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TEXAS BIRD RECORDS COMMITTEE REPORT FOR 2005

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The Texas Bird Records Committee (hereafter "TBRC" or "committee"), of the Texas Ornithological Society, requests and reviews documentation on any record of a TBRC Review List species (see TBRC web page at http://texasbirds.org/tbrc/ or Lockwood 2003). Annual reports of the committee's activities have appeared in the Bulletin of the Texas Ornithological Society since 1984. For more information about the Texas Ornithological Society or the TBRC, please visit www.texasbirds.org. The committee reached a final decision on 146 records during 2005: 121 records of 55 species were accepted and 25 records of 19 species were not accepted, an acceptance rate of 82.9% for this report. There were 168 observers who submitted documentation (to the TBRC or to other entities) that was reviewed by the committee during 2005.

In 2005, the TBRC accepted first state record of the Streak-backed Oriole. A photographically documented record of Social Flycatcher was also accepted during 2005, moving the species from the presumptive list to the state list. These actions brought the official Texas State List to 629 species in good standing. This total does not include the four species listed on the Presumptive Species List.

In addition to the review of previously undocumented species, any committee member may request that a record of any species be reviewed. The committee requests written descriptions as well as photographs, video, and audio recordings if available. Information concerning a Review List species may be submitted to the committee secretary, Mark Lockwood, 402 E. Harriet Ave., Alpine, Texas 79830 (email: mark.lockwood@tpwd.state.tx.us). Guidelines for preparing rare bird documentation can be found in Dittmann and Lasley (1992) or at http://www.greglasley.net/document.html.

This first-year White-eared Hummingbird at Lubbock 12–18 July was the most expected occurrence in an outstanding year for this species in Texas. Photo by Brandon Best.

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The records in this report are arranged taxonomically following the AOU Check-list of North American Birds (AOU 1998) through the 46th supplement (Banks et al. 2005). A number in parentheses after the species name represents the total number of accepted records in Texas for that species at the end of 2005. All observers who submitted written documentation or photographs of accepted records are acknowledged by initials. If known, the initials of those who discovered a particular bird are in boldface but only if the discoverers submitted supporting documentation. The TBRC file number of each accepted record will follow the observers' initials. If photographs or video recordings are on file with the TBRC, the Texas Photo Record File (TPRF) (Texas A&M University) number is also given. If an audio recording of the bird is on file with the TBRC, the Texas Bird Sounds Library (TBSL) (Sam Houston State University) number is also given. Specimen records are denoted with an asterisk (*) followed by the institution where the specimen is housed and the catalog number. The information in each account is usually based on the information provided in the original submitted documentation; however, in some cases this information has been supplemented with a full range of dates the bird was present if that information was made available to the TBRC later. All locations in italics are counties.

TBRC Membership — Members of the TBRC during 2005 who participated in decisions listed in this report were: Randy Pinkston, Chair, Keith Arnold, Academician, Mark Lockwood, Secretary, Kelly Bryan, Eric Carpenter, Mel Cooksey, Brad McKinney, Jim Paton, and Willie Sekula. During 2005, Paton was elected to a second term and the Academician and Secretary were re-elected.

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Additional Abbreviations — AOU = American Ornithologists' Union; LSUMNS = Louisiana State Museum of Natural Science; NP = National Park; NWR = National Wildlife Refuge; SHS = State Historic Site; SNA = State Natural Area; SP = State Park; TCWC = Texas Cooperative Wildlife Collection (Texas A&M University); WMA = Wildlife Management Area.

ACCEPTED RECORDS

Eurasian Wigeon (*Anas penelope*) (38). An adult male at Lubbock, *Lubbock*, on 3 April 2005 (AH, TSo; 2005–59; TPRF 2304).

King Eider (*Somateria spectabilis*) (2). An immature male at Port Bolivar, *Galveston*, from 10 April-9 May 2005 (**DJe**, **JPu**, LBa, FB, CE, DE, TRo; 2005–60; TPRF 2305).

Barrow's Goldeneye (*Bucephala islandica*) (9). A female at Greenville City Lakes, *Hunt*, on 28 November 2004 (**MWh**; 2004–98; TPRF 2292).

Masked Duck (*Nomonyx dominicus*) (67). One near Riviera, *Kleberg*, on 19 November 2004 (**GP**; 2004–95; TPRF 2244). One at the Mad Island Marsh Preserve, *Matagorda*, from 20–24 December 2004 (**HS**, RKo; 2004–118; TPRF 2256). One near Ingleside, *San Patricio*, from 20–30 December 2004 (MRe, WS; 2004–119; TPRF 2257). One at Padre Island National Seashore, *Kleberg*, from 28 February-11 April 2005 (MCo, LBa; 2005–58; TPRF 2303).

Leach's Storm-Petrel (*Oceanodroma leucorhoa*) (24). At least one Leach's Storm-Petrel off South Padre Island, *Cameron*, on 16 July 2004 (**AG**; 2004–83; TPRF 2291).

Red-billed Tropicbird (*Phaethon aethereus*) (8). An adult off South Padre Island, *Cameron*, from 14 June-19 July 2005 (**BoD**, EC, BMc, LBa, BG; 2005–87; TPRF 2322).

Brown Booby (*Sula leucogaster*) (22). One off Port Aransas, *Aransas*, on 13 July 2004 (**BPo**; 2004–62). One at Port Aransas, *Aransas*, from 26 February-4 March 2005 (BPi, MCo, PHo, BFr, MRe, LBa, JBo; 2005–47; TPRF 2299).

Northern Goshawk (*Accipiter gentilis*) (21). An adult at Quanah, *Hardeman*, from 30 December 2004–8 January 2005 (**SWe**; 2005–18; TPRF 2265). An adult at Garland, *Dallas*, on 20 March 2005 (**MWh**; 2005–86).

Roadside Hawk (*Buteo magnirostris*) (7). An imm. bird at San Ygnacio, *Zapata*, from 30 January-1 March 2005 (**DE**, RTi, MCo, GMo, RDu, JHa, FG, DH, RPi, BPi, DN, MRe, LBa; 2005–25; TPRF 2269). One at the Resaca del Rancho Viejo unit, Lower Rio Grande Valley National Wildlife Refuge, *Cameron*, from 5–12 February 2005 (**JA**; 2005–50). An imm. bird at Santa Ana NWR, *Hidalgo*, from 9 February-31 March 2005 (**BFi**, MDe, PiH, ML; 2005–42; TPRF 2297).

Short-tailed Hawk (*Buteo brachyurus*) (25). A light morph adult at Utopia, *Uvalde*, on 22 April 2005 (**MiH**; 2005–97). A light morph adult at Lost Maples SNA, *Bandera*, from 23–29 April 2005 (**CB**, RTa; 2005–72).

Sharp-tailed Sandpiper (*Calidris acuminata*) (3). A juvenile at Springlake, *Lamb*, from 14–18 November 2004 (**BG**, MRe, AH; 2004–91; TPRF 2241).

Purple Sandpiper (*Calidris maritima*) (17). One at Galveston, *Galveston*, on 7 January 2005 (**SL**; 2005–94).

Long-tailed Jaeger (*Stercorarius longicaudus*) (18). A second-year bird off South Padre Island, *Cameron*, on 6 November 2004 (**BMc**, **MRe**, **LBa**, **CMe**; 2004–92; TPRF 2242).

Little Gull (*Larus minutus*) (42). One adult at Lake Tawakoni, *Hunt*, from 18–20 November 2004 (**MWh**, HL; 2004–105). A first-winter bird at Lake Tawakoni, *Rains*, on 4 December 2004 (**MWh**; 2005–21). One second-winter bird at Lake Ray Hubbard, *Rockwall/Dallas*, on 16 December 2004 (**BG**, **DH**; 2004–116). A first-winter bird at Lake Livingston, *Polk*, from 21–27 December 2005 (BNi; 2005–15). A first-winter bird at Quintana, *Brazoria*, from 6–18 January 2005 (**RW**, LBa, MG; 2005–39; TPRF 2278).

Black-headed Gull (*Larus ridibundus*) (24). One adult at South Padre Island, *Cameron*, on 12 December 2004 (**GCo**, BMc; 2004–104; TPRF 2248).

Western Gull (*Larus occidentalis*) (3). One first-year bird at Sal del Rey NWR, *Hidalgo*, from 14–16 November 2004 (**JDu**, WS, PHo, CW, GR, CT, F&JD; 2004–93; TPRF 2243).

Providing only the third record for Texas, this first-winter Western Gull was at the La Sal del Rey N. W. R., Hidalgo Co., 14–16 November. Photo by Willie Sekula.

Great Black-backed Gull (*Larus marinus*) (38). A first-winter bird at Mesquite Bay, *Aransas*, on 28 December 2004 (**JJ**, **CFi**; 2005–26; TPRF 2270). A first-winter bird at Boca Chica, *Cameron*, from 20 January-2 March 2005 (RDu, GMo, BMc, LBa; 2005–23; TPRF 2268).

Black-legged Kittiwake (*Rissa tridactyla*) (75). A first-winter bird at Imperial Reservoir, *Pecos*, from 28 November-24 December 1999 (**GLa**; 2005–112; TPRF 2332). An adult at Balmorhea Lake, *Reeves*, from 4–15 December 1999 (**MAd**, **ClS**; 2005–108; TPRF 1819). An adult at Balmorhea Lake, *Reeves*, on 23 November 2002 (**RO**; 2005–109; TPRF 2329). An adult at South Padre Island, *Cameron*, on 22 February 2004 (**S&GCo**; 2005–110; TPRF 2330). A first-winter bird at Boca Chica, *Cameron*, from 30 December 2004–5 January 2005 (MiP, LBa; 2005–115; TPRF 2333). A first-winter bird at the San Vicente Crossing, Big Bend NP, *Brewster*, on 28 March 2005 (**GCl**; 2005–111; TPRF 2331). Black-legged Kittiwake was removed from the Review List in 1999, but due to the small number of reports in the intervening years the species was placed back on the Review List on 23 July 2005.

This Red-billed Tropicbird was spotted on 17 June South Padre Island pelagic trip, providing the eighth record for the state. Photo by Brian Gibbons.

Brown Noddy (*Anous stolidus*) (8). An adult at South Padre Island, *Cameron*, from 20–26 June 2005 (ScC, RDa, BMc, LBa; 2005–92; TPRF 2324).

Black Noddy (*Anous minutus*) (3). An adult on North Padre Island, *Nueces*, on 22 June 1975 (**PY**; 2002–91; TPRF 77).

Ruddy Ground-Dove (*Columbina talpacoti*) (14). One at El Paso, *El Paso*, on 28 September 2004 (**BZ**; 2005–6). Two at Cottonwood Campground, Big Bend NP, *Brewster*, from 17 November 2004–17 February 2005 (**EC**, **HL**, ML, RPi, LBa, RKo; 2004–96; TPRF 2245).

Green Violet-ear (*Colibri thalassinus*) (46). One near San Saba, *San Saba*, from 20–21 April 2005 (JBy; 2005–64; TPRF 2308). One at South Padre Island, *Cameron*, from 8–11 May 2005 (**PWa**, MHa, BMc, CFe, SeC; 2005–71; TPRF 2313). One near New Braunfels, *Comal*, from 2–3 June 2005 (BNo, LBa; 2005–84; TPRF 2321). One near Hunt, *Kerr*, from 8–14 June 2005 (**C&PH**; 2005–93; TPRF 2325).

Green-breasted Mango (*Anthracothorax prevostii*) (15). One adult male at McAllen, *Hidalgo*, from 22 August-5 December 2004 (DDa, JDa, RPi, DDC, MRe; 2004–71; TPRF 2234). One (or possibly two) adult male(s) at McAllen, *Hidalgo*, from 20 September 2004–25 January 2005 (BBe, JBo, DN, FB, LBa, FC, GR, MTo, JTh, GMa; 2004–82; TPRF 2235). An imm. bird at San Benito, *Cameron*, from 18–20 June 2005 (**TF**, **NF**; 2005–95; TPRF 2326).

White-eared Hummingbird (*Hylocharis leucotis*) (21). A male in the Chisos Mountains, Big Bend NP, *Brewster*, from 5–11 August 2004 (**GCu**, J&LW; 2004–74). Up to six in the Davis Mountains Resort, *Jeff Davis*, from 27 May-6 August 2005 (**M&ME**, ML, RPi, LBa; 2005–76; TPRF 2315). A female in lower Boot Canyon, Big Bend NP, *Brewster*, on 2 June 2005 (**BG**; 2005–80; TPRF 2317). Two males and one female in Boot Canyon, Big Bend NP, *Brewster*, from 24 June-10 July 2005 (**AL**, TRi, BG, BRo; 2005–91; TPRF 2323). One at Lubbock, *Lubbock*, from 12–19 July 2005 (BBe, AH; 2005–98; TPRF 2327).

