Strengthening Federal-State Coordination

Submitted By

National Invasive Species Council Invasive Species Advisory Committee (ISAC)

Federal-State Task Team

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I. Executive Summary

The Federal-State Task Team was formed to address the need for increased coordination of invasive species actions at the local, state, regional, and ecosystem level as put forth in Executive Orders 13112 and 13751, and Action 2.5.1 of the National Invasive Species Council's 2016-2018 Management Plan. The need for improved federal-state coordination is evident given the damage caused to our ecosystems and economy, the need to deploy limited resources efficiently and effectively, and the difficulties encountered by conservation practitioners at all levels of government when responding to threats and impacts of invasive species. The Task Team investigated this need by analyzing strengths and weaknesses and identifying commonalities from a suite of case studies representing various geopolitical scales including region/state level and multi-state/landscape level invasive species management efforts. Case studies are summarized and also included in their entirety in the appendix. These were used to formulate key findings and three levels of conclusions. Level 1 conclusions are focused on the need to increase the effectiveness and efficiency of federal-state communication. Level 2 conclusions address the need to strengthen federal-state partnerships and increase capacity. The Level 3 conclusion identifies the need to explore options for addressing particularly large and complex multi-jurisdictional invasive species issues. The Task Team recommends establishing a Coordinating Committee to advance federal-state coordination as set forth in Executive Orders and the NISC Management Plan and to address the findings and conclusions of this report.

II. Introduction and Problem Statement

Invasive species are causing serious large-scale environmental and economic problems across the United States. They are estimated to cost the US economy over $100 billion annually including impacts to business and industry, recreation, and public health. The need for improving federal-state coordination on invasive species issues is evident in the difficulties encountered by conservation practitioners nationwide when attempting to respond to threats and impacts from invasive species. Given limited resources, it is imperative that effort and funding be deployed as efficiently and effectively as possible. This requires broad understanding of the pertinent science, available resources, applicable laws and policies, jurisdictional boundaries, human/intellectual capital and lines of communication. An inability or unwillingness to address all of these issues, particularly how they might differ across boundaries, can lead to an absence of clear leadership, processes, and overarching goals. Successful multi-jurisdictional efforts have been established in many natural resource conservation arenas. For example, the management of some recreational and commercial fisheries is coordinated through federal councils, interstate/federal commissions, federal agencies and state governments. This level of coordination and governance is largely lacking for

invasive species management programs as witness the invasive plant management structure as it currently stands across many western states (Figure 1).

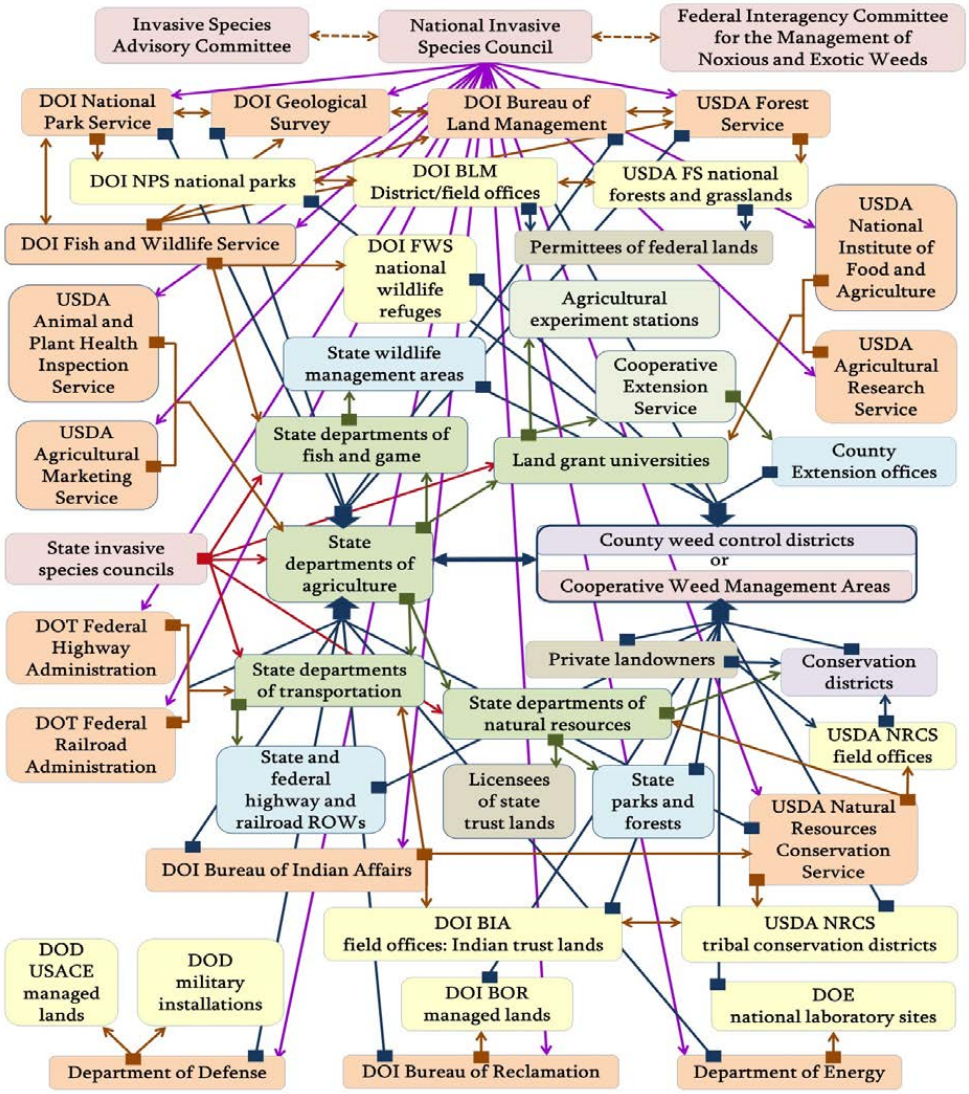

Figure 1. Invasive plant management network structure within the range of the greater sage-grouse. Taken from: Ielmini, M.R., T.E. Hopkins, K.E. Mayer, K. Goodwin, C. Boyd, B. Mealor, M. Pellant, and T. Christiansen. 2015. Invasive Plant Management and Greater Sage-grouse Conservation: A Review and Status Report with Strategic Recommendations for Improvement. Western Association of Fish and Wildlife Agencies. Cheyenne, Wyoming. 47 pp

This Task Team's objective was to provide the National Invasive Species Council (NISC) Secretariat with recommendations for improving the coordination of federal agency invasive species activities with the states, federal districts and territories. More specifically, the Task Team identified key findings, conclusions, and one recommendation for strengthening federal-state coordination. The intent is to improve the implementation and support of on-the-ground management actions and achieve better overall outcomes for invasive species actions. It is

hoped that this and subsequent efforts will serve to streamline the process and approach to invasive species management across the U.S.

