



# The All-Bird Bulletin

*Bird Conservation News and Information*

Summer 2012

A publication of the North American Bird Conservation Initiative

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*Advancing integrated bird conservation in North America*

## North American Prairies: 21st Century Conservation Initiatives and Partnerships

*Fritz L. Knopf, U.S. Department of Interior (retired) and Susan K Skagen, Research Wildlife Biologist, U.S. Geological Survey*

Native grasslands are North America's most impacted terrestrial ecosystem. Since European settlement, these systems have been displaced by urbanization in the East and agricultural conversions in the True Prairie—oft referred to as tallgrass prairie—of the central states, the Palouse prairie of the Northwest, and the Central Valley of California. The Great Plains have been less severely impacted by land use change, although expansion of the mixed-grass prairie westward and extensive fencing have had major ecological consequences on the landscape. Estimates of conversion of U.S. prairies from their native conditions range from 29 percent of short-grass and 41 percent of mixed-grass to an overwhelming 99 percent or more of tallgrass landscapes.



Healthy prairie grasslands and wetlands of the Prairie Pothole Region. / Jim Ringelman, Ducks Unlimited

Interest in grassland conservation was initially a response to soil loss during the Dust Bowl years. The birth of the discipline of game management spurred an increased focus on grasslands, especially as nesting cover for waterfowl and upland game birds. It wasn't until the U.S. Fish and Wildlife Service's annual Breeding Bird Survey (BBS) was 30 years old, however, that a collective evaluation of species population trends raised concern about the conservation of grassland birds. The BBS analyses indicated that grassland birds had shown steeper and more consistent geographically widespread declines than any other behavioral or ecological guild of birds. Those findings stimulated a heightened interest in grasslands and grassland management during the following decade.

So where are we after 70 years of focus on waterfowl/pheasant/quail/prairie-chicken habitat protection and enhancement? We are undoubtedly beyond the need for biological information with regard to nest concealment, predator control, and reducing habitat edge. The emphasis needed now is one of broader, more comprehensive conservation action. We know a lot about what birds need. Finding ways to provide those needs within a modern, human economic and political landscape is the task at hand.

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Conservation concerns are more elevated and complex today given that global temperatures are rising and altering the hydrological cycle in uncertain ways. Climate change will likely exacerbate the loss and degradation of prairie habitats resulting from changes in land use and agricultural practices. In fact, projected rainfall declines in some areas of the western Great Plains may reduce the likelihood that endemic prairie songbirds can maintain stable breeding populations in those regions due to low nest survival. True, many avian species have persisted through millennia of both climate stasis and extreme variability throughout their evolutionary history, presumably through redistribution on the landscape. Yet today, land use change and human perturbations of grassland systems limit the opportunities for such redistribution. Restoration and protection of grasslands, and associated prairie wetlands such as potholes, playas, and rainwater basins, is even more urgently needed today to provide a buffer against climate change and allow prairie species to shift into suitable areas as needed.



The declining Chestnut-collared Longspur breeds on shortgrass and mixed-grass plains and prairies of the central U.S. into Canada and winters south to central Mexico. / John Carlson, Bureau of Land Management

Today, scientists, conservationists, and the public are working to block significant future losses of native prairie habitats at many scales. These critical efforts are fundamental to a future grassland bird resource and are meeting with success.

More difficult, however, is the need to focus restoration efforts on recreating the natural, functioning ecosystems that previously occurred on-site. Unlike decades of work on tallgrass prairies, where volumes have been dedicated to grassland restoration, virtually no science has addressed the question of how to restore a shortgrass prairie.

Although shortgrass prairie has not been as physically fragmented as tallgrass, it has been partitioned by fencing at increasingly finer scales over the last 50 years. The diversity of avian habitats, created by migrant grazing herds of bison and elk on a landscape of permanently local small grazers, including prairie dogs and kangaroo rats, has been obliterated by grassland management systems that emphasize livestock production and uniform use of vegetation. Such practice applied universally across a landscape results in the loss of avian species that require minimal grazing and those that require very intensive grazing. Fortunately, alternatives to fencing and traditional grazing management that favor heterogeneity in grassland structure are being studied and implemented.

With these seemingly overwhelming hurdles for the conservation of our nation's prairies, this special issue of the *All-Bird Bulletin* reports on some contemporary efforts to recover, restore, and recreate prairie habitats for birds across the United States and Mexico. The authors address policy and legislative challenges with the Clean Water Act and Farm Bill and the science and public support needed to improve these programs, as well as opportunities for addressing habitat loss, such as the Dakota Grassland Conservation Area, decision support tools, strategic communications with landowners in the Playa Lakes, and assessments of best management practices implemented through the Farm Bill. These status updates are indicative of the progress being made to advance prairie bird conservation in the 21st century—as well as the serious challenges that continue to face these important ecosystems.

## America's Great Outdoors Supports Dakota Grasslands

Heather Johnson, Regional Coordinator, Partners for Fish and Wildlife Program, U.S. Fish and Wildlife Service

Throughout North America we continue to see the loss of grasslands and the decline of grassland-dependent migratory bird species. One of the highest priority grassland ecosystems in North America is the Dakota grasslands, part of the Prairie Pothole Region. This area contains over 50 million acres, including native prairie with embedded wetlands that provide highly productive habitat for an incredible diversity of migratory birds. This area is the most important region for waterfowl production on the continent and is widely regarded as the “duck factory.” In addition to producing incredible waterfowl numbers, the Dakota Grasslands is also spectacular habitat for migratory and nesting shorebirds, waterbirds, and grassland songbirds.

The healthiest areas of the Dakota Grasslands are those large blocks of native prairie with a diverse mix of imbedded temporary and seasonal wetlands. These areas are typically managed by livestock producers, with cattle as the primary industry. Cattle ranchers view the healthy grass and healthy wetlands as a vital part of their operation. The wetlands provide water for cattle and the high quality grasslands provide excellent forage for cattle yield. Production of migratory birds and cattle go hand-in-hand — good grass and good water are necessary requirements for the success of both.

Unfortunately, the current trend in the Dakota Grasslands is accelerated conversion of grasslands and wetlands to cropland. With corn, soybeans and other row crop prices at an all-time high, the incentive to plow up native prairie and drain wetlands is extremely high. Recent advances in seed and herbicide technology, combined with record high commodity prices and favorable agricultural policy, have pushed row crop production westward into formerly secure grassland and ranching landscapes. In addition, advanced technology and equipment has made it easier to drain wetlands and plant on marginal cropland.

The conversion of grassland to cropland is having devastating effects on suites of migratory bird species and other fish and wildlife. Models developed by the Service's Habitat Assessment and Population Evaluation Team are showing downward trends for many high-priority migratory bird species. As a conservation community, many partners have recognized these trends for years and have thus made this area one of their highest priorities for both conservation delivery on-the-ground and science support.

In response to the more recent threats and stressors mentioned above, key partners and landowners have been accelerating their efforts to protect the highest priority landscapes before it is too late. These efforts are impressive and demonstrate the strong partnerships that exist in the area and the passion these partners have for the prairies.

*Examples of Some of the Successes.* Since 1963, the U.S. Fish and Wildlife Service (Service) Division of Realty has had a Small Wetlands Program—a program for the protection of small wetlands. Through this easement program, the Service has perpetually protected 1,393,486 wetland acres within the Dakota Grasslands area. Since 1992, the Service has also perpetually protected 1,062,337 upland acres in the Dakota Grasslands area through its grassland easement program. In 2000, the Service established the Dakota Tallgrass Prairie Wildlife Management Area to preserve quality tallgrass prairie habitat in eastern North Dakota and South Dakota. In addition,



Private land in the Prairie Coteau provides excellent habitat for grassland and wetland birds. / Heather Johnson, U.S. Fish and Wildlife Service

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the Service established the North Dakota Wildlife Management Area. Since establishment of these two programs, the Service has protected 62,012 acres of native prairie in the Dakota Tallgrass Prairie Wildlife Management Area and protected 48,875 acres of native prairie through the North Dakota Wildlife Management Area.



Prairie wetland being drained with a combination of surface ditching and drainage tile in eastern South Dakota. / National Izaak Walton League

Recently, the Service recognized that several additional protection measures would be necessary to prevent high-priority migratory bird species from drastically declining. Through America's Great Outdoors, the Dakota Grassland Conservation Area was established, providing new opportunities through the Land and Water Conservation Fund (LWCF) to perpetually protect native prairie and other high-priority grassland habitats in the Dakota Grasslands. Since 2011, the Service has protected an additional 3,072 acres of native prairie using LWCF monies. The Dakota Grassland Conservation Area (DGCA) also perpetually protected 261 acres of wetlands through the Migratory Bird Conservation Fund (MBCF).

The U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program (Partners Program) is celebrating its 25th Anniversary in 2012. The Partners Program has made the Dakota Grasslands one of its highest priority focus areas and has accomplished

tremendous results for the conservation of both grasslands and wetlands in the region. It has worked with landowners to restore, enhance or create 55,308 acres of wetlands and restore or enhance 451,357 acres of uplands within this geographic area. These acres were accomplished through 4,850 private landowner agreements with 70 percent of these projects now associated with a perpetual conservation easement through one of the Service's easement programs.

At the same time the Service is bolstering their conservation actions on-the-ground, so is the USDA through their Natural Resources Conservation Service (NRCS) Farm Bill conservation programs. For example, in South Dakota, there are 1,171 USDA easements covering 130,816 acres. Thousands of wetlands have been restored supporting native grass habitat.

In Fiscal Year 2012, the NRCS worked with 665 producers through the Grasslands Reserve Program (GRP), Wetland Reserve Program (WRP), and Environmental Quality Incentive Program (EQIP). NRCS protected 33,948 acres of grasslands through GRP, restored and protected 65,400 acres of wetlands through WRP, and restored and enhanced 2,488 acres of grasslands through EQIP.

The NRCS also saw a tremendous need for additional migratory bird habitat restoration and protection. Dave White, the NRCS Chief, authorized a new initiative called the Northern Plains Migratory Bird Habitat Initiative. The Initiative is aimed specifically at helping Northern Plains farmers and ranchers secure funding to restore or protect their land in order to enhance migratory bird habitat and improve water quality and grassland health in the Prairie Pothole Region. Although the Initiative was just started in August 2011, they have already made excellent progress including protecting 6,958 acres of grasslands through GRP and 285 acres of wetlands through WRP; and restoring 5,954 acres through EQIP.

The USDA Farm Service Agency has also been a big player in migratory bird conservation in the prairies. Since its inception in 1985, the Conservation Reserve Program (CRP) has provided significant grassland and wetland habitat for migratory birds and other wildlife in the Dakota Grasslands Conservation Area of North and South Dakota. Enrollment in the region peaked in 2007, at nearly 4 million acres but has since been on a steady decline that is projected to continue into the future. CRP and the wetland conservation

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provision (Swampbuster) of the Farm Bill both have had tremendous positive benefits to waterfowl populations in the Dakota Grasslands, and throughout the Prairie Pothole Region.

When you drive through the heart of the Missouri Coteau in the Dakota Grasslands, you see the conversion of native grassland to cropland every day. It leaves you wondering what the future holds for migratory birds. We are optimistic that we can continue to maximize good conservation actions on-the-ground, working in partnership to share resources and expertise. Although these are challenging times, the support of so many partners and the added emphasis on the Dakota Grasslands through America's Great Outdoors, leaves us optimistic about the future.

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## Fish and Wildlife Service and Partners Increase Funding for Prairie Potholes Conservation

*Rachel Levin, Communications Coordinator, Division of Bird Habitat Conservation, U.S. Fish and Wildlife Service*

The U.S. Fish and Wildlife Service and Ducks Unlimited announced in March that they will work with willing landowners to put conservation easements in place on tens of thousands of acres in the Prairie Potholes—helping to stem the threat to these vital waterfowl breeding grounds posed by conversion of native grasslands and isolated wetlands to agricultural and other uses.

Under this initiative, the Service, DU, and other partners will work with the Migratory Bird Conservation Commission to spend upwards of 70 percent—approximately \$30 million—of the Migratory Bird Conservation Fund to help secure the future for waterfowl and grassland bird species in the Prairie Pothole Region—known as America's "Duck Factory." Additional funding through the Land and Water Conservation Fund will further bolster efforts to conserve the prairies, which play a central role in sustaining healthy duck populations.



Aerial of prairie habitats in western Minnesota. / Cyndi Perry, U.S. Fish and Wildlife Service

The Migratory Bird Conservation Fund is primarily composed of revenue from the sale of Federal Migratory Bird Hunting and Conservation Stamps, commonly known as Federal Duck Stamps. Each year, millions of waterfowl hunters and other outdoor enthusiasts directly contribute to habitat conservation by buying Duck Stamps. Since 1934, funding from the sales of Duck Stamps has protected more than 5 million acres of wetlands and grasslands for ducks, geese and other wildlife, including hundreds of thousands of acres in the Prairie Pothole Region.

