

Breeding Bird Surveys and Ecotourism Potential at Laredo, Webb County, Texas

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City of Laredo
Convention and Visitors Bureau
501 San Agustin
Laredo, Texas 78040

Authors:

Marc C. Woodin and Mary Kay Skoruppa,
U.S. Geological Survey
Texas Gulf Coast Field Station
Corpus Christi, Texas 78412

And

Graham C. Hickman,
Texas A&M University-Corpus Christi
Department of Physical and Life Sciences
Corpus Christi, Texas 78412

Research Administrator:
Texas A&M Research Foundation
3578 TAMUS
College Station, Texas 77843

*Cover illustration of the Green Parakeet by Don Breeden
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EXECUTIVE SUMMARY

- This project, “Breeding Bird Surveys and Ecotourism Potential at Laredo, Webb County, Texas”, was funded by the City of Laredo. The goal was to determine if bird resources on public lands in the Laredo area will sustain birding ecotourism.
- From March-July, 1999, 94 unlimited-distance point counts were conducted in early morning hours to sample birds active during daylight.
- From March-June, 1999, 37 unlimited-distance point counts were conducted at night to sample birds active after sunset.
- All point counts were conducted at the Rio Grande vega property under joint ownership of the City of Laredo and Laredo Community College, near the junction of Zacate Creek and the Rio Grande, or at Lake Casa Blanca International State Park.
- We detected 128 species of birds during point counts on public lands at Laredo. We detected a total of 150 species of birds in the Laredo area during this project. Of these 150 species, 25 species (17%) were tropical, and 23 species (15%) were western.
- Three tropical species which are rare in the U.S. and are restricted geographically to extreme southern Texas were located at Laredo. These three species were the White-collared Seedeater (*Sporophila torqueola*), Clay-colored Robin (*Turdus grayi*), and Red-billed Pigeon (*Columba flavirostris*); all three of these species are eagerly sought by birders. Only White-collared Seedeaters were common enough to be seen regularly.
- All three rare tropical species (White-collared Seedeater, Clay-colored Robin, and Red-billed Pigeon) were detected at the Rio Grande property owned jointly by the City of Laredo and Laredo Community College. Clay-colored Robins and White-collared Seedeaters were also detected along the Rio Grande near Zacate Creek. None of these three species occurred at Lake Casa Blanca International State Park.
- Green Parakeets (*Aratinga holochlora*), a highly charismatic species for birders, were detected occasionally near Zacate Creek, and they could be seen regularly in parts of the central city. Green Parakeets were not detected at the Rio Grande vega owned by the City of Laredo and Laredo Community College or at Lake Casa Blanca International State Park.
- Occurrence of these four species on public lands along the Rio Grande is sufficient to propel the Laredo area into an ecotourism initiative. The species which should be especially emphasized are White-collared Seedeaters and Green Parakeets, as they are common enough to offer a high probability of being detected by birders.

- Preservation of the natural habitats existing on the Rio Grande property owned by the City of Laredo and Laredo Community College is essential for the successful outcome of an ecotourism initiative focused on public lands at Laredo.
- Further developments at the City of Laredo/Laredo Community College site should be limited to improvements for low-impact human activities, such as birding, nature walks, and environmental education for local students and citizens of Laredo.
- Intensive development of this site for group outdoor activities (such as those that occur at most traditional city parks and at some state parks) should be avoided. Intensive development will lead to habitat degradation, high-impact human disturbance, and, ultimately, will result in loss of those species most important for ecotourism development in Laredo.
- Recommendations are provided for conservation and management of birds of potential economic benefit to the City of Laredo.
- Recommendations for ecotourism development in the Laredo area are also given.

INTRODUCTION

Southern Texas is well known for its great variety of birds, including many tropical species (i.e., those breeding primarily in Mexico and Central America) which reach their northern limits of distribution in southern Texas. Historically, efforts to preserve and study the avifauna in southern Texas have been restricted to federal wildlife areas and state lands in the lower Rio Grande Valley, a region extending from the Gulf of Mexico inland to the International Falcon Reservoir (Fig. 1). Even prior to the establishment of refuges, early scientific expeditions in southern Texas focused on the lower Rio Grande Valley and the coast (Merrill 1878, Sennett 1878, Pearson 1921). Upriver of the International Falcon Reservoir, nearly all lands remain in private ownership. Consequently, the distributions, abundances, and basic ecology of bird species occurring in the region of the Rio Grande Valley between International Falcon Reservoir and Del Rio (a distance of approximately 350 km) remained virtually unstudied until 1997.