Costa's Hummingbird (*Calypte costae*) (15). One (non-adult male) at Cottonwood Campground, Big Bend NP, *Brewster*, on 10 November 2004 (**BG**; 2004–107).

Elegant Trogon (*Trogon elegans*) (6). A male at the Frontera Audubon Sanctuary, Weslaco, *Hidalgo*, from 14 January-12 May 2005 (BMc, PHo, MAu, MHa, MCo, FB, RPi, LBa, BPi, DH, DN, JM, SB, DCr, CE; 2005–13; TPRF 2295).

This adult male Elegant Trogon provided the fourth documented occurrence in the Lower Rio Grande Valley. It was present from January–May 2005 at Frontera Audubon's Sanctuary in Weslaco, Hidalgo County. Photo by Dede Crusinberry.

Red-breasted Sapsucker (*Sphyrapicus ruber*) (3). An adult at the Lawrence E. Wood Picnic Area, Davis Mountains, *Jeff Davis*, from 11–28 March 2005 (**SCo**, MRe, ML, RPi, LBa, BRi, BRa; 2005–56; TPRF 2302).

Greater Pewee (*Contopus pertinax*) (17). One at Progreso Lakes, *Hidalgo*, from 2–3 February 2005 (JDu, PDe; TBRC 2005–51). One at the Davis Mountains Preserve, *Jeff Davis*, on 13 June 2005 (**EC**, GLa, ML, RPi, KBr; 2005–82; TPRF 2319).

Buff-breasted Flycatcher (*Empidonax fulvifrons*) (8). Up to nine (three adults and six fledglings) at Wolf Den Canyon, Davis Mountains Preserve, *Jeff Davis*, from 14 April-24 July 2005 (ML, LBa, GLa, RPi, EC; 2005–63; TPRF 2307). Two at Pine Canyon, Davis Mountains Preserve, *Jeff Davis*, on 12 June 2005 (**ML**; 2005–81; TPRF 2318).

Dusky-capped Flycatcher (*Myiarchus tuberculifer*) (28). One at the Frontera Audubon Sanctuary, Weslaco, *Hidalgo*, from 18 December 2004–1 January 2005 (**BMc**, DJo, EHo, ML; 2004–117; TPRF 2255). One near Rangerville, *Cameron*, 22 January-28 March 2005 (**TF**, DE, RDu, GMo; 2005–27; TPRF 2271). Up to eight (six adults and two fledglings) at the Davis Mountains Preserve, *Jeff Davis*, from 14 June-9 July 2005 (**EC**, **ML**, **RPi**, **KBr**; 2005–83; TPRF 2320).

Social Flycatcher (*Myiozetetes similis*) (2). One at Bentsen-Rio Grande Valley State Park, *Hidalgo*, from 7–14 January 2005 (**JA**, MAu, PHo, PiH, GMa, MRe, LBa; 2005–8; TPRF 2261). This represents the first fully-documented record for Texas and moves the species from the Presumptive List to the main list.

Thick-billed Kingbird (*Tyrannus crassirostris*) (18). One at Selkirk Island, *Matagorda*, from 20–31 December 2004 (**MAu**, JSc; 2005–19).

Fork-tailed Flycatcher (*Tyrannus savana*) (15). An adult at Anahuac NWR, *Chambers*, from 9–10 November 2004 (**MaW**, **CSh**, BL, HL; 2004–90; TPRF 2240).

Rose-throated Becard (*Pachyramphus aglaiae*) (36). A female at Pharr, *Hidalgo*, from 28 November 2004–2 April 2005 (WL, CD, HL, BPi, DCr; 2004–115; TPRF 2293). Up to three at Santa Ana NWR, *Hidalgo*, from 18 December 2004–4 March 2005 (**PDe**, PR, MAu, BPi, DH, PiH, KTh, MV; 2005–10; TPRF 2263). Up to two at Sabal Palm Sanctuary, *Cameron*, from 24 December 2004–18 March 2005 (BMc, JA, LBa; 2005–04; TPRF 2258). A female at the Anacua unit of Las Palomas Wildlife Management Area, *Cameron*, on 8–22 January 2005 (**DJo**; 2005–48). A female at the Resaca del Rancho Viejo unit, Lower Rio Grande Valley National Wildlife Refuge, *Cameron*, on 5 February 2005 (**DJo**; 2005–49).

Black-whiskered Vireo (*Vireo altiloquus*) (22). Two at Sabine Woods, *Jefferson*, from 24 April-27 May 2005 (MAu, LBa, MRe; 2005–66; TPRF 2310).

Tamaulipas Crow (*Corvus imparatus*). Up to 16 at Brownsville, *Cameron*, from 26 March-30 July 2005 (DaB, KBe, BBa, LBa, MaH; 2005–74; TPRF 2314).

American Dipper (*Cinclus mexicanus*) (7). One at Prairie Creek Park, Dallas, *Collin*, on 23 December 2004 (**SA**; 2004–120).

Orange-billed Nightingale-Thrush (*Catharus aurantiirostris*) (2). One at Edinburg, *Hidalgo*, on 28 May 2004 (DDi, JA; 2005–61; TPRF 2306; *LSUMNS).

White-throated Robin (*Turdus assimilis*) (10). A first-winter bird near Mission, *Hidalgo*, on 30 December 2004 (**JA**; 2005–01). One at Frontera Audubon Sanctuary, Weslaco, *Hidalgo*, from 2 January-23 March 2005 (**FB**, CR, PDe, JTh, PHo, MHa, BPi, RPi, LBa, FG, DH, CMS, ML, DN, MRe, EB; 2005–07; TPRF 2260). One at Los Fresnos, *Cameron*, on 24 January 2005 (**MRo**; 2005–40; TPRF 2279). One at Santa Ana NWR, *Hidalgo*, from 26 January-19 February 2005 (CSt, RDu, DH; 2005–30; TPRF 2274). One near Rangerville, *Cameron*, from 28 January-4 February 2005 (**DE**, TF; 2005–29; TPRF 2273). One at Sabal Palm Sancturary, *Cameron*, from 28–31 January 2005 (JiP, IS; 2005–46; TPRF 2298). One at Bentsen-Rio Grande Valley SP, *Hidalgo*, on 10 February 2005 (MPa; 2005–37; TPRF 2277).

Varied Thrush (*Ixoreus naevius*) (28). A male at San Antonio, *Bexar*, from 8–9 November 2004 (**MCr**, MRe, GSc, WS, RHi; 2004–89; TPRF 2239). A female at El Paso, *El Paso*, on 14 November 2004 (JPa; 2004–94). A male near Texhoma, *Sherman*, on 21 November 2004 (**BG**; 2004–112; TPRF 2254).

Bohemian Waxwing (*Bombycilla garrulus*) (16). Three at Dalhart, *Hartley*, on 21 November 2004 (**BG**; 2004–109; TPRF 2250). One in Gruver, *Hansford*, on 21 November 2004 (**BG**; 2004–110). Two in Stinnett, *Hutchinson*, on 22 November 2004 (**BG**; 2004–111; TPRF 2251). Two in Spearman, *Hansford*, on 22 November 2004 (**BG**; 2004–113; TPRF 2252). Three in Perryton, *Ochiltree*, on 22 November 2004 (**BG**; 2004–114; TPRF 2253). Four in Humble, *Harris*, on 11 February 2005 (**JW**; 2005–41).

Olive Warbler (*Peucedramus taeniatus*) (7). One at Road Canyon, Davis Mountains Preserve, *Jeff Davis*, from 28–30 May 2005 (**SCo**, BRi, LBa; 2005–78; TPRF 2316).

Yellow (Mangrove) Warbler (*Dendroica petechia oraria*) (5). Up to 30+ at Port Isabel, *Cameron*, from August 2004+ (S&GCo, DaB, ML, PHo; 2005–31; TPRF 2275). "Mangrove" Warbler was removed from the Review List at the TBRC annual meeting on 23 July 2005 after this year's discovery of a significant population within the state.

Gray-crowned Yellowthroat (*Geothlypis poliocephala*) (42). An adult male and female at Sabal Palm Sanctuary, *Cameron*, from 8 December 2004–30 June 2005 (BMc, RPi, FG, DH, JHe, LBa, JiP, DaB; 2005–16; TPRF 2296).

Red-faced Warbler (*Cardellina rubrifrons*) (33). Two at Dog Canyon, Guadalupe Mountains NP, *Culberson*, on 8 May 2004 (**HL**; 2004–106). One at Packery Channel, Corpus Christi, *Nueces*, from 5–10 May 2005 (**LA**, **JMc**, MAu, WS; 2005–70; TPRF 2312).

Golden-crowned Warbler (*Basileuterus culicivorus*) (18). One at Los Ebanos Preserve, *Cameron*, from 9 January-1 February 2005 (DCr, GMa, AV, LBa; 2005–17; TPRF 2264). One at Brownsville, *Cameron*, from 18 January-4 March 2005 (**PWa**, RDu, GMo, DH, EHu, DN, CMS, JM; 2005–28; TPRF 2272).

Rufous-capped Warbler (*Basileuterus rufifrons*) (24). One near Pearsall, *Frio*, from 31 October 2004–21 March 2005 (**WS**, MRe, EC, RPi, LBa, BPi; 2004–86; TPRF 2236). One at Concan, *Uvalde*, on 1 May 2005 (**RTr**, EHo, CdB; 2005–69; TPRF 2311). One at the Westcave Preserve, *Travis*, from 30 June-10 July 2005 (VE, EF, KH; 2005–99; TPRF 2328).

Flame-colored Tanager (*Piranga bidentata*) (6). An immature male at Pharr, *Hidalgo*, on 28 February 2005 (**MCa**, **SJ**; 2005–55; TPRF 2301).

Baird's Sparrow (*Ammodramus bairdii*) (47). One 33 miles SW of Marfa, *Presidio*, on 13 November 2004 (**BG**; 2004–108; TPRF 2249). Up to five near Marfa, *Presidio*, from 22 November 2004–6 January 2005 (**EC**, MAu, ML, LBa; 2004–97; TPRF 2246). Up to three near the intersection of RR 505 and US 90, *Jeff Davis*, from 12 December 2004–23 January 2005 (**MAu**, ML, DP; 2004–103).

Golden-crowned Sparrow (*Zonotrichia atricapilla*) (29). One at Lubbock, *Lubbock*, on 18 December 2004, (**RLe**; 2005–14).

Crimson-collared Grosbeak (*Rhodothraupis celaeno*) (17). At least five at Frontera Audubon Sanctuary, Weslaco, *Hidalgo*, from 2 November 2004–27 April 2005 (EC, MRe, F&JD, BPi, MCo, DN, TSc, BMc, ML, RPi, FB, LBa, FG, DH, JM, RR, KTh, EB, GR, MHe, CE; 2004–87; TPRF 2237). Up to three at Pharr, *Hidalgo*, from 20 November 2004–20 April 2005 (HL, JA, BPi, BMc, ML, JM, RR, DCr, PWe; 2005–05; TPRF 2294) A first-winter female at Brownsville, *Cameron*, on 10 December 2004 (**PB**, JiP; 2004–102; TPRF 2247; *LSUMNS). Up to three at Sabal Palm Sanctuary, *Cameron*, from 18 December 2004–4 May 2005 (BMc, DaB; 2005–02). An adult female at Los Fresnos, *Cameron*, from 30 December 2004–23 January 2005 (**AB**; 2005–3; TPRF 2259). An adult female at Laredo, *Webb*, on 16 January 2005 (**SCo**, MRe; 2005–12). An adult male at Weslaco, *Hidalgo*, on 14 April 2005 (**RR**; 2005–67). A male at Rockport, *Aransas*, from 15–21 April 2005 (**DS**, MTa, MDo; 2005–65; TPRF 2309). A female at Lafitte Cove Nature Preserve, *Galveston*, from 6–9 May 2005 (**LWM**; 2005–73).

Blue Bunting (*Cyanocompsa parellina*) (31). Up to three at Laredo, *Webb*, from 2–19 January 2005 (SF, NW, CR, MRe, RL; 2005–09; TPRF 2262). A female at Pharr, *Hidalgo*, on 6 January 2005 (**DeB**; 2005–11). A male at San Ygnacio, *Zapata*, from 16–20 January 2005 (MRe, LBa; 2005–24; TPRF 2267). A male at Santa Ana NWR, *Hidalgo*, from 17 January-25 February 2005 (PDe, MTo, RDu, BPi, JM; 2005–22; TPRF 2266).