This renewed effort builds on the success of the Service's Small Wetlands Program, which uses funds from the sale of Federal Duck Stamps to permanently protect wetlands and surrounding grassland habitat on waterfowl production areas, primarily in the U.S. portion of the Prairie Pothole Region. The nearly three million areas protected so far through fee-title acquisition or easement are called waterfowl production areas.

Through its Grasslands for Tomorrow initiative, Ducks Unlimited has pledged to perpetually protect two million acres of native prairie for future generations to experience and enjoy—one of the most ambitious conservation initiatives ever undertaken. Protection of native prairie is achieved through perpetual grassland and wetland easements, land purchases, and donated conservation easements. These approaches are always directed at willing landowners. For more information, contact Rachel Levin, [rachel\\_levin@fws.gov](mailto:rachel_levin@fws.gov).

## North Dakota Ballot Initiative: Increasing Investments in the State's Natural Resources

*Stephen E. Adair, Director of Operations, Ducks Unlimited, Inc. Great Plains Region; Peggy Ladner, State Director, MN, ND, & SD, The Nature Conservancy; and Keith Trego, Executive Director, North Dakota Natural Resources Trust*



CRP ground in North Dakota hayed and converted back to cropland. / Stephen E. Adair, Ducks Unlimited

Wildlife habitats in North Dakota are experiencing rapid change. Native prairie, which has been on the landscape for 10,000 years, is slowly but steadily being converted to cropland. For example, in a recent five-year period (2002-2007), 145,000 acres of native grassland were converted to other uses. This prairie is important habitat for many species of declining grassland-nesting birds like Baird's Sparrow, Chestnut-collared Longspur, Upland Sandpiper, Marbled Godwit and Greater Prairie-chicken.

Since 1985, grasslands planted under the Conservation Reserve Program (CRP) have served as surrogate nesting habitat for many grassland bird species. CRP grasslands do not provide the entire suite of nesting habitats of native prairie, but species like Northern Pintail, Blue-winged Teal, Dickcissel, Bobolink, and others have found the cover attractive. North Dakota peaked at 3.4 mil-

lion acres of CRP in the late 1990s, but by the end of 2012, 2.2 million of these acres will be returned to crop production and the wildlife and ecosystem services they provided will be lost.

Historically, the Swampbuster provision in the federal Farm Bill provided an effective disincentive to landowners for draining wetlands because doing so meant giving up desirable subsidies like direct and counter cyclical payments. As commodity prices have risen, federally-subsidized crop insurance, which is not linked to Swampbuster compliance, has become the primary safety net for producers and many of them are now opting out of Swampbuster and draining wetlands. Prairie Pothole wetlands are vital to many species of water birds such as Horned Grebe, American Bittern, Wilson's Phalarope, Black Tern, and Piping Plover, which are expected to decline with further habitat loss.

In addition to this accelerating habitat loss, the remaining grasslands and wetlands in the state are being fragmented by accelerating development of the oil reserves in the Bakken Shale. This fragmentation is most concerning for area-sensitive species like Sprague's Pipit and Greater Sage-grouse. Increasing numbers of wind towers are creating new obstacles for migratory birds in the state. While collisions were the initial concern, avoidance by breeding pairs may also have a significant impact.

These challenges are growing and significant, but solutions do exist. Increasing federal investments to protect native prairie and wetlands through Duck Stamp and Land and Water Conservation Fund revenue are incrementally securing a habitat base for birds in the region (see article on page 5). The State of North Dakota also has an excellent opportunity to increase its investment in the conservation of wildlife habitat.

A coalition of over 25 sporting and conservation groups are working to gather the 27,000 signatures required to get a conservation amendment on the November ballot. We are also working to broaden our endorsements and ensure we have the necessary resources and expertise for a successful campaign. If the required signatures are gathered, voters in the state will get to decide whether or not to dedicate 5 percent of the existing oil and gas production and extraction tax revenue to a constitutionally protected fund for conservation.

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If approved by voters, this amendment would establish a nine-member citizen board appointed by the governor and legislature to make grants to state agencies, local governments, political subdivisions, tribes and 501(c)3 organizations.

The fund can be used for the following purposes: (1) Protect, restore, and improve water quality; (2) Improve natural flood control; (3) Protect, restore, and create fish and wildlife habitat; (4) Conserve natural areas for people through the establishment of parks and recreation areas; and (5) Encourage beginning farmers and ranchers through conservation programs.

Under current oil production estimates, the fund would generate \$88 million per year and that is expected to grow as development of the Bakken Shale expands.



Bakken oil development directly adjacent to a U.S. Fish and Wildlife Service Waterfowl Production Area in North Dakota. / Stephen E. Adair, Ducks Unlimited

Numerous accountability provisions were included in the amendment, including a requirement that Board members have demonstrated knowledge and experience in the science or practice of habitat conservation. No more than 3 percent of the funds can be used for administration, helping to ensure that dollars are directed to the ground. Each legislative session, the Board will report to the state through a public hearing on projects and expenditures.

The North Dakota dedicated funding measure holds great promise for birds and other wildlife in the state at a time when habitat is in serious decline. One of the project ideas is a state-level conservation cover program (similar to CRP) that is geared to North Dakota landowners. Given recent flooding in the state, there are increasing opportunities to restore wetlands to retain runoff and restore floodplains to reduce damage to homes and infrastructure in the future. These floodplains provide important bird habitat and are fairly limited in the state. Since over 90 percent of North Dakota is privately owned, working with landowners on conservation practices that support their operations and provide wildlife habitat holds the greatest potential for impacting large landscapes.

To learn more about the North Dakota dedicated funding amendment, go to <http://www.ndheritage.org>.

## Draining the Lifeblood from the Prairie Pothole Region: The Need to Restore Clean Water Act Protection to Prairie Potholes

*Scott C. Yaich, Vice-Chair, The Wildlife Society's Wetlands Working Group*

If one views the 10,000-year-old ecosystem of the Prairie Pothole Region (PPR) within the metaphorical perspective of a living organism, the prairies are suffering from two major medical challenges. First, they are being skinned alive with the removal of its native and other grass cover. Second, the lifeblood of its circulatory system, its water, is literally being drained from the system. While these diagnoses may strike one as a bit graphic, they create a pretty fair image of the primary challenges facing the prairies. To make matters worse, while most medical issues are dealt with by first stopping whatever is causing the problem and then aiding the recovery of the patient, national policies are, to the contrary, accelerating these two systemic challenges to the prairie ecosystem.



Tile drainage of a wetland in the Prairie Pothole Region. / Mark Francis, Ducks Unlimited Canada

This article focuses on one of the two major policy issues causing the rapid “bleeding” of water from this ecosystem—the withdrawal of Clean Water Act (CWA) protections from wetlands like the prairie potholes, playa lakes, and rainwater basins. While these wetland types originally existed in a matrix of prairie, they are now embedded in systems dominated to a growing extent by row-crop agriculture.

Prior to January 2001, there had been two layers of protection afforded to wetlands like the prairie potholes—the CWA (passed in 1972), and the Swampbuster provision of the Farm Bill (passed in 1985). Together, these two federal policies, along with growing public awareness of the importance of wetlands and related water issues to human well-being, resulted in a decline in the loss of wetlands most important to wildlife—from a rate of over a half-million acres per year in the mid-1950s-70s to about 85,000 acres per year during 1998-2004.

However, two confusing 5-4 decisions by the U.S. Supreme Court in 2001 and 2006, and subsequent interpretations by the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE) leadership, resulted in the withdrawal of CWA protections from tens of millions of acres of wetlands. Foremost among the wetlands that lost protection were the prairie potholes, due to typically being small, intra-state, geographically isolated, non-navigable waters. Although the on-the-ground impact was slow to manifest, the latest U.S. Fish and Wildlife Service report of wetland status and trends for 2004-2009—the first following the 2001 court case in its entirety—documented a 140 percent increase in the rate of national wetland loss. The report also highlighted the PPR as a region where wetland losses due to agricultural drainage exceeded gains realized through restoration programs. Now, on top of the challenge posed by the loss of CWA protection, Farm Bill protections have also eroded significantly, further accelerating wetland drainage in the PPR (see article on page 10).

The implications to prairie birds of this potentially dramatic and rapid drainage of millions of acres of wetlands are clear to most conservationists. So what can wildlife ecologists and other scientists do to help restore protection to wetlands like prairie potholes? The EPA and USACE have drafted revised guidance (currently under review by the Office of Management and Budget) that makes clear that wetlands-related science will be a fundamental part of the decision-making process. Specifically, the draft guidance includes a revised process for assessing whether a “significant nexus”—a key phrase in the court decisions—exists between a wetland and navigable waters. This means that the CWA’s ability to protect many wetlands will be contingent upon the strength

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of the science supporting the biological, hydrological, and chemical connections between wetlands and navigable waters (see side bar).

This is where avian and other wildlife scientists can make important contributions. The EPA is finalizing a compilation of the available science related to what constitutes a significant nexus affecting CWA jurisdiction for various wetland categories. When released, the perceived scientific gaps regarding ecological connections between certain categories of wetlands and navigable waters should be apparent. It then will be important for ecologists and conservationists to do two things: (1) Review the compendium and ensure that all existing and relevant science is a part of the record and (2) Consider pursuing original research to fill information gaps that would help document the connections between wetlands and navigable waters.

The most useful information will show how wetland loss would impair the chemical, physical, and biological integrity of navigable waters. Ornithological information could be particularly useful in extending the significant-nexus distance between navigable waters and wetlands in need of protection. For example, approximately 80 percent of North America's Redheads winter in estuaries of the Gulf of Mexico, most in the Laguna Madre, and forage almost exclusively on shoal grass in the hypersaline lagoon, a navigable waterway. But the birds also make daily use of inland, coastal freshwater ponds to dilute ingested salt loads. Research has shown that Redheads use wetlands as far as 13 miles inland—and scamp up to 33 miles—to obtain fresh water. These two bird species are therefore dependent upon *both* the navigable waters of the Laguna Madre and the inland freshwater wetlands in the region. Thus, if the inland wetlands were lost, the region would be less able to support Redhead populations and the biological integrity of the navigable Laguna Madre would be affected, constituting a “significant nexus.”

#### What's a “Significant Nexus?”

A majority of the Supreme Court Justices indicated that the existence of a “significant nexus,” or meaningful connection, between a wetland, whose CWA jurisdiction is in question, and a navigable water is the key to establishing whether or not a wetland (or headwater stream) should be protected by the CWA. If the loss of the wetland, or similar wetlands in the aggregate within a region, would significantly affect the chemical, biological or physical integrity of the navigable water, then the wetland(s) would also be considered jurisdictional. So, in addition to biological nexuses, if the loss of wetlands resulted in increased flooding, reduced stream base flows, or reduced water quality, for example, these also could be key elements in establishing the significant nexus that would provide the basis for CWA protection.

Other examples of similar situations might include: American Black Duck in the northeast, mid-Atlantic coast, and Chesapeake Bay that also depend upon inland freshwater wetlands; California Gull using hypersaline Mono Lake and freshwater wetlands in southern California; and White Ibis using estuarine rookeries and requiring freshwater wetland-derived prey for osmoregulation.

By providing such studies, scientists can help strengthen the foundation for restoring CWA protections to wetlands important for wildlife. A formal CWA rulemaking could be initiated as early as this year, so it's vital that relevant scientific information be provided to the EPA and USACE during any comment period. Literally tens of millions of acres of wetlands across the U.S. are at risk, many of them in the prairies. Avian ecologists and other scientists have an opportunity to provide critical science that could meaningfully benefit wetland conservation within the current and any future regulatory framework.

If we hope to reverse the downward trend of grassland birds, from American Pintail to Nelson's Sparrow, we will first have to stop the hemorrhaging of our prairie wetlands so our prairie patient can one day, perhaps, be in recovery.

Portions of this article originally appeared in the summer 2012 issue of the Society's *The Wildlife Professional*. For more information, contact Scott Yaich at [scott.yaich@gmail.com](mailto:scott.yaich@gmail.com), or 901-229-1296.

## A “Permanent Drought?” Increasing Threats to Prairie Wetlands

*Jim Ringelman, Director of Conservation Programs, Ducks Unlimited, Inc.*

Many biologists are familiar with the Prairie Pothole Region (PPR), that wetland-rich landscape in the Northern Great Plains of the United States and Canada. Some 300,000 square miles in size, the PPR is renowned for its severe weather—brutally cold winters, hot summers, and extremes of deluge and drought. It’s the latter characteristic that drives the hydrology of PPR wetlands, recycling nutrients and making them among the most productive aquatic systems on earth. But while naturally occurring droughts are desirable, human-induced drought is not.



