



The All-Bird Bulletin

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Advancing integrated bird conservation in North America

Joint Ventures: Carrying Out Full-Cycle Conservation for Birds

Dave Smith, Intermountain West Joint Venture Coordinator and Roxanne Bogart, Wildlife Biologist, U.S. Fish and Wildlife Service

What Do Joint Ventures Do for Birds? “Joint venture” is a term most commonly used to describe a cooperative business enterprise. However, the term was adopted by wildlife conservationists in the late 1980s to describe the public-private partnerships that would be needed to implement waterfowl conservation across the continent with the signing of the North American Waterfowl Management Plan in 1986.

Today these joint ventures (JVs) are collaborative, regional partnerships of government agencies, non-profit organizations, corporations, tribes, and individuals that conserve habitat for priority bird species within specific geographic regions in the United States and Canada. JVs use state-of-the-art science to ensure that a diversity of habitats is available to sustain bird populations for the benefit of those species, other wildlife, and the public. Their actions include: biological planning, conservation design and prioritization; project development and implementation; monitoring, evaluation, and applied research; communications, education and outreach; and funding support for projects and other activities. These actions form an iterative cycle known as strategic habitat conservation (SHC; see Fig. 1). In this way, JVs carry out full-cycle conservation for birds.

Effective, collaborative conservation for birds is needed now more than ever. More than 30 percent of bird species in the United States are federally listed as endangered, threatened, or of conservation concern. Their greatest threat is habitat loss on breeding areas, overwintering grounds, and migration sites throughout North America and beyond. This special issue of *The All-Bird Bulletin* presents the wide range of work carried out by the U.S. bird habitat and species JVs. Their work is critical to achieving the North American Bird Conservation Initiative’s (NABCI’s) vision of protecting and restoring populations and habitats of North America’s birds through partnerships guided by sound science and effective management.

How did JVs Evolve? The Joint Ventures were born out of the North American Waterfowl Management Plan (NAWMP), a landmark agreement signed in 1986 by the United States and Canadian governments to restore continental waterfowl populations to the levels of the 1970s. Duck populations had declined precipitously due to a ten-year drought on the prairies and extensive habitat loss. The framers of NAWMP realized that the two federal governments could not halt the decline alone, and that the only viable option was to encourage a network of regionally based, self-directed partnerships committed to strategic waterfowl habitat conservation. These public-private partnerships were needed to leverage science-based planning and insure that on-the-ground habitat conservation would happen at unprecedented levels.

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As such, JVs were initially waterfowl conservation partnerships. The first six JVs were located in portions of North America—the Prairie Pothole Region of the U.S. and Canada, the Central Valley of California, Lower Mississippi Valley, Gulf Coast, Atlantic Coast, and Great Lakes/St. Lawrence Basin—designated as the highest priority habitats of concern for waterfowl. The United States and Canadian governments provided encouragement and seed funding, but the real work got done by the regional partnerships. They formed management boards, developed governance procedures, and collectively sought funding for priority work. In 1994, Mexico became a signatory to the NAWMP, completing the continental partnership for waterfowl; though it would take at least another decade for JV-like partnerships in Mexico—regional alliances—to begin to form.

Conservationists concerned with the plight of other migratory bird groups—landbirds, shorebirds, and colonial waterbirds—saw the success of the NAWMP's model and adopted it as they developed conservation plans and strategies for their species of concern. This spawned development of new JVs and expansion of existing ones such that an essentially seamless network of JVs now exists across the United States, as well as portions of Canada and Mexico. Most of the JV management boards now work under the guidance of national and international bird conservation plans to design and implement landscape-scale conservation efforts for all birds, including resident game species. To provide a consistent framework for these activities, NABCI partners developed Bird Conservation Regions (<http://www.nabci-us.org/bcrs.htm>), which are used not only by JVs, but also by state-level bird initiatives and other agencies and organizations.

How Do JVs Work? The JV partnerships are supported with base funding from the U.S. Fish and Wildlife Service (FWS) and the Canadian Wildlife Service and a vast array of additional federal, state, and private funds. For JVs with approved implementation plans, the FWS has committed to seek funding for a coordinator and establish base capability for planning, implementation, and evaluation—the main components of SHC. Nationwide, 18 habitat-based JVs each address the bird habitat conservation issues found within their geographic area. Additionally, three species-focused JVs—all with an international scope—work to further the scientific understanding needed to effectively manage those species (see Fig. 2).

A common misconception of JVs is that because they are supported by federal funding, they are a grants program or a branch of the federal government. In fact, JVs occupy unique territory in that their appropriated federal funding and activities are governed by self-directed management boards comprised of representatives of participating agencies, organizations, corporations, and individuals.

Management boards are responsible for sustaining the commitments of representative organizations, which is critical to achieving JV goals and objectives and determining priorities for all aspects of JV activities. The composition of management boards varies among JVs and they can be very diverse. For example, the Intermountain West JV Management Board includes state and federal agencies, non-governmental conservation organizations, and for-profit corporations. The Rainwater Basin JV Management Board includes farmers and other private landowners. These organizations and individuals bring valuable non-federal dollars to leverage federal dollars for habitat projects, conservation planning, and other JV priorities. And the relationship is mutually beneficial. The JV forum helps organizations build partnerships for habitat conservation and gain support for key initiatives.

Joint Ventures have been widely accepted as the model for conservation in the 21st century. The U.S. Congress has strongly supported the work of JVs over the last 20 years. Funding has increased steadily during this period to a collective annual allocation of over \$14 million, split amongst the 18 U.S. Habitat JVs and three species JVs. This isn't surprising—JVs have a 25-year history of success in leveraging public and private resources by bringing together partners to focus on regional conservation needs. Since the program's inception in 1986, JV partnerships have invested \$5 billion to conserve 17.3 million acres of priority habitats.

JVs range in size from San Francisco Bay, the smallest—but protecting one of the Pacific Flyway's largest migratory bird stopovers, to Intermountain West at 486 million acres spanning 11 states. Most established JVs maintain a staff devoted to coordinating the JV partnership, providing scientific and geospatial expertise, and undertaking communications, education, and outreach. In some cases, JVs administer grants for capacity-building, research and monitoring, or direct habitat projects. JV funds are often used to support the work of partner organizations that

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Strategic Habitat Conservation

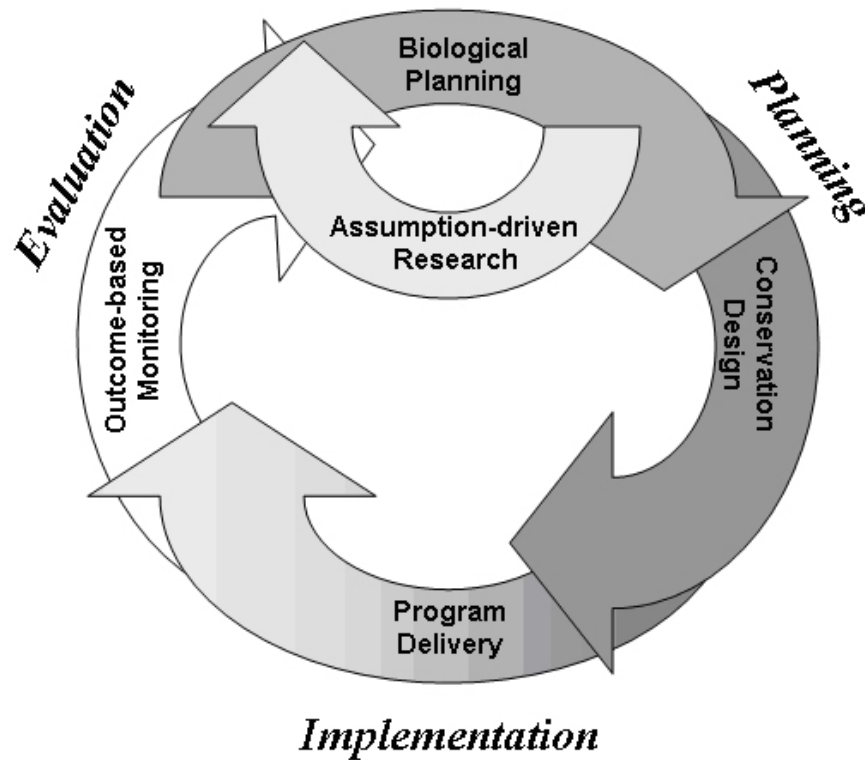


Figure 1. Strategic habitat conservation (SHC) is a science-based framework for making management decisions about where and how to deliver conservation efficiently to achieve specific biological outcomes. SHC is a way of thinking and doing business that requires us to set specific biological goals, allows us to make strategic decisions about our work, and encourages us to constantly reassess and improve our actions. <http://www.fws.gov/science/strategichabitatconservation.html>

SHC incorporates these elements—biological planning, conservation design, delivery, monitoring and research—in a framework that allows for change (adaptive) and repetition (iterative).

- Biological planning involves identifying priority trust resources, determining population objectives, assessing the current status of populations, identifying threats and limiting factors, and using models to describe the relationship of populations to habitat and other limiting factors.
- Conservation design uses the results of biological planning to develop decision support tools, including maps and models, to guide management. It also identifies priority geographic areas for conservation and determines population-based objectives for habitat or other limiting factors based on these tools.
- Program delivery involves implementing conservation actions through communications, education, and outreach programs and partnerships that are guided by decision support tools and targeted to achieve specific biological results or outcomes.
- Monitoring collects data to evaluate the effectiveness of conservation actions in reaching biological outcomes and to provide feedback to future planning and delivery.
- Research tests assumptions in biological planning and conservation design that have the greatest impact on management decisions and provides feedback to future planning.

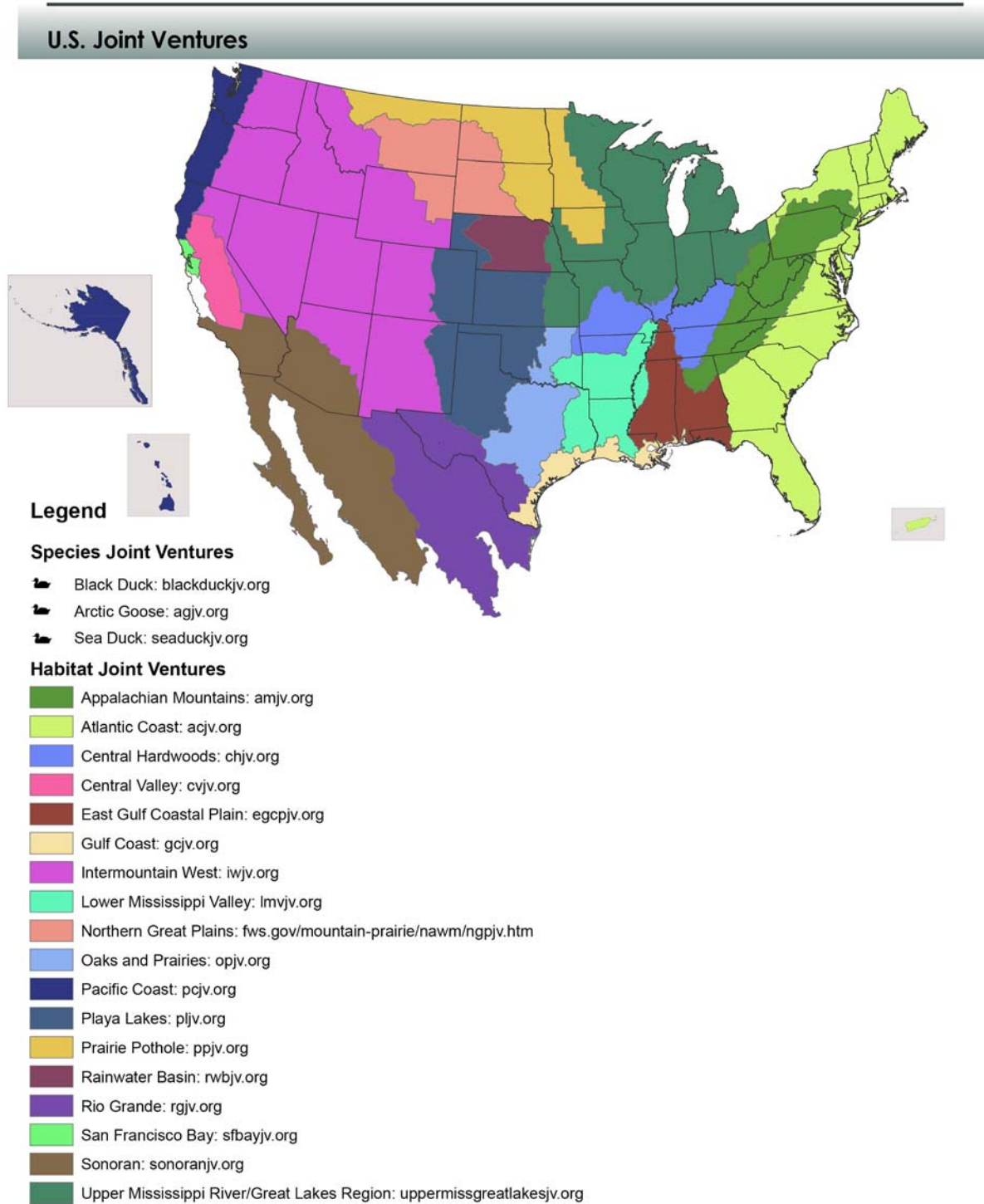


Figure 2. U.S. Habitat and Species Joint Ventures. /Debra Reynolds, USFWS

<http://www.fws.gov/birdhabitat/jointventures/index.shtm>

leverage funding for habitat work through, for example, Farm Bill conservation programs or other federal, state, and private sources. And several JVs have stepped up to contribute seed money to new positions in priority landscapes, as defined by their science-based bird conservation planning.

