



*Scissor-tailed Flycatcher*

# Oaks & Prairies Joint Venture



*A Vision for Regional  
Bird Management*



# Oaks and Prairies

## Joint Venture

*Our Mission:*

*To plan for and facilitate the habitat conservation, research and outreach needed to ensure sustainable populations of priority bird species within the Edwards Plateau and Oaks and Prairies regions.*

March 2007

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# Executive Summary

The Oaks and Prairies Joint Venture (OPJV) covers two Bird Conservation Regions (BCRs)—the Edwards Plateau BCR of Central Texas and the Oaks and Prairies BCR of Texas and Oklahoma. These two BCRs harbor a rich assemblage of resident and migratory landbird species. Riparian corridors provide habitat for terrestrial birds (e.g., Bell's Vireo, Red-headed Woodpecker) in addition to shorebirds and waterfowl. Recent and historical population declines in regional avifauna have underscored the need for large-scale habitat conservation measures. The OPJV will work to reverse these trends by producing region-wide conservation plans, implementing those plans, and using research to refine our knowledge of avian-habitat relationships.

Avian habitat conservation faces numerous challenges in both BCRs. Fire suppression and fine fuel reduction via livestock grazing have reduced fire frequency, resulting in accelerated development of shrub and tree species. The end result of this process has been a decline in habitat for savannah and grassland-associated birds. Most of the grassland habitat within the Post Oak Savannah Ecoregion has been converted to crop production or planted to Bermuda grass; the majority of the native vegetation of the Blackland Prairie Ecoregion has been lost, primarily to cultivation; and grassland habitat within the Cross Timbers Ecoregion is being planted with non-native forages. Additionally, over 2.5 million acres of rural land in Texas and Oklahoma were converted to urban uses from 1982 to 1997.

Both Texas and Oklahoma have a diverse array of avian-related conservation initiatives. However, these efforts need to be tied together with a unifying vision, common goals and a collective approach to landscape planning and delivery of "on-the-ground" conservation. Through our conversations with regional conservation entities, the OPJV is developing a conservation model that emphasizes a repeating cycle of planning, doing and learning. The starting point of this model is development of a biologically-based, region-wide plan. Research and adaptive management are used as tools to test the assumptions of conservation planning and increase baseline knowledge of species-habitat relationships. Conservation delivery centers on providing outreach in the form of workshops and literature, generating and leveraging conservation dollars to put more and better habitat on the ground and maximizing use of landowner incentive programs. The fact that the vast majority of the land area within the OPJV boundaries is privately controlled underscores the need for a strong, coordinated outreach effort to inform landowners of conservation issues, opportunities and incentives. The partner-based format of Joint Ventures is ideally suited to putting together the conservation planning and delivery, research and outreach programs needed to impact avian species at a regional level.



# Oaks and Prairies Joint Venture Concept Document

## What is a Joint Venture?

A Joint Venture (JV) is a regional, self-directed partnership of government and non-governmental organizations, corporations and individuals that works across administrative boundaries to deliver science-based avian conservation. JVs work in support of national and international bird conservation plans by helping step the larger plans down to regional or landscape scales. They are organized (built) on the biological foundation of Bird Conservation Regions (BCRs) that encompass landscapes having similar bird communities, habitats and resource issues. They focus on a broad spectrum of tools including conservation planning, “on the ground” projects, outreach, monitoring and research, and they raise money for these activities through partner contributions and grants. Joint Ventures are not regulatory and do not directly compete with other conservation entities; in fact, these partnerships should enhance and facilitate the success of existing conservation efforts.

Joint Ventures are led by a Management Board made up of partner representatives. There are many levels of participation in a JV, ranging from membership on the Board to participation within technical teams and working groups. Formation of a JV begins with selecting a Management Board and preparing an Implementation Plan that details the conservation goals and the infrastructure and mechanisms needed to realize those goals. This plan is then submitted to the U.S. Fish and Wildlife Service for review. When the Implementation Plan is approved, the JV becomes eligible for federal funding.