Streak-backed Oriole (*Icterus pustulatus*) (1). One at Brazos Bend State Park, *Fort Bend*, from 12 December 2004–8 April 2005 (GrL, RPi, FB, DCr, BRi, BDu, BPi, DE; 2005–32; TPRF 2276). This represents the first record for Texas.

White-winged Crossbill (*Loxia leucoptera*) (8). An immature male near Utley, *Bastrop*, on 1 December 2004 (**BFr**; 2004–100).

Lawrence's Goldfinch (*Carduelis lawrencei*) (14). A male at Rockport, *Aransas*, from 21–22 February 2005 (**R&DE**; 2005–52; TPRF 2300).

NOT ACCEPTED

A number of factors may contribute to a record being denied acceptance. It is quite uncommon for a record to not be accepted because the bird was obviously misidentified. More commonly, a record is not accepted because the material submitted was incomplete, insufficient, superficial, or just too vague to properly document the

This female Crimson-collared Grosbeak was one of three present in Pharr, Hidalgo Co., from 20 Nov into the spring. Photo by Mark W. Lockwood.

reported occurrence while eliminating *all* other similar species. Also, written documentation or descriptions prepared *entirely from memory* weeks, months, or years after a sighting are seldom voted on favorably. It is important that the simple act of not accepting a particular record should by no means indicate that the TBRC or any of its members feel the record did not occur as reported. The non-acceptance of any record simply reflects the opinion of the TBRC that the documentation, as submitted, did not meet the rigorous standards appropriate for adding data to the formal historical record. The TBRC makes every effort to be as fair and objective as possible regarding each record. If the committee is unsure about any particular record, it prefers to err on the conservative side and not accept a good record rather than validate a bad one. All records, whether accepted or not, remain on file and can be re-submitted to the committee if additional substantive material is presented.

Common Pochard (*Aythya ferina*). Lake Worth, *Tarrant*, from 5–6 November 2003 (2004–1).

Red-necked Grebe (*Podiceps grisegena*). Matagorda Bay, *Matagorda*, on 15 December 2003 (2004–31) East Matagorda Bay, *Matagorda*, on 20 December 2004 (2005–20).

Brown Booby (*Sula leucogaster*). Anahuac NWR, *Chambers*, on 21 October 2004 (2204–99).

South Polar Skua (*Stercorarius maccormicki*). off South Padre Island, *Cameron*, on 6 November 2004 (2004–88; TPRF 2238).

Heermann's Gull (*Larus heermanni*). Crystal Beach, *Galveston*, on 25 February 2005 (2005–45).

Mew Gull (*Larus canus*). Magnolia Beach, *Calhoun*, on 4 March 2005 (2005–77).

Elegant Tern (*Sterna elegans*). Austwell, *Aransas*, on 19 November 2004 (2005–38).

Ruddy Ground-Dove (*Columbina talpacoti*). Honey Creek State Natural Area, *Comal*, on 15 February 2005 (2005–53).

Green Violet-ear (*Colibri thalassinus*). Corpus Christi, *Nueces*, from 19–20 April 2005 (2005–88).

Greater Pewee (*Contopus pertinax*). Rio Grande Village, Big Bend NP, *Brewster*, on 5 August 2004 (2004–67). Chisos Mountains, Big Bend NP, *Brewster*, on 8 May 2005 (2005–75). Sam Nail Ranchsite, Big Bend NP, *Brewster*, on 20 May 2005 (2005–85).

Dusky-capped Flycatcher (*Myiarchus tuberculifer*). Boot Spring, Big Bend NP, *Brewster*, on 11 May 2005 (2005–90).

Fork-tailed Flycatcher (*Tyrannus savana*). Anahuac NWR, *Chambers*, on 3 April 2004 (2004–44).

Black-capped Gnatcatcher (*Polioptila nigriceps*). Sam Nail Ranchsite, Big Bend NP, *Brewster*, on 16 April 2005 (2005–68).

This Roadside Hawk was at Santa Ana National Wildlife Refuge, Hidalgo Co., from 9 February to 31 March 2005 and was one of three in the Valley during the winter of 2004–2005. Photo by Keith Brady.

Olive Warbler (*Peucedramus taeniatus*). Rio Grande Village, Big Bend NP, *Brewster*, on 24 March 2005 (2005–62).

Golden-crowned Warbler (*Basileuterus culicivorus*) Rio Grande Village, Big Bend NP, *Brewster*, on 26 January 1992 (2003–1). Los Fresnos, *Cameron*, from 23 January-17 February 2005 (2005–54).

Baird's Sparrow (*Ammodramus bairdii*) Seminole Canyon SHS, *Val Verde*, on 28 December 2002 (2005–34). Buffalo Lake NWR, *Randall*, on 11 April 2004 (2004–32). near Seminole Canyon SHS, *Val Verde*, on 26 December 2004 (2005–35).

(Slate-colored) Fox Sparrow (*Passerella iliaca schistacea*). Sam Nail Ranchsite, Big Bend NP, *Brewster*, on 19 February 2005 (2005–57).

Blue Bunting (*Cyanocompsa parellina*). Bentsen-Rio Grande Valley SP, *Hidalgo*, from 28–29 January 2005 (2005–36).

Common Redpoll (*Carduelis flammea*). Spearman, *Hansford*, on 4 December 2004 (2004–101)

CORRIGENDUM

The following records are from an oil platform off North Padre Island and were listed for **Kenedy** County. The TBRC recently received the coordinates of the platform and was able to determine the platform is actually off **Willacy** County.

Sooty Shearwater - 5 Nov 1999 (TBRC 2000–19)

Brown Booby - 30 Oct 1999 (TBRC 1999–107; TPRF 1798)

Brown Booby - 18 Oct 2000 (TBRC 2001–35)

Long-tailed Jaeger - 2 Nov 2000 (TBRC 2001–37)

Brown Noddy - 27 Apr-1 May 2000 (TBRC 2000–32; TPRF 1911)

Piratic Flycatcher - 20–21 Oct 2000 (TBRC 2000–126; TPRF 1933)
Fork-tailed Flycatcher - 1 Nov 2000 (TBRC 2001–36; TPRF 1934)

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POPULATION TRENDS OF RED-COCKADED WOODPECKERS IN TEXAS

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ABSTRACT.—We tracked population trends of Red-cockaded Woodpeckers (*Picoides borealis*) in eastern Texas from 1983 through 2004. After declining precipitously during the 1980s, woodpecker population trends on federal lands (National Forests and Grasslands in Texas, but excluding the Big Thicket National Preserve) increased between 1990 and 2000, and have been stable to slightly decreasing over the past four years. Litigation against the U.S. Forest Service in the mid 1980s reversed a severe population decline, whereas litigation during the past 8 years hampered recovery efforts for the Red-cockaded Woodpecker. Red-cockaded Woodpecker populations on private and State of Texas lands have steadily declined over the past 15 years, most likely the result of demographic isolation. Limited availability of old pines suitable for cavity excavation, inadequate fire regimes to control hardwood midstory, and demographic dysfunction resulting from woodpecker group isolation remain as significant obstacles to recovery in most populations.

Red-cockaded Woodpecker (*Picoides borealis*) populations have declined precipitously in recent decades, primarily because of loss of forested habitat, short-rotation silviculture, suppression of fire, and serious demographic dysfunction (Conner and Rudolph 1989, Costa and Escano 1989, James 1995, Conner et al. 2001).

Since 1990, the scientific and technical knowledge necessary to effectively manage and recover Red-cockaded Woodpecker populations has become available as a result of the efforts of many individuals involved in both research and management (Conner et al. 2001, U.S. Fish and Wildlife Service 2003). Several management activities that are sufficient to recover Red-cockaded Woodpecker populations have been identified (Conner et al. 2001, U.S. Fish and Wildlife Service 2003, Rudolph et al. 2004). The recovery of the Red-cockaded Woodpecker is dependent on forest management that is directed at site-specific cavity-tree clusters and foraging habitat, and at landscape-level demographics (Conner et al. 2001). Suitably aged potential cavity trees and artificial cavities, open pine forest free of most hardwood midstory, and suitably open foraging habitat with large old pines can be provided through implementation of current guidelines. Landscape-level management using woodpecker translocation to solve inadequate dispersal for mate replacement (demographic problems) must be solved by teams with members from multiple forests across the region (U.S. Fish and Wildlife Service 2003). A breakdown in management effort at ground-level managers or at higher levels of management coordination can seriously impair recovery efforts and eventual results.

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A federal court decision against the U.S. Forest Service in Texas in 1988 (*Sierra Club et al. v. Lyng et al., L-85–69-CA*) found that the National Forests and Grasslands in Texas had violated Section 7 by failing to consult with the U.S. Fish and Wildlife Service when the population was declining and Section 9 of the Endangered Species Act by failing to appropriately manage habitat for the Red-cockaded Woodpecker, which caused harm to the woodpecker. The initial result of this federal court ruling was a significant improvement in the management of Red-cockaded Woodpecker populations on public lands in Texas and throughout the range of the species across the South (Conner et al. 2001).

Litigation against the U.S. Forest Service in Texas between 1996 and 1999 resulted in court injunctions that excluded fire and reduction of hardwood midstory from upland pine habitat management until summer 2003 (Conner et al. 2001). Thus, fire was not applied in habitat managed for Red-cockaded Woodpeckers in both longleaf (*Pinus palustris*) and loblolly (*P. taeda*)- shortleaf (*P. echinata*) pine habitats for 8 years (1995 to 2003). Because habitat could not be maintained in a condition suitable for U.S. Fish and Wildlife Service translocation requirements, woodpecker translocations for augmentation of single birds and reintroduction to expand small populations were halted on some national forests. Thus, litigation had the potential to seriously hinder recovery efforts during the past decade on national forest lands.

METHODS

Using data collected on the Angelina, Davy Crockett, and Sabine National Forests in Texas from 1983 through 2004 (Conner and Rudolph 1989, Conner et al. 1995, Rudolph et al. 2004), and additional data from annual Red-cockaded Woodpecker population status meetings provided by the National Forests and Grasslands in Texas, the Texas Forest Service, private landowners, and the U.S. Fish and Wildlife Service, we examined population trends of Red-cockaded Woodpeckers in Texas. We used data for the number of active clusters in early spring immediately prior to the woodpecker's breeding season, which begins in late April, for the Angelina, Davy Crockett, and Sabine National Forests. Prior to 1996, data on numbers of active clusters from other forests may not be from spring counts.

Management needed for the recovery of Red-cockaded Woodpecker populations is described by Conner et al. (2001) and includes providing old pines for cavity trees or artificial cavities in younger pines, thinning the pine overstory, reduction of hardwood midstory, prescribed fire to sustain lush grasses and forbs in the herbaceous layer, and woodpecker translocation to solve population demographic problems. We explored how these management factors had been applied to populations and examined how the co-occurrence of events such as litigation affected management and changes in population trends. We examined populations by general ownership category: federal, state, and private.

RESULTS

Populations on Federal Lands. Red-cockaded Woodpeckers on federal lands in Texas are currently found only on the four national forests: the Angelina, Davy Crockett, Sabine, and Sam Houston National Forests. A very small population on the Big Thicket National Preserve was extirpated in 1995 (Table 1). Prior to 1988 management for Red-cockaded Woodpeckers on U.S. Forest Service lands in Texas had primarily involved protection of cavity trees from cutting and removal of hardwood midstory trees from a 15-m radius around cavity trees. However, prior to 1988, some cavity trees were cut and only a few cavity trees had encroaching midstory removed (Conner and Rudolph 1989). Prescribed fire was used irregularly during cool wet seasons, was not applied to all habitats with Red-cockaded Woodpeckers, and was generally not effective in reducing encroaching hardwood vegetation in the pine uplands. As a result, Red-cockaded Woodpecker populations on the national forests in Texas were in severe decline prior to 1988 (Fig. 1, Table 1).