JVs are partnerships that operate under the old adage—*the partnership is stronger than the sum of its parts*.

In This Issue. This special spring issue of *The All-Bird Bulletin* is dedicated to presenting the full-cycle conservation work of the 18 bird habitat and 3 species JVs in the United States. The JV business model, strategic habitat conservation, is exemplified by the Appalachian Mountain JV's award-winning mineland restoration efforts described in the article on pages 6-7.

Biological planning results in goals and priorities for conservation action and the next step, conservation design, is about developing habitat models at regional scales to examine trade-offs among species and habitats and optimize landscapes to meet population and habitat objectives identified through biological planning. Articles on pages 8 through 16 show how habitat work is being informed by such biological planning and conservation design activities in the Central Hardwoods, San Francisco Bay, Intermountain West, Playa Lakes, Rainwater Basin, Atlantic Coast, East Gulf Coastal Plain, Gulf Coast, and Oaks and Prairies JVs.

To plan for or improve conservation activities on the ground, partners undertake monitoring and research to better understand populations, evaluate the effectiveness of actions, test the assumptions behind models, and measure progress towards objectives. Articles on pages 17 through 21 describe such monitoring and research activities of the Arctic Goose, Sea Duck, and Black Duck species JVs as well as the Atlantic Coast and Upper Mississippi River-Great Lakes Region habitat JVs.

Partnerships are the cornerstones to JV success, whether they be long-standing alliances with land trusts, as described in the Pacific Coast JV article on page 23, or binational collaboration with Mexico for grasslands conservation in the Sonoran and Rio Grande JVs' article on page 22. The latter shows how partners are spreading the JV model to Mexico through creation of regional alliances or "alianzas." Other prosperous partnerships are described by the Intermountain West JV on page 10 and the Prairie Pothole, Lower Mississippi Valley, and Northern Great Plains JVs on pages 24 through 26.

New partnerships are evolving to deal with the landscape-scale conservation challenges that all species face. Landscape Conservation Cooperatives (LCCs) are partnerships of organizations that are developing science-based recommendations and decision-support tools to guide on-the-ground conservation for wildlife and address landscape-scale stressors such as climate change, habitat loss and fragmentation, genetic isolation, invasive species, and water scarcity. Many JVs now have opportunities both to collaborate with LCCs to develop needed science-based tools and solutions to meet shared goals, and to help guide the evolution and work of the LCCs for birds. The Atlantic Coast JV article on page 13 is one example of such cooperation.

Communications, outreach, and education provide the foundation for creating and maintaining partnerships, ensuring conservation actions are taken, stopping detrimental human behaviors, and fostering a conservation ethic. The Junior Duck Stamp program in California, as described in the Central Valley JV article on page 27, is using science and the arts to foster conservation awareness in children—our next generation of land stewards. The Cerulean Warbler pen-pal program on page 7, which links students in the Appalachian Mountains with those in the Andean region of Colombia, is educating children in both places about the importance of sustainable coffee and coal production to the survival of a Neotropical migrant on its breeding and wintering grounds.

While waterfowl and wetland conservation is and always will be critical to most JV missions, the expanded scope of JVs fits well with the locally based habitat work of many partners—those that work not just to conserve wetlands, but also forests, grasslands, coastal and marine environments, and chaparral and desert ecosystems. Indeed, JVs provide an excellent forum to advance the bird and habitat objectives of a wide variety of agencies and organizations across the country, benefitting a host of other wildlife species and people as well.

Award-winning Mineland Restoration Efforts in Appalachian Mountains

Brian Smith, *Appalachian Mountains Joint Venture Coordinator* and Robert Johns, *Public Relations Director*,
American Bird Conservancy

Managing any landscape for a broad spectrum of species can be a challenge. But with the use of science-based conservation tools and dedicated partnerships, successfully implementing “game-changing” programs for multiple species is possible.



“Legacy mineland” in West Virginia. Mine reclaimed 15-20 years ago with grasses. Very few trees — and none typical of a diverse hardwood forest— have colonized the site due to severely compacted soils. /Patrick Angel, OSMRE, ARRI

When it comes to mineland restoration in the Appalachian Mountains, the “game changer” in recent years has been the Appalachian Regional Reforestation Initiative (ARRI, <http://arri.osmre.gov/>), coordinated by the Office of Surface Mining and Reclamation Enforcement (OSMRE). ARRI is a coalition of agencies, organizations, citizens, and coal companies dedicated to restoring forests on coal mined lands—both old and new—in the eastern United States.

Unfortunately, various types of surface mining (e.g., conventional contour mining and mountaintop removal) are prevalent throughout Appalachia and leave visible and lasting marks on the landscape. Following the implementation of the Surface Mining Control and Reclamation Act (SMCRA) of 1977, regulators focused on stabilizing the landforms created by mining in lieu of restoring diverse native forests. Regulators addressed problems such as severe erosion and sedimentation, often seen on “pre-SMCRA” surface mines, by compacting soil excessively and planting aggressive, non-native ground covers.

Over the last three decades, these actions led to widespread failure of early reforestation attempts, leading mine operators and regulators to implement post-mining land uses such as haying and pasture land rather than re-establishing forests. As a result, an estimated 750,000 – 1,000,000 acres throughout the Appalachians have been reclaimed to grasses and other undesirable vegetation (e.g., Autumn Olive, *Sericea lespedeza*), contributing to both forest fragmentation and the spread of non-native plants.

The ARRI effort seeks to remedy these ongoing reclamation issues by using refined techniques to establish native forests on loosely packed mineland reclamation sites. This practice also has been found to reduce erosion and sedimentation.



Compacted soils on southeastern Kentucky mineland recently “ripped” using a large bulldozer to loosen the top four feet of soil so hardwood seedlings could be planted and their root systems thrive. /Brian W. Smith, American Bird Conservancy

Large blocks of core forest, especially those that exhibit structural and age-class diversity, are critical to several priority bird species in the Appalachians, including the Acadian Flycatcher, Wood Thrush, Cerulean Warbler, Worm-eating Warbler, and Kentucky Warbler. In portions of the region, reclaimed mine sites offer the only early successional habitats on the landscape, many of which now support viable populations of high priority species that rely on grasslands (e.g., Henslow’s Sparrow, Northern Bobwhite) and shrublands (e.g., Golden-winged Warbler, American Woodcock).

Given the diversity of species and habitats in need, the ARRI, in partnership with the Appalachian Mountain Joint

Venture (AMJV), is developing and using a suite of planning tools, innovative restoration techniques, and diverse partnerships to set goals and strategically target efforts and resources. The conservation design tools will help identify those places on the ground where reforestation, shrubland restoration, or grassland management would most benefit priority species, while also predicting the tradeoffs of not selecting particular management options. Simultaneously, the ARRI partnership is developing a science-based, adaptive approach to establishing forests on newly reclaimed mines and restoring forests on old mines with compacted soils.

Once the conservation tools are in-hand, partners will be able to better target resources to the most appropriate land restoration and management options for particular suites of species using minelands or the forests surrounding them. Most importantly, ARRI is beginning to change the way mineland reclamation will be conducted into the future.

Initiated in 2004, this young but successful effort has now won much-deserved recognition from the highest office in the land. ARRI was awarded the first Presidential Migratory Bird Stewardship Award, announced on May 24th in Washington, D.C.

The award citation says that “ARRI serves as OSMRE’s key focus for the agency’s migratory bird conservation practices. Major ARRI partners include notable bird conservation organizations such as the American Bird Conservancy (ABC) the Appalachian Mountains Joint Venture, the Cerulean Warbler Technical Group (CWTG), the Golden-Winged Warbler Working Group (GWWG), the National Fish and Wildlife Foundation, The Trust for Wildlife, and many other conservation and environmental groups and associations.” Visit <http://www.fws.gov/migratorybirds/> for more information.

In addition to the reforestation efforts, the Presidential Award also recognized a key ABC South American partner, Fundación ProAves, for its work with ARRI and CWTG in a pen-pal program that links high school students from the coal fields of the Appalachian Mountains with students in the Andean coffee-growing region of Colombia. Using the conservation of shared migratory birds such as Cerulean Warbler as the uniting principal, the project adds an international education dimension to the on-the-ground work of restoring minelands. It is not only linking the warbler’s breeding and wintering grounds, but also educating kids in both areas about the connection of this bird to two global products—coffee and coal—both of which have altered habitats within the Cerulean’s wintering and breeding ranges.

ARRI’s partnership with groups such as AMJV, ABC, and ProAves is the key to its success, bringing diverse expertise and knowledge together to solve a critical issue. Together they will ensure that migratory bird conservation will stay “in the game” as the initiative grows. For more information, contact Brian Smith, American Bird Conservancy, at bsmith@abcbirds.org.



Mineland recently reclaimed to hay and pastureland near Ohio’s—and possibly the Appalachian’s—largest and densest population of Cerulean Warbler. These grassland tracts now support growing numbers of Henslow’s Sparrow and Bobolink. /Brian W. Smith, American Bird Conservancy

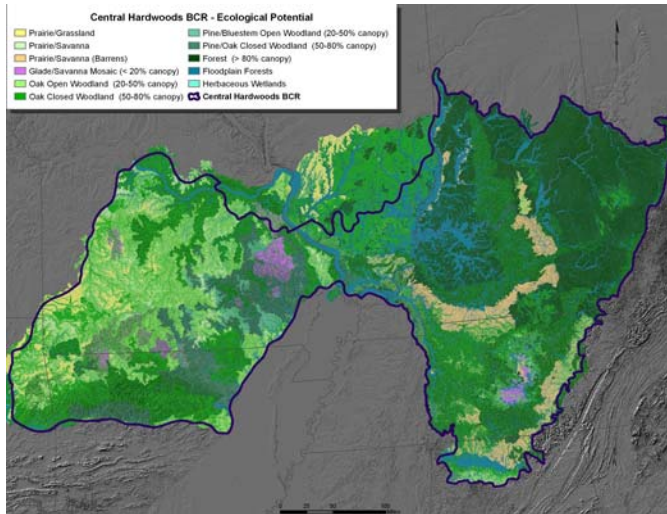


American Chestnut hybrid planted on the Flint Gap Project in southwestern Virginia, headed up by The Nature Conservancy. /Brian W. Smith, American Bird Conservancy

One Million-Acre Habitat Restoration Project in Central Hardwoods

Jane Fitzgerald, Central Hardwoods Joint Venture Coordinator, American Bird Conservancy

When European settlers first arrived at the area now called the Central Hardwoods Bird Conservation Region (BCR 24), which straddles the Mississippi River between Illinois and Missouri, they were greeted by vast expanses of “barrens”—prairie-like grasslands with scattered clumps of trees across the low plateaus of Kentucky and Tennessee. Large areas of open woodlands grew on the rugged topography. Grassy glades, which occur on rocky outcrops, were found on some hilltops and dry slopes. In other landscapes, enough Shortleaf Pine existed to support populations of the now extirpated federally endangered Red-cockaded Woodpecker.



High value areas for restoration have been mapped by the CHJV, whose scientists predict dramatic increases in currently declining bird populations once native landscapes are restored.

Central Hardwoods Joint Venture (CHJV) has adopted a habitat goal of restoring over one million acres of barrens, glades, and woodlands across BCR 24.

