1-28.

McAdoo, J. K., B. W. Schultz, and S. R. Swanson. 2013. Aboriginal Precedent for Active Management of Sagebrush-Perennial grass Communities in the Great Basin. *Rangeland Ecology and Management*, 66(3):241-253.

Dalldorf, K. N., S. R. Swanson, D. F. Kozlowski, K. M. Schmidt, R. S. Shane, and G. Fernandez. 2013. Influence of Livestock Grazing Strategies on Riparian Response to Wildfire in Northern Nevada. *Rangeland Ecology and Management*, 66(1):34-42

Swanson, S. and W. Gilgert. 2009. Fuels Management at the Landscape Scale. *Rangelands, 31(2):25-29.*

Tanaka, J. A., L. Coates-Markle, and S. Swanson. 2009. SRM Center for Professional Education and Development: Wildfires and Invasive Plants in American Deserts. *Rangelands*, 31(2):2-5.

Schultz, B.W.,, M. Ryan, J. Buk, R. Davis, M. Havercamp, S. Lewis, M. Rebori, S. Emm and S. Swanson. 2009. Evaluation of Nevada's State-wide Sage Grouse Planning Effort: Paid vs. Non-paid Participants. UNCE Special Publication 09-09. 41 p.

Ryan, M., B.W. Schultz, S. Lewis, J. Buk, R. Davis, S. Emm, M. Havercamp, M. Rebori and S. Swanson. 2006. Nevada Sage Grouse Conservation Planning Facilitation Study. UNCE Special Publication 06-03.22 p.

Schultz, B.W. 2004. Analysis of Studies Used to Develop Herbaceous Height and Cover Guidelines for Sage Grouse Nesting Habitat. UNCE Special Publication 04-11. 25 p.

McAdoo, J.K., B.W. Schultz and S.R. Swanson. 2003. Habitat Management for Sagebrush Associated Wildlife Species. UNCE Fact Sheet 03-66. 4 p.

Schultz, B.W. 2010. A Review of Nest Trampling by Livestock and the Implications for Ground Nesting Birds on Shrub-Grass Rangelands in the Western States. In: Proceedings Fourth National Conference on Grazing Lands). Reno, NV. Pages 540-550.

McAdoo, J.K., S.R. Swanson, B.W. Schultz and P.F. Brussard. 2004. *Vegetation* Management for Sagebrush-Associated Wildlife Species. Pages 183-187. In: A.L. Hild, N.L. Shaw, S.E. Meyer, T. Booth, and E.D. McArthur (compilers). Seed and Soil Dynamics in Shrubland Ecosystems: August 12-16, 2002; Laramie, WY. Proceedings RMRS-P-31. Ogden, UT. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Davies, K.W., T.J. Svejcar, and J.D. Bates. 2009. Interaction of historical and non-historical disturbances maintains native plant communities. *Ecological Applications* 19:1536-1545.

Crawford, J., R. Olson, N. West, J. Mosley, M. Schroeder, T. Whitson, R. Miller, M. Gregg, and C. Boyd. 2004. Ecology and management of sage-grouse and sage-grouse habitat. J. Range Manage. 57: 2-19.

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