Photos by © Gary H. Rosenberg of Tucson, Arizona:
Mourning Warbler (*Oporornis philadelphia*)
Empire Gulch, Pima County, Arizona, 1 June 2011.

These two photos illustrate the “visual” variation in amount of black perceived by an observer. In Dunn and Garrett’s warbler book, Plate 23 shows two illustrations of a spring adult Mourning Warbler, one with a gray throat and one with black extending all the way to the chin. These photos show that the same individual can show both features depending on the angle from which one views the bird.
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Front cover photo by © Charles W. Melton of Hereford, Arizona: Fan-tailed Warbler (Euthlypis lachrymosa), Madera Canyon, Santa Cruz County, Arizona, 24 May 2011.

Back cover “Featured Photos” by © Peter Pyle of Point Reyes Station, California: Indigo Bunting (Passerina cyanea) more than one year old, captured 18 April 2011 in Cameron Parish, Louisiana, following eccentric prealternate molt (top); Indigo Bunting more than one year old, captured 8 March 2010 in Oaxaca, Mexico, in definitive basic plumage (bottom).

Western Birds solicits papers that are both useful to and understandable by amateur field ornithologists and also contribute significantly to scientific literature. The journal welcomes contributions from both professionals and amateurs. Appropriate topics include distribution, migration, status, identification, geographic variation, conservation, behavior, ecology, population dynamics, habitat requirements, the effects of pollution, and techniques for censusing, sound recording, and photographing birds in the field. Papers of general interest will be considered regardless of their geographic origin, but particularly desired are reports of studies done in or bearing on North America west of the 100th meridian, including Alaska and Hawaii, northwestern Mexico, and the northeastern Pacific Ocean.

Send manuscripts to Kathy Molina, Section of Ornithology, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, CA 90007. For matters of style consult the Suggestions to Contributors to Western Birds (at www.westernfieldornithologists.org/docs/journal_guidelines.doc).

Good photographs of rare and unusual birds, unaccompanied by an article but with caption including species, date, locality and other pertinent information, are wanted for publication in Western Birds. Submit photos and captions to Photo Editor. Also needed are black and white pen and ink drawings of western birds. Please send these, with captions, to Graphics Manager.
ABSTRACT: In this its seventh report, the Arizona Bird Committee reviews 501 records and updates the Arizona bird list through 2009, adding 12 species: the Black-vented Shearwater, (Puffinus opisthomelas), Black Turnstone (Arenaria melanocephala), Lesser Black-backed Gull (Larus fuscus), Royal Tern (Thalasseus maximus), Tufted Flycatcher (Mitrephanes phaeocercus), Couch’s Kingbird ( Tyrannus couchii), Gray-collared Becard (Pachyramphus major), Brown-chested Martin (Progne tapera), Sinaloa Wren (Thryothorus sinaloa), Winter Wren (Troglodytes hiemalis), Brown-backed Solitaire (Myadestes occidentalis), and White-winged Crossbill (Loxia leucoptera). The records of the Gray-collared Becard, Sinaloa Wren, and Brown-backed Solitaire are the first accepted for the United States, and that of the Brown-chested Martin is the first for the western United States. Acceptance of the Brown-backed Solitaire in Miller Canyon, Huachuca Mountains, in 2009 prompted reevaluation and acceptance of the record of this species in Madera Canyon in 1996, in spite of the unanswered question of the birds’ origin; the Brown-backed Solitaire is popular as a cage bird in Mexico, but the individuals seen in Arizona were in the species’ mountain forest habitat and remote from plausible sources of escapedes.

This is the seventh published report of the Arizona Bird Committee (hereafter ABC) (see Speich and Parker 1973, Speich and Witzeman 1975, Rosenberg and Witzeman 1998, 1999, Rosenberg 2001, and Rosenberg et al. 2007). This report covers records mainly from the period between 2005 and 2009 but also includes a scattering of recently reviewed records from prior years. The ABC reviewed a total of 501 records (some with multiple submissions from several observers), of which 436 (87%) were accepted. Twelve species were added to the state list, the Black-vented Shearwater (Puffinus opisthomelas), Black Turnstone (Arenaria melanocephala), Lesser Black-backed Gull (Larus fuscus), Royal Tern (Thalasseus maximus),

Other highlights in this report include acceptance of Arizona’s fourth Trumpeter Swan (*Cygnus buccinator*), second and third Eurasian Green-winged Teals (*Anas crecca crecca*), fifth and sixth Yellow-billed Loons (*Gavia adamsii*), fourth Yellow-crowned Night-Heron (*Nyctanassa violacea*), first confirmed nesting of the Short-tailed Hawk (*Buteo brachyurus*), second Pacific Golden-Plover (*Pluvialis fulva*), fourth and fifth Northern Jaçanas (*Jacana spinosa*), a flock of 13 White-rumped Sandpipers (*Calidris fuscicollis*), third through fifth Buff-breasted Sandpipers (*Tryngites subruficollis*), second and third Ruby-throated Hummingbirds (*Archilochus colubris*), third Yellow-bellied Flycatcher (*Empidonax flaviventris*), third Nutting’s Flycatcher (*Myiarchus nuttingi*), third Carolina Wren (*Thryothorus ludovicianus*), third Blue Mockingbird (*Melanotus caerulescens*), first confirmed nesting of the Crescent-chested Warbler (*Oreothlypis superciliosa*), and third through fifth Tropical Parulas (*Parula pitiayumi*).

The current Arizona Bird Committee (2011) consists of Andrew Core, Narca Moore-Craig, Pierre Deviche, Paul Lehman, Michael Moore, Molly Pollock, Kurt Radamaker, and Gary H. Rosenberg (who also serves as secretary). Recent committee members who also voted on records in this report include Charles Babbitt, Chris D. Benesh, Gavin Bieber, Troy Corman, Henry Detwiler, Ken Kertell, Dave Stejskal, and Mark M. Stevenson. Janet Witzeman serves in a nonvoting capacity as assistant secretary and has done so since the inception of the committee in the early 1970s.

The ABC’s web site, http://abc.azfo.org, includes the Arizona state list, the ABC’s bylaws, a list of current committee members, a brief history of the ABC, and all past reports of the ABC (as published in *Western Birds*). The list of species currently reviewed is at http://abc.azfo.org/lists/review_list.html, and an electronic form for reporting is available at www.azfo.org/AZFOPhotoSubmit/ABCSubmitMain.aspx.

The ABC encourages observers to submit documentation for species on the review list, as well as species new for Arizona. All material should be submitted via the electronic link above or sent to Rosenberg at the address above. The committee would like to emphasize the importance of submitting documentation of sightings directly to the ABC for review. The posting of reports, including those with written descriptions, on local “listserves” may not safely be assumed to have been discovered by the ABC nor safely be assumed to be intended as documentation of a rarity. The ABC prefers reports submitted directly to the committee or to the regional editor for *North American Birds* (who forwards the material on review-list species to the secretary of the ABC). The ABC thanks the many observers (375+) who have submitted their documentation of sightings to the ABC, without whom there would be no report.

Each record listed below includes a locality, county (abbreviation: see below), date (span normally as published in *North American Birds*), and
initial observer if known. Additional observers who submitted written reports (as indicated by the symbol †), photographs, video recordings, and sound recordings are also listed. All records are of sight reports unless noted otherwise with a symbol for a photograph, sound recording, or specimen. The ABC’s current policy as of 2011 is to review individuals returning for multiple years if the individual has left and then returned. Individuals that persist for multiple years without leaving will not be reviewed again. In most cases, the total number of records in the state for a species includes the number of records accepted by the ABC and those published in Birds of Arizona (Phillips et al. 1964) or the Annotated Checklist of the Birds of Arizona (Monson and Phillips 1981) prior to the inception of the ABC. The ABC emphasizes that a report listed in the “reports not accepted” section does not necessarily mean that the members of the ABC “do not believe” the observer but rather that the documentation supplied to the committee was insufficiently detailed or may not have met the rigorous standards established individually and independently by each member of the committee in order for the sighting to be substantiated as a formal historical record. The ABC endeavors to be fair and objective with regard to evaluation of all reports.

The ABC’s abbreviations for counties in Arizona are APA, Apache; COS, Cochise; COC, Coconino; GIL, Gila; GRA, Graham; GRE, Greenlee; LAP, La Paz; MAR, Maricopa; MOH, Mohave; NAV, Navajo; PIM, Pima; PIN, Pinal; SCR, Santa Cruz; YAV, Yavapai; YUM, Yuma. Other nonstandard abbreviations commonly used within this report include †, written description; N. W. R., national wildlife refuge; ph., photograph; s.r., sound recording; v.r., video recording.

The numbers appearing in parentheses (n, n, n) after each species name represent the following. The first number is the total number of reports published by Phillips et al. (1964) and Monson and Phillips (1981) if the species was included on the ABC’s first checklist compiled in 1972 and the record specifies a date and location. A few reports from Monson and Phillips (1981) from before 1972 that were later reviewed and published by the ABC are not included in the pre-committee total. Additionally, a few reports from Monson and Phillips (1981) after 1971 that were not reviewed by the committee may be included in the pre-committee total. The “#” symbol in this location represents a number indeterminate because the species was not recognized at that time and was not on the review list. The second number is the number of reports reviewed and accepted by the Arizona Bird Committee since its inception in 1972, excluding the records accepted in this report. Also, certain species (e. g., Red-eyed Vireo and Bobolink) were originally on the ABC review list in 1972, removed from that list in the 1970s, then reinstated in the 1990s. Therefore, this second number represents only those records the committee has accepted and does not include reports published while the species was not on the review list. The third number is the number of records of the species published in this report. Adding all three numbers yields the total number of records accepted by the ABC. All totals reflect the number of reports and not the number of individuals. For example a report of 200 Least Storm-Petrels at Lake Havasu, MOH, after Tropical Storm Nora 26 Sep 1997 is treated as one record.
FULVOUS WHISTLING-DUCK *Dendrocygna bicolor* (6, 2, 6). One was at Scottsdale, MAR, 10 Nov 2005 (*†*ME; ph. GWa), one was at Red Mtn. Park, Mesa, MAR, 4 Dec 2005–25 Feb 2006 (MT; ph. MW), and another, thought to be a different individual, was at Chaparral Park, Scottsdale, MAR, 2–29 Dec 2005 (HBo; ph MW, JBu, PD, RD). Possibly the same individual then moved to McCormick Ranch, Scottsdale, MAR, 7 Jan–28 Feb 2006. Another (or the same) was at McCormick Ranch, Scottsdale, MAR, 3–28 February 2007 (ph. JHo). A high count of 12–16 (and possibly up to 18) was at Green Valley, PIM, 3 Dec 2005 (ph. CTr). Three were at Gilbert Water Ranch, MAR, 11 Jun 2008 (†, ph. BGr). After a relative hiatus of reports through the 1980s and 1990s, during the early 2000s numbers of this species appear to be on the increase. The relatively large number of individuals found in the state in late 2005 corresponded with a similar influx of this species at the Salton Sea in southern California at that same time, where numbers of the Fulvous Whistling-Duck have collapsed in recent decades (Hamilton 2008).

BRANT *Branta bernicla* (2, 8, 2). Single individuals were along the Colorado River near Ehrenberg, LAP (seen on both sides of the river), 27 Nov 2005 (ph. RHi) and at Willcox, COS, 29 Apr 2008 (ph. PDC). We believe all Brant reaching Arizona to be Black Brant (*B. b. nigricans*).

CACKLING GOOSE *Branta hutchinsii* (2, 2, 10). Accepted records of this species, first recognized as such by the A. O. U. checklist committee in 2004 (Banks et al. 2004), are of two on a pond in Avondale, MAR, 13 Feb 2006 (†, ph. MMo), one at a pond in Goodyear, MAR, 30 Oct 2006–25 Feb 2007 (ph. JJ; †DPO), three at McCormick Ranch in Scottsdale, MAR, 1–9 Jan 2007 (TC; ph. PD), one at Goodyear, MAR, 20 Jan 2007 (ph. MHe), one at Flagstaff, COC, 19–21 Nov 2007 (ph. JC), one at Granado Lake, APA, 2 Dec 2007 (PK), one at St. David, COS, 19–24 Dec 2007 (†DSm; ph. SH), three at Sun Lakes, MAR, 19 Jan 2008 (ph. TC), two at Cibola N. W. R., LAP, 30 Nov 2009 (†PL, BC), and four at Whitewater Draw Wildlife Area, COS, 13 Dec–26 Feb 2009 (MTu; †, ph. MSh, REW). The ABC was interested in reviewing all “small” white-cheeked geese, particularly given the difficulty in distinguishing subspecies *taverneri* of the Cackling Goose from subspecies *parvipes* of the Canada Goose (*B. canadensis*). While some of the Cackling Geese in Arizona were likely *B. h. minima* (the only subspecies mentioned for Arizona by Phillips et al. 1964), most committee members were hesitant to identify the recently reported birds to subspecies. As yet, the Aleutian Cackling Goose (*B. h. leucopareia*) is unconfirmed in Arizona, though now the predominant subspecies of Cackling Goose in southern California. Given that it is now clear that the Cackling Goose is a rare but regular winter visitor to Arizona, the ABC removed it as a review species in 2009. Sketch details are requested for inclusion of reports of this species in *North American Birds*.

TRUMPETER SWAN *Cygnus buccinator* (0, 3, 1). A group (family?) of six (two adults, four juveniles) was at Kino Springs, Nogales, SCR, 6–9 Jan 2006 (†R&RT; ph. LSm, †J&MH), then at the Corona de Tucson sewage-treatment plant, PIM, 15–26 Jan 2006 (BHW; ph. AT, MMS). Iliff et al. (2007) noted an increase in the number of reports of Trumpeter Swans in California. The ABC continues to regard this species’ occurrence in Arizona a result of birds dispersing from “wild” populations (see Rosenberg et al. 2007), unless the birds are marked in a way that links them to a relocation program.

(EURASIAN) GREEN-WINGED TEAL *Anas crecca crecca* (1, 0, 2). One male was at Gilbert Water Ranch in Gilbert, MAR, 2 Mar 2008 (†, ph. PD, MMo), and another male was at Tempe Town Lake, MAR, 9 Jan–1 Mar 2009 (MyS; ph. PM; †, ph. PD; see *N. Am. Birds* 63:304). Both individuals were stunning males showing
no visible signs of intergradation. Previously, the only Arizona record of this distinctive subspecies was a sighting at Picacho Reservoir, PIN, 18 Jan 1953 (Monson and Phillips 1981).

**BLACK SCOTER** *Melanitta americana* (0, 6, 8). All eight records accepted are of females or immature males: three at Ashurst Lake, COC, 2 Nov 2005 (†JPr; †, ph. CN), one at Saguaro Lake, MAR, 18 Feb–3 Mar 2006 (†SFr, JRs; ph. KR, MMS), another at Saguaro Lake, MAR, 21–25 Oct 2007 (KR, †, ph. DPr; ph. MMS), one north of Katherine Landing, MOH, 9 Dec 2007 (†SSc), one at Pittsburgh Point, Lake Havasu, MOH, 6 Nov–7 Dec 2008 (†, v.r. PL, †LHa), one at Parker Dam, LAP, 25 Nov–3 Dec 2008 (JRI, KBI, ph. DVP), one at Bill Williams Delta, MOH, 3–7 Dec 2008 (†DVP, LHs, †, v.r. PL), and three at Upper Lake Mary, COC, 22 Nov 2009 (†, ph. EH). The Black Scoter remains the scarcest of the three scoters in Arizona.

**RED-THROATED LOON** *Gavia stellata* (3, 7, 7). One was photographed on the Bill Williams arm of Lake Havasu, LAP, 9–26 Dec 2006 (†CBa, SST; ph. MMS, ph. DCi; see *N. Am. Birds* 61:308), and a second bird was at the same location, 16–17 Dec 2006 (†MMS, MP). Another was at Roper Lake, Safford, GRA, 2–8 Dec 2007 (KK, SSC; ph. MMS, TG; v.r. MP), one was at Willcox, COC, 8 Dec 2008 (ph. SH), one was at Site 6, Lake Havasu City, MOH, 2 Feb–6 Apr 2008 (†, ph. KR, CR, DPr; †, ph. SFz; ph. SMy), one was at Roosevelt Lake, GIL, 19 Jan 2009 (ph. TC), and one was near Litchfield, MAR, 15 Dec 2009 (ph. JA, LD). The number of Arizona records has nearly doubled since 2006.

**YELLOW-BILLED LOON** *Gavia adamsii* (0, 4, 2). One second-year bird on Lake Havasu at Lake Havasu City 11–12 Jan 2008 (†DKr, JRu) was likely the same individual photographed nearby 2 Feb–6 April 2008 (†, ph. KR, CR, †DPr; ph. BDe). This individual apparently lingered into summer, where it was seen and videotaped on the California side of Lake Havasu across from Site 6. An immature, remarkably late in the spring, was at Tempe Town Lake, MAR, 20–24 May 2008 (DBa; ph. MMO, PD, BGr, PM). All four previous records from Arizona are for winter.

**LEAST GREBE** *Tachybaptus dominicus* (4, 11, 1). One was at the Avra Valley sewage-treatment plant, PIM, 27 Jun–14 Jul 2006 (ph. DJS). This species had recently appeared to be on the increase (Rosenberg et al. 2007), but it remains a casual visitor from Mexico with only 16 records for Arizona.