In 1988, litigation against the U.S. Forest Service in federal court in Tyler, Texas (*Sierra Club et al. v. Lyng et al., L-85–69-CA*), resulted in a court order from Judge Robert Parker that found the U.S. Forest Service had violated Section 7 and Section 9, "take," of the Endangered Species Act because of their failure to correctly manage the Red-cockaded Woodpecker's habitat (Conner et al. 2001). The 1988 court order forced the U.S. Forest Service to begin an intensive management effort to thin pine stands, remove hardwood midstory, increase prescribed burning, install artificial cavities, and translocate woodpeckers to reduce population demographic problems. As a result of the intensified habitat management, the woodpecker populations on federal lands had stabilized by 1990, and subsequently increased at a fairly steady rate until 2000 (Fig. 1).

Table 1. Number of active Red-cockaded Woodpecker clusters in Texas populations on federal, State of Texas, and private lands from 1983 through 2004. Columns with blanks indicate years when data were not available for specific populations.

Population	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Federal Forests (total)					224	203	208	193	193	200	223	231	235	246	234	244	266	275	270	270	257	262
Angelina National Forest	38	33	26	26	22	19	22	20	20	22	27	26	23	26	22	21	24	25	27	29	27	26
Davy Crockett National Forest	47	43	38	34	29	28	28	23	27	34	38	38	38	40	39	41	47	55	53	51	51	53
Sabine National Forest					13	11	10	8	8	9	15	16	20	24	23	22	24	25	27	29	27	26
Sam Houston National Forest					160	145	148	141	137	134	141	149	153	156	150	160	168	168	163	164	152	155
Big Thicket National Preserve								1	1	1	2	2	1	0	0	0	0	0	0	0	0	0
State Forests (total)								29	25	25	25	22	22	21	19	19	19	19	17	17	18	17
W. Goodrich Jones								15	14	15	15	14	14	14	14	14	14	14	12	12	13	12
I. D. Fairchild								12	9	8	8	7	7	6	4	4	4	4	4	4	4	4
Huntsville State Fish Hatchery								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pine Park (TX Dept. of Trans.)								1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Private Forest Lands (total)								52	50	48	42	40	38	33	31	31	31	37	37	37	33	33
Brushy Creek/ Boggy Slough								18	18	18	15	13	12	10	9	7	7	7	8	9	8	8
Scrappin' Valley								4	4	4	4	4	4	4	4	5	5	10	8	12	10	10
Louisiana-Pacific								15	14	14	13	13	12	9	8	8	7	7	7	2	2	1
Cook's Branch								15	14	12	10	10	10	10	10	11	12	13	12	13	14	14

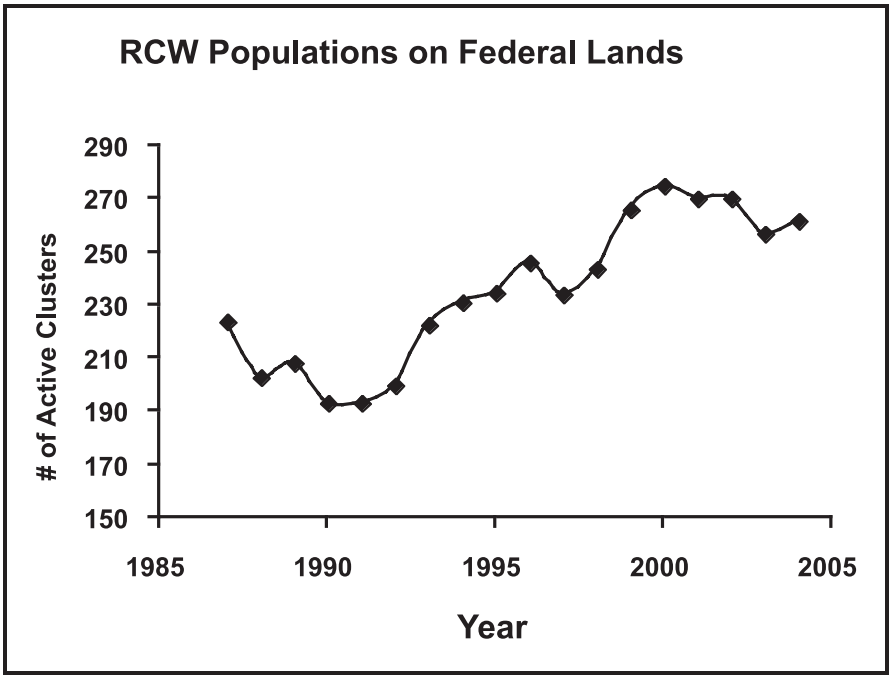

Figure 1. Red-cockaded Woodpecker (RCW) populations on federal lands between 1983 and 2005 in Texas as measured by the number of active woodpecker clusters.

Between 1996 and 1998, litigation against the U.S. Forest Service in Texas by the Sierra Club and Texas Committee on Natural Resources again impacted Red-cockaded Woodpecker management, but this time it impaired necessary management. Preliminary injunctions in 1997 and 1998 from Judge Richard Schell, a federal judge in Beaumont, Texas, brought the use of prescribed fire, thinning, and hardwood midstory control to a complete stop on most national forests in Texas (*Sierra Club et al. v. Glickman et al., Case No. L-85–69-CA*). Concurrent with the absence of management for the Red-cockaded Woodpecker was a halt in the population increase and a gradual population decrease on federal lands in Texas between 2000 and 2004 (Fig. 1).

Close up of Red-cockaded Woodpecker (*Picoides borealis*). Photo by Craig Rudolph and Richard Conner.

Populations on Private Lands. Private lands in eastern Texas support more than 30 Red-cockaded Woodpecker groups. Management on private lands was not directly affected by endangered species litigation that occurred on the national forests. However, litigation against the U.S. Forest Service and observed declines on private lands increased the awareness and concern of some private landowners, which had an effect on their forest management by the mid 1990s. Prior to 1997 Red-cockaded Woodpecker populations on private lands declined steadily (Fig. 2). After 1998, voluntary enrollment by some landowners in the Regional Habitat Conservation Plan for the Red-cockaded Woodpecker on Private Lands in East Texas (Texas RCW HCP) and more than $400,000 in funds provided by the U.S. Fish and Wildlife Service improved management on private lands at several locations, Scrappin' Valley, Brushy Creek, North Boggy Slough, Cook's Branch, and others, helped stabilized total population numbers on private lands. On two sites, thinning, hardwood midstory control, prescribed burning, artificial cavity installation, and translocation of woodpeckers to replace lost breeders were implemented as part of active management programs. The population at Cook's Branch and Scrappin' Valley offset the continuing losses that occurred on Brushy Creek/Boggy Slough and on Louisiana-Pacific lands (Fig. 2, Table 1). Red-cockaded Woodpeckers on the Louisiana-Pacific lands will likely be extirpated during the next few years (Table 1); their lands containing a single active woodpecker cluster have been sold recently.

Populations on State Lands. During the past 15 years Red-cockaded Woodpeckers were present on the I. D. Fairchild and the W. Goodrich Jones State Forests, the Huntsville State Fish Hatchery, and Pine Park (now extirpated) on Texas Department of Transportation lands near Hemphill, Texas (Table 1). Recovery of woodpecker populations on these four areas is hampered by their small land base, their isolation from other larger populations, and the fact that surrounding lands are either young forest or non-forest habitat. Translocation of woodpeckers to replace lost breeders has not been part of the management in these two small populations on the state forests. Use of prescribed fire has been constrained, primarily on the W. G. Jones State Forest, because of surrounding residential development. As a result of these problems, the woodpecker populations on the two state forests combined have declined by 41% over the past 15 years (Fig. 2, Table 1). Red-cockaded Woodpeckers disappeared from Pine Park near Hemphill soon after their foraging habitat on private forest lands surrounding the park was harvested during the early 1990s.

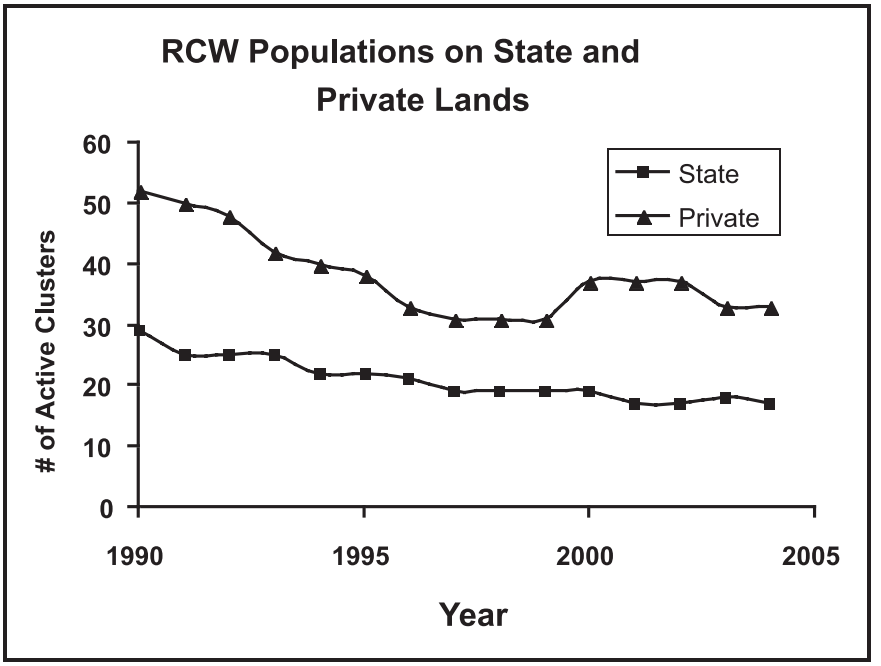

Figure 2. Red-cockaded Woodpecker (RCW) populations on state and private lands between 1990 and 2005 in Texas as measured by the number of active woodpecker clusters.

DISCUSSION

Habitat management for Red-cockaded Woodpeckers is essential in present-day forest landscapes (Conner et al. 2001). The observed population declines and extirpation are ample evidence that the Red-cockaded Woodpecker can not survive without management in the absence of the historic fire regimes that maintained the open character of the pine uplands inhabited by the woodpecker, particularly in the smaller, isolated populations (Saenz et al. 2001). The historic fires that burned unchecked across the landscape day and night and prevented the encroachment of off-site hardwood vegetation in the pine uplands are no longer possible (Conner et al. 2004). Roads, reservoirs, non-forest habitat, and fire suppression greatly reduce the hectares burned by natural lightning-ignited fires on present-day landscapes. Many historic fires were likely of human origin (e.g., ignited by Native Americans), a much less common event in modern forests. Prescribed fire, which is an essential tool for today's forests, is difficult to implement because of the risk of escape (wildfire), air quality issues, and liability issues for property damage from escaped fire and indirect damage from vehicle accidents on smoked-out highways.

Red-cockaded Woodpecker populations on national forest lands will increase or decrease depending on the efficacy of future management. The ability of the U.S. Forest Service to manage habitat, especially using prescribed fire to control encroaching hardwoods, providing an adequate supply of older pines and artificial cavities, and translocating birds to address demographic issues, will depend on internal and external factors. Litigation initiated by the Sierra Club and the Texas Committee on Natural Resources in 1987 resulted in greatly improved forest management for Red-cockaded Woodpeckers and subsequent woodpecker population increases on national forests from 1988 to 2000. Why these same organizations are now pursuing litigation to stop management needed to recover the endangered woodpecker is unknown.

Red-cockaded Woodpecker populations on state and private lands will likely continue to dwindle in the future. There is no large land base on state lands to support large viable populations. The largest population on state lands is on the W. G. Jones State Forest and its close proximity to Houston, Texas, greatly hinders the ability to implement an aggressive prescribed fire program. The future of woodpecker populations on private lands is usually tied to the economic interests of the landowner. On private industrial lands, woodpecker management conflicts with optimization of timber production (Conner et al. 2001). On non-industrial private lands, there is often pressure from owners to develop the land for other uses, particularly residential, if the lands supporting the woodpecker populations are close to urban centers. The woodpecker population increase observed on Cook's Branch (Table 1), near Houston, Texas, demonstrates that knowledgeable landowners who implement proper forest management can make a significant contribution to the recovery of an endangered species.

Non-industrial private landowners usually can not afford the cost of the management necessary to sustain small populations of Red-cockaded Woodpeckers, and typically do not have a sufficiently large land base to provide habitat for a viable population. There is currently insufficient economic incentive to increase Red-cockaded Woodpecker populations on industrial forestlands. As with non-industrial private landowners, current forested state lands in Texas do not have a sufficient land base to manage a self-sustaining, viable population. The future of Red-cockaded Woodpeckers in Texas will likely depend most on federal lands on the national forests. The land base is present on national forests to contain large, viable populations, and there is a legal requirement to recover the woodpecker on federal lands (Conner et al. 2001, USFWS 2003). It is fortunate that science-based management is available with a demonstrated ability to increase woodpecker populations (Conner et al. 2001, USFWS 2003). Science-driven forest management is essential for the recovery of the endangered Red-cockaded Woodpecker in Texas and throughout the rest of the South (Saenz et al. 2001); it is vital for agencies managing for the woodpecker to be able to do their job without unnecessary litigation.