Healthy wetland and associated grasslands in the Prairie Pothole Region. / Jim Ringelman, Ducks Unlimited

Today, an unfortunate confluence of events is setting the stage for massive wetland drainage in the U.S. PPR, in effect creating a permanent drought that will have profound consequences to North American avifauna. What’s behind this crisis in the prairies?

Ironically, consecutive years of wet conditions is one driver. In North Dakota alone, about six million acres of cropland could not be planted in 2011 because of excessive moisture. That cost producers over a billion dollars. When crops prices are at record highs as they are now, this creates an unprecedented demand for wetland drainage. Additional motivation is provided by new technology in the form of inexpensive, plastic drain tile that is easily installed and readily available. Banks are eager to lend—at today’s record low interest rates—to finance such “land improvements.”

Yet despite these circumstances, wetland drainage is still a comparatively rare event in the U.S. PPR. Unfortunately, it appears that is about to change.

When Clean Water Act protection was withdrawn from “isolated” wetlands like prairie potholes (see article on page 6), there was still a second line of protection known as “Swampbuster.” A product of the 1985 Farm Bill, Swampbuster stipulates that landowners who drain wetlands become ineligible for commodity payments on their entire farming operation. This created a strong incentive to conserve wetlands that has worked well for 27 years. But incentives only work if the associated programs are authorized and important to farmers, and that’s the problem. Congress has announced its intent to eliminate most commodity payments, and those programs that remain linked to conservation stewardship are becoming increasingly irrelevant to PPR farmers. Eliminate the programs linked to conservation, and you eliminate the incentive for conservation compliance. Even if Swampbuster remains on the books, it becomes toothless.

The obvious solution is to incentivize conservation practices, including wetland protection, by linking them to those Farm Bill programs that are most relevant to farmers. Today, that program is crop insurance, which was coupled to conservation compliance from 1985 to 1995. In 1996, the connection with conservation was severed, ostensibly to encourage more farmers to buy crop insurance. That mission has been accomplished. In 2009, over 80 percent of corn, soybean, wheat, cotton, and peanut growers participated in the crop insurance program. Depending on the coverage they select, 70 percent or more of their insurance premium is subsidized by taxpayers. There are no conservation strings attached to this subsidy. As of this writing, the U.S. Senate passed a Farm Bill with an amendment that re-couples crop insurance to conservation compliance. A recent

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survey revealed that 61 percent of Midwestern farmers believe there should be some environmental standards to receive federal farm benefits such as crop insurance.

If Swampbuster is no longer an effective deterrent to wetland drainage, massive wetland loss is likely to occur. Some 1.4 million wetlands, which are partially or completely embedded in cropland, are at greatest risk. Loss of these wetlands would reduce the breeding duck population by 2.9 million birds, a decrease of 37 percent. Among those affected will be the Mallard, the species used to formulate annual hunting regulations. The predicted decrease in Mallard numbers would likely be sufficient to trigger a greater frequency of moderate and even restrictive regulations, something the hunting community has not seen in over two decades. But the implications for birds goes way beyond ducks.

PPR wetlands are vital to millions of migrating shorebirds and other species. In addition to some 20 species of waterfowl, over 140 species of songbirds, shorebirds, and wading birds occur in the U.S. PPR. While wetland-dependent species will obviously be affected by drainage, even upland nesters will feel the effects if agricultural practices are not balanced with conservation practices. Currently, native prairie is being converted to cropland at a rate of 70,000 acres per year. If passed, another conservation provision in the Farm Bill—called “Sodsaver”—would slow the destruction of this 10,000 year old grassland. That provision would help moderate the ongoing decline of grassland songbirds, a guild of great concern to conservation biologists.

Now is the time for individuals, together with their organizations and agencies, to weigh in on these important Farm Bill issues. History teaches us that once lost, wetlands are rarely restored. In addition, this is the perfect time to purchase a Federal Duck Stamp or support an organization that conserves wetlands. Funds from these sources have been used to acquire perpetual wetland easements on 1.45 million acres in the Dakotas alone. These protected wetlands will remain a part of the landscape regardless of Farm Bill programs, economic drivers, or new technology. Will they be enough to sustain wetland birds in the absence of strong conservation incentives in the next Farm Bill? Let's not do that experiment. We can't afford a permanent drought.

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Aerial photographs show the striking differences between drained and undrained prairie pothole landscapes. / Dave Kustersky, Ducks Unlimited Canada

## Using Science and Technology to Target Conservation of Migratory Bird Habitat in the U.S. Prairie Pothole Region

Neal D. Niemuth, Habitat and Population Evaluation Team (HAPET) Region 6; Michael E. Estey, HAPET Region 6; Rex R. Johnson, HAPET Region 3; and William A. Meeks, HAPET Region 3, U.S. Fish and Wildlife Service

The wetlands and grasslands of the Prairie Pothole Region (PPR) make it the most important area for waterfowl production in North America. In addition, the PPR harbors large proportions of continental populations for many species of priority waterbirds, shorebirds, and grassland birds, including Franklin's Gull, American Bittern, Black Tern, Marbled Godwit, Willet, Sprague's Pipit, Baird's Sparrow, and Chestnut-collared Longspur.

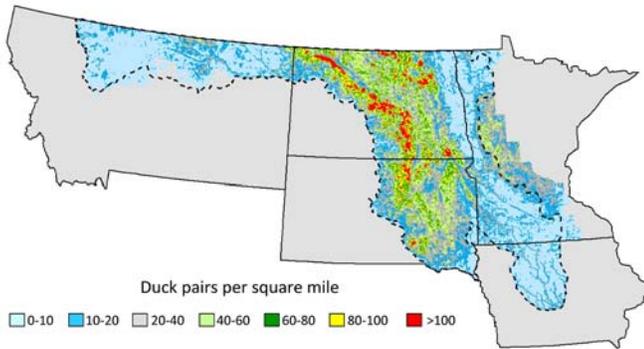


Fig. 1. The waterfowl thunderstorm map quantifies the number of waterfowl pairs with access to upland parcels across the U.S. Prairie Pothole Region (dotted line) and is used to identify areas for conservation. The map, based on regression models relating five species of dabbling ducks (Mallard, Blue-winged Teal, Gadwall, Northern Shoveler, and Northern Pintail) to wetlands, was given its name because of its resemblance to a radar image of a thunderstorm weather system crossing the region.

Because of the importance of the PPR to migratory bird populations, extensive programs are in place to conserve migratory bird habitat, primarily wetlands and grassland. Given the magnitude of conservation programs, the uneven distribution of habitat and birds, and the size of the PPR, two HAPET offices—in Bismarck, North Dakota andergus Falls, Minnesota—use a variety of data and techniques to create spatial tools to target effective conservation and measure biological outcomes of conservation efforts.

Spatial planning tools developed by the HAPET offices are guided by a few simple principles. First, all-bird conservation is the goal of the Prairie Pothole Joint Venture's efforts, but spatial models are developed for one species at a time. Rather than attempt to identify the "best" place for all species, the HAPET offices create species-specific models that can stand alone or be integrated with other models, depending on need. This allows targeting of locations and treatments (e.g., preservation, restoration, or enhancement

of wildlife habitat) for any focal species, combination of species, or program while maintaining the integrity of information used in conservation planning tools. This approach helps ensure that conservation efforts follow the principles of strategic habitat conservation (SHC), which focuses on populations of trust species, rather than general, less-precise concepts such as ecological integrity or species richness. Second, the HAPET offices use high quality landcover and biological data. If suitable data don't exist to meet an identified need, appropriate data are acquired. Third, the scale of planning and evaluation always matches or is finer than the scale of management to avoid the erroneous assumption that larger areas like counties or watersheds are homogeneous. Finally, on-the-ground conservation is the final goal, and conservation scientists work closely with partners and field biologists to ensure that spatial tools meet the needs of those who deliver conservation.

Waterfowl have long been the foundation of conservation planning and delivery in the PPR, and the waterfowl thunderstorm map (Figure 1) is used primarily to target acquisition of grassland easements in areas of high wetland density. Similar models for other species are now used in the easement assessment process to ensure benefits for waterbirds, shorebirds, and grassland birds.

Most conservation delivery in the PPR has been funded by waterfowl programs and targeted using the thunderstorm map, but benefits for other species have been substantial (Figure 2). Spatial models in the PPR also have been used to evaluate the effectiveness of various programs, including easements acquired using Migratory Bird Conservation Fund money and effectiveness of the USDA's Conservation Reserve Program (CRP) at supporting populations of waterfowl and grassland birds. For example, CRP grasslands in the PPR portion of North Dakota were shown to harbor 35 percent of the area's 1.2 million Sedge Wrens. Similarly, CRP grasslands in the PPR of North Dakota, South Dakota, and three counties in Montana produced two million

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ducks more than would have been produced in the same area without CRP.

In addition to informing conservation delivery, the HAPET offices integrate data and conservation planning tools. For example, data collected annually on more than 50,000 wetlands during the Four-Square-Mile (FSM) waterfowl surveys are incorporated into models for wetland birds. Wetland data from the waterfowl surveys are also being used to model factors driving wetland hydrology, which will help managers better understand potential effects of changing climate on wetlands and wildlife in the PPR (Figure 3). Water conditions and bird populations in the PPR typically vary greatly over time and space; wetland data collected during FSM waterfowl surveys will allow us to assess trends in water levels in ponds over time, as well as understand landscape and climatic factors influencing wetland dynamics and land use.

The HAPET offices also have had considerable success integrating North American Breeding Bird Survey (BBS) data into spatial planning tools. The BBS provides long-term continuity and context that simply aren't available with many other data sets, which will also help with understanding potential effects of climate change in the PPR.

The models we have described, particularly the waterfowl model and its derivatives, are the primary tools used to guide the annual expenditure of tens of millions of dollars for land protection and restoration within the PPJV by the Service and partners, including the U.S. Department of Agriculture. Contrary to conventional wisdom, resource management agencies manage very little of the PPR landscape; programs such as the Service's Partners for Fish and Wildlife (PFW) program work with landowners to develop grazing systems and manage their lands. PFW biologists also use spatial tools developed by the HAPET offices, and feedback from landowners and biologists helps maintain the SHC adaptive loop.

For more information, visit <http://www.ppjv.org> and <http://www.fws.gov/midwest/hapet/>.

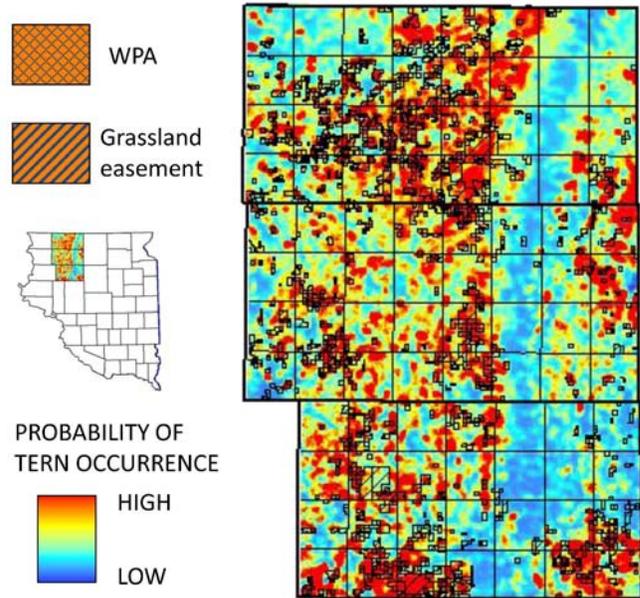


Fig. 2. Waterfowl production areas (WPA) and grassland easements, acquired for waterfowl in McPherson, Edmunds, and Faulk counties, South Dakota, have conserved much high-priority Black Tern habitat. Grassland easements are acquired in areas with access to large numbers of waterfowl pairs and tract boundaries shown typically include high-quality wetland complexes.

