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# 16 The Role of Joint Ventures in Bridging the Gap between Research and Management

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Progress toward global conservation, if we accept the bargain, will pick up or falter depending on cooperation among three secular stanchions of civilized existence: government, the private sector, and science and technology.

—E. O. Wilson (2002)

## ABSTRACT

No single entity can effectively address conservation planning and actions for migratory bird species that move across continents annually to fulfill their life cycle needs. Successful landscape-level conservation requires cooperation and coordination of efforts among individual conservation entities. U.S. bird habitat joint ventures (JVs) are highly successful partnerships of public agencies, private organizations, corporations, and individual landowners that work cooperatively to meet shared goals. JVs identify and address strategic habitat conservation needs for priority bird populations through biological planning, conservation design, research, monitoring, communication, education, and outreach (CEO) that maximize the effectiveness of conservation delivery activities of the individual member agencies/organizations of the partnership. JVs have a greater impact than individual partners working independently. The highly successful model for JV bird conservation partnerships has been successfully copied for other taxa and issues, including Regional Alliances in Mexico, the Monarch Joint Venture, Fish Habitat Partnerships, and Landscape Conservation Cooperatives.

## INTRODUCTION

During the early 1980s, waterfowl biologists and managers in central North America were alarmed by steeply declining populations of early-nesting waterfowl species such as Mallards (*Anas platyrhynchos*) and Northern Pintails (*Anas acuta*), which were at their lowest population levels since annual surveys began in 1955. Intensifying agricultural land use combined with a 5-year drought in key breeding areas reduced wetland habitat availability and reproductive success of waterfowl. During 1985, waterfowl experts from Canada and the United States came together to design an international strategy for conservation of North American waterfowl with the aim of “maintaining an adequate habitat base to ensure the perpetuation of waterfowl populations.” The resulting North American Waterfowl Management Plan was signed in 1986 by the Canadian Minister of the Environment and the U.S. Secretary of the Interior, and in 1994 Mexico became a signatory to the plan (USFWS 1986, 1994).

These waterfowl experts were representatives from concerned agencies and conservation organizations. They recognized that landscape-scale conservation

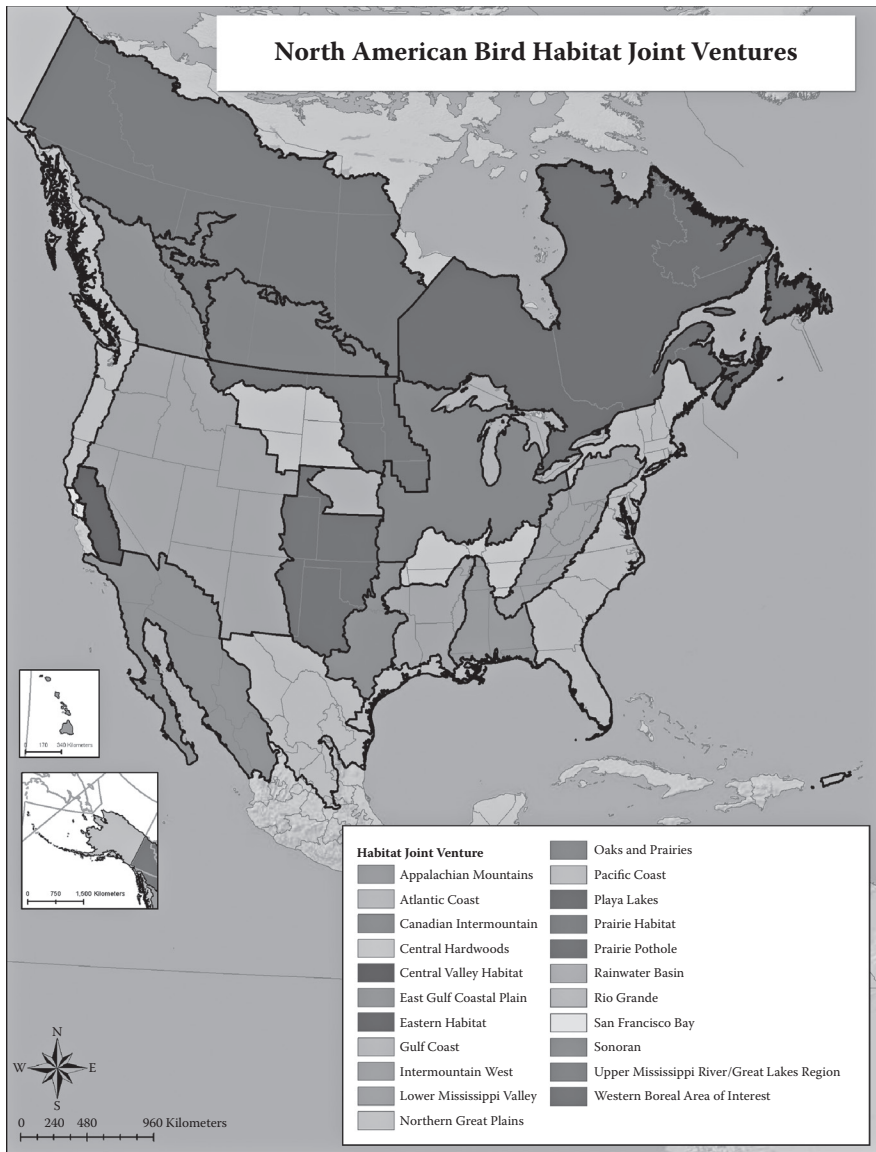
would require long-term planning, close cooperation, and coordination of management activities. A key principle was that no single entity could effectively address complex landscape-level conservation issues to sustain migratory bird populations and their supporting habitats in perpetuity. “Joint ventures of private and governmental organizations [would] be considered as an approach to financing high priority research and management projects of international concern that can only be addressed through a pooling of resources” (USFWS 1986). Starting with five original waterfowl habitat-based joint ventures (JVs) and three species-based JVs, today there are 18 bird habitat JVs covering most of the United States, 4 in Canada, and 3 species JVs (Figure 16.1). Our discussions throughout this chapter are centered on U.S. bird habitat JVs.