The focus of this assessment was on improving federal-state coordination; however, in the course of investigation and analysis the need for strengthening intra and interstate coordination also became apparent. This was not unexpected given the many levels of government and non-governmental organizations, private industry, and academic institutions that are typically involved in the patchwork that makes up today's invasive species response efforts. It is hoped that this effort to generate recommendations for improving federal-state coordination may serve as the genesis for subsequent efforts to strengthen collaboration at all levels.

III. Mandate from Executive Orders and ties to NISC Management Plan

Executive Order (EO) 13112 called on NISC to "encourage planning and action at local, tribal, state, regional, and ecosystem-based levels to achieve the goals and objectives of the NISC Management Plan" (Management Plan). Similarly, EO 13751, which amends EO 13112, directs federal agencies to "coordinate with and complement similar efforts of States, territories, federally recognized American Indian tribes …" and to "pursue the duties … in cooperation with State, local, tribal, and territorial governments, and stakeholders." The Management Plan references the need for enhanced coordination and underscores the intent of NISC in Action 2.5.1: Develop recommendations for coordinating Federal agency activities to implement EO 13122 with U.S. states and territories. The charge to the Federal-State Task Team was to investigate federal-state coordination on invasive species issues and develop suggestions for improvement that are appropriate for NISC to implement. As such, each of the findings and recommendations put forth in this document are intended to begin addressing these specific mandates from both the Executive Orders and Management Plan.

IV. NISC and Federal–State Coordination

NISC and the NISC Secretariat have a long history of federal-state coordination and collaboration through a number of projects and initiatives. In the past the NISC Secretariat has included a temporary post specifically focused on interfacing with states and has participated in efforts focused on state level interaction (e.g., Association of Fish and Wildlife Agencies, regional Aquatic Nuisance Species panels). Other efforts include working with the Department of the Interior to engage non-federal partners to develop an Early Detection and Rapid Response framework to assist states in addressing the establishment and spread of new invasive species, and partnering with the National Council of State Legislatures to establish a list-serve to facilitate communication with state-level invasive species practitioners. The emphasis in the 2016-2018 Management Plan and the formation of this task team are an extension of these past efforts and are reflective of the importance of effective federal-state coordination. NISC is well positioned to effect change and seek improvement in this arena as they are charged with "providing national leadership regarding invasive species" through

coordination of invasive species activities among 13 federal Departments/Agencies and three White House Offices.

V. Approach

Analysis of federal-state cooperation on invasive species issues focused on selecting and reviewing case studies to identify what has worked, what hasn't worked, and what could be improved. Task team members collected information and summarized issues, actions taken, partners, organizational structures, operational mechanisms, and funding sources for specific invasive species efforts. This analysis included a qualitative assessment of the strengths, weaknesses, opportunities and outcomes for each particular case study. The selected case studies included three small region/state level invasive species efforts and three large multi-state/landscape level efforts.

The analysis identified similarities that factored into operational success and then considered how transferable these might be to efforts in different geographic areas involving different species. The analysis also identified approaches and conditions associated with sub-optimal performance. These were compiled into a suite of findings and conclusions that apply to various geopolitical scales and an overarching recommendation for consideration by NISC.

The results generated via this approach were limited to high level findings, conclusions, and recommendations due to time constraints that were decided at the onset of the project. As such, it is reasonable to expect that important findings will continue to emerge, emphasizing the need for an adaptive management approach during implementation.

VI. Summary of Case Studies

The following is a summary of each of the three region/state level case studies and the three multi-state/landscape level case studies and their outcomes. The complete case study reports are included in the Appendix.

a. Florida Invasive Species Partnership (FISP):

   FISP is a collaboration of federal, state, and local agencies, non-government organizations, and interested groups who participate in the management of invasive species in Florida. The goal of FISP is to connect public and private land managers to invasive species resources and expertise and to bridge the gap between public and private management efforts.

   Notable successes include achieving 100% state coverage in Cooperative Invasive Species Management Areas (CISMAs) and standardization of invasive species lists. An MOU was implemented for one of the CISMAs that allows state, federal, and private partners to effectively share resources and for agencies to jointly fund positions. This MOU could be used as a model for CISMAs statewide. Important ongoing challenges include funding shortages, achieving participatory balance in ongoing partnerships, lack

of high-level agency buy-in, and coordinating the deployment of resources. In addition, the expense of administering and contracting work on federal lands has resulted in less treatment at higher cost than on state or private properties.

b. Massachusetts Asian Longhorned Beetle Cooperative Eradication Program:

The Massachusetts Asian Longhorned Beetle Cooperative Eradication Program is a collaboration of federal, state, and local agencies, non-government organizations, and interested groups who share a stake in Asian longhorned beetle eradication in the Worcester, MA area. The mission of the group is to develop and implement a coordinated management plan to eradicate the beetle, a federally regulated forest pest, from a 110 square mile quarantine area.

Successes include implementation of a unified approach for planning, executing, and communicating beetle control efforts. Funding was secured to bring in staff under the Northeast Forest Fire Protection Compact to conduct delimiting surveys and for a tree replacement program. An agreement was implemented to enable agencies to jointly fund positions. Training and compliance was standardized among private tree companies. Challenges included maintaining funding, finding the right balance in partnerships (i.e. roles and responsibilities), and managing through the ebb and flow of motivation and urgency. Additional concerns were knowledge gaps created by turnover in state and federal positions and differences in standard procedures among federal and state programs that created operational challenges.

c. Greater Yellowstone Coordinating Committee – Noxious Weed Subcommittee:

The Greater Yellowstone Coordinating Committee – Noxious Weed Subcommittee is a working group of federal, state and county agencies representing Idaho, Wyoming and Montana. This group was created by an MOU between the US Fish and Wildlife Service, the National Park Service and the Bureau of Land Management and the three states. The goal is to pursue cooperation and coordination in the management of federal lands in the Greater Yellowstone Ecosystem and, more specifically, to develop noxious weed priorities and coordinate invasive species efforts between Coordinated Weed Management Areas and to minimize duplication of efforts.

Successes include developing a partnership that includes county programs and achieving 95% Coordinated Weed Management Area coverage. An early detection, rapid response system was implemented that incorporates all partners and crosses jurisdictional boundaries. A noxious weed geospatial database has been developed and maintained and seed funding was provided for numerous management and research projects. Challenges include an ongoing need for a decision tool or adaptive management strategy. Differences in regulations and policies among agencies, high turnover and lack of dedicated invasive species staff in federal agencies, and a general lack of funding for “on the ground” work impede progress. Other challenges include developing incentives for private landowner participation, educating recreational visitors, and overcoming resistance to pesticide use.

d. Building Consensus in the West:

Building Consensus in the West is a collaboration of federal, state, and regional agencies, non-government organizations, and other entities interested in the prevention and management of aquatic invasive species across the Western US. The goals of this effort are to develop recommendations for watercraft inspections and decontaminations, provide guidance to states, facilitate regional cooperation and coordination, and achieve greater regional compliance by boaters while also improving customer service to the boating public.