Because neither birdwatchers nor biologists have had access to this region of Texas, the area between Laredo and Del Rio has received no economic benefits from birding ecotourism. Throughout the United States, the economic return from this form of tourism is substantial and continually increasing. In 1996, wildlife watchers spent \$31 billion in the United States (U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, Bureau of the Census 1997). Visitors to Santa Ana National Wildlife Refuge, a popular birding destination in the lower Rio Grande Valley of southern Texas, were responsible for spending \$14 million in Hidalgo County (Fig. 1) alone (Kerlinger 1994). Private landowners and ranchers in southern Texas have the opportunity to offer birdwatchers, youth groups, and other eco-tourists a remote outdoor experience away from the more heavily populated lower Rio Grande Valley. The King and Kenedy Ranches in southern Texas have already been successful in offering birding tours.

In 1997, breeding bird surveys conducted by Woodin et al. (1998) on the Galvan Ranch (located along the Rio Grande northwest of Laredo) (Fig. 1) represented possibly the first scientific survey of breeding and migrating birds within this region of Texas. To complete the species checklist for this ranch, the U.S. Fish and Wildlife Service funded additional surveys of nocturnal birds on the Galvan Ranch in 1998 (Woodin et al. 2000). The Galvan Ranch point counts yielded 147 bird species during the 1997-98 surveys, with a total of 192 bird species documented throughout all phases of the studies. Of these 192 species, 29 were tropical species, several of which had been thought to exist in the U.S. only in the lower Rio Grande Valley.

Fifteen tropical species of birds found to occur on the Galvan Ranch were at, or beyond, the known northern limits of their distributions. Among these tropical species were the Red-billed Pigeon, White-collared Seedeater, and Gray-crowned Yellowthroat. These three species have extremely limited distributions in southern Texas (Oberholser 1974, Howell and Webb 1995) and have become increasingly rare in recent decades. Also found on the Galvan Ranch were 24 western bird species (i.e., those breeding primarily in the western U.S.), many of which approach their eastern limits of distribution in this part of southern Texas.

A Wildlife and Nature Seminar, organized by Los Caminos del Rio of Texas in March, 1998, attracted about 65 participants to Laredo, among them a number of owners of private ranches. The discovery of rare bird species on the Galvan Ranch figured prominently in the workshop program and generated intense interest in birds and their potential economic benefits. However, over the next several months, no discernible progress occurred beyond heightened public interest in bird resources. The next phase required a landowner who was willing to grant birders access to property on which rare birds were present.

The Texas Gulf Coast Field Station was approached in early 1999 by the City of Laredo with the request to survey birds on public lands within the Laredo area. The shared interest among citizens, municipal leaders, and the business community of Laredo was that if the presence of rare birds on parcels of public land at Laredo could be documented, then there existed an opportunity to market public lands in the area as destinations for birders. The scientific interest in these bird surveys was to further document bird distributions along the Rio Grande in this region.

The objectives of this study were to:

- 1) generate a list of breeding bird species and migrant species (including birds active during the day and at night) which can be found on public lands at Laredo in the spring and early summer,
- 2) identify tropical species and western species occurring on public lands at Laredo, focusing especially on rare birds, which could serve to attract birders, and
- 3) make recommendations about the conservation and use of bird resources of Laredo for development of sustainable ecotourism.

DESCRIPTION OF STUDY AREAS

Webb County occurs within the ecological region known as the Tamaulipan Biotic Province (Blair 1950). In the Tamaulipan Biotic Province of southern Texas, geography and climate interact, resulting in the overlap of ranges of temperate and tropical birds. Great numbers of Neotropical migrants are concentrated by the funneling effect of the western rim of the Gulf of Mexico. Because of the high daily mean temperatures of a subtropical climate and the unique diversity of vegetation (including western desert, northern, and tropical plants), many tropical bird species occurring widely in Mexico and Central America reach their northern limits of distribution in southern Texas (Oberholser 1974). Additionally, many western species, especially those characteristic of the arid Chihuahuan Desert, are at their eastern limits of distribution in this area.