JVs work with many state and federal agencies to leverage public conservation programs with private corporation and conservation organization funding. Collectively, JVs have invested over \$4.5 billion to protect, restore, and enhance more than 6.35 million hectares of wetland habitat (USFWS 2010). This investment was possible in part with the enactment of the North American Wetlands Conservation Act, a competitive grant program that provides federal funds to leverage state and private matching funds for wetland conservation projects at a minimum 1:1 ratio. More recently, the Neotropical Migratory Bird Conservation Act (NMBCA) was enacted to leverage federal funds with private conservation funding to promote the long-term conservation of Neotropical migratory birds and their habitats throughout the hemisphere. Between 2002 and 2010, the NMBCA provided over \$175 million (matched 3:1) in support of 333 projects, with participation from 48 U.S. states and 36 countries. These funds benefited approximately 0.8 million hectares of bird habitat (USFWS 2010). JVs also work with the Natural Resources Conservation Service in the U.S. Department of Agriculture to help target U.S. Farm Bill conservation programs in high priority areas and species associated with agricultural lands (i.e., grassland and shrubland birds).

## ORGANIZATIONAL STRUCTURE

JVs are regional, self-directed partnerships of government and non-governmental agencies and organizations as well as corporations and individual landowners. JV partners work across administrative boundaries to deliver landscape-level planning and science-based conservation, which results in linking on-the-ground management with national bird population goals. The administrative planning boundaries of many JVs are organized by Bird Conservation Regions (Figure 16.1). Bird Conservation Regions encompass landscapes with similar bird communities, habitats, and resource issues. All JVs are set up to cross traditional jurisdictional boundaries and encourage cooperation among agencies and organizations that traditionally focus their work within administrative, geographic, or political boundaries (e.g., state wildlife agencies or USFWS regional offices).