Successes include effectively engaging a diverse group of partners beyond those typically involved in invasive species partnerships including the State Offices of Attorneys General, National Sea Grant Law Center, and the American Boat and Yacht Council. A set of model legislative provisions was created and vetted to state and federal agencies and accompanying model regulations have been drafted. A dozen western states have amended laws and regulations to incorporate components of these provisions helping to improve cross-border consistency. Western states have recently resolved to develop and support a consistent regulatory approach for pulling drain plugs and removing vegetation and organic debris. An ongoing challenge is that the translation of policy guidance to on-the-ground action is incremental and slow. In addition, this effort is regional but recreational boats are moving throughout the country. Cross-regional engagement has been difficult due to differences in invasive species priorities, management strategies, and political cultures. Nationwide application will require considerable effort and infusion of resources.

e. Asian Carp Management and Control:

A comprehensive Asian carp management and control plan has been developed by a diverse group of scientists, private farmers, policy makers, and others under the direction of the US Fish and Wildlife Service and the Aquatic Nuisance Species Task Force. The goal is to contain and control the spread of Asian carps in the United States. Due to the widespread distribution and migratory nature of Asian carps, large-scale coordination among federal and state agencies is essential for implementing the strategies identified in the plan.

The national plan calls for the creation of focused regional plans and there has been some success. Coordination and implementation of control strategies and communication efforts have been effective in the Great Lakes Basin (particularly to prevent movement into Lake Michigan) and similarly successful efforts in the Upper Mississippi and Ohio River basins have been initiated. States have generally been successful at leveraging available federal funds. State and local control efforts at removing carp show promise in distinct areas, but lack capacity in most. Coordination of control efforts is inadequate and results in insufficient capacity and continuity. The ongoing work of the Asian Carp Regional Coordinating Committee and the Mississippi Interstate Cooperative Resource Association have shown that successful coordination

can be achieved with sufficient funding. Additional challenges are that federal laws and policies are not coordinated and there is similar inconsistency with and among states.

f. Greater Sage Grouse Conservation:

Invasive plants have degraded Greater Sage Grouse habitat over an 11 state range in the Western United States. On-the-ground invasive plant management efforts within this range involve a broad array of federal agencies, state agencies, local agencies and organizations, businesses, and non-governmental organizations. The US Fish and Wildlife Service requested the assistance of the Western Association of Fish and Wildlife Agencies to assess the challenges associated with this multi-state level effort and to make recommendations for improvement.

Local weed management programs conduct most of the on-the-ground invasive plant control and public education throughout the 11 state range. Both state and local weed management programs (Cooperative Weed Management Areas and County weed programs) and educational efforts have been effective but lack capacity and cross-jurisdictional coordination. Multi-state/landscape level invasive species problems require a coordinated and sustained effort across many jurisdictions. Federal law and policies do not provide clear authority or coordination among federal agencies and there is inconsistency among state and local laws and policies. Interstate and regional coordination is difficult due to wide differences in state priorities, capacities, and jurisdiction, such that as scale increases, so do the barriers which cause efforts to become fragmented, inconsistent and ineffective. Adding to this challenge is inadequate funding at all levels (federal, state, local) resulting in insufficient capacity and loss of continuity and accountability. Inadequate federal funding effectively transfers risk and responsibility to state and local governments.

VII. Key Findings from Case Studies

The Task Team identified the following key findings from analysis of case studies.

- "On-the-ground" invasive species work is the most important component to a successful program.
- "On-the-ground" work is being compromised when federal-state coordination is sub-optimal, particularly at the large landscape level.
- There are many examples of successful invasive species efforts involving federal-state coordination.
- Even large scale invasive species efforts that appear to be struggling include successful component parts.
- Successful coordination of invasive species efforts is most apparent at smaller geographic scales.

- Cooperative programs are more likely to be successful when federal, state and local agencies have identified specific individuals or positions tasked with participating.
- High level support coupled with local authority and autonomy appear to be important factors for successful coordination.
- Coordination is hindered by turnover and operational and procedural differences among partners.
- Partnerships/coordination is more likely to be successful when objectives are simple and clear.
- Single species initiatives are often more successful in the organizational stages than at achieving long-term control and management objectives. This is due to changing priorities such as those brought about by the emergence of competing invasive species threats or conservation needs.
- Large scale invasive species efforts suffer from lack of sufficient funding and cooperator capacity. This may impede program success even when agencies are effectively communicating.
- Effective coordination can stretch existing resources and increase capacity and continuity.
- Invasive species issues that cross jurisdictional borders are frequently hampered by inconsistent laws, regulations, policies, and priorities.
- Accountability is important for motivating coordination.
- The effectiveness and efficiency of invasive species efforts tend to decrease as complexity and/or geographic scale increases.
- Systems and structure to facilitate communication among federal-state partners is lacking.
- The need for improved governance structure is apparent in all large scale invasive species case studies.

VIII. Conclusions

The Task Team concludes the following based on the case studies and findings. Conclusions pertain to improving federal-state coordination on invasive species efforts in the following focus areas: Communication, Partnerships and Capacity, and Institutional Structure.

Level 1 Conclusions: For increasing the effectiveness and efficiency of federal-state communication:

1) A point person within the NISC Secretariat is needed to focus on strengthening federal-state coordination and communication on invasive species issues, beginning with the establishment of a directory of contacts for each federal Department, State, and county (where applicable).
2) NISC Departments need to designate contact persons to assist in the identification of agency employees who, when requested, can engage in regional and local collaborative invasive species projects.
3) State agency level invasive species points-of-contact need to be identified. Information on both state agency level contacts and federal Departmental contacts (previous bullet) should be maintained on the NISC website.
4) NISC Departments should instruct regional and state-level field offices to coordinate with state, tribal, and local entities on invasive species activities to avoid duplication, leverage resources, and enhance success.

Level 2 Conclusions: For strengthening federal-state partnerships and increasing capacity:

5) NISC Departments need to engage in and support emerging state, tribal, and local partnerships that address multi-jurisdictional invasive species issues.
6) NISC Departments need to establish mechanisms for funding early detection and rapid response to support collaborative efforts with state, tribal, and local partners.
7) Agreements such as “terms of reference” or “operating principles” (similar to MOAs), among NISC Departments and state, local, tribal, and territorial governments and stakeholders should be considered for selected multi-state/landscape level invasive species issues, as requested by partners. Consider using non-federal or federal detailees to assist in the development of agreements and to enhance the effectiveness of these efforts.

Level 3 Conclusion: For addressing the institutional structure needs of large complex multi-jurisdictional invasive species issues:

8) New organizational and regulatory options need to be explored to support multi-state, ecosystem-scale invasive species efforts. Options may include enhancement of existing or creation of new commissions or other multi-jurisdictional bodies, modification to existing policy and regulatory frameworks, or other actions to complement efforts of states, tribes, and non-federal entities.

IX. Recommendation

ISAC Recommends that NISC establish and maintain a **Federal-State Invasive Species Coordinating Committee** to conduct high-level policy and planning functions to advance federal-state coordination as set forth in Executive Orders and the NISC Management Plan and to address the findings and conclusions of this Task Team.