Joint Venture partners include federal, state, and local governmental agencies; tribes; conservation groups; sportsmen’s groups; farmers; ranchers; small businesses; and corporations, among others.

# What is the Oaks and Prairies Joint Venture and why does it matter?

Since 1986, JVs have invested more than \$3.3 billion to protect, restore and/or enhance more than 13 million acres of habitat.

- \* Natural landscapes and the wildlife species that call them home have long been valued (both socially and economically) by the people of Texas and Oklahoma.
- \* These values are being tested by modern-day pressures (changing land uses, altered environment) that make maintenance of these important resources more difficult than ever before. This is particularly evident in declining populations of native birds and their habitats:
  - Over 2.5 million acres of rural land in Texas and Oklahoma were converted to urban uses from 1982 to 1997, and the rate of development is increasing.
  - Northern bobwhite populations in the Edwards Plateau and Oaks and Prairies BCRs have experienced dramatic declines: Quail densities have plummeted 65 to 85 percent in the last 25 years, while hunter harvest has dropped 68 to 85 percent during the same time period.
  - The Breeding Bird Survey suggests that 60 percent of bird species breeding in grassland habitat and nearly 40 percent of species breeding in successional shrub habitat are experiencing long-term declines within one or both BCRs.
- \* A comprehensive solution to these problems involves enhancing the effectiveness of existing avian conservation efforts, identifying important but underrepresented conservation roles, and promoting incentive programs for landowner involvement in habitat conservation.

The Oaks and Prairies JV (OPJV) is one of 20 habitat JVs in North America and focuses on promoting avian habitat conservation across administrative and geographic boundaries. The Edwards Plateau BCR provides habitat to a rich diversity of bird life, including the endangered Black-capped Vireo and Golden-cheeked Warbler. However, pressures from urban development, agronomic uses and plant community changes in the absence of natural disturbance regimes threaten critical habitat resources. Within the Oaks and Prairies BCR, avian habitat in the Cross Timbers Ecoregion has suffered from a lack of fire, which has reduced native shrub habitat availability and allowed for invasion of existing woody plant and grassland communities by eastern red cedar.

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Red cedar invasion results in habitat used by few bird species. In Texas, most of the Blackland Prairie habitat has been converted to urban or agricultural uses, with the remnants occurring in small, isolated patches. These changes have driven a reduction or elimination of native grassland habitat in much of Texas and declines in, or local extirpation of, associated species (e.g., Northern Bobwhite, Loggerhead Shrike).

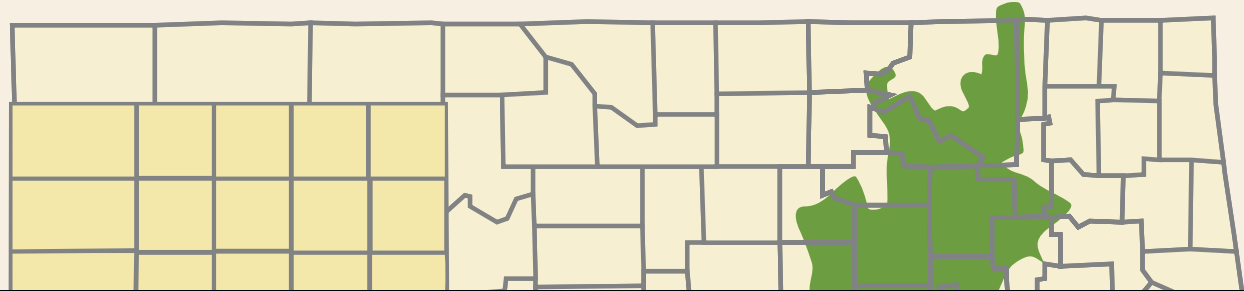
Both Texas and Oklahoma have a diverse array of existing avian-related conservation initiatives. However, these initiatives need to be tied together with a unifying vision, common goals and a collective approach to landscape planning and delivery of on-the-ground conservation projects. Additionally, the fact that most of the land area within the OPJV boundaries is privately controlled suggests the need for a strong, coordinated outreach effort to inform landowners of conservation issues, opportunities and incentives.