The Laredo/Webb County area of Texas is sharply distinct in several ways from the lower Rio Grande Valley. Annual rainfall at Laredo averages less than in the lower Rio Grande Valley. Mean annual precipitation between the years 1931-1993 for Laredo was 21.4 inches (54.4 cm), while Brownsville, for the same period, received a mean annual rainfall of 26.6 inches (67.6 cm) (Office of the Texas State Climatologist 1993). Because of this, bird and plant species typical of western deserts are much more prevalent near Laredo. Cattle grazing is the dominant land use along the Rio Grande near Laredo. This part of Texas contains large expanses of uninterrupted native brushland; across the border in the adjacent Mexican states of Tamaulipas and Coahuila, most of the land also remains in native brush. In contrast, most of the native Tamaulipan brushland in the lower Rio Grande Valley in both the U.S. and Mexico has been lost to agriculture (cotton, sorghum, and citrus) and residential/commercial developments (Jahrsdoerfer and Leslie 1988).

While large expanses of native Tamaulipan thorn scrub remain intact in Webb County, nearly all of these lands are privately owned. Public lands which contain suitable habitat for birds in the vicinity of Laredo, to which we wished to restrict surveys, are extremely limited. After consulting with Laredo officials and conducting exploratory visits to potential sites, we located three suitable areas to survey.

A parcel of mostly undeveloped public land, which is owned jointly by the City of Laredo and Laredo Community College (LCC), exists within the Laredo city limits. This parcel occurs continuously along the Rio Grande, from approximately the International Railway Bridge upriver to the northern boundary of Laredo Community College. The area of this parcel of public land is approximately 200 acres (80 ha), and it borders the Rio Grande along approximately 2.0 miles (3.2 km). Three former gravel pits now function as permanent ponds on this property. Much of this land is Rio Grande vega (floodplain), and a mixture of riparian habitats occurs on this site, including: open mature woods dominated by sugar hackberry (*Celtis laevigata*), Mexican ash (*Fraxinus berlandieriana*), salt cedar (*Tamarix* spp.), and black willow (*Salix nigra*); dense thickets of woody shrubs dominated by honey mesquite (*Prosopis glandulosa*), granjeno (*Celtis pallida*), and anaqua (*Ethretia anacua*); and thick stands of giant cane (*Arundo donax*).

Tamaulipan thorn scrub and buffelgrass (*Pennisetum ciliare*) dominate the upland edge of this property.

The second area in Laredo which we chose to sample is in the vicinity of La Azteca Park, a small city park along the lower reaches of Zacate Creek. This creek enters the Rio Grande east of International Bridge Number 2. Water flows in the creek through a series of catchment pools in bedrock. Near the mouth of the creek, remnant native woody vegetation remains, including black willow, tepeguaje (*Leucaena pulverulenta*), Mexican ash, and sugar hackberry. Salt cedar, an exotic species, is common in the adjoining wooded flood plain.

The largest single tract of publicly owned land in the area which retains natural habitat is Lake Casa Blanca International State Park. This state park is located on the northeastern edge of the City of Laredo, near Laredo International Airport. The area of Lake Casa Blanca International State Park is approximately 2,020 acres (818 ha); of this total, about 1,650 acres (668 ha) are lake surface. Much of the land within the state park has been developed for various recreational activities, so relatively little high-quality bird habitat remains. Fragments of remaining habitat are scattered mostly around the periphery of the park boundary. These small fragments contain Tamaulipan thorn scrub, honey mesquite and huisache (*Acacia minute*) savanna, and wooded riparian habitats dominated by black willow.

METHODS

A commonly used method of surveying breeding birds is the point count. A point count is a tally of all birds detected visually or aurally by observers from a fixed location during a specified period of time (Hamel et al. 1996). The “unlimited-distance” point count is defined as a count of all birds detected regardless of their distance from the observers (Blondel et al. 1981, Ralph 1981). Use of unlimited-distance point counts prevents calculation of population densities. We chose to use unlimited-distance point counts, however, because they allow the maximum potential for detecting birds.

We chose ten sites to sample monthly at the Rio Grande property jointly owned by the City of Laredo and LCC. These sites were chosen in a way which maximized the number of habitats sampled. We also established two locations for monthly surveys in the nearby vicinity of Zacate Creek. One of these sites was at the confluence of Zacate Creek and the Rio Grande. The second location overlooked the Rio Grande flood plain, about midway between Zacate Creek and International Bridge Number 2 (near the intersection of San Leonardo and Water Streets). Monthly point counts were conducted during early morning hours at all twelve of these sites. Monthly point counts of night birds were conducted after sunset at five river sites and at one of the two sites near Zacate Creek.