To reach this goal and restore these ecosystems at landscape scales, JV partners are using careful thinning and prescribed fire. Management was initiated or reapplied on roughly 130,000 acres in 2010, and plans are in place to allow the JV to meet or exceed the million-acre objective within the next two decades if sufficient funding can be secured. Bird habitat models and others developed by JV staff and partners suggest that meeting the habitat objectives for these ecosystems will also allow us to reach Partners in Flight and CHJV population objectives for priority early successional bird species in the BCR. This assumes that lack of suitable habitat on the breeding ground is the primary limiting factor.

Many of the bird species that would benefit from this long-term restoration effort are listed as U.S. Fish and Wildlife Service Birds of Conservation Concern due to dwindling populations or habitat loss. These include the Red-headed Woodpecker, Brown-headed Nuthatch, Bachman's Sparrow, Prairie Warbler, and Blue-winged Warbler—species that need open habitats rather than closed-canopy forests and either have disappeared from the target areas or have been greatly diminished from historic levels. In addition to birds, other wildlife that may benefit from the project include: Indiana Bat, Red Bat, Eastern Gray Treefrog, Texas Mouse, Eastern Woodrat, Eastern Chipmunk, Giant Swallowtail butterfly, Diana Fritillary butterfly, Lichen Grasshopper, Dusky Gopher Frog, Northern Cave Crayfish, and Collared Lizard. Threatened and endangered plants that may benefit include Tennessee Coneflower, Tennessee Milk Vetch, and Eggert's Sunflower.

For more information on native ecosystem restoration in the Central Hardwoods BCR, contact Jane Fitzgerald, American Bird Conservancy, jfitzgerald@abcbirds.org.

Today the prairies and barrens have been almost completely converted to pasture and cropland. Nearly all the pasture has been planted to Tall Fescue, a non-native grass that is much less bird- and wildlife-friendly than the diverse native grasses and flowering plants and shrubs that once blanketed open areas and the understory of open woodlands.

Forests and woodlands often still exist in areas with steeper topography; but with the advent of fire suppression in the early 1900s, they are now much denser in most places. Loss of natural disturbance-driven diversity has resulted in dramatic population declines of early successional bird species that once were associated with barrens, glades, and open oak and pine woodlands.

But in many places where the sod has yet to be broken, seedbanks and rootstocks of long-dormant native grasses, forbs, and shrubs—which once characterized natural early successional communities—persist and have a great ability to rebound if encouraged by proper management. The Cen-

Smallest Joint Venture Has Big Vision for Restoring San Francisco Bay

Beth Huning, Coordinator, and Carline Warner, Public Outreach Coordinator, San Francisco Bay Joint Venture

Situated in a densely populated area, and with the signature feature of being the smallest joint venture in geographic area, the San Francisco Bay Joint Venture (SFBJV) is boldly moving forward with the enormous task of protecting, restoring, and enhancing 200,000 acres of wetlands in the nine Bay Area counties. With more than 160 active projects, including four of the five largest tidal wetland restoration projects in the nation, changes to the landscape are visible across the Bay as partners return military installations, salt-making ponds, and agricultural and industrial areas to wetland and riparian habitats. Projects derive from biological planning activities and an ecosystem-based strategy for restoring the Bay Estuary that establishes region-wide goals and subregional objectives for bay habitats, seasonal wetlands, and creeks and lakes.

San Francisco Bay is the largest estuary on the West coast and is recognized as a Site of Hemispheric Importance, the highest ranking given by the Western Hemisphere Shorebird Reserve Network. Despite an estimated loss of 80 percent of the historic tidal marshes due to a century of diking and draining for human use, hundreds of thousands of shorebirds find forage in its mudflats during their annual migration, and nearly 50 percent of Pacific Flyway diving waterfowl winter in the Bay. The area also has the highest concentration of listed species anywhere on the continent. Clearly, the Bay is a critical area for waterfowl, shorebirds, and endangered species—and while the landscape can't be returned to the way it was historically, ecological function can and is being restored.

Over the SFBJV's 15-year history, partners have been working on a variety of projects ranging from the day-lighting of small creeks previously buried underground throughout Oakland and San Francisco, to the restoration of more than 26,000 combined acres of salt ponds in the North and South Bay. While the goal of some of the projects is to re-create or simulate the historic tidal marshes, project managers are also incorporating managed ponds and seasonal wetlands into project designs to accommodate and attract a diversity of species.

With the return of natural and human-induced tidal action to large acreages, wetlands and managed ponds are returning as well. While it is too soon to know what the long-term bird conservation impacts of the restorations will be, initial monitoring data shows encouraging signs of increased bird use across the region, with shifting foraging patterns also noted.

For instance, waterfowl that once favored San Pablo Bay in the north are now moving to areas in the South Bay that have been opened to tidal action and provide favorable depths. Likewise, shorebirds that preferred the South Bay salt ponds are shifting foraging habits to newly restored areas of the North Bay. As these restored areas evolve over time, so too will bird responses. Each of the restoration projects has monitoring permit requirements, primarily for water quality, but many are conducting simultaneous biological monitoring, specifically for birds and fish.

With ongoing challenges such as climate change, sea level rise, a legacy of contaminants, and the threat of invasive species, the impacts of altering the landscape through restoration also presents an element of uncertainty in the



RESTORING SALT PONDS IN THE NORTH BAY

The Napa Sonoma Marshes Wildlife Area includes over 13,000 acres of saltwater ponds, tidal marshes, and wetlands. Just north of San Pablo Bay, this area is made up of levees and sloughs and many waterfowl, waterbirds, and shorebirds, including the endangered California Clapper Rail, can be found here. The State of California acquired the Green Island Unit, formerly known as the Napa Plant Site, in 2003. The San Francisco Bay Joint Venture partners took action to restore 1,400 acres of salt evaporation ponds within this unit to natural tidal wetlands. Activities included multiple levee breaches, levee lowering, internal tidal slough enhancement, and construction of public access features. The restoration was completed in November 2010 by Ducks Unlimited with the California Department of Fish and Game, and funding from California Wildlife Conservation Board, Resources Legacy Fund, the National Oceanic and Atmospheric Administration and the American Recovery and Reinvestment Act. /Ducks Unlimited.

The Sage-Grouse Initiative: Science-based Conservation Delivery

Dave Smith, Intermountain West Joint Venture Coordinator, U.S. Fish and Wildlife Service; Tim Griffiths, Sage-Grouse Initiative Coordinator, USDA Natural Resources Conservation Service; and David Naugle, Associate Professor, University of Montana

The Brewer's Sparrow may not be the centerpiece of a \$70 million habitat conservation initiative anytime soon. Yet the unheralded sagebrush-obligate passerine stands to reap significant benefits from the Sage-Grouse Initiative.

The [Sage-Grouse Initiative](#) (SGI) represents a bold step by the USDA's Natural Resources Conservation Service (NRCS), state fish and wildlife agencies, science institutions, and a host of other public and private partners to conserve sagebrush landscapes at a scale that transcends anything attempted to date. It is rooted in the reality that the futures of sage grouse and sustainable ranching are inextricably linked, and that science-based, landscape-scale conservation delivery is the recipe for success. The Intermountain West Joint Venture (IWJV) shares this vision and recently developed a strategic alliance with SGI through a \$4 million investment by NRCS in building SGI delivery capacity through partnerships.

The IWJV was born in 1994 out of a vision of collaboration in stark contrast to the polarization over natural resource use in the sagebrush biome among proponents of biodiversity, livestock production, and energy development. The

IWJV took a different tack than some of the 18 U.S. bird habitat JVs by building a management board made up of federal agencies, state agencies, non-governmental conservation organizations, and for-profit corporations. The thinking was that everyone needed a seat at the table and that the whole was stronger than the sum of its parts.

The icon of the sagebrush is the Greater Sage-Grouse, a native bird that the U.S. Fish and Wildlife Service (FWS) recently determined was "warranted but precluded" for listing under the Endangered Species Act.

On March 15, 2010, Dave White, chief of NRCS, announced that NRCS was allocating \$16 million in Environmental Quality Incentives Program (EQIP) and Wildlife Habitat Incentives Program (WHIP) funding to [SGI](#).

In its inaugural year, SGI has quickly become the largest conservation success story in the West. SGI works with livestock

producers to achieve wildlife conservation through sustainable ranching—all while reducing regulatory burdens. Capitalizing on the strong link between sustainable ranching and healthy sage-grouse populations, NRCS approved 223 contracts totaling over \$18.5 million in Farm Bill assistance to remove threats to sage-grouse and improve working ranches; another \$53 million is available Fiscal Year (FY) 2011. SGI targets program delivery within high sage-grouse abundance centers or "core areas" to help maintain large and intact grazing lands. This new "conservation triage" approach enables NRCS to prioritize relentlessly, ensuring enough of the right conservation practices are implemented in the right places to expect a positive sage-grouse population-level response.

In FY 2010, 40,000 acres of encroached conifer were removed, improving forage available for livestock and wildlife. By year's end, SGI will implement improved grazing systems on 2,600 square miles of large and intact sagebrush grasslands—an area equivalent to 2,200 football fields conserved every day!

The IWJV and SGI recently joined forces when NRCS decided to implement the SGI Strategic Watershed Action Team (SWAT) through the JV. This effort will build critical field capacity and science and communications capabilities through partnerships, thus increasing the effectiveness and durability of SGI. It will result in 17 new wildlife biologists and range conservationists working in NRCS field offices in key sagebrush landscapes, as well as a wide array of new decision support tools and on-going outcome-based research. The IWJV partnership network has

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The iconic Greater Sage-Grouse of the Intermountain West.
/Stephen Ting, USFWS

Mapping Tool Targets Lesser Prairie-Chicken Habitat Reclamation in New Mexico

Misti Vazquez, Communication Director, Playa Lakes Joint Venture

In 2010, the Bureau of Land Management (BLM) began using a map-based Decision Support Tool (DST), developed by a multi-agency conservation team, to identify and prioritize abandoned oil and gas wells in southeastern New Mexico for reclamation to benefit the Lesser Prairie-Chicken (LEPC).

Historically, this resident grouse species was found throughout eastern New Mexico, but over time its range receded due to habitat loss and it is now confined to relatively small areas. The LEPC is a Partners in Flight species of high tri-national concern, and the U.S. Fish and Wildlife Service has begun the process of list it under the Endangered Species Act.

“In order to survive, the Lesser Prairie-Chicken requires large, intact patches of grassland, greater than 10,000 acres,” says Grant Beauprez, an LEPC biologist with the New Mexico Department of Game and Fish, “but much of its habitat has been fragmented and degraded by oil and gas activity.”

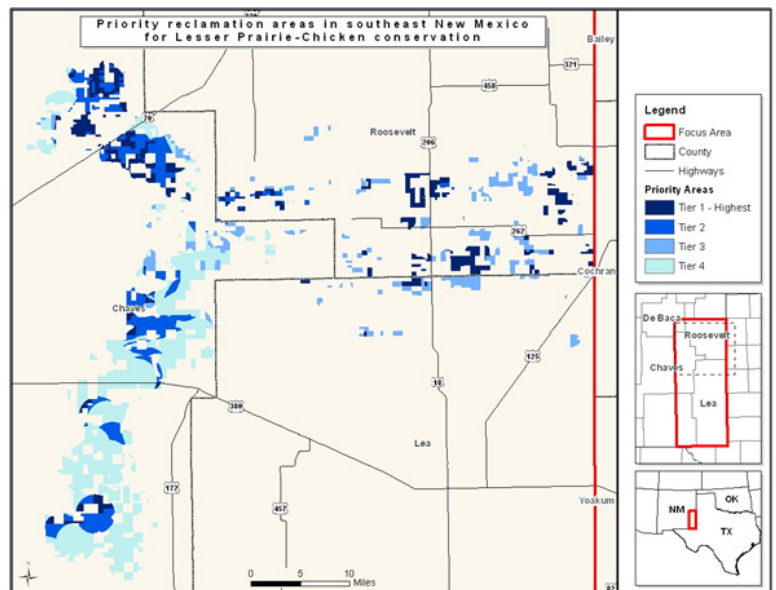
The BLM-New Mexico has been working to restore some of the impacted habitat by reclaiming abandoned oil and gas wells; however, with hundreds of wells and limited funding, the BLM needed a way to determine where work would be most beneficial to the LEPC. This need spurred the formation of the multi-agency team and the development of the DST.