JVs focus on a broad spectrum of bird conservation activities including biological planning; “on-the-ground” conservation; communications, education, and outreach; initiating research and monitoring projects; creating decision support tools; and raising funds for these activities through partner contributions and grants. JVs



**FIGURE 16.1** North American Bird Habitat Joint Ventures (USFWS 2010).

work to implement national and international bird conservation plans (i.e., waterfowl [North American Waterfowl Management Plan Committee 2004], landbird [Rich et al. 2004], waterbird [Kushlan et al. 2002], and shorebird [Brown et al. 2001]) by “stepping down” the population goals of these larger plans to regional or landscape habitat goals, while feeding local information (known as “rolling up”) to the national and international planning groups. This process bridges the gap between continental-level planning and local-level actions by bringing national- and

international-level priorities and resources to address local-level conservation issues. At the same time, the process ensures that local-level information is incorporated into national and international policymaking. JVs document their proposed plans of action in an implementation plan, which provides guidance for the partnership on needed conservation actions and outcomes to further bird conservation in the region. These implementation plans are updated periodically to incorporate the best available knowledge and reflect the ever-changing nature of the interactions between human land use and the environment.

Although partnerships are common in wildlife conservation, one of the key distinctions in JV partnerships is that partners are invested in JV activities and share risks and costs as well as rewards. JV partners are expected to bring resources (personnel and funding) to the table to help identify and attain shared goals. These shared goals are broad enough to reach across the missions of the individual partners and are based upon managing bird populations and habitats at the landscape level. The shared goals are also broad enough so that they are not dependent on a single partner or program. The JV partnership model creates a shared motivation to continue to pursue shared goals even if one partner's circumstances change. The result of this process is continuity of conservation regardless of political or administrative changes. The partnership brings together the different abilities of the various partners to pursue common goals that some may be unwilling or unable to do alone. For example, one partner may lobby government officials for support, another may provide legal or tax expertise, while a third may provide scientific, technical, fundraising, or education and outreach abilities (Graziano 1993).

U.S. JVs receive funding from the U.S. Fish and Wildlife Service (USFWS), whose mission includes the conservation of birds and bird habitat. Funding for new JVs may initially provide funds for a coordinator and eventually funds may be available for additional staff. Some of the long-established JVs have annual budgets exceeding \$1 million.

Although bird habitat JVs are designed to implement landscape-level science-based conservation of bird populations, a major principle is that local or regional priorities are informed by national objectives. With local control, each JV evolves as needed within its region, but national and international bird population objectives help to drive activities.

JV success was formerly evaluated by the USFWS using dollars and acres as the measures of progress—the total amount spent to put habitat in the desired condition and the number of acres affected. For the JV to be effective, these metrics have to link back to measurable changes in bird populations or vital rates (survival or productivity) for priority species. Recently, new metrics have been introduced to evaluate the success of JVs, including the number of USFWS Birds of Management Concern (USFWS 2008b) with habitat needs identified. For a given priority bird species, the habitat type, condition, and amount needed to support a population at a desired level (the population goal) has been determined. This gives the JV measurable goals to work toward as a part of its planning process. JV activities focus on several main themes, which have been outlined in a self-evaluation matrix used by each JV to assess its individual progress and next goals. These themes include organizational

performance, biological planning, conservation design, habitat delivery, monitoring, research, communication, education, and outreach (CEO). Depending upon the conditions and needs within the geographic area of each JV, different JVs will invest resources in these themes in very different ways.

## ORGANIZATIONAL PERFORMANCE

Organizational performance refers to the activities that make the partnership work from a personnel and funding management perspective. This includes coordinating the partners, creating a management board, organizing the technical community, and managing funding. At a minimum, each JV has a coordinator, a management board, and technical teams or advisors. JVs may have other staff to provide expertise in different areas including science; CEO; geographic information systems (GIS); modeling, etc.

The JV coordinator manages the day-to-day activities of the JV partnership as well as any staff who are assigned to the initiative. The coordinator works with the management board to determine priority staffing needs that address missing capabilities within the JV partnership. The JV coordinator provides leadership, coordinates operation of the partnership, and is accountable to the management board. The coordinator is responsible for providing organizational leadership by furthering the JV mission, vision, and implementation plan and provides programmatic, organizational, and financial management guidance, and maintaining communication among the partners as well as oversight of any additional JV staff. JV staff (i.e., coordinator and others) may work for or be funded by any of the partners.

The coordinator and additional staff, such as science coordinators, communication, education and outreach coordinators, and geospatial staff, work with the scientific, technical, and land management community to form technical teams of staff members from state and federal agencies, non-profit conservation organizations, and universities to identify and address bird conservation science, management, and research needs.