ISAC further recommends that NISC adopt the following agreement:

Federal-State Invasive Species Coordinating Committee

(1) Establishment: NISC shall establish a committee, to be known as the "Federal-State Invasive Species Coordinating Committee" (Coordinating Committee) to enhance coordination of policy activities of federal and state governments when taking action to prevent, eradicate, or control invasive species, address emerging federal-state invasive species issues, and to restore ecosystems and natural resources impacted by invasive species.

(2) Composition: The Coordinating Committee shall be composed of representatives from the following (one unless otherwise noted):
(A) Three representatives from NISC Departments/Agencies.
(B) NISC Secretariat.
(C) Association of Fish and Wildlife Agencies.
(D) National Association of State Foresters.
(E) National Association of State Departments of Agriculture.
(F) A member of the Invasive Species Advisory Committee who serves in state government.
(G) Three representatives from State Invasive Species Councils, or equivalent, from geographically diverse regions of the United States.
(H) The National Governors Association.
(I) Such other persons as determined, from time to time, by the Secretary.

(3) Chairperson: The NISC Secretariat shall secure (or designate) and maintain a full-time staff member to support federal-state coordination functions and to serve as chairperson of the Coordinating Committee.

(4) Duties: The Coordinating Committee shall:
(A) Provide direction and coordination of selected actions of NISC Departments and Agencies in coordination with State agencies to effectively address the invasive species priorities set forth in Executive Orders 13112 and 13751, and in the NISC Management Plan.
(B) Address the findings and conclusions of the ISAC Task Team on Federal-State Coordination to the extent possible consistent with Executive Orders 13112 and 13751, and the NISC Management Plan, and as federal and state agency resources allow.

(5) Meeting:
(A) The Coordinating Committee shall meet at least twice annually to review progress in addressing the aforementioned duties. More frequent meetings may be scheduled to address emerging or high-priority invasive species issues at the discretion of the chairperson, request of

a majority of Committee members, or at the direction of the Secretary. All meetings shall be conducted electronically such that travel will not be required.
(B) The Chairperson or NISC Executive Director shall provide updates on Coordinating Committee activities and seek input from ISAC members at ISAC meetings.

(6)Compensation
(A) Federal members: Members who are full-time officers or employees of the United States shall receive no additional pay, allowances, or benefits by reason of their service on the Coordinating Committee.
(B) State and other non-federal members: State and other non-federal members of the Coordinating Committee shall receive support from their employers in accordance with their institutional policies and provisions.

X. Appendices

Florida Invasive Species Partnership (FISP)

The Florida Invasive Species Partnership (FISP) was established in 2008 with a mission to improve the efficiency and effectiveness of a partnership approach to preventing and controlling invasives species. FISP pursues this mission through increased communication, improved coordination, and shared resources, in order to protect wildlife habitat, working lands, natural ecological communities, and the state's biological diversity.

Partners:

Federal: USFWS, USDA, USACE, NPS

State: DOT, FFS, DEP, FWC, UF/IFAS, Water Management Districts, Florida Natural Areas Inventory

NGO: Nature Conservancy, Florida Exotic Pest Plant Council (FLEPPC), Native Plant Society, Audubon

Others: Palm Beach County, University of Georgia (Invasive Species and Ecosystem Health), Naples Zoo, Florida Grazing Lands Coalition, Seminole County

Purpose:

FISP is a collaboration of federal, state, and local agencies, non-government organizations, and interested groups who share a stake in the management of invasive non-native species in Florida. Invasive species spread beyond fence lines, into conservation, agricultural, recreational, and private properties. The goal of FISP is to connect public and private land managers to invasive species resources and expertise, and to assist programs that operate beyond public/private boundaries.

- FISP serves as an umbrella organization for the volunteer Cooperative Invasive Species Management Areas (CISMAs) and the Early Detection/Rapid Response (EDRR) network.
- FISP provides tools and resources that enable the development of a unified planning approach that bridges the gap between public and private invasive species management efforts.
- FISP encourages the development, implementation, and sharing of new and/or innovative management approaches that address the threat of invasive species to all landowners.

Results:

Successes and Strengths of the Florida Invasive Species Partnership, an Example of Federal-State Cooperation in Florida

- 100% CISMA coverage across the entire state
- Support for and standardization of CISMAs and EDRR species lists
- Private land owner support and education through raising awareness of incentive programs http://www.floridainvasives.org and connecting private/public land managers through CISMAs
- Bridges the gaps between lands: private, public, conservation, rights-of-way, easements, etc.

- Monthly webinar, annual workshop, FLEPPC symposium
- FISP website, CISMA websites, private land incentives database
- Agencies jointly funding positions to ensure FISP works!
- Coordination of annual fall weed counts across the state
- An MOU developed by the Apalachicola Regional Stewardship Alliance (ARSA) Cooperative Invasive Species Management Area that allows state, federal, and private partners to share resources

Weaknesses Identified in Federal-State Cooperation:

- Difficult to always find the right balance in our partnerships; adequate funding; organizations "allowing" staff to work in a partnership, rather than authorizing it as part of their job
- No national, or even regional, federal network for FISP to share successes and challenges with other invasive species partnerships
- Lacking federal-state communication and management support from top down and bottom up, including upper levels inside and outside of Florida
- Lacking high-level agency buy-in for streamlining laws and regulations, jointly deploying resources, or speeding up the review and listing process for invasive species

Many FISP members previously served on the Governor's Invasive Species Working Group (ISWG), established to develop a "comprehensive plan that coordinates the responsibilities of the state agencies to manage and prevent biological invasions." The ISWG consisted mostly of state agencies, but also had federal and non-profit supporters. Group members served in an advisory capacity to the agencies to assist in identifying invasive species program priorities, and to resolve jurisdictional and policy disputes. With most of the plan's action items accomplished, the Chair discontinued ISWG meetings absent clearly established direction and goals, reporting procedures, and agency heads' involvement in establishing cross-agency statewide policies.

Former members agree that there is value in maintaining an ISWG coordinating body, but this would require state, federal, non-profit, and other stakeholder cooperation, along with recognized authority and full agency support. FISP could integrate the working group structure into its operations, provided there is a mechanism where policymakers meet to review working group priorities and, further, to provide support and direction to pursue enabling authority for implementing the highest priority actions.

Additional Findings:

There are differences in federal/state funding efficiency; the same number of dollars "stretch" much farther on state land than on federal land, due to cost of administration. State funding for invasive species management on federal land is limited and competitive, so monies must be expended in a manner that ensures maximum cost-efficiency and efficacy. Invasive species control in Florida is performed primarily by private independent contractors under contract with the state (or a unit thereof).