The Playa Lakes Joint Venture (PLJV), BLM-New Mexico, The Nature Conservancy, New Mexico Department of Game and Fish, New Mexico State Land Office, U.S. Fish and Wildlife Service, several oil companies, and other organizations developed an area conservation strategy for the LEPC, which includes the reclamation of abandoned oil and gas sites. The PLJV, a public-private partnership for bird habitat conservation in the region, guided the development of the DST through a grant from the National Fish and Wildlife Foundation, which also provided \$200,000 in funding for infrastructure removal.

The DST is based on a prioritization process that employs the principles of Strategic Habitat Conservation as set forth by the U.S. Fish and Wildlife Service, and is applied in a geographic information system (GIS) or computer-mapping environment. The tool prioritizes areas for reclamation based on six criteria: habitat suitability (e.g., core patches), disturbance level (e.g., noise, human activity, structures), proximity to leks, mineral rights, mineral lease status, and conservation areas (see map).



Lesser Prairie-Chicken, a resident grouse species of high conservation concern, is known for performing showy breeding displays on leking grounds, and is found only in the Southern Great Plains. /Noppadol Paothong



Map of priority areas in southeast New Mexico for reclaiming oil and gas infrastructure to improve habitat quality for Lesser Prairie-Chicken. Tier 1 areas, shown in dark blue, receive highest priority, although all Tiers should be considered areas important for the conservation of the species. /Playa Lakes Joint Venture

Making Every Wetland Habitat Acre Work Harder in the Rainwater Basin

Doreen Pfost, Communications Director, Rainwater Basin Joint Venture

Rainwater Basin Joint Venture (RWBJV) partners are taking advantage of advances in farming technology and geographic information systems (GIS) to improve habitat for waterfowl, whooping cranes, and other wetland birds in south-central Nebraska.

The Rainwater Basin Watershed Initiative combines resources from partner organizations and the RWBJV's GIS capabilities to restore hydrology in the watersheds of publicly owned wetlands. The Rainwater Basin's playa wetlands receive their water from rain and snowmelt within their respective watersheds. Most of the region's watersheds, though, have been altered to facilitate cropping and irrigation. Hydrologic alterations include ditches, concentration pits, and "re-use" pits—excavations that collect and store runoff water for gravity irrigation systems.



Northern Pintails at Clark Wildlife Management Area in south-central Nebraska. /Andy Bishop, Rainwater Basin Joint Venture

Most of the region's 167 public wetlands are impaired to some degree by re-use pits. The RWBJV identified by GIS analysis over 800 pits in the watersheds of public lands. A growing number of these pits are obsolete, as more landowners convert to center-pivot irrigation systems. The pits, generally on private farmland, intercept runoff that would otherwise flow to the wetland. As a result, recent aerial habitat surveys found that the RWB's public wetland areas ponded water at an average rate of just 17 percent during spring migration, providing far less habitat than they ideally could for the estimated 9 million waterfowl that stop here.

RWBJV biologists estimate that this region's wetlands must annually provide 4.4 billion kilocalories of wetland forage to meet the nutritional needs of

migrating waterfowl—a 50 percent increase over the amount currently available. To acquire 50 percent more public land would not be economically or socially feasible, nor would it be necessary. The better solution is to make each already-protected acre provide more and better habitat. For example, eliminating an average re-use pit would return about 5.6 acre-feet of water to a watershed, and flood 9 to 15 wetland acres, according to estimates by RWBJV's GIS staff. It would also give the landowner more farmable acres, though the expense of earthwork generally outweighs the economic benefit to a farm operation.

Through the Rainwater Basin Watershed Initiative, RWBJV partners are helping to offset the cost of pit-fills. Contributors include the Natural Resources Conservation Service, through its Wildlife Habitat Initiative Program; the Nebraska Environmental Trust; U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program and Challenge Cost-Share grant; Nebraska Game and Parks Commission; Ducks Unlimited, through a North American Wetlands Conservation Act grant; county road departments; and landowners.

Clark Waterfowl Production Area is one success story. This 450-acre WPA provides migration habitat to tens of thousands of Northern Pintail, Mallard, White-fronted Geese, and other ducks and geese, plus Trumpeter Swan, Sandhill Crane, and Whooping Crane. Four neighboring landowners agreed to fill a total of nine irrigation pits on their land to achieve an almost-complete restoration of the watershed. In early 2011, contractors used sediment from the wetland to fill road ditches and three pits. Other landowners donated nearly 37,000 cubic yards of soil from their fields to fill additional pits.

Touring the Rainwater Basin this March, Secretary of the Interior Ken Salazar visited Clark WPA, where he praised the cooperation among landowners and Joint Venture partners, calling it "a model for conservation in the 21st century." For more information, contact Andy Bishop, U.S. Fish and Wildlife Service, at andy_bishop@fws.gov.

Designing Sustainable Landscapes in the Face of a Changing Climate

Tim Jones, Atlantic Coast Joint Venture Science Coordinator and Andrew Milliken, North Atlantic Landscape Conservation Cooperative Coordinator, U.S. Fish and Wildlife Service

Fish and wildlife agencies in the southeast United States are increasingly challenged to predict and respond to the potential effects of a changing climate and a changing landscape. In response to these challenges, the Atlantic Coast Joint Venture initiated a project to design sustainable landscapes for bird populations in the eastern United States, currently funded under the Multi-State Cooperative Grant Program of the Association of Fish and Wildlife Agencies.

The project involves developing a framework and the necessary tools for landscape-level strategic habitat conservation planning in the South Atlantic Migratory Bird Initiative (SAMBI) region—the eastern portion of the Southeastern Coastal Plain Bird Conservation Region (BCR 27). Researchers at the Alabama Cooperative Research Unit are using structured decision making to identify priority species for planning. Meanwhile personnel at the North Carolina Cooperative Research Unit are incorporating projections of climate change, urban growth, land cover dynamics, and sea-level rise into habitat models for these priority species.

One major challenge in implementing adaptive management is to anticipate and estimate the indirect impacts of climate change on the landscape. Changes in temperature and precipitation may directly impact vegetation and wildlife through changes in phenology and water availability. However, other subtler impacts that occur over long time-scales could have an even larger effect on the entire ecosystem.

In BCR 27, fire frequency changes are a prime example of a potential indirect climate change impact that could have large-scale implications. Fire is a disturbance of great importance to ecosystems in the region, which historically experienced high frequency, low intensity fires that limited the growth of hardwoods and shrubby understory. Although human-induced landscape changes have dramatically altered the frequency and extent of the pre-settlement fire regime, the inter- and intra-annual variability and the relative magnitude of the fire regime remain tightly coupled to the climate system.



Longleaf Pine habitat is important for several priority bird species including the Red-cockaded Woodpecker. /USFWS

The SAMBI team is using a two-part methodology to project changes in fire frequency and associated effects on the landscape. First, to predict changes in fire frequency, a statistical model relates historic fire occurrence data to various climatic and environmental variables such as temperature, precipitation, evapotranspiration, and soil moisture. It then projects changes in fire frequency over the next century using outputs from a suite of global climate models.

Second, the fire frequency projections are incorporated into a vegetation dynamics model, the Vegetation Dynamics Development Tool (VDDT) and the Tool for Exploratory Landscape Scenario Analyses (TELSA), to simulate landscape change in BCR 27 in the 21st century. Random and non-random disturbances such as fire, disease, and timber management are modeled according to their likelihood of occurrence (for random disturbances) or according to a pre-determined cycle (non-random disturbances). Changes in fire frequency are expressed as either increases or decreases in the probability that a fire will occur for a particular system.

The initial results are intriguing. In the Upland Longleaf Pine system of BCR 27, the model indicates that under a “business-as-usual” greenhouse gas emissions scenario, mid- and late-open stage habitat is resilient to increased fire frequency. This is considered to be prime habitat for several priority bird species in the SAMBI, including the endangered Red-cockaded Woodpecker. These findings could have important implications for conservation planning in that some systems appear to provide greater resilience to climate change than others. For more information, contact Andrew Milliken, U.S. Fish and Wildlife Service at andrew_milliken@fws.gov.

Developing Desired Forest Conditions for Southern Pine Ecosystems

Randy Wilson, Wildlife Biologist, U.S. Fish and Wildlife Service

Across the southeastern United States, a suite of high priority species depend on fire-maintained, pine-grassland systems. These high priority, threatened, and endangered species include Gopher Tortoise, Mississippi Gopher Frog, Black Pine Snake, Red-cockaded Woodpecker, Northern Bobwhite, and Bachman's Sparrow. The East Gulf Coastal Plain Joint Venture (EGCPJV) is leading an effort with multiple partners to develop "Desired Forest Conditions" (DFCs) for the southern pine ecosystems that these species depend on.



Foresters and wildlife biologists discuss desired forest conditions for longleaf pine on an EGCPJV field trip. /Catherine Rideout, USFWS

The main purpose of this effort is to provide technical recommendations to public and private land managers who are undertaking fire-maintained, pine-grassland restoration and management. The recommendations will focus on enhancing habitat for these and other priority wildlife species of southern pine ecosystems. By considering species from multiple taxonomic groups, the development of DFCs is being conducted in a holistic manner to reflect the habitat needs of a diversity of priority species.

The Desired Forest Conditions will provide blueprints for managing southern pine forests for wildlife. To guide this effort, a series of goals have been identified to focus the efforts of partners. The first two goals are to develop DFCs for Southern Pine ecosystems and a framework to link priority species' habitat needs to those conditions. The final goal is to develop management recommendations to achieve the conditions. This last goal involves the development of a series of structural and compositional attributes and corresponding desired metrics to aid on-the-ground management decisions and actions.

The initial geographic focus of this project was the East Gulf Coastal Plain portion of the Southeastern Coastal Plain Bird Conservation Region (western portion of BCR 27). However, participants realized early on that for this endeavor to be fully successful, it should include the entire geographic range of southern pine systems across the Southeast. To that extent, the EGCPJV partner-

ship has engaged other bird habitat joint ventures (e.g., Lower Mississippi Valley, Gulf Coast, Atlantic Coast, Central Hardwoods, and the Appalachian Mountains Joint Ventures) that have expressed interest in coordinating similar efforts within other BCRs across the southeast. This inter-joint venture collaboration will provide an opportunity to develop a shared product that reduces duplicative efforts and incorporates information from the larger geographic range of southern pine ecosystems.

The joint ventures anticipate that the development of DFCs for these ecosystems will provide: (1) a clearly articulated blueprint of forest conditions, at both the landscape-scale and stand-scale, that supports sustainable populations of all fire-maintained, pine-grassland species; (2) contemporary restoration and management recommendations rooted in wildlife habitat needs; and (3) a forum to increase inter-disciplinary coordination and communication between the biological and forestry communities.

The success of this effort depends on the participation of biologists, foresters, and researchers representing a myriad of federal and state agencies, and non-governmental and industrial organizations. To learn more or find out how you can participate, contact Randy Wilson, U.S. Fish and Wildlife Service at randy_wilson@fws.gov or 601.965.4903 ext 300.

Gulf Coast Models Inform Wetlands Management in Face of Oil Spill

Barry Wilson, *Gulf Coast Joint Venture Coordinator, U.S. Fish and Wildlife Service*

On April 20, 2010, the Deepwater Horizon off-shore drilling unit exploded in the Gulf of Mexico near the mouth of the Mississippi River. The explosion killed 11 workers and marked the beginning of an oil spill that continued through most of the summer, before it was permanently sealed. The spill posed significant but unknown risks to birds and their habitats across much of the Gulf Coast Joint Venture (GCJV) region. GCJV partners were motivated to identify and implement strategies to address presumed impacts that were highly uncertain and dependent on factors such as duration of spill, quantity of oil released, occurrence and severity of tropical storms, area of landfall, quality of habitat impacted, density of birds using habitats at the time of impact, and residual effects of oil-contaminated habitats. While the degree of uncertainty was high, the risk of failing to act was higher.

GCJV partners identified a suite of habitat-related actions deemed appropriate to mitigate, compensate, or recover from anticipated spill-related bird impacts. Providing an immediate and ample supply of shallow water wetlands inland from the expected spill impact zone was among this suite of actions. Partners envisioned providing such shallow water management on both public and private lands through supplemental water provision and vegetation manipulation on water management units designed for intensive moist-soil management, as well as on active and idle cropland.