## The Conservation Landscape

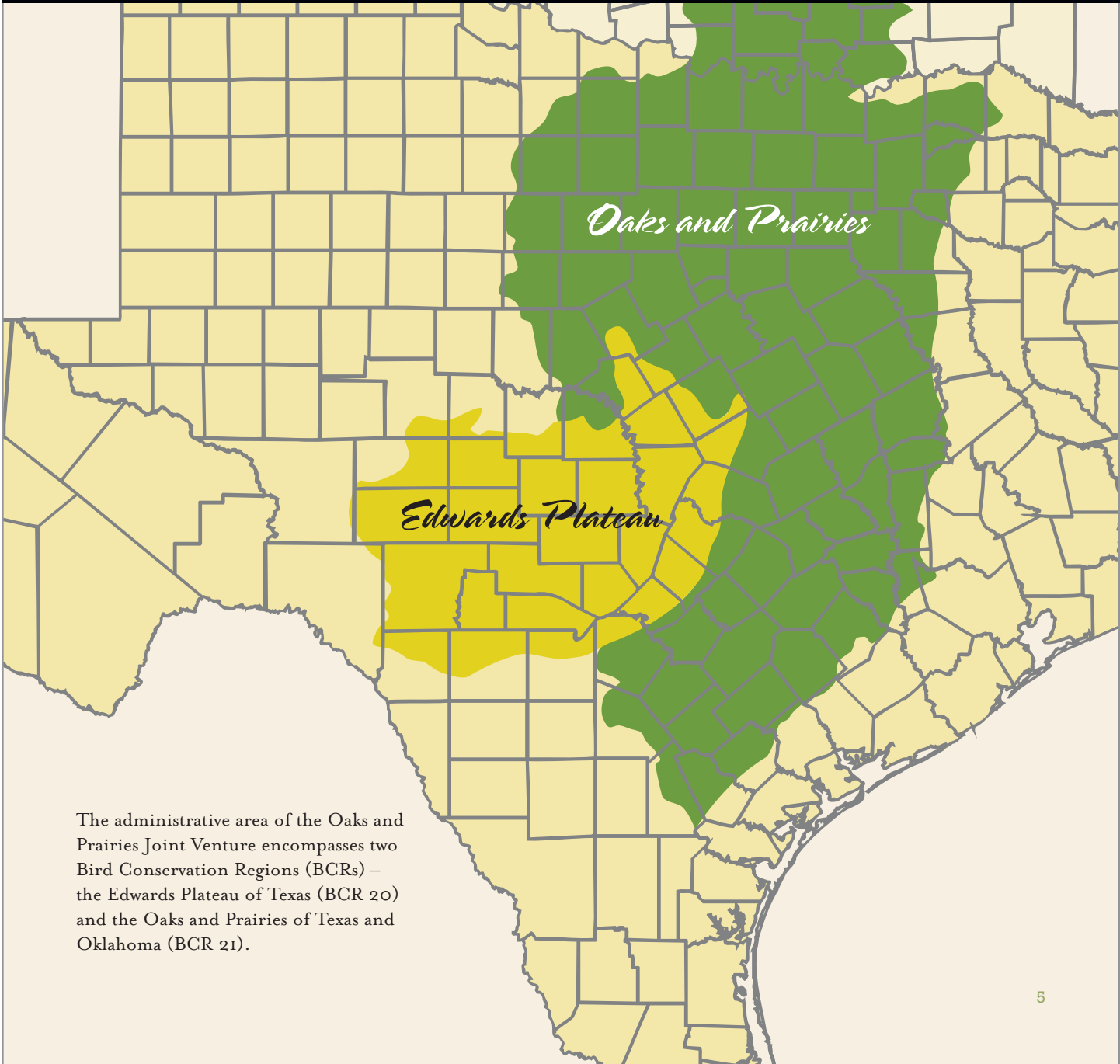
Covering nearly 14 million acres, the Edwards Plateau BCR is the southernmost extension of the Great Plains and comprises four distinct ecological subregions. The southern and eastern boundaries of the Plateau are marked by the Balcones Canyonlands subregion, separating the Plateau from the adjacent South Texas Plains and Blackland Prairies. Here steep-sided canyons are characterized by ash juniper-oak woodlands. To the north, the sandy soils of the Llano Uplift subregion support a variety of shrub, and mixed shrub-grass communities, but the abundance of woody species is reduced. Farther north, the broad valleys and relatively flatter terrain of the Lampasas Cut Plain subregion supports woody plant communities similar to the Balcones Canyonlands, but woodlands are typically less dense and interspersed with grass and savannah habitats. The central and western portions of the Plateau constitute the largest subregion, bounded on the west by the Chihuahuan Desert, and the north by the High Plains, Osage Plains and Red Rolling Plains. This subregion is also the most arid, with the westernmost portions receiving only about half the annual precipitation of the eastern Plateau.