ACKNOWLEGDMENTS

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HABITAT USE OF BREEDING BIRDS IN RIPARIAN FOREST OF THE LOWER RIO GRANDE VALLEY OF TEXAS

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Riparian-dependent birds have been negatively impacted by habitat loss and severe deterioration of this habitat, over this past century. In the Lower Rio Grande Valley (LRGV) of Texas, once-abundant riparian bird species

Plain Chachalacas (*Ortalis vetula*) were present at all three sites. Photo by Larry Ditto.

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The decline in Altamira Orioles (*Icterus gularis*) at Santa Ana NWR may be due to the loss of tall trees needed for nesting. Photo by Michael Patrikeev.

have either disappeared or persist only in very small numbers. Qualitative comparisons of early accounts of bird abundance along the Rio Grande in the 1870s and more recent accounts of south Texas bird abundance indicate declines of many historically abundant species rarely or never seen today, such as Tropical Parula (*Parula pitiayumi*), Summer Tanager (*Piranga rubra*) and Audubon's Oriole (*Icterus graduacauda*) (Sennett 1879, Brush 2005). Preservation of bird populations and conservation of biodiversity depends upon identification and preservation of habitat conditions that support healthy (self-sustaining) populations of coexisting species (BBIRD 1994). Breeding biology and habitat information is lacking for most non-game bird species particularly for subtropical birds breeding along the border with Mexico. Few studies have been conducted on actual nesting bird densities and the effects of discrete variables including corridor width.

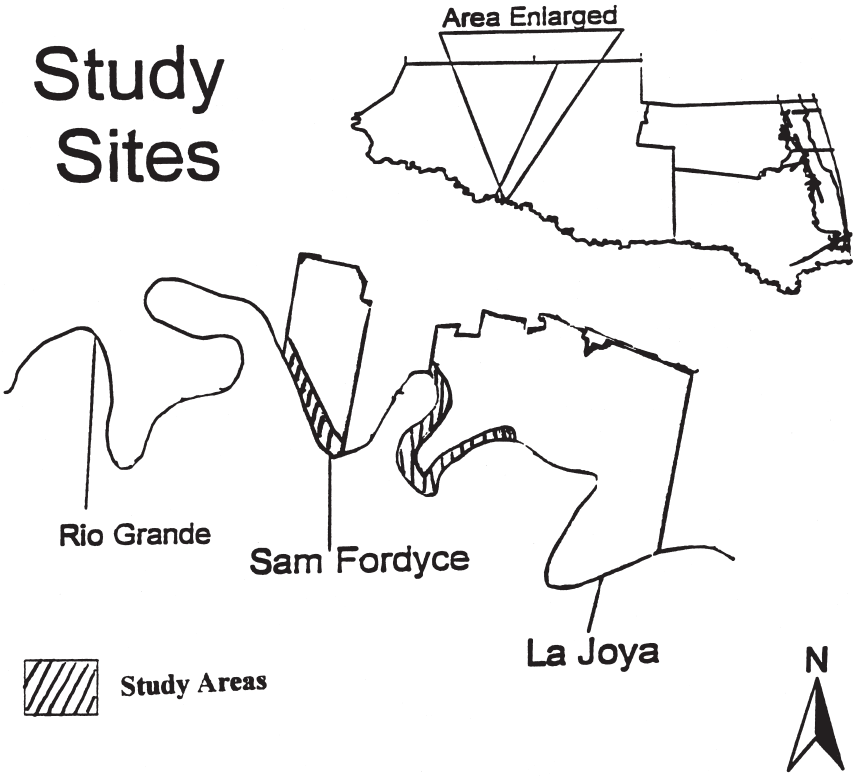
Historically, the LRGV consisted of forests of palms, mesquites, anacua, ebony and other subtropical, tropical and temperate zone trees (Lehman 1969). Prior to European colonization, human disturbance in the valley was minimal, and large tracts of tall riparian forest lined the lower Rio Grande and old river channels (Sennett 1879). Since the 1920's, riparian forests in Texas have been removed at an accelerated rate due to increased agricultural, municipal and recreational developments along the Rio Grande (Jahrsdoerfer and Leslie 1988). Of the many bird species breeding in the LRGV, those requiring riparian habitat may have been the most impacted by habitat loss and deterioration over the past century. Human modifications of the Rio Grande, especially Falcon Dam, which was completed in 1953, resulted in less frequent to nonexistent flooding. This has caused the loss or severe deterioration of many riparian forests along the banks of the river from the dam to the Gulf of Mexico (Jahrsdoerfer and Leslie 1988). Some of the riparian species such as the Summer Tanager, Gray-crowned Yellowthroat (*Geothlypis poliocephala*), and Yellow-breasted Chat (*Icteria virens*) have almost completely disappeared from the LRGV as breeders, while others such as the Red-billed Pigeon (*Patagioenas flavirostris*), Rose-throated Becard (*Pachyramphus aglaiae*), and Tropical Parula persist in small numbers and have an uncertain future (Brush 2005). Similar events have been well documented along the middle Gila River and the lower Colorado River in the southwestern U.S. (Rea 1983, Rosenberg et al. 1991).

Riparian birds and their habitats appear to have declined more severely than species using Tamaulipan thorn forest habitats in the LRGV. Thorn forests are represented to a greater extent within protected federal, state and private lands of the LRGV and may be easier to regenerate on former agricultural fields. At several protected sites within the LRGV, thorn forest has replaced or is currently replacing deteriorating riparian forest. A recent study of mixed forest within Santa Ana National Wildlife Refuge, Texas has already shown

increases in thorn forest birds such as Olive Sparrows (*Arremonops rufivirgatus*), Long-billed Thrashers (*Toxostoma longirostre*) and Northern Cardinals (*Cardinalis cardinalis*), while riparian species such as the Red-billed Pigeon and Rose-throated Becard have declined or remain low in numbers (Gehlbach 1987, Brush and Cantu 1998). Even species such as the Altamira Oriole (*Icterus gularis*) which forage readily in thorn forest have declined at Santa Ana NWR, probably due to the loss of tall trees as nesting sites (Hathcock and Brush 2004). While most LRGV forest birds have declined, those species dependent on tall riparian forest appear to be at the greatest risk (Brush 2005). The goal of this study is to give insight into the breeding bird status in tall riparian forest on the Lower Rio Grande National Wildlife Refuge and discuss implications for management of riparian birds in these areas.

STUDY AREAS

This study was conducted on two Lower Rio Grande Valley National Wildlife Refuge tracts (LRGVNWR) containing tall riparian forest in southwestern Hidalgo County, Texas. These riparian tracts were chosen in consultation with LRGVNWR staff because they were considered to be some of the highest quality LRGV riparian habitat remaining. The first tract, Sam Fordyce, was located four miles (6.4 km) southwest of La Joya, Texas along the Rio Grande. This tract was the largest of the study, but most of it was abandoned agricultural field or upland thorn-scrub and riparian habitat existed only in narrow strips along the river. The widest section (with an average width of 128.4 m) contained approximately 15 ha of riparian habitat and the narrowest section (with an average width of 29.4 m) contained approximately 3.5 ha of riparian habitat. It was divided into Sam Fordyce Narrow, Sam Fordyce Agriculture, and Sam Fordyce River, as discussed in Methods below. The other site was the La Joya tract, approximately 2 miles (3.2 km) south of La Joya, Texas along the river and it contained approximately 16 ha of riparian habitat (with an average width of 96 m).



Map of study sites, two Lower Rio Grande Valley National Wildlife Refuge tracts.

METHODS AND MATERIALS

This study covered two complete, consecutive breeding seasons 1 March through 1 August 1996 and 1997. To determine breeding bird densities a total of 80 plots were placed in the three sites (the greatest width at Sam Fordyce, the narrowest width at Sam Fordyce and La Joya) using a randomized block pattern to reduce the probability of chance segregation as described by Hurlbert (1984). Each plot measured 31 m $\times$ 20 m (0.062 ha). Sam Fordyce contained 20 plots adjacent to the river (SF-river) and 20 plots, which were placed parallel to the first set but 40 m in from the rivers high bank (SF-agriculture).

Twenty plots were placed along the river with no pairing due to narrow corridor width at La Joya and a narrow section at Sam Fordyce (SF-narrow).

Each established plot was searched following Martin and Geupel's (1993) methodology, which included watching bird behavior and following birds to nests. Each plot was visited and searched at least once every other week, although most plots were searched weekly throughout the breeding season. Once nests were located, they were monitored every 2 to 5 days until fledging, predation or abandonment. Diversity indices were calculated using the Shannon diversity index for each site and separated by year (MacArthur and MacArthur 1961).

To quantify the habitat characteristics at each study site we used a simple point quarter technique (Brower et al. 1990). Two points were established at the 5 m and 25 m mark in each of the randomly placed plots using a meter tape stretched from the northeast corner to the southwest corner. This allowed for 120 points of data to be collected (two per plot). In addition to collecting data on the density of the trees we recorded the height of the trees, the diameter at breast height, and canopy cover (using a densiometer). Ground cover was also determined at each point, using a 1 m $\times$ 1 m square. We estimated its percent cover. An importance value was determined for each species (Brower et al. 1990). Descriptive statistics were calculated for each of the habitat characteristics and an ANOVA with a Tukey-Kramer Post Hoc test was used to compare habitats between sites. The habitat variables were then paired and analyzed with nesting densities, number of species and the number of successful nests using multiple linear regression. The statistics were calculated using SYSTAT. To estimate vegetation volume using the habitat variables we took all of the variables and assigned a rank value from the least (a one) to the greatest (a four) at each site. We used the mean value of tree density, canopy cover and ground cover for ranking, since these variables would contribute the most to vegetation volume. We used the standard deviation to rank tree height and basal area (dbh) as these variables would contribute to greater vegetation volume by having the greatest variability. Once we ranked each variable for each site, we added the ranks of all five variables for each site and created a point-quarter volume rank. The site with largest number or rank had the greatest vegetation volume and the site with the smallest number had the smallest vegetation volume. we then used this point-quarter volume rank to compare nesting densities and species richness with vegetation volume to determine if nesting densities and species richness were highest in the highest volume site.

RESULTS

Nineteen total bird species were detected nesting along the Rio Grande in the two sites (Table 1). Of these, 15 species occurred at the widest section at Sam Fordyce (SF), 9 species occurred at Sam Fordyce's narrow section and 18 occurred at La Joya (LJ). In 1996, within the plots, LJ and the widest section of Sam Fordyce (SFW) had similar species diversity followed by the narrowest section at Sam Fordyce (SFN) (Table 2). In 1997, within the plots, LJ and SFW were equally diverse in species followed by SFN. There were no Rose-throated Becards, Tropical Parulas, Gray-crowned Yellowthroats, Yellow-breasted Chats, Summer Tanagers, Red-billed Pigeons, Audubon's Orioles or Hooded Orioles breeding on the study sites, and no individuals of these species were seen.

VEGETATION CHARACTERISTICS

Tree density. The LJ site had greater tree density than SF-agriculture, SF-river or SF-narrow (Table 3). ANOVA showed significant differences ($F = 8.125$, $P < 0.01$, 3df). Tukey-Kramer tests revealed tree density was greater at La Joya than SF-narrow ($P < 0.01$) and SF-agriculture had greater tree density than SF-narrow ($P < 0.01$) and SF-river had greater tree density than SF-narrow ($P < 0.05$).

Diameter at breast height. Tree diameters at breast height (DBH) does not seem to correspond with tree densities (Table 3). SF-narrow had the largest average tree diameters at breast height. The other three areas,

Table 1. List of bird species observed nesting on Lower Rio Grande Valley National Wildlife Refuge tracts in southwesternmost Hidalgo County, Texas.