**RED-NECKED GREBE** *Podiceps grisegena* (0, 7, 7). Though accidental in Arizona just a few years ago, the Red-necked Grebe is now on the increase. One adult was at Willcox, COS, 19 May 2005 (†, ph. DJS; ph. GHR, MMS), one was at Kearny Lake, PIN, 15 Nov–1 Dec 2006 (†DJ; ph. GHR, MMS; see *N. Am. Birds* 61:120), one immature was on the Bill Williams arm of Lake Havasu, LAP, 7 Dec 2006–20 Jan 2007 (KBI; ph. TG; ph. MMS), two immatures were at Mesquite Bay, Lake Havasu, MOH, 26 Dec 2006–8 Jan 2007 (SB; †, ph. MMS), with one at Lake Havasu City, MOH, 23 Feb 2007 (ph. KBr), possibly the same as one of those at Mesquite Bay, one was at Lake Havasu City, MOH, 12 Jan–2 Feb 2008 (DKr, JRu; †, ph. KR, CR, DPr), one was at Davis Dam, MOH, 30 Jan 2008 (†TC), and one was seen from Cottonwood Cove (in Nevada) across the Colorado River in Arizona waters, MOH, 12 Dec 2008 (†, ph. CLu).

**BLACK-VENTED SHEARWATER** *Puffinus opisthomelas* (0, 0, 1). One well-described individual was at the north end of Lake Havasu, MOH, 26 Sep 1997 (†RJ, †CBA, †BJ), blown in by Tropical Storm Nora, along with numerous Least Storm-Petrels (*Oceanodroma microsoma*) and Black Storm-Petrels (*O. melania*) (Jones 1999). Although this shearwater was not photographed, the ABC considered and eliminated similar (and much less likely) species of *Puffinus*. This record is the first for Arizona of this pelagic species that wanders north regularly into the northern Gulf of California.
WOOD STORK Mycteria americana (3, 8, 2). Five juveniles were at Mittry Lake, YUM, 16 Jun 2007 (ph. HD; see N. Am. Birds 61:625), and one was at Gilbert Water Ranch, MAR, 17 Aug–12 Sep 2009 (†, ph. TD; ph. BGr; see N. Am. Birds 64:185). This species remains a casual summer visitor from Mexico, with most of Arizona’s records preceding 1990. Numbers at the Salton Sea have also declined in recent years (Patten et al. 2003).

FRIGATEBIRD Fregata sp. (4, 2, 1). One juvenile frigatebird was photographed flying over Marana, PIM, 5 Aug 2006 (ph. DHo), but unfortunately the photo was not detailed enough for the species to be identified definitively. Though the Magnificent (F. magnificens) is presumed to be the frigatebird most likely to occur in Arizona, the ABC is hesitant to accept all frigatebirds as that species by default, given the records of the Lesser Frigatebird (F. ariel) from California (Sullivan et al. 2007) and Wyoming (Faulkner 2006). The Great Frigatebird (Fregata minor) has also occurred in North America (Pranty et al. 2008). Numbers of Magnificent Frigatebirds reaching southern California have declined sharply in recent years (Patten et al. 2003, P. E. Lehman pers. comm.). Phillips et al. (1964) treated Arizona’s first four frigatebirds as Fregata sp., as did the ABC with two subsequent records, whereas seven records (some supported with photographs) have been published in previous ABC reports as the Magnificent. A full review all of the Arizona reports of Fregata is warranted.

BLUE-FOOTED BOOBY Sula nebouxii (3, 3, 1). One individual was at Martinez Lake, YUM, 19 Sep 2009 (JCo, ph. HD), the first reported from Arizona since 1996. Several also reached the nearby Salton Sea in 2009, so an occurrence on the Colorado River was not surprising.

REDDISH EGRET Egretta rufescens (3, 19, 8). Accepted records were all of single immature dark-morph birds, at Patagonia Lake State Park, SCR, 22–24 Jul 2005 (DPr, MRe; †BS; ph. RCo, MB), at Willcox, COS, 13 Aug 2005 (GHa, PSw; †J&MH; †, ph. KR), below Painted Rock Dam, MAR, 5–31 Aug 2007 (BiG; ph. MMo), at the Yuma East Wetlands, YUM, 25 Aug–22 Sep 2007 (FP; ph. HD), in Marana, PIM, 4 Sep 2007 (†, ph. MMS; v.r. MP), at the Bill Williams delta, LAP, 15 Aug 2008 (†, ph. JRI), in Chandler, MAR, 27 Dec 2008–19 Jan 2009 (ph. DCl, JMa, JBu), at Gillespie Dam, MAR, 31 Jan 2009 (TC, ph. MHe), and in Glendale, MAR, 4 Aug 2009 (†JLD). Late summer continues to be the best time of year for this southern egret to wander north.

YELLOW-CROWNED NIGHT-HERON Nyctanassa violacea (1, 2, 1). One immature was among numerous Black-crowned Night-Herons (Nycticorax nycticorax) below Painted Rock Dam, MAR, 13 Aug–5 Sep 2005 (†, ph. BiG; ph. RJ; see N. Am. Birds 60:116). It established only a fourth accepted Arizona record.

GLOSSY IBIS Plegadis falcinellus (0, 2, 8). Accepted records are of two together in a flock of White-faced Ibises (P. chihi) at the Avra Valley sewage-treatment plant, PIM, 26 Aug 2005 (†, ph. MMS, †MP; ph. DJS, CDB; see N. Am. Birds 60:117), one at Rio Rico near Nogales, SCR, 23 Apr 2006 (ph. SFi, DJS), one at Willcox, COS, 10 Sep 2007 (ph. DJS), one near Poston, LAP, 27 April 2008 (†PL, †BC), one near Palo Verde, MAR, 23 Aug 2008 (†DPO), one adult near Avondale, MAR, 12 Apr 2009 (†, ph. TC), one adult near Poston, LAP, 21–31 May 2009 (†, v.r. PL, †BC), and one immature there 31 May 2009 (†PL). Presumed hybrids continues to pose an identification problem in Arizona (see Records Not Accepted), and the ABC accepts only reports specifying no red visible in the eye, no pinkish in the facial skin, and with thin facial stripes typical of the Glossy. Arizona’s first documented record of this expanding species was in May 2001.

ROSEATE SPOONBILL Platalea ajaja (2, 14, 9). One older record was accepted from Gillespie Dam, MAR, 18–20 Jul 1997 (†SP, †MMS). Eight additional accepted records suggest that the status of Roseate Spoonbill in Arizona is changing. One was
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near Catalina, PIM, 3 Sep 2005 (JSr, ph. BH), one was at Patagonia Lake State Park, SCR, 11–12 Sep 2005 (PW, ph. RTe), one was at Gila Bend Auxiliary Air Field, MAR, 20 Oct 2005 (ph. JZ), one was at the Avra Valley sewage-treatment plant, PIM, 18 Aug 2006 (ph. PS), two were at Empire Ranch, Las Cienegas National Conservation Area, PIM, 20 Aug, with one remaining there until 10 Sep 2006 (WR; ph. BR; ph. JN), one was in southwest Phoenix, MAR, 11 Sep 2006 (‡HD, RHa), one was at Yuma Main Drain, YUM, 26 Aug 2007 (ph. HD; see N. Am. Birds 62:121), and one was at Gilbert Water Ranch, MAR, 27 Sep–1 Oct 2008 (RCt, PM, CWe; †, ph. BGr). A comprehensive accounting of previously unreviewed reports from southern California, mostly from the Salton Sea region (Iliff et al. 2007), revealed that this species occurs in the Southwest (including southern Arizona) sporadically during the late summer, sometimes with many years between irruptions, but is numerous in occasional summers.

RED-SHOULDERED HAWK Buteo lineatus (1, 17, 13). One older record was accepted from Picacho Reservoir, PIN, 19 Dec 1997 (‡AJ). Also, one was at Sahuarita, PIM, 14–26 Nov 2007 (DT; ph. AC), another was at Yuma Main Drain, YUM, 16–17 Nov 2007 (DPo; v.r. MP), one was in southwest Phoenix, MAR, 16 Dec 2008 (†, ph. TC), one was in St. David, COS, 20 Feb 2008 (†, ph. CC), one was in Patagonia, SCR, 12–16 Mar 2008 (MK; ph. MB), one was at Big Springs Fire Station on the North Kaibab Plateau, COC, 1 Oct 2008 (ph. SPu), one was found injured at Meadowview, north of Kingman, MOH, 2 Oct 2008 (ph. TS1), one was at Queen Creek, PIN, 14 Feb 2008 (ph. JSc), one was at Willow Lake near Prescott, YAV, 3 Nov 2008–3 Jan 2009 (CTo; ph. RGr), one was near Parker, LAP, 28 Jul–25 Aug 2009 (ph. JHi), one was at Tres Rios, Phoenix, MAR, 22 Oct 2009 (ph. JRz), and one was at Willow Lake, YAV, 26 Oct 2009 (ph. FG). Adapting to urbanization, Buteo l. elegans has, over several decades, increased substantially in its core range in California (e. g., Bloom and McCrady 1996, Unitt 2004) and become annual in Arizona.

BROAD-WINGED HAWK Buteo platypterus (2, 18, 9). Accepted records are of one near Portal, COS, 13 May 1994 (†, ph. BZ), one immature at San Bernardino N. W. R., COS, 26 Apr 2005 (‡REW), one adult at Tonto Creek above Roosevelt Lake, GIL, 16 Apr 2006 (‡TM), one at Imperial N. W. R., YUM, 19 Apr 2007 (‡TA), one adult at Rio Verde Ranch, MAR, 19 Apr 2007 (TM; ph. GG), one adult at Page Springs, YAV, 29 Apr 2007 (ph. NG), one adult near Portal, COS, 11 Apr 2008 (‡RA), one at Dead Horse Ranch S. P., YAV, 24 Apr 2008 (‡DVP), one at Tumacacori National Historic Park, SCR, 25 May 2008 (‡JSp), and one in Peppersauce Canyon, PIN, 26 Sep 2009 (ph. BBo; †DJ). Like the Red-shouldered Hawk, the Broad-winged Hawk has become annual in Arizona, particularly at hawk-watch sites at the Grand Canyon. The ABC removed Broad-winged Hawk from its review list in 2009, but the editors of North American Birds still request sketch details for sightings away from the Grand Canyon.

SHORT-TAILED HAWK Buteo brachyurus (0, 11, 13). The Short-tailed Hawk continues to expand its range into and beyond southeastern Arizona. Accepted records are of one adult at Upper Pinal Mountain Picnic Area, Pinal Mts., GIL, 17–18 Jun 2005 (‡DPe), one adult at Barfoot Junction, COS, 13 Apr 2006 (AG; ph. ON), two juveniles near Barfoot Park, COS, 9–18 Aug 2006 (ph. JPi; †, ph. GW), suggesting successful nesting in the area, one near Miller Peak, Huachuca Mts., COS, 9 Aug–8 Sep 2007 (LHo; ph. PK), two light-morph adults nesting at Barfoot Park, COS, 25 May 2007 (ph. N&HS; Snyder et al. 2010), the first nesting confirmed in Arizona, one at upper Carr Canyon, Huachuca Mts., COS, 1 Aug 2008 (†, ph. JSm), one juvenile at Barfoot Park, COS, 8–11 Aug 2008 (ph. CDB, GS), one there 8–12 Aug 2009 (ph. MHN, SWH), one in Madera Canyon, SCR, 13 Sep 2008 (JHe; †, ph. DJS) and 14 May 2009 (‡CC), and one on Mount Bigelow, Santa Catalina Mts., PIM, 3 Sep 2009 (†, ph. JE, RPa). Away from the mountains, one was in Hereford (accepted
on a second round of voting), COS, 2 Aug 2008 (†BFi), and one juvenile was photographed in suburban Tucson, PIM, 11 Feb–13 Apr 2008 (†, ph. DJS; see N. Am. Birds 62:283) and 20 Nov 2008–14 Mar 2009 (ph. DJS, CC, AC, NH, DMc, BST). The bird wintering in Tucson was in an odd plumage. At first it was thought simply to be retaining juvenile feathers, but the question of possible hybridization has been raised. The committee plans to discuss the identity of this individual. The number of records likely includes many returning individuals.

PURPLE GALLINULE *Porphyrio martinica* (4, 6, 3). One adult was at the Sweet-water Wetlands in Tucson, PIM, 30 Jul–12 Aug 2006 (D&PP; ph. MMS), one immature was there 27 Aug–5 Sep 2008 (†, ph. PK), and one was at Gilbert Water Ranch, MAR, 2–8 Sep 2009 (ph. NN, PD, TT, BAm). This species remains a casual visitor to southern Arizona, with all records falling between June and early September.

AMERICAN GOLDEN-PLOVER *Pluvialis dominica* (21, 17, 8). One older record of one in basic plumage accepted from Willcox, COS, 1–3 July 2003 (†, ph. DJS). Other accepted records are of two individuals together at Gilbert Water Ranch, MAR, 23–24 Apr 2005 (BHi; ph. CMa; v.r. MRu), one in mostly basic plumage at Vicksburg, LAP, 27 Apr–3 May 2008 (†PL, †, ph. KR), one juvenile at Whitewater Draw Wildlife Area, COS, 25–26 Sep 2008 (PWa;†, ph. AC), one juvenile on the Santa Cruz Flats near Eloy, PIN, 24–26 Oct 2008 (†, ph. A&DK), one in basic plumage at Whitewater Draw Wildlife Area, COS, 4 May 2009 (JF; †, ph. DJS), another there 8 May 2009 (ph. DJS), and one molting into adult plumage at Roosevelt Lake, GIL, 16 May 2009 (†, ph. STj). Although the American Golden-Plover has become almost annual in Arizona, the ABC continues to review it because of its similarity to the Pacific Golden-Plover (*P. fulva*), of which there are now two Arizona records.

PACIFIC GOLDEN-PLOVER *Pluvialis fulva* (0, 1, 1). Arizona's second record was of one second-cycle male at Willcox, COS, 26–27 Jun 2009 (†, ph. MMS; ph. GHR, JMh, RT; Figure 1; see N. Am. Birds 63:672).

NORTHERN JACANA *Jacana spinosa* (0, 3, 2). One adult at Dave White Golf Course, Casa Grande, PIN, 1 Nov 2007–9 Apr 2008 (GK; v.r. MP; ph. ES, GHR; s.r. PD; see N. Am. Birds 62:188) and 8 Nov–18 Dec 2008 (ph. JWa), established a fourth record for Arizona. Arizona’s fifth record was of an immature, a first for the state in this plumage, at the Patagonia Lake spillway, SCR, 7 Oct 2008 (†, ph. MB).

UPLAND SANDPIPER *Bartramia longicauda* (3, 3, 1). One was seen and recorded as it flew over while the observer was recording vocalizations of grassland species near Sonoita, SCR, 24 Aug 2007 (s.r. JF).

RUDDY TURNSTONE *Arenaria interpres* (2, 3, 4). Accepted records are of one adult at Willcox, COS, 22 Jul–1 Aug 2007 (CLu, RM; ph. RS, MMS, RW; see N. Am. Birds 61:625), one juvenile at Aztec, YUM, 23–25 Aug 2007 (PN, ph. HD), one juvenile at Willcox, COS, 26 Sep–2 Oct 2008 (RM; ph. DBe, TR), and one juvenile there 4–7 Sep 2009 (†, ph. DJS, REW). In 1978, this species was removed from the review list and numerous reports were subsequently published in *American Birds* but not reviewed. The ABC reinstated the Ruddy Turnstone on the review list in 2007 because of a noticeable decrease in reports during the 1980s and 1990s. It remains a casual visitor to Arizona, with about 25 published records (many not reviewed), all but three from late July to mid-September.

BLACK TURNSTONE *Arenaria melanocephala* (0, 0, 1). A one-year-old at Willcox, COS, 2–5 Jun 2005 (RE; †, ph. MMS, RD, JEi; Figure 2) provided a first Arizona record. This species was considered long overdue, as it occurs regularly in the Gulf of California (Russell and Monson 1998) and nearly annually in spring at the Salton Sea in southeastern California (Patten et al. 2003). For a fuller account, see Stevenson (2005).
RED KNOT *Calidris canutus* (2, 6, 5). Five fall reports accepted, four of them from Willcox, COS, of one 3 Aug 2002 (SF); v.r. MP), one 29 July–1 Aug 2006 (ph. BM; ph. DBa, JLD, DN, TL), one juvenile 27 Oct 2007 (ph. RT), the latest recorded in Arizona, and one 11 Sep 2009 (*†*, ph. DJ). An additional bird was at the Glendale recharge basin, MAR, 7–8 Aug 2009 (ph. CBa, PM). The ABC removed the Red Knot from its review list in the late 1970s and reinstated it in 2002. It is a casual fall migrant in Arizona, surprising given its numbers at the Salton Sea (Patten et al. 2003). All records fall between mid-July and October; there are no spring records for Arizona.

WHITE-RUMPED SANDPIPER *Calidris fuscicollis* (0, 7, 4). Accepted records are of one at a shrimp pond near Dateland, YUM, 28 May 2005 (*†*HD), three at Willcox, COS, 6 Jun 2006 (*†*EW), a remarkable flock of 10–13 there 3–5 Jun 2009 (ph. GB, DJ; Figure 3; see *N. Am. Birds* 63:635), and one there 20–24 May, 2008 (*†*, ph. DPe; ph. MMS). These more than doubled the number of individual White-rumped Sandpipers recorded in Arizona.

BUFF-BREASTED SANDPIPER *Tryngites subruficollis* (0, 2, 3). After the long-awaited first two Arizona records in 2002, three additional records have been accepted. One was at Marana, PIN and PIM, 31 Aug–4 Sep 2007 (*†*, ph. MMS, v.r. MP; ph. DJ; see *N. Am. Birds* 62:121), two were at Paloma Ranch near Gila Bend, MAR, 11–16 Sep 2007 (ph. BiG, ON), and one was at Rousseau Farm, Scottsdale, MAR, 25–30 Sep 2007 (*†*KR; ph. MV; ph. ON).