We chose eight sites at Lake Casa Blanca International State Park at which to conduct monthly bird surveys. These sites also were selected in order to maximize the types of habitats which were sampled. Monthly point counts were conducted during early morning hours at seven of these sites, while monthly point counts of night birds were conducted after sunset at four of the sites. We did not conduct point counts at the eighth site, but we kept a species list of all birds observed there.

Table 1 shows how the sites for bird surveys were distributed among the three study areas and the habitat types sampled. Geographic Positioning System (GPS) coordinates are also provided, should a repeat survey be considered in the future.

From March to July, 1999, we conducted a total of 94 unlimited-distance point counts to sample birds active during daylight hours. We conducted 50 morning point counts along the Rio Grande on the City of Laredo/LCC property, 10 morning point counts near Zacate Creek, and 34 morning point counts at Lake Casa Blanca International State Park. Point counts typically began within a few minutes of sunrise, and the last point count was initiated before 10:30 a.m. Point counts were not initiated during passage of cold fronts, during high winds (> 16 km/hr), or in rainfall heavier than a mist (Robbins 1981). Point counts lasted 20 minutes because of the relatively high probability of encountering rare, tropical species (Karr 1981) in southern Texas. Morning point counts were conducted on 29 March, 26 April, 24 May, 25 and 28 June, and 19 and 26 July. We recorded numbers of all bird species seen or heard during the morning point counts.

From March to June, 1999, we also conducted 37 unlimited-distance point counts to sample nocturnal birds. We conducted 17 point counts at night along the Rio Grande at the City of Laredo/LCC property, 4 point counts at night near Zacate Creek, and 16 point counts at night at Lake Casa Blanca International State Park. Point counts typically were begun after sunset, and no surveys were conducted in fog, high wind (> 16 km/hr), or in rainfall heavier than a mist (Robbins 1981). All evening surveys were conducted when the moon was waxing between half and full phases, and all point counts were completed before the moon set. Evening point counts were conducted on 28 March, 25 April, 23 May, and 24 and 27 June.

Evening point counts lasted for 10 minutes and were preceded by one minute of silence. We chose 10-minute point counts (instead of 5 minutes) because of the possibility of encountering rare or tropical species (Karr 1981). During the 10-minute listening period, any non-elicited, spontaneous calls were noted. Any owls or nightjars seen during the point count period were also noted. We estimated numbers of individuals for each species detected during a point count. We did not attempt to record distances or directions of bird calls; therefore, the abundance estimates in this report should not be used as measurements of densities.

We also occasionally broadcast a three-minute, prerecorded call of either the Elf Owl (*Micrathene whitneyi*) or the Ferruginous Pygmy-Owl (*Glaucidium brasilianum*) after the conclusion of ten-minute point counts. We used a Johnny Stewart Wildlife Caller at a level of approximately 95 decibels (re 1 μ Pa) (measured at a distance of 1 meter). We listened for owl responses an additional three minutes after calls were broadcast.

All species detected during point counts on public lands at Laredo were compiled in a species list (Appendix A). The species list also includes all bird species which we detected at any time in Laredo.

RESULTS

We documented a total of 150 species of birds, representing 45 families and 17 orders, on public lands in the Laredo area during March-July, 1999 (Appendix A). Approximately one-third of all bird species were either primarily tropical or western species. Of the 150 bird species, 25 (17%) were tropical species. Many of these species are at the northern limits of their known distributions. Among this group of tropical species were many that are considered “South Texas Specialty Birds”, species with U.S. distributions entirely restricted to southern Texas. Nearly all “South Texas Specialty Birds” found regularly in the lower reaches of the Rio Grande Valley occurred also on public lands at Laredo. Table 2 shows all tropical bird species detected. The Plain Chachalaca (*Ortalis vetula*) and the Altamira Oriole (*Icterus gularis*), two species of “South Texas Specialty Birds” which occur in the lower valley, were not, however, observed at Laredo.

Of the total of 150 bird species, 23 (15%) were primarily western species. Many of these species are near the eastern limits of their distributions. Table 3 shows all western bird species detected.

We recorded three species of birds, all of them tropical, which are rare. These three “South Texas Specialty Species”, the White-collared Seedeater (*Sporophila torqueola*), the Clay-colored Robin (*Turdus grayi*), and the Red-billed Pigeon (*Columba flavirostris*), were detected only along the Rio Grande.