Common name (*scientific name*)	**SFW[1]**	**SFN[2]**	**LJ[3]**
Green Heron (*Butorides virescens*)		X	
Plain Chachalaca (*Ortalis vetula*)	X	X	X
White-winged Dove (*Zenaida asiatica*)	X	X	X
Mourning Dove (*Zenaida macroura*)	X		X
White-tipped Dove (*Leptotila verreauxi*)	X	X	X
Yellow-billed Cuckoo (*Coccyzus americanus*)	X	X	X
Groove-billed Ani (*Crotophaga sulcirostris*)	X		X
Common Pauraque (*Nyctidromus albicollis*)			X
Golden-fronted Woodpecker (*Melanerpes aurifrons*)	X		X
Brown-crested Flycatcher (*Myiarchus tyrannulus*)	X	X	X
Great Kiskadee (*Pitangus sulphuratus*)	X	X	X
Couch's Kingbird (*Tyrannus couchii*)	X	X	X
Green Jay (*Cyanocorax yncas*)	X		X
Black-crested Titmouse (*Baeolophus atricristatus*)			X
Northern Mockingbird (*Mimus polyglottos*)			X
Long-billed Thrasher (*Toxostoma longirostre*)	X	X	X
Olive Sparrow (*Arremonops rufivirgatus*)	X		X
Northern Cardinal (*Cardinalis cardinalis*)	X		X
Altamira Oriole (*Icterus gularis*)	X		X

[1]Sam Fordyce wide section (river and agricultural edges combined)
[2]Sam Fordyce narrow section
[3]LaJoya

Yellow-billed Cuckoo (*Coccyzus americanus*) feeding young at nest. Photo by Michael Patrikeev.

The Golden-fronted Woodpecker was not recorded at the Sam Fordyce narrow tract. Photo by Michael Patrikeev.

SF-river, SF-agriculture, and La Joya followed with lesser values (Table 3). ANOVA showed significant differences of diameter at breast height ($F = 2.87$, $P < 0.05$, 3df). Tukey-Kramer tests revealed SF-narrow had greater DBH's than SF-agriculture ($P < 0.05$).

Tree height. The average height of trees was greater at La Joya then either SF-river, SF-agriculture, or SF-narrow (Table 3). ANOVA showed significant differences ($F = 4.542$, $P < 0.01$, 3df). Tukey-Kramer tests indicated that the La Joya tract had greater tree heights than SF-agriculture ($P < 0.01$).

Table 2. Shannon Diversity Indices for bird species of the study sites within the plots.

	1996				1997			
	H′	**J′**	**s**	***n***	**H′**	**J′**	**s**	***n***
SF-Narrow	0.99	1	2	2	2.7	0.95	7	11
SF-Wide	3.3	0.88	13	33	3.4	0.9	14	54
La Joya	3.3	0.94	11	24	3.4	0.92	13	25

H′ = Shannon diversity index; J′ = Species evenness, s = Number of species, *n* = total number of individuals

Table 3. Mean tree density, diameter at breast height (DBH), tree height, canopy cover and ground cover of the study sites, $n = 20$ (standard deviations in parentheses).

	SFN[1]	**SFR**[2]	**SFA**[3]	**LJ**[4]
Tree Density/m^2 (s)	0.031 (0.023)	0.066 (0.029)	0.083 (0.057)	0.088 (0.044)
DBH cm (s)	19.3 (5.5)	18.1 (5.06)	15.2 (3.73)	17.2 (3.84)
Tree Height m (s)	7.26 (1.34)	7.58 (1.046)	6.53 (1.4)	8.02 (1.43)
Canopy cover (s)	0.69 (0.228)	0.82 (0.165)	0.71 (0.295)	0.87 (0.144)
Ground cover (s)	0.44 (0.263)	0.68 (0.218)	0.56 (0.305)	0.41 (0.253)

[1]Sam Fordyce Narrow
[2]Sam Fordyce River
[3]Sam Fordyce Agriculture
[4]La Joya

Canopy cover. Canopy cover was slightly greater at La Joya than SF-river followed by SF-agriculture and SF-narrow (Table 3). ANOVA showed significant differences ($F = 3.306$, $P < 0.05$, 3df). Tukey-Kramer tests revealed that La Joya had a greater canopy cover than SF-narrow ($P < 0.05$).

Ground Cover. Ground cover varied little and did not show any inverse relationship to canopy cover (Table 4). SF-river had the greatest amount of ground cover followed by SF-agriculture then SF-narrow and finally La Joya (Table 3). ANOVA showed significant differences ($F = 4.483$, $P < 0.01$, 3df). Tukey-Kramer tests suggested SF-river had a greater ground cover than La Joya ($P < 0.01$) and SF-narrow ($P < 0.05$).

Vegetation volume. La Joya had the greatest estimated vegetation volume followed by SF-river and SF-agriculture, then SF-narrow (Table 5).

Importance values. Sugar hackberry (*Celtis laevigata*) was the most abundant tree dominating all other species in all four areas of the study sites (Table 6). Huisache (*Acacia minuata*) was the next most important species at SF-agriculture and SF-narrow while Mexican ash (*Fraxinus berlandieriana*) was the next most important species at La Joya. Black Willow (*Salix nigra*) was the second most important species at SF-river.

AVIAN COMMUNITY CHARACTERISTICS

Bird species richness. SF-agriculture had the largest number of breeding bird species followed by La Joya, SF-river and finally SF-narrow (Table 7). ANOVA showed significant differences between the numbers of breeding bird species among sites ($F = 7.436$, $P < 0.01$, 3df). Tukey-Kramer tests revealed SF-river had greater species richness than SF-narrow ($P < 0.05$), SF-agriculture had greater species richness than SF-narrow ($P < 0.01$), and La Joya had greater species richness than SF-narrow ($P < 0.01$).

Nests per plot. The pattern shown by the number of nests per plot was very similar to species richness pattern. SF-agriculture had the greatest nesting density followed by La Joya, SF-river and SF-narrow (Table 7). ANOVA showed significant differences ($F = 7.190$, $P < 0.01$, 3df). Tukey-Kramer tests revealed SF-agriculture had greater nesting density than SF-narrow ($P < 0.01$) and the La Joya site indicated greater nesting density than SF-narrow ($P < 0.01$).

The relationship between all of the habitat variables and corridor width could not explain the variation in the number of nests ($R^2 = 0.084$, $P > 0.05$) and the number of species ($R^2 = 0.048$, $P > 0.05$).

Table 4. Correlations of habitat characteristics, $n = 80$ (r^2 in parentheses).

	Tree Density	DBH	Tree Height	Canopy Cover	Ground Cover	Plot Width
Tree Density	—					
DBH	0.19982	—				
Tree Height	0.040613	0.423641	—			
Canopy Cover	0.334798	0.020018	0.323716	—		
Ground Cover	0.18784	0.0122	0.060627	0.13671	—	
Site Width	0.390231	0.23031	0.05886	0.141865	0.265316	—

Table 5. Point-quarter volume ranks of the four study areas.

Study Sites	Tree Density	Basal Area	Tree Height	Canopy Cover	Ground Cover	Volume Rank	Nest Density	Species Richness
Sam Fordyce Narrow	0.031[1]	5.5[4]	1.34[2]	0.69[1]	0.44[2]	10	1	1
Sam Fordyce Wide Ag.	0.083[3]	3.73[1]	1.4[3]	0.71[2]	0.56[3]	12	4	4
Sam Fordyce Wide River	0.066[2]	5.06[3]	1.05[1]	0.82[3]	0.68[4]	13	2	2
La Joya	0.088[4]	3.84[2]	1.43[4]	0.87[4]	0.41[1]	15	3	3

[1-4]Rank from lowest value to highest value

Table 6. Importance values for tree species in the four study areas.

Species	SFWR[1]	SFWA[2]	SFN[3]	LJ[4]
Salix nigra	27.7	3.9	13.2	19.4
Baccharis neglecta	4.5	5.3	0	0
Celtis laevigata	208.1	148.6	134	198.5
Celtis pallida	2.3	0	7.4	2.2
Ulmus crassifolia	2.4	7.6	2	21.2
Fraxinus berlandieriana	24.7	29.2	18.2	44.8
Tamarix gallica	7.7	0	0	0
Parkinsonia aculeate	4.9	5.7	33.7	0
Acacia minuata	17.7	97.7	50.3	7.2
Snag (sp. Unknown)	0	0	0	6.6
Bothriochloa barbinodis[5]	0	1.9	4.8	0
Leucaena pulverulenta	0	0	24.3	0
Ehretia anacua	0	0	3.7	0
Prosopis glandulosa	0	0	8.3	0

[1]Sam Fordyce Wide River
[2]Sam Fordyce Wide Agriculture
[3]Sam Fordyce Narrow
[4]La Joya
[5]Actually a grass species, but important cover where tree species were not present

DISCUSSION

The bird community on these study sites in southwestern Hidalgo County is a depauperate riparian community, missing many species common in the late 19th and early 20th centuries. Species typical of tall forests were not present and species remaining were those which were able to nest in thorn forest and are common throughout the LRGV today (Gelbach 1987, Brush and Cantu 1998). As discussed below, habitat quality, corridor width and plot size may all be factors contributing to their decline.

We found very little statistical correlation between nesting densities or species richness and corridor width. If correlations in reality existed at the sites, our selection of plot size (31 m $\times$ 20 m), may not have been large enough to fully detect them. We do not feel that the plot size hampered our ability to analyze habitat within the plots however, nesting birds may have been dispersed throughout the tracts in such a manner that the plots would not have adequately sampled them. In hindsight, we may have been better served to select larger plots for sampling.

Despite the small plots and lack of statistical correlation we did detect trends in habitat size with nesting densities and species richness. We found increased nesting densities and species richness in wider corridors, however, this trend was not statistically confirmed and corridor width remains non-useful as a predictor of species richness and nesting density along the Lower Rio Grande. Our statistical findings may suggest a weak trend towards support of

Table 7. Mean number of species per plot, number of nests per plot and successful nests per plot of the study sites, $n = 20$.

	SFN[1]	SFN[2]	SFA[3]	LJ[4]
Species/plot (s)	0.65 (0.875)	1.65 (1.09)	2.3 (1.147)	2.15 (1.387)
Nests/plot (s)	0.65 (0.875)	1.8 (1.361)	2.7 (1.565)	2.4 (1.7)
Success/plot (s)	0.05 (0.222)	0.5 (0.827)	0.74 (0.805)	0.9 (1.07)

[1]Sam Fordyce Narrow
[2]Sam Fordyce River
[3]Sam Fordyce Agriculture
[4]La Joya

White-tipped Doves (*Leptotila verreauxi*) remain a common species in the Texas LRGV. Photo by Michael Patrikeev.

other studies, which showed that nesting densities and species richness increased in wider corridors (Hodges and Krementz 1996). Other studies have also shown positive correlations of increased species richness with increased area, although not necessarily riparian corridors (Grover and Slater 1994, Bellamy et al. 1996, Telleria and Santos 1994, Galli et al. 1976). Most of these increasing areas were much larger than the areas of our study. Hodges and Krementz (1996) had three corridor widths to compare and the smallest of their study, 350 m, was much wider than our largest site (<130 m) and Telleria and Santos (1994) worked with sites up to 350 ha.

The following studies had sites ranging from less to greater area than our sites. Grover and Slater (1994) had sites of <10 ha, <30 ha, and >50 ha while our largest plot was 16 ha. They saw trends of increasing species diversity, even at their smaller sites. Galli et al. (1976) choose study sites from 0.01 ha up to 24 ha and they also found increasing species diversity starting with the smallest tract. Bellamy et al. (1996) study sites ranged from 0.02 ha to 29.9 ha and they found increasing species richness as the area increased. Although we were unable to statistically detect this trend, we observed a general increase in species richness and nesting density with increasing area from 10 ha, 15 ha and 16 ha tracts but that trend did not occur with regards to corridor width because our largest size tract was the intermediate corridor width. It is possible that corridor width had very little correlation with nesting density and species richness due to their very small size relative to other studies. The size and width of even our largest tract may not have been large enough to detect changes in nesting densities and species richness. If Hodges and Krementz (1996) were correct, to see an increase in nesting densities and species richness in the Lower Rio Grande Valley riparian corridor, the width of the corridors would have to be increased.

Studies in Arizona suggested breeding bird densities (which we consider to be similar to our nesting densities and species richness) were highly correlated with total vegetation volume, which was calculated by measuring vertical vegetation layers with a pole (Mills et al. 1991). Other studies in New Mexico found that as bird densities increased so did vegetation complexity, which was measured by recording plant cover (Naranjo and Raitt 1993). Although we did not measure vegetation volume directly, we have estimated this with the vegetation variables we recorded: tree densities, dbh, canopy cover, tree height, ground cover and point-quarter volume. These measurements alone or combined could not explain the variation in nesting density or species richness using multiple regression analysis. However, there was a definite trend of the point-quarter volume ranks with nesting density and species richness among the sites (Table 5).