RUFF *Philomachus pugnax* (0, 5, 4). Accepted records are of individuals well photographed at Gilbert Water Ranch, MAR, 27 October 2007 (ph. RD, PM, BGr; see *N. Am. Birds* 62:122), at Arlington, MAR, 22 Dec 2007–26 Jan 2008 (MHe; *†*DPo; ph. TC), at Willcox, COC, 21 May 2009 (ph. TLe), and at Glendale, MAR, 13 Feb 2009 (ph. RWi).

BLACK-LEGGED KITTIWAKE *Rissa tridactyla* (1, 11, 1). One accepted record of a first-cycle bird at Site 6, Lake Havasu City, MOH, 25–31 Mar 2007 (ph. JR, ACI). There was only one previous spring record for Arizona; most of the other records are for November and December.

LAUGHING GULL *Leucophaeus atricilla* (1, 16, 3). One in its second plumage cycle was at Willcox, COS, 29 Jun–3 Jul 2006 (ph. EBu; *†*, ph. RT), one in its first cycle was at Patagonia Lake, SCR, 14 May 2007 (ph. SH), and one was at Lake Havasu City, MOH, 17 May 2008 (*†*BC, *†*PL). This species remains a casual spring and summer visitor to southern Arizona, with only two fall records, a paucity rather perplexing given the Laughing Gull’s abundance in summer at the nearby Salton Sea (Patten et al. 2003).

THAYER’S GULL *Larus thayeri* (3, 5, 1). One first-cycle individual well photographed at Katherine Landing, Bullhead City, MOH, 7–20 Jan 2007 (MP; *†*, ph. MMS; *†*DCI; see *N. Am. Birds* 61:309) brings the total number of records in Arizona to nine.

LESSER BLACK-BACKED GULL *Larus fuscus* (0, 0, 2). One first-cycle Lesser Black-backed Gull at Palo Verde, MAR, 9–16 Dec 2006 (*†*, ph. BiG, PD, JBu, GHR; *†*, ph. CDB; Figure 4; see *N. Am. Birds* 61:363) was well studied and photographed, finally establishing a long-overdue first record for Arizona. Another in its second cycle was photographed at Katherine Landing, MOH, 25 Feb 2008 (*†*, ph. BiG). This species is now fairly regular at the nearby Salton Sea (Iliff et al. 2007, Heindel and Garrett 2008). The fact that these individuals were in their first and second cycles is interesting, as a high percentage of California records of this species are of adults (Heindel and Garrett 2008).

ARCTIC TERN *Sterna paradisaea* (2, 2, 1). One at Lake Havasu, MOH, 1 Jun 2009 (*†*, v.r. PL) provided only a fifth record for Arizona.
ROYAL TERN *Thalasseus maximus* (0, 0, 1). Quite surprising but overdue was the discovery of an adult at Willcox, COS, 15 Feb 2006 (†, ph. MVi; Figure 5; see *N. Am. Birds* 60:314), establishing a first Arizona record. The Royal Tern nests numerously in northwestern Mexico as far north as Sinaloa, presumably the origin of birds wandering north to Sonora (Russell and Monson 1998) and to the Salton Sea (Patten et al. 2003), where there are five records. An individual color-banded at El Rancho in coastal Sinaloa in 2003 was noted at Long Beach, California, during the winter of 2005 (K. C. Molina pers. comm.), documenting northward dispersal by this species in winter.

ELEGANT TERN *Thalasseus elegans* (0, 5, 3). Accepted records of one at Gilbert Water Ranch, MAR, 14 Jun 2006 (ph. BGr), two at Patagonia Lake, SCR, 7–8 Jun 2009 (†, ph. MB; ph. LH, MHi), and two at Lakeside Park, Tucson, PIM, 7–10 Jun 2009 (RTe, KK, †, ph. MMS; ph. DJS, PD, CW) fit nicely into the pattern established in Arizona by the previous five records, which all fall between 24 May and 21 July. Interestingly, at the Salton Sea there are records as early as mid-April (Patten et al. 2003).

BLACK SKIMMER *Rynchops niger* (0, 7, 2). A color-banded immature was at Gillespie Dam, MAR, 16–19 Sep 2005 (†DP; ph. ON; see *N. Am. Birds* 60:117). The bands could be read in photographs of the bird, revealing that it was hatched and banded at the Salton Sea on 19 Aug 2005 (K. C. Molina pers. comm.), providing a rare insight into the origin of such vagrants in Arizona. Another three individuals were at the Bill Williams delta, MOH, 24–28 Oct 2009 (†, v.r. PL, †BC).

POMARINE JAEGER *Stercorarius pomarinus* (2, 3, 1). A subadult was observed on Lake Havasu, MOH, 29 Sep 2008 (†PL). This somewhat contentious record was circulated twice (because some of the committee considered the details incomplete), but it was ultimately accepted because the description did specify the bulk of the bird in comparison to nearby gulls as well as a dark cap extending down the face to the base of the bill (a feature unique to the Pomarine), and the observer is thoroughly familiar with jaegers and their identification.

PARASITIC JAEGER *Stercorarius parasiticus* (2, 5, 2). One adult was well described from Lake Havasu, MOH, 26 Sep 1997 (†RJ). The committee concluded that the description of one seen away from water at Fort Huachuca, COS, 4 Sep 2006 (†DP) eliminated other jaeger species.

LONG-TAILED JAEGER *Stercorarius longicaudus* (0, 11, 1). One juvenile was at Lake Havasu City, MOH, 24 Sep–8 Oct 2008 (†, ph. LH); †PL; †, ph. CMz). All 11 previous records fall between mid-August and mid-September; the 2008 record is the latest for Arizona.

GROOVE-BILLED ANI *Crotophaga sulcirostris* (3, 12, 3). Accepted records are of one at Gilbert Water Ranch, MAR, 7 Nov–11 Dec 2005 (OH; ph. PD, MV), one at Whitewater Draw Wildlife Area, COS, 22–26 Nov 2005 (WW; ph. RS; s.r. REW; see *N. Am. Birds* 60:118), and one at Arivaca Cienega, PIM, 9–10 Jun 2006 (TG; †RPe; ph. MMS). There appear to be two “peak” seasons for the ani in southern Arizona, late May–early August and October–December.

BUFF-COLLARED NIGHTJAR *Caprimulgus ridgwayi* (5, 4, 1). At least one at Oro Blanco Mine, SCR, 15 Apr–1 Aug 2008 (†MMS) represented the seventh consecutive year this species was at this location (see Rosenberg et al. 2007).

BERYLLINE HUMMINGBIRD *Amazilia beryllina* (3, 19, 10). The ABC removed the Berylline Hummingbird from its review list in 2009. Prior accepted records during the period of this report are of one banded at Tumacacori, PIM, 3–31 May 2005 (ph. LN), one female at Ramsey Canyon, COS, 21–30 Jul 2005 (PBr; †GB), one at Ramsey Canyon, COS, 12 Aug–1 Oct 2005 (†J&MH; ph. DCz, JWo), probably representing...
the same individual found in July, one at Ramsey Canyon, COS, 12 Jun–31 Jul 2006 (RR; ph. ON, JWo, DN, MHl), one in Miller Canyon, COS, 27–28 Jun 2006 (PSa; ph. JWo), one banded at Madera Canyon, SCR, 8 Aug–1 Sep 2006 (MBe; ph. ON; ph. GWe), probably the same individual seen at two different locations in Madera, one at Ramsey Canyon, COS, 27 May–31 July 2007 (RBe; ph. AT), one at Stewart Campground, Cave Creek Canyon, COS, 10 Jul–August 2007 (ph. EH; attempted nest failed), one in Ramsey Canyon, COS, 6 May 2008 (ph. HD), and two in Madera Canyon, SCR, 14 Jun–19 Aug 2008 (SMa; ph. LH, GWe). This species has become annual in Arizona in small numbers between May and August.

**PLAIN-CAPPED STARTHROAT** *Heliomaster constantii* (0, 15, 4). One subadult was in Florida Wash, PIM, 28 Jun 2006 (†DCh), one was in the lowlands at Agua Caliente Park, Tucson, PIM, 5–26 Jun 2007 (RC; ph. AT; ph. ON; see *N. Am. Birds* 61:626), one was in Patagonia, SCR, 12–23 Sep 2008 (ph. CVC), and one was well documented in Harshaw Canyon, SCR, 10–19 Aug 2009 and again 31 Aug–2 Sep 2009 (‡, DSf, BHo, ph. CW). The ABC considers a starthroat photographed at the Patagonia–Sonoita Creek Preserve 13 Aug 2009 to be the same individual as that in Harshaw Canyon. A great majority of Arizona’s 19 recorded starthroats have occurred from June to early September.

**RUBY-THROATED HUMMINGBIRD** *Archilochus colubris* (0, 1, 1). One adult male was at Patagonia, SCR, 23 Sep–20 Oct 2007 (ph. S&LT; †, ph. MMS, CVC, ON, AT; v.r. MP; see *N. Am. Birds* 62:122). Almost certainly the same adult male appeared in the same Patagonia yard 12–30 Sep 2008 (RBx; ph. CVC), apparently frequenting the same perch as in 2007.

**EARED QUETZAL** *Euptilotis neoxenus* (0, 21, 3). One was in the South Fork of Cave Creek Canyon near Portal, COS, 11 Oct 2005 (†, ph. MD; s.r. REW), one was seen and heard sporadically in upper Madera Canyon, SCR, 28 Oct–14 Nov 2007 (‡LH, NG), and one was described from Chiricahua National Monument, COS, 31 May 2009 (DL; †AD). Most of Arizona’s 24 records of this vagrant from Mexico are for late summer and fall.

**RED-BREASTED SAPSUCKER** *Sphyrapicus ruber* (#, 6, 13). The ABC removed this species from its review list at the end of 2009. Prior reports accepted are of one at Peña Blanca Lake, SCR, 20–27 Jan 2005 (CMo; †, ph. CLu), one at Yuma, YUM, 4 Jan 2006 (ph. HD), one in Tucson, PIM, 1 Nov 2006 (TDJS), one at Coon Bluff, Salt River, MAR, 7 Jan–4 Feb 2007 (ph. JWe), one along Sabino Creek, PIM, 22 Jan 2007 (BGv; ph. RW), one at Patagonia Lake S.P., SCR, 12 Feb–4 Mar 2007 (‡, SA; ph. DD, ph. DPl) and (returning?) 20 Jan 2008 (ph. LM), one in southwest Phoenix, MAR, 15–20 Dec 2007 (ph. TC), one well described from Topock Marsh, MOH, 20 Jan 2008 (†TWu), one at Goldwater Lake near Prescott, YAV, 15 Nov 2008–10 Mar 2009 (‡MN; ph. DI, LHa, DVP), one at Agua Caliente Park, Tucson, PIM, 15–22 Oct 2009 (†, ph. PC), one at McCormick Park, Tucson, PIM, 18 Oct 2009–18 Feb 2010 (MP; †, ph. MMS), and one at Cameron, COC, 30 Oct–1 Nov 2009 (‡CL). By removing the Red-breasted Sapsucker from the review list, the ABC acknowledges that it is a very rare but regular winter visitor to Arizona, as are hybrids between the Red-breasted and either the Red-naped or Yellow-bellied Sapsuckers (which are more frequent in the state than are pure Red-breasted).

**TUFTED FLYCATCHER** *Mitrephanes phaeocercus* (0, 0, 2). Astounding was one photographed in the northwest corner of Arizona in White Rock Canyon, Lake Mead National Recreation Area, MOH, 24 Feb 2005 (†, ph. SSs, JS; Figure 6; see *N. Am. Birds* 592:371), providing a first Arizona record. Another well-documented bird was at Herb Martyr Campground, Chiricahua Mts., COS, 5–17 and 30 May 2008 (TDJs; ph. JPI, TG, CDB, GHR, ON; see *N. Am. Birds* 62:503). The first United States record of this Mexican species was from Rio Grande Village, Big Bend
YELLOW-BELLED FLYCATCHER *Empidonax flaviventris* (1, 1, 1). Arizona’s third accepted record was of one photographed at Dateland, YUM, 22 Sep 2007 (†, ph. CR, KR).

LEAST FLYCATCHER *Empidonax minimus* (3, 5, 1). One was near Wellton, YUM, 3 Nov 2008–5 Feb 2009 (†, ph. RH, SSc; †, ph. GHR; v.r. PL). Previous Arizona records are mainly from fall (mid-September–mid-December; Monson and Phillips 1981, Rosenberg et al. 2007); this represents the first for winter.

NUTTING’S FLYCATCHER *Myiarchus nuttingi* (1, 1, 1). Extraordinary was the discovery, and eventual documentation of the United States’ third Nutting’s Flycatcher, photographed and voice recorded along the Bill Williams River, Bill Williams River N. W. R., LAP, 24 Sep 2008 (†, ph., s.r. JY, JMh). While the photos certainly suggested this species, the recorded calls were diagnostic and confirmed the identification. Prior accepted Arizona records of this accidental vagrant from Mexico are of a specimen taken at Roosevelt Lake 8 Jan 1952 (Dickerman and Phillips 1953) and of one photographed at Patagonia Lake S. P. 14 Dec 1997–21 Mar 1998 (Rosenberg 2001). The ABC still requires voice recordings to accept any Arizona report of this species.

COUCH’S KINGBIRD *Tyrannus couchii* (0, 0, 1). One was well documented at Tacna, YUM, 11 Jan–7 Mar 2007 (†, v.r. PL; ph. KR, MMS, RD, SFi, GHR, JHo; s.r. PD; Figure 7; see *N. Am. Birds* 61:363). It represents the first record of this flycatcher for Arizona and only the second west of the continental divide, the first being California’s only record at Fullerton, Orange County, 31 Dec 1997–21 Feb 1998 (Rottenborn and Morlan 2000). Couch’s Kingbird moves seasonally in Texas and has occurred as a vagrant at a number of locations in the East. Recordings of the calls of the bird at Tacna were crucial to distinguishing it from the very similar Tropical Kingbird (*T. melancholicus*).

GRAY-COLLARED BECARD *Pachyramphus major* (0, 0, 1). Long predicted by some as a potential vagrant from Mexico to the United States, the Gray-collared Becard is now recorded for both Arizona and the United States from an immature male well documented in South Fork of Cave Creek Canyon, Chiricahua Mts., COS, 5 Jun 2009 (†, ph. JJo; ph. CW; Figure 8; see *N. Am. Birds* 63:672). Johnston et al. (2010) argued persuasively that the bird was of the subspecies *uropygialis*, resident in western Mexico. This individual’s plumage was heavily worn, yet the committee believed it unlikely that it was an escaped cage bird. Reports after 5 Jun were not substantiated.

ROSE-THROATED BECARD *Pachyramphus aglaiae* (#, 0, 2). One apparently migrating individual was at California Gulch, PIM, 4 Jun 2009 (ph. ASp), whereas one at Santa Gertrudis Lane in Tumacacori, SCR, 26 Oct 2009–16 Jan 2010 attempted to winter locally (†, ph. MMo, MBk, BST; ph. KK). Until recently, the Rose-throated Becard was a rare but regular summer resident that bred in small numbers along Sonoita Creek near Patagonia, along Arivaca Creek, and in Sycamore and Guadalupe canyons. It is accidental in winter. Reports have decreased substantially, and we believe it may no longer breed regularly in Arizona. The most recent known nesting attempt in the state (along Sonoita Creek) was in 2006.

WHITE-EYED VIREO *Vireo griseus* (1, 16, 12). This species has certainly increased in Arizona in recent years; there has been at least one record in eight out of the last ten years. There was one along the San Pedro River near the San Pedro House, COS, 20–22 May 2004 (s.r. DJS, JC), one at the Patagonia Roadside Rest Area, SCR, 17
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Jul–23 Aug 2006 (†A&NC; †MMS; †RW; s.r. PD; ph. MBS), one at Harshaw Creek, SCR, 18 Aug 2007 (†MMS, †MP), one along the Santa Cruz River near Tubac, SCR, 2 Dec 2007–9 Jan 2008 (†TSd; MMo, JBo; †JY; ph. DD), one along the San Pedro River near Hereford, COS, 28 May 2008 (ph. DBe), one in Morgan City Wash, MAR, 13 Sep 2008 (†, ph. TC), one near Topock, Havasu N. W. R., MOH, 19 Sep 2008 (†DDD), one at Patagonia Lake S. P., SCR, 3 Dec 2008 (ph. IP, DH), one in Hereford, COS, 18–19 May 2009 (s.r. MP), one at Las Cienegas National Conservation Area, PIM, 1–2 Jun 2009 (KK, †, ph. JMh.; †, s.r. DJS), one at Cameron Seep, COC, 23 Jun–16 July 2009 (†CL; †, ph. BGa), another there 1 Sep 2009 (CL, BGa, JC, BWh), and one at Round Valley near Portal, COS, 2–7 Jul 2009 (s.r. REW).

YELLOW-THROATED VIREO Vireo flavifrons (6, 13, 8). Eight accepted records are of one in eastern Tucson, PIM, 15 May 2007 (†, ph. JDW), one singing male at Cienega Creek Preserve, PIM, 5 Jun–26 Jul 2007 (ph. MA; s.r. PD, JH), one at San Bernardino N. W. R., COS, 30 May 2008 (†, s.r. REW), one along Blue Haven Road, Patagonia, SCR, 25 Aug–27 Sep 2008 (DJS; ph., s.r. CDB; †, ph. GHR), one at Granite Basin, YAV, 16–18 Sep 2008 (†MDo, †CTo), one at Montezuma Well, YAV, 19 May–6 Jun 2009 (MA; ph. DRa), one at Empire Gulch, Las Cienegas National Conservation Area, PIM, 25 May–18 Jun 2009 (GWe; †, ph. AC, DJS), and one at the San Pedro House, COS, 29 May–15 Jul 2009 (ph. DBe; †, ph. BVD). There are now 27 accepted records for Arizona, yet we have averaged only about one per year for the last 15 years.