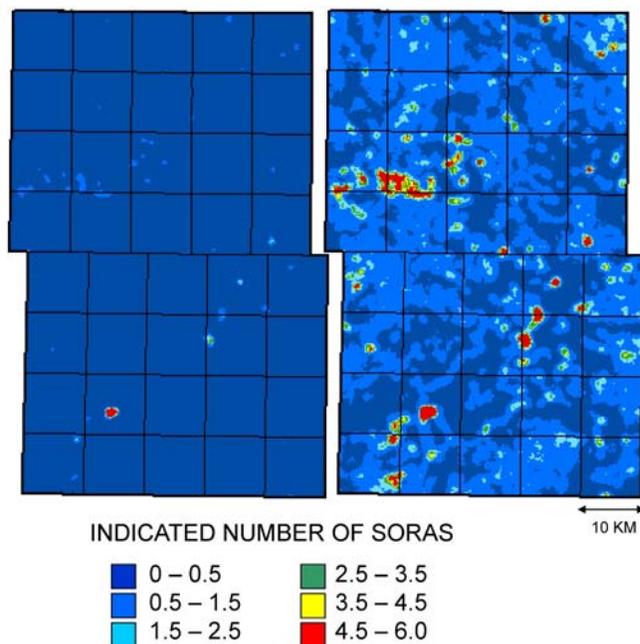


Fig. 3. Estimated numbers of Soras in Kidder County, North Dakota, varied by approximately a factor of four from a dry year (1993, left) and a wet year (1995, right). Retrospective analyses of waterfowl and waterbird response to water conditions will provide guidance for future planning of conservation in the face of climate change.

## USDA Conservation Effects Assessment Project (CEAP): Documenting Farm Bill Benefits to Prairie Birds

Charlie Rewa, Conservation Effects Assessment Project (CEAP) Wildlife Coordinator, Natural Resources Conservation Service



In South Dakota, a dramatic fenceline contrast is seen where over-grazed rangeland abuts more healthy grassland. / Tim McCabe, Natural Resources Conservation Service

Since 1985, USDA Farm Bill conservation programs have helped farmers and ranchers conserve natural resources on their lands, including wildlife habitats. These programs have been particularly important for bird conservation in highly productive Midwestern prairies. Most native plant communities that persist in these now largely agricultural landscapes are fragmented or degraded, and broad agricultural policy related to international trade and commodity programs continues to indirectly affect the condition of these landscapes. Yet opportunities remain to provide suitable habitats for prairie birds.

Farm Bill conservation programs have generated millions of acres of term and permanent set-aside lands through the Conservation Reserve and Wetlands Reserve Programs (CRP and WRP) and have helped to improve habitat on millions more acres of working farms and ranches. While USDA agencies are responsible for carrying out the conservation programs,

other federal and state agencies, NGOs, and other partners have also been instrumental in program delivery and habitat improvement.

The focus of USDA's Conservation Effects Assessment Project (CEAP) is on quantifying the impacts of conservation practices and programs. CEAP relies on active partnerships with other agencies, academia, and a myriad conservation organizations and interests to meet its objectives. The CEAP Wildlife Component has supported assessments related to prairie grassland birds. Some of the findings of these efforts are presented here. Readers are encouraged to visit the CEAP website <http://www.nrcs.usda.gov/technical/nri/ceap/> for details on these and other assessments, and to check back often as new findings emerge.

An early effort of the CEAP Wildlife Component was to review, in partnership with The Wildlife Society, the literature on wildlife response to Farm Bill programs and practices (see TWS Technical Reviews 05-2 and 07-1). Some findings regarding prairie birds include:

- Small wetlands in crop fields protected by Swampbuster remain critical to waterfowl productivity in the upper Midwest.
- Many grassland bird populations have benefited from conversion of cropland to grass cover associated with the millions of acres of CRP in the Great Plains.
- Grassland nesting bird production on individual CRP contract fields depends on the cover composition and disturbance from haying and grazing.
- From 1992–2003, upland herbaceous cover provided by CRP in the upper Midwest produced 25.7 million additional upland nesting ducks in the Prairie Pothole Region.
- Continued permanent loss of native grasslands potentially offsets temporary wildlife habitat gains from CRP in the Great Plains.
- For many species, landscape conditions surrounding specific habitats provided by conservation enrollments or practices have more influence on habitat suitability than do local habitat conditions.

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Many CEAP assessments have been initiated to document Farm Bill program benefits to fish and wildlife, including the following examples involving prairie grasslands.

*Playa Lakes Joint Venture CEAP CRP assessment.* Geo-spatial land cover analysis tools and species-specific habitat models were used to quantify the contribution of CRP habitats to meeting population goals for important grassland birds in BCRs 18 and 19 (short-grass and mixed-grass prairies). The analysis was based on 2006 enrollments of approximately 9.5 million acres in these BCRs; current enrollment is substantially less (however, as many as 270,000 acres of expired CRP land in core Lesser Prairie-chicken range has been enrolled in the NRCS Lesser Prairie-chicken Initiative and remain in grass). Some species benefit little from CRP (e.g., Swainson's Hawk, Mountain Plover), whereas others (e.g., Dickcissel, Eastern Meadowlark, and Grasshopper Sparrow) benefit substantially. The most extreme example is in the mixed-grass prairie region of Texas where CRP habitat supported over 61 percent of the population goal for Dickcissel. The occurrence of CRP enrollments near existing grassland improved the quality of those grasslands by increasing the size of large blocks of grass. This improvement contributed over six percent of the population goal for Lesser Prairie-chicken in the mixed-grass prairie portion of Kansas. Also noteworthy, CRP contributed over 10 percent of the Lesser Prairie-chicken population goal for the short-grass prairie BCR.



Conservation buffer, seeded to prairie grasses, borders riparian habitat and a cultivated field in Kansas. / Jeff Vanuga, Natural Resources Conservation Service

*Rainwater Basin Joint Venture WRP assessment.* Bio-energetic modeling revealed that nearly 12 percent of the wetland-derived food available to waterfowl migrating through the Rainwater Basin (RWB) in central Nebraska is provided by the approximately 3,000 acres of WRP-restored wetlands in the region. Nevertheless, approximately 44 percent more wetland-derived waterfowl food energy is needed in the RWB to meet all the energy requirements of the estimated 12.4 million waterfowl that migrate through this area (2.6 million in fall; 9.8 million in spring). Continued management of WRP wetlands in early successional habitat can maximize production of food resources for migrating waterfowl in the RWB.

*Farm Service Agency CRP studies.* The Farm Service Agency sponsored several studies that examined the effects of CRP on populations of various wildlife species. These studies modeled substantial benefits derived from habitats provided on lands enrolled in the CRP for prairie-nesting ducks, Ring-necked Pheasant, Northern Bobwhite, and Greater Sage-grouse in Washington.

Findings from CEAP's wildlife assessments allow stakeholders to more fully appreciate the wildlife benefits of Farm Bill programs and their importance in achieving landscape goals for species. Moreover, program results enable USDA to be strategic and adaptive in addressing wildlife conservation needs in agricultural landscapes. One example is the development of a spatially targeted duck nesting habitat CRP initiative in the Prairie Pothole Region. In addition, USDA agencies are integrating CEAP findings into the toolboxes of conservation planners and using the results to better account for and further program accomplishments.

Farm Bill conservation programs continue to have great potential to benefit prairie birds; CEAP is committed to help us understand and maximize those benefits.

For more information, contact Charlie Rewa, [Charles.Rewa@wdc.usda.gov](mailto:Charles.Rewa@wdc.usda.gov).

## Forward to the Past: Preserving Montana's Prairie Legacy

*John Carlson, Fish, Wildlife, and T&E Program Lead/ Conservation Biologist, Bureau of Land Management*

On a recent June morning, under a rapidly lightening big sky, I found myself standing on a low ridgeline surrounded by a landscape of gently rolling hills carpeted by a mix of native grasses. Above me I could distinguish the ethereal songs of Sprague's Pipits while all around me Chestnut-collared Longspurs were either singing from low sagebrush or performing their aerial displays. At the edge of the ridge, a McCown's Longspur floated down like a feathered butterfly, wings thrown back and singing. The tinkling songs of Baird's Sparrows were emanating from patches of slightly denser grass in low swales and drainages, and in the distance a Ferruginous Hawk was being harassed by a male Northern Harrier. The plaintive call of a Long-billed Curlew rose from the long, low valley below and a squadron of Lark Buntings zipped through the scene.

Given the profound loss of native prairie habitats resulting from agricultural production occurring throughout much of North America's Great Plains and the concomitant reports of steep grassland bird population declines you might think this was a description provided by Audubon during his trip to the confluence of the Missouri and Yellowstone Rivers nearly 170 years ago or A.C. Bent describing his venture into southwestern Saskatchewan a little over 100 years ago. However, this scene is still fairly typical throughout a portion of the northern Great Plains in north-central Montana, southeastern Alberta, and southwestern Saskatchewan—a landscape that has been called one of the most extensive naturally functioning grasslands in North America.



The rare and declining Sprague's Pipit breeds in open grasslands of the northern prairies. / John Carlson, BLM

In order to better understand the distribution and abundance of priority grassland bird species in this area, the Bureau of Land Management's (BLM) Glasgow Field Station and the Montana Natural Heritage Program initiated a cooperative inventory and long-term monitoring program in Valley County, Montana, in the summer of 2001, based on recommendations in a previous ecological assessment. Our objective was to gather habitat information to help guide management of grasslands for a variety of species, including a suite of grassland birds that are of conservation concern. The results exceeded our expectations – from 2001 to 2007 more than 75 species of birds were recorded on 1410 point-counts (189 - 207 points each year) in north Valley County. Twenty species were recorded on at least one point count every year, nine of which are Montana Species of Concern (SOC): Long-billed Curlew, Sprague's Pipit, Brewer's Sparrow, Lark Bunting, Grasshopper Sparrow, Baird's Sparrow, McCown's Longspur, Chestnut-collared Longspur, and Bobolink, Chestnut-collared Longspur occurred on the greatest per-

centage (79.7-89.9 percent) of our point counts. Next in order of relative abundance were Horned Lark, Western Meadowlark, Sprague's Pipit, and Baird's Sparrow. Each of these species was detected every year on at least 30 percent of our count points.

That all of these bird species co-occurred every year, sometimes in substantial numbers and despite large differences in preferred vegetation structure, suggests that current management is maintaining a mosaic of vegetation conditions at large enough landscape scales to retain what appears to be a complete mixed-grass prairie bird community. The results of this work? The designation of the northern Valley County, Montana grasslands as an Important Bird Area of global significance.

We have since expanded surveys to sites in nearby northern Blaine and Phillips counties within the BLM's HiLine District and found the same SOC birds in roughly the same proportions, with the

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exception of Baird's Sparrow, which was less abundant, and McCown's Longspur, which was more abundant (reflecting shorter and less-dense vegetation in Blaine and Phillips counties). This suggests that much of the HiLine District continues to support a diverse and abundant grassland bird community.

Unlike many other areas in the Great Plains where conservation is often directed at restoration of degraded habitats, which is often expensive with uncertain or long-term outcomes, the challenge in this landscape is to make sure it continues to provide high value habitats for grassland birds and other prairie wildlife—a much less expensive endeavor with immediate results. The landscape is a mixture of ownerships—private, state, and federal—and each has its own conservation challenge. Approximately 53 percent of historical grass and shrubland remain in the HiLine District and 32 percent of the remaining habitat is on BLM lands. To address the primary threat of habitat loss through conversion of native habitats to cropland, our partners are securing conservation easements on private lands to ensure there continues to be grasslands available for these grassland birds.



McCown's Longspur breeds in shortgrass prairies of the Great Plains and winters in the southern U.S. and Mexico. / John Carlson, BLM

On BLM lands, where conversion of habitats isn't an issue, conservation measures intended to address habitat degradation have been incorporated into management actions in the ongoing Resource Management Plan revision for the HiLine District. We are also now exploring how domestic livestock grazing, the predominant land use, can be managed to improve grassland bird numbers. Grazing is a natural disturbance on the Great Plains, but the scale at which grazing occurs has been dramatically altered, changing from large herds of bison moving throughout the landscape to grazing by domestic livestock in smaller confined pastures. We hope to determine if alterations in the timing and intensity of domestic livestock grazing can improve habitat for the full suite of grassland birds.

Through this combination of conservation strategies and actions, we hope to continue to provide June mornings that even Audubon or Bent would recognize 100 years from now.

For more information, contact John Carlson, [jcarlson@blm.gov](mailto:jcarlson@blm.gov).

### **NABCI Welcomes RMBO and CLO as Members, Expresses Gratitude to WMI for Years of Service**

The U.S. NABCI Committee recently invited the Rocky Mountain Bird Observatory and the Cornell Lab of Ornithology to participate as members on the Committee. Both organizations enthusiastically accepted and attended the August 2012 Committee meeting in Arlington, VA.

The Wildlife Management Institute which has served on the Committee since it was first established in 1999, is stepping down after a long tenure. The Committee thanks WMI for its diligent efforts over the years to promote integrated bird conservation in North America and work collaboratively on shared priorities for birds.