Another possible factor that may influence nesting densities and species richness in these study areas was plant composition. Characterization of vegetation structure on a small scale may be valuable because plant composition may be related to food and the subsequent foraging (and nesting) behavior of birds (Bersier and Meyer 1994, Fuller and Henderson 1992). The trees at all four-study areas were dominated by sugar hackberry.

Pauraque (*Nyctidromus albicollis*) were noted at only one of the three sites. Photo by Michael Patrikeev.

However, the occurrence of subdominant species shows variability between the study areas (Table 6). For example, three of the sites were most similar to Vora's (1990) description of "riverbank" (riparian forest) at Santa Ana National Wildlife Refuge where as Sam Fordyce narrow was more similar to an early successional stage of "floodplain-bottomland" (mixed forest with elements of riparian and thorn forest). Sam Fordyce narrow had the lowest occurrence of sugar hackberry and the lowest occurrence of Mexican ash relative to the other sites and the composition of the subsequent tree species showed the highest occurrence of retama (*Parkinsonia aculeata*), tepeguaje (*Leucaena pulverulenta*), mesquite (*Prosopis glandulosa*), anacua (*Ehretia anacua*) and the second highest occurrence of huisache. All other sites were dominated by riparian tree species, however, succession may have been occurring on those sites as well. The addition of these species may indicate a kind of reverse succession (xerification) toward thorn forest, like what has occurred in parts of Bentsen-Rio Grande Valley State Park and Santa Ana National Wildlife Refuge (T. Brush, pers. obs.).

The fact that riparian sites had significantly higher nesting densities and species richness is typical of riparian habitat (Knopf and Samson 1994). Sam Fordyce Narrow's low nesting density and low species richness may be attributed to its thorn forest tree composition. This is a disturbing trend considering the probability of this continued habitat succession. In an earlier study at Santa Ana National Wildlife Refuge, Texas, Brush and Cantu (1998) speculated that the bird community had changed due to lack of periodic flooding along the river. Some species, such Olive Sparrow, Long-billed Thrasher, and Northern Cardinal increased, while others, such as Altamira Oriole and Red-billed Pigeon declined.

In addition to habitat quality, habitat fragmentation may help explain some of the differences in nest density and breeding bird species diversity. Sam Fordyce Narrow, which had the lowest nesting density and species richness, was the narrowest tract and was bordered by replanted retama. One possibility is that bird species were not pressured to nest in the narrow riparian strip and were utilizing this adjacent area. This is unlikely, though, due to the fact that few bird species are known to nest in retama-dominated habitats (T. Brush, pers. obs.). The greater width of the other tracts may have attracted some species which did not nest in Sam Fordyce-Narrow.

Additional inquires into the size of habitat blocks and their effect on species diversity and nesting densities in areas with more habitat such as Santa Ana National Wildlife Refuge, Texas may help to resolve the question of how wide a corridor must be and how habitat juxtaposition affects the avian community. Corridor width, habitat characteristics and plant compositions suggest negative effects on riparian species. There seems to be evidence that the corridor width may not be wide enough to support greater species diversity and nesting success. Habitat characteristics and plant composition suggest succession away from riverbank habitat that

may be vital for rare riparian species. With this in mind, increasing acquisition or revegetation of wider and larger tracts, as well as habitat management in favor of traditional riparian tree species is suggested.

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SHORT COMMUNICATIONS

FIRST DOCUMENTED RECORD AND PROBABLE NESTING OF THE TROPICAL PARULA (*PARULA PITIAYUMI*) IN TRAVIS COUNTY

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The Tropical Parula (*Parula pitiayumi*) is a resident from northern Mexico south to South America. In the United States its summer range extends into extreme southern Texas where it occasionally overwinters (Regelski and Moldenhauer 1997). It breeds mainly in Kenedy, Hidalgo, Willacy and Brooks Counties with rare and local summer residents north along the coast to Calhoun and Victoria Counties (Lockwood and Freeman 2004). Sightings have occurred on the southern Edwards Plateau and along the Devil's River in Val Verde County where nesting is suspected. In 2001, a pair unsuccessfully nested in Davis Mountains State Park, Jeff Davis County (Lockwood and Freeman 2004).

We observed a pair of Tropical Parulas on 11 and 12 May, 2005 within the Hamilton Pool Nature Preserve, Travis County, TX (UTM: z14, 0582929 E, 3357689 N). The male sang from various perches and appeared to patrol a territory along a creek within a limestone canyon containing mainly Texas oak (*Quercus buckleyi*), Arizona walnut (*Juglans major*), Texas ash (*Fraxinus texensis*), black cherry (*Prunus serotina*), cedar elm (*Ulmus crassifolia*), and abundant epiphytic growth. On May 11th the male and female were observed both carrying food items. On May 12th, the male and female were observed within the same area. The male was singing and reacted strongly to the playback of a recorded Northern Parula (*Parula americana*), flying close to the speaker and counter singing. The male Tropical Parula had black lores and lacked any white around the eye. It had a distinct orange breast band with extensive yellow towards the belly. On the female faint eye arcs and yellow extending from the breast towards the belly were noted. The birds appeared to interact as a pair. When the male chipped in response to our presence the female approached the location and chipped. Also when we used playback of a recorded Northern Parula the female flew in briefly as the male sang in the vicinity of the speaker. Northern Parulas are regular breeders at Hamilton Pool Nature Preserve, and a singing male Northern Parula was observed within 100 meters of the Tropical Parulas. We also received reports from several observers of the Tropical Parula pair's continued presence at the same location through the beginning of June 2005.

From the aforementioned observation we conclude that the pair was nesting. This marks the first documented record of the species in Travis Co. (S. Ashbaugh pers. comm.) and one of the most northeastern breeding records of the species. The location in Travis Co. is approximately 420 km north from known breeding areas. North of the Rio Grande Delta, breeding range expansion into oak woodlands (*Quercus virginiana*) has been suspected due to recent fire suppression (Regelski and Moldenhauer 1997). Our observation is further evidence that there exists a breeding range overlap with the Northern Parula, possibly representing a zone of hybridization (Brush 2005).

Tropical Parulas are listed as threatened by the state of Texas (Campbell 2003) and due to the small populations found in remaining forest tracts, its continued existence in the Lower Rio Grande Valley is uncertain (Brush 1999). Conservation threats include habitat loss and degradation, pesticides and pollution, and brood parasitism (Regelski and Moldenhauer 1997). Due to its similarities in appearance and song to the closely related Northern Parula, the Tropical Parula can easily be overlooked in areas where Northern Parulas are regular breeders. We suggest further surveys of suitable habitat within the general area of the recent sighting in order to monitor whether the species is expanding its range, understand the entire distribution of the species in Texas, and study possible range overlap effects of the two parula species.

We thank D. W. Pogue for reviewing the manuscript. We would also like to thank T. Brush for his advice and correspondence.

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ON FEEDING AND NESTING BEHAVIOUR OF PYRRHULOXIA (*CARDINALIS SINUATUS*) IN LOWER RIO GRANDE VALLEY

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The Pyrrhuloxia (*Cardinalis sinuatus*) is a common and widespread passerine of mesquite brushland in central and south Texas (Tweit and Thompson 1999, Tweit 2003). The Pyrrhuloxia is an opportunistic feeder, heavily exploiting a varied food supply "taking a wide variety of seeds, as well as grasshoppers, caterpillars, beetles, stinkbugs and cicadas" (Oberholser 1974, Tweit and Thompson 1999). According to Oberholser (1974) this species gleans insects from trees and shrubs when feeding fledglings.

In May 2005, I observed several pairs of Pyrrhuloxia in Chihuahua Woods Preserve (Hidalgo County, Texas). The Chihuahua Wood is a small (141 hectare = 349 acres) tract of Tamaulipan Thornscrub protected by the Nature Conservancy since 1991. The site is known for its diverse cactus flora and consists of almost impassible thickets formed by Texas prickly pear (*Opuntia engelmannii var. lindheimeri*), brasil condalia (*Condalia hookeri*), catclaw acacia (*Acacia greggii*), etc. (The Nature Conservancy 2005), and also relatively open honey mesquite (*Prosopis glandulosa*) woodlands with some patches of Texas prickly pear. Access to many parts of

Figure 1. Walking stick or stick insect (*Diapheromera sp.*). Bentsen State Park, Hidalgo County. 12 May 2005. Photo by Michael Patrikeev.

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Figure 2. Male Pyrrhuloxia (*Cardinalis sinuatus*) has just delivered a stick insect to the young. Chihuahua Woods Preserve, Hidalgo County. 15 May 2005. Photo by Michael Patrikeev.

the preserve is difficult owing to impenetrable thickets, but some trails run through Chihuahua Woods making access easier.

According to the Nature Conservancy (Undated) the Pyrrhuloxia is an occasional non-breeding species in the preserve, however, my observations showed that this species was an uncommon nesting species at this site in 2005. At least four pairs were observed in the central part of the preserve and 2 nests were found. Singing was recorded as early as 23 February and continued through March and early April. Northern Cardinal (*Cardinalis cardinalis*) also occurs in Chihuahua Woods, although it prefers denser areas of thornscrub at the north end.

The Pyrrhuloxia nests were constructed of thorny twigs and placed in the forks of honey mesquite, one at 1.4–1.5 m and another at 3.5 m. Both nests were in a relatively open low mesquite brushland (canopy height c. 3.5–4.5 m) with patches of Texas Prickly Pear. Tweit (2003) reported the honey mesquite as the most commonly nest tree used by this species in Texas.

At one nest, I noticed Pyrrhuloxias carrying what appeared to be long green twigs to the nest. Subsequent observations from a blind revealed that the "green sticks" were in fact stick insects (Diapheromera sp.) (Figure 1). Many of walking sticks brought to the nest were green, some had legs while others had legs removed. Two species of walking sticks are known to occur in the area. *Diapheromera tamaulipensis* and *D. velii eucnemis* (M. Quinn, Texas Parks and Wildlife Department, pers. comm.). It is not known to me whether these two species undergo dramatic increases in their numbers, but another species, the common walkingstick (*D. femorata*), does have population explosions (Helfer 1953). It's likely that being an opportunistic forager, the Pyrrhuloxia quickly switches to the most abundant food supplies when one becomes available, e.g., stick insects in this case. The only other identifiable food item brought to the nest was a small green caterpillar.

Figure 3. Green Jay (*Cyanocorax yncas*) at the pyrrhuloxia nest. Chihuahua Woods Preserve, Hidalgo County. 15 May 2005. Photo by Michael Patrikeev.

Observations at the nest were made between 13 and 17 May 2005 on an opportunistic basis, e.g., 1755–1930 on 13 May, 0825–1130 and 1800–1850 on 15 May, and 1035–1435 on 17 May (a total of 9 hours and 20 minutes of observation). Walking sticks were brought to the young on 35 of 55 visits recorded (63.6% of all prey delivered). On average, stick insects were brought at a rate of 3.89 per hour (STD ± 2.76) while other prey items at 2.22 per hour (STD ± 1.86). However, statistically, the number of stick insects delivered to that nest was not significantly greater than other food items combined ($t=1.504$, $P = 0.152$). Both male and female fed the young (Figure 2); on average the male fed 2.38 times per hour (STD ± 1.51) and female 3.13 per hour (± 2.23). According to Wilkie (1995) the female makes c. 5 trip/hour, and male 2/hour, but in our case, partners' nest attendance efforts were more closely related. At some point, on 15 May, when the female disappeared for over 40 minutes (between 1025 and 1125) the male fed the young, although he did not shade them even though the young were visibly uncomfortable (temperatures reached at least +34°C in the afternoon). When two young were in the nest, food was delivered 6.5 times per hour (STD ± 2.08) and when only one young remained: 4.5 ± 3.69. When only one nestling remained in the nest, the female did not shade it, although often remained close to the nest for periods of time. The last young still remained in the nest on 18 May. The nest was empty on 24 May, but the male remained nearby. It corresponds with Tweit's (2003) data that young birds leave the nest at 10–13 days after hatching.