RED-EYED VIREO Vireo olivaceus (5, 13, 12). The 12 records accepted in this report are of one at Rio Rico, SCR, 12 Jul 2005 (†TW), one at the Patagonia Roadside Rest Area, SCR, 17–19 May 2007 (†PA, GS), one at Paloma Ranch, MAR, 25 May 2007 (†BiG), one singing male at Miller Canyon, COS, 23 Jun–14 Jul 2007 (s.r. JH), one in Patagonia, SCR, 11–15 Aug 2007 (ph. CDB), one at Paradise Junction, COS, 2 Jun 2008 (ph. JLF), one at Hearst Tanks, south rim, Grand Canyon N. P., COC, 14 Jun 2008 (†, ph. BGa), one at Spur Cross, Cave Creek near Carefree, MAR, 14 Sep 2008 (†BI), one at Cameron Seep, COC, 16–18 May 2009 (JLo, TLi; †CL), one near Wellton, YUM, 22 May 2009 (†PL, BC), one at the Sweetwater Wetlands, PIM, 23 Jun 2009 (†, ph. JMH), and one at the Arizona–Sonora Desert Museum, Tucson, PIM, 12 Oct 2009 (†BBLi, BBu). This species has proven to be a rare but regular visitor, with no fewer than 18 records accepted since 2000. The Red-eyed Vireo was not on the review list for much of the 1970s and 1980s.

YELLOW-GREEN VIREO Vireo flavoviridis (1, 5, 4). One singing male was at Cienega Creek Preserve, PIM, 27 Jun–4 Jul 2007 (MA; †MMS; v.r. MP), another singing male was at Cook’s Lake, near Dudleyville, PIN, 12–17 July 2007 (†SSf, †TC), one was at Proctor Road, Madera Canyon, PIM, 28 Jun 2008 (†NCr), and one was at Tubac, SCR, 12 Aug 2009 (†MMA). All 10 accepted Arizona records fall between late May and mid-August, and most are for June and July.

BROWN-CHESTED MARTIN Progne tapera (0, 0, 1). One of the biggest surprises to date in Arizona was the documentation of a Brown-chested Martin at Patagonia Lake State Park, SCR, 3 Feb 2006 (†RW, DSM, et al.; ph. GRs; see N. Am. Birds 60:269), establishing a first Arizona record and a first for the western United States. There are only two previous well-supported records from the United States for this South American species, of one on Monomoy Island near Chatham, Massachusetts, 12 Jun 1983 (Peterson et al. 1986) and one at Cape May, New Jersey, 6–15 Nov 1997 (N. Am. Birds 52:37, 1998). Langridge and Hunter (1993) published an additional sight record from Palm Beach County, Florida, 24 Oct 1991. The Brown-chested Martin breeds in southern South America and migrates north (for the austral winter) to Amazonia. It is the fourth species of austral migrant landbird from South America recorded in the western United States, joining the Fork-tailed Flycatcher (Tyrannus savana; McCaskie
and Patten 1994), Piratic Flycatcher (*Legatus leucophaius*; Pranty et al. 2008), and Variegated Flycatcher (*Empidonax varius*; Mlodinow and Irons 2009).

CAVE SWALLOW *Petrochelidon fulva* (0, 5, 3). One was well described from Bill Williams N. W. R., LAP, 2 Feb 2008 (†KR, CR, DPo), another was photographed at Gilbert Water Ranch, MAR, 9–21 Feb 2008 (†, ph. BGr; ph. PD; see *N. Am. Birds* 62:332), and one was seen at Kino Springs, Nogales, SCR, 8 Aug 2008 (†TC). The five previous records accepted from Arizona include the birds that returned to nest on the University of Arizona campus, Tucson, 1979–87 (Rosenberg 2001).

BLACK-CAPPED CHICKADEE *Poecile atricapillus* (4, 6, 1). One individual was along Short Creek in Colorado City, MOH, 27 Nov 2009–19 Feb 2010 (†PL; ph. BiG), only about 18 km in a straight line from where the species breeds along the Virgin River in southwestern Utah. This is the first documented report of the Black-capped Chickadee in Arizona since 2001 (Rosenberg et al. 2007).

SINALOA WREN *Thryothorus sinaloa* (0, 0, 2). A first record of the Sinaloa Wren for Arizona and the United States was of a singing male at the Patagonia–Sonoita Creek Preserve, Patagonia, SCR, 25 Aug 2008–30 Nov 2009 (†, ph., s.r. RBx, MB;
Figure 2. This Black Turnstone at Willcox 2–5 June, 2005 provided a first Arizona record.

Photo by Mark Stevenson

ph. GHR, MTa; Figure 9). Brown and Baxter (2009) published photos and a sonogram as well as an excellent analysis of the species’ distribution in Sonora, Mexico, where it breeds as close as 50 km south of the international border. Amazingly, a second singing individual was in Huachuca Canyon, Fort Huachuca, COS, 14–18 Apr 2009 (DT; †EW; ph. LH; v.r. R&RT). These are the only two records for the United States.

Figure 3. Although there are now ten records of the White-rumped Sandpiper from Arizona, a remarkable flock of at least ten at Willcox 3–5 June 2009 provided the first record of multiple individuals in the state.

Photo by David J. Stejskal
Figure 4. Arizona’s long overdue first Lesser Black-backed Gull was at a pond in Palo Verde 10–16 December 2006.

Photo by Chris Benesh

Figure 5. A big surprise was this Royal Tern at Willcox 15 February 2006, establishing a first Arizona record of this normally coastal species.

Photo by Matt Victoria
CAROLINA WREN *Thryothorus ludovicianus* (0, 2, 1). One at the Southwest Research Station, Cave Creek Canyon, Chiricahua Mts., COS, 3 Sep 2005–30 Jun 2006 (†TWu; †MMS; s.r. REW) provided only a third Arizona record of this Mexican species.

WINTER WREN *Troglodytes hiemalis* (1, 0, 2). What we had traditionally referred to as the Winter Wren has now been split into two species, the Pacific Wren (*T. pacificus*), widespread in the West, and the Winter Wren, mainly of eastern North America,

![Figure 6. This Tufted Flycatcher, discovered in remote White Rock Canyon in Lake Mead National Recreation Area 24 February 2005, provided a first Arizona record of this Mexican species.](image)

*Photo by Steven Servantez*
west to British Columbia (Chesser et al. 2010). The Pacific Wren is a widespread but rare winter visitor in Arizona, but Monson and Phillips (1981) reported a probable record of the eastern form based on a bird photographed at Portal 21 Nov 1976 (the ABC has not reviewed this photo). The ABC requests full details for all reports of \textit{hiemalis}. There are a few plumage characteristics useful in distinguishing the two species (Pyle et al. 2011:155), but the best feature is the voice, in particular the calls; we encourage all observers to include descriptions of calls and ideally recordings with their reports. Well-documented individuals were along Horton Creek near Kohl’s Ranch, GIL, 17 Jan 2009 (†, ph. EH) and in Mesa, MAR, 24 Nov 2008–7 Apr 2009 (ph. JMi; †, ph. MMO; ph., s.r. PD; ph. JBu; Figure 10).


Figure 7. This Couch’s Kingbird vocalizing near Tacna 11 January–7 March 2007 provided a first Arizona record.

\textit{Photo by Gary H. Rosenberg, 28 January 2007}
a pair in Chino Canyon, SCR, 29 Apr 2009 (†, ph. DJS, MP). The Black-capped Gnatcatcher has been present continuously at numerous locations in southern Arizona since at least 2002; the ABC dropped it from its review list as of 2010, but we still request sketch details for inclusion of reports in *North American Birds*.

**BROWN-BACKED SOLITAIRE** *Myadestes occidentalis* (0, 0, 2). A singing male was first discovered in Miller Canyon, Huachuca Mts., COS, 16 Jul 2009 (†, ph. BVD, RDa, DJa, BMa), then later rediscovered at nearby Ramsey Canyon Preserve 18 Jul 2009, where it was seen infrequently until 1 Aug (SK; ph. JWo, CMe, GHR, CVC, JO; s.r. DJS, CDB; RR; Figure 11). See *N. Am. Birds* 63:672 and Van Doren (2010) for an excellent discussion. The ABC was concerned that this individual could have been transported in and escaped from a cage, as the Brown-backed Solitaire is a frequent cage bird in Mexico (Hamilton 2001). Acknowledging this, the committee believes that this question is unanswerable. Absent any evidence to the contrary we infer the bird occurred naturally, and given that it was in natural habitat, behaving naturally, well away from any border crossing, occurring during a good season for stragglers dispersing north from Mexico, the committee chose to accept it. An additional record of one at Proctor Road, Madera Canyon, PIM, 4–7 Oct 1996 (†NCr; ph. GHR) was previously not accepted by the ABC because of questions of origin (Rosenberg et al. 2007). Given the acceptance of the 2009 record, the committee reviewed the 1996 record again and accepted it, as that bird was also in proper habitat and well away from any border crossing.

**WOOD THRUSH** *Hylocichla mustelina* (0, 16, 5). One older record was accepted from Sonoita Creek near Patagonia, SCR, 30 May 1987 (s.r. DJS). Additionally, one was in Cave Creek Canyon, COS, 4–12 Dec 2005 (MMy; ph. MBk, REW), one was at the Sweetwater Wetlands, Tucson, PIM, 2 Jul 2006 (ph. TLd), providing a very rare mid-summer record, one was at the Arizona–Sonora Desert Museum, Tucson, PIM, 3 Nov 2008 (†, ph. PK), and another was at the Sweetwater Wetlands, PIM, 21 Nov 2009 (†, ph. DVa, BMe). November is the peak month for this species in the West, but the December record was very late.

**AZTEC THRUSH** *Ridgwayia pinicola* (0, 15, 8). After only one report in ten years (see Rosenberg et al 2007), three individuals were near Comfort Spring, Carr Canyon, COS, 3–12 Aug 2005 (†JLD), one was at Madera Canyon, SCR, 6 Aug 2005 (†BFt, KA), one was at a residence in lower Ash Canyon, Huachuca Mts., COS, 9 Jul 2006 (ph. KL; ph. JWo), one was in Garden Canyon, Huachuca Mts., COS, 21 Jul 2006 (TWi, BA, CBe; ph. KVR), up to nine were in Madera Canyon, SCR, first reported 24 Jul 2006, with at least one seen through 6 Sep (GL, TSt, MP, BMs; ph. AT; ph. MR; ph. DN), one was found during winter in Madera Canyon, SCR, 5–18 Jan 2008 (†, ph. IW; ph. ON, LHi), one was in Huachuca Canyon, COS, 29 May 2008 (†, ph. GF), and one was in Ramsey Canyon, COS, 31 July–11 Aug 2009 (†, ph. MBa, TB; ph. JeS; ph. CW). The concentration of records in 2006 after a long lull emphasizes the Aztec Thrush’s irruptiveness in Arizona.

**BLUE MOCKINGBIRD** *Melanotis caerulescens* (0, 2, 1). Arizona’s third accepted Blue Mockingbird was at the Slaughter Ranch, east of Douglas, COS, 5 Feb–2 May 2009 (†, ph. REW; ph. CVC, DDa, KKe, MHn, CTa; Figure 12). The previous two records are also of winter birds that remained for long periods; the first was along Sonoita Creek near Patagonia 21 Dec 1991–6 Mar 1992, the second in Portal 4 Jan–4 Apr 1995 (Rosenberg and Witzeman 1999).

**LAPLAND LONGSPUR** *Calcarius lapponicus* (4, 11, 3). Two of the accepted records are from the Rousseau Farm, Scottsdale, MAR, of one 14 Oct–6 Dec 2006 (ph. RJo; ph. RWd) and one 28 Nov 2009 (ph. HBo), Another male was near Elgin, SCR, 12 Feb–18 Mar 2007 (ph. GHR; ph. CDB; ph. JW; see *N. Am. Birds* 61:310). Inexplicably, given the regularity of this species in California, in Arizona the Lapland
Longspur remains a casual fall and winter visitor, with only six records in the past ten years (see Rosenberg et al. 2007). It may be overlooked to some degree, or areas where it may occur in northern Arizona are not being birded regularly, as emphasized 47 years ago by Phillips et al. (1964:212).

**BLUE-WINGED WARBLER** *Vermivora cyanoptera* (1, 6, 4). Four accepted records are of one near Crescent Lake, APA, 24 Sep 1997 (†JL), one at Military Sinkhole near Woods Canyon Lake west of Heber, COC, 13 May 2006 (†Kp), one at Whitewater Draw Wildlife Area, COS, 20 May 2009 (†, ph. TLe), and one at Cook’s Lake, PIN, 25 October 2009 (TC; †, ph. AC, †MMo). Once thought of as one of the rarer “eastern” vagrants to Arizona, the Blue-winged Warbler has increased in frequency, so there are now 11 records for the state, about equally divided between spring and fall.

**GOLDEN-WINGED WARBLER** *Vermivora chrysoptera* (1, 17, 2). Only two records accepted, one a very rare winter record, for Madera Canyon, SCR, 16–31 Dec, 2007 (†JMo; ph. GHR, DD), the other for late spring, near Wellton, YUM, 2 Jun 2009 (†PL).

**TENNESSEE WARBLER** *Oreothlypis peregrina* (3, 11, 11). After returning this species to the ABC review list in 2002, because of a paucity of records in the late 1990s and early 2000s, the ABC has accepted at least ten since 2005, including one singing male in Tucson, PIM, 9 May 2005 (†MMS), one along the South Fork of the Little Colorado River near Eagar, APA, 15 Sep 2006 (†CBa), one at Gilbert Water Ranch, MAR, 29 Apr–1 May 2007 (†MMo, s.r. PD), another there 9–20 Nov 2007 (†, ph. MMo), one at Reid Park, Tucson, PIM, 21 Nov 2007 (†MMS), one at the Sweetwater Wetlands, PIM, 30 Oct 2008 (JBo; †MMS), possibly the same individual there 8–12 Nov 2008 (ph. AC), one in Surprise, MAR, 2 Dec 2008 (ph. DSh), another at the Sweetwater Wetlands, PIM, 2–5 Sep 2009 (PK; ph. AC; †MP), yet another there 25 Oct–7 Nov 2009 (ph. AC), and one along the Santa Cruz River at Tubac, SCR, 6 Nov 2009 (†, ph. DJL).

**CRESCENT-CHESTED WARBLER** *Oreothlypis superciliosa* (0, 5, 6). The six records accepted since 2005 are of one in Miller Canyon, COS, 12–14 Aug 2005 (†M&LC; †RH; †CS), one female feeding a recently fledged young along East Turkey Creek, Chiricahua Mts., COS, 12–16 July 2007 (J&JG; ph. HB; ph. LS, REW; see *N. Am. Birds* 61:668), the first evidence of nesting in Arizona, one in upper Madera Canyon, SCR, 30 Oct 2007 (GRo; †MB; †, ph. MHn) and again 6 Nov–13 Feb 2008 (†MMS, †KC; ph. ON, HSp), one in San Bernardino N. W. R., COS, 29 Apr 2008 (†REW), one at Kent Springs, Madera Canyon, SCR, 24–26 Jun 2008 (†LH), and one in Pinery Canyon, Chiricahua Mts., COS, 13–16 May 2009 (SSh; †; ph. CW; ph. REW). These more than double the previous total number of records for Arizona.

**TROPICAL PARULA** *Parula pitiayumi* (0, 3, 3). An older record is of one well described from northeast of Scottsdale, MAR, 2 Jun 2002 (†PM). More recently, one was at a residence below Portal, COS, 16–23 June 2006 (T&LG; ph. REW; see *N. Am. Birds* 60:594) and one was well described from upper Sycamore Canyon, SCR, 15 Jul 2006 (†TJ). The six Arizona records fall between early June and mid-July.

**MAGNOLIA WARBLER** *Dendroica magnolia* (4, 19, 6). One at Gilbert Water Ranch, Gilbert, MAR, 7–20 Oct 2006 (BWi; ph. JHo, CMA, DCl; see *N. Am. Birds* 61:121), another there 9–15 Nov 2007 (†, ph. MMo, PM), one along the Bill Williams River above Planet Ranch, LAP, 3 Jun 2008 (†SBl), one at the Cameron Seep, COC, 7 Oct 2008 (†, ph. BGA), one in Lower Stump Canyon near Hereford, COS, 15 Nov 2008 (†PS0), and one at Fort Lowell Park, Tucson, PIM, 6–7 Nov 2009 (†, ph. CC, DSm, AC) bring the total number of Arizona records to 29, with at least one in nine of the last ten years.
Figure 8. This Gray-collared Becard discovered in Cave Creek Canyon near Portal 5 June 2009 provided a first record for Arizona and United States of this Mexican species.

Photo by Jillian Johnston

BLACK-THROATED GREEN WARBLER *Dendroica virens* (7, 10, 9). After only two records between 1990 and 2005 (Rosenberg 2001, Rosenberg et al. 2007), the ABC accepted nine records in three years, of one at the Boyce Thompson Arboretum, PIN, 4 Nov 2006 (†KR; ph. RFo), one at Gilbert Water Ranch, MAR, 23–24 Oct 2007 (†MMo; ph. JY, HBo), one at the Sweetwater Wetlands, Tucson, PIM, 4–5 Nov 2007 (†MMS; v.r. MP), one along the San Pedro River near the San Pedro House, COS, 31 Aug 2008 (†KRo), one in Madera Canyon, SCR, 7 Nov 2008 (MKu; ph. SPI), one at the Sweetwater Wetlands, PIM, 29 Nov 2008–17 Feb 2009 (WR; ph. JU, PW), one in Garden Canyon, Huachuca Mts., COS, 24 Jan 2009 (ph. R&RT) and again 24–25 Mar, one at Cave Creek Canyon, COS, 22 Feb 2009 (ph. RHl), and one at Gilbert Water Ranch, MAR, 11–12 Nov 2009 (ph. BGr). The August record is very early for a fall vagrant in the West. Before 1990, there were nearly 30 published reports (not all reviewed by the ABC).
BLACKBURNIAN WARBLER *Dendroica fusca* (0, 15, 3). Accepted records are of one at El Dorado Park, Scottsdale, MAR, 17–21 October 2007 (JBa; ph. JBu, PD, DJS, ON; see *N. Am. Birds* 62:123), one at Slaughter Ranch, COS, 8 Sep 2008 (†REW), and Arizona’s second for winter along the Santa Cruz River in Tucson, PIM, 21 Dec 2008–23 Jan 2009 (†, ph. CMc; ph. DJS, LH). As for the Black-throated Green Warbler, there was a big push of records in the late 1970s, followed by a long hiatus through much of the 1980s and 1990s.