- Federal time-and-materials (fee schedule) procurement methods result in less treatment at a higher cost than the fixed-unit (per-acre) bid process used by the state.
- Federal requirements for work crews increase the cost of projects. Federal land managers require every crewmember to be a licensed herbicide applicator, while the state requires (by contract, not law) only one licensed crew supervisor for each eight-man crew. A crew supervisor must hold a certified pesticide applicator license and a natural areas certification. The company expense for maintaining staff licensing means a crew supervisor's billable hourly rate runs $25-$40, versus an unlicensed crewmember cost of $12-$15 per hour.
- Federal land managers require all herbicides used on their property to be previously approved brands, rather than allowing equivalent generics with the same active ingredient. The state's cost for chemicals is based upon a statewide open competitive bid on brands and generics, resulting in lower prices and greater flexibility in choosing products. This agency pricing is not available to private contractors; however, the state can purchase chemicals in bulk for any funded project, thus reducing the project cost even more.
- Federally authorized Wilderness Committees do not follow consistent guidelines. One committee may not allow transporting of bulk chemicals to work areas, requiring contractors to daily prepare treatment mixes off-site. Another committee might require crews to walk to remote sites, rather than allow the use of swamp buggies on existing roads, trails, and paths. Such decisions result in fewer interested contractors, higher project costs, and less work completed.

Massachusetts Asian Longhorned Beetle Cooperative Eradication Program

The Massachusetts Asian Longhorned Beetle Cooperative Eradication Program (MA ALB EP) was established in 2008 with a mission to coordinate a management plan to eradicate Asian Longhorned beetle (ALB), a highly destructive exotic federally regulated forest pest discovered in Worcester Massachusetts August 2008.

MA ALB EP pursues this mission through a ground survey to determine the extent of infestation, and regulatory management to prevent movement of host trees and untreated wood out of the quarantine area. Infested trees and susceptible host trees are removed and destroyed or receive pesticide treatment to prevent further infestation. This management plan includes optional replanting of private and publicly owned trees.

ALB is an invasive species native to China. It was first discovered in the U.S in New York in 1996. 308 square miles are under quarantine for ALB in the United States; 137 square miles in New York, which includes the New York City boroughs of Brooklyn and Queens, and a portion of central Long Island; 110 square miles in Worcester County, Massachusetts which includes all of the City of Worcester, West Boylston, Boylston, Shrewsbury, and a portion of the Towns of Holden and Auburn; and 61 square miles in Clermont County, Ohio including East Fork State Park, Tate Township, and portions of Monroe, Stonelick and Batavia Townships. Infestations have been declared eradicated in Illinois (2008), New Jersey (2013), Manhattan (2013), Staten Island (2013), and Islip (2011) in New York and Boston (2014) in Massachusetts.

ALB attacks a wide variety of hardwood trees, particularly maples, and is considered a serious threat to nursery, lumber, wood products, maple syrup, and tourism industries. It is estimated ALB was present in Worcester, MA 10 to 15 years prior to its announced discovery and quarantine placement August 8, 2008.

Partners:

Federal: USDA - APHIS PPQ & Forest Service

State: MA DCR, MA DAR, state legislators, and MA Environmental Police

Municipal: City of Worcester and six surrounding municipalities

NGO: Greater Worcester Land Trust, Worcester Tree Initiative

Others: UMass Extension Agriculture and Landscape Program

Purpose:

MA ALB EP is a collaboration of federal, state, and local agencies, non-government organizations, and interested groups who share a stake in ALB eradication in the greater Worcester, MA area. This is a regulatory program. ALB does not spread quickly on its own but rather through transport of infested wood such as logs, firewood, other live hardwood tree woody debris. Numerous hardwood tree species

are suspect to ALB infestation. The goal of MA ALB EP is to eradicate ALB from the regulated area, an approximate 110 square mile federal and state quarantine area in Worcester County - east/central MA.

- MA ALB EP serves to coordinate eradication, education, outreach, and compliance within the ALB quarantine area.
- MA ALB EP provides tools and resources that inform the public about ALB, trains tree removal companies in quarantine compliance measures, and reduces threat of further infestations through survey and infested tree removal.
- Informs public of scheduled tree removal and treatment operations.
- Provides a unified approach for planning and communicating MA ALB EP efforts.
- MA ALB EP implements new and/or innovative management approaches to eradicate ALB and readily shares these techniques and lessons learned with interested stakeholders including other state and Canadian forest pest & protection regulatory agencies.

Results:

Successes and Strengths of the MA ALB EP Cooperative, an Example of Federal-State Cooperation in Massachusetts

- Federal and State ALB quarantine covers 110 square miles, all or a portion of seven municipalities in Worcester County, MA
- Support for and standardization of tree care company training and regulatory compliance.
- Private land owner support and education through public information meeting, formal public hearings, numerous on-line resources including response plans, regulated area maps, information posters, guides, and photo galleries.
- Tree replacement program whereby public, commercial and residential property owners can choose a free tree replacement for infested trees that have been removed.
- Requested and funded Northeast Forest Fire Protection Compact deployment to assist with ALB delimiting surveys.
- Operational flexibility for centralized private and municipal tree disposal site. Seven day/week emergency operations during a significant ice storm that caused extensive tree and limb loss exacerbated by structurally weakened ALB infested trees. For ICS purposes deemed an “incident within the incident”.
- Agencies jointly funding positions to ensure MA ALB EP works. State and Federal staff work very effectively together in teams to pursue a common outcome.
- ALB Awareness Month Events (August). Governor Proclamations.
- Regulated area has not changed in five years.

- A USDA APHIS program director and staff to coordinate the survey and eradication effort on site.

Weaknesses Identified in Federal-State Cooperation:

- Difficult to always find the right balance in partnerships; adequate funding; organizations "allowing" staff to work in a partnership, rather than authorizing it as part of their mission/job.
- The survey tasks are very repetitive with currently very few ALB finds. Work motivation levels ebb and flow as repetitive tasks are producing little result. However, the occasional find is critical to successful ALB eradication.
- Messaging needs to be constant otherwise local citizens start forgetting the reasons for eradication.
- While most SOP's are similar between federal and state programs, there are occasionally differences in work procedures, i.e. federal employees may get a holiday off and a state employee does not or federal employees may be released from work on snow days, whereas state employees need a Governor authorization to be sent home.
- Funding for tree planting is waning.
- Turnover in both state and federal supervisory positions has created knowledge gaps regarding initial eradication efforts. Lack of sufficient institutional knowledge being passed along is noticeable.
- State employees need to follow federal background policies including background checks.

Greater Yellowstone Coordinating Committee – Noxious Weed Subcommittee

The Greater Yellowstone Coordinating Committee (GYCC) – Noxious Weed Subcommittee was established in 1991 under the umbrella of the GYCC which was established in 1964. The overarching goals of the GYCC as confirmed in the fall of 2011 are: Ecosystem Health; Sustainable operations; greater Yellowstone landscape integrity; and connecting people to the land.