Two other bird species detected during the surveys are of special interest. Green Parakeets (*Aratinga holochlora*), another tropical species, were detected on several occasions along the Rio Grande and seemed at times to be quite common in older parts of Laredo near the central core of the city. Least Terns (*Sterna antillarum*) were observed regularly at Lake Casa Blanca International State Park and along the Rio Grande.

Groups of birds which were relatively well represented at Laredo included the following non-passerine families of birds: 1) Ardeidae (eight species of herons, egrets, and night-herons); 2) Anatidae (seven species of whistling and dabbling ducks); 3) Columbidae (seven species of doves and pigeons, 4) Cuculidae (one cuckoo and two related species); and 5) Alcedinidae (three species of kingfishers). Appendix A also shows that the passerine bird families which were relatively well represented at Laredo were: 1) Tyrannidae (nine species of kingbirds, flycatchers, and phoebes); 2) Hirundinidae (six species of swallows); 3) Emberizidae (fifteen sparrow and related species); and 4) Cardinalidae (seven species, including three species of buntings).

Several groups of birds were poorly represented on public lands at Laredo during March-July, 1999. Owl diversity and abundance seemed very low. We documented only two owl species on public lands, and detection rates for both species were low. Other bird families with relatively poor representation on public lands at Laredo were Picidae (two species of woodpeckers) and Parulidae (six species of warblers).

DISCUSSION

Several aspects of the species list developed from the 1999 bird surveys will be attractive to birders and operators of organized tours. The diversity of habitats on public lands (Table 1) contributes to the large number and diversity of birds present. Aquatic habitats are present at all three study sites, which explains the relatively large number of species of water birds (Appendix A) on public lands. The widespread occurrence of undeveloped riparian woodlands and savannas (Table 1), along with small intact fragments of Tamaulipan thorn scrub, contributes to the diverse assemblage of terrestrial bird species on public lands at Laredo.

The total of 150 bird species found to occur on public lands at Laredo, Texas, compares with 192 species of birds which we found to occur on the Galvan Ranch in northwestern Webb County (Appendix A). Larger total numbers of bird species on the Galvan should be expected, given that the disparity in area between the Galvan Ranch (69,000 acres) (about 28,000 ha) and public lands at Laredo (slightly more than 2,000 acres) is so great. Additional species are undoubtedly present in Laredo during the fall and winter that were not present during our spring and summer surveys. Also, with further visits by biologists and birders to public lands at Laredo, the species list will continue to increase in the future.

The relatively high proportion of birds (about one-third) which were either tropical or western species (Tables 2 and 3) presents an unusual mixture of birds which is rather difficult to match within the U.S. For example, Common Nighthawks (*Nyctidromus albicollis*), Ringed Kingfishers (*Ceryle torquata*), and Great Kiskadees (*Pitangus sulphuratus*) are tropical species which are relatively common and easy to locate at Laredo (Table 2). Common Poorwills (*Phalaenoptilus nuttallii*), Black Phoebes (*Sayornis nigricans*), and Black-throated Sparrows (*Amphispiza bilineata*) are examples of western species which can be found in Laredo (Table 3). This relatively high proportion of either tropical or western species exists in Laredo because the area is near a crossroads in southern Texas, where the known northern distributional limits of tropical species and the eastern distributional limits of western species overlap.

Several tropical species (the Red-billed Pigeon, Clay-colored Robin, and White-collared Seedeater) which were detected on public lands at Laredo are recognized as rarities even within southern Texas. In fact, Laredo was the only location in the United States for which White-collared Seedeaters were documented during the 1999 Christmas Bird Count (B. Godley, pers. comm.).

The Red-billed Pigeon was rare (Table 2), occurring only once during a single point count at the Rio Grande. This individual pigeon was probably a vagrant passing through the area. This species was observed more readily on the Galvan Ranch (Woodin et al. 1998). Red-billed Pigeons require mature riparian forest, much of which has disappeared (Oberholser 1974). This may be why known Red-billed Pigeon nesting efforts in the Rio Grande Valley have declined so drastically in recent decades (Oberholser 1974, Brush 1998).

The Clay-colored Robin was also rare (Table 2) at Laredo. At least one robin was detected by songs or calls at Laredo on three different dates. This species was detected at both the City of Laredo/LCC site and near Zacate Creek. No Clay-colored Robins were found at Lake Casa Blanca International State Park. Clay-colored Robins were not known to occur at the Galvan Ranch (Woodin et al. 1998). This species is known to fare well in urban settings in Mexico, where it is much more common than in southern Texas. Dense, woody thickets are also more prevalent in the Rio Grande vega at Laredo than in the riparian corridor on the Galvan Ranch. These conditions may provide the habitat mix of wooded pool margins, forest, and open parklands seemingly favored by this species (T. Brush, pers. comm.) in urban or rural environments.

