

Landscape Conservation Collaboration

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INTRODUCTION

Across the United States and around the world, conservation organizations approach urgent conservation issues using a collaborative, cross-boundary approach. While some efforts have been in place for decades, the use of this approach has rapidly accelerated in the last decade. The approach has come to be called landscape conservation, large landscape conservation, or landscape level conservation. According to the [Network for Landscape Conservation](#), landscape initiatives are generally characterized by: 1) conservation of connected, healthy ecological systems; 2) use of science-based and culturally sensitive conservation planning; 3) collaborative network structure (formal or informal); and 4) meaningful multi-sector stakeholder engagement.

It has long been recognized that landscape conservation is needed because most fish and wildlife species occur and complete their life requirements in ecological systems that cross administrative boundaries. However, working at larger scales requires broader stakeholder engagement, effective communication, transparency and accountability. The best decisions about species or habitats occur when diverse stakeholders contribute to the understanding of the issues and actions taken.

Nationally, the US Fish and Wildlife Service (FWS) has supported landscape conservation principally through the Migratory Bird Joint Venture (JV) program, National Fish Habitat Partnership (NFHP) and Landscape Conservation Cooperative (LCC)s. Successful implementation of these partnerships has been challenging due to inadequate funding and other issues. More recently, regional fish and wildlife associations have emerged as conveners of landscape conservation through partnerships such as the Southeast Conservation Adaptation Strategy (Southeast), the Regional Conservation Needs program (Northeast), the Mid-America Monarch Strategy (Midwest) and the Crucial Habitat Assessment Tool (West).

Regional Associations have also engaged in landscape conservation to respond to proposed listings under the Endangered Species Act for species such as the New England Cottontail, Gopher Tortoise, Lesser Prairie Chicken and Greater Sage Grouse. Landscape conservation processes have been used to improve conservation for other species ranging from anadromous fish to large ungulates. State fish and wildlife agencies routinely use landscape conservation approaches within their state boundaries.

This white paper stemmed from a December 2017 joint meeting of the Executive Committee of the Association of Fish and Wildlife Agencies (AFWA) and the Directorate of the FWS that met to discuss landscape conservation and other issues related to the authorities and relationship between the states and the FWS. The discussion raised questions about the future of landscape conservation and the respective roles of states and the FWS in delivering landscape conservation.

During the meeting, Greg Sheehan, Principal Deputy Director of the FWS, asked the group to consider “what successful landscape conservation looks like” to help guide what approaches are needed and to overcome challenges to successful landscape conservation. Following the meeting, AFWA’s Wildlife

Resource Policy Committee was asked to form a working group that was charged to “examine existing landscape partnerships and review their governance structure, commonalities of success, approaches, partner roles, and other attributes and synthesize the information into a white paper that identifies key challenges and lessons learned”.

Individuals with diverse experience working on landscape conservation were asked to participate on the working group. Working group members agreed that the need for landscape conservation is great but that there are real challenges to successful implementation. Rather than focusing on defining landscape conservation, the working group agreed to identify the *challenges* and *elements of successful collaboration* through a review of regional landscape conservation partnerships. This white paper summarizes what was learned from those reviews.

REGIONAL LANDSCAPE CONSERVATION PARTNERSHIPS

Overview of the Northeast Region

The Northeast region includes thirteen states, the District of Columbia and seventeen federally recognized tribes. The region contains ecological and geographical diversity including pine barrens, forested wetlands, northern hardwood and conifer forests, high elevation spruce-fir forests, large bays, estuaries, beaches, coastal islands, salt marshes and major river systems like the Connecticut, Hudson, and Delaware rivers. These diverse ecosystems and habitat types support an equally diverse array of fish and wildlife resources. The region’s history is built around its rivers, streams, lakes and coast, and watersheds that help define the region’s landscapes.

The resources sustaining these species also provide essential benefits like clean water to the tens of millions of people who make their home in the Northeast. It is the most densely populated region in the country, yet it is a place where people and natural resources have long coexisted. The Northeast is a mosaic of communities, agricultural and forestry working lands, open spaces and protected habitats. Over 90 percent of the lands are in private ownership.

The Northeast states, FWS, and conservation organizations have a long history of working collaboratively. Over four decades ago, the Northeast Association of Fish and Wildlife Agencies (NEAFWA) created technical committees focused on deer, furbearers, bear, game birds, habitat and wildlife diversity to collaborate on addressing regional-scale conservation challenges. After the completion of State Wildlife Action Plans in 2005, states in the Northeast pooled 4 percent of their state’s annual State Wildlife Grant apportionment to address information gaps and develop tools to benefit multiple states across the region as part of the Regional Conservation Needs (RCN) program. This program allowed states to share the cost of large-scale conservation to reduce duplication of effort. LCCs became an extension of this approach in the Northeast.

The RCN program, Atlantic Coast Joint Venture (ACJV), New England Cottontail collaborative and North Atlantic and Appalachian LCCs were reviewed to identify challenges and successes to collaboration in

the Northeast. In addition, NEAFWA hosted a meeting for Directors and representatives from the US Fish and Wildlife Service on February 22, 2018, to discuss successes, strengths, weaknesses and obstacles to landscape collaboration to help inform the review of Northeast partnerships.

Key Drivers for Landscape Collaboration

Key drivers for collaborative conservation in the Northeast range from issues concerning migratory species spanning multiple jurisdictions (i.e. ACJV), the desire to preclude listing under the Endangered Species Act (i.e. New England Cottontail), cooperatively developing and sharing information and approaches on similar species and management challenges (i.e. Regional Conservation Need program) and developing a regional approach and tools for landscape-scale conservation for multiple scales and species such as Species of Greatest Conservation Need (i.e. LCCs). These collaborations have been effective because they:

- drive collaborations for species that range across the region;
- provide opportunities to save money and staff time;
- allow the development of consistent approaches and information sharing; and
- address joint challenges that each or several states are facing.

Each of these responsibilities, opportunities and challenges drive the need to collaborate, and also can define the form of collaboration that is necessary.