Partners:

Memorandum of Understanding (MOU) Partners:

Federal: USDA-FS, USDI-NPS, USDI-BLM

States: Governor Wyoming, Governor Idaho, Governor Montana

Non – Memorandum of Understanding (MOU) Partners:

Federal: USDI-FWS

NGO: Montana State University, Gallatin – Big Sky Weed Committee

Others: Teton County Weed and Pest Control District, Lincoln County Weed and Pest Control District, Park County Weed and Pest Control District, Sublette County Weed and Pest Control District, Madison County Weed and Mosquito, , Bonneville County Weed Department, Teton County Conservation District, Gallatin County Weed Control, Fremont County Weed and Pest Control District

Purpose:

GYCC – Noxious Weed Subcommittee is a working group of federal, state and county agencies representing Idaho, Wyoming and Montana. The subcommittee is one of ten subcommittees of the GYCC that carry out the on-going coordination of management activities in the Greater Yellowstone Area (GYA). The GYCC was formed to allow representatives from the National Park Service (NPS), US Forest Service (USFS), the US Fish and Wildlife Service (USFWS) and the Bureau of Land Management (BLM) to pursue opportunities of mutual cooperation and coordination in the management of core federal lands in the Greater Yellowstone Ecosystem. The Noxious Weed Subcommittee was created by an MOU between the USFS, the NPS and the BLM with the states of Wyoming, Idaho and Montana to address the GYA threat of terrestrial invasive weeds across multiple jurisdictional and private property boundaries.

- Address noxious weed management at a multi-state/landscape scale.
- Identify and recommend noxious weed management priorities within the GYA.
- Coordinate management actives between units and Coordinated Weed Management Areas (CWMA) within the GYA.
- Minimize duplication of efforts.
- Learn and benefit from each other's experiences.

- Coordinate closely with the Aquatic Invasive Species Committee to ensure no invasive is overlooked.

Results:

Successes and Strengths of the GYCC – Noxious Weed Subcommittee, an Example of Federal-State Cooperation in the Greater Yellowstone Area.

- One of the few GYCC subcommittees where county programs are participating partners.
- Over 95% of the GYA falls within established or proposed Coordinated Weed Management Areas.
- Early Detection Rapid Response System incorporating all participating partners.
- Work and funding can cross jurisdictional boundaries.
- Development of education material including the "Invasive Plant Pocket Guide", "Why Should I Care About Noxious Weeds", "Best Management Practices for Controlling the Spread of Noxious Weeds"
- Built and maintain a noxious weed geospatial database.
- Helped establish the North American Invasive Species Management Association (NAISMA) guidelines for Weed Free Sand and Gravel inspections.
- Helped multiple small management and research projects with seed money.

Weaknesses Identified in Federal-State Cooperation:

- Lack of national framework for decision making process.
- No adaptive management strategy or tool for decision making.
- Inconsistent or high turnover in representation from federal agencies.
- Lack of dedicated invasive species management staff within the federal agencies.
- Differences in regulations and policies between agencies.
- Differences in programmatic goals are sometimes burdensome.
- Declining or lack of "on the ground" funding for applied research and management.
- Lack of incentives and trust to encourage private landowner participation.

Additional Findings:

The GYA, and specifically Yellowstone National Park present a complicated challenge for invasive species management. Recreational visitors to the National Park exceed 3 million annually with 2015 statistics exceeding 4 million. Preliminary numbers from 2016 indicate that the will exceed the 2015 numbers. Many of the recreational visitors are from areas outside of the region, including international. This

exponentially increases the opportunity for expansion of current infestations and the introduction of new non-native species.

The recreational visitors understanding and perception of invasive weed issues is often minimal. Additionally, public perceptions of pesticides can be unfavorable and sometimes outright hostile in settings such as Yellowstone National Park. This can complicate the ability of land managers in implementing effective management without heavy scrutiny. Additionally, traffic through the GYA during the season is dense on roads and right-of-ways that are narrow and steep, thus creating situations that can be dangerous for applicators working in the area.

Aquatic Nuisance Species Task Force and Western Regional Panel: Building Consensus in the West

Trailered recreational boats are an important vector in the spread of aquatic invasive species. Recreational boating is incredibly popular in the United States. According to the U.S. Coast Guard's Recreational Boating Statistics, over 11.8 million recreational vessels were registered by the states in 2015. Many of these vessels are small enough to be towed overland on trailers, allowing boaters to enjoy the abundant fishing, water sport, and scenic opportunities available at waters around the country. However, boaters themselves are not always aware of the organisms their boats may be harboring, which can lead to the unintentional introduction and spread of aquatic invasive species.

Partners:

Federal: USFWS, NPS

State: State Fish & Wildlife agencies, State Offices of Attorneys General,

NGO: Invasive Species Action Network, Creative Resource Strategies, American Boat and Yacht Council, Association of Fish and Wildlife Agencies

Others: National Sea Grant Law Center, Oregon Sea Grant, Tahoe Regional Planning Agency, Pacific States Marine Fisheries Commission

Purpose:

Building Consensus in the West is a collaboration of federal, state, and regional agencies, non-government organizations, and other entities interested in the prevention and management of aquatic invasive species across the Western US. Aquatic invasive species (AIS) are often unintentionally moved via recreational boats as they are transported from one water body to another. States across the West, and across the US, have differing laws and regulations. Additionally, in popular recreational boating and fishing areas that have been confirmed to harbor problem AIS, wait times to get on the water can be long and frustrating, as each boat is inspected or decontaminated upon entry or exit (or both); some boaters and anglers may be discouraged by these long lines and may choose to leave. Improving the frameworks for watercraft inspection and decontamination (WID) can improve customer service for recreational boaters, keeping boaters and anglers on the water.

The goals of the Building Consensus in the West effort are:

- to develop recommended approaches for WID programs;
- to provide guidance to states that choose to update, enhance or increase consistency in legal and regulatory frameworks regarding WID across states;
- to facilitate regional cooperation and coordination by laying the foundation for the adoption of reciprocal agreements among states adhering to these recommended approaches; and
- to help, in turn, facilitate and encourage compliance by the boating public for WID, while also improving customer service.

Results:

The BC effort has:

- Convened several meetings since August 2012 to discuss challenges, needs, and opportunities to achieve consensus on protocols and terminology.
    - The August 2012 meeting resulted in the creation of "An Action Plan to Implement Legal and Regulatory Efforts to Minimize Expansion of Invasive Mussels through Watercraft Movements in the Western United States;" subsequent, annual meetings have been focused on implementation of these recommended actions.
    - Initiated consensus agreement on recommended approaches for the WID process (and the group continues to discuss additional aspects), as part of updating and improving the *Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination Programs for Dreissenid Mussels in the Western United States*, now in its 3rd edition, developed by the Pacific States Marine Fisheries Commission in collaboration with the BC effort.
- Tracked and compiled the suite of state laws that govern WID and related actions (such as "white" or "black" lists for AIS via the National Sea Grant Law Center.
- Created a set of model legislative provisions (Model Law) that, when adopted by multiple states, can allow for interstate reciprocal acceptance of WID documentation across state lines.
- Developed a set of model regulations to accompany the Model Law, to continue to facilitate interstate collaboration through consistency across state laws and regulations.