White-collared Seedeaters were relatively common and sighted regularly on the Rio Grande vega at the City of Laredo/LCC site. Singing males were detected during every monthly survey, March-July, 1999. No White-collared Seedeaters were detected at Lake Casa Blanca International State Park. White-collared Seedeaters were also relatively common and easy to locate along the Rio Grande at the Galvan Ranch (Woodin et al. 1998). The habitat features which seemed to be associated with this rare tropical grassland species (Eitniear 1997) at both locations were dense stands of giant cane bordered by patches of grass and forbs. White-collared Seedeaters are more common along the Rio Grande near Laredo (Arnold 1980, Woodin et al. 1999) than has been recognized in the past.

The Green Parakeet, another tropical species, is not nearly as rare or as difficult for birders to locate in the U.S. as any of the three preceding tropical species. Nevertheless, this colorful species is highly prized by birders. Green Parakeets, which were relatively common at Laredo, are not known to occur on the Galvan Ranch. This species, like the Clay-colored Robin, apparently fares well in an urban environment. The Green Parakeets in Laredo were seen in very limited numbers along the Rio Grande flood plain near Zacate Creek. None were seen at the City of Laredo/LCC river property or at the lake. However, we found many Green Parakeets throughout the historic downtown area of the city. The parakeets probably are attracted to this area by its abundance of large trees, as well as by the food provided by fruits from various ornamental plants. One roost site used by several Green Parakeets was found in an old abandoned church building on Victoria Street.

Least Terns, along with other avian species which nest on exposed shorelines, are under intense pressure from residential development and human disturbance. While Least Terns are not sought avidly by birders, the Laredo area is one of only three locations along the Rio Grande in Texas where the endangered interior population of Least Tern occurs. Least Terns also occur at Falcon International Reservoir and at Lake Amistad National Recreation Area. Numbers of this population, while low, are stable to slightly increasing throughout most of its North American range (Kirsch and Sidle 1999).

The bird families which were represented so richly on Laredo public lands (i.e., Ardeidae, Anatidae, Columbidae, Cuculidae, Alcedinidae, Tyrannidae, Hirundinidae, Emberizidae, and

Cardinalidae) were also very well represented among the bird species found on the Galvan Ranch (Woodin et al. 1998). Species numbers within each of these bird families were comparable for Laredo public lands and the Galvan Ranch, with the exception of Anatidae (waterfowl). In comparison to the seven species of ducks which we documented at Laredo, the Galvan Ranch is known to harbor 19 species of waterfowl, including 9 species of dabbling ducks and 5 species of diving ducks. Several reasons account for this difference in waterfowl species richness between Laredo public lands and the Galvan Ranch. These include the remote location of the ranch, which eliminates much disturbance by people in an urban setting such as Laredo. The large number of ponds (73) on the Galvan Ranch also provides a quantity and diversity of waterfowl habitat which cannot be matched on Laredo public lands. However, as observations of birds using aquatic habitats in Laredo accumulate from birders and surveys conducted at other times of the year (especially during migratory periods and winter), numbers of waterfowl species known to occur on Laredo public lands will increase.

Owls, which were poorly represented on public lands at Laredo (Appendix A), were present on the Galvan Ranch (Woodin et al. 2000) in greater diversity. Four species of owls occurred on the Galvan Ranch, including the Elf Owl, a migratory species with a limited breeding range in the U.S. The urbanized environment of Laredo may have contributed to the disappointing owl diversity, in comparison with that at the Galvan Ranch.