With the addition of RMBO and CLO, the Committee now hosts 23 members, including representatives from federal and state agencies, the flyway councils, the bird conservation initiatives, and non-profit conservation organizations. For more information on the U.S. NABCI Committee, visit <http://www.nabci-us.org> or contact NABCI Coordinator, Allison Vogt, [avogt@fishwildlife.org](mailto:avogt@fishwildlife.org).

## Using Science and Conservation Design to Make a Difference for Grassland Birds of the Northern Great Plains

*Adam Ryba, Wildlife Biologist, Habitat and Population Evaluation Team Region 3, U.S. Fish and Wildlife Service*

The Northern Great Plains Joint Venture (NGPJV) recently completed an update to its priority bird species list, which highlights species from the major habitat types present throughout the JV. Species in need of conservation include Sprague's Pipit, Baird's Sparrow, and Upland Sandpiper among others, as well as bird assemblages that use mixed-grass prairie, shrub-steppe, woody draw, wetland, woody riparian, and prairie dog colony habitats. Focusing management on any one of these habitat types will ultimately impact the numerous species present there.

These conservation planning efforts are urgently needed, as the region is being heavily impacted by energy development, including wind and oil and gas. The number of active oil wells and drilling rigs present in North Dakota continues to climb, with potential direct, indirect, and unforeseen impacts to birds and other wildlife throughout the region.

Approximately 2,000 oil wells are being drilled annually, with estimates of between 1 million and 1.5 million gallons of water used per well. This demand for water will likely increase dramatically over the next few years, especially when the region begins to enter a dry cycle. Estimates of the amount of oil in the Bakken formation range from 10 billion barrels to 503 billion barrels; however, estimates of recoverable oil rates are as low as 1 percent. The most recent study conducted by the United States Geological Survey estimated the amount of technically recoverable oil in the Bakken formation between 3.0 and 4.3 billion barrels.

Transportation counts for areas impacted by oil development in western North Dakota have risen dramatically due to increased oil production and an influx of people on the landscape. Increased traffic on gravel roads and highways has more potential to result in direct mortality and disturbance due to noise and dust. Additionally, more access roads to well pads and activity on the well pads increase fragmentation and predator populations in the immediate area of the disturbance.

To be able to respond to these challenges, a team of scientists, from the Northern Wildlife Prairie Research Center, Wisconsin Cooperative Wildlife Research Center, and Habitat and Population Evaluation Team (HAPET) office in Bismarck, North Dakota, are conducting a research project this year that will examine the effects of oil and gas development on grassland birds. Some of the primary objectives include determining impacts oil wells have on density or species presence at varying distances, bird avoidance of re-injection wells, and impacts from increasing well density over the course of the study.

To better target conservation for declining grassland birds, the HAPET office generated a Grassland Bird Conservation Area (GBCA) model for the Prairie Pothole and Northern Great Plains Joint Ventures using the 2006 National Landcover Database (NLCD). The NGPJV has some large blocks of core areas throughout and much potential for conservation in grassland and shrubland habitat. Fragmentation of grassland habitat is thought to be one of the most detrimental factors contributing to declining grassland bird populations. Core areas of the GBCAs consist of grassland cores surrounded by varying distances and acreages, from one-quarter mile, one-half mile and one mile wide, covering a minimum of 55, 160, and 640 acres respectively. Core areas are a minimum of 95 percent grassland, more than 50 meters from woodlands and up to 30 percent wetlands.

The HAPET office also has been examining waterfowl and waterbird use of Partners for Fish and Wildlife (PFW) created wetlands in western North and South Dakota. More than 600 PFW and natural wetlands are being evaluated by counting the pairs and other waterfowl present twice in the spring, and then counting the broods present on a subset of the wetlands surveyed for pairs.

Salinity in the PFW created wetlands has been a concern in much of the more arid regions in the Dakotas. The majority of the restored or created wetlands on private lands are important for ranching operations and func-

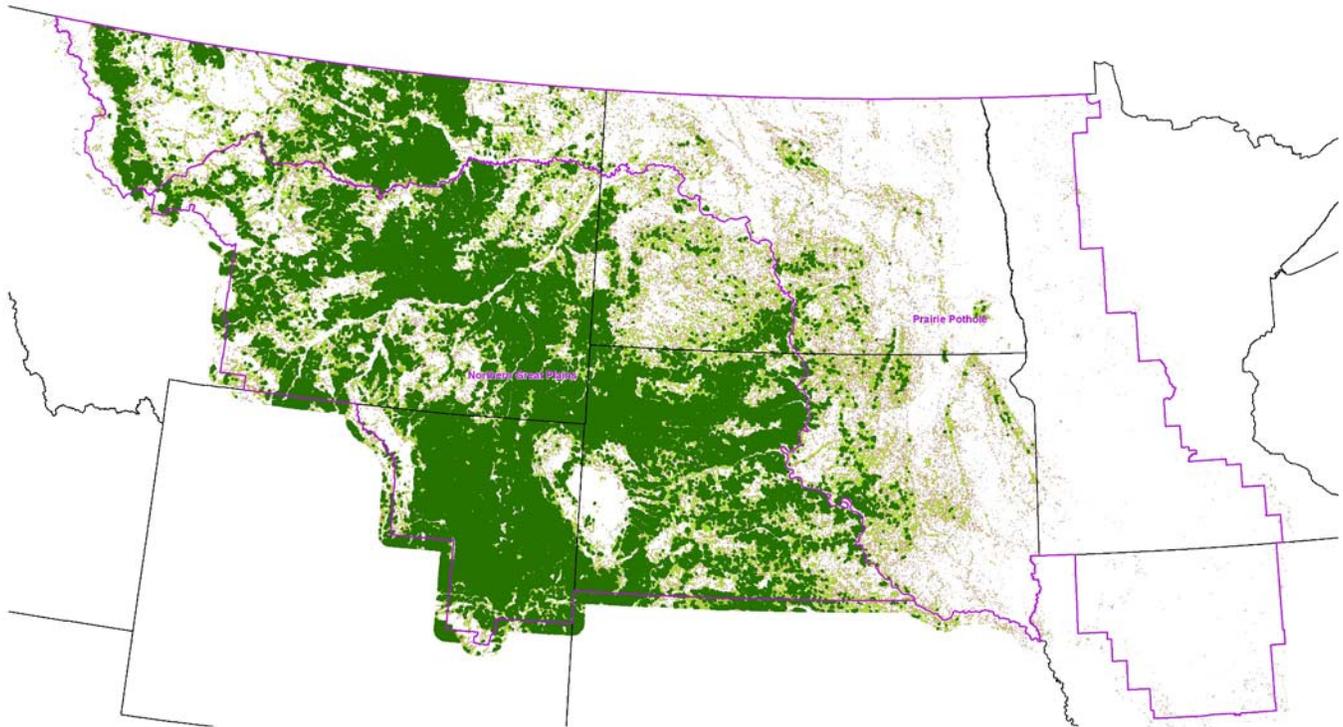
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tion as watering areas for livestock. Increased salinity in water sources is thought to reduce growth in livestock, reduce wetland quality, and potentially cause waterbirds to develop salt buildup on their legs due to wading in the high salinity water.

The upcoming years will be continue to be challenging for birds and other wildlife in the NGPJV, with growing human populations, increasing disturbance from energy development and agriculture, and loss and degradation of habitat on the landscape. But with sound science and landscape design tools in place to target conservation, the JV can make a difference for grassland and other bird populations in decline in this region.

For more information, contact Adam Ryba, [adam\\_ryba@fws.gov](mailto:adam_ryba@fws.gov).

### Grassland Bird Conservation Area (GBCA) Cores \*



- GBCA Type 1: Consists of a Core with minimum dimensions of 1500m x 1500m and the surrounding matrix. Cores are comprised of a minimum of 95% compatible habitats. Matrices encompass a 1500m buffer area around the outer boundary of Cores. A minimum of 40% of the area encompassed by the GBCA is comprised of compatible habitat.
- GBCA Type 2: Consists of a Core with minimum dimensions of 810m x 810m and the surrounding matrix. Cores are comprised of a minimum of 95% compatible habitats. Matrices encompass a 1500m buffer area around the outer boundary of Cores. A minimum of 30% of the area encompassed by the GBCA is comprised of compatible habitat.
- GBCA Type 3: Consists of a Core with minimum dimensions of 450m x 450m and the surrounding matrix. Cores are comprised of a minimum of 95% compatible habitats. Matrices encompass a 1500m buffer area around the outer boundary of Cores. A minimum of 20% of the area encompassed by the GBCA is comprised of compatible habitat.

| Landcover Class (NLCD)       | Compatibility Class |
|------------------------------|---------------------|
| Grassland/Herbaceous         | C                   |
| Shrub/Scrub                  | C                   |
| Hay/Pasture                  | C                   |
| Open Water                   | C*                  |
| Emergent Herbaceous Wetlands | C*                  |
| Woody Wetlands               | C*                  |
| Cropland                     | N                   |
| Barren                       | N                   |
| Perennial Snow/Ice           | H                   |
| Forest                       | H                   |
| Developed/Urban              | H                   |

pfp Compatibility Classes: C = Compatible, N = Neutral, H = Hostile  
 \*A maximum of 30% of a Core area is comprised of these habitats.

GBCAs were conceptualized through a joint project between the US Fish and Wildlife Service, Region 6, Habitat and Population Evaluation Team (HAPET) office, Bismarck, ND, and Ducks Unlimited Great Plains Regional Office, Bismarck, ND.

The 2006 National Land Cover Database (NLCD) was used to create the GBCAs depicted here. Grassland/herbaceous, shrub/scrub and hay/pasture habitats were considered compatible grassland bird habitat.

This map was prepared by the Habitat and Population Evaluation Team (HAPET) office US Fish and Wildlife Service, Region 6 Bismarck, ND.



**GBCA Core**

- Type 1 (1500m)
- Type 2 (810m)
- Type 3 (450m)
- Joint Venture



## Challenges for the Prairies: The Flint Hills

Robert Penner, Avian Programs Manager, The Nature Conservancy and Brian Obermeyer, Landscape Programs Director  
The Nature Conservancy

Grasslands once covered much of central North America, making up the continent's largest vegetative region. While the total acreage was greatly reduced following Euro-American settlement, North America's native prairies (short, mixed, and tall) still serve as an important repository for biodiversity. The eastern third of this vast grassland region is represented by tallgrass prairie, a mosaic of distinct herbaceous-dominated communities. Tallgrass prairie once stretched across 170 million acres from Canada to Texas and Kansas to Kentucky. Few places

in the world have experienced the extent of human-made alterations documented in the tallgrass prairies, making this once expansive, complex ecosystem the most altered in North America in terms of total acres lost.



Upland Sandpiper is a grassland nesting bird of the Flint Hills prairie ecosystem. / Robert Penner, The Nature Conservancy

The Flint Hills, in eastern Kansas and northeast Oklahoma, are still relatively unspoiled. Unlike other now-vanished tallgrass prairies that once blanketed much of the American heartland, this 3, 300, 000-acre prairie landscape of gently-sloping limestone and chert hills remains today as the continent's last significant expanse of tallgrass prairie. Roughly two-thirds of the remaining tallgrass prairie in North America—less than five percent of the historic total—is contained in the Flint Hills.

The Flint Hills provide a unique ecosystem representation of tallgrass prairie. This large, intact area is especially important to grassland nesting birds, such as Upland Sandpiper, Grasshopper Sparrow, Dickcissel, Eastern Meadowlark and Henslow's Sparrow. Because of their scale, the Flint Hills harbor one of the continent's largest populations of Greater Prairie-Chicken. The

Flint Hills also serve as an important north-south corridor for migrating grassland birds, raptors, and shorebirds. The American Golden-Plover, Buff-Breasted Sandpiper, Smith's Longspur, and Sprague's Pipit are species of conservation concern that are known to migrate through the region in significant numbers.

The area owes its persistence as a largely unfragmented prairie landscape to its ranching heritage, one that has perpetuated the natural disturbance of fire and grazing. However, energy development, low-density housing, invasive species, incompatible management, and woody encroachment all threaten its biological integrity. Incompatible development in the more contiguous areas of the Flint Hills could create large areas less suitable to species that have a strong affinity for unfragmented prairie. If such development is left unchecked, these alterations could lead to severe population declines and perhaps even eradication of certain bird species.

High burn frequency within the core of the Flint Hills has been associated with low productivity and poor recruitment of prairie chickens and other grassland birds that require residual vegetation for nesting. Fire and grazing are not in themselves detrimental to grassland bird reproduction, but a decline in reproductive success may occur when the two are combined. Conversely, other areas of the Flint Hills have experienced severe woody encroachment due to many years of fire suppression. Non-native plants that out-compete the native vegetation can also have a negative effect on wildlife. *Sericea lespedeza*, Old World Bluestem, and Eastern Red Cedar are three invasive species that pose a significant threat.