Successes and Strengths of the BC effort, an Example of Federal-State Collaboration in the Western US

- Stronger, more consistent state laws and regulations reduce the need for federal action to address a regional problem.
    - Political gridlock and fiscal constraints hinders Congress and federal agencies from effectively tackling emerging AIS threats.
    - Interstate coordination strengthens opportunities for regional invasive species management without reliance on federal injurious wildlife regulations via Title 18 of the Lacey Act (18 U.S.C. § 42). Furthermore, Title 16 of the Lacey Act (16 U.S.C. § 3372) elevates the violation of state, tribal, or foreign wildlife laws to federal offenses.
        - Stronger state laws provide a firmer foundation for Title 16 prosecutions of interstate wildlife violations
- Since 2012, almost a dozen western states have amended laws and regulations to incorporate consensus policies and model authorities. These reform efforts have strengthened state AIS programs and are helping to harmonize the legal framework throughout the region.
- The Model Legislative Provisions informed development of the new WID programs in several of the western Canadian provinces, helping to ensure cross-border consistency among state and provincial WID programs.

- The Association of Fish and Wildlife Agencies (AFWA), an entity that coordinates among the state fish and wildlife agencies, approved the Model Law document during their business meeting in March 2015.
- The Western Association of Fish and Wildlife Agencies passed a resolution in July 2016 in support of consistent approaches to prevent AIS spread, namely, pulling drain plugs on recreational boats and trailers and removal of all visible plant and organic material (*available upon request*).
- Support and collaboration by the recreational boat manufacturing industry, with the American Boat and Yacht Council actively developing voluntary standards for boat design that will minimize the transport of AIS.

Weaknesses Identified in Federal-State Cooperation:

- Translation of policy guidance to policy action is incremental and slow, though agencies are using these documents as they consider changes in their policy structures.
    - Political climates, attitudes about regulations, staff capacity and resources are all limiting factors toward implementation of these recommended solutions.
- Building Consensus is an initiative of the Aquatic Nuisance Species Western Regional Panel and its member states and various partners. As such, the effort is regional in nature. Recreational boats are moving throughout the country, however, and broader conversations are needed to effectively address the vector. Cross-regional engagement has been difficult due to differences in AIS priorities, management strategies, and political cultures. Nationwide application of the model and recommended strategies will require dedicated effort and resources.

Agencies and AIS staff participating in the effort find the process, partnerships, and products all to be highly valuable. The effort continues and will continue as additional needs and challenges are identified and addressed. In addition, the AFWA Invasive Species Committee has looked at the effort as a model that could be exported to other species or regional invasive species challenges in the future, and will continue to explore this possible application of the model in the coming years.

Additional Findings:

Funding is always a limiting factor in the implementation of WID programs. Some states have been able to creatively supplement the dollars received via the Nonindigenous Aquatic Nuisance Species Control and Prevention Act of 1990, and as amended in the National Invasive Species Act of 1996, for USFWS-approved state Aquatic Nuisance Species (ANS) Plans. Other states struggle with this due to competing priorities or the need to triage AIS management among multiple other threats to native wildlife.

Further, while states create their ANS Plans in collaboration with federal partners, getting federal agencies to comply or to implement state priority actions on federal lands is often a challenge. Agencies as a whole are interested in supporting collaboration and preventative measures. Individual management units, similar to states, struggle with limited staff capacity and resources for these types of prevention or management actions. Some management units may not view AIS management at the same level of priority as their agency superiors or agency stances on AIS may indicate.

Asian Carp Management and Control:

For the purposes of this document the term "Asian carps" refers to four species: Black Carp (*Mylopharyngodon piceus*), Bighead Carp (*Hypophthalmichthys nobilis*), Grass Carp *Ctenopharyngodon idella*), and Silver Carp (*H. molitrix)*. Feral Asian carps have established reproducing populations in several major rivers of the United States. Asian carps have the potential to cause extensive and irreversible changes to the aquatic environment, thereby jeopardizing the long-term sustainability of native aquatic species.

Recognizing the complexity of the Asian carps situation in the United States and that the potential magnitude of the problems were such that all stakeholders (i.e., private and public sector fisheries professionals, aquaculturists, aquatic ecologists, the public) must be involved in the development of an appropriate management plan, the US Fish and Wildlife Service and the Aquatic Nuisance Species Task Force organized an Asian Carp Working Group to develop a comprehensive national Asian carp management and control plan. The Asian Carp Working Group was a geographically and interest diverse consortium of 66 scientists, private farmers, policy makers, and others.

The Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States (Plan) is a nationwide, comprehensive management plan for the four species of Asian carps in the United States. (Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States, 2007, Asian Carp Working Group) The Plan contains information and important management recommendations to contain and control the spread of Asian carps in the United States and is considered an almost entirely comprehensive plan for managing Asian carps.

Due to the widespread distribution and migratory nature of Asian carps, coordination among federal and state agencies is vitally important for implementing the management and control strategies identified in the Plan. All agencies must look beyond their borders and management authorities to work together and develop the most effective approaches and regulations to manage and control Asian carps.

Partial List of Partners Involved in Asian Carp Management and Control:
Federal: USFWS, USGS, USEPA, USACE, USCG, NOAA, USDOT, USFS, USDA, NPS

Regional: Great Lakes Commission, Mississippi Interstate Cooperative Resource Association

State: State Fish & Wildlife Agencies, State Natural Resource Agencies, State Agriculture Departments

Local: universities and colleges, private aquaculture farms, commercial fishermen

Success/Strengths in Federal/State Coordination:

- State and local control efforts at removing Silver Carp and Bighead Carp show promise in distinct areas, but lack capacity in most.
- Local education efforts by state and local management programs can be effective. However, cross-jurisdictional coordination is limited and as a result, progress is slow.
- The comprehensive national Plan encourages creation of more focused regional plans and frameworks.
- Federal/State coordination and implementation of control strategies and communication efforts has been effective in the Great Lakes Basin. Control efforts in the Illinois River, specifically, have

been effective at preventing Silver Carp and Bighead Carp from moving into Lake Michigan, leading the way for work in other basins.
- Coordination and implementation of control strategies in the Upper Mississippi and Ohio River Basins has been initiated. Skeleton projects began in 2015.
- WRRDA (Water Resource and Research Development Act) funding commitment for the upper portions of the two sub basins (Ohio and Mississippi) has allowed the states (and USFWS) to initiate efforts to reduce the expansion up those river basins.
- States have done an excellent job of leveraging WRRDA funds with their own to increase control efforts.

Weaknesses in Federal/State Coordination:

- Current federal and state laws regarding Asian carps are fragmented and uncoordinated. Bighead Carp, Silver Carp, and Black Carp are designated as injurious wildlife species by the US Fish and Wildlife Service. Regulation of intrastate use and possession of the species is the responsibility of the states, and there is inconsistency among state laws and policies regarding Asian carps. For example, some states allow the stocking of diploid Grass Carp, some require the use of triploid Grass Carp, and some do not allow any importation of Grass Carp. Interstate and regional coordination is made difficult due to these differences in state priorities and capacities.
- Coordination of Asian carp control efforts, while increasing, is inadequate or nonexistent outside the Great Lakes Basin.
- Funding for Asian carp control actions at both federal and state levels is inadequate or nonexistent throughout most of the range of Asian carps, which includes the majority of the Mississippi River Basin.
- The combined WRRDA and state funding is inadequate for removing the carps in areas where their populations are currently low and in those areas where they are threatening aquatic resources.
- Several states have difficulty effectively utilizing additional funding that has been made available for Asian carp control (particularly as it pertains to increasing staff numbers).