Over 400 avian species occur within the Edwards Plateau BCR, the vast majority of these being landbirds. This rich avifauna results, in part, from the Plateau's central location in the state, providing for an influx of species from surrounding ecoregions. The Partners in Flight North American Landbird Conservation Plan recognizes 17 species of regional concern, including two federally endangered species. This BCR harbors the majority of breeding habitat for the endangered Black-capped Vireo and virtually all of the known breeding range of the endangered Golden-cheeked Warbler. Other species of regional concern include: Northern Bobwhite, Dickcissel, Cassin's Sparrow, Bell's Vireo, Painted Bunting and Rufous-crowned Sparrow. The Edwards Plateau is considered of minor importance to waterfowl, waterbirds and shorebirds.

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# Oaks and Prairies Joint Venture BCRs



The administrative area of the Oaks and Prairies Joint Venture encompasses two Bird Conservation Regions (BCRs) – the Edwards Plateau of Texas (BCR 20) and the Oaks and Prairies of Texas and Oklahoma (BCR 21).

*Oaks and Prairies*



## Oaks and Prairies Joint Venture Regions



*Edwards Plateau*



The Oaks and Prairies BCR encompasses over 45 million acres of Texas and Oklahoma and contains both the southernmost extent of the "True Prairie" (the Blackland Prairie Ecoregion) and the westernmost extent of deciduous forest (the Cross Timbers Ecoregion). The Texas portion of this BCR contains a mix of habitats grading from prairie to forested landscapes. To the east, the Post Oak Savannah Ecoregion separates this BCR from the adjoining Gulf Coast Plains. Here, tallgrass species intermingle with a scattered overstory of mainly deciduous oaks. Moving west, the Blackland Prairie stretches from the Red River south to San Antonio. The heavy clay soils of this area support a variety of tallgrass plant communities. The Blackland Prairie grades into the Grand Prairie Ecoregion to the west, which supports similar but less productive plant communities on shallower soils. The Cross Timbers brackets the Grand Prairie and moves north into Oklahoma. The majority of the OPJV in Oklahoma is within the Cross Timbers but includes areas of transitional prairie to the west. The Cross Timbers is a diverse mix of post oak-blackjack oak woodlands in various stages of succession intermixed with prairie and transitional shrubland habitats. One of the unique attributes of the Cross Timbers is the existence of old-growth (more than 300 years old) stands of post oak. These knarled, low-growing trees represent some of the oldest unharvested trees in the United States.