YELLOW-THROATED WARBLER *Dendroica dominica* (0, 19, 4). Four reports were accepted, of one at Arizona City, PIN, 8–16 Nov 2008 (†, ph. KR; †, ph. BGr), one wintering in Portal, COS, 27 Feb–1 May 2009 (†OH; †, ph. JY, RAR), another along the San Pedro River near the San Pedro House, COS, 30 Mar–9 Apr 2009 (TPa; v.r. R&RT, ph. TMa; see *N. Am. Birds* 63:478), and one along the Santa Cruz River at Tubac, SCR, 16 Oct 2009 (†MMS).

PINE WARBLER *Dendroica pinus* (0, 12, 5). Accepted records are of one at Northern Arizona University, Flagstaff, COC, 3 Nov 2005 (†JPr), one at Banning Creek Field Station, Mule Mts., COS, 22 Jan–24 Mar 2007 (TWo, ph. SW; †, ph. MMS), one at Peña Blanca Lake, SCR, 17–28 Nov 2007 (†, ph. RW), one at Evergreen Cemetery, Tucson, PIM, 20–24 Jan 2009 (†PK; ph. RFr, LH), and one in Madera Canyon, SCR, 6 Mar 2009 (†JKe). In recent years this species has been found annually, yet Arizona’s 17 accepted records are all since 1987, with most for late fall or winter.

PRAIRIE WARBLER *Dendroica discolor* (3, 9, 2). One was at Gilbert Water Ranch, Gilbert, MAR, 17 Nov 2005–4 Feb 2006 (†Mmo; ph. JBu, ON), another at Lyman Lake near St. John’s, APA, 2 Nov 2008 (†JY).

PALM WARBLER *Dendroica palmarum* (7, 15, 8). Eight accepted records, with one at Whitewater Draw Wildlife Area, COS, 23 Apr 2005 (†J&MH), one at Punkin Center, GIL, 11–19 Feb 2006 (†, ph. KR, CR), one at Mittry Lake, YUM, 23 Apr 2006 (ph. HD), one atRio Salado, Phoenix, MAR, 28 Jan–16 Feb 2007 (ph. PD), one at the Kachina Wetlands near Flagstaff, COC, 14 Oct 2007 (†EH), one at Slaughter Ranch, COS, 26 Apr 2009 (†VTD), one at Rackensack Canyon, MAR, 13 Oct 2009 (ph. MV), and one at Quigley Wildlife Area, YUM, 21 Nov 2009 (†, ph. JY). Since the ABC reinstated the Palm Warbler as a review species in 2002, there have been no fewer than 14 records accepted. All Arizona records have been of the western subspecies *D. p. palmarum*.

BAY-BREASTED WARBLER *Dendroica castanea* (0, 15, 1). One was along Woodland Road in Tucson, PIM, 21–29 Nov 2009 (†, ph. RFr; ph. JMe, KKe). Most of Arizona’s 16 records precede 1990.


WORM-EATING WARBLER *Helmitheros vermivorum* (2, 19, 13). The ABC only recently resumed reviewing the Worm-eating Warbler, after it was off the list for many years. No fewer than 13 records accepted since 2006, including one found window-killed in Mesa, MAR, 26 Apr 2006 (ph. JSt; specimen not preserved), one in Flagstaff, COC, 19–20 Sep 2006 (†CH, JC), one along the Santa Cruz River at Tubac, SCR, 22 Dec 2006–17 Jan 2007 (SJJo; ph. CC), one at the Southwestern Research Station, Portal, COS, 16–28 Apr 2007 (S&JJ; ph. TSz), one at Paradise, COS, 26 Apr 2007 (ph. JaL), one at Watson Woods, Prescott, YAV, 18 Oct–27 Nov 2007 (ph. S&SB), one
at Hassayampa River Preserve, Wickenburg, MAR, 22 Feb 2008 (†, ph. MHe), one at Cibola N. W. R., LAP, 2 Dec 2008–4 Feb 2009 (ph. JKa, CDo), one banded in Ramsey Canyon, COS, 11 Jan–7 Feb 2009 (WL; ph. LH), one at Rio Salado, Phoenix, MAR, 31 Jan–7 Mar 2009 (JJn; ph. BGr), one in Huachuca Canyon, COS, 18 Apr 2009 (ph. RWs), one at Whitewater Draw Wildlife Area, COS, 6 Oct 2009 (†, ph. DJs), and one at the Arizona–Sonora Desert Museum, Tucson, PIM, 5–9 Nov 2009 (SPH; †, ph. AC). It is clear that the Worm-eating Warbler is a rare but regular visitor to Arizona.

KENTUCKY WARBLER Oporornis formosus (3, 21, 5). Another species recently restored to the ABC review list, the Kentucky Warbler was recorded on the basis of one netted at Hassayampa River Preserve, Wickenburg, MAR, 18 Aug 2007 (AL, AWe, ph. KW), one at Kingfisher Pond, San Pedro River, COS, 1 May 2008 (JWh; ph. AW), one at Dinnebito Wash, Navajo Indian Reservation, COC, 7 Nov 2008 (JC), one in lower Florida Canyon, PIM, 27 Dec 2008–2 Jan 2009 (†, ph. MMo), and one near Herb Martyr Campground, Chiricahua Mts., COS, 21 Jun 2009 (†, ph. JJJ). This species remains a casual visitor to Arizona.

MOURNING WARBLER Oporornis philadelphia (0, 5, 2). Both records accepted are sight records, of one well described in Morgan City Wash below Lake Pleasant, MAR, 8 Sep 2007 (TC) and a male in Phoenix, MAR, 14 May 2008 (TC). Of Arizona’s five previous accepted records, only one is documented physically, col-

Figure 9. This singing male Sinaloa Wren along Sonoita Creek near Patagonia 25 August 2008–30 November 2009 established a first Arizona and United States record of this Mexican species.

Photo by Monte Taylor

CANADA WARBLER Wilsonia canadensis (0, 7, 2). The two accepted records are of one photographed at Rio de Flag, Flagstaff, COC, 23–24 May 2006 (ph. CN; ph. JC) and another photographed along the Santa Cruz River near Tubac, SCR, 15 Oct 2009 (DT; ph. AC; see N. Am. Birds 64:126).

SLATE-THROATED REDSTART Myioborus miniatus (0, 5, 2). Arizona’s sixth accepted record is of one seen for several days before, amazingly, being found dead in the woods by birders near Comfort Spring, Carr Canyon, Huachuca Mts., COS, 26 May–5 June 2005 (†LK, PN; †, ph. KK; †MMS; †MSc; †, ph. JZa; †CMz; specimen to the University of Arizona, catalog number 17957). One additional sight record accepted from Cave Creek Canyon, COS, 25 Aug 2008 (†B&NLF).

FAN-TAILED WARBLER Euthlypis lachrymosa (1, 5, 1). One old report was resurrected from field notes by two skilled observers, submitted by the primary observer’s son, and accepted by the committee. It involved one observed in the Arizona portion of Guadalupe Canyon, COS, 25 Jun 1961 (†BPa, †DCa); remarkably, Arizona’s first recorded Fan-tailed Warbler was collected at Baker Spring north of Guadalupe Canyon about a month earlier on 25 May 1961 (Levy 1962).

Figure 10. The Winter Wren has been recently split into two species, of which the eastern Troglodytes hiemalis likely occurs in Arizona in small numbers during winter. This individual that wintered in Mesa 24 November 2008–7 April 2009 was well documented by photos and tape recordings of vocalizations.

Photo by Jim Burns
RUFOUS-CAPPED WARBLER Basileuterus rufifrons (0, 16, 3). Accepted records of this Mexican stray are of one in Sycamore Canyon, SCR, 27 Nov 2005–10 Aug 2006 (MG, DJo; ph. DJs, ph. HD; see N. Am. Birds 60:468), a pair in lower Florida Canyon, PIM, 19 Dec 2008–14 Jan 2010 (†, ph. TC; ph. LH, SHa, TGr, JHu, JHa; see N. Am. Birds 63:352), with a nest found and photographed 18 May 2008 (ph. WC) and a bird carrying nesting material 25 May. This record confirmed a new locality for nesting in Arizona, the others being Cave Creek Canyon (Jul 1977; Monson and Phillips 1981) and French Joe Canyon (2001–2003; Rosenberg et al. 2007). One additional accepted record was of one to two individuals at Patagonia–Sonoita Creek Preserve, SCR, 4 Jun–28 Oct 2009 (†, ph. AO; ph. RBx, CC, AS, EB), and nest building was reported there also.

FIELD SPARROW Spizella pusilla (0, 6, 1). Arizona’s seventh Field Sparrow was well described from Roll, YUM, 26 Oct 2009 (†PL).

FOX SPARROW Passerella iliaca. (#, 0, 2). The status of the various forms of Fox Sparrow in Arizona is unclear. The Rocky Mountain and Great Basin forms (P. i. schistacea group, made up of several subspecies) are clearly the most expected in winter statewide. To improve understanding of its status, the ABC has decided to review the “red” form (subspecies zaboria; six specimens listed by Phillips et al. 1964). Accepted records are of one in Florida Canyon, PIM, 28 Dec 2008 (ph. LH) and one along Sonoita Creek near Patagonia, SCR, 13 Dec 2009 (ph. MB, CRa). The ABC requests the submission of photos of all Fox Sparrows other than schistacea.

SCARLET TANAGER Piranga olivacea (4, 16, 5). Five accepted records are of one along the upper Verde River east of Paulden, YAV, 11 May 2006 (†S&SB), one in Peppersauce Canyon, PIN, 7 Jun 2008 (†, ph. JY, DJ), one female near Wellton, YUM, 30 May 2009 (†PL), one in Tolleson, MAR, 13 Oct 2009 (ph. BiG), and one in Tubac, SCR, 16 Oct 2009 (†, ph. DJs). This species remains casual in Arizona, with records in seven of the previous ten years and a total of about 25 records in all.

FLAME-COLORED TANAGER Piranga bidentata (0, 13, 2). The male and female discovered in Madera Canyon, SCR, in 2003, returned for a third year, 14 Apr–10 Jul 2005 (JMj; ph. MMS, CVC). The same male (without his mate) returned 31 Mar–6 Aug 2006 (CLa; ph. Jpd; ph. KVR; see N. Am. Birds 60:595), 6 Apr–29 Jul 2007 (ph. MBk; ph. GHR), 27 Mar–8 Aug 2008 (CLa; ph. GH), and 30 Apr–30 Jul 2009 (CLa; ph. GH). One additional male was accepted from Miller Canyon, Huachuca Mts., COS, 27–28 May 2009 (†, ph. CRo; ph. SHe). This species remains a casual Mexican stray, despite birders’ complacency brought on by the long-returning Madera Canyon bird. The possibility of hybrids between the Flame-colored and Western Tanagers (P. ludoviciana) continues.

YELLOW GROSBEAK Pheucticus chrysopeplus (1, 14, 4). Four accepted records are of one in Sycamore Canyon, SCR, 10 June 2006 (†ZH), one in Ash Canyon, Huachuca Mts., COS, 1–2 Jun 2007 (†, ph. RB; see N. Am. Birds 61:624), one at Slaughter Ranch, COS, 5 May 2008 (†REW), one, possibly the same, at Santa Bernardino NWR, COS, 13 Jun 2008 (†, s.r. REW), and one in Portal, COS, 3–6 Jul 2008 (ph., s.r. REW; ph. TG, JPe). Nearly all of Arizona’s 19 accepted records are for June and July. The record for 5 May is the earliest for “summer.”

BOBOLINK Dolichonyx oryzivorus (#, 4, 1). One was at Dudleyville, PIN, 16 Oct 2009 (†, ph. MBk). The Bobolink, historically considered rare in Arizona, was regular during the 1970s, 1980s, and even early 1990s, and was not on the ABC’s review list for much of that time. But recent records have been few and far between, so the ABC restored it to the review list.

RUSTY BLACKBIRD Euphagus carolinus (9, 11, 3). The Rusty Blackbird is another species that was much more regular in Arizona prior to 1990. Only three records
accepted since 2006, of one at Kino Springs, Nogales, SCR, 7 Oct 2007 (†J&MH), one at Rio Salado in Phoenix, MAR, 30 Dec 2007–8 Jan 2008 (†TC; ph. RD, ON, HB), and one along Woodland Road, Tucson, PIM, 19–29 Nov 2009 (MMS;†, ph. AC, DJs; see N. Am. Birds 64:127). These bring the total number of accepted Arizona records to about 23, although only 14 have been reviewed by the ABC.

COMMON GRACKLE *Quiscalus quiscula* (0, 12, 6). One was in Portal, COS, 11 Nov 2006 (ph. SDL), two were in Bisbee, COS, 20 Dec 2006–28 Feb 2007 (ph. WW), one was at Paloma Ranch, MAR, 27 Oct 2007 (†CBa), one was at Cameron, COC, 2 Nov 2007 (†CBa), one was at Woodland Road, Tucson, PIM, 10–15 Dec 2007 (†PL; ph. CDB), and one was at Bisbee, COS, 27 Nov 2009 (ph. MTu). There are now 18 records for Arizona, where the Common Grackle is still casual, though it has been increasing and spreading west in New Mexico (LaRue and Ellis 1992).

ORCHARD ORIOLE *Icterus spurius* (4, 17, 9). The Orchard Oriole has become essentially annual in Arizona, mostly in fall and winter, with at least 12 records since 2003. Recent accepted records are of a female at Gilbert Water Ranch, Gilbert, MAR, 17 Oct–28 Nov 2006 (†, ph. HB; ph. BGr), one male at Mesa, MAR, 21 Jan 2007 (†, ph. LF), one male in northwestern Tucson, PIM, 26 Mar 2007 (ph. S&CS), one in Miller Canyon, COS, 23 Jun 2008 (ph. CVC), one in Surprise, MAR, 1 Dec 2008 (ph. DSh), one at San Simon Cienega near Portal, COS, 9 Sep 2009 (†, ph. REW), one below Portal, COS, 13 Sep 2009 (†, ph. REW), one at Willow Tank near Portal, COS, 4 Oct 2009 (†, ph. REW), and one in Tolleson, MAR, 18 Oct 2009 (†, ph. BGr).

STREAK-BACKED ORIOLE *Icterus pustulatus* (5, 6, 4). One was at Tumacacori, SCR, 23 Jul–1 Aug 2005 (WL; †MMS; ph. KK, GB), one was at Gilbert Water Ranch, MAR, 8 Nov 2005–22 Mar 2006 (†, ph. MBr; †KR; ph. ON, PD; see N. Am. Birds 60:118), returning 7 Oct 2006–10 Mar 2007 (maybe as late as 8 Apr) (†SG; ph. JM; ph. JJ) and 9 Oct–17 Nov 2007 (THu; †, ph. CMa, RD, BGr), one was along Sonoita Creek near Patagonia, SCR, 18 Dec 2005 (ph. GHR; ph. DJS; see N. Am. Birds 60:315) and 12–22 Jan 2006 (†TWa; ph. JWo), and one was in Stump Canyon, Huachuca Mts., COS, 1 May 2009 (PSo; ph. LSo; see N. Am. Birds 63:479). This species remains a casual visitor, mainly in fall and winter.

BALTIMORE ORIOLE *Icterus galbula* (1, 11, 8). One adult male at Hubbell Trading Post, Ganado, APA, 21–22 May 2005 (†, v.r. CBa), one probable female at Rimmy Jim Tank north of Flagstaff, COC, 19 May 2006 (†CBA), one adult male in Yuma, YUM, 19 May 2007 (ph. HD), one adult male in Tucson, PIM, 2 May 2008 (†DSm), one adult male at Tubac, SCR, 11–29 Jun 2008 (†GWe; ph. KKe; s.r. PD), one male at Havasu N. W. R., MOH, 28 Aug 2009 (†DSD), one adult male at Morgan City Wash below Lake Pleasant, MAR, 19 Sep 2009 (†TC), and one male at Tubac, SCR, 16–17 Oct 2009 (†, ph. DJs). This species has become more regular in Arizona in recent years.

PURPLE FINCH *Carpodacus purpureus* (4, 1, 2). The only reports accepted of this casual visitor were of two females or immature males at Madera Canyon 22–23 Jan 2008 (†DVP, †LHa; ph. OJ) and one female or immature male at the Boyce Thompson Arboretum, PIN, 7 Nov 2009 (†, ph. BGr, PD). Because of the paucity of records and confusion with the very similar Cassin’s Finch (*C. cassini*), the ABC added this species to its review list in the 2000s.

WHITE-WINGED CROSSBILL *Loxia leucoptera* (0, 0, 1). One came to a feeder at South Rim Village, Grand Canyon N. P., COC, 17 Nov 2007 (†, ph. DSp; Figure 13). The photos establish a first Arizona record of this long overdue species. Interestingly, 2007 was not a major flight year for the White-winged Crossbill, though such an irruption did take place to the north of Arizona during the winter of 2008–09.
FULVOUS WHISTLING-DUCK *Dendrocygna bicolor*. A bird described from a sandbar in the Santa Cruz River at Tucson, PIM, 7 Mar 1997 was thought by some committee members to possibly be a domestic duck.