Challenges to Collaboration

Defining boundaries for landscape conservation partnerships that don't reflect the goals of the collaboration can serve as a barrier to success. The initial boundaries drawn for LCCs in the Northeast cut across states, creating operational hurdles to participation. The North Atlantic LCC overcame this challenge early on by centering its work on the entire Northeast region.

Inviting a large number of diverse partners to the collaboration table can result in "dilution of purpose". Partners can enter a partnership with differing expectations, needs, authorities and resources, which can hinder a collaborative effort. In addition, all partners do not share equally in their authorities and responsibilities. The states and the FWS have unique authorities and responsibilities designated in law that separate them from other partners. A strong peer-to-peer relationship between the states and FWS is important to ensuring the right priorities and approaches are pursued and that states see relevancy in the partnership. Another challenge in the Northeast is the difficulty in developing conservation tools that are equally useful to all states since needs and capacities differ.

Large geographies and multiple political jurisdictions can make communication challenging. Keeping State Fish and Wildlife Agency Directors well informed and supportive of landscape conservation efforts can be difficult and the communication loop between partnership staff, state agency staff and state Directors is hard to sustain. Despite considerable effort, some leaders felt that their voice was not always heard, which limited their support for some landscape conservation partnerships.

Meeting fatigue was also a challenge in the Northeast. Although, regular meetings are paramount to sharing information and developing tools, participants often wanted to “get going” with on-the-ground conservation. On-the-ground conservation was not part of the purpose of LCCs, yet conservation delivery can help sustain long-term collaboration. The states play a central role in implementation of conservation actions, so respecting agency responsibilities and authorities for implementation as well as planning is critical. Structuring partnerships that can address the relationship between planning at the regional scale and implementation by participants can be a challenge.

Successes and Strengths of Collaboration

The long history of collaboration in the Northeast set the stage for and made the transition to landscape conservation collaboration easier and more successful. Over 35 state, federal, tribal, and non-governmental organizations (NGO) partners regularly participate in Northeast partnerships. For example, the work that the North Atlantic LCC took on complemented and added capacity to the established RCN program. The LCC supported the RCN program by contributing science and combining habitat information for regional Species of Greatest Conservation Need (SGCN). This allowed State Wildlife Action Plans to be seamlessly knit together across the Northeast region, the only region to date that has done that. The LCC partnership supported work by the US Geological Survey (USGS) and the National Oceanic and Atmospheric Administration (NOAA) to downscale climate information and conduct species climate vulnerability assessments for the region. The LCC also developed a region-wide conservation design approach with states that connected species priorities, the best habitats, and resilience.

The added capacity provided by partnerships for modeling, information collection and sharing and development of tools would have been difficult and expensive for any individual state fish and wildlife agency to take on themselves. A single-state approach could also result in gaps or inconsistencies that would not allow for that work to be used across the region. Landscape conservation partnerships have developed a set of comprehensive habitat, species and climate data and modeling tools that are available to all states, federal agencies and conservation partners and can align conservation priorities across organizations and the region.

The regional focus and responsibilities of the FWS allows it to facilitate a regional approach that benefits states in the Northeast and meshes with the responsibilities of NEAFWA. A strong relationship between the states, FWS and the Wildlife Management Institute (WMI) allowed WMI to play a key role that improved efficiency and assured accountability.

Collaboratives in the Northeast have worked to connect each state’s Wildlife Action Plan by species, habitats and focus areas across the entire region. In addition, the Northeast has worked across state lines to improve connectivity by addressing hydrologic and aquatic barriers.

Sound processes and strong governance structures are a key to success in the Northeast. The ACJV is driven by consensus and stakeholder buy-in. Partners from across the ACJV feel well-represented and engaged and there is a strong sense of ownership of the process and priorities which allows the ACJV to engage in policy work and address technical issues. A dedicated coordinating body and sustainable

funding through the FWS is essential to the success of the ACJV, something partners do not have capacity to do on their own.

Summary and Conclusions

When done correctly, landscape conservation initiatives are an important tool in conserving fish and wildlife in the Northeast. They can make significant contributions to the science of fish and wildlife conservation, which can benefit fish and wildlife agencies and stakeholders. NEAFWA is committed to continuing the use of landscape conservation as an appropriate model for large-scale, complex, inter-jurisdictional management actions to achieve regional conservation objectives. This approach is also appropriate at even larger, multi-region or national scales.

In all the partnerships that were reviewed, federal and state fish and wildlife agencies were key stakeholders along with certain non-governmental organizations (NGOs). For this reason, it is vital when a landscape conservation partnership is being considered, that those key stakeholders be involved at the earliest conceptual stage. The failure to include state fish and wildlife agencies in the development of LCCs was a flaw, and is a prime example of how not to initiate landscape conservation.

Policy-level participation needs to include directors of state fish and wildlife agencies since in most cases they have the legal authority to implement management actions. Successful landscape conservation includes a strong and effective policy-level governance structure with technical/management staff who can help implement conservation. An effective and continuous feedback loop from top-to-bottom and bottom-to-top is important.

State fish and wildlife agency policy-makers need to ensure that management staff are actively engaged in the design and implementation of management actions to ensure a strong commitment to success. Landscape conservation is most effective when very specific conservation objectives are identified (e.g. secure populations of New England Cottontail) and is less effective when the objectives are overly broad.

Strong coordination of landscape conservation initiatives is essential. This means dedicated personnel within one or more of the collaborating entities must be assigned to lead planning, communication, evaluation and implementation. In the case of LCCs and JVs, the assignment of FWS staff to a coordinating role has been invaluable and was appreciated by the states. The inclusion of a third party (i.e. WMI) served a vital role in the success of the RCN and New England Cottontail Project. NEAFWA is on record supporting the on-going science capacity and funding of LCCs but acknowledges that changes are needed to make this partnership stronger in the future.

During the review of landscape conservation partnerships, eight best practices were identified that are incumbent to successful landscape conservation in the Northeast. The best practices draw a distinction between key collaborators (i.e. state fish and wildlife agencies and federal agencies) and appropriate cooperators such as NGOs.