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The Nature Conservancy has identified the Flint Hills as a priority conservation action site. Likewise, the Kansas Natural Heritage Inventory rates the Flint Hills as the state's number one landscape conservation priority. The World Wildlife Fund also recognizes the landscape as "one of only six grasslands in the contiguous U.S. that is globally outstanding for biological distinctiveness." In 2001, The Nature Conservancy launched its Flint Hills Initiative, a community-based conservation initiative, to employ multiple strategies to help preserve the biological integrity of the region. The Nature Conservancy also has an impressive portfolio of conservation landholdings in the Flint Hills, totaling more than 60,000 acres. These include Konza Prairie, which is operated as a field research station by the Division of Biology at Kansas State University, and the Tallgrass Prairie National Preserve, a unit of the National Park Service.

Perhaps the best way to protect this extensive prairie landscape from development and other encroachments is through conservation agreements or easements. The use of conservation easements addresses the goal of many who wish to maintain the unfragmented nature of the Flint Hills while preserving the region's ranching heritage and economic base. Landowners can benefit from conservation easements by protecting their rangeland from future development while retaining ownership and traditional uses of the land. Conservation easements can also enable landowners to keep the land for future generations. Donated conservation easements provide tax benefits and income for landowners who choose to sell their development rights. The Nature Conservancy, Kansas Land Trust, Ranchland Trust of Kansas and USDA's Natural Resources Conservation Service (NRCS) hold more than 70,000 acres of conservation easements in the Flint Hills. Most recently, the U.S. Fish & Wildlife Service has established the Flint Hills Legacy Conservation Area, which authorizes the Service to acquire conservation easements of up to 1.1 million acres within the Flint Hills.

For more information, contact Robert Penner, [rpenner@tnc.org](mailto:rpenner@tnc.org).



Butterfly Milkweed of the Flint Hills Preserve in Kansas. / Robert Penner, The Nature Conservancy



Tallgrass prairie of the Flint Hills Preserve. / Robert Penner, The Nature Conservancy

## Only Crumbs for the Birds in America's Breadbasket?

*Barth Crouch, Conservation Policy Director and Misti Vazquez, Communications Director, Playa Lakes Joint Venture*

The American Great Plains has long been the supplier of food and fiber for a worldwide population, as well as a source of energy for the United States. But how deep is the nation's breadbasket? With the many demands on its vast resources, is there still room on the prairie for America's birds? The answer is yes according to Playa Lakes Joint Venture (PLJV), a regional partnership of federal and state wildlife agencies, conservation groups and private industry dedicated to conserving bird habitat in western Nebraska, Kansas and Oklahoma, the panhandle of Texas, and eastern New Mexico and Colorado.



One of the growing number of wind farms in Kansas.

“Grassland birds are facing more and more challenges to their survival—grasslands being converted to cropland, increased development of oil, gas and wind energy, invasive shrubs that siphon available water, declining aquifer levels, and the suppression of fire on the landscape—all of which have consequences, not just for the birds of the region, but for the human population as well,” says PLJV Coordinator Mike Carter. “That’s why it’s so important to work collaboratively to determine the best areas for agriculture and energy development and, where they occur, to make them as bird-friendly as possible.”

The abundant water found in the Ogallala Aquifer, which underlies parts of eight states, drives much of the agricultural production in the western Great Plains. This water resource—responsible for 30 per-

cent of all the groundwater used for irrigation in this country—transformed the ‘Dust Bowl’ of the 1930s into an agricultural production engine that now supplies one-fifth of the wheat, corn, cotton and cattle produced in the United States. But the aquifer can’t last forever, not at this rate. In large areas of Texas, Oklahoma and Kansas, the water level in the aquifer has declined by 50 to 175 feet since pumping began. In many areas, wells are being decommissioned as their ability to supply water dwindles.

Playas are the primary source of recharge for the Ogallala, contributing up to 95 percent of the overall return of water to the aquifer. During dry periods, a playa develops deep cracks and fissures in the clay bottom, which are channels for recharge. But, many of the approximately 80,000 playas throughout the region are not able to recharge the aquifer at all. To function properly, playas need excess sediment removed, a filtering grass buffer around the edges, and a watershed that allows water to reach the playa.

One of the largest threats to birds is the conversion of USDA Conservation Reserve Program (CRP) acres from grass to cropland for corn, wheat, sorghum, soybeans and cotton. With millions of acres expiring in the next few years, all the grassland dependent birds are potentially at risk of undergoing significant population declines. Many of these CRP acres have erodibility problems and would be better used for grazing, but the lure of high crop prices may lead to many acres being converted, some even before they are due to expire.

“The economic return from cropping is seen as much higher than the returns from livestock or forage production, but the long drought cycles common to this area remind us how much we depend on the shrinking Ogallala Aquifer,” says PLJV Conservation Policy Director Barth Crouch. “We need to farm only those soils that are best-suited for farming, plant shorter native grass and forbs on croplands being returned to rangeland, and remove invasive shrubs and trees that take water from the native vegetation.”

Fire and proper grazing keep these troublesome plants from encroaching upon the remaining grasslands and making the landscape unfavorable for grassland birds. Some are native to North America but

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totally out of place while others are exotics that lack natural controls. Most of the invasives tend to be woody with deep roots that aggressively compete for the available water, especially in times of drought. Eastern Red Cedar, Mesquite and Salt Cedar—invasive shrubs causing the largest impact in the region—use more water than the native vegetation, inhibit grass and forbs production, and grow in thick stands that severely fragment bird habitat. In many places, the infestation is so severe that fire or mechanical removal is needed.

The Great Plains, long known for its agricultural products, has also become home to a growing number of wind farms, creating new challenges for native and migrating birds. The building of these complexes causes short-term disturbance within the area, permanent habitat fragmentation from the towers and the roads connecting them, and bird mortality from collisions with the turbines and transmission lines. With current demand, it is expected that the energy output from wind farms will increase by several hundred percent. Just in Kansas, there may soon be as many as 35 to 40 wind farms with 2,500 to 4,500 turbines.

Although the challenges may seem overwhelming, PLJV believes a proactive and collaborative approach is the key to long-term bird conservation. “We understand this land must provide energy and agricultural commodities to meet an ever-growing demand,” says Carter. “By working with landowners and private industry we can produce solutions for both the people and wildlife that depend on this landscape.”

To that end, PLJV creates state-of-the-art maps and decision support tools to help their partners evaluate information in order to make effective, efficient decisions about where to restore playas and native grasslands and where to locate energy development for the least impact on bird populations. The partnership also works with private landowners to conserve soil, protect wetlands, and increase aquifer recharge.

## Playa Lakes Joint Venture Addresses Habitat Conservation Challenges Using Science, GIS, and Communications

*Misti Vazquez, Communications Director, Playa Lakes Joint Venture*

To address the many challenges now facing birds of the western Great Plains, the Playa Lakes Joint Venture (PLJV) has developed an initiative that will incorporate the latest work of the partnership in a number of fields to drive more habitat conservation, particularly for playas. The initiative is comprised of 18 interrelated projects focused on addressing the current conservation challenges and taking advantage of available opportunities.

“This approach to playa conservation builds upon the work done over the last decade by the Joint Venture partnership,” says PLJV Coordinator Mike Carter, “and, in all likelihood, will provide direction for the next decade of conservation action.”

The projects include creating decision support systems that prioritize playas based on different conservation activities; placing private lands biologists focused on playas and the Ogallala Aquifer in strategic areas throughout the region; developing playa research priorities; collecting data on bird use of playas; and promoting ecosystem services provided by playas. Although most of the projects are still in the conceptual stage, work on the Playa Decision Support System—a tool that will help developers, land managers, and conservationists strategically plan where their efforts will have the greatest or least impact on playas—is already underway.



Aerial photo shows wetlands located within a wind farm in Nolan County, Texas. PLJV's Playa Decision Support System will help energy developers avoid priority playas when planning new projects.

## Building a Continental Partnership for the North American Grasslands

*Commission for Environmental Cooperation's North American Grasslands ad hoc Technical Group*

“What’s healthy grassland for birds is healthy grassland for all of us, including the rancher.”

– Arvind Panjabi, International Program Director at the Rocky Mountain Bird Observatory



Baird's Sparrow breeds in native mixed-grass and fescue prairie and is surveyed by the Rocky Mountain Bird Observatory. / John Carlson, BLM

Migratory birds and cattle ranchers in North America have a lot in common; they are both largely dependent on healthy grasslands for a good life.

Ranchers, natural stewards of the land, have witnessed the rapid loss of the prairies due to pressures such as expanding agriculture, urbanization, and desertification. In the United States, for example, only 3 percent of native grasslands remain, the rest having been largely converted to farming. Moreover, profitable agriculture in the United States, resulting from high crop prices and increased yields, is diminishing the incentives for farmers to enroll in conservation programs.

Habitat fragmentation is also threatening grassland ecosystems and biodiversity. Access roads bring power and transmission lines, wind turbines, drilling, and pipelines as well as compression stations and other noise point sources. Intensive cattle production and overgrazing further degrade the already fragmented landscape.

Not surprisingly, experts are observing a steady decline in grassland bird populations across North America. In Canada,

it is estimated that grassland bird abundance has fallen by approximately one third since the 1970s and more than one in three grassland bird species is now considered at risk. And in the Valles Centrales Grasslands Priority Conservation Area of Mexico, the accelerated clearing of native grassland for agriculture is driving the extinction of the last known native populations of desert-dwelling Aplomado Falcons in North America.

The Commission for Environmental Cooperation (CEC) has been supporting bird monitoring in Northern Mexico since 2007. This area is significant because 90 percent of the grassland birds that breed in the Western Great Plains of the U.S. are migratory, and 80 percent of those overwinter in the Chihuahuan Desert Grasslands. The strong dependence on these wintering grounds makes North American grassland birds particularly vulnerable to habitat conversion and changing climatic conditions, such as drought and desertification.

Migratory birds have low site fidelity so it can be difficult to analyze variations in abundance. A likely key factor determining wintering sites is available food and other resources to survive the winter, which in turn is affected by summer precipitation patterns. Over the last century, ill-adapted ranching practices and climate change have also resulted in increased fragmentation, erosion, and loss of grasslands and rangelands in northern Mexico.

Through trilateral collaboration, actions are being taken in the three countries to reverse these negative trends. Abundance measured in relation to habitat and climatic conditions within Grassland Priority Conservation Areas is being used as input data for models to develop habitat management guidelines for bird conservation. These guidelines allow ranchers and land managers to plan conservation efforts around priority bird species' habitat needs and design habitat management for reaching target population levels.

Experts in Canada, Mexico and the U.S. have also begun compiling beneficial management practices for the sustainable use of the grasslands. These will be distributed to ranchers and other partners on the landscape in early

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2013. Beneficial practices include rest periods for pastures—through a multi-paddock system for example— to increase vegetation vigor. This change in vigor can result in a highly significant increase in the forage available in a very short period of time.

Research is also shedding light on the green and low-carbon benefits of adopting sustainable rangeland practices. For example, the stored carbon in Canadian grasslands is at least three times Canada's annual GHG emissions from all sources.

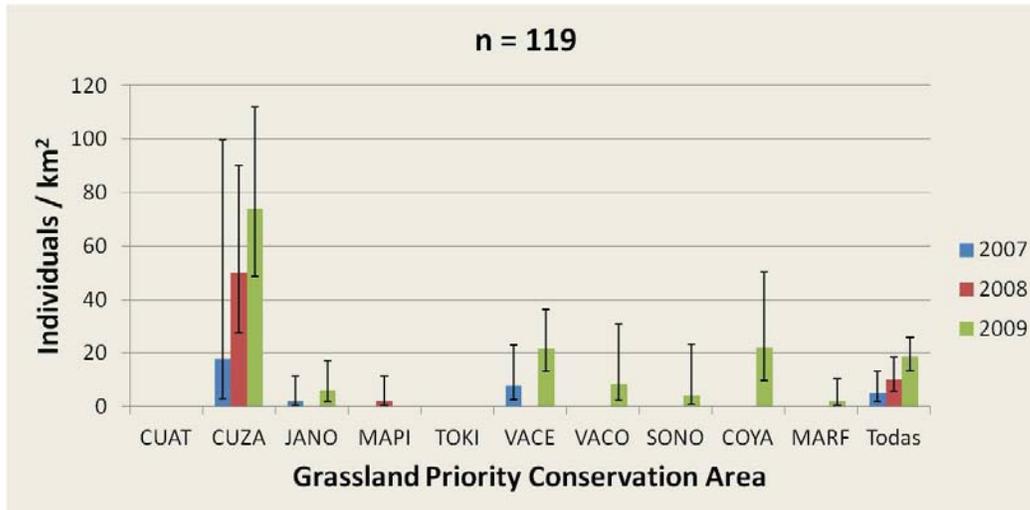


Chart shows the number of birds found each year in the priority grassland conservation areas studied.