RECOMMENDATIONS

Habitat and Bird Conservation

- 1) Habitat is the key to sustaining the rich bird resources which Laredo can offer to birders. Habitats on public lands should not be further degraded or reduced, or Laredo could lose the very resource which it is now trying to use to fuel economic benefits.
- 2) By far, the most significant public land at Laredo for birds is the Rio Grande property owned jointly by the City of Laredo and LCC. This small parcel of land should be maintained in its present natural state. No further clearing or other habitat degradation should be allowed.
- 3) Only minimal improvements to the City of Laredo/LCC property are needed. An acceptable level of improvements would include signage, parking facilities on the bluff overlooking the vega, and trail maintenance. Bark or wood chips for trails would be useful. Widening of trails is not recommended, as the existing network of trails on the property is quite extensive. In fact, some trails ultimately should be abandoned and allowed to revegetate.
- 4) Construction of a boardwalk at the shoreline of one of the ponds is an option. The advantage of a boardwalk is that it offers good views of aquatic birds while providing safe access to potentially dangerous areas, such as pond edges or cattail marshes. An example of where a boardwalk might be considered is the pond overlook where the LCC stone wall ends. While this site is a good vantage point for the pond, the steep bank and uneven ground could pose safety problems. This would be remedied by construction of a boardwalk with enclosed sides.
- 5) Trails in the Rio Grande vega do not permit a good view of the river and Mexico. Consideration should be given to extending the trail to create one or two esthetically appealing vantage points overlooking the Rio Grande. Caution should be exercised in any trail extension to minimize clearing of vegetation.
- 6) The City of Laredo should enter into discussions with the U.S. Border Patrol with the objective of eliminating Border Patrol vehicular traffic on the existing network of trails on the City of Laredo/LCC property along the Rio Grande. Continued heavy use of these trails by Border Patrol vehicles will foster erosion and increase maintenance costs. Also, as visitor use of the trails increases, the safety of visitors will become a concern. We suggest that the City of Laredo recommend that the U.S. Border Patrol institute foot or bicycle patrols on the vega.

7) Because the City of Laredo/LCC property apparently has been a traditional route of illegal entry into the U.S., there may be some questions expressed about security concerns for birders and other tourists who will use the area. Regular foot patrols on the vega by uniformed police of the City of Laredo should allay most of these concerns.

8) Areas next to the Rio Grande and along Zacate Creek which have been cleared should be replanted with native woody species. A professional native-plant landscaper/biologist will be essential in achieving a park appealing to both wildlife and people. Staff and students at Laredo Community College could be enlisted in this effort.

9) Participation by local residents in a bird feeding program would yield several positive results. Feeding birds will help sustain bird populations during periods of low food supplies, especially during winter and prolonged drought. As a result, feeding of birds will enhance opportunities for birders, while at the same time it will increase public awareness and appreciation of local bird species. We suggest that the City of Laredo support a local program to make hummingbird feeders more readily available for hummingbirds. These tiny birds capture intense devotion not only from birders, but also from some who would otherwise not consider themselves birders. Hummingbirds respond incredibly well to feeders which are well placed and maintained. The City of Laredo may be able to emulate the success of Rockport, Texas, which has met with great success in attracting tourists to its annual hummingbird festival.

10) White-collared Seedeaters are known to visit bird feeders. Placement of feeders in and near the City of Laredo/LCC property could enhance opportunities for viewing this rare species and possibly increase the local population of White-collared Seedeaters.

11) Green Parakeets, like many other bird species which are cavity-nesters, may be limited by a shortage of cavities for nesting and reproduction. We suggest that the City of Laredo facilitate a nest-box program (perhaps with the assistance of local schools or youth groups) to attempt to increase numbers of Green Parakeets in Laredo. A similar program has been implemented in Brownsville.

12) Residential development is proceeding rapidly outward from Laredo toward Lake Casa Blanca International State Park. Continued encroachment on this small state park will favor nuisance birds (e.g., Great-tailed Grackles (*Quiscalus mexicanus*), House Sparrows (*Passer domesticus*), and Brown-headed Cowbirds (*Molothrus ater*)) at the expense of the tropical and western species of high interest to birders. We recommend that additional land adjacent to Lake Casa Blanca International State Park be preserved in a natural state. This could be done by acquisition of land from a willing seller or by securing a long-term conservation easement. The state park then will have an effective buffer against encroaching development, which will improve the long-term outlook for bird resources on the public land.