Best Practices for Landscape Conservation in the Northeast

1. Key collaborators, state fish and wildlife agencies and federal agencies must be considered as equal partners at the earliest stages of landscape conservation planning.
2. Appropriate cooperators, NGOs and others should be brought into the planning process only after the key collaborators with management authority have agreed on a preliminary framework for landscape conservation.
3. Specific conservation outcomes/objectives must be agreed to and remain the focus of landscape conservation. Every effort should be made to be as clear and specific as practical when these objectives are identified. To the degree possible, outcomes should be measurable.
4. Achieving on-the-ground conservation is critical to the success of any landscape conservation effort. Implementation needs to be considered and planned from the outset.
5. Landscape conservation by its very nature is large and complex. To that end, a centralized coordination function is required. Key roles for coordination include communication, implementation of conservation actions and evaluation. Those coordinating staff could be placed within appropriate federal agencies, a state fish and wildlife agency, or a non-governmental partner, as appropriate.
6. A strong governance model is required, with a policy-level “steering committee” or board that includes the directors of state fish and wildlife agencies and leaders of federal agencies, and the assignment of technical/management personnel to implement conservation actions. Communication from top-to-bottom and bottom-to-top must be continuous.
7. Large and complex landscape conservation efforts may need to periodically focus, or scale back, their scope in order to achieve priority objectives.
8. Reassessment must be mandatory and regularly scheduled. There must be a regular process to assess the effectiveness of landscape conservation, and when inefficiencies or mission creep are identified, this must be corrected. In some cases, a thorough “re-boot” may be appropriate and encouraged by the management authorities. No landscape conservation initiative should be considered as a permanent, on-going entity.

Overview of the Southeast Region

The Southeast region includes 15 states and the Caribbean territories of Puerto Rico and the US Virgin Islands. It is home to approximately 129 million people, and is the fastest growing region of the United States. By 2060, growth is projected to increase to 163 million people.

Ecologically, the Southeast is rich in biodiversity. A total of 6,682 Species of Greatest Conservation Need (SGCN) have been identified in State Wildlife Action Plans. Currently, over 300 species are being evaluated by the FWS for possible listing under the Endangered Species Act. A large percentage of SGCN and at-risk species are aquatic. The Southeast is considered to be a global hotspot for aquatic biodiversity. Over 1,800 species of fishes, freshwater mussels, freshwater snails, turtles and crayfish can

be found in Southeastern watersheds. More than 500 of these are endemic to these states or in individual watersheds within them. More than 70 major river basins in the region link with the South Atlantic-Gulf of Mexico coastline to nourish and support rivers, streams, lakes, bays, estuaries, reservoirs and the bulk of the country's wetlands. The drainage basin for the Gulf of Mexico, which includes the area drained by the Mississippi River, includes almost 60 percent of the land in the Continental US. Over 50 percent of coastal wetlands in the lower 48 states are found in the region.

The Southeast is home to important forest resources, including longleaf and shortleaf pine, coastal forests, bottomland hardwoods, upland and mixed hardwood forests and high elevation montane forests. These forest systems support a broad diversity of plant and animal life, provide critical protection to surface drinking water and support a thriving timber products industry. The majority of the forestlands in the 13 Southeastern states are privately owned, with two thirds owned by families or individuals. In the last 20 years, the forest products industry has divested more than three fourths of its forestland holdings, with timberland investment management organizations and real estate investment trusts acquiring the majority of these lands. An important landscape conservation issue for the future is how these lands will be managed, and how future land transactions will affect not only the forest products industry, but wildlife conservation as well. It's projected that by 2060 up to twenty-three million acres of forestlands (the size of the state of South Carolina) could be lost as a result of forestland conversion to urban and non-forested land uses.

The Southeast has 2,942 miles of coastline, including both the Atlantic Coast and Gulf of Mexico. NOAA estimates that Southeastern states have more than 35,000 miles of tidal shorelines. These coastal resources are a source of great ecological and recreational value for American citizens. They are also severely threatened by anthropomorphic pressures such as overdevelopment and energy extraction, which has resulted in enormous loss of coastal natural features, such as tidal marshes, coastal lakes, and beaches and dunes. The Southeastern coastlands are also threatened by sea level rise, and increasingly strong hurricanes and tropical storms.

Southeastern grasslands, including prairies, savannahs, barrens, and other grassland ecotypes, have suffered major habitat losses in the last 50 years. These losses are correlated with accompanying declines of grassland-dependent wildlife species. Iconic game species such as the Northern bobwhite have experienced population declines exceeding 90 percent in many Southeastern states, and nearly one-third of all rare Southeastern land vertebrates require or prefer grasslands.

The Southeast has a rich culture of hunting, fishing, wildlife watching and many other outdoor-related activities, including boating, camping, kayaking, sailing, hiking, etc. These outdoor recreational pursuits strengthen the region's economy, generating billions of dollars in expenditures on an annual basis, and supporting state and local government operations through various tax revenues. In addition, commercial harvest of fish and other marine species in coastal and marine environments is an important economic driver for both the Atlantic and Gulf Coasts.

The Southeast is also important for national security. The Department of Defense (DOD) operates numerous military installations across the region, where training of our nation's military forces occurs. For many of these installations, training needs go beyond the installation boundaries, and issues of urban encroachment on training grounds, including aerial training routes at night, have become a pressing need. To mitigate these pressures, DOD has worked with conservation organizations to implement programs to conserve landscape features outside of military installations. Approximately 50 installations in the Southeast have participated in DOD's Readiness and Environmental Protection Integration Program, conserving hundreds of thousands of acres. Three of the seven nationally recognized Sentinel Landscapes are located in the Southeast (NC, GA, and FL). These landscape conservation programs provide win-win outcomes for both fish and wildlife conservation and our country's national security needs.

Five partnerships were reviewed for this white paper including the ACJV, Appalachian LCC, Southeast Aquatic Resources Partnership, Longleaf Alliance, and Southeastern Conservation Adaptation Strategy, to identify drivers, challenges and successes.