CACKLING GOOSE *Branta hutchinsii*. Although photographs of an apparently small white-cheeked goose photographed with a Ross’s Goose (*Chen rossii*) at Cow Springs Lake, NAV, 30 Oct 1992 suggested the Cackling, some committee members believed that “size alone” was not definitive in identifying the bird to species. A relatively small goose at Willcox, COS, 3 Dec 2007 and another small goose at Kansas Settlement, COS, 21 Jan 2008 were both thought by some on the committee to have been subspecies *parvipes* of the Canada Goose.


GLOSSY IBIS *Plegadis falcinellus*. The report of one from the Avra Valley sewage-treatment plant, PIM, 21 May 1996 described the eye as “red” or “reddish-brown,” suggesting a possible hybrid. In photos of an ibis at Rio Salado, Phoenix, MAR, 20 Jan–16 Feb 2007, a pinkish cast to the facial skin also suggested that the bird was likely a hybrid.

RED-SHOULDERED HAWK *Buteo lineatus*. Descriptions of ones at St. David, COS, 27 Feb 2007 and Granite Creek, YAV, 5 Dec 2007 were too brief for acceptance. Some members of the committee thought photographs of a bird in the Prescott Valley, YAV, 8 Nov 2009 were more suggestive of a Red-tailed Hawk (*B. jamaicensis*). The photos contradicted the description.

Figure 11. Arizona’s first accepted Brown-backed Solitaire was at both Miller (where this photo was taken 23 July 2009) and Ramsey canyons, 16 July–1 August 2009.

*Photo by Christie Van Cleve*
Figure 12. Arizona’s third Blue Mockingbird was at the Slaughter Ranch near Douglas 5 February–2 May, 2009.

*Photo by Oliver Niehuis, 6 February, 2009*

Figure 13. Arizona’s first White-winged Crossbill, this individual came to drink along the south rim of the Grand Canyon 17 November 2007.

*Photo by David Spier*
**BROAD-WINGED HAWK** *Buteo platypterus*. The descriptions of one juvenile at Lake Montezuma, YAV, 17 Sep 1997, one juvenile at Tumacacori, SCR, 13 Oct 2007, one adult in Oak Creek Canyon, COC, 7 May 2007, one adult near Flagstaff, COC, 7 May 2007, another adult near Flagstaff, COC, 9 May 2009, and one adult near Patagonia, SCR, 24 May 2009 were all too brief for acceptance.

**SHORT-TAILED HAWK** *Buteo brachyurus*. The description of a light-morph adult reported from the Pinaleño Mts., GRA, 4 Jun 2006 was thought, by a majority of the committee members, to lack certain critical details that would eliminate confusing species. The identification of a dark-morph adult reported near Rustler Park, COS, 13 May 2007, near where this species has nested, was thought by several committee members to be likely correct, but some thought the description of the underwing pattern conflicted.

**WHITE-TAILED HAWK** *Buteo albicaudatus*. An old report of a bird identified as White-tailed Hawk at Prescott, YAV, 30 Dec 1996 was though by all committee members to lack details critical to confirming the identification. A report of two adults in Tucson, PIM, 16 Oct 2007 was not detailed enough to eliminate the common Red-tailed Hawk. The last well-supported record of the White-tailed Hawk in Arizona was in 1899, so thorough documentation is needed to establish an additional record for the state.

**AMERICAN GOLDEN-PLOVER** *Pluvialis dominica*. A description of one reported from Willcox, COS, 4 May 2007 received six positive votes in two rounds of voting, but two committee members concluded the description lacked enough detail to eliminate similar species.

**WHITE-RUMPED SANDPIPER** *Calidris fuscicollis*. A report of two at Willcox, COS, 22 Oct 2005 lacked the information critical for this late fall report to be accepted. Although juveniles of this species linger well into the fall in the East (even into November), there are no accepted fall records for Arizona; the White-rumped Sandpiper winters in southern South America.

**PARASITIC JAEGER** *Stercorarius parasiticus*. A bird originally thought to be a Parasitic Jaeger at Roosevelt Lake, GIL, 20 August 2005 was eventually accepted as a “jaeger sp.” because the observer expressed some doubt about the initial identification. A bird identified as a juvenile Parasitic by a very skilled observer at Lake Havasu City, MOH, 29 Sep 2008 was accepted by the committee as a “jaeger sp.” because two members believed that the description was too brief and that the bird was seen at too great a distance for other jaeger species to be eliminated with certainty.

**BLACK SWIFT** *Cypseloides niger*. Two reports of single birds, at Tucson, PIM, 8 Aug 2008 and the South Fork of Cave Creek Canyon, COS, 23 May 2009, were both possibly correct, but both lacked details sufficient for the committee to be sure that other species of swifts or the Purple Martin were eliminated. Even though a “large” black swift is very likely to be a Black Swift, other species of migratory or wandering members of the genus *Cypseloides* should be considered.

**BERYLLINE HUMMINGBIRD** *Amazilia beryllina*. One reported from Chiricahua National Monument, COS, 1 May 2005 may have been correctly identified, but the description was too sketchy to eliminate similar species or a possible hybrid.

**PLAIN-CAPPED STARLORD** *Heliomaster constantii*. The description of one reported at Ramsey Canyon, COS, 23 Sep 2005 lacked the critical information that would confirm it as a starthroat. The details of one reported from South Fork of Cave Creek Canyon, COS, 22 May 2008 lacked some critical features such as the white rump, so the committee could not be certain that it was correctly identified.

**GOLDEN-FRONTED WOODPECKER** *Melanerpes aurifrons*. A description of a woodpecker identified as this species at Tucson, PIM, 25 May 2008 was intriguing but lacked the critical documentation needed to secure a first Arizona record.
RED-BREASTED SAPSUCKER *Sphyrapicus ruber*. One photographed in Bear Canyon, Santa Catalina Mts., PIM, 4 Dec 2005 may have been correctly identified, but the photo did not show the entire bird (lacking a view of the back), so a hybrid was not adequately excluded. Other reports that suggested probable or possible hybrids included one at Topock, MOH, 4 Feb 2007, one at Peña Blanca Lake, SCR, 22–26 Feb 2007, one at Bog Spring, SCR, 17 Jan 2009, and one in Madera Canyon, SCR, 23 Feb 2009.

AMERICAN THREE-TOED WOODPECKER *Picoides dorsalis*. One reported from Rose Canyon, Santa Catalina Mts., PIM, 15 April 2005 may have been correctly identified, but the description was not convincing enough for such an unlikely and unexpected occurrence in southern Arizona away from the species’ breeding range in the northern portion of the state. There are no confirmed records of this species in Arizona below the Mogollon Rim.

TUFTED FLYCATCHER *Mitrephanes phaeocercus*. A very intriguing report of one at the Sweetwater Wetlands, Tucson, PIM, 6 April 1999 went through two rounds of voting, in the end receiving only three positive votes. While the description of the bird suggested a Tufted Flycatcher, only one of two observers submitted rather brief written details, insufficient to support a first Arizona record (and third United States record). This report preceded the two records now accepted.

LEAST FLYCATCHER *Empidonax minimus*. The description of one reported from Huachuca Canyon, COS, 25 Nov 2006 did not exclude other confusing species. Written descriptions of *Empidonax* flycatchers are often difficult to evaluate, particularly if they lack good comparisons with similar species.

COUCH’S KINGBIRD *Tyrannus couchii*. A kingbird photographed at Tacna 9 Sep 2007 near the site of Arizona’s first record of Couch’s in the winter of 2006–07 (see above) was clearly either Tropical or Couch’s, but the bird was not heard calling and was not identifiable from the photos alone.

PHILADELPHIA VIREO *Vireo philadelphicus*. The written details of a bird reported from the Grand Canyon, COC, 10 Oct 2007 did not describe the dark lores characteristic of the Philadelphia Vireo and failed to mention the plumage variation within the Warbling Vireo (*V. gilvus*), such as the extent of yellow below.

RED-EYED VIREO *Vireo olivaceus*. The details of one from the Sweetwater Wetlands, PIM, 15 Sep 2004 suggested the Red-eyed, but three committee members concluded the description lacked details excluding similar species.

BLUE JAY *Cyanocitta cristata*. One described from Glendale, MAR, 30 Oct 2005 was circulated twice and received two positive votes. Most committee members believed the observation was too brief, and the observer was unaware of the rarity of the occurrence.

WINTER WREN *Troglodytes heimalis*. Photographs of one in Madera Canyon, SCR, 1 Feb 2009 suggest this species, but the observer chose not to submit full details, including voice differences, to the committee. There is much plumage variation in throat and underpart color and extent and color of the eyebrow within the Pacific Wren (as well as in the Winter Wren), so photos alone may not be sufficient to identify the species.

BLACK-CAPPED GNATCATCHER *Polioptila nigriceps*. A report from near Gila Bend, MAR, 19 March 2008 lacked details sufficient to substantiate this species north of any previous record. There are no accepted records north of the Santa Rita Mountains or west of the Baboquivari Mountains.

VEERY *Catharus fuscensens*. The ABC is long overdue publishing the results of its evaluation of three sight reports of one to three individuals seen in Madera Canyon.
between 8 and 15 May 1999. The committee did not accept any of the reports, even though it acknowledges the high skill level and experience of some of the observers. Reports of the Veery in May 1999 began with a bird netted along the San Pedro River, photographed in the hand, identified as a Veery, but ultimately reidentified from the photos as a Swainson’s Thrush (C. ustulatus). May of 1999 was perhaps the best spring in recent times for migrating Swainson’s Thrushes in southern Arizona, and the committee was almost unanimous in concluding that all the Veeries reported were likely Swainson’s Thrushes and that the observers may not have appreciated how red the Pacific subspecies group of Swainson’s Thrush (Russet-backed Thrush) can appear in certain lighting conditions. Furthermore, the Russet-backed Thrush, which winters in Mexico and Central America and migrates up the Pacific coast, and the Veery, which migrates across the Gulf of Mexico, should not be migrating together. There is only one accepted Arizona record of the Veery away from the Little Colorado River in the White Mountains, where the species nested infrequently until the 1970s. Migrants weren’t known to arrive there until June. Because of the potential for confusion with the Russet-backed Thrush, any successful Veery report will likely need to be supported by photographs or a specimen.

AZTEC THRUSH *Ridgwayia pinicola*. Reports of one near Clint’s Well, COC, 9 Aug 2005 and another near Flagstaff, COC, 14 Jul 2009 both lacked details sufficient for acceptance, given that either would represent a first northern Arizona record. Some of the committee suggested the description better fit a Loggerhead Shrike (*Lanius ludovicianus*) or even a juvenile Clark’s Nutcracker (*Nucifraga columbiana*). Another report from Florida Canyon, PIM, 9 May 2009 lacked sufficient details.

LONG-BILLED THRASHER *Toxostoma longirostre*. A thrasher described and photographed in East Whitetail Canyon, Chiricahua Mts., COS, 1 Jan and 11 Feb 2007 was most likely a hybrid Brown Thrasher (*T. rufum*) × Curve-billed Thrasher (*T. curvirostre*).

BLUE-WINGED WARBLER *Vermivora cyanoptera*. A description of one at Bog Springs Campground, PIM, 11 Apr 2010 was incomplete and did not rule out a number of similar species.

CONNECTICUT WARBLER *Oporornis agilis*. A description of one reported from Ramsey Canyon, COS, 14 Aug 1997 lacked enough detail for acceptance, and the date was very early for a vagrant in the West.

FLAME-COLORED TANAGER *Piranga bidentata*. A written description of one from Miller Canyon, COS, 31 May 1994 did not eliminate the possibility of a hybrid.

WHITE-COLLARED SEEDEATER *Sporophila torqueola*. One male photographed at Kino Springs near Nogales, SCR, 25 Jun–24 Aug 2007 was not accepted because this species is a common cage bird in Mexico, and any records in Arizona my be suspect. If a pattern of occurrence is established, this record could be re-evaluated.

THICK-BILLED FOX SPARROW *Passerella iliaca megarhyncha*. On the basis of the photos submitted, the ABC did not accept the identification of a bird reported as this subspecies in the Chiricahua Mountains, COS, 31 Jan 2007; some committee members concluded that the expected Rocky Mountain subspecies *P. i. schistacea* was not eliminated.

STREAK-BACKED ORIOLE *Icterus pustulatus*. The written description of an oriole in Tucson, PIM, 30 Mar 2007 did not adequately exclude similar confusing species. An obvious Streak-backed Oriole was photographed near Portal, COS, 30 Dec 2007 (ph. MHi) but was probably of a subspecies from central or southern Mexico (not the expected subspecies *microstictus*), so the ABC questioned the its origin.
PURPLE FINCH *Carpodacus purpureus*. After two rounds of voting, the ABC did not agree on the identification of a bird photographed at Patagonia, SCR, 12 Mar 2005, some members calling it a Cassin’s. A photograph of a finch at Cameron, COC, 23 Apr 2006 lacked details sufficient to exclude the more common Cassin’s Finch. Another report from Tanque Verde Wash, PIM, 28 Dec 2007 was not complete enough to identify the species with certainty. Photographs of one reported from Flagstaff, COC, 4 Feb 2008 suggested the Purple but did not show some critical features, such as the undertail coverts.

PEACH-FACED LOVEBIRD *Agapornis roseicollis*. Reports from Gilbert and Mesa, MAR, 2 Jan 2007 and 17 Jan 2007 clearly represented correct identifications, but because this cage bird has not been documented as having an established population in Arizona, it has not been accepted for the Arizona list and has not been added to the North American list. A thorough evaluation of the species’ status in Arizona is needed.

CORRIGENDA

The following corrections are noted for the previous Arizona Bird Committee report (Rosenberg et al. 2007). The year of the Broad-winged Hawk at Chandler on 26 Jan 2003 should have been 2004. There were two Rufous-capped Warblers in Sycamore Canyon on 28 Jul 2004, not one. An Orchard Oriole that returned (for a second winter) to Tucson 10 April 2005 actually arrived on 13 Nov 2004.

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ACKNOWLEDGMENTS

We thank the more than 300 observers who submitted material to the ABC; they
have made an important contribution to the expanding base of knowledge of the
status of Arizona birds. Jon L. Dunn, Paul Lehman, Molly Pollock, and Philip Unitt
contributed greatly to the improvement of the manuscript.

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Accepted 14 October 2011
MITOCHONDRIAL DNA AND METEOROLOGICAL DATA SUGGEST A CARIBBEAN ORIGIN FOR NEW MEXICO’S FIRST SOOTY TERN

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ABSTRACT: We report the first documented record for the Sooty Tern (Onychoprion fuscatus) in New Mexico and the fourth for the region of the southern Rocky Mountains and trans-Pecos Texas. The bird was found dead in moderately fresh condition on 8 July 2010 in the Laguna Grande area, near Carlsbad, Eddy County. It was brought to the Museum of Southwestern Biology where it was preserved as a study skin. A DNA analysis comparing the sequence of the specimen’s mitochondrial control region to a published population-genetic dataset on this species found that the sequence of the New Mexico tern was a perfect match with previously sequenced haplotypes from Puerto Rico and Ascension Island and ~2% divergent on average from all Sooty Terns previously sequenced from the Pacific and Indian oceans. Measurements of the specimen are consistent with a Caribbean origin. We surmise that this individual was carried inland from the Gulf of Mexico to southeastern New Mexico by the remnants of Hurricane Alex.

The Sooty Tern (Onychoprion fuscatus) is a seabird that nests on tropical and subtropical islands worldwide (Schreiber et al. 2002). Although the species typically remains at sea, it is known to wander widely, often in association with tropical storms (e.g., Dickerman et al. 1998, Hockey et al. 2005, Robin and Sudheendra Rao 2005). In this paper, we describe a Sooty Tern specimen that was salvaged far inland in the southwestern United States and that represents one of only a few records for the region. We attempt to identify the natal origins of this specimen by comparing its mitochondrial DNA and measurements to those of Sooty Terns from potential source populations in the central Pacific Ocean, the eastern tropical Pacific Ocean, the Caribbean Sea, and the central Atlantic Ocean. We also consider weather that may have driven this bird inland.

On 8 July 2010, staff of the Mosaic Corporation discovered a dead tern in a brine pond in the Laguna Grande area southeast of Carlsbad, New Mexico. The specimen was transferred to Desert Willow Veterinary Services where it was tentatively identified as a Sooty Tern and shipped to the Museum of Southwestern Biology (MSB), University of New Mexico. Johnson prepared it as a study skin (MSB 30000; http://arctos.database.museum/guid/MSB:Bird:30000; Figure 1). Its identification was confirmed by comparison to another Sooty Tern skin at MSB. The specimen was received soaked in water and covered with debris but was fresh enough that it could be preserved as a study skin with minimal loss of feathers. Its internal anatomy was still intact. Its ovary was 8 × 4 mm, with no developing ova, oviduct rather straight, 3 ½ mm wide; the bursa of Fabricius was absent. It was molting primary 3 and rectrices 1 and 6; on the head and neck molt was moderate, on the rest of the body light. Its plumage in general was rather worn and faded. Freshly grown feathers on the back were edged in
white. During preparation, many feathers on the dorsal surface of the base of the neck were lost, resulting in the specimen having a capped appearance, rather than an entirely black dorsum as it originally had. See Table 1 for comparison of the specimen’s tarsus, exposed culmen, and wing chord measurements to those of various populations of the Sooty Tern.