JVs are overseen by management boards, which include representatives from the JVs' main partner organizations. Usually, management board members are top administrators within their agency/organization and have the authority to direct its resources to address the goals of the JV. The management board and the JV coordinator develop the vision for the future, and establish and implement strategies to achieve that vision. The management board's responsibilities include:

1. directing the activities of the partnership, including staff and JV technical teams
2. formulating strategies to further the JV's mission and periodically reviewing and updating the mission as necessary
3. providing oversight of organizational and programmatic planning and evaluation
4. ensuring legal and ethical integrity and maintaining accountability for the JV
5. promoting the activities of the JV and enhancing the JV's visibility among partner entities and the broader conservation community

It is expected that management board members will:

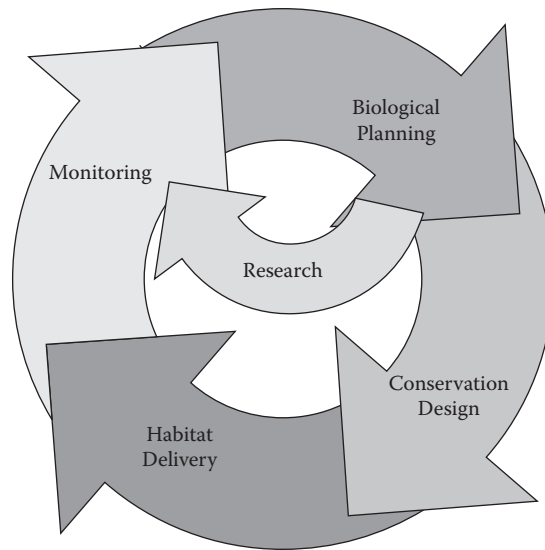
1. maintain commitments of time, focus, and financial support necessary to achieve the JV mission
2. consistently attend and engage fully in management board meetings, conference calls, and ad-hoc working groups as needed
3. direct technical staff from their agency/organization to fully participate on JV technical teams and contribute to the development of technical documents
4. possess authority to represent their agency/organization in decision making on the JV management board
5. serve as active partners in the JV's planning and implementation activities
6. act as JV ambassadors to other public, private, and political leaders
7. be alert to opportunities and threats likely to be encountered by the JV
8. become familiar with JV finances and financial (or resource) needs
9. understand the policies and procedures of the JV

JV technical teams serve as the forum for coordination and communication among JV partners in matters pertaining to implementing adaptive conservation (Figure 16.2; biological planning, conservation design, habitat delivery, and monitoring and research; also known as Strategic Habitat Conservation [USFWS 2008a]). Technical teams advise the management board and JV staff and ensure that the conservation actions by partners help to contribute to the overall goals of the JV. Most researchers interact with the JV by participating in technical teams that focus on developing models and decision support tools that link habitat to populations in ways that help predict the impacts of potential land management strategies. Investigators can then use hypothesis-driven research to identify and test the major assumptions used to create these models, and outcome-based monitoring to evaluate the effectiveness of management strategies. The results of the research and monitoring before, during, and after implementation of management activities are then fed back into the next round of planning to improve future management and incorporate changes in the environment in a continuous cycle.

JV partners participating in the technical teams support the ongoing development and modification of JV conservation goals and objectives, and work to provide the biological science foundation for JV activities by using existing research to evaluate current management strategies. Responsibilities of the JV technical teams include the following:

1. Develop, refine, and integrate JV priority species and habitat objectives that contribute to range-wide bird conservation plan population objectives for all priority species (waterbird, shorebird, waterfowl, landbird, etc.).
2. Integrate state wildlife action plans into the JV planning process where applicable.
3. Implement an adaptive approach for bird conservation that includes habitat monitoring to evaluate impacts of JV partner conservation actions.
4. Design targeted and statistically rigorous monitoring programs to help test planning assumptions.