Key Drivers for Landscape Conservation

We recognize four over-arching drivers that should be addressed through multiple scales of landscape conservation partnerships. The expansion of the urban footprint of the Southeast is projected to more than double by 2060. Urbanization will not occur evenly across the region, but instead will be concentrated around existing metropolitan and suburban areas. Habitat fragmentation and loss of habitat connectivity will be major consequences of continued urbanization and incidences of human-wildlife conflicts will likely increase.

The availability of water, and its potential reallocation to meet the needs of growing human populations, urban environments, industrial and agricultural uses, is a concern for the conservation of the region's aquatic resources, many of which are at risk or imperiled. Water allocation and management in the Southeast is complicated by the multi-state jurisdictions over major river systems and the fact that state fish and wildlife agencies do not have the authority to manage stream flows or water usage.

According to the Southern Forest Futures Project, it is projected that 23 million acres of forests could be lost by 2060 due to increasing human populations and urbanization. These forest losses will impact forest species of conservation concern, especially in the coastal plains and the Appalachian-Cumberland sub-regions. Additionally, increased carbon emissions, decreased ability to protect freshwater supplies, a longer and more intense wildfire season, and additional stresses to other forest resources, are anticipated over the next 40 years. Population growth in the south will also put greater recreational demands on existing public forestlands.

Sea level rise is impacting and will continue to impact coastal areas along the Atlantic and Gulf Coast regions in the Southeast. In Louisiana, sea level rise combined with coastal subsidence, is resulting in massive losses of coastal marshes and wetlands. As sea levels rise, coastal wetlands will migrate inland,

causing flooding and increased storm hazards for coastal communities. The USGS has developed predictive models on where coastal wetlands are likely to migrate, and The Nature Conservancy is working with conservation partners and coastal communities to mitigate these impacts through more effective natural landscape protections in flood prone areas.

Challenges to Collaboration

In the Southeast, ensuring that all relevant organizations are invited and contributing to a partnership can be challenging. Active participation and buy-in by state fish and wildlife agencies and federal land management partners is a primary key to success, but can be difficult to achieve and maintain. Likewise, it is important that there is an understanding by all partners that these agencies have unique responsibilities and authorities, which make it essential for them to be at the table and contributing. Turf issues and personality conflicts can jeopardize partnerships and be difficult to overcome.

Partnerships that did not share a common vision struggled until a shared vision was agreed upon. Deciding on scale of a landscape conservation issue and how to scale up and down when needed and who the right partners are is also a challenge. Challenges stemming from participation such as partner fatigue (i.e., too many stakeholder initiatives and not enough staff resources to participate) were also cited as important. All the case studies acknowledged that working across partnerships was important but sometimes occurred minimally or was prohibited due to lack of staff capacity.

Formal performance metrics and strong evaluation processes were recognized as important elements of successful partnerships, but are challenging to develop, and not always a priority in the beginning stages of a collaborative effort. Partnerships should spend adequate time developing appropriate performance measures, agreed to by the partners so that progress can be measured and communicated.

Adequate and sustained funding is a challenge to forming and sustaining strong partnerships. Funding sources must be identified, advocated for and developed to implement conservation strategies. Ideally, funding should come from diverse sources, and should include in-kind resources. All partners should contribute and be recognized for their contributions including but not limited to expertise, office space, funding, or staff coordination capacity. Partnerships without diverse funding had greater challenges in maintaining viability and enthusiasm.

Successes and Strengths of Collaboration

Dedicated support staff and an effective governance structure serve as the “backbone” of a functional partnership. A coordinator and dedicated staff are essential to maintaining the viability and smooth operation of partnerships. All five Southeast case studies identified this as a critical component of their partnership’s success.

Effective partnerships also need a governance structure that is inclusive of state, federal and NGO partners but also recognizes the authorities of the partners. Effective partnerships do not seek to go beyond partners’ explicit authorities, but instead finds common ground where partners can work

together in a collaborative framework. Being adaptive and having strong partnerships and state-based engagement are keys to success. Sharing a common vision, purpose or strategic focus is also viewed as essential to a successful partnership.

Other elements that are important to the success of large-scale collaborative partnerships include coordination with existing partnerships, creation of a common and accessible comprehensive data management system, a performance evaluation framework and communication of successes and benefits of the partnership to internal and external audiences. The use of human dimensions and communication planning can incorporate more rigorous and scientific strategies into outreach.

Although working across large landscape scales is challenging, establishing priorities and a shared vision helped overcome that challenge. Related to having a shared vision, all the cases cited “shared planning” as essential. No single entity within the partnership should conduct planning in isolation.

For landscape scale conservation, good science is considered to be essential to effective decision-making and filling gaps. Rather than a one-off list of research studies, the most useful approach was found when the guiding body directed systematic and sequential science and tool development that incorporated stakeholder input and met important needs.

Summary/Conclusions

The challenges of conservation in the 21st century require collaborative approaches to be successful. The partnerships we consulted all recognized that the issues they work on transcend political and jurisdictional boundaries and require a multi-organizational conservation approach to be successful. Most of the major landscapes and aquatic habitat systems in the Southeast cross state lines, making it necessary to develop multi-state strategies to achieve common conservation goals and landscape sustainability. Each partnership was made up of organizations from multiple state and federal agencies and NGOs.

The Southeast has numerous partnerships dedicated to conservation. Most have restrictive reaches, either geographically, taxonomically, or temporally. While this is not necessarily a good or bad thing, recognition of the scale of the partnership’s mission and vision is an important prerequisite to effective outcomes. In at least one case (i.e. Atlantic Coast Joint Venture), the focus of the partnership was narrowed to a limited number of species and one habitat system.

The “backbone” to a successful partnership is coordination. Partnerships examined in the Southeast universally agreed that having a coordinator was essential to maintaining the partnership and ensuring its success. SECAS was the only partnership reviewed that provides an overarching approach to landscape conservation in the Southeast. The partnerships we reviewed are each effective in their own right, and it is important to recognize geographic and taxonomic scale in evaluating the success or lack thereof of a specific partnership. We see SECAS as an overarching framework that can both incorporate the objectives of more narrowly focused conservation partnerships, and provide a larger context for

those partnerships to align their objectives and goals.

One particular challenge to maintaining the viability of SECAS will be restructuring its organizational framework. To date, SECAS has relied on LCCs and the Southeast Climate Science Center for funding, science capabilities and partnership forums. However, under new direction from the Department of Interior (DOI), LCCs are transitioning into new arrangements or are disassembling. During this uncertain time period, it is challenging to determine how best to provide the components of an effective partnership to sustain the vision of SECAS. In the Southeast, the FWS is exploring avenues of continuing their participation in SECAS by working more directly with the states to help integrate State Wildlife Action Plans across state jurisdictions and with the SECAS Blueprint. As a state-led initiative, SECAS provides a unifying framework for aligning conservation actions with state priorities, as well as incorporating FWS, DOI, and other federal interests through the Southeast Natural Resource Leaders Group.

Overview of the Midwest Region

The Midwest Association of Fish and Wildlife Agencies (MAFWA) includes the states of Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, three Canadian provinces, and all or parts of FWS Regions 3, 4, and 6. The land formations and ecoregions vary from grasslands and prairies to forests and major lake and river systems. As the heart of the Corn Belt, the majority of the land is in private ownership and is used for agriculture and livestock production. Silvicultural and energy production are other important landuses. Outdoor recreation tourism is important recreationally and economically.

A wide diversity of fish and wildlife, including migratory species, are found in the Midwest. Since there is a relatively small percentage of dedicated conservation land, most of the land has been converted to intensively managed and cultivated landscapes, impacting habitat for resident and migratory species. The conservation of fish and wildlife is largely dependent upon the support and participation by private landowners in partnerships with state, federal and local organizations. Collaboration across geo-political boundaries, industry sectors and interests is important to aligning conservation where it is feasible.

Four partnerships were reviewed in the Midwest. The Mid-America Monarch Conservation Strategy is a coalition of states and other organizations working to benefit monarch butterflies across their range. This partnership is governed by a board made up of state fish and wildlife agencies and several ex officio members. The Missouri Comprehensive Conservation Strategy is a process that informs decision-making by identifying areas that offer the greatest opportunities for sustainable conservation within Missouri. The Sandhills Task Force is a local organization governed by ranchers, livestock organizations, state and federal agencies and NGOs that discusses issues and concerns in Nebraska's Sandhill region and promotes projects that help sustain livestock and wildlife. The Upper Mississippi River Restoration Project is a partnership led by the Army Corps of Engineers and USGS to meet legislatively mandated habitat and navigation goals and inform management.

Although numerous other landscape-level partnerships exist in the Midwest, such as LCCs, JVs, and NFHPs, the review was limited to collaborations unique to the region and to specific scales and systems. The Great Lakes Commission was discussed but was not formally reviewed.

Key Drivers for Landscape Conservation

The review of partnerships revealed that there were several primary drivers that led to landscape collaboration in the Midwest. The principal driver for creation of the Mid-America Monarch Conservation Strategy was the need to respond to a potential federal Endangered Species Act listing. The partners aligned around the goal of identifying and/or providing voluntary conservation to avoid the need to list. Funding prioritization and project identification were the genesis for the Missouri Comprehensive Conservation Strategy and the need for conflict resolution, trust building and project prioritization led to the formation of the Sandhills Task Force.

Challenges to Collaboration

Several challenges to successful landscape conservation collaboration were identified in the Midwest. Foremost was the challenge that some impacts to fish and wildlife are so big or outside the control of the conservation community that finding a solution or common ground is not possible. Conflict among partners or individuals is an important challenge that can prevent collaboration from happening or cause collaborators to withdraw or cease participation if it goes unresolved. Insufficient or reduction in funding for landscape conservation is another key challenge in the Midwest. Heavy workloads and lack of time by key stakeholders can lead to “meeting fatigue”. Uncommon interests by partners is another barrier to collaboration in the Midwest.

Successes and Strengths of Collaboration

One key element of success is a shared vision or agreement by a partnership that a problem exists and can or needs to be solved. A shared vision, mission and goals can orient a group in a common direction and result in a shared purpose. If there is confusion on direction or if there are rapidly changing goals, partners will fall away from the process, impeding work and promoting apathy.

Agreeing on a set of priorities, particularly if they are informed by State Wildlife Action Plans or other conservation plans, like the North American Waterfowl Management Plan, is important to the success of a partnership. The Mid-America Monarch Conservation Strategy relied on the plans of individual states but was also informed by science from the FWS and USGS. The Sandhills Task Force created its own strategic plan but utilized the Nebraska State Wildlife Action Plan, FWS Partners for Fish and Wildlife Program Strategic Plan, North American Waterfowl Management Plan and the Rainwater Basin JV implementation plans to help establish priorities.

Agreement on science needs and questions is also a key to success. In some cases, existing science was available, in other cases the partnership acquired the science. The ability to secure funding through grants or partner contributions was critical. In the case of the Upper Mississippi River Restoration Program, the greatest need was long-term research and monitoring. In Missouri, the partnership is

working to develop a landscape health index through rapid assessments to monitor progress in achieving a future desired condition.

Thoughtful consideration of partnership boundaries is another key to success. In the case of the Mid-America Monarch Conservation Strategy, the boundary was based on the range of a species. Boundaries used for the Missouri Comprehensive Conservation Strategy were based on ranking criteria and GIS analysis that included many factors. The Sandhills Task Force established its boundary based on ecoregion and landform. The boundary of the Upper Mississippi River Restoration Project was established legislatively.

A clear point of contact and coordination is an ingredient of successful partnerships. Landscape scale work is complex, requires the involvement of many partners and organizations, and must have a coordinator. A coordinator can help participants see progress, be an arbitrator when disagreements arise and steer the ship when course corrections are needed as priorities or conditions change. Under poor coordination, factions can form, leading to work diversion and distraction that can compromise the goals of the partnership. When this happens, partners will disengage, leading to work disruption.

A sound organizational structure with the right people and processes in place is essential to achieving goals and defining roles. When roles are well-defined, engagement by partners is higher, teams function well, tasks are accomplished and disagreements are overcome. An organizational structure can guide who has the appropriate authority to make timely decisions and manage teams so those with the right skill sets are doing the work. The partnership organization must be seen as credible. For example, the Sandhills Task Force was well known and respected both within and outside the geography in which it works.

Two other keys to success include access to the participant's time and reliable funding. Both are needed to accomplish goals, fill data gaps and employ adaptive management. When time and financial resources are scarce, interest and participation in the partnership can wane. In addition, successful partnerships clearly define outcomes, measure progress and show success. The use of metrics can be important to communicate how partners are contributing and how credible the partnership is. In the absence of well-defined outcomes and progress, support by partnership leaders will diminish.

Summary and Conclusions

There are large-scale challenges to healthy fish and wildlife in the Midwest that no one single state can tackle alone. Landscape conservation collaboratives provide space to convene, discuss, plan and implement work to meet shared priorities. Fear and opportunity often bring people to the table and landscape conservation can serve as a means to resolve conflict but also provides a forum to bring diverse partners (e.g. agriculture and energy sectors) together to collaborate.

Despite the many challenges of working at landscape scales (e.g. partner fatigue, conflict, lack of funding and capacity, etc.) we can point to successes. When there is common purpose such as preventing the

listing of the monarch butterfly or shared priorities such as implementing State Wildlife Action Plans, partnerships can take root and flourish. Partnership boundaries can be relatively small (i.e. Nebraska Sandhills region) or expansive (i.e. Upper Mississippi River Restoration Project), but critical factors such as agreeing upfront on those boundaries and considering capacity for coordination, funding and organizational structure at the onset of partnership development, can help ensure success.

Overview of the Western Region

The Western region is the largest of the four geographic areas being evaluated in this white paper, and includes nineteen states, three Canadian provinces and one Canadian Territory. It is characterized by expansive landscapes that fall under a myriad of ownerships and jurisdictional authorities. Some western states are comprised of almost entirely federally-administered lands while others are nearly all private in ownership. Most western states also contain some smaller proportions of land owned by the state or administered under tribal authorities. Although similarities exist between some, there is no standard model of land ownership or jurisdictional authority that shapes collaboration in landscape conservation efforts throughout the Western region.

Ecologically the Western region is diverse and includes, but is not limited to marine environments, coastal rain forests, deserts, riverine systems, coniferous forests, sagebrush steppes and alpine mountain tops. The Western region is immense in size and ecological diversity. The plant and animals species occupying the Western region vary considerably in their ecological distributions and requirements. Home range size, distribution, density, and life history of plants and animals vary considerably and are important factors in determining landscape conservation collaboration in this region.

The unique combination of highly diverse ecosystems and vast landscapes, coupled with complex and different jurisdictional authorities, highlights the importance of scale. Collaborative conservation efforts in large landscapes often contain a broad range of stakeholders who, across large geographies and sparsely populated areas, struggle to find efficient and effective engagement opportunities that do not require extensive travel and time. The multiple-use mandate of some federal land management agencies can further exacerbate the challenges of adequate stakeholder representation as the numerous issues naturally invite many and varied perspectives.

The Western region's geographic, demographic, political, and ecological uniqueness is evident in the elements of collaboration challenges as well as in the elements of collaboration successes. Thirteen landscape conservation partnerships were assessed, including two LCCs, two JVs, and nine state-led or state-engaged partnerships.

Key Drivers for Landscape Conservation

Drivers provide the catalyzing energy for landscape conservation. A principal driver in the West is threats from new or potential federal Endangered Species Act listing and the need to collaborate on recovery of species that have already been listed. Other drivers include desired regulatory certainty for

industry, land or water use conflicts, the health of fish and wildlife and economic sustainability of rural communities. These drivers are not independent of one another and multiple related drivers often serve as the basis for collaboration.

Challenges to Collaboration

Landscape conservation collaboration challenges are numerous and appear to have a multiplicative effect as they can cascade when present in a partnership effort. Many existing partnerships can reference a small number of key challenges that previously or presently existed. Partnerships in which several key challenges remain without successful resolution will at best be ineffectual and at worst fail and disband.

Challenges to initiating landscape conservation can include the lack of a clear catalyst to bring people together, lack of inclusion of all affected or interested stakeholders and political resistance from key people with heightened and imbalanced influence or authority. Partnerships that can address these issues early on are much more likely to be successful. The lack of involvement by states in directing LCC design and roll out led to initial mistrust and concerns by states about capacity going towards FWS-led efforts rather than those of the states further diminished support.

Maintaining an effective partnership relies on overcoming a different set of challenges such as resistance to alternative perspectives, lack of structure or coordination, lack of funding, lack of co-produced and co-supported actionable science, lack of clear objectives and lack of a strategy and meaningful actionable tasks. These challenges can be exacerbated by high rates of personnel turnover, intermittent partner engagement, disproportionate levels of responsibilities which can foster resentment, and selection of an inappropriate scale for the collaborative. Scale must match species attributes, jurisdictional authorities and interests of stakeholders while simultaneously having the appropriate scope to achieve identified objectives. Furthermore, partners must commit to and trust the collaborative will of the partnership.

Conservation delivery through a landscape conservation collaborative can also have challenges. A lack of monitoring or monitoring the wrong things can limit opportunities to evaluate success or determine failure and limits the ability to use adaptive management. Not unrelated to the challenge of inadequate or inappropriate monitoring is the challenge of stakeholder unwillingness to own outcomes, particularly when immediate success is not demonstrated.

Successes and Strengths of Collaboration

The West is characterized by multiple land use mandates, diverse stakeholders, and a strong commitment to State rights. As such, landscape conservation partnerships in the West, perhaps more so than in other regions, must bring together diverse perspectives and forge a shared vision. Partnerships with fish and wildlife management objectives must involve leadership by state fish and wildlife agencies and participation by key stakeholders such as federal agencies, NGOs, private landowners and industry. The success of the Playa Lakes Joint Venture (PLJV) and Intermountain West Joint Venture (IWJV) grew

out of a high level of initial involvement and investment by state fish and wildlife agencies. This played a key role in the formation, maturation, and evolution of the partnerships. Likewise, the Western Native Trout Initiative and Lesser Prairie Chicken Range-wide Conservation Plan were built through early involvement and support by state fish and wildlife agency leaders through WAFWA.

These and other successful landscape conservation collaborations in the West share a set of unique elements. Although one or more elements of success may be absent from a successful partnership, these shortcomings can be offset by other elements. A key determinant of success is the willingness of individual partners to find common ground and form strong and resilient relationships. Successful partnerships, while created to address challenging natural resource issues, often spawned lasting personal friendships built on trust and honesty. Although difficult to quantify, the importance of human relationships should not be underestimated. Successful landscape conservation partnerships in the West share a clear and compelling need, vision, shared priorities, catalyst, sense of urgency, reasonable timeline, inclusiveness and political support from key influencers or authorities.

Maintaining an effective collaborative partnership relies on a different set of elements that includes group evolution toward a shared motivating value and unifying theme, clear and transparently defined roles and responsibilities with assignments matching appropriate levels of authority or expertise, financial support, co-produced and co-supported actionable science, well-identified objectives, clear strategy to achieve objectives, and meaningful actionable tasks. Other important elements include consistency in leadership or an issue champion, consistent participation, shared and equitable levels of responsibilities and selection of an appropriate scale for the collaborative. Scale must be matched to species attributes as well as jurisdictional authorities and interests of stakeholders, as noted in the challenges above.

Successful conservation delivery through a landscape conservation collaboration should include monitoring to evaluate success or determine failure with appropriate management and decision-making in response. In successful partnerships there also appears to be a high degree of willingness to own the outcome, whatever that may be. Successful landscape conservation partnerships transparently monitor progress toward clearly defined objectives and are willing to accept and own outcomes.

Summary and Conclusions

It is likely that the single most important factor affecting the success or failure of the thirteen landscape conservation partnership we evaluated lies neither in the words “landscape” or “conservation” but rather “partnership”. Challenges and successes can all be addressed through structures, gestures and actions focused on building or strengthening relationships. The elements that most effectively build trust and collaboration are clearly some of the most essential in landscape conservation partnerships. Critical to trust and relationship building is the need to be inclusive and involve scale-appropriate groups that represent affected or interested stakeholders. Other elements include trust-facilitated group evolution towards unifying themes, clear expectations through well-defined objectives, co-production of actionable science, shared implementation through leveraged responsibilities, persistent political and

financial support, consistency of engaged personnel, an issue champion, joint and equitable ownership of actions and outcomes and appropriate monitoring and adaptive responses. Successful partnerships evolve out of a clear need, shared vision, and a strong commitment by partners to coordination, communication, and lasting relationships. The take home message in the West is that future successful landscape conservation collaboration will be built on a continued focus on effective relationships.

DISCUSSION

The approaches to landscape conservation varied substantially among the four regions. In the Northeast, long-established relationships and participation in regional planning for species and habitats made the assimilation of LCCs easier and more successful. LCCs in the Northeast complemented and supported region-wide planning and conservation delivery and built a foundation for LCC leadership in building a shared, multi-species, regional conservation design. Landscape conservation in the Northeast was not without challenges. A willingness to be flexible (e.g. realign LCC boundaries to NEAFWA boundaries), use the capacity of partners like the Wildlife Management Institute to provide capacity for the RCN and the ability to refocus and narrow priorities (i.e. ACJV) were important adaptations that help make landscape conservation collaboration successful.

In the Southeast, SEAFWA has been the convener of region-wide planning aimed at developing a shared future desired condition for the landscape that partners can implement through their delivery mechanisms and authorities. The Southeast Conservation Adaptation Strategy provides the larger context for partners to align their goals and objectives. Coordination, capacity and funding from the LCCs and Climate Science Centers provided critical science and forums for collaboration that contributed to the initial success of SECAS. However, future budget uncertainties are creating new challenges that could threaten the sustainability of the initiative.

In the Midwest, a shared vision to take action to conserve the monarch butterfly catalyzed MAFWA to collaborate with the FWS and other partners to develop a landscape conservation strategy. Key to this effort was funding for staff capacity from the FWS and partners and the appointment of FWS personnel with a strong understanding of and relationship with state fish and wildlife agency leaders. Expansion of this collaborative approach to address other challenges in the Midwest could be a natural next step.

In the West, landscapes are expansive, where single states are larger than some entire regions of the US. In addition, a high percentage of federal ownership and complex endangered species issues presents unique challenges and approaches to landscape conservation. WAFWA has taken a prominent role in planning and conservation for iconic species such as Lesser Prairie Chickens and Sage Grouse. Unlike in other geographically smaller regions, FWS-led efforts like LCCs were not universally seen as relevant or needed to meet state priorities.

Drivers are the catalysts that initiate landscape partnerships. The principal drivers cited in the regional reviews included federal Endangered Species Act listing, conflict resolution and largescale threats to fish

and wildlife like habitat loss, water availability, climate change and sea level rise. The need for project prioritization and industry regulatory certainty were also cited as drivers. Drivers can spur action that is reactive or proactive to an issue.

Drivers may initiate the development of a landscape conservation collaborative, but other factors such as the desire for capacity often enhance the need. These capacities include the need for science, information collection and sharing, modeling, tool and database development, coordination and communication strategies. Many of these would be unattainable or overly burdensome for a single agency or partner to do on their own.

The nature of landscape conservation demands collaboration and coordination over a large scale. There can be inherent complexities such as land ownership that is heavily weighted towards federal or private ownership, multiple jurisdictions of authority, vast and ecologically diverse landscapes, complex land use and rapidly changing demographics.

The three most frequently cited challenges to landscape conservation were boundaries, funding and meeting fatigue. When key stakeholders are not involved early in the process to designate and establish boundaries and a shared vision, participation in and support for the partnership can be compromised. External funding or funding from partners to support coordination and science capacity is key to getting a partnership started and sustaining it. Current budget uncertainties with FWS Science Applications are causing some LCC partnerships to pause or dismantle. The demands on the time of state fish and wildlife agency Directors and their staff make it difficult to commit to partnership requests because of heavy workloads and insufficient staff capacity. This is also true for federal agencies and partners and impacts the ability of for engagement with all key players.

Having too many partners at the table can lead to issue dilution and can increase the rate of partner turnover. Treating all parties as equal voices when authorities and responsibilities differ can impact the success of a partnership. Partnerships where the states and FWS are seen as trusted peers with due recognition with their respected authorities tend to have greater participation, success and support by the states.

Turf issues and personality conflicts were also cited as impediments to partnership development as were the lack of effective internal and external communication. Other issues that were identified as impeding partnerships include a lack of coordination, no clear purpose, poor governance structure and a lack of adequate performance measures.

There was broader agreement on the elements of successful collaboration. Having relevant, engaged and contributing partners was cited by three regions as a key to success in landscape conservation partnerships. Recognition of the unique role and responsibility of state and federal agencies participating in those partnerships was also seen as important, as was having strong governance structures. Sustained funding and conducting work that is supportive or complementary to State Wildlife

Action Plans and other state priorities was cited by three regions as important. Other strengths or elements of success that were included in more than one region were the need for a single point of contact or coordinator, having shared vision/goals/priorities, dedicated science capacity, effective communication, performance measures and agreement when developing partnership boundaries.

OPPORTUNITIES AND NEXT STEPS

State fish and wildlife agencies have provided critical leadership over the last 40 years in the development of collaborative, landscape-scale conservation initiatives. Examples of this leadership include work with partners like the FWS, Ducks Unlimited and others to develop the North American Waterfowl Management Plan which led to the establishment of JVs. These early efforts were followed by similar continental-scale plans to address the needs of all bird taxa, and a North American Fish Habitat Plan, which gave rise to Fish Habitat Partnerships.

Although a more exhaustive review of regional partnerships was not possible because of the short timeline to complete this white paper, the partnerships that were reviewed provided valuable insight into the challenges of landscape conservation and many of the key drivers for and elements of successful collaboration. One common theme across all regions is the necessity of continuing collaborative landscape conservation. This is consistent with the National Academy of Sciences 2015 report that stated “the nation needs a landscape approach to conservation”. State fish and wildlife agencies can and should continue to provide the leadership needed to forge 21st century landscape conservation partnerships, much in the way that they have led previous efforts.

While states and their partners have a track record of success for conserving fish and wildlife, the threats facing fish and wildlife today and the challenges of the future will require thoughtful, effective, and well-coordinated and well-funded collaborative partnerships that work at landscape scales. The urgency in assembling this white paper was driven in part by impending decisions by DOI and Congress on funding LCCs through the Science Applications program within the FWS. These decisions will have a bearing on existing landscape conservation collaboration across the country. From this report, it's evident that LCCs provide important leadership and capacity for landscape conservation partnerships in some regions but they were not universally seen as effective at addressing the most important priorities of all states.

Members of this working group, AFWA and the regional fish and wildlife associations, stand ready to assist DOI and Congress in developing a vision, approach and policies to advance future collaboration on landscape conservation. The juxtaposition in time of this white paper and the uncertainty of funding for LCCs does give opportunity to ponder potential opportunities and next steps to sustain existing landscape collaboration and to advance future efforts in the near term.

There is an opportunity for investment in the development of a nationwide habitat assessment tool. Several regions have assessment tools, most based in or linked to geospatial applications that distill data into functioning models, analytics, etc. We think of Nature's Network in the Northeast, SECAS in the

Southeast and the Crucial Habitat Assessment Tool in the West as great examples. Depending on budgets, there may also be federal and state financial resources to fund decision support and science needs identified by DOI and partners. Is there opportunity to evaluate existing systems and determine how to develop new and integrate existing systems? Is there a way to provide access to common habitat/species data layers and decision support tools?

An opportunity for leadership exists for AFWA and its regional associations to continue to develop convening and leadership structures for emerging issues within their respective geographic areas. Improvement of collaborative efforts among AFWA states and DOI agencies will be critical to successful implementation of landscape conservation. The FWS currently has resources available through Science Applications staff, pending budget appropriations, to facilitate science-based landscape level planning. There may be an opportunity to distribute funds and staff resources in new or aggregated ways, improving capacity to meet the needs and priorities of landscape partnerships.

We see an opportunity for expanded use of landscape conservation principles across the country. The need and opportunities for landscape conservation are growing and flexibility, adaptability, shared priorities and respect for management authorities will be essential to success. Is there value in allocating some resources to agencies with primary responsibility for fish and wildlife to work proactively on issues while retaining some capacity for flexible ad hoc organization around emerging or pressing issues?

There is an opportunity to better inform partners and stakeholders on the measurement of performance and success. We found that there is not a well-developed performance evaluation framework for large scale collaborative efforts. The LCC Network began working on this type of framework as a result of the National Academy of Sciences review. This work could be piloted and modified to help state fish and wildlife agencies, federal agencies, NGOs, and others involved in large scale conservation to report on their successes in a consistent way that resonates with policy makers.

The charge of the Landscape Conservation Working Group that assembled this white paper was not to make concrete recommendations on how landscape conservation should be conducted in the future. To do that would require more time and broader input from states, federal agencies and conservation partners. However, we do make the following recommendations to help advance the concept and practice of landscape conservation.

1. Establish a Working Group between AFWA and FWS leadership to identify immediate opportunities to continue and expand work on shared landscape conservation priorities through state-led partnerships. Investments in leadership, collaborative approaches, decision-support tools, science, and agency capacity are critically needed.
2. The charter of the Landscape Conservation Working Group should be extended to continue the dialogue and develop additional resources that can be used by policy-makers in the coming year to assess and provide direction on landscape conservation. Alternatively AFWA could engage a

partner like the Wildlife Management Institute to coordinate such an effort.

3. Expand on the best practices developed in the Northeast to include all regions of the US.
4. Host a forum to gather input from broader audiences including NGOs to seek input on the direction and approach to landscape conservation and develop specific policy recommendations related to funding needs and other challenges identified in this report.