In the Atlantic basin the breeding range of the Sooty Tern comprises coastal islets of the Gulf of Mexico. Although small nesting populations exist in Louisiana and western Florida, the bulk of the population breeds in the Yucatán, and on Caribbean islands from the Dry Tortugas and the Bahamas through the West Indies, Fernando de Noronha, Ascension, Martin Vas, and St. Helena Islands (AOU 1957). In the central and eastern Pacific Ocean, it breeds from the Hawaiian Islands to Islas Revillagigedo and Tres Marías along the western coast of Mexico (AOU 1957) and south to subtropical Chilean islands (e.g., Easter Island; Schreiber et al. 2002). Most authorities recognize seven subspecies of Sooty Tern, three of which are known from the waters of the United States, Mexico, and Central America (Schreiber et

Figure 1. Photographs of the New Mexico specimen of the Sooty Tern, MSB 30000; (A) close up of head; (B) ventral view; (C) lateral view; (D) dorsal view.
<table>
<thead>
<tr>
<th>Locality</th>
<th>Ocean</th>
<th>Sex</th>
<th>n</th>
<th>Wing</th>
<th>Culmen</th>
<th>Tarsus</th>
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<td>16</td>
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<td>24.5 ± 1.8</td>
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<td>59</td>
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<td>Schreiber et al.</td>
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<tr>
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<td>43.0 ± 1.7</td>
<td>28.8 ± 1.1</td>
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<td>293 ±8</td>
<td>43.5 ± 2</td>
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<td>Hughes et al. (2010)</td>
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<td>U</td>
<td>50</td>
<td>289 ±6</td>
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<td>38.0 ± 1.4</td>
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<td>Haney et al. (1999)</td>
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aLACM, specimens in Natural History Museum of Los Angeles County, Los Angeles.
We consider three as candidates for vagrancy to New Mexico: *Onychoprion f. fuscatus* (Linnaeus), *O. f. crissalis* (Lawrence), and *O. f. oahuensis* (Bloxham). The eastern Pacific *O. f. crissalis* has the underparts grayer than in the western Atlantic *O. f. fuscatus*. The central Pacific *O. f. oahuensis* is similar in color to *O. f. crissalis*, but its bill averages larger (Cramp 1985). Available data suggest that there is little geographic variation in size throughout the range of the Sooty Tern, although North Pacific populations appear to be larger in body mass, wing length, and tarsus length (Schreiber et al. 2002).

On a global scale, the Sooty Tern has slight mitochondrial genetic differentiation, which is thought to have arisen after global expansion during the last ~100,000 years (Avise et al. 2000, Peck and Congdon 2004). Avise et al. (2000) sequenced a 373-base-pair (bp) portion of part I of the mitochondrial control region of Sooty Terns from the Caribbean and tropical Atlantic, central tropical Pacific, and central and western Indian Ocean. They found evidence for a dichotomous split between the Atlantic and Indo-Pacific populations, with a net genetic distance of ~1.5% between the two groups. Peck and Congdon (2004) were unsuccessful in sequencing additional samples for part I of the control region, but they added sequences of ~540 bp of part II of the control region of Sooty Terns from three separate breeding populations in the Great Barrier Reef region of the southwest Pacific Ocean, and they reanalyzed the data of Avise et al. (2000). They found that all Sooty Tern populations that had been assayed showed evidence of population bottlenecks and subsequent expansions that are estimated to have occurred between 16,000 and 90,000 years ago. To date, no study has sequenced Sooty Terns from subspecies *crissalis* of the eastern tropical Pacific.

**METHODS**

Using Qiagen DNEasy kits, we extracted DNA from 0.25 mg of muscle tissue and from the proximal tip of a single axillary feather of our specimen by following the manufacturer’s protocol but with the addition of 30 µL of 0.1-M dithiothreitol to the feather fragment at the initial tissue-incubation and digestion phases to reduce the disulfide bonds of the keratinous rachis and calamus. We assayed both extractions for DNA content with a NanoDrop spectrophotometer (Thermo Fisher Scientific, Pittsburgh, PA). Following Avise et al. (2000) and using the primers they reported, we attempted to amplify a 343-bp fragment of the mitochondrial control region. However, the primer combination reportedly used by Avise et al. (2000) resulted in amplification and sequencing of a pseudogene that was not alignable with the published sequences for the Sooty Tern’s control region. We subsequently tried without success to amplify the target fragment by using three additional primer pairs that have been used for sequencing the control region in other species of Charadriiformes. The success of Avise et al. with these primers may have resulted from their use of purified mitochondria rather than whole DNA extract that contains a mix of mitochondrial and nuclear DNA. Finally, we designed primers directly from the Avise et al. (2000) sequence (Genbank accession no. AF205605.1) that would amplify a 271-bp fragment between the 5’ forward primer (Avise 325F: GTATTA-
Figure 2. Phylogeny of Sooty Tern mitochondrial haplotypes based on 271 bp of the control region. Nodes supported by >70% bootstrap support are marked with asterisks and correspond to the haplotypes published by Avise et al. (2000). IO(a), Chagos Archipelago, Indian Ocean; IO(b), Seychelles, Indian Ocean; HI, Johnston Atoll (near Hawaii), Pacific Ocean; PR, Puerto Rico, Atlantic Ocean; AS, Ascension Island, Atlantic Ocean. Note the position of the New Mexico specimen in a clade of samples form Puerto Rico and Ascension Island.
CATACAACCTATCCCCCATT) and the 3’ reverse primer (Avise325R: ACGATTAAATAATCCCATCTAATACGAA). We amplified this fragment in a 15-µL reaction using 2 µL of the DNA extract and the following reagents: 0.15 µL of Taq polymerase (0.75 units; Gold Taq, ABI, Mountain View, CA), 200 µM of each deoxyribonucleotide triphosphate, 1.5-mM MgCl₂, 1.5 µL Gold Buffer (ABI), and 0.5 µM of each primer. For the polymerase chain reaction (PCR), we used an Eppendorf Mastercycler (Eppendorf, Hamburg, Germany) thermal cycler to carry out the following protocol: 95 °C for 8 min, (95 °C for 30 sec, 50 °C for 30 sec, 72 °C for 60 sec) × 35 cycles, 72 °C for 10 min. We visualized the PCR products on a 1% agarose gel and cleaned them with Exo-Sap-It (USB, Cleveland, OH). For the sequencing reactions we used BigDye 3.1 chemistry (ABI) and the same primers as for PCR amplification. Sequences were read with an ABI 3130 automated sequencer. Our primers coamplified and cosequenced an additional pseudogene of ~100 bp, but we were able to read the entire 271 bp of the target fragment in both the forward and reverse sequences. We assembled the sequence contig (set of overlapping DNA segments derived from a single genetic source) and inspected chromatograms manually with Sequencher 4.7 (GeneCodes, Ann Arbor, MI). We used the software package MUSCLE (Edgar 2004) for alignment with Genbank sequence no. AF205605.1 and each of the 46 additional haplotypes reported by Avise et al. (2000). We used the program MEGA (Tamura et al. 2007) to calculate uncorrected pairwise distances and for distance-based phylogenetic analysis. We used the program Phyml (Guindon and Gascuel 2003) for phylogenetic analysis by maximum likelihood, using the default parameters (HKY85 model with gamma-distributed rate variation among sites) and simultaneous estimation of the model’s parameters. We ran 500 bootstrap replicates of the maximum-likelihood analysis to assess support of the branch nodes.

We obtained the paths and times of tropical storms in both the eastern Pacific and Caribbean basin from the National Oceanic and Atmospheric Administration’s Hurricane Center on 7 March 2011 (www.nhc.noaa.gov/2010epac.shtml; www.nhc.noaa.gov/2010atlan.shtml). We considered all tropical storms or hurricanes that moved inland from the Pacific or Atlantic toward New Mexico during the month before the bird was discovered. We also checked local weather archives for Carlsbad, New Mexico, and archived regional weather reports for Texas and New Mexico in the week before the discovery of the tern.

RESULTS

The New Mexico specimen of the Sooty Tern has nearly white underparts and nearly black upperparts (Figure 1). Its white forehead extends into a supercilium that does not extend behind the eye (Figure 1). Viewed ventrally, its primaries are uniformly gray on the inner web, slightly lighter on the outer web, lacking the extensive white in the vanes (Figure 1). This combination of characters confirms the identity of the specimen as a Sooty Tern. The specimen lacks the white in the primaries and the long supercilium extending past the eye of the Bridled Tern (O. anaethetus). The nearly black back rules out the Bridled and Gray-backed (O. lunatus) Terns, and this speci-
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men is too pale ventrally and too dark dorsally to be an Aleutian Tern (O. aleuticus). We identified the specimen as an adult from its plumage pattern, plumage wear, molt, and absence of a bursa of Fabricius. The measurements of wing, culmen, and tarsus were unable to eliminate any of the potential source populations (Table 1).

The molecular sequence generated from MSB 30000 was 271 bp long from the 3′ end of the forward primer to the 5′ end of the reverse primer. The sequence has been deposited in Genbank (accession no. HQ713543). The base positions correspond to positions 42 to 312 of the sequence of Avise et al. (2000). Pairwise comparison of MSB 30000 to the 47 haplotypes of Avise et al. (2000) revealed mean genetic distances of 0.020–0.021 (range: 0.011–0.033) from samples from Hawaii (Johnston Atoll) and the Indian Ocean (Table 2). Mean genetic distances of the New Mexico specimen to samples from Puerto Rico and Ascension Island were much lower, 0.009 (range 0.000–0.018) and 0.007 (range 0.000–0.015), respectively. The haplotype of MSB 30000 was identical to Ascension Island haplotypes AS8 and AS9 and Puerto Rico haplotype PR3 (Fig. 2) of Avise et al. (2000). The phylogenetic result shows a dichotomy corresponding to the Puerto Rico-to-Ascension Island clade and Hawaii-to-Indian Ocean clade, with MSB 30000 falling clearly in the former. Bootstrap support is low, but this is expected given the small number of informative characters in the data set. Avise et al. (2000) considered the character states at base-pair positions 131, 198, and 200 of their alignment to be diagnostic for the Caribbean and Atlantic populations of the Sooty Tern. At each of the three positions, the bases in the New Mexico bird match the state expected for Caribbean and Atlantic populations.

Only one storm, Hurricane Alex from the Caribbean Basin, passed at a time and with a track that might have carried this Sooty Tern off course. Hurricane Alex passed over the base of the Yucatán Peninsula on 27 June before making its way northwest over the southern Gulf of Mexico, then turning southeast to make landfall in central Tamaulipas and dissipating over the western edge of San Luis Potosí on 2 July 2010. Carlsbad, New Mexico, received ~100 mm rain in the week leading up to the find, as predicted by the track of Alex’s remnants over northern Mexico into the southwestern United States (Sosnowski 2010).

Table 2 Estimates of Evolutionary Divergence in 271 Base Pairs of Mitochondrial DNA between Sooty Terns from Various Locations

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
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<tbody>
<tr>
<td>(1) Johnston Atoll, Hawaii</td>
<td>0.0007</td>
<td>0.0007</td>
<td>0.0004</td>
<td>0.0004</td>
<td>0.0007</td>
<td></td>
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<tr>
<td>(2) Puerto Rico</td>
<td>0.028</td>
<td>0.0004</td>
<td>0.0007</td>
<td>0.0007</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td>(3) Ascension Island, Atlantic Ocean</td>
<td>0.024</td>
<td>0.016</td>
<td>0.006</td>
<td>0.006</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>(4) Chagos Archipelago, Indian Ocean</td>
<td>0.016</td>
<td>0.028</td>
<td>0.023</td>
<td>0.004</td>
<td>0.007</td>
<td></td>
</tr>
<tr>
<td>(5) Seychelles, Indian Ocean</td>
<td>0.018</td>
<td>0.027</td>
<td>0.024</td>
<td>0.019</td>
<td>0.007</td>
<td></td>
</tr>
<tr>
<td>(6) New Mexico</td>
<td>0.021</td>
<td>0.009</td>
<td>0.007</td>
<td>0.02</td>
<td>0.021</td>
<td></td>
</tr>
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aBelow diagonal, based on the number of base differences per site, averaged over all pairs of sequences in MEGA 5 (Tamura et al. 2007). Above diagonal, standard error estimate(s). The analysis involved 47 nucleotide haplotypes published by Avise et al. (2000).
DISCUSSION

The combination of the plumage characters of our specimen of *Onychoprion* confirms its identity as a Sooty Tern. Furthermore, at the mitochondrial cytochrome oxidase I locus, Sooty Tern specimens from the Pacific Ocean differ by 5.8% from Bridled Tern specimens from Florida. Therefore it is unlikely that any Bridled Tern would contain a haplotype identical to that of a Sooty Tern at the 271-bp fragment of the control region.

In measurements, MSB 30000 is decidedly small in comparison to published measurements of the Sooty Tern (Table 1), but definitive identification of the geographic origin is not possible by morphology alone because of the plumage wear of the specimen and the broad overlap and high variability of available measurements. A thorough morphological study of the subspecies that takes into account sex and plumage wear is clearly needed.

The small size of our specimen might suggest a hybrid origin, perhaps the product of a Sooty Tern mother with a Bridled Tern father. Indeed, the wing, tarsus, and culmen measurements of MSB 30000 also fall within published measurements of the Bridled Tern (Haney et al. 1999; Table 1). There are, however, no reports of a Bridled × Sooty Tern from the literature (McCarthy 2006). An F1 hybrid should be intermediate in most phenotypic characters (Clark and Witt 2006), whereas the plumage of MSB 30000 is consistent with a pure Sooty Tern. Therefore, we consider hybridization to be a remote possibility.

The control-region sequence of MSB 30000, although short in length, unambiguously indicates an affinity with Sooty Tern haplotypes from Puerto Rico and Ascension Island to the exclusion of those from Johnston Atoll and the Indian Ocean. This result firmly indicates that this bird did not originate in either the central Pacific or Indian oceans, and it suggests that it may have come from the Atlantic side of North America via the Caribbean Sea and Gulf of Mexico. The major uncertainty in this conclusion stems from the lack of DNA sequences from Sooty Terns of the eastern tropical Pacific Ocean, where the species breeds from the Alijos Rocks west of southern Baja California south to the Gulf of Panama (Pitman 1985, Wetmore 1965). If the Sooty Terns from the eastern tropical Pacific are so closely related to those in the Caribbean and Atlantic that they share mitochondrial DNA haplotypes, then it would be equally plausible that the New Mexico specimen may have come from the Pacific. Indeed, this vagrant from New Mexico, along with previous inland records, suggests the possibility for gene flow across the Central American land barrier. Furthermore, previous genetic analyses of Avise et al. (2000) and Peck and Congdon (2004) suggest that the Isthmus of Panama has not been a barrier to gene flow for this species, whose global genetic diversity is far more recent than the formation of the isthmus ~3.1 million years ago. However, we suspect that haplotype sharing and gene flow are unlikely, especially considering that a different subspecies of the Sooty Tern (*O. f. crissalis*) occurs in the eastern tropical Pacific. We further suspect that the water barrier separating populations on the Pacific coast of Middle America from those on Johnston Atoll is less significant to the Sooty Tern than is the land barrier separating Pacific from Caribbean populations.
This occurrence marks only the second record of the Sooty Tern in the southern Rocky Mountain region, the first being from Colorado (Percival 2009). Trans-Pecos Texas has records from Jeff Davis and Brewster counties (Williams 1981). Additional inland records associated with tropical storms include one from Oklahoma (Heck and Arbour 2010) and many from throughout the eastern one third of the contiguous United States (AOU 1998). New Mexico’s avifauna includes several records of Pacific seabirds, including the Ancient Murrelet (Synthliboramphus antiquus; Hubbard 1986; MSB 9287), Long-billed Murrelet (Brachyramphus perdix; Witt et al. 2010; MSB 29200), and Least Storm-Petrel (Oceanodroma microsoma; Zimmerman 1992; MSB 9087). There is also at least one specimen of the Pacific Brown Pelican (Pelecanus occidentalis californicus) from New Mexico (MSB 6815).

Sequences of mitochondrial DNA from multiple individuals of O. f. crissalis would be required to rule out an eastern Pacific origin of the New Mexico Sooty Tern definitively. However, weather patterns prior to its discovery southeast of Carlsbad and molecular data provide strong and corroboratory evidence that this bird arrived from the Caribbean.

ACKNOWLEDGMENTS

We thank Melody Russo and Sammie Uhrig for ensuring that this specimen was promptly brought to the Museum of Southwestern Biology after salvage. We thank Kimball Garrett for measuring specimens at the Los Angeles County Museum and providing specimen data. Philip Unitt, Chris Feare, Betty Anne Schreiber, Doug Pratt, Brandon Percival, Mark Lockwood, Sartor Williams and John Hughes all provided helpful correspondence. Kimball Garrett and one anonymous reviewer provided comments that improved the manuscript.

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Accepted 30 September 2011
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NORTHERLY EXTENSION OF THE BREEDING RANGE OF THE ROSEATE SPOONBILL IN SONORA, MÉXICO

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The Roseate Spoonbill (Platalea ajaja) lives in coastal wetlands from the southern United States south through Middle and South America. On the Pacific coast of the United States and northwestern Mexico, it is a local summer visitor and post-breeding wanderer, rare in Sonora (Russell and Monson 1998), very rare on the Baja California peninsula (Howell and Webb 1995, Amador and Ramirez 1996), and casual and irregular (primarily immature birds in the post-breeding period) in southern Arizona (Monson and Phillips 1981) and California (California Bird Records Committee 2007). The Roseate Spoonbill is currently a regular summer resident in Sonoran estuaries at least as far north as Estero Santa Cruz in Bahía Kino.

The only published record of the Roseate Spoonbill breeding in Sonora is from Estero Tobari in the southern part of the state, where Palacios and Mellink (1995) documented 15 nests on 14 May 1994. In May 2010, this colony had approximately 21 nests (Germán N. Leyva García pers. comm.). Currently, the spoonbill breeds as far north in the Gulf of California as Bahía Guásimas, 100 km north of Estero Tobari, where in 2010 approximately 20 pairs nested in a mixed-species colony of wading birds (Jaqueline García Hernández pers. comm.). Here we report the northward extension of the breeding range in the Gulf of California to Estero Santa Cruz, 167 km north of the Bahía Guásimas colony (Figure 1).