Promotion and Marketing Aspects of Ecotourism

- 1) A birding ecotourism initiative in Laredo should stress the existing local infrastructure for leisure travel (i.e., Laredo International Airport and major airlines, car rental agencies, major motel/hotel accommodations, and first-rate dining facilities) and its proximity to local public lands with easy access to good birding opportunities.
- 2) An ecotourism initiative should emphasize the diversity of birds and habitats occurring on public lands. Total numbers of bird species, the variety of habitats available to birders, and bird families especially well represented on public lands at Laredo should be made clear. One way that this can be done is by creating a comprehensive species checklist available to birders who visit Laredo. One or more species checklists could include the following information: 1) the season in which each species is known to occur, 2) the habitat type in which each species may be found (i.e., terrestrial vs. aquatic), 3) the general breeding distribution of each species (i.e., tropical, temperate, eastern, western, or other), 4) the probability of detection, within the appropriate habitat and season (i.e., high, medium, or low), and 5) the local status of each species (i.e., rare, casual, or common).
- 3) An ecotourism initiative should emphasize the relatively large numbers of both tropical and western species at Laredo (Tables 2 and 3). This will be important for birders who need to add species from these two bird groups to their "life lists". For this category of birders, travel to the Laredo area will be especially appealing.
- 4) A birding ecotourism initiative should also stress the known occurrence on public lands at Laredo of at least three tropical species which are both rare and geographically restricted (even in southern Texas). These three species are the White-collared Seedeater, the Clay-colored Robin, and the Red-billed Pigeon. It must be emphasized to birders that, of these three species, only White-collared Seedeaters can be seen regularly on public lands at Laredo. Green Parakeets, while not rare, are nevertheless a charismatic species highly prized by birders. The ease with which Green Parakeets can be seen in Laredo could also be useful in securing the attention of birders and tour operators.
- 5) We suggest that the birding opportunities present at Laredo be incorporated in a City of Laredo website. Birders as a group make heavy use of the internet and electronic communication.
- 6) We recommend that the City of Laredo seek to develop joint working agreements with one or two private landowners in Webb County who own land along the Rio Grande which supports rare tropical bird species, and who would be willing to accept birding tours. Ideally, the rare species on private lands should complement those known to occur regularly on public lands. Logical target species for a joint agreement are the Red-billed Pigeon and Elf Owl. These two species are not found reliably on public lands in Laredo, yet both are known to occur on private land along the Rio Grande in Webb County. Such an arrangement will enhance further the

attraction of the Laredo area for birders.

7) An educational center for birds in the Laredo area should be established. The City of Laredo and Laredo Community College jointly could provide this facility on the bluff overlooking the vega, possibly co-located at the site of the new Environmental Science Center. This location could enhance educational opportunities for both visitors and local citizens, provide parking and good trail access to the vega, and provide further outlets for Laredo Community College student participation. Bird feeders at this center will be especially effective at capturing visitors' attention and enthusiasm.

8) Bird resources shared with Nuevo Laredo provide a new incentive for increased tourism coordination and cooperative conservation efforts. The habitat available in Laredo may not be large enough to sustain some species of birds at their current levels. Consequently, conservation efforts on the Nuevo Laredo property adjoining the river may be especially important in maintaining current bird populations at the City of Laredo/LCC site.

9) Once Laredo has become established as a destination for birders, the next logical step would be to explore opportunities for birding in Mexico. Laredo and Monterrey already share commercial, trade, and transportation linkages, and outstanding birding opportunities exist within easy driving distance of Monterrey. Binational birding tours, with Laredo and the Monterrey area as focal points for travel, should be explored in the future.

Future Bird Surveys

1) Based on the results from the 1999 bird surveys, riparian habitats along the Rio Grande are the focal points for rare, tropical bird species. We encourage the City of Laredo to identify any additional small tracts of public land along the Rio Grande which may harbor rare bird species. These small tracts should be surveyed, perhaps with the assistance of Laredo Community College students or local members of the National Audubon Society, to confirm the presence of rare species.

2) Upper reaches of Lake Casa Blanca are inaccessible to the public by land because these areas are in private ownership. Nevertheless, these areas could hold rare species which we were unable to detect. Indeed, the upper reaches of Lake Casa Blanca are not subject to intensive human disturbance, and habitats in these areas are much less impacted by development for outdoor recreation activities. We suggest that the City of Laredo enlist local college personnel, perhaps jointly with staff of Lake Casa Blanca International State Park, to conduct bird surveys by boat of at least some of the upper reaches of Lake Casa Blanca. If this effort succeeds in locating rare birds, it may be possible to enter into some type of agreement with the landowner to provide compensation for conservation activities. Depending upon the survey results, boat tours of this pristine area could be offered to tourists for a much different birding experience (for the more adventurous birders).

3) The Christmas Bird Count (CBC), sponsored by the National Audubon Society and held annually throughout the United States every winter, should be supported in Laredo. The first Laredo CBC in over 30 years was conducted in 1999. Results from the 1999 Laredo CBC should be incorporated (as winter data) into the seasonal bird checklist. Fall and winter bird surveys should also be considered to complete the seasonal checklist.

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