At least 450 species of birds have been documented within the Oaks and Prairies BCR, and the Partners in Flight North American Landbird Conservation Plan lists 23 landbird species of regional concern. This suite of species includes over 25 percent of the global breeding populations of Painted Buntings and Scissor-tailed Flycatchers. Other landbirds of regional concern include the Eastern Meadowlark, Northern Bobwhite, Bell's Vireo, Golden-cheeked Warbler and Loggerhead Shrike. Throughout the Oaks and Prairies, numerous riverine systems provide habitat for terrestrial birds (e.g., Bell's Vireo, Red-headed Woodpecker) in addition to shorebirds and waterfowl. While this BCR is not listed as an Area of Continental Significance by the North American Waterfowl Management Plan, significant waterfowl populations are associated with numerous impoundments and reservoirs. In Texas, up to one-third of overwintering waterfowl are within the Oaks and Prairies BCR.



*Golden-checked Warbler*

*Clemente III*



*Northern Bobwhite*

*Clemente III*

# Conservation Challenges in the OPJV



*Black-capped Vireo*

*Clemente III*



*Red-headed Woodpecker*

*Clemente III*

## What are the conservation challenges?

The earliest European explorers of the Edwards Plateau BCR found much of the landscape heavily influenced by natural disturbances. Lightning- and human-caused fires maintained a network of live oak savannahs, and periodic grazing by bison probably shaped both the structure and composition of grassland habitats. Based on current-day evidence, the grazing patterns of bison were likely focused on areas recently burned. Savannah communities were interrupted by deciduous oak-juniper woodlands, particularly in areas where fine fuels were limited (e.g., the steep, rocky slopes of the Balcones Canyonlands). Historic visitors to the southeast portion of the Oaks and Prairies BCR found similar disturbance factors at work, helping to shape and maintain the Post Oak Savannah and the expansive, nearly treeless prairies. Those encountering the Cross Timbers describe an abrupt transition from prairie to forested landscape that some dubbed the “Cast Iron Forest” due to the low-growing, dense growth form of post oak and blackjack oak. Here, too, fire played a central role in maintaining both the structure of woodlands and the existence of prairie islands. Across the OPJV range, this historical collision of disturbance factors and site conditions would likely have resulted in a shifting mosaic of plant communities that enhanced landscape-scale habitat diversity.

The present-day environment has been altered markedly from historic times by changes in land use patterns and interruptions in natural disturbance processes. The net effect of these changes has been a loss of native habitat diversity at the landscape scale, and a loss of structural and compositional diversity within existing native habitats. These changes, along with an increasingly complex conservation atmosphere, pose numerous challenges for avian habitat conservation, including:

**Altered fire cycle:** Historical fire frequency for most of the OPJV region is not known with any degree of specificity. However, notes from historical expeditions suggest that fire was a regular disturbance, and these same records describe a vegetation structure and composition consistent with a fire-influenced landscape. Today, the influence of large-scale fires is practically non-existent, having been marginalized by reduced fine fuels, mechanized fire suppression, and decreased fire ignition in the absence of indigenous peoples. The resulting habitat changes have been dramatic: reduced quality of grassland habitat with encroaching woody plants, succession of shrub habitats to woodlands, and conversion of deciduous woodlands to juniper dominance. Additionally, conversion to woody plants can increase soil erosion and may have negative implications for water conservation.

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**Livestock grazing:** Livestock grazing can be used as a tool to modify habitat structure and composition beneficially for some bird species. However, present-day grazing practices often focus on maximizing forage yield and harvest. This results in homogenization of habitat at large scales, reduction of nesting cover for ground nesting birds, indirect interruption of the fire cycle through consumption of fine fuels, loss of grazing intolerant plant species (decreasers) and possible increases in cowbird nest parasitism for some species.

**Juniper encroachment:** Juniper abundance has increased markedly since European arrival. In the Edwards Plateau BCR, redberry and ashe juniper now form expansive woodlands in the western and northern portions of this region, whereas historical woodlands of these species were largely limited to the southern and eastern portions of the Plateau. The Cross Timbers has been heavily impacted by eastern red cedar; some reports suggest that Oklahoma is losing over 250,000 acres of rangeland habitat each year to eastern red cedar expansion. Where juniper dominates, understory grasses, forbs and shrubs become reduced or are lost from the community, and habitat for grass- and shrub-associated birds is reduced or eliminated.