**FIGURE 16.2** JVs are generally organized around an adaptive management cycle, also known as Strategic Habitat Conservation (USFWS 2008a). Each JV may address any part of the cycle depending upon its own regional needs, and an adaptive conservation cycle can start at any point. Ideally, adaptive conservation is based on a plan that identifies what needs to be done (biological planning) and where the identified actions would have the highest probability of success (conservation design). Where uncertainties exist in the planning process, research needs are addressed and incorporated into future planning. For example, for new habitat projects, the project is a result of needs identified in the biological planning process. Through conservation design, the project is located on the land in the best available location. The Habitat Delivery is the on-the-ground conservation actions that most conservation organizations and agencies already are doing, but the adaptive conservation planning helps to focus individual actions to achieve larger landscape-level effects. Monitoring the project's success and the resulting impacts on the population or desired parameter (survival, productivity) allows for refinement of the process through research to ensure greater success in the future.

5. Provide technical support for biological planning including the development of population-habitat models and decision support tools, and the identification of basic research needs where insufficient information exists to build initial models.
6. Identify conservation actions and targeted research to test assumptions built into the JV biological science foundation.
7. Coordinate the implementation of research projects.
8. Provide technical support for conservation design by developing GIS tools and maps to identify strategic, biologically based locations for conservation actions.
9. Provide CEO to the public on the technical and scientific issues.
10. Organize ad hoc or standing sub-committees or working groups as necessary (e.g., focus areas, monitoring, etc.).



## **BIOLOGICAL PLANNING**

Biological planning builds the conceptual biological science foundation that supports bird conservation needs. It is based on regional, national, and international conservation initiatives while feeding local information to inform the conservation planning at larger scales. JVs use the biological planning process to answer questions including, “Which species are a priority?”, “How many birds can the region support?”, and “How much habitat is needed?” Biological planning includes identifying and justifying priority bird species and suites of species and establishing abundance and demographic population objectives for those species to account for environmental or seasonal variability. Limiting factors for declining priority species are identified and population-habitat models are designed to link population objectives and habitat objectives. Assumptions built into these models then become targets for further research by JV partners.

## **CONSERVATION DESIGN**

Conservation design refers to the process of assessing the existing landscape for conservation potential and providing spatially explicit targets for conservation activities. The conservation design process is used to answer questions such as, “How much habitat exists and how is the amount changing?”, “How much more habitat is needed to meet objectives?”, and “Where should conservation actions be focused?” The technical teams work with JV staff to create spatially implicit or explicit decision support tools to evaluate specific management actions to overcome identified limiting factors. Where possible, existing GIS data layers are used to create GIS-based decision support tools and maps to target conservation actions, and additional GIS layers are developed as needs are identified.

## **HABITAT DELIVERY**

Habitat delivery refers to the major activities of JV partners, including state and federal agencies and many of the non-governmental organizations (NGOs) to protect, restore, and enhance bird habitat. JVs use the planning and decision support tools created through biological planning and conservation design to focus partner activities. Most JV partners already do a great deal of habitat delivery that is often effective at the local scale. Working with a landscape-level plan shifts conservation from a “shot-gun” pattern of unconnected projects, usually in areas where conservation efforts are politically or logistically convenient, to an integrated strategic approach that maximizes limited resources and improves conservation impacts by targeting areas that will have the largest positive impact for populations of priority species.

## **MONITORING AND RESEARCH**

Monitoring allows JVs to measure bird population response to management activities and to evaluate “net” changes in habitat over time at the landscape scale. Monitoring the response of priority bird populations to direct management activities provides a

local-scale check for the effectiveness of habitat conservation actions. Landscape-scale monitoring of habitat changes in conjunction with species-habitat relationship information allows JVs to estimate the total population of priority bird species within the JV. Ultimately, monitoring allows JV partners to adjust their conservation activities to provide the most benefit and helps the JV set and adjust bird and habitat conservation priorities and objectives. Finally, monitoring helps to justify continuing effective conservation actions or abandoning conservation actions that do not significantly increase priority bird populations.

Research is used as a tool to evaluate competing conservation strategies by testing the assumptions of biological planning and identifying factors that might minimize the uncertainty in these assumptions. The most basic assumptions of biological planning are that priority species are limited by available habitat, and that changing the breeding, migration, or wintering habitat structure and composition will promote increases in vital rates of these species. These assumptions are then evaluated, to the extent possible, through existing and future habitat manipulation projects, with local-scale experiments distributed to represent the landscape-scale.