PREDATION

When the nest was found on 10 May, it contained 4 small young (2–3 days old). Only 3 young remained in the nest on May 13, only 2 on May 14 and 15, and only one on May 17. Nest predation was extremely high in nesting birds in Chihuahua Woods in May and June 2005 (Patrikeev, in prep.), especially in species nesting in Texas Prickly Pear. Snakes and/or rodents may be the cause, although solid evidence is lacking. In this case, a possible explanation was a visit paid by a Green Jay (*Cyanocorax yncas*) on 15 May. The jay came c. 1100 when no Pyrrhuloxias were present at the nest. It landed in the mesquite just above the nest (Figure 3) and looked into it, but was scared by the observer's movement in the blind. It's possible that the jay was after the young, and it was responsible for predation of Pyrrhuloxia young from this nest. Green Jays occur in thornscrub at the north end of the preserve, but none was observed in mesquite woodlands (where Pyrrhuloxias breed) until this occurrence. It is quite possible that this Green Jay had followed a Pyrrhuloxia carrying food to the nest.

The Green Jay is reputed to take eggs and nestlings of other birds, e.g., White-eyed Vireo, and probably " . . . Thrashers, Orioles, Sparrows, Wrens, Chats, Mockingbirds" (Smith 1910). Oberholser (1974) also wrote that "Many early day (ca. 1870–1951) settlers from the Rio Grande delta claimed that the present jay's [Green Jay] diet consisted almost wholly of corn and eggs of chicken and White-winged Doves". Surprisingly, no instances of nest predation were observed during recent studies in South Texas (Gayou 1984, Brush 2005). It is possible that Green Jay predation on other bird nests is significant, especially where jay numbers have been kept high by feeding program through the winter, e.g., in Bentsen - Rio Grande Valley State Park (Patrikeev, in prep.).

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FORAGING IN INSECT SWARMS BY EASTERN PHOEBES

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The Eastern Phoebe (*Sayornis phoebe*) is a common and widespread species of tyrant flycatcher (*Tyrannidae*), which winters throughout the southeastern United States, reaching peak concentrations in eastern and central Texas and northern Florida (Weeks 1994). This species generally inhabits both woodlands with streams and rocky ravines, and edge habitat in the vicinity of water (Bent 1942, Teres 1980, American Ornithological Union 1983). *S. phoebe* generally forages by sally forth from a perch about 10 m from the ground (Via 1979). Flycatching is the principal method of feeding with most often a solitary capture of prey in a sally (Via 1979, Weeks 1994). The diet consists largely of flying insects, which are mainly pursued by flycatching; however, prey items are also gleaned from the ground, leaves and other substrates (Weeks 1994). Via (1979) found 78% of prey captures by hawking and 22% by gleaning from different substrates. Fitzpatrick (1980) suggested the species may feed more often by gleaning from objects on the ground.

We observed foraging Eastern Phoebes in state, county, and city parks in Bastrop, Colorado, Hays, Travis and Williamson counties of Texas from November 2004 through February 2005 because of the high seasonal abundance, and the assumption phoebes concentrated only on foraging and other self-maintenance behaviors. Observations began 1 minute after a bird was located or when a bird made a foraging movement. We monitored time periods using a stopwatch. Each attempt at prey capture was considered a foraging movement (Murphy 1987) because of difficulty in determining the success of an attempted prey capture. We used Fitzpatrick's (1980) classification of tyrannid prey capture methods to characterize foraging movements. We ended an observation when the bird flew out of sight, had an intra or interspecific interaction, after collecting $\geq$ 4 minutes of observational time, or if the bird indicated an awareness of our presence.

In February 2005, we observed Eastern Phoebes on 5 different occasions actively foraging into flying insect swarms over flowing streams and in grassland habitats. The phoebes made a series of back-and-forth flights in rapid succession through insect swarms. During flights within swarms, the phoebes made a side-to-side jerking motion with their head. Based on the jerking head movements, we presumed more than 1 prey item was taken during each foraging event. The Torrent Tyrannulet (*Serpophaga cinerea*) exhibited similar behavior alongside flowing water, but the Black Phoebe (*Sayornis nigricans*), a congener of the Eastern Phoebe, did not forage in a similar manner (Smith 1971).

Conrad and Robertson (1992) theorized that Eastern Phoebes fed on an unusually large emergence of aquatic insects in calculating forage trips to feed nestlings. However, Conrad and Robertson (1992) did not mention observations of a back-and-forth flight or feeding in the emergent insect swarms. Jung (1926), Binford (1957), and Eaton and Hernandez (2005) also reported foraging by Eastern Phoebes in association with stream-type habitats.

The behavior we observed may be a case of opportunistic foraging upon an abundant prey. Instead of the usual perching after each prey capture, the phoebes may have taken advantage of additional prey items located in a high density patch near an available perch. In doing so, the phoebes may have been conserving energy during foraging. The Eastern Phoebes may have taken advantage of swarming insects for no other reason than an energetic gain for self-maintenance; however, these birds may have benefited from an abundant energy source in preparation for an eminent migration and breeding. An alternate explanation is that swarming insects may not be as energetically beneficial to Eastern Phoebes as larger prey items; therefore, an individual would have to catch more prey to fulfill its energetic requirements. The close proximity of smaller-size prey and birds closer to each other may make such foraging energetically worthwhile. There is a possibility that not all jerking motions were

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Eastern Phoebes (*Sayornis phoebe*) are usually found in the vicinity of water along streams, edge habitat and in ravines. Photo by Greg Lavaty.

attempts to capture prey. We had difficulty determining whether each jerking motion resulted in the capture of prey, or whether some movements repositioned the head for a better view of the insect swarm or capture of prey. A video recording of this behavior may more accurately depict the precision of insect predation.

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Long-billed Thrashers (*Toxostoma longirostre*) seem to be increasing in Texas thorn forest. Photo by Michael Patrikeev.

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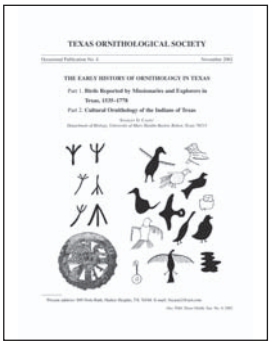

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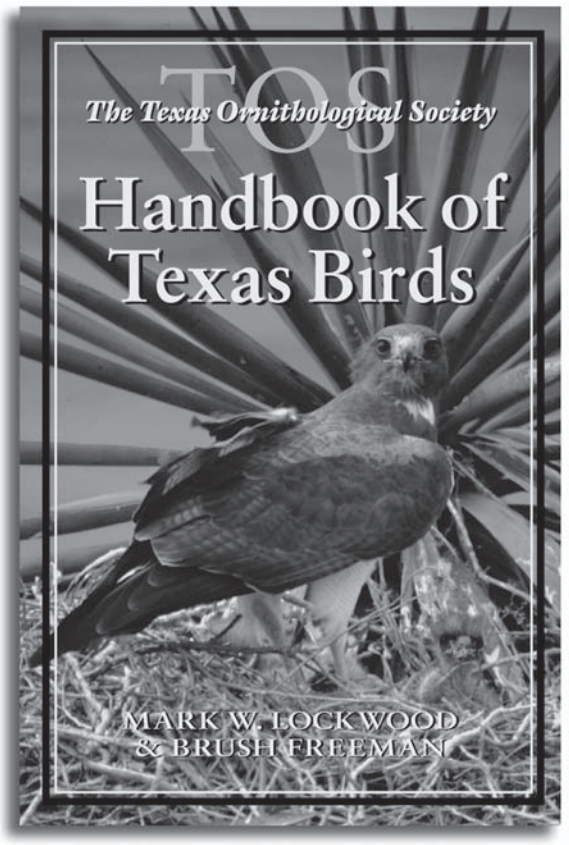

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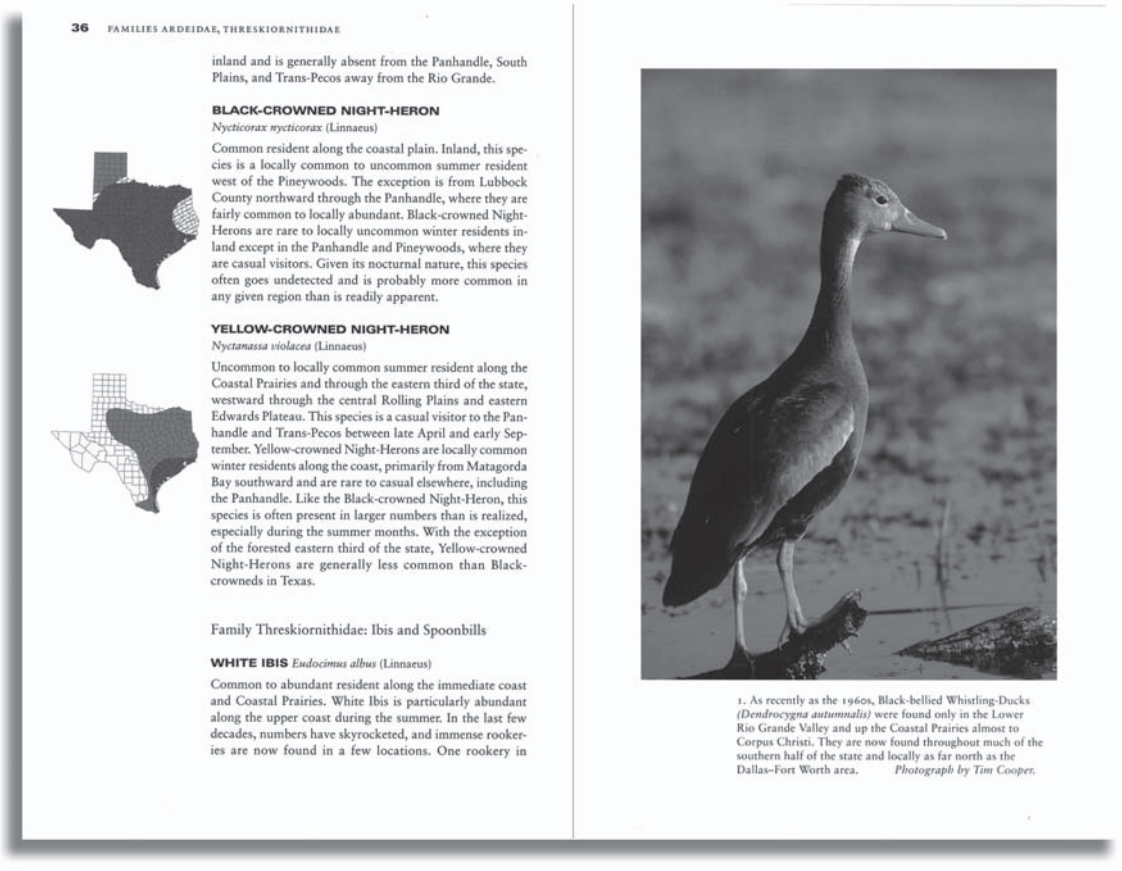

36 FAMILIES ARDEIDAE, THRESKIORNITHIDAE

inland and is generally absent from the Panhandle, South Plains, and Trans-Pecos away from the Rio Grande.

BLACK-CROWNED NIGHT-HERON
Nycticorax nycticorax (Linnaeus)

Common resident along the coastal plain. Inland, this species is a locally common to uncommon summer resident west of the Pineywoods. The exception is from Lubbock County northward through the Panhandle, where they are fairly common to locally abundant. Black-crowned Night-Herons are rare to locally uncommon winter residents inland except in the Panhandle and Pineywoods, where they are casual visitors. Given its nocturnal nature, this species often goes undetected and is probably more common in any given region than is readily apparent.

YELLOW-CROWNED NIGHT-HERON
Nyctanassa violacea (Linnaeus)

Uncommon to locally common summer resident along the Coastal Prairies and through the eastern third of the state, westward through the central Rolling Plains and eastern Edwards Plateau. This species is a casual visitor to the Panhandle and Trans-Pecos between late April and early September. Yellow-crowned Night-Herons are locally common winter residents along the coast, primarily from Matagorda Bay southward and are rare to casual elsewhere, including the Panhandle. Like the Black-crowned Night-Heron, this species is often present in larger numbers than is realized, especially during the summer months. With the exception of the forested eastern third of the state, Yellow-crowned Night-Herons are generally less common than Black-crowneds in Texas.

Family Threskiornithidae: Ibis and Spoonbills

WHITE IBIS *Eudocimus albus* (Linnaeus)

Common to abundant resident along the immediate coast and Coastal Prairies. White Ibis is particularly abundant along the upper coast during the summer. In the last few decades, numbers have skyrocketed, and immense rookeries are now found in a few locations. One rookery in

1. As recently as the 1960s, Black-bellied Whistling-Ducks *(Dendrocygna autumnalis)* were found only in the Lower Rio Grande Valley and up the Coastal Prairies almost to Corpus Christi. They are now found throughout much of the southern half of the state and locally as far north as the Dallas–Fort Worth area. *Photograph by Tim Cooper.*

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