**Non-native forages and crops:** Most of the grassland habitat in the Post Oak Savannah has been converted to crop production or planted in Bermuda grass or Bahia grass; the majority of the Blackland Prairie has been lost, primarily to cultivation; and grassland habitat within the Cross Timbers is being planted with non-native forages. Not only do these conversions directly reduce the existing habitat base, but they also serve to fragment and isolate remaining intact grassland and savannah habitats.

**Urban and suburban development:** Over 300,000 acres of rural land in Oklahoma were developed for urban uses from 1982 to 1997. In Texas that figure is over two million acres, and the rate of development is increasing. These land use changes represent net habitat losses for many avian species.

**Maintenance of riparian habitat:** Regional riparian systems face numerous challenges, including loss to reservoir development for recreation and municipal water supplies, extensive channel modification, and agricultural impacts on riparian vegetation. All of these activities affect habitat quality for terrestrial birds, shorebirds and waterfowl associated with aquatic, streamside and bottomland ecosystems. Managing these issues will involve coordinating habitat maintenance and restoration activities across a broad diversity of user groups, agencies and land ownership categories.

**Changing patterns of land ownership:** Traditional approaches to providing wildlife habitat conservation in the private lands context of Texas and Oklahoma have relied heavily on agriculture-linked delivery mechanisms. However, the land base controlled by non-agricultural interests is growing. In Texas, the majority of people buying rural land are now doing so for recreational purposes. While agricultural landowners have been, and continue to be, of vital importance to regional conservation efforts, additional strategies, outreach mechanisms and incentives are needed to realize the conservation potential of partnering with "new" landowners.

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In its native state the Post Oak Savannah provides habitat for a variety of grassland bird species. Lack of fire and planting of non-native grasses has dramatically decreased the quality and availability of grassland habitat.



**Private lands incentives:** Sustainable conservation of avian habitat has to be “value-added” to the landowner. We must ensure that existing incentive programs are used to their full potential and develop new incentives to provide conservation dollars for all categories of landowners.

**Deer herbivory:** The Edwards Plateau BCR harbors the highest recorded deer density in the nation. Recent estimates suggest that densities can top 30 deer per 100 acres in some areas. At these levels, deer herbivory can and does decrease recruitment of some shrub and tree species and is considered a limiting factor for maintaining key woody plants in woodlands used by Golden-cheeked Warblers.

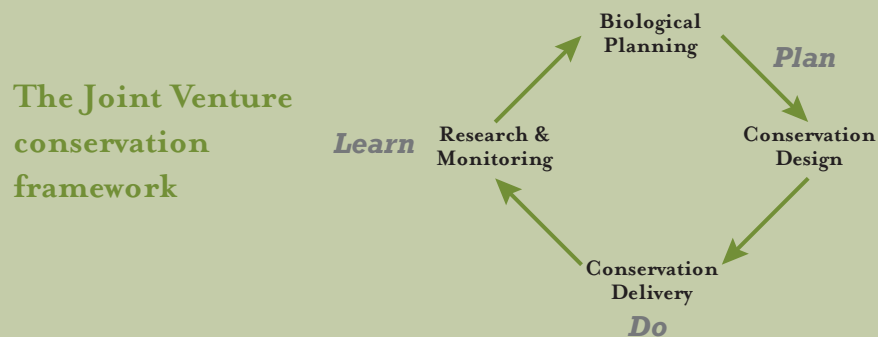
**Information gaps:** For many of the landbird species within both BCRs there is a lack of information on their specific habitat requirements and their responses to management-induced changes in habitat condition. Additionally, monitoring efforts for many species are limited or not reliable. Population data for the majority of landbird species of regional concern within the OPJV have important deficiencies that limit their utility in describing long-term trends.

**Unifying existing conservation efforts:** At present there are many natural resource management plans impacting the OPJV, including state, federal and non-governmental programs, plus recovery efforts for several endangered avian species. The resulting complex management matrix suggests the need for a common outlet that helps planners avoid redundancy, recognize shared opportunities, and leverage financial and logistical resources.

Joint Ventures enhance and facilitate the ability of existing conservation entities by providing technical assistance for habitat maintenance, enhancement and restoration projects.

# What can the OPJV do to help?

Joint Ventures are fairly unique in their strategic approach to avian conservation. In this model, biological planning is used to identify and prioritize conservation needs of bird species, set population objectives, and develop working models that link population abundance to habitat condition. This information serves as the basis for a spatially targeted conservation design or plan. Mechanisms for conservation delivery are then put together based on science and experience/intuition with both the natural and social systems in play. Follow-up monitoring provides a reference for gauging the success of conservation planning and delivery. Research is primarily centered on testing the assumptions underlying biological planning and conservation design. This process results in an increased understanding of the biology and management of bird species, and that increased understanding can be plugged back into the planning and design elements. The importance of this framework is that it links (and strengthens) different conservation tools as a repeating cycle of planning, doing and learning.



Ultimately, the specific direction of the OPJV is a function of goals and priorities identified by the Management Board, working with JV staff and technical committees and the resources available to pursue these goals. However, what follows are some of the potential roles identified in our continuing dialogue with regional conservation entities:

**Biological planning:** Starting with a firm biological foundation helps set the stage for successful avian conservation through the articulation of clear goals and objectives and baseline information on bird populations and their habitats. The OPJV can work with partners to:

- \* Develop an ecoregional-based assessment of avian habitat challenges and opportunities
- \* Prioritize the conservation needs of avian species
- \* Identify limiting habitat factors for priority species
- \* Develop working models to link abundance of priority species with habitat condition
- \* Develop BCR-specific, habitat-based population objectives for priority species
- \* Synthesize and incorporate common goals of existing state and regional planning efforts (e.g., state wildlife conservation strategies, The Nature Conservancy Conservation Portfolios, the Texas Quail Conservation Initiative, etc.)

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**Conservation design:** In recent years there has been general acknowledgment that local scale conservation efforts have not been sufficient to reverse declining populations of many avian species. Managing at landscape and larger scales requires an elegant approach and a solid vision of the desired result. The OPJV could work with partners to:

- \* Develop and disseminate decision support tools for priority species habitat management
- \* Promote change from “opportunity-based” to “biologically-based” conservation by identifying ecologically important focus areas
- \* Put forward a vision of a realistic “desired landscape” based on the needs of key bird species as modified by social, land-use and ecological constraints

Each JV is uniquely adapted to the cultural conditions in its part of the country. There is no single JV template.

**Conservation delivery:** Delivering effective on-the-ground conservation involves developing the technical, funding and outreach capacities needed to protect, enhance and restore habitat. The OPJV and its management partners could play a number of important habitat conservation roles:

- \* Protect existing habitat
  - Identify important avian habitats that need to be protected
  - Develop informational workshops for landowners interested in pursuing conservation easements
  - Help finance conservation easements on key habitats

*continued*



- \* Enhance or maintain condition of existing habitat
  - Promote existing and emerging landowner incentive programs for conservation of avian habitat
  - Leverage partner and outside dollars to enhance the condition of key habitats
  - Support (through technical and financial assistance) and organize prescribed burning cooperatives as a tool to restore and maintain avian habitats
  - Inform policymakers of the beneficial uses of fire in ecosystem, wildlife and fuels management
  - Organize informational Farm Bill workshops for action agencies and interested landowners
  - Use conservation planning to identify important avian habitats needing treatment
- \* Restore habitat
  - Provide financial, technical and outreach support to state-level programs for revegetating non-native pastures and croplands with appropriate native species (e.g., the Texas Parks and Wildlife Department's "Pastures for Upland Birds Program")

Joint Ventures have proven they can deliver on-the-ground habitat conservation. Each partner brings unique problem-solving expertise to the table.

**Research and Monitoring:** "Research-based" and "biologically sound" are not just popular catch phrases; they are concepts central to effective planning and delivery of conservation. However, all too often, research is conducted without clear plans for linking what we learn to what we do, or the two meet only episodically. One solution to this problem is to implement management actions using a format that allows us to statistically quantify their effects, or to determine the differences between competing management approaches. This "adaptive management" approach explicitly links science with on-the-ground management and can be used to test planning and design assumptions. Working with management and research partners, the OPJV could:

- \* Use adaptive management to address deficiencies in our knowledge of:
  - The influence of habitat structure and composition on productivity of priority bird species
  - Population-level responses of priority birds to habitat modification
  - The proper use of management tools for modifying habitat structure and composition
- \* Sponsor periodic meetings of research and management partners to determine research priorities
- \* Develop new, and provide support (technical and financial) for existing, research/demonstration areas
- \* Identify sustainable mechanisms for correcting population monitoring deficiencies

Joint Ventures work with research entities to identify and fund research projects that enhance our knowledge of the biology of priority bird species and our ability to manage key habitats.

Joint Ventures provide an opportunity for partners to network, identify common interests, and leverage conservation dollars and ability.

## Become an OPJV Partner

Partnerships are the backbone of any successful JV. In fact, JVs **are** a collection of partners working toward common goals. Oaks and Prairies Joint Venture partners will have the opportunity to leverage funds and share resources in an atmosphere created to foster exactly those things. Additionally, as management proceeds to increasingly large spatial scales, the OPJV is ideally suited to meeting the unique challenges associated with creating biologically-sound landscape and ecoregional conservation efforts. The simple truth is that no single agency or entity can handle the enormous task of putting together the conservation planning and delivery, research, outreach and monitoring programs that are possible in the partner-based JV format. For more information, please call (512) 389-4328 or e-mail: [ctop.jv@verizon.net](mailto:ctop.jv@verizon.net)

# For more information on Joint Ventures and Landscape-level Bird Conservation Planning

## **Surrounding Joint Ventures**

Gulf Coast Joint Venture  
<http://www.gcvjv.org>

Lower Mississippi Valley Joint Venture  
<http://www.lmvjv.org/>

Playa Lakes Joint Venture  
<http://www.pljv.org/>

Rio Grande Joint Venture (Forming)

Upper Mississippi River and Great Lakes Region  
Joint Venture  
<http://www.fws.gov/midwest/NAWMP/>

## **National and International Bird Conservation Plans**

The North American Landbird Conservation Plan  
[http://www.partnersinflight.org/cont\\_plan/default.htm](http://www.partnersinflight.org/cont_plan/default.htm)

The North American Waterbird Conservation Plan  
<http://www.waterbirdconservation.org>

The North American Waterfowl Management Plan  
<http://www.fws.gov/birdhabitat/NAWMP/index.shtm>

The Northern Bobwhite Conservation Initiative  
<http://www.bobwhiteconservation.org/index.html>

The United States Shorebird Conservation Plan  
<http://www.fws.gov/shorebirdplan/>

## **Reading List**

Bird Conservation Region Descriptions. North American Bird Conservation Initiative, 2000. U.S. NABCI Committee.  
<http://www.nabci-us.org/aboutnabci/bcrdescrip.pdf>

Birds of the Edwards Plateau: A Field Checklist. Mark W. Lockwood, 2001. Natural Resources Program, Texas Parks and Wildlife Department. PWD BK P4000-667 (2/01).  
[http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd\\_bk\\_p4000\\_0667.pdf](http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_p4000_0667.pdf)

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<http://www.wildlifedepartment.com/CWCS.htm>

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Joint Venture

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