Moist-soil management strives to produce abundant natural seed-bearing vegetation and invertebrates—critical food items for waterfowl and shorebirds. Flooding and manipulation of harvested or idle cropland in rice cultivation rotations, and management of late summer and early fall mudflats on such lands, ensure the availability of waste grain, natural seeds, and invertebrates for foraging waterfowl and shorebirds. The need for such conservation actions existed prior to the spill and are presented in various long-term GCJV planning documents. But with spill-related uncertainties looming over some coastal marsh habitats, GCJV partners had an even greater desire to ensure that alternative habitats were not in short supply elsewhere within the region.



Northern Pintail and other waterfowl using shallow agricultural wetland in southwest Louisiana. /John Pitre, USDA-NRCS

Unfortunately, developing reliable predictions of the oil spill's impacts on birds and their habitats was not possible, especially under the short timeframe needed to ensure imminent provision of inland shallow water wetlands. In lieu of such predictions, GCJV staff developed hypothetical scenarios of the spatial extent of oil impacts in a GIS framework based on reasoned judgments in consultation with aerial photography, geospatial databases that delineate coastal marsh types and barrier islands, an understanding of oil impacts already detected, and experience with extent of hurricane-induced storm surges. GCJV partners used the scenarios as broad sideboards to help quantify the likely range of potential impacts to waterfowl and shorebird habitats, which they translated into wetland habitat acreages necessary to mitigate the potential short-term impacts.

GCJV staff used GIS and wetland spatial databases to measure the area of habitats potentially impacted under each scenario and used biological models to translate acres impacted into lost foraging capacity for waterfowl and shorebirds. Staff then calculated inland habitat acreages necessary to compensate for reduced foraging capacity of impacted coastal marshes and shorelines. Biological models and assumptions followed those previously used to relate waterfowl and shorebird population targets to habitat needs through bird energetic requirements and food energy availability.

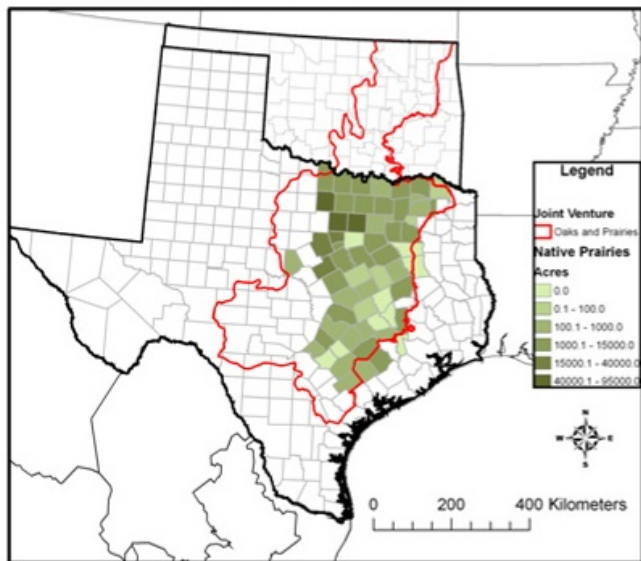
Informed by these estimates, GCJV partners significantly expanded inland shallow water wetland management on public and private lands through several initiatives and funding sources, including USDA-NRCS's Migratory Bird Habitat Initiative, the National Fish and Wildlife Foundation, National Wildlife Refuge System, and others. The current challenge facing the GCJV is to maintain attention on inland shallow water bird habitat needs that existed prior to the spill, and that will likely only increase in the face of many coastal marsh stressors (e.g., predicted sea-level rise). For more information, contact Barry Wilson, U.S. Fish and Wildlife Service, barry_wilson@fws.gov.

Survey of Texas Native Prairies Advances Grassland Bird Conservation

Jim Giocomo, Oaks and Prairies Joint Venture Coordinator, American Bird Conservancy

Identifying existing native habitat is one of the first steps in the conservation design phase of adaptive management or Strategic Habitat Conservation. Up to 99 percent of native tallgrass prairie in the United States has been converted to other land uses, including agriculture and urbanization, but there are no recent large scale surveys of existing prairie remnants.

Acres of Native Prairies by county within the Oaks and Prairies Joint Venture



The Oaks and Prairies Joint Venture (OPJV) has identified grassland-associated birds as its highest priority and accurate identification of existing habitat is instrumental to both effective conservation design and habitat delivery. Our high priority grassland species include Scissor-tailed Flycatcher, Painted Bunting, Dickcissel, Eastern Meadowlark, Northern Bobwhite, and Bell's Vireo.

In 2008, Native Prairies Association of Texas (NPAT; <http://texasprairie.org/>) in cooperation with the OPJV with funding through the Texas Parks and Wildlife Department (TPWD), along with several other private conservation funding organizations, initiated a county-level, road-based survey to identify tallgrass prairie remnants in 95 counties primarily in the Oaks and Prairies Bird Conservation Region (BCR 21) and the Gulf Coast Prairie BCR (37).

NPAT used a precise protocol to record all information needed to create Element Occurrence Records to include in the Natural Diversity Database used by NatureServe

cooperators. Data collected included location, ownership information, native plant communities present, vegetation quality (using a defined scale), and a map of the patch borders in GIS. Location information on false positives was also collected to avoid future re-evaluation of sites. It took approximately 180 hours to do the field work, enter the data, and create the report for each county surveyed.

Within each county, aerial photography and soil survey maps were used to narrow down the search area and identify potential prairie remnants. Local prairie experts, landowners, and residents were queried to help locate actual native prairie remnants. The owner of each remnant was contacted and offered information and educational material about tallgrass prairies, care of native prairies and native prairie hay meadows, conservation easements and land trusts, wildlife management associations, and state landowner incentive programs.

TPWD has agreed to be the primary source for GIS mapping and database management; however, NPAT intends to share this information with other partners. NPAT plans on using the data to prioritize land acquisition as well as restoration and outreach efforts and is partnering with other agencies through two primary coalitions: North Texas Prairie Coalition and the Coastal Prairie Partnership. The Texas Land Trust Council also has expressed an interest in serving as a point of dissemination. A host of entities—including non-governmental organizations, land trusts, conservation partnerships such as the OPJV, and government agencies—will use the survey data not only to help protect these habitat patches, but also to provide potential seed sources for restoring local ecotypes adapted to regional soil and environmental conditions.

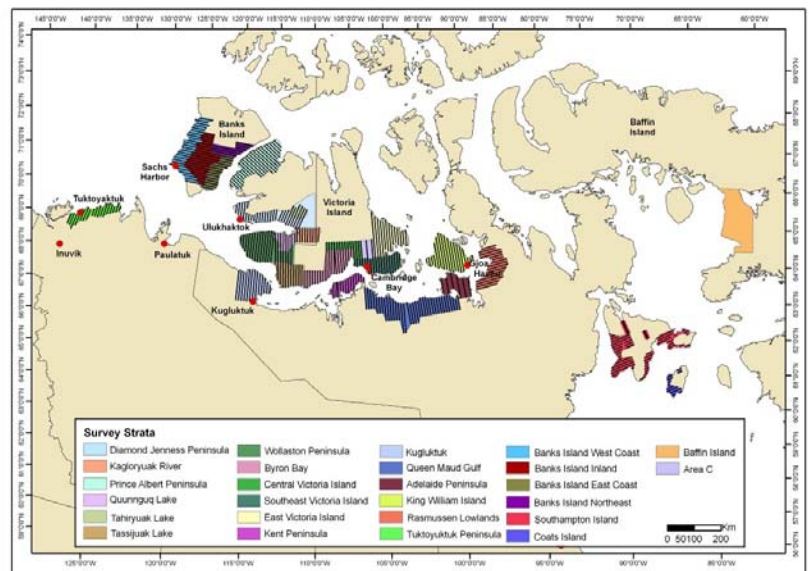
This survey project has already identified 1,763 native prairie remnants covering 382,548 acres (1 percent) of the 37,639,586 acres in the Texas portion of the BCR 21 (see map). Moreover, this project will go a long way toward helping our partners identify priority areas among these remnants for conservation action to support priority grassland bird populations. The OPJV hopes to expand these prairie remnant surveys into the Oklahoma portion of the JV. For more information, contact Jim Giocomo, American Bird Conservancy, at jgiocomo@abcbirds.org.

Multiple Species Monitoring in Arctic Habitats

Tim Moser, Arctic Goose Joint Venture Technical Team Co-Chair, U.S. Fish and Wildlife Service

North America's arctic region, specifically the Arctic Plains and Mountains Bird Conservation Region (BCR3), is the primary breeding grounds for many of the continent's migratory geese, swans, sea ducks, waterbirds, shorebirds, and raptors, as well as resident wildlife such as caribou and muskoxen. The importance of arctic habitats has been recognized through the designation of several RAMSAR sites, Migratory Bird Sanctuaries (Canadian Wildlife Service), Areas of Continental Significance (North American Waterfowl Management Plan), and Important Bird Areas (BirdLife International). However, due to the remoteness of the arctic and the logistic hurdles of working there, most important areas have been systematically surveyed for wildlife only infrequently, if at all.

Since 2005, the Arctic Goose Joint Venture, Sea Duck Joint Venture, and cooperators have conducted exploratory aerial surveys to evaluate the distribution and abundance of White-fronted Goose, Canada Goose, Tundra Swan, King Eider, Long-tailed Duck, Sandhill Crane, several loon species, other waterfowl and waterbirds, and resident wildlife. Crews have surveyed 5,000-7,000 km of transects each year over an extensive area of the Canadian Arctic, from Banks Island, to the Queen Maud Gulf, to Baffin Island (see map). Observations of all identifiable wildlife are recorded and linked to simultaneous GPS locations. In 2011, U.S. Fish and Wildlife and Canadian Wildlife Service crews will survey nearly 14,000 km of transects in a final exploratory effort. Survey of this extensive area is facilitated by the U.S. Fish and Wildlife Service's recent acquisition of turbine-powered aircraft, which are especially well suited to arctic conditions and logistics.



These surveys of Canadian arctic habitats, in conjunction with those of the Alaskan arctic, will provide the most comprehensive assessment of breeding abundance and distribution for numerous bird populations to date. Abundance estimates resulting from only a sample of surveyed Canadian arctic areas indicate that previous assessments of abundance for several groups of birds were underestimated (e.g., Short-grass Prairie Canada Goose, Eastern Population Tundra Swan, Yellow-billed Loon). Continued surveys promise to provide reliable metrics with which to monitor change in breeding populations over time, which is critical for effective conservation and management.

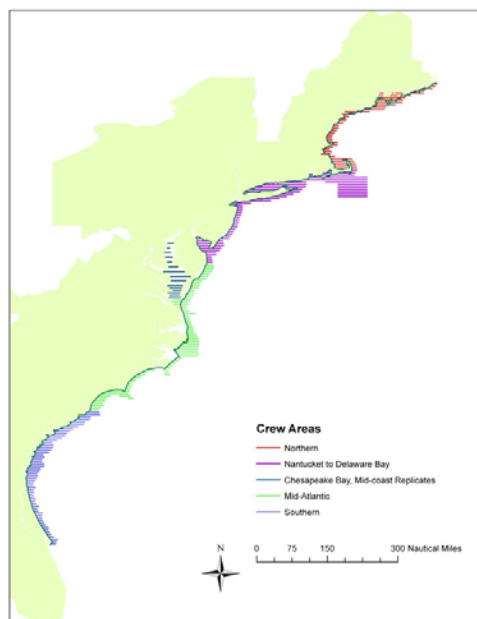
Monitoring wildlife guilds in the arctic provides particular utility in light of the increasing threats of climate change. Temperatures in the arctic are warming at twice the rate of more southerly ecosystems, and mean annual arctic temperatures are predicted to increase another 5 degrees in the next 50 years. Arctic warming is expected to degrade the integrity of permafrost, reduce wetland abundance, deplete the digestibility of vegetation, and increase erosion of coastal habitats. Melting permafrost may also release contaminants, such as mercury and organic pollutants, into the aquatic environment, exposing species to new threats. Longer ice-free periods during the arctic summer have increased anthropogenic pressures on these habitats from development and mineral exploitation.

Two prevalent subjects of these arctic surveys, geese and caribou, are keystone herbivores of tundra ecosystems. Substantial increases or decreases in these species can alter vegetative, predator, and entire biotic communities. Systematic monitoring programs such as this one, which includes keystone herbivores, will serve as an important barometer of change in the face of increasing temperatures and anthropogenic pressures on the arctic. For more information, contact Tim Moser, U.S. Fish and Wildlife Service, at tim_moser@fws.gov.

Surveys Identify Critical Information for Sea Duck Conservation

Emily Silverman, Statistician, Sea Duck Joint Venture Continental Technical Team, U.S. Fish and Wildlife Service

Sea ducks that migrate and winter along the east coast of the United States have long faced threats from shoreline development, shipping, pollution, and harvest. Now they face added risks from offshore energy development and the changing climate. To wisely plan for expanding use and management of marine habitats along the Atlantic coast while maintaining healthy wintering sea duck populations, the Sea Duck Joint Venture and the Division of Migratory Bird Management of the U.S. Fish and Wildlife Service (Service) are developing a winter aerial survey to monitor sea duck abundance and distribution. Information from this survey will help identify critical areas for wintering sea ducks, determine the habitat features sea ducks rely on, clarify the environmental conditions that affect distributions, and assess changes in population status.



Map of the 2010 survey design indicating the five crew areas. The 263 transects are spaced at 5° latitude intervals (approximately 5 nm). Every other east-west transect was flown twice by the four primary crews; observations were also collected as crews flew south to north, ¼ mile offshore and parallel to the coast, between replicates (dark green track). The fifth crew flew the northern Chesapeake Bay lines and four additional replicates of a set of lines around the mouth of the bay (inset). Crews flew 100 knots at an altitude of 200 m with the pilot and right seat observer each counting all birds seen within a 200m-wide strip transect on their respective side of the aircraft.

Service pilot-biologists and their observers have completed four years of preliminary survey work along the Atlantic coast from the U.S.-Canadian border to northern Florida (see map). Surveys in February 2008 covered the area from Cape Canaveral, Florida, to Cape Cod, Massachusetts, with five crews flying at least eight nautical miles offshore to the 16 m depth contour. In subsequent years, the survey was extended north to the U.S.-Canadian border and the southern extent truncated due to the absence of sea ducks along the Florida coast. Survey transects also cover the Chesapeake and Delaware Bays, Pamlico and Long Island Sounds, and the Nantucket Shoals south of Nantucket Island. Crews record all species of sea ducks, as well as seabirds, but survey design and data analyses are focused primarily on the five most marine-oriented species that winter along the coast: White-winged, Surf, and Black scoters, Long-tailed Duck, and Common Eider. Populations of these species are believed to be declining, and detailed information about their ecology and behavior is critically needed to design management responses.

Preliminary results suggest that the vast majority of sea ducks are found within 15 miles of land (except for birds foraging over shoals south and east of Cape Cod), and most are within five miles of the coast. Observations restricted to the nearshore, however, may misrepresent annual changes in abundance and distribution, as current data suggest substantial annual shifts in the distance of birds from shore. Less evidence of significant latitudinal shifts over the four survey years exists. Common Eider has the most northerly distribution, extending well into Canadian waters (their winter distribution is not completely covered by the survey). Long-tailed Duck and White-winged Scoter are concentrated especially around Cape Cod, with a substantial number of the former also found in Chesapeake Bay. Surf Scoter is also found in abundance along the mid-Atlantic coast, while Black Scoter, which averages the farthest distance from shore along the mid-Atlantic and southern coasts, winters as far south as the Georgia-

Florida border. Black Scoter distribution off South Carolina and Georgia appears to be highly variable among years. Additional intensive survey transects flown in 2011, combined with locations from Black Scoters with satellite transmitters, will help characterize their use of this region.

After four years of extensive preliminary survey work, we have a much-improved understanding of the winter range of sea ducks along the Atlantic coast, and we have developed important information about patterns of aggregation and fidelity within and between years. We are synthesizing the data, evaluating survey protocols, and generating abundance and distribution estimates with the goal of providing recommendations for continued comprehensive monitoring of wintering sea ducks. Contact Emily Silverman, U.S. Fish and Wildlife Service, at emily_silverman@fws.gov.

Atlantic Coast Partners Complete Three-year Study on Painted Bunting

Tim Jones, Science Coordinator and Deb Reynolds, Outreach Coordinator, Atlantic Coast Joint Venture, U.S. Fish and Wildlife Service

The male Painted Bunting is no doubt one of the most striking and colorful songbirds in North America. Its French name, *nonpareil*, meaning “without an equal,” describes the beautiful and somewhat gaudy plumage of this declining species, which breeds in two different populations: one in the south-central United States and one along the seaboard of the southeastern states.

The decline of the Painted Bunting is well documented from Breeding Bird Survey (BBS) data, indicating a decline of 4.1 percent annually, and 90 percent overall, since 1968. Habitat loss from development and land use changes, increased natural predation from climbing snakes, mammalian and avian predators in degraded habitats, free roaming and feral house cats, brood parasitism by Brown-headed Cowbirds, and trapping for the caged bird trade in Cuba and Mexico all have contributed to the Painted Bunting's decline. The apparent and sustained decline of this species has prompted several organizations and agencies to elevate its conservation status, which in turn has stimulated conservation actions to reverse its decline.

The Painted Bunting is classified as a species of Continental Importance by Partners In Flight and of Highest Priority by the Atlantic Coast Joint Venture's (ACJV's) South Atlantic Migratory Bird Initiative. It is also designated as a Bird of Conservation Concern and Focal Species by the U.S. Fish and Wildlife Service, a Green List species by the American Bird Conservancy, and a Watch List species by National Audubon Society.



The imperiled Painted Bunting prefers open brushland, thickets, and scattered woodlands. /Stephen Pittman

The imperiled status of this species prompted ACJV partners to form an Eastern Painted Bunting Working Group in the late 1990s. The goals of this group were to estimate the size of the eastern Painted Bunting population and better understand habitat use so ACJV partners could develop improved habitat management guidelines for this species. Because the BBS is not thought to adequately survey Painted Bunting habitat, ACJV staff and partners developed and implemented new monitoring protocols to better document the population status of the Painted Bunting along the southeastern seaboard. The group intensified its efforts in the fall of 2006 and, in consultation with statisticians, species experts, and remote sensing specialists, developed a survey program to provide data to achieve both goals within three years.

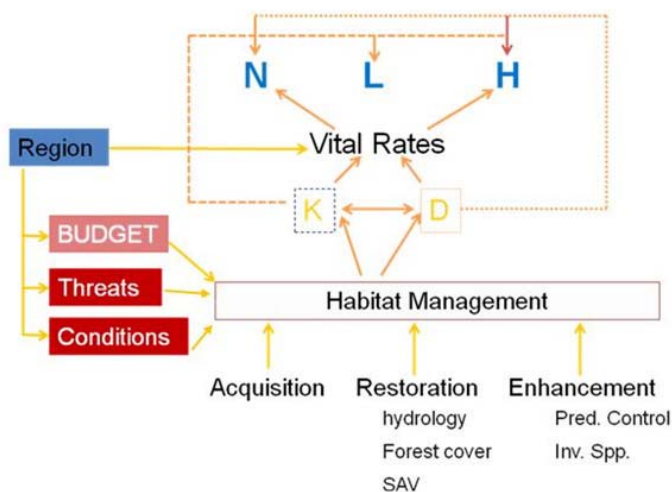
Between 2007 and 2009, over 11,000 point counts were conducted at almost 1,600 unique locations. The study produced a number of unexpected results, including large numbers of buntings in agricultural areas far from the coast and an overall population size much larger than previously expected. The new population estimate was six times larger than the best previous estimate. There is no evidence that this finding represents an expansion of bunting populations; rather, the BBS apparently has not been adequately sampling this species and its habitats. However, BBS data do indicate that from 1995–2007, buntings seem to have increased significantly throughout their range. While the reasons for this recent recovery are poorly understood, changes in agricultural practices, climate change, and changes in over-winter survival may be partly responsible.

As a result of this project, ACJV partners may re-evaluate the priority status of the Painted Bunting in Bird Conservation Regions 27 and 31. However, conservation efforts for this species and its habitats will continue, as it is a high regional priority to maintain an adequate amount of inland successional habitat and coastal stopover habitat for a large suite of species. For more information, contact Tim Jones, U.S. Fish and Wildlife Service, at tim_jones@fws.gov.

Adaptive Management Framework Integrates Black Duck Population Dynamics and Habitat Management

Patrick Devers, Black Duck Joint Venture Science Coordinator, U.S. Fish and Wildlife Service

Historically the American Black Duck was the most abundant duck species in eastern North America, but the population experienced a drastic (>50 percent) and long-term decline between the 1950s and 1990s. Researchers and managers have proposed several hypotheses to explain the historic decline of black ducks including over-harvest, competition and hybridization with Mallards, decrease in quality and quantity of wintering and breeding habitat, and environmental contaminants. Research into each of these hypotheses has provided valuable insight into black duck ecology and management. However, the black duck scientific community has not reached consensus regarding the cause of the population decline or current limiting factors. Today the population remains below the North American Waterfowl Management Plan (NAWMP) continental population goal despite bird habitat conservation efforts and implementation of restrictive hunting regulations in both the United States and Canada in the mid-1980s.



Conceptual model of the black duck management system designed to increase the black duck population by increasing continental carrying capacity via habitat management. Abbreviations include estimated breeding abundance (N), landscape conditions (L), continental harvest (H), continental carrying capacity (K), and regional black duck density (D). Black duck vital rates consist of season survival (summer, fall, winter, and spring), harvest mortality, and recruitment.

The Black Duck Joint Venture (BDJV) was initiated in 1989 to develop and promote cooperative population monitoring, research, and communication programs to provide the scientific information required to restore the black duck population to the NAWMP goal. The initial efforts of the BDJV focused on the development and improvements of monitoring programs, including a breeding population survey, development of an adaptive harvest management strategy, and research into black duck ecology. Now, the BDJV and its partners are focused on synthesizing the results of these efforts to develop an adaptive management framework to guide strategic habitat conservation and harvest management. The overall goal of this project is to increase continental carrying capacity via habitat conservation and management, which is critical to achieving both the NAWMP population goal and desire for more hunting opportunity. The anticipated output of this adaptive framework

will be an optimal policy for habitat acquisition, restoration, and enhancement throughout key regional areas covering the annual life cycle of the black duck—constrained by a budget.

The BDJV is using a structured decision making process to develop the framework and has completed an initial prototype of the underlying model (see figure). The initial prototype indicated the optimal policy for habitat delivery was highly influenced by our assumption of how black ducks respond to different types of management actions. For example, does salt marsh restoration result in higher black duck density or increases winter survival? Similarly, what is the relative impact on population growth of restoring one acre of breeding habitat compared to one acre of winter habitat? The BDJV used the results of the initial prototype to develop priority information needs as part of its 2011 Competitive Grant Program, which resulted in the selection of three new research projects designed to address our model assumptions. The BDJV and its partners have dedicated significant time and resources to the development of this framework and are hiring a research associate this summer to continue developing the underlying model. The BDJV anticipates having an initial adaptive management framework in place and informing habitat management by 2014.

For more information, contact Patrick Devers, U.S. Fish and Wildlife Service, at 301-497-5549 or patrick_devers@fws.gov

Research and Monitoring Support Conservation Planning in Upper Mississippi River-Great Lakes Region

Andrew Forbes, Upper Mississippi River-Great Lakes Region Joint Venture Assistant Coordinator, U.S. Fish and Wildlife Service

The 2007 Upper Mississippi River and Great Lakes Region Joint Venture (JV) Implementation Plan, and associated Bird-group Habitat Conservation Strategies, established a biological planning process for the JV partnership. The JV Plan presents explicit bird population and habitat objectives for the region, and identifies research and monitoring needs to refine JV recommendations over time. In 2010, members of the JV Technical Committee, Science Team, and staff supported and collaborated on several research projects designed to address planning information gaps and uncertainties. Here are brief summaries of a few of these projects:

(1) *Stopover Ecology of American Golden-Plovers*. This project, led by the Illinois Natural History Survey, will determine: 1) duration of stay in east-central Illinois, a key migration stopover location; 2) selection of stopover habitat and landscape use; 3) home range size during stopover; 4) average movement distances and landscape attributes related to movements while staging; and 5) carrying capacity of the agricultural landscape in east-central Illinois. Fieldwork for this project began in 2010 and will continue through spring 2011.

(2) *Evaluating Relationships between Multi-scale Habitat Variables and Marsh Bird Use of Great Lakes Coastal Wetlands*. This project is a collaboration between the Michigan Natural Features Inventory, Michigan State University, and the JV Science Team. The objective is to develop a database linking habitat variables with occurrence for nine species of high conservation concern in order to explore relationships between habitat and marsh bird use. Models developed through this process will be used to produce explicit predictions of the distributions of these nine species across the Great Lakes region. The project began in 2010 and is scheduled to be completed in 2012.

(3) *Movements, Survival, and Refuge Use by Locally Produced Post-fledging Ring-necked Ducks in Minnesota*. The objectives of this project, led by the Minnesota Department of Natural Resources, are to improve survey techniques for breeding Ring-necked Ducks and determine hen survival, recruitment success, and habitat characteristics influencing hen success. Due to the remote locations and low nesting densities for this species, researchers had significant challenges with sample sizes for nests, hens, and radio-tracked broods. Additional funding for a third field season was required to increase sample sizes. The field work associated with this project has now been completed and a final report is being prepared. Information from this study will be used to develop a regional species account, as the Ring-necked Duck has been identified as a potential focal species in the JV's Waterfowl Habitat Conservation Strategy.

These and many other JV-supported projects will improve the science foundation for strategic planning and decision support to better guide bird habitat protection, restoration, and enhancement projects. For more information, contact Andrew Forbes, U.S. Fish and Wildlife Service, andrew_forbes@fws.gov.



American Bittern is a marsh bird of high conservation concern. /Noppadol Paothong

Spreading the Joint Venture Model: The Regional Alliance for the Conservation of Chihuahuan Desert Grasslands

Jennie Duberstein, Sonoran Joint Venture Education and Outreach Coordinator, U.S. Fish and Wildlife Service

The grasslands of central North America are among the most threatened ecosystems in the world. In the Chihuahuan desert grasslands of the southwestern United States and northern Mexico, activities such as conversion for agriculture, unsustainable grazing practices, desertification, and woody shrub encroachment threaten the long-term survival of this ecosystem.



The Chihuahuan desert grasslands of the southwestern United States and northern Mexico are among the world's most threatened ecosystems.
/Janet Ruth, USFWS

Over 80 percent of grassland bird species breeding in western North America overwinter in the Chihuahuan desert grasslands, so as grassland habitat is lost and degraded, these species also will be impacted. Breeding Bird Survey data show that numbers of some grassland bird species have declined by as much as 80 percent since 1966. Species such as Lark Bunting, Horned Lark, Western Meadowlark, Vesper Sparrow, and Savannah Sparrow all show significant declining trends. Although the reasons behind these declines are not completely clear, the loss of critical wintering habitat in the Chihuahuan desert is likely to be an important factor.

With the widespread success of the U.S. and Canadian bird habitat joint ventures, it is no surprise that others are adopting this conservation model. The two binational bird habitat joint ventures with Mexico—the Rio Grande and Sonoran Joint Ventures (JVs)—have strong participa-

tion from partners in both countries. These experiences, as well as other JV achievements, have motivated Mexico to establish similar conservation collaborations, called Alianzas Regionales, or Regional Alliances.

In November 2010, the Commission for Environmental Cooperation announced the formation of the Alianza Ecoregional para la Conservación de Pastizales del Desierto Chihuahuense (Regional Alliance for the Conservation of Chihuahuan Desert Grasslands.) The Alianza is an eight-state ecoregional joint venture with the mission of conserving the Chihuahuan desert grasslands of northern Mexico. It is the result of a decade of work by representatives of nearly 30 organizations from Mexico, the U.S., and Canada, including the Rio Grande and Sonoran JVs.

The Alianza (<http://www.cec.org/grasslands>) is currently forming its steering committee, which will comprise partners from Mexico, with representatives from the U.S. and Canada serving in an advisory capacity. The Sonoran and Rio Grande JVs have played an important role in providing guidance and support to the developing Alianza, which will follow the JV model. Both JVs will continue to participate in this new effort in a number of ways, including providing advice and technical assistance, helping identify conservation priorities, collaborating on funding initiatives, and conducting outreach activities to stakeholders on both sides of the border.

Initial priority actions for the Alianza include working with beef producers to encourage best management practices to maintain quality grassland for both birds and cattle, creating seed banks of native strains of forage grasses, restoration activities to transform into lush grasslands areas that have suffered the effects of poor grazing management, developing manuals on grassland management conservation, and implementing a mentoring program for ranchers wishing to transition from traditional to holistic range management.

Conservation of this critical ecosystem will have far-reaching positive impacts on the continent's migratory birds, and the collaborative work of the Rio Grande and Sonoran JVs will help ensure the continued growth and success of the JV model for bird habitat conservation. For more information, contact Jennie Duberstein, U.S. Fish and Wildlife Service, at jennie_duberstein@fws.gov.

Teaming Up With Land Trusts Along the Pacific Coast

Shelley Kirk-Rudeen, Outreach and Communications Coordinator, Pacific Coast Joint Venture

Teaming up with land trusts has been an important part of the evolution of the Pacific Coast Joint Venture (PCJV) and a boon to achieving its conservation goals. In turn, land trusts have benefitted from the joint venture's expertise and assistance in a win-win partnership experience.

Land trusts have the local knowledge needed to identify grassroots projects that advance joint venture habitat goals. They've helped bring joint venture meetings from agency conference rooms to coffee shops and irrigation district offices. As community-based organizations, land trusts can tailor their conservation strategies to fit local needs while contributing to the joint venture's broader habitat conservation objectives. Because they are in the business of long-term land conservation, land trusts can help ensure that joint venture partners' investments produce lasting benefits for birds and other wildlife. And because they are local, land trusts can help create the community support needed to sustain responsible stewardship over time.

In return, the PCJV has helped land trusts compete successfully for millions of dollars in state and federal grants and has provided administrative funding for project planning, land appraisals, and outreach. Joint venture funds helped launch the Washington Association of Land Trusts and the Coalition of Oregon Land Trusts in their efforts to provide a stronger voice for land conservation interests at the state level.

Small grants for habitat protection can have a lasting impact on conservation groups such as land trusts. The grants assist in protecting or restoring a specific property and in building a group's capacity to do more projects. The story of Columbia Land Trust illustrates this point.

In 1990, a group of volunteers in Vancouver, Washington, formed Columbia Land Trust as a vehicle to conserve land through voluntary agreements with landowners. From 1990 through 1998, the land trust worked with five landowners to conserve about 70 acres. While this was important work, the pace was far slower than what the group hoped for. They knew they needed paid staff.

In fall 1998, Columbia Land Trust identified a priority 50-acre property within the boundary of Steigerwald National Wildlife Refuge, as well as private funding for part of the purchase price. But the land trust needed a match. With help from the Pacific Coast Joint Venture, the land trust applied for a \$50,000 small grant from the North American Wetlands Conservation Act (NAWCA). The grant request was successful, private fundraising was completed, and the property was protected.

The local newspaper ran stories about the project. Within weeks, the land trust's membership doubled, and then doubled again and again, allowing the land trust to complete a conservation and business plan and leverage funds to hire its first staff. In the ten years following the NAWCA small grant, Columbia Land Trust conserved 18,600 acres with 120 landowners, and now has 20 staff with three offices. The Trust has raised more than \$40 million and recently signed an agreement to conserve 20,000 acres of forest land.

Many factors went into the Columbia Land Trust's success. Assistance from the Pacific Coast Joint Venture through the NAWCA small grant came at a critical time and was essential to the publicity and growth in membership and donors that drove subsequent achievements. Helping land trusts achieve such success is a great example of how the joint venture partnership model carries out habitat protection for birds and other wildlife. For more information, contact Washington PCJV Coordinator, Lora Leschner, at lora_leschner@pcjv.org.



Columbia Land Trust members, Dory Brooking and Rae Tennyson on Washington State's Long Beach Peninsula. /Columbia Land Trust

The Prairie Pothole Joint Venture and NAWCA

Casey Stemler, Prairie Pothole Joint Venture Coordinator, U.S. Fish and Wildlife Service

Strategic Habitat Conservation (SHC) is the construct adopted by the U.S. Fish and Wildlife Service to fulfill its mission of wildlife and habitat conservation. From its inception, the Prairie Pothole Joint Venture (PPJV) adopted this business model. Given the vast size of the U.S. prairie pothole region (100,000 sq miles), biologists and land managers historically recognized the need to spend limited conservation dollars in a strategic manner. Consequently, as one of the first joint ventures established under the North American Waterfowl Management Plan, the original PPJV partners invested their time and money to conduct fundamental research, develop biological plans, design conservation strategies, and establish long-term monitoring activities. This investment allowed the PPJV to develop ground-breaking spatial planning tools that land managers can easily understand and use. For examples of such tools, visit <http://www.fws.gov/midwest/hapet/managementtools.html> and http://www.ppjv.org/hapet/hapet_bismark.htm.



Wetlands in the Prairie Pothole Joint Venture region. /Casey Stemler, USFWS

However, with the requisite tools in hand to strategically target conservation actions for priority species, land managers faced the quandary of identifying funding opportunities for habitat conservation. Since the early 1990s, they have turned to one of the most important wetland habitat conservation programs in the country—the North American Wetlands Conservation Act (NAWCA).

The North American Wetlands Conservation Act and bird habitat Joint Ventures are allied programs. PPJV partners look to NAWCA to provide a much-needed source of federal funding for their habitat conservation activities. The objective of NAWCA is to offer competitive matching grants to protect and restore wetland and associated habitats and help develop and grow long-term partnerships among state and local governments, non-governmental organizations, corporations, and private citizens, as

exemplified by the PPJV. Such partnerships work together on habitat projects that benefit wetland-associated migratory birds, plants, amphibians, insects, and other wildlife. Following the SHC process, countless PPJV partners use the planning tools and the funding provided by NAWCA to strategically carry out conservation across the PPJV landscape.

On average, PPJV partners submit four standard grant and three small grant proposals per year. For example, in the PPJV portion of Montana and South Dakota, the NAWCA program has supported 31 grants that conserve over 660,000 acres of wetland and associated upland habitat by using over \$23 million in NAWCA grants matched by almost \$48 million of non-federal funding. PPJV partners in Minnesota and Iowa have successfully secured 97 NAWCA grants totaling \$45 million matched by a whopping \$138 million in partner funds. As a result, partners in Minnesota and Iowa have protected, restored and enhanced 245,000 acres. In North Dakota alone, over the past 20 years, some 60 public and private organizations have partnered with over 1,000 landowners to protect, restore, enhance and create roughly 1,176,000 acres of wetland and upland habitat. This impressive accomplishment was supported by \$56 million in cash and in-kind services with a federal match through NAWCA of \$32 million.

The PPJV has shown the soundness and utility of the SHC business model as we implement habitat conservation across the region. Using the NAWCA program as a funding source and mechanism for partnership development, we are creating an enduring legacy of conservation achievement for both wildlife and the citizens of the United States. For more information, contact Casey Stemler, U.S. Fish and Wildlife Service, at casey_stemler@fws.gov.

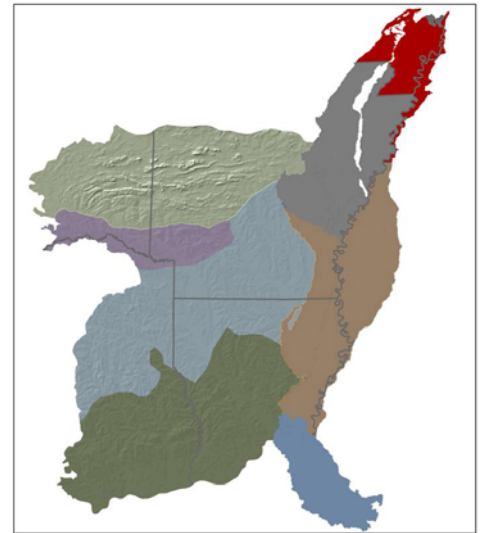
CDN – A New Acronym For On-The-Ground Partnerships in the Lower Mississippi Valley

Steve Brock, Mississippi Alluvial Valley Partnership Coordinator, Lower Mississippi Valley Joint Venture, U.S. Fish and Wildlife Service

The Lower Mississippi Valley Joint Venture (LMVJV) partnership is nationally recognized for its progressive, science-based approach to addressing priority migratory bird conservation needs in the Mississippi Alluvial Valley and West Gulf Coastal Plains/Ouachitas Bird Conservation Regions (BCRs 26 and 25). Since its inception in 1988, the taxonomic scope of the LMVJV has expanded (from waterfowl to all birds) and this coincided with an exponential growth in available information and technology. As a result, the potential value of effectively conveying the partnership goals, objectives, tools, datasets, and other products “to the field” has grown accordingly.

The LMVJV Management Board responded to this challenge by exploring ways to strengthen ties between the JV’s landscape-scale conservation design and planning work—accomplished primarily through technical committees and working groups—and the broader conservation community working on the ground. Ultimately, the LMVJV Board determined that the best strategy for addressing this need is to establish eight Conservation Delivery Networks (CDNs) within the LMVJV region. Very simply, CDNs are organized forums for conservation organizations, working within a functional geography, to coordinate on-the-ground delivery of their otherwise independent efforts. CDNs are guided by the vision that through cooperative coordination, leveraging, and targeting of their actions, they can more effectively achieve, at eco-regional scales, the bird conservation outcomes sought by the LMVJV.

In 2009, the development of CDNs caught the attention of the Walton Family Foundation (WFF). The WFF’s Freshwater Initiative seeks, among other things, to promote ecological restoration in the Mississippi Alluvial Valley as an integral part of economic sustainability in the region. The combination of the LMVJV’s existing science-based planning and developing partnership networks provided an ideal way for the WFF to focus its resources through an existing, partnership-rich mechanism. The end result was the initiation of a granting program, coordinated through the LMVJV, which facilitates the simultaneous accomplishment of LMVJV’s and WFF’s objectives.



**Lower Mississippi Valley Joint Venture
Conservation Delivery Network Geography**

In 2010, the Foundation made one million dollars available for granting to qualified projects. The grants serve as a potent catalyst for accomplishing projects focused on the biological priorities of the LMVJV and initiated through CDNs in the Lower Mississippi Valley. Further, partners leverage grant funds with contributions from other sources such as USDA Farm Bill, North American Wetlands Conservation Act grants, State Wildlife Grants, and Land and Water Conservation Funds. As a result, three priority habitat projects totaling more than 3,900 acres in Arkansas, Louisiana, and Mississippi, were matched by more than \$5.3 million in state and federal funds. One of the three projects leverages a USDA Mississippi River Basin Initiative grant that is projected to restore up to 10,000 acres of JV-targeted high priority bottomland hardwood habitat in the Arkansas Delta over the four year program. The project is being delivered through the NRCS Wetlands Reserve Enhancement Program, and is projected to leverage up to \$15M for restoration of priority bird habitat. The success of the program in 2010 resulted in WFF making \$1.25 million available through the LMVJV in 2011. The second round of proposals have been evaluated and ranked by the LMVJV, and should be awarded by July 2011.

The LMVJV’s partnership with the WFF is proving to be highly beneficial on multiple fronts. Most importantly, it is supporting the implementation of priority activities that emanate from the LMJV’s conservation design and planning efforts, while also stimulating the establishment of new CDNs, and supporting the WFF’s fundamental goal of fostering ecological restoration within the Mississippi Alluvial Valley. It’s winning proposition for all.

For more information, contact Steve Brock, U.S. Fish and Wildlife Service, at steve_c_brock@fws.gov.

Joint Venture Partnership Makes Wetland Conservation Possible in Hawaii

Shelley Kirk-Rudeen, Outreach and Communications Coordinator, Pacific Coast Joint Venture

The finite nature and vulnerability of island landscapes set them apart from continental ecosystems. The Hawaiian Islands are no exception and they present unique challenges for land managers and conservationists. Invasive species, land use activity, and population growth have heavily impacted habitat for native birds. Of 113 endemic species of birds originally found on the Hawaiian Islands, 71 are now extinct. Thirty-one are listed on the federal endangered species list, and ten of these species have not been seen for several decades.

Hawaii's forest birds have long been a focus for conservation partners. However, when the Pacific Coast Joint Venture expanded to include the Hawaiian Islands in 2002, it helped focus attention on the needs of wetland-dependent birds such as the Hawaiian Duck, Hawaiian Moorhen, Hawaiian Coot, Hawaiian Goose, Hawaiian Stilt, and Laysan Duck.



The endangered Nene, or Hawaiian Goose, is the only native goose species left in the state. /John and Karen Hollingsworth

"Wetland and waterbird managers on each island were plugging along, but working in isolation," says Fern Duvall, a wildlife biologist with the Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife. "The joint venture has helped to bring a statewide scope to the management of lowland wetlands and the needs of the birds that depend on them."

Hawaii Wetland Joint Venture steering committee meetings provide a forum for collaboration. The joint venture also assists partners with grants and information, helped fund the state's first brochure on wetlands and the fledgling Wetland Information Network database, and coordinated an effort to identify which wetlands to focus on among those found on islands across the archipelago. For more information, contact Jane Rubey, Hawaii Wetland Joint

ConocoPhillips Continues Support for Migratory Bird Conservation

Ken Sambor, Coordinator, Northern Great Plains Joint Venture

ConocoPhillips has expanded its support for migratory bird conservation by accepting an invitation to join the Northern Great Plains Joint Venture (NGPJV) Management Board. At the Board's April 20th meeting in North Dakota, ConocoPhillips announced a cash contribution for 2011, under a continuing award to the NGPJV. The Board agreed to provide 1:1 cash match for projects and activities funded by the ConocoPhillips award. The Board then approved \$47,500 in funding for the following five bird habitat conservation and partnership-building projects which, like all approved projects, leverage significant additional funding for conservation:

North Dakota Great Plains VII - A \$25,000 match contribution to support a \$750,000 grant proposal to the North American Wetlands Conservation Council for wetland and native grassland conservation in southwestern North Dakota; *Improving Riparian Habitat in Southwestern North Dakota* - \$10,000 to support a Cooperative Conservation Partnership Initiative providing \$1,500,000 to conserve priority riparian migratory bird; *Grid-based migratory bird monitors* - \$5,000 to combine with more than \$300,000 in other partner contributions for grid-based bird monitoring in the NGPJV; *Montana Bird Conservation Partnership* - \$5,000 for capacity building; and *North Dakota West River Action Group* - \$2,500 for capacity building.

ConocoPhillips and the NGPJV will fund another round of projects in August in Billings, MT. For more information, contact Ken Sambor, Ducks Unlimited, at ksambor@ducks.org.

Junior Duck Stamp: Planting the Seeds of a Conservation Ethic

Jill Shirley, Communications Coordinator, Central Valley Joint Venture

The Central Valley Joint Venture (CVJV) is a self-directed partnership of 21 state and federal agencies and private conservation organizations. It directs its efforts toward the common goal of providing for the habitat needs of migrating and resident birds in the Central Valley of California.

Because it is a self-directed partnership, the management board of the CVJV is empowered to make its own decisions about its particular priorities. Throughout its 23-year history, one priority that has remained constant is a belief in the importance of educating the public about the value of wetlands. Without such efforts, the CVJV cannot generate the kind of support necessary to accomplish its conservation mission. To that end, it has continually sought opportunities to extend its reach, deliver its message, and connect with the public in creative and meaningful ways. The Junior Duck Stamp (JDS) program has proven a valuable investment of CVJV resources because it has provided an opportunity to speak to an audience that wouldn't ordinarily be hearing a conservation message.

The Federal Junior Duck Stamp program is a national conservation and education program tailored to students in grades K-12. Teachers use curriculum to conduct classroom activities relating to conservation, wildlife art, and wetland-related topics. This unique program is a non-traditional pairing of art and science that spans cultural, ethnic, social and geographic boundaries to promote awareness of our nation's natural resources. It helps students tie together lessons on animal form and function, plant science, observation, wetland habitats, and more.

In California, the contest is directed by the U.S. Fish and Wildlife Service's Sacramento National Wildlife Refuge Complex and is sponsored by the California Waterfowl Association, the CVJV and its many other partners. Artwork is judged in four age groups: Grades K-3, 4-6, 7-9, and 10-12. Winning designs receive plaques, art supplies, and various other awards from the sponsors. All winners receive ribbons and certificates from the U.S. Fish and Wildlife Service.

On March 25th, judges from across the state gathered to decide this year's winner. With over 3,100 pieces of artwork, this was the biggest contest in JDS history. The winner was high school student Erica Digap, whose image of a Snow Goose was judged Best in Show. Her painting represented California in the Federal Junior Duck Stamp Competition in April that selected the 2011-2012 Federal Junior Duck Stamp.

The Junior Duck Stamp program is an important component of the larger joint venture mission because it helps us to reach—and teach—the next generation of land stewards using a medium that they already understand. They do not have to know about biology or have seen a wetland. The conservation message that is integrated into the contest criteria—that wetland habitat is essential for waterfowl to live and thrive—helps the participants to think more deeply about what they're doing and why it's important.

The JDS is more than an art program; it's teaching conservation through the arts. By the end, students are able to move from understanding to expression, while we plant the seeds of a lasting conservation ethic.

For more information, visit <http://www.fws.gov/juniorduck/>.



Snow Goose by 2011 California Junior Duck Stamp winner Erica Digap, /Erik Bergren, California Waterfowl

The North American Bird Conservation Initiative (NABCI) is a coalition of organizations and initiatives dedicated to advancing integrated bird conservation in North America.

The vision of NABCI is to see populations and habitats of North America's birds protected, restored, and enhanced through coordinated efforts at international, national, regional, state, and local levels, guided by sound science and effective management.

The goal of NABCI is to deliver the full spectrum of bird conservation through regionally based, biologically driven, landscape-oriented partnerships.

The All-Bird Bulletin is a news and information-sharing publication for participants of NABCI.

For subscription or submission inquiries, contact the Editor, Roxanne Bogart, U.S. Fish and Wildlife Service, 802-872-0629 ext. 25 or Roxanne_Bogart@fws.gov. To download back issues, visit <http://www.nabci-us.org/news.html>.

The All-Bird Bulletin publishes news updates and information on infrastructure, planning, science, funding, and other advancements in the field of integrated bird conservation and management. Include author's name, organization, address, telephone and fax numbers, and e-mail address. Pictures are welcome but not necessary.

From San Francisco Bay, Page 9

future of restoring San Francisco Bay. In response, SFBJV Science Coordinator Christina Sloop is collaborating with partners to produce a monitoring and evaluation plan, with a framework of consistent practices, to better understand the net landscape change and benefits—or possible detriments—of habitat restoration to target species. Such a plan will integrate new knowledge about the effects of habitat restoration and enhancement activities into future projects across the Bay area. Such adaptive management is essential to achieving the goal of restoring the Bay to benefit the greatest biodiversity in the face of serious threats. Phase One of the plan will be completed by summer 2011. To receive a copy, please contact Christina at csloop@sfbayjv.org.

In other news, PRBO Conservation Science will unveil a scaled-down version of the national *State of the Birds* report for the Bay area in June. This first-ever, regional *State of the Birds* report will highlight the trends, status, and threats to bird species according to habitat type, along with a series of recommended actions and success stories. To receive a copy, please contact Melissa Pitkin, Point Reyes Bird Observatory, at mpitkin@prbo.org.

From Mapping Tool, Page 11

“For example, the tool places a high value on areas near leks because they are critical for reproduction,” explains Megan McLachlan, GIS Analyst for PLJV. “Areas with federal mineral rights also receive a high value because the BLM has pledged not to lease any mineral rights for future oil and gas development in this area.”

To date, 41.5 acres of abandoned oil and gas pads and roads have been restored—all priority areas targeted by the DST. Although this may seem like a modest number, these restorations are predicted to enhance the larger landscape, adding approximately 5,000 acres of intact grassland close to where prairie-chickens are currently found. Thus, when restoration is targeted strategically, the effect of habitat de-fragmentation can be exceptional. Revisions to the DST, such as incorporating newly discovered leks and completed restoration, will be on-going. Other habitat actions, including spraying and removal of mesquite or identifying important areas for conservation easements, can also be prioritized on the same landscape using this model.

In the PLJV, DSTs are proving invaluable to directing conservation dollars to the most important habitat actions needed on the landscape for the LEPC and other species in need of conservation. For more information, contact Mike Carter, Playa Lakes Joint Venture Coordinator, at mike.carter@pljv.org.

From Sage-Grouse, Page 10

leveraged the \$4 million NRCS contribution to SGI SWAT with \$2.25 million in funding from state fish and wildlife agencies, non-governmental conservation organizations, corporations, and the FWS Partners for Fish and Wildlife Program to bolster SGI implementation.

SGI goes far beyond its intended benefit to sage grouse by engaging ranchers, scientists, and NRCS' substantial cadre of technical specialists in conserving the treasured sagebrush landscapes of the West. Billed as the future of conservation in the Intermountain West, SGI is targeting the best of the best sagebrush and ultimately some of the best Brewer's Sparrow habitat in North America. For more information, contact Dave Smith, U.S. Fish and Wildlife Service, at dave_w_smith@fws.gov