Estero Santa Cruz is a 3622-ha negative estuary dominated by thickets of Black Mangrove (Avicennia germinans), extensive tidal flats, and permanent channels (Brusca 1980). Formerly the terminus of the Rio Sonora, since the damming of the river in 1947 Estero Santa Cruz no longer receives significant freshwater input, so the aquatic environment is hypersaline (Quevedo Estrada 2007). It is located at 28°48′ N, 111° 54′ W on the eastern shore of the midriff island region of the Gulf of California, immediately south of the fishing village of Bahía Kino, Sonora (Fleischner and Gates 2009). On 23 May 2007, we noted a mixed-species colony of wading birds, predominantly Reddish Egrets (Egretta rufescens), Snowy Egrets (E. thula), White Ibis (Eudocimus albus), and Yellow-crowned Night-Herons (Nyctanassa violacea) in a Black Mangrove thicket on the western margin of Estero Santa Cruz (Figure 2). The mangroves average 4 meters high and have a dense canopy of leaves and branches. The substrate consists of thick mud with permanent pools and channels. We recorded the perimeter of the colony with GPS and mapped it with ArcGIS 9.2, calculating the area of the colony as 0.42 hectares adjacent to the shoreline. This colony was also active in 2008, 2009, and 2010.

Because of the dense canopy, much of the colony could not be scrutinized directly. Therefore in 2009 and 2010 we made flight-line counts (Paul and Paul 2004) to determine the composition and abundance of species within the colony. These counts record the number of adults flying to the colony from foraging grounds and vice versa. Each count began approximately 2 hours after sunrise and lasted 1 hour. At sunrise one of the adults leaves the nest to forage, returning to the nest approximately 2 hours later to switch with the adult that has been guarding the nest. By recording all the birds flying in and out of the colony we obtained a flight rate, which we then multiplied by 1.5 to estimate the number of nests in the colony (Paul and Paul 2004).
NOTES

This method has the advantage that the observer does not need to enter and disturb the colony at a time when the chicks are most vulnerable. Our counts took place when nests were in the “guard” stage, as stipulated by Paul and Paul (2004). During this stage, it is presumed that one of the adults is constantly at the nest to protect young chicks from predators and heat stress.

We completed six counts, three in 2009 and three in 2010. We surveyed the colony on 3, 6, and 11 June 2009 and on 22 May and 10 and 14 June 2010. In 2009, we were unable to observe nests directly but estimated 6–15 nests by the flight-line method. In 2010, we observed a maximum of five nests and estimated 15–20 spoonbill nests by the flight-line method.

In 2008 and 2010, we made efforts to identify the breeding chronology. We first observed spoonbills in Estero Santa Cruz on 25 March in 2008 and on 18 April in

Figure 1. Roseate Spoonbill near colony at Bahía Kino, Sonora.

*Photo by Abram B. Fleishman*
2010. In 2008, we recorded no further data on their phenology. In 2010, nest-site selection and nest construction occurred between 18 April and 17 May. We observed three recently hatched chicks in one nest on 14 June 2010. On the basis of an incubation period of 22 days (White et al. 1982), the eggs were likely laid between 14 May and 21 May. Roseate Spoonbill chicks fledge when they are approximately 6 weeks old. By this estimate, the chicks in Estero Santa Cruz could have fledged around 22 July 2010.

According to Cosme Damian Becerra, a local resident, this colony has been active since at least 1984, and it used to be larger before an oyster farm was built directly alongside it in the mangroves.

There are many threats to this colony. Subsistence harvesting of mangrove wood occurs within the colony, and an easily accessible network of trails allows feral dogs and cats to roam freely within it (pers. obs.). In addition, the future of Estero Santa Cruz is threatened by large-scale expansion of aquaculture of shrimp on the salt flats adjacent to the estero. In total, over 4000 ha of ponds (107% the size of the estero) are under cultivation (Comité de Sanidad Acuícola del Estado de Sonora, www.cosaes.com/camdic10.htm, accessed 1 July 2011), and the effluent from over half the area under cultivation is discharged into the bay 2.25 km outside the mouth of the estero at an estimated rate of up to 25.7 billion liters per day (unpubl. data). The antibiotics, pathogens, and suspended organic and inorganic matter in the effluent pose a great risk to this valuable ecosystem through sedimentation, eutrophication, and contamination of critical foraging habitat for waterbirds (Páez-Osuna et al. 2003). This colony is also threatened by development of infrastructure for tourism and disturbance by the growing human use of the surrounding region by both Mexicans and foreign visitors. Clearly, the continued existence of this spoonbill colony will require increased conservation efforts focusing on Estero Santa Cruz and should begin with educating the local community about the importance of this colony.

This work was undertaken by the Prescott College Kino Bay Center for Cultural and Ecological Studies Research and Conservation Program. We acknowledge the Environmental Studies faculty at Prescott College for inspiring in their students the
love of natural history and birds. Thanks to Ed Boyer, Lorayne Meltzer, and Tom Fleischner for providing encouragement and support, Germán N. Leyva García, and Jaqueline García Hernández for sharing unpublished data, Gregory Smart for field assistance, Eduardo Palacios for suggestions with the methods, and Kimball Garrett, Osvel Hinojosa-Huerta, Mark Riegner, Tom Fleischner, and Kathy Molina for providing feedback on the manuscript.

LITERATURE CITED


Accepted 16 August 2011
With few exceptions, the literature on hummingbirds reports that the male hummingbird courts, copulates, and moves on, uninvolved in any part of the subsequent nesting process. There are only two published reports of adult male hummingbirds feeding chicks. In 1954, Ernst Schäfer reported that in Venezuela he had observed and photographed a male Sparkling Violet-ear (Colibri coruscans) feeding a single nestling (Skutch 1973). Schuchmann (1999:506) dismissed this report as unlikely on the grounds that it “might easily have been misinterpretation” because the Sparkling Violet-ear is monomorphic. In 1970, in her yard in Napa, California, Clyde (1972) observed a male-plumaged Anna’s Hummingbird (Calypte anna) feed a solitary chick left in a nest after the first chick had fledged and the female tending the nest had disappeared. This observation is often recounted in the literature without comment (Russell 1996:16, Johnsgard 1997:55) or is dismissed as “highly doubtful, since male-like plumage has been reported in a variety of female hummingbirds” (Tyrrell 1985:105). Stiles and Martinez (1992) expressed skepticism about the reports by Schäfer and Clyde because of the lack of unequivocal sexing.

In May 2007 an unmistakably male-plumaged Anna’s Hummingbird fed chicks in a nest in a residential yard in Eugene, Oregon (44° 2’ N, 123° 1’ W). The nest was in an Oregon white oak (Quercus garryana) in a mixed wooded area of predominantly Oregon white oak, Douglas-fir (Pseudotsuga menziesii), and Oregon ash (Fraxinus latifolia). The oak was roughly 11 meters in height. The nest was on a limb about 2 meters from a deck on a house. The limb was about 6 meters from the ground, at the same height as the deck railing. The nest was also at the same height as a feeder about 3 meters from the nest. I observed the nest from the building stage (initiated by 23 May), through incubation (two-egg clutch), to the development of two chicks, hatched by 12 June 2007. On 24 June I observed an adult male-plumaged Anna’s Hummingbird visit the nest. I monitored and photographed activity at the nest on 24 June from 11:15 to 12:02 and from 12:45 to 15:25. A male-plumaged Anna’s Hummingbird visited the nest repeatedly, sometimes sitting on it (Figure 1), sometimes feeding the chicks (Figure 2). In the course of the same day an adult female Anna’s Hummingbird also visited the nest. I was unable to make observations on 25 and 26 June. On 27 and 28 June I observed the two chicks in the nest. By the morning of 29 June only one chick was in the nest and the female was not present in the area; the male-plumaged Anna’s Hummingbird, however, remained and fed the lone chick at 8:35. By 12:50 on 29 June that chick had also fledged.

Although Clyde (1972) wrote that there was a remote possibility that the Anna’s Hummingbird at her nest was a female in male plumage, the photo-documentation at the nest I describe strongly suggests that the apparent male at my nest was indeed a male. Female Anna’s Hummingbirds usually have a rosy patch on the gorget (Williamson 1956, Russell 1996), and some have scattered iridescent rosy pink feathers on the crown (Howell 2003), but there are no reports of an adult female with a complete complement of red crown feathers, as evident in Figures 1 and 2 or on the individual reported by Clyde (1972). In addition to having the head and gorget color typical of an adult male, the apparent male I photographed had throat feathers elongated laterally and posteriorly, according to Russell (1996) characteristic of the male’s definitive basic plumage.

At the nest described by Clyde (1972) and at mine the behavior of the apparent male was in many ways similar. At both the male perched repeatedly near the nest;
Clyde reported sometimes “about 12 inches” from the nest, recurrently over 3 days before the fledging. At the Oregon nest the male perched within 3 meters of the nest repeatedly from 19 to 29 June. Clyde remarked that the female tolerated the male’s presence; in my observation the female also did not resist the male’s visiting the nest even though she was also present and still attending the nest. In both instances the female disappeared after the first chick fledged and the male then took responsibility for feeding the remaining nestling. The settings of the two nests were also similar, as both yards had a year-round feeder nearby and there was a regular human presence near the nest. Both instances occurred near the end of the breeding season for the Anna’s Hummingbird (Russell 1996, Patterson and Scheuering 2003). Photos show that the male-plumaged Anna’s Hummingbird at my nest had started wing molt (suggesting he was done with displaying and any more nesting attempts) but was not quite as advanced in primary molt as the female at the nest.

My observation is more definitive than Clyde’s because of photo documentation. Taken together, Clyde’s observations and mine suggest that the male Anna’s Hummingbird can play a role in feeding nestlings and that the female can tolerate his involvement.

In addition to the reports of male hummingbirds feeding nestlings mentioned above, there have been reports of other types of male hummingbirds’ involvement with nesting over a range of time, places, and species. Wheelock (1916) reported seeing in California a male Anna’s Hummingbird “on guard” near a nest and a Black-chinned Hummingbird (*Archilochus alexandri*) sitting “within two feet of the brooding mother.” Bailey (1927) reported seeing a male Rufous (*Selasphorus rufus*) incubate a nest in southeastern Alaska. Welter (1935) reported seeing a male and a female Ruby-throated (*Archilochus colubris*) work together on a nest in Kentucky. In Utah in 1923 Clarence Cottam and his wife observed a male Calliope Hummingbird (*Stellula calliope*) feed an incubating female a number of times by regurgitation (Cottam 1941). Schäfer’s male Sparkling Violet-ear in Venezuela, distinguished by its “abnormally light crown” (Skutch 1973:82), took turns sitting on the eggs in the nest. Skutch (1973:82) also reported that Augusto Ruschi “stated that males of the
hermit genera *Glaucis* and *Phaethornis* usually cooperate with the female in caring for the young.” Moore (1947) recounted incidents of male hummingbirds of several species guarding a nest or an incubating female and even building a nest; in Ecuador he reported seeing a male Sparkling Violet-ear guarding and then incubating a nest after the female was collected; the sexes of both birds were confirmed by dissection. In Costa Rica Wolf and Stiles (1970) reported a pair of Fiery-throated Hummingbirds (*Panterpe insignis*) of which the male defended and shared feeding territory with at least one female while she tended a nest. Also in Costa Rica, Stiles and Martinez (1992:369) observed one adult Band-tailed Barthroat (*Threnetes ruckeri*) feed another that was incubating. Those authors thought both birds might have been female but concluded that “it is also possible that the second adult was a male, in which case we witnessed a very uncommon event.” These wide-ranging reports collectively suggest that the role of the male hummingbird in the nesting cycle can be more varied and extensive than generally assumed.

I thank Stephen and Ruth Russell, who looked closely at my photographs and offered encouragement in getting this information out to the scientific community; Dan Gleason, who first confirmed that the feeding Anna’s Hummingbird in the photos was indeed a male; Steve Howell, who kindly made both substantive and stylistic improvements to this article, and Tom Gardali, who so generously gave of his time, expertise, and patience to bring this article into its final form.

**LITERATURE CITED**

NOTES


Accepted 2 September 2011
SEVERE BILL DEFORMITY OF AN AMERICAN KESTREL WINTERING IN CALIFORNIA

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During a recent survey for West Nile virus in wild birds around the Sonny Bono Salton Sea National Wildlife Refuge, Imperial County, California (Dusek et al. 2010), we captured a female American Kestrel (*Falco sparverius*) with a severe bill deformity (Figure 1). The kestrel was captured on 9 March 2006, at 08:45, approximately 0.25 km south of the intersection of Wiest and Lindsey roads (33° 08′ 42′′ N, 115° 26′ 59′′ W) and 6 km east-northeast of Calipatria. It was caught on a bal-chatri trap baited with a domestic mouse (Berger and Mueller 1959), as were all the 208 kestrels captured during this study. The bird was initially perched on a high transmission line

Figure 1. Adult female American Kestrel with missing maxilla, captured on 9 March 2006 in Imperial County, California; (a), View from the right side of head; (b) view from right side forward; (c) view from overhead, left side of head; (d) view from left side of head.

*Photos by R. J. Dusek*
running along Wiest Road and was caught within 10 minutes of our setting the trap. In examining the bird, we observed that the maxilla beyond the cere was missing. The upper bill structure from the palatine process, which included part of the maxilla, the entire premaxilla, and the external rhamphotheca (the hardened keratin layer covering the premaxilla) was missing rostral to the bird’s cere and nares (Threlfall 1968, Lucas and Stettenheim 1972, Proctor and Lynch 1993). The epidermal layer of the cere appeared to have fused over the remaining area between the nares where the upper bill normally would have been. The deformation did not appear to be recent or related to our trapping, as there were no obvious abrasions or open wounds in the region surrounding the nares and oropharynx or signs of recent trauma surrounding the oropharynx area. Both nares were clearly defined, and the tongue protruded from the open oropharynx area. After completing the physical examination, measurements, and obtaining a blood sample for testing for West Nile virus, we released the kestrel at the location of capture. After its release, we monitored the kestrel’s behavior for approximately 30 minutes but did not observe any additional hunting.

In March in southern California, the American Kestrel population is a mix of year-round residents and overwintering birds. On the basis of its plumage, the individual we captured was 6 months in age or older (Smallwood and Bird 2002). Thus it is not possible to determine whether this bird was hatched locally or migrated into the area. At the time of capture, other than the bill deformity, the general condition and behavior of this bird did not seem to differ from those of other kestrels we caught around this time. When compared with other females captured in March 2006, its scores for body condition (on a 1-to-5 scale, with 1 being the lowest; Iko et al. 2003) were 1 for furcular fat (n = 62, median value = 1) and 2 for pectoral muscle (n = 67, median value = 2). Its mass, however, was 100 g, lighter than that of other females (mean weight 111.8 g, standard error 1.3 g, n = 67) captured during this period (t = 9.39, P < 0.05). Laboratory test results for West Nile virus (following methods used by Dusek et al. 2010) indicated no active virus, but an enzyme-linked immunosorbent assay (ELISA) yielded a low virus-neutralizing antibody response (1/40 antibody titer), demonstrating previous exposure to West Nile virus.

Regardless of the circumstances that caused this deformity, the ability of this bird to survive in relatively good condition with this abnormality was surprising. Other studies noting birds with bill deformities have described behavioral changes in how the bird was able to manipulate food with its tongue and remaining bill structure, surviving over multiple years, and, in some cases, even successfully reproducing (Pomeroy 1962, Sealy 1977, Fiala 1981, Castro and Taylor 2001, Rintoul 2005). In falcons, the maxilla is sharp and hooked to tear flesh from prey, and the tomosium of the maxilla is notched, possibly as an adaptation for severing the cervical spinal column of vertebrate prey (Johnsgard 1990, Smallwood and Bird 2002). Both aspects of the falcons’ bill morphology are considered important for killing and ingesting captured prey, although other studies have indicated that a raptor’s ability to kill prey may be more related to squeezing pressure with its foot than to the direct use of its bill (Csermely and Gaibani 1998, Csermely et al. 1998). Despite the deformity we observed, the kestrel’s hunting and aggressive behavior did not seem to be impaired.
as it actively tried to capture the bait mouse within our trap. It is possible that this individual had been surviving with its deformation for some time (Murza et al. 2000), although we cannot suggest how it was able to tear apart and ingest its prey. Despite our monitoring of the bird after release, we observed no further hunting and did not encounter this bird again during the remainder of our study.

We thank the staff at the Sonny Bono Salton Sea National Wildlife Refuge for their logistical assistance and support of this work. This project was funded by the U.S. Fish and Wildlife Service, Sonny Bono Salton Sea National Wildlife Refuge, and the U.S. Geological Survey’s Salton Sea Science Office. We also thank Nancy Thomas, Megan Eberhardt-Frank, Sara Oyler-McCance, Laurie Baeten, David Rintoul, and an anonymous reviewer for their assistance and insights on the manuscript.

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Accepted 1 September 2011

THANKS TO WESTERN BIRDS’ REVIEWERS AND ASSOCIATE EDITORS

Peer review is a critical step in the publication of a scientific journal. I thank the following people for their generosity in taking the time to provide this essential service sustaining the scientific quality of Western Birds for volume 42: David G. Ainley, Dan Airola, Carolyne Bardeleben, Jeff Davis, Jon L. Dunn, Christopher J. Farmer, Kimball L. Garrett, Daniel D. Gibson, Jesse Grantham, David Green, Lori Hargrove, Steven C. Heint, Osel Hinojosa-Huerta, Steve N. G. Howell, Diana Humple, Paul E. Lehman, Dave Mackenzie, Kathryn Purcell, David E. Quady, Dan Rintoul, L. Jay Roberts, Alexandra Rose, Ernesto Ruelas Inzunza, Nathaniel Seavy, Larry Semo, Paul Sunby, Morgan Tingley, and Sophