Partnerships to Deliver Bird Conservation along the Gulf Coast[1]

Cecilia M. Riley,[2] Greg Esslinger,[3] and Barry Wilson[4]

Abstract

The Gulf of Mexico region contains much of the Western Hemisphere's most important stopover habitat. Long an important region for industry and agriculture, the near-shore maritime and wetland habitats are now highly threatened by habitat degradation and rapid urbanization. Because of the value placed on coastal property, acquisition is not always a viable conservation tool. The development of public and private partnerships has proven to be an excellent method to deliver cost-effective conservation in the maritime habitats of the western gulf coast. Here we describe accomplishments of four partnership programs spanning the gulf coast from Alabama to the Yucatan Peninsula: The Gulf Crossings Network, The Texas Prairie Wetlands Project, the Louisiana Waterfowl Project South, and the Mini-refuge Program. The Gulf Crossings Network includes 48 partner sites consisting of a diverse group of private and public landowners responsible for the management of 5.7 million acres of coastal habitat. The Gulf Coast Bird Observatory works to assist these partners with specific conservation efforts and also facilitates sister-site partnerships to share responsibilities and resources for similar habitat types and for shared avian species. Many en route migrants such as shorebirds, as well as wintering waterfowl and prairie grassland birds, benefit from the efforts of the Gulf Coast Joint Venture partnership and three private landowner programs. The Texas Prairie Wetlands Project, the Louisiana Waterfowl Project South, and the Mini-refuge Program each provide technical assistance and financial incentives to Texas and Louisiana landowners interested in creating or enhancing the status of wetlands on their property.

Key words: conservation partnerships, Gulf of Mexico, landowner incentives, nearctic-neotropical migrants, stopover habitat.

Gulf Crossings Network

The Gulf of Mexico, with its central position within the Americas, is a region of hemispheric importance to a great diversity of migratory bird species. More than 800 species of birds, including waterfowl, shorebirds, raptors, songbirds, and colonial waterbirds, use the shores of the gulf for breeding, over-wintering, and spring and fall migration staging areas.

About 300 of these species are nearctic-neotropical migrants that depend on stopover habitat in the gulf region to rest and refuel on their trans-gulf and circum-gulf journeys between breeding and wintering grounds. An important region for industry, tourism, and agriculture, the near-shore maritime and wetland habitats are increasingly threatened by coastal erosion, urbanization, and other land conversion activities.

In 1997 the Gulf Coast Bird Observatory (GCBO) began to address these issues by partnering with the stewards of important public and privately owned gulf coastal habitat via a network of partner sites in locations known to be of great importance during migration seasons. Specifically, the first site partners selected were well-known spring fall-out locations along the upper Texas and Louisiana coasts. The primary objective was to use the network concept to raise funds to acquire and protect these key stopover sites, then to expand the same principals of protection into all important coastal locations. End points of trans-gulf migration pathways (known fall-out sites) were the targeted properties. Beginning with eight key sites in 1997, the site-partner program was designed to recognize and assist landowners who wanted to protect and or provide stopover habitat for migratory landbirds. Each landowner had a strong interest in bird conservation and had existing, quality habitat located in the region of the trans-gulf flyway for migratory landbirds. The benefits to partners in the network include opportunities for international networking, increased site publicity, funding opportunities, and financial and technical assistance with on-the-ground projects such as habitat restoration, monitoring, and public use enhancements.

Today, the Observatory's Network includes 48 partner sites consisting of a diverse group of private and public landowners responsible for over 5.7 million acres of coastal habitat including maritime woodlands, marine and freshwater wetlands, and coastal prairies. To help fund the efforts of our partners, the Gulf Crossings

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[2]Gulf Coast Bird Observatory, 103 West Highway 332, Lake Jackson, TX 77566, USA. E-mail: criley@gcbo.org

[3]Gulf Coast Joint Venture, U.S. Fish & Wildlife Service, P.O. Box 1306, Albuquerque, NM 87103.

[4]Gulf Coast Joint Venture, 700 Cajundome Blvd., Lafayette, LA 70506.

project was designed to assist these sites in their conservation efforts and to encourage cooperative action among them. Initial accomplishments of this project include the restoration of a coastal prairie in Texas, private lands conservation efforts in the Yucatan Peninsula, and the compilation of species and habitat data for each partner site. Currently, the Gulf Crossings project is involved in the acquisition of two important stopover habitats in coastal Texas, as well as conservation activities in the Yucatan Peninsula.

With site partners in five states in both the United States and Mexico, and one site in Cuba, the program has now expanded to include an all-bird focus. With the assistance of the partners, we are working to identify additional sites targeted for protection, develop action plans for habitat restoration at new as well as existing sites, and implement avian monitoring, education, and outreach programs at several sites.

The Gulf Crossings project of the GCBO has made significant achievements in land protection. Acquisition of valuable stopover habitat at Quintana Island and Mustang Island, Texas, were completed in 2001. Both sites were small privately owned woodlots in key migration zones and both were known (by birders) to be important stopover habitat. Each was threatened by increasing local development, and both acquisitions provided a unique opportunity to build new relationships between city officials interested in ecotourism and birders interested in new access to once-private property. Winning birding teams in the Texas Parks and Wildlife Birding Classic event provided the initial funding for these acquisitions. Gulf Crossings staff provided technical assistance to the city for enhancements, habitat management, and raising the remaining funds required to complete the land purchases. Gulf Crossings also assisted in raising funds for U.S. Fish and Wildlife Service (USFWS) acquisitions of three large tracts of riparian forest in the Columbia Bottomlands of coastal Texas. The Bird Pond tract (100 acres), the Hudson tract (1,093 acres), and the Bludworth tract (750 acres) all contain mature bottomland hardwood forests and freshwater wetlands that provide valuable habitat for migratory landbirds and waterfowl. All three tracts are managed as part of the USFWS Texas Mid-coast National Wildlife Refuge Complex. On another important coastal site, the Gulf Crossings project provided funds to restore 425 acres of coastal prairie. This prairie restoration, at The Nature Conservancy's Texas City Preserve, is expected to increase the habitat quality for the last wild population of the endangered Attwater's Prairie-Chicken (*Tymjpanuchus tupido Attwateri*).

The educational component of the Gulf Crossings project was initiated with a National Fish and Wildlife Foundation grant to provide annual funding to support a bird conservation/education specialist in Yucatan, Mexico. The Yucatan Conservation Coordinator is involved in a number of activities that have benefited the conservation of birds at the Mexico Gulf Crossings partner sites. The coordinator organized and taught a total of 17 bird identification and training workshops carried out in coastal communities. The workshops have had a significant impact on these communities as the participants have gained an understanding and appreciation of birds and their habitats. The benefits also have been seen in the increase of responsible and sustainable ecotourism practices, an important economic activity in the Yucatan. After only two years of funding, this position grew into a new full-time initiative and locally funded conservation effort, a first-of-its-kind Yucatan regional bird center, known as CAPY.

Sister-Site Partnerships

A new way in which Gulf Crossings is encouraging cooperation is through sister-site partnerships between sites within the larger network. Sister-site partnerships are mutually beneficial relationships between two sites with commonly shared features. The birds themselves are shared features, but sometimes there are also similar threats or management activities that the two sites can help each other with. Each site can benefit from the experiences and resources of the other, which translates into greater conservation results and efficiency. Using habitat and species data collected for each partner site, GCBO's Gulf Crossings staff selects those sites that share common traits, and approaches the site managers about their interest in a sister-site linkage. If the parties do have an interest, staff then facilitates the development of a formal Letter of Agreement with terms of benefit to both sites.

Gulf Crossings has established two such sister linkages. The partnership between Anahuac National Wildlife Refuge, in southeast Texas, and the Ria Lagartos Biosphere Reserve, in Yucatan, Mexico, is still in the planning stages, but it looks like a promising relationship because of the similarities in habitat and management strategies at these two reserves. A second linkage between the Houston Audubon Society and the Sian Ka'an Biosphere Reserve in Quintana Roo, Mexico is currently underway and has already met with success.

The Houston Audubon Society has provided much needed funds for conservation projects at Sian Ka'an. One of these projects consists of carrying out training workshops in the communities associated with this reserve. So far this year, nine training workshops have taken place in the Sian Ka'an associated communities of Chunyaxche, Punta Allen, and Xcalak. The workshops train community members in bird identification

and appreciation, the use of binoculars and field guides, and the skills and responsibilities for being an ecotourism guide. The participants are taught how to care for binoculars, how to avoid negatively impacting the birds and habitats, how to pronounce names of birds in English, and which species are endemic or most sought after by visiting birders. The workshops have been a remarkable success and have generated a spreading enthusiasm that has led some of the participants to begin bird watching for the pleasure of it—an uncommon activity in Mexico.

Another project funded through this sister-site partnership is the construction of a modest visitor center in the Sian Ka'an Biosphere Reserve. The center was built using traditional materials along a nature trail in the Maya archeological area near the indigenous forest community of Chunyaxche. The center is a simple and practical structure that serves as an environmental education facility as well as a station for staff and scientists at Sian Ka'an.

Staff exchanges are also encouraged between sister-sites. In January 2002, Barbara MacKinnon, the Founding President of Amigos de Sian Ka'an, traveled to Houston to give a presentation on the Sian Ka'an Biosphere Reserve at the Houston Audubon Society monthly meeting. In August, several representatives of the Houston Audubon Society traveled to the Yucatan Peninsula to visit with the Amigos de Sian Ka'an staff to see first hand the natural beauty and conservation work at this Biosphere Reserve. The sister-site partnership concept allows sites to focus their attention and energies on one other partner site within the broader network of sites that they are less closely involved with. This strategy increases the possibilities and the rate at which conservation results can be accomplished for birds and their habitats.

Like the Gulf Crossings project, our colleagues with the Gulf Coast Joint Venture (GCJV) work with partners along the shores of the Gulf of Mexico. In fact, the regions of work for both organizations overlap in four states. Both the GCBO and the GCJV keep apprised of each other's activities and share responsibilities for avian conservation in the region. The following three GCJV programs were each designed to use large expanses of active, idle, or abandoned agricultural lands in Texas and Louisiana. Since rice farming operations require 2- or 3-year crop rotations, this form of agriculture offers ample opportunity to provide seasonal habitat for wetland dependant bird species. Therefore, manipulated agricultural fields are the primary focus of these projects that benefit shorebirds, wintering waterfowl, wading birds, and even many wintering landbirds such as Sedge (*Cistothorus platensis*) and Marsh wrens (*C. palustris*), Common Yellowthroat (*Geothlypis trichas*), Yellow-rumped Warbler (*Dendroica coronata*), and Swamp Sparrow (*Melospiza georgiana*).

Texas Prairie Wetlands Project

Initiated in l991, the Texas Prairie Wetlands Project (TPWP) is a cooperative effort of the North American Waterfowl Management Plan and GCJV. The purpose of this program is to develop, restore, and enhance natural wetlands or seasonally flooded agricultural fields on private lands along the Texas coast. The goal is to address the wetland habitat needs of wintering waterfowl identified by the GCJV for private lands. Ducks Unlimited, Inc., Texas Parks and Wildlife Department, USFWS, and U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) support the TPWP.

Strategies to meet the program's goal are the provision of technical assistance and financial incentives to landowners who are interested in improving the status of wetlands on their property. Financial cost-sharing for the restoration, enhancement, or creation of wetland habitat is provided to a landowner in exchange for an agreement to maintain and manage the area. Project agreements are for a period of not less than 10 years. In addition to waterfowl, many species of shorebirds, wading birds, songbirds, and other wetland-associated wildlife benefit from the quality wetland habitat effectively developed under the TPWP.

Over 26,000 acres of wetlands have been restored, enhanced, or created since the inception of the program. Project agreements have been established with 303 landowners for the development and management of approximately 550 wetland units. Seventy-one percent of the developed wetlands is categorized as flooded agricultural land and moist soil habitat (36 percent and 35 percent, respectively). The balance of the developed wetland acreage is categorized as either emergent marsh (25 percent) or lake/pond (4 percent).

Louisiana Waterfowl Project South

The Louisiana Waterfowl Project South (LWPS) focuses on the development of wetland habitat on private lands of southwestern and south central Louisiana. The LWPS is implemented in support of the North American Waterfowl Management Plan and GCJV. In addition to private landowners, key partners are Ducks Unlimited, Inc., the Louisiana Department of Wildlife and Fisheries, USFWS, and NRCS. Technical assistance and financial incentives are available to landowners interested in maintaining and managing off-season agricultural fields and other wetland areas as

waterfowl habitat. Project agreements are for a minimum of 10 years. The LWPS is similar to the TPWP but there are differences between the cost-share guidelines of the two programs. This newly established program has already developed over 3,500 acres of wetland habitat on private lands within the GCJV. Approximately 71 percent of the acreage is associated with agricultural lands. The remainder is divided among moist soil, scrub-shrub, and coastal marsh habitats.

Mini-Refuge Program

The southwest Louisiana mini-refuge program is a wetland habitat conservation partnership among the USFWS, Louisiana Department of Wildlife and Fisheries, and private landowners, initiated in 1988 under the auspices of the GCJV. The program is administered by USFWS from Lacassine National Wildlife Refuge. Under the program, private landowners provide a free lease to USFWS in exchange for trespass protection and the potential for reimbursement of some habitat management expenses. During the lease period, usually July through March of each year, enrolled properties become inviolate sanctuaries as part of the USFWS system. As funds are available, expenses for pumping water on agricultural fields and manipulating habitat are reimbursed to the landowner through annual agreements with USFWS.

The availability of funds to support this program has varied annually, resulting in unrealized habitat potential at some sites in some years. Consequently, new guidelines were established for this program in 1999 to more efficiently direct available funds. These guidelines are intended to improve habitat quality and distribution, while reducing the number of sites to accommodate funding limitations and improve program efficiency. The mini-refuge program is currently implemented in the portion of southwest Louisiana that is encompassed by the GCJV Chenier Plain Initiative Area, including the parishes of Cameron, Calcasieu, Jefferson Davis, Acadia, Vermilion, Allen, and Evangeline. Agriculture in this region is dominated by rice and rice-rotation crops. Louisiana's Chenier Plain Initiative Area is a continentally important region for wintering waterfowl, with midwinter population objectives of 4.5 million ducks and 340,000 geese. It is a particularly important area to wintering pintails, with midwinter population objectives of nearly 400,000. Northern Pintails (*Anas acuta*) are one of the few duck species that lag far behind their North American Waterfowl Management Plan population objective, so pintails are specifically targeted for management through the mini-refuge program. Habitat value to pintails may be reduced by a number of disturbance factors that increase energetic expenditures necessary to find foraging and roosting habitat. These high energetic costs (Cox and Afton 1998a) may interact with direct mortality factors to result in low overwinter survival of pintails, relative to those monitored in other regions (Cox et. al. 1998). One objective of the mini-refuge program is to provide sanctuary to pintails to partially mitigate the interaction between disturbance, energetic cost, and low survival.

Optimally managed mini-refuges serve as feeding and roosting sites for southwest Louisiana pintails and other ducks (Rave and Cordes 1993). An appropriate distribution of these sites will enhance ducks' access to surrounding agricultural foraging areas and decrease the energetic costs of lengthy transit and associated vulnerability to mortality. Researchers have estimated that 7 to 19 percent of daily energetic expenditures for southwest Louisiana pintails are due solely to one round-trip flight from a major daily roost site (Lacassine Pool) to nocturnal feeding areas, with one-way flight distance averages ranging from 5.4 to 15.2 miles (Cox and Afton 1996). Current guidelines for the spatial distribution of mini-refuges are, therefore, intended to provide diurnal roost sites that are no farther than 15 miles from other sanctuary.

The Lower Mississippi/Western Gulf Coast Regional Shorebird Plan has identified fall foraging habitat as a limiting factor to survival and/or condition of shorebird populations that utilize habitats in this region. Therefore, provision of late summer and fall shorebird foraging habitat is another objective of the mini-refuge program. Ideal mini-refuge sites are a minimum of 600 contiguous acres, with perimeter-to-area ratios as small as possible. This allows for a central core of flooding, surrounded by a protected buffer area. Eight sites were enrolled in the program during the fall/winter of 2001.

Waterfowl Management

Proper water management and habitat manipulation are critical to making sites attractive to feeding and/or roosting ducks. Pintails begin arriving in mid-September, while some Blue-winged Teal (*Anas discors*) arrive even earlier, usually in mid-August. This early fall period typically coincides with regionally dry habitat conditions. There is not as much incentive for the average landowner to flood early compared to later during fall and winter when hunting seasons are open. Providing early pumped water, especially when conditions are dry, is therefore an important focus of this program. Optimal flooding depths for pintails and other dabbling ducks are 3-6," with a maximum of 12." Flooding for waterfowl, whether pumped or collected from rainfall, is targeted to be at least 200 acres near the core of each site.

Idle fields have roughly 3 times the amount of waterfowl foods as harvested rice fields (Davis et al. 1960, Harmon et al. 1960), so flooding these moist-soil habitats is encouraged. In both field types, standing vegetation or stubble should be manipulated (i.e. rolled, lightly disked, or roller-chopped) to create visually opened areas attractive to pintails.

Shorebird Management

For those mini-refuge fields that are targeted for intensive shorebird management, shallow flooding of mudflats during late summer (mid-July through September) provides important foraging habitat for migrating shorebirds. Shallowly flooded, double-disked, rice rotation fields yield the type of mudflat attractive to most species of shorebirds. Subsequent mechanical manipulation is conducted to maintain a mudflat conducive to shorebird foraging.

Evaluating performance of mini-refuge sites is necessary to ensure an effective mini-refuge program. Performance is evaluated based on all stated objectives of the program, but provision of sanctuary to pintails and water during critical dry periods are the primary evaluation criteria. Aerial surveys ascertain diurnal waterfowl use by species once per month in October, November, and December. Ground surveys are conducted for each mini-refuge twice monthly. Guidelines for continuance in the program require that survey data demonstrate significant use by pintails or exceptional use by shorebirds. While this program has not yet realized its full potential, the successes of some specific sites are encouraging. Adherence to new guidelines and evaluation criteria, along with attainment of a stable funding source, should improve the program and increase benefits to migratory birds.

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