Ideally, population-habitat models serve as a tool for generating questions to be answered with hypothesis-driven research. Often research is conducted without clear plans for linking what is learned to what is done. In order to address this shortcoming, whenever possible, JV conservation actions are conducted within an adaptive conservation framework formalized by the USFWS and the U.S. Geological Survey as Strategic Habitat Conservation (National Ecological Assessment Team 2006) that allows for statistical evaluation of conservation prescriptions (Figure 16.2). The basic idea is to implement management in replicated “blocks” and simultaneously monitor bird populations and habitat responses on untreated areas (control sites). The use of replicate treatments allows estimation of experimental error (i.e., variability in response to treatment), which then allows statistical comparisons either between competing treatments or treated versus non-treated areas.

## **COMBINING RESEARCH AND MANAGEMENT IN THE JOINT VENTURE SYSTEM**

The adaptive conservation framework effectively combines and streamlines research and management into a single process, which allows research results to improve future decisions about conservation actions (i.e., adaptive management). Adaptive management provides a format for experimental learning based on statistical comparisons between competing alternatives, can be used to test assumptions/hypotheses associated with biological planning, and is carried out in an iterative fashion that allows for continual refinement of management approach. Although monitoring programs can be put in place at any time, monitoring protocols should be designed before the management action can be of maximum utility and generally should include pre- as well as post-treatment data. Overall, the adaptive management process is a key component of effectively linking research outcomes with future management actions.

Ultimately, research results in a biologically based foundation that forms the basis for decision support tools that link conservation actions with predicted species

responses. Research can also be used to derive estimates of the amounts and conditions of habitat needed to provide sufficient habitat area and quality for reaching population objectives for priority species. For research to increase our understanding of the effects of our conservation actions, planning and funding of research activities must be considered as important as the on-the-ground habitat conservation and management.

## COMMUNICATION, EDUCATION, AND OUTREACH

Human behavior underlies most of the threats facing bird populations throughout the world. JVs must account for the complex social and economic factors that influence ecological landscapes at various scales (Bogart, Duberstein, and Slobe 2009). As discussed earlier in this chapter, biological planning, conservation design, and monitoring and research all provide a strong scientific foundation for achieving conservation. In order to implement conservation goals and objectives on the ground, however, JVs must work with other agencies, NGOs, private landowners, homeowners, businesses, legislators, universities, land managers, and a wide range of other stakeholders. CEO is a critical tool for doing this.

Strategic CEO involves clearly identifying audiences that are critical for conservation success, determining desired behavioral outcomes, and developing the best tools to deliver a message that results in altered human behavior. JVs use strategic CEO to identify relevant stakeholders and provide them with the tools and information needed to ultimately achieve on-the-ground bird and habitat conservation. From the development of best management practices manuals and landowner guides to websites and listserves to videos and newsletters to training workshops and conferences to press releases and articles, there are many ways in which strategic CEO allows JVs to cultivate engaged, active partnerships, garner support, and deliver results. Researchers, for example, design stakeholder surveys to help land managers understand social or political barriers to conservation actions that may have significant biological support, but are not implemented due to misunderstandings of the possible actions (e.g., using prescribed fire for management in some areas).

## SUMMARY

Every JV has different locally determined priorities and goals. Collectively, the JV model has had a huge impact on bird and habitat conservation in the New World. The JV model provides a bridge between research and management. The U.S. habitat JV model of a coordinator funded by USFWS (and employed by USFWS or an NGO) working for a management board of partner state and federal government agencies, conservation organizations, corporations, tribes, and individuals with land managers well represented working with researchers on the technical committees to determine the conservation needs in their region, and the partners implementing integrated and strategic conservation actions effectively marries management and research into strategic conservation.

Since 1986, JVs have invested more than \$4.7 billion to protect, restore, and enhance habitat for birds on more than 7 million hectares. JVs continue to serve

as a model for landscape-level conservation, including the emergence of the U.S. Department of the Interior's Landscape Conservation Cooperative Program to address conservation needs of all priority species—including birds.

JVs have become an incredibly successful and important strategy for science-based conservation of birds and bird habitat in a relatively short time (<30 years). Their success is partially rooted in a strategy that allows decision makers and land managers to work with researchers collaboratively and employ tactics that might otherwise not be possible if these people continued to work in isolation. The maintenance of this strong linkage between research and management is, and will continue to be, a major component of the continued success of JVs.

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