This year trilateral grassland experts took the first steps towards a continental grasslands partnership of ranchers, bird conservationists, and government agencies concerned with the rapid loss of the grasslands. One of the breakthroughs of the continental partnership was the incorporation in June 2012, of the Regional Alliance for the Conservation of the Chihuahuan Desert Grasslands—an alliance of government and non-government partners to promote the conservation and sustainable use of the grasslands of Northern Mexico.

Bringing together diverse partners has facilitated collaboration on several fronts, from practical, on-the-ground best practices work and monitoring to economics. For example, a small group of experts is looking at the market feasibility of introducing sustainable ranching practices that impact the entire supply chain in areas of high ecological importance. Economic and ecological cost-benefit analyses are being done for different sustainable production options including marketing, management, and monitoring needs as well as the willingness of landowners to adopt such management and monitoring approaches. These sustainable practices and incentives would allow private landowners to improve their bottom-line, while conserving grasslands.

As the only continentally-shared terrestrial ecoregion, opportunities abound for sharing information, beneficial practices, and resources among Canada, Mexico and the United States. Governments, joint ventures, landscape conservation cooperatives, ranchers and NGOs are among the many partners that will need to work together to stem the rapid loss of North America's grasslands.

Through its project North American Grasslands: Management Initiatives and Partnerships to Enhance Ecosystem and Community Resilience, the Commission for Environmental Cooperation (CEC) is working with partners in the three countries to compile and distribute practices that promote sustainable ranching, production and biodiversity conservation. These activities are complemented by research to monitor the recovery of birds in grasslands and provide scientific information on habitat requirements for migratory and native species.

To learn more about the CEC's North American Grasslands Project, go to <http://www.cec.org/grasslands>.

## Chihuahuan Desert Grasslands: From Science to Implementation

*John Nielsen, Senior Writer/Editor, American Bird Conservancy*

Bird conservation specialists with American Bird Conservancy and their partners are looking for some unexpected allies in the struggle to save birds that depend on what's left of the grasslands found in northern Mexico's Chihuahuan desert: cattle ranchers caught up in a vicious cycle that is detrimental to cattle rancher profits, native grasslands, and the local and migratory birds.



Quality grasslands in Valles Centrales are critical wintering habitats for priority species like Sprague's Pipit, Baird's Sparrow, and Chestnut-collared Longspur. / Pronatura Noreste

“Drought, desertification, and overgrazing by cattle on local ranches degrade the native grassland habitat used by birds such as the Sprague's Pipit, Baird's Sparrow, Chestnut-collared Longspur, Aplomado Falcon, Burrowing owl, Lark Bunting, and Long-billed Curlew,” says Andrew Rothman, Migratory Bird Program Director of ABC. “Degraded grasslands provide less food for grazing cattle, which means the cattle are often less fit, which in turn means they often end up selling for less. This can lead to even more destructive grazing practices or worse yet for the birds, conversion to agriculture.”

This vicious cycle, Rothman says, frequently ends when cash-strapped ranchers sell to farmers who replace vital grasslands with irrigation- and chemical-intensive agriculture that provides little value to birds. Once the land has been converted, even returning it to ranchland is not a viable option.

But conservation specialists with ABC, their Mexican partner Pronatura Noreste, and Rocky Mountain Bird Observatory (RMBO) say it doesn't have to be this way. To share this message they're taking to the dusty, bumpy roads of the Valles Centrales Grassland Priority Conservation Area, a 6.7 million-acre region in northern Chihuahua that's been identified by conservationists for its important remaining grassland habitat.

The specialists driving those dusty roads are Lilia Vela, a Private Lands Biologist hired by Pronatura Noreste with support from ABC, and Roberto Rodríguez, one of the top ornithologists in Mexico who has been hired by RMBO with the help of a grant from Neotropical Migratory Bird Conservation Act.

This duo is now knocking on the doors of local ranchers in the Valles Centrales, hoping to convince them that it's possible for healthy bird populations and healthy cattle to share the precious desert grasslands.

Improving grazing practices will benefit rangeland health and condition as well as the bird populations using these critical wintering habitats. That's a point of view that's been endorsed by scientists from RMBO, the Universidad Autónoma de Nuevo Leon, the Universidad Autónoma de Chihuahua, and others who have been gathering data on grassland bird species, their habitat preferences, and the status of that habitat in the Chihuahuan Desert grasslands of Mexico for at least the past five years.

Technical support comes from the staff of ABC, RMBO, and Pronatura Noreste, who combined have dozens of years of experience working with private land conservation, agronomy, and management plan development and implementation.

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Finally and most importantly, the program has been endorsed by the Chihuahuan Desert Grassland Regional Alliance and its members: at a recent meeting in Chihuahua City, Mexico, they agreed that there was a desperate need for this conservation action in the Valles Centrales.

Vela and Rodríguez are focusing on solutions to the region's conservation problems. They say it's a process that begins by developing relationships with individual landowners. It comes down to building trust and convincing the landowners to take part in improved management practices.

RMBO has been gathering bird data on ranchlands in the Chihuahuan desert grasslands for many years, finding out how grassland structure and density are affecting birds. These data are helping guide which doors the biologists need to knock on, and ultimately assisting with guiding what habitat prescriptions are developed to enhance the land for cattle, birds, and people. By overlapping preferred bird habitats with preferred grazing condition, this project will find the "sweet spot" where the grasslands can be managed for the benefit of both the birds and cattle.

ABC, RMBO, and Pronatura Noreste recently signed a cooperative Memorandum of Understanding between the three organizations, setting initial targets for restoration and providing a pathway to leverage knowledge, funding, and success. Over the next two years, they plan to improve a minimum of 12,000 acres of grassland habitat in Valles Centrales.



Aplomado Falcon is a species that will benefit from efforts to improve grazing practices in northern Mexico's Chihuahuan Grasslands. / Elaine R. Wilson

That's a lot of driving on a lot of dusty roads. But to the conservationists involved in this new project, the potential payoff is tremendous. As cattle ranchers enhance sustainability of their lands, they'll not only raise cattle that bring higher prices in the marketplace: they'll also be saving grasslands birds.

For more information, contact Andrew Rothman, [arothman@abcbirds.org](mailto:arothman@abcbirds.org).

## Your Place or Ours? Bird Conservation in the Prairies of the Pacific Northwest

Marnie Lassen, Conservation Project Manager, Center for Natural Lands Management and Bob Altman, Pacific Coast Joint Venture Science Coordinator, American Bird Conservancy

### FREE LAND

High quality restored prairie available for occupation by rare prairie birds. Cozy nest boxes, no invasive Scotch Broom, open areas free of row trees.

No need to apply – just move in!

If only it were as easy as posting a sign to bring birds back to their former habitat. But prairie conservationists in the Pacific Northwest are finding that it takes a lot more than that.

*Prairies in the Pacific Northwest rainforest?* Yes indeed—prairie habitats occupy fertile lowlands, post-ice age glacial outwash soils and relatively drier rain shadow areas—the same places where people want to live. Thus, populations of

*Continued next page*

prairie birds have declined dramatically due to habitat degradation and fragmentation and the loss of over 90 percent of native prairie in Washington's South Puget Sound and 99 percent of native prairie and savanna in Oregon's Willamette Valley.



A southern Puget Sound prairie in full bloom. / Rod Gilbert

Conservationists are working on several fronts to conserve prairie birds. This includes working in unusual non-native grassland areas that the birds are still occupying, working in remnant prairie lands that have the potential to be restored, and using innovative population enhancement techniques to potentially save some populations. Grasslands are one of the priority habitats identified by Pacific Coast Joint Venture plans for the Puget Lowlands and Willamette Valley ecoregions.

*Airport dwellers.* With so few prairies left in the Pacific Northwest, some of the region's rarest birds have found refuge in the short-grassed yet highly disturbed habitat of airports – some of the last open spaces that haven't been overrun by development or converted to agriculture.

Streaked Horned Lark is a Federal Candidate species for listing under the Endangered Species Act. Of the limited number of sites in Washington where they occur, about half are on airports. Indeed, the largest known population is at the Corvallis Airport in Oregon. Hannah Anderson of the Center for Natural Lands Management in Olympia, Washington, notes, "In the ideal world, we'd conserve the lark in protected areas. Instead we're working in noisy, highly disturbed areas with conflicting management priorities." Anderson is working with airport operators to find conservation solutions that address the airports' needs, including the very real safety issues that arise from managing airports to conserve wildlife. These solutions include rescheduling mowing and events such as airshows to avoid the larks' breeding season. Conservation partners are also working toward producing best management practices for airports inhabited by larks.

Similarly, the Oregon (or Coastal) Vesper Sparrow is found in only one location in Canada: the Nanaimo Airport on Vancouver Island. This population has been 6-10 pairs per year since 2002. Conservationists at the Garry Oak Ecosystem Recovery Team and Environment Canada manage a 13-acre area for the sparrow under a stewardship agreement with the airport. Past restoration made the area more suitable for nesting Vesper Sparrows by removing dense patches of invasive Scotch Broom, and ensuring a mosaic of plant density to provide cover. However, given the very small population and the continuing threats to the habitat, Vesper Sparrows are only "hanging on by their toenails" at the Nanaimo Airport.

*Free transport to a new home, anyone?* The shrinking population of Streaked Horned Larks has created an additional impediment to recovery in Washington's South Puget Sound region – lack of genetic diversity. An innovative project led by the Washington Department of Fish and Wildlife and the Center for Natural Lands Management targets the low hatch rate of larks there, as compared with their cohorts in Oregon's Willamette Valley. By replacing eggs sourced from Oregon larks with those in nests in Washington's South Puget Sound, biologists hope to diversify the genetic base and increase the lark's hatch rate. This study began in 2011, when clutches from five Oregon nests were brought to Washington. Already in 2012, biologists have spotted one banded lark from Oregon parents. Even this one success may help alleviate the genetic bottleneck, especially if this male can contribute to several clutches. Adrian Wolf of the Center for Natural Lands Management has the delicate task of transporting the eggs: "Sure, I felt a little guilty taking eggs from those Oregon mothers,

but it was all worth it this year when I spotted that Oregon bird that hatched and fledged in Washington. There are probably less than 2,000 Streaked Horned Larks in total—so it's imperative that we do everything we can to keep the South Sound population from disappearing.”

*They just moved in!* Sometimes the ideal does happen—conservationists restore habitat for target species, and those species return.

The Glacial Heritage Preserve in Washington's South Puget Sound that is owned by Thurston County and managed by the Center for Natural Lands Management used to be blanketed by Scotch Broom. Volunteers and staff have worked for nearly 20 years to restore the prairie habitat through prescribed burns, mowing, herbicide and good old-fashioned broom-pulling. From a low point of only two or three singing meadowlark males in 1999, the population has at least quadrupled to date.

Perhaps the most striking example of the “build it and they will come” philosophy for prairie bird conservation is at two U.S. Fish and Wildlife Service refuges in the Willamette Valley of Oregon—William Finley and Baskett Slough National Wildlife Refuges.

In the mid-1990s, Western Meadowlarks—which carry special significance as Oregon's State bird—were a rare sight at either refuge. In the last 10-15 years, refuge staff and partners, including the Pacific Coast Joint Venture, have emphasized restoration of wet prairie at Finley and upland prairie at Baskett Slough. The result has been an “explosion” of meadowlarks, with nearly 60 breeding adults at Finley and 45 at Baskett Slough. Now when you get out of the car during the breeding season at either refuge you are immediately greeted by a loud chorus of welcoming meadowlark song.

Capitalizing on the successes at Finley, the Institute for Applied Ecology is conducting habitat restoration activities on three private properties nearby. A key deterrent to occupation of these properties by meadowlarks was the past practice of planting rows of trees between fields for privacy and windbreaks. By removing 2,000 linear feet of trees from one site, conservationists have created one large prairie of over 200 acres suitable for meadowlarks. Matt Blakeley-Smith of the Institute noted that a crucial partner in the project is the Natural Resources Conservation Service (NRCS), who he described as “one of the unsung heroes for conservation in the Willamette Valley.” He said, “This is a landscape dominated by private land ownership, and without easements facilitated by NRCS we would not have access to these lands to manage them for the meadowlarks.” So far, meadowlarks have been detected at two of the three restored private properties, and their prospects for future use by meadowlarks look bright.

*Conclusion.* Conserving prairie birds in the Pacific Northwest is a study in multiplicities: the use of multiple strategies in multiple remaining prairie habitat types, while working with multiple partners—whether public, private or nonprofit. Conservationists are doing just that, and because of their efforts, increasing numbers of rare prairie birds are continuing to call the prairies of the Pacific Northwest home. They are finding that “free land” is available just for them.

For more information about Pacific Northwest prairies:

<http://www.goert.ca/>

<http://www.southsoundprairies.org/> <http://appliedeco.org/>

<http://www.pcvj.org/home/implementation/puget2.html>



A Streaked Horned Lark in the foreground is dwarfed by the military aircraft at Joint Base Lewis-McChord, Washington. / Hannah Anderson

## Prairies of California's Central Valley

*Jill Shirley, Communications Coordinator and Ruth Ostroff, Assistant Coordinator, Central Valley Joint Venture*

Along with the Sierra Nevada, the Central Valley is one of the West's most recognizable geological features. When we think of it now, we think of epic-scale agriculture, urbanization, and fragmented habitats. However, it was not always so. The Central Valley of California once contained a vast mosaic of wetlands and prairie.



The declining Western Meadowlark is a conspicuous resident of central and western North American grasslands. / Tom Grey

The earliest reference to California prairie grasslands was recorded in July 1769. A group of Spaniards riding northward from San Diego through the Coast Ranges in search of the Port of Monterey dipped into the Central Valley, and became the first extensive European sojourn into the interior of California. One of the expeditioners wrote in his diary: "The place where we halted was exceedingly beautiful and pleasant, a valley remarkable for its size, adorned with groves of trees and covered with the finest pasture."

One hundred years later, John Muir traversed the Great Valley on foot. In his singular voice, he described a landscape, "fairly drenched with sunshine, all the air was quivering with the songs of meadowlarks, and the hills were so covered with flowers that they seemed to be painted. Slow indeed was my progress through these glorious gardens, the first of the California flora I had seen. Cattle and cultivation were making few scars as yet, and I wandered enchanted in long wavering curves..."

This fertile landscape supported a plethora of wildlife. Pronghorn wandered the valley in herds of thousands, and Grizzly Bear roamed freely. Today, every bird lover has heard the tales of Central Valley skies alive with the sound of birds, breathtaking in their numbers and diversity. Now it requires a great feat of imagination to see such a sight. Today, the pronghorn herds are remnants, the birds are much quieter and the Grizzly Bear can only be seen on the California state flag.

Historically, the Central Valley supported three major landscapes: wetlands, grassland-prairies, and riparian woodlands. These habitats were all hydrologically and biologically linked to the river systems. Wet, mild winters and long, hot summers helped create the vegetation communities that characterize the Central Valley. Grasslands are thought to have historically covered about 20 million acres in California.

The California prairie was a product of winter rains, in contrast to the tall and short grass prairies of the Great Plains, which were products of spring and summer rains. The most common feature were native bunch grasses, whose conspicuous, scattered clumps gave the California grassland its characteristic aspect. Today, most of the historic prairie has given way to agriculture, urban development, and invasive species.

There are currently more than 34 million people in the state of California and this number is projected to reach 59 million by 2040. These numbers reflect serious consequences for habitat. Since the mid-1980s, over 250,000 acres of the Central Valley's grasslands have been lost. More than 100,000 acres of grasslands have been converted to more intensive agricultural uses such as vineyards, while over 160,000 acres have been lost to urbanization.

Today, the California prairie exists only in remnants, and less than 19 percent of the acreage is protected by fee and easement. As a consequence, the spectacular wildlife displays and abundant bird life that once distinguished the Valley are but a memory. But that doesn't mean we should give up hope. California's Central Valley still supports some of the highest abundance and diversity of wintering raptors in North America. Twenty-one species of hawks, eagles, and owls are regularly recorded on Central Valley Christmas Bird Counts. For certain grassland species like the Western Meadowlark, Lark Sparrow, and American Pipit, Valley grasslands constitute a significant portion of their range in California.

To maintain and increase these populations, there is a growing sense of urgency to curtail the accelerating loss of grasslands and plan for their restoration. California Partners in Flight (PIF) has responded to the challenge by developing a Grassland Bird Conservation Plan. California PIF seeks to promote conservation, protection, and restoration of grassland habitats to support long-term viability and recovery of both native bird populations and other native wildlife species. See <http://www.prbo.org/calpif/htmldocs/grassland.html>

The overall goal is to develop a web-based statewide grassland bird conservation plan that will be used by a diversity of stakeholders, including public and private land managers, conservation planners, and agencies that will enable them to stop the decline of, maintain, or increase grassland bird populations. The plan will synthesize and summarize, in one place, current "state of the science" knowledge concerning the needs and requirements of birds in grassland habitats. It will provide recommendations for habitat protection, restoration, management, and monitoring to ensure long-term persistence of birds and other wildlife dependent on grassland ecosystems. Once developed, the plan will inform future implementation and monitoring and evaluation plans for the five USFWS migratory bird joint ventures in California (Central Valley, San Francisco Bay, Sonoran, Intermountain West and Pacific Coast).

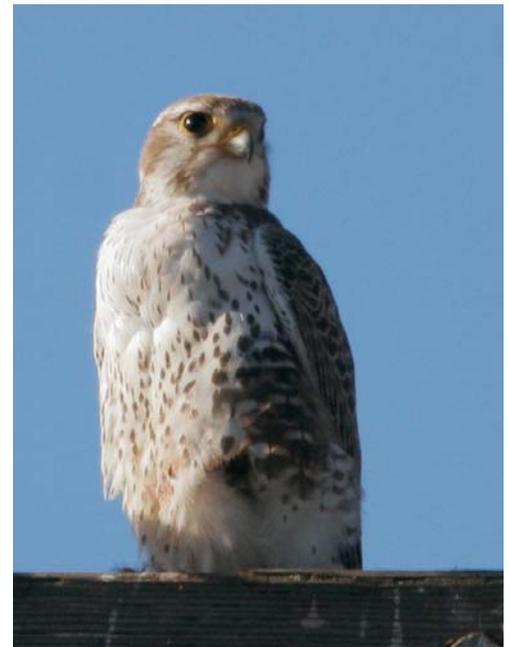
For the Central Valley Joint Venture, supporting this effort is a high priority. We cannot lose this critically important landscape that is an irreplaceable haven for wintering raptors and other grassland birds.

## Texas Blackland Prairies Conservation Challenges

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

The Texas Blackland Prairies encompass over 13 million acres in Texas running from the Oklahoma border in the north, to San Antonio and the outskirts of Houston in the south. The Blackland Prairies actually consists of a few tallgrass prairies, including the Blackland, Fayette, and San Antonio, and contains the southernmost extent of the "true prairie." The Blackland Prairies run down the middle of the Oaks and Prairies Bird Conservation Region (BCR 21), serving as the transition between the eastern deciduous forest and the Great Plains. Major conservation challenges in the Blackland Prairies include urban and suburban development, changing patterns of land ownership, livestock grazing, non-native forages and crops, and altered fire cycle.

Over 20 percent of the Blackland Prairies land area has been permanently converted to urban and suburban land use, and over 97 percent of the land area is privately owned. The Blackland Prairies ecosystem includes four of the five most populous cities, including Dallas, San Antonio, Fort Worth, and Austin. These cities are also among the fastest growing cities in the United States, and the overall population in this area is expected to continue growing faster than the national rate over the next few decades. This growth is causing a shift in land ownership patterns, including breaking up large landholdings into smaller ranchettes and housing developments. Many "new" landowners are buying rural land for recreational purposes, requiring changes in education and incentives to help landowners manage their land for sustainable bird populations.



Prairie Falcon inhabits grasslands, shrub-steppe, and deserts of the arid West. / Tom Grey

Over 95 percent of the original Blackland Prairies were converted by the early 1900s, mostly to crops like cotton. Since the original conversion of native prairie to cropland, some areas have been converted to tame pastures planted with exotic grasses. These pastures are usually managed for maximum forage yield, resulting in landscape-scale loss of habitat due to overgrazing, a shift in plant composition to grazing-tolerant plant species, and a reduction of fine fuels contributing to the alteration of the fire cycle.



Dickcissel hidden in sorghum. / Chuck Kowaleski, Texas Parks and Wildlife Department

savannas and woodlands. Prescribed fire is used to manage grassland habitats, but its use is very limited due to lack of fuel in overgrazed areas, too much fuel in overgrown areas, and liability issues due to increasing housing development in rural areas.



The state bird of Oklahoma, the Scissor-tailed Flycatcher breeds in open grasslands and agricultural fields in the Central U.S. and winters in southern Mexico and Central America. / Gary Kramer, U.S. Fish and Wildlife Service

Historically, large scale fires were common in this ecosystem, but today fires are vigorously suppressed to protect the increasing number of structures in the region. Active suppression of fire at the landscape scale results in habitat succession within as little as a decade. This succession includes reduction of grassland habitat through woody encroachment, very quick transition of grass/shrubland to woodland, and dominance of junipers replacing deciduous

In the face of all these challenges, there are many positive developments. Conservation agencies and organizations are coming to together to recognize the importance of this ecosystem. Large scale conservation partnerships like the Oaks and Prairies Joint Venture and the Gulf Coast Landscape Conservation Cooperative are bringing partners together to restore prairies at the landscape level. The Native Prairies Association of Texas has mapped the remnant native prairie patches that have never been plowed in the Blackland Prairies, and these areas can serve as local seed sources for restoration efforts. Prescribed burn associations are forming throughout the region to share equipment and address the liability issues. Northern Bobwhite management cooperatives, like the Western Navarro Bobwhite Initiative, have developed to bring landowners together to address grassland bird habitat needs. With sustained effort, these conservation activities can add up to the conservation of grassland habitats so critical to a host of birds in the Oaks and Prairies, including Northern Bobwhite, Scissor-tailed Flycatcher, Loggerhead Shrike, Grasshopper Sparrow, Dickcissel, and Eastern Meadowlark.

For more information, contact Jim Giocomo, [jgiocomo@abcbirds.org](mailto:jgiocomo@abcbirds.org)

*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.*

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*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 Playa Lakes, page 23***

Using the best available spatial data and the latest science on playa ecology, the system prioritizes individual playa basins according to their estimated ecological value and identifies clusters of playas that likely have higher value functioning as a group. The system prioritizes playas differently based on proposed land-use activities, chiefly energy development (e.g., siting wind farms), application of USDA Farm Bill conservation programs (e.g., enrollment in the USDA Conservation Reserve Program), and wetland restoration or protection (e.g., enrollment in long-term or permanent easements).

“This project is a cornerstone of our conservation initiative,” says PLJV Coordinator Mike Carter. “With more than 80,000 playas within the Joint Venture, people are asking which ones are the most important to conserve. When the Playa Decision Support System is completed, we will be better able to answer that question.”

“Because of its complexity and the need to tailor the system for the specific needs and issues of each state, the Playa Decision Support System is being developed in phases on a state-by-state basis,” says PLJV GIS Director Megan McLachlan. “We are currently in phase one of development with most states focused on building the system to guide development activities, namely wind energy development.”

Once the Playa Decision Support System and other products are completed, it will be imperative to get the information and tools out to all the partners and stakeholders within the region. One way PLJV does this is through radio.

Since approximately 95 percent of the land in the PLJV region is privately owned, landowners play an important role in managing the playas and grasslands that provide water, food and shelter for native and migrating birds. In an effort to reach this key audience and increase their awareness of the importance of playas in this semi-arid landscape, PLJV began producing the Playa Country radio show in 2006. The program was revamped in 2011 and began airing again in June of this year. The weekly episodes are four and a half minutes long and are broadcast on seven farm and public radio stations that together cover most of the six-state area.

“The show focuses on the wildlife, wetlands, and prairies of the western Great Plains, and the people who manage them,” says PLJV Communication Director Misti Vazquez. “The topics are informative, yet interesting, with different voices and perspectives telling the stories. We talk to conservation and wildlife experts—as well as farmers, ranchers and land managers—about topics such as removing invasive shrubs to provide more water and forage, the impact of fire on the landscape, and the important role playas have in recharging the Ogallala aquifer.”

The radio show has been very effective in reaching natural resource managers and private landowners who spend many hours in their trucks and tractors. Six years after its debut, Playa Country continues to be a primary tool for communicating with these crucial conservation partners.

The first phase of the Kansas Playa Decision Support System is complete and available on the PLJV website, with the data and maps for Nebraska and New Mexico to follow shortly. Episodes of the Playa Country radio show are also available on the website. *For more information about these projects, contact Playa Lakes Joint Venture at 303-927-0777.*