Additional Obstacles:

- For implementation of the Plan to successfully prevent further introduction and spread and to reduce or eradicate populations of Asian carps, coordination of management and control actions among federal, state, and local entities is critical. A coordination structure for Asian carp management must be organized across the entire country.
- Lack of capacity and continuity at all levels (i.e., federal, state, local) affects the success of Asian carp control activities.
- No single control technique is available to eradicate or contain Asian carps once they become established. Effective, long-term control will require the development of various innovative methods integrated into a single program, similar to the integrated approach developed for sea lamprey control in the Great Lakes.
- Federal law and policies regarding aquatic invasive species as a whole do not provide clear authority or coordination among federal agencies. For example, federal agencies should have clear and understandable authority and resources to manage the movement of aquatic invasive species both onto and off of federal lands and waters. Federal efforts should complement and coordinate with current efforts by states to achieve common goals and objectives at the local, state, regional, and national scale.

Additional Finding:

- Funding of the National Plan is a critical component moving forward. Once that goal is achieved, the ACRCC (Asian Carp Regional Coordinating Committee) and MICRA (Mississippi Interstate Cooperative Resource Association) have already shown that the issues of communication and coordination can be overcome.

Greater Sage Grouse Conservation

Invasive plant species have degraded Greater Sage Grouse habitat by converting native perennial sagebrush ecosystems to exotic plant dominated systems over an 11 state range in the Western United States. This conversion has increased the frequency and intensity of wildfire (by increasing available fuel) which has further facilitated the spread and dominance of invasive plants (better adapted to fire) and concurrent loss of greater sage grouse habitat. Invasive plant control work by federal, state, and local governments and by NGOs and private landowners has been inadequate and fragmented as the rate of spread continues to outpace treatment efforts.

In 2013 the US Fish & Wildlife Service solicited the assistance of the Western Association of Fish and Wildlife Agencies to assess the challenges associated with control of invasive plants affecting greater sage grouse populations across their range. This summary attempts to capture the key findings of that final report as they relate to the task before our Federal/State Coordination Task Team (Reference: Invasive Plant Management and Greater Sage-Grouse Conservation: A Review and Status Report with Strategic Recommendations for Improvement, 2015, Western Association of Fish and Wildlife Agencies, Wildfire and Invasive Species Initiative – Working Group).

Partners involved in on-the-ground invasive plant efforts within the range of greater sage grouse:

Federal: USFWS, BLM, US Forest Service, USDA, USACE, NPS, DOD, Bureau of Indian Affairs, Bureau of Reclamation, NRCS, Federal Interagency Committee for Management of Noxious and Exotic Weeds,

State: State Agriculture Departments, State Fish & Wildlife Agencies, State Weed Control Districts, State Parks, State Natural Resource Agencies, State DOTs, Invasive Species/Plant Councils

Local: County Weed Programs, Cooperative Weed Management Areas (CWMAs)

NGO: NFWF, Private Landowners

Success/Strengths:

Local weed management programs conduct most of the on-the-ground weed control and public education throughout the 11 state range.

- State and local weed management programs conducting on-the-ground invasive plant control work are effective but lack capacity for widespread application.
- Local education efforts by state and local weed management programs can be effective, but lack cross-jurisdictional coordination
- Cooperative Weed Management Areas (CWMAs) and County weed programs can be highly effective at the local level but capacity and success is variable across programs.

Weaknesses identified in Federal/State Coordination:

- Legal Authorities:
    - Current overall law is fragmented and uncoordinated. Invasive species policy is a mixture of federal and state rules allocating responsibility to many different agencies/entities.

  - Federal law and policies do not provide clear authority or coordination among federal agencies.
  - NEPA can be arduous and prohibitive for large-scale management control.
  - Inconsistency among state and local laws and policies. Interstate and regional coordination is made difficult due to wide differences in state priorities, capacities, and jurisdiction.

- Federal invasive species research and management programs, if existent, are often uncoordinated and highly variable in structure, capacity and function.

- As scale of invasive species problem increases from local to statewide to regional to national level, so do the barriers which cause efforts to become fragmented, inconsistent and ineffective.

- Chronically inadequate funding investment at all levels.

- On-the-ground management and control conducted by different federal, state and local agencies and private landowners often with no shared goals, objectives or targets/benchmarks.

- On-the-ground work by County weed management programs and CWMAs is often diverted by contracts with state and federal agencies directing them to conduct work elsewhere (i.e. the addition of contracts with state and federal agencies does <u>not</u> result in more invasive control work getting done).

Additional Findings:

The WAFWA report broke this multi-state/landscape level invasive plant issue into four challenge areas (Information & Science, Leadership & Coordination, Policy & Regulation, and Operational Capacity). The following are those points <u>most relevant to the federal/state coordination charge</u>.

1) Information Management and Science Challenges:
    - Inadequate sharing of invasive plant data.
      - More than half (59.3%) of local, federal, and county managers are not satisfied with weed program performance on storing and retrieving spatial and treatment data in centralized databases.
      - Considerable disconnect between invasive plant researchers and practitioners as new techniques and tools are developed or proposed.
      - Lack of sharing data collected through existing mapping efforts.
2) Leadership, Coordination and Communications Challenges:
    - Government coordination and emphasis for invasive species management is and inconsistent at all levels (federal, state, local).
      - NISC has been unable to provide the necessary cross-departmental oversight to allow for coordinated federal implementation.
      - <u>The lack of a national or regional framework to address invasives consistently across political boundaries hampers the ability to be effective against invasive threats at multi-state/landscape scales.</u>

3) Policy and Regulatory Challenges:
    - Lack of effective legal and regulatory framework for invasive species management at all levels (Federal, State, and Local).

- Multi-state/landscape level invasive species problems require a coordinated effort across jurisdictions. Laws vary among states resulting in different priorities, regulatory and management approaches and funding and operational gaps.
- Lack of adequate or timely NEPA to support multi-state scale management.

4) Operational Capacity and Program Management Challenges:
    - Lack of capacity at all levels (federal, state, and local). Lack of capacity affects ability to maintain adequate pressure on infestations across jurisdictions and ownerships found at multi-state/landscape scale. Results in differing approaches between neighboring areas. Lose both continuity and accountability.
    - Lack of federal funding support transfers risk and responsibility to state and local governments.
    - Capacity challenges at all jurisdictional levels have impacts beyond control and management and include prevention efforts, EDRR, and habitat restoration. More than half of federal, state and local managers (64%) indicated significant weaknesses in the ability to effectively implement EDRR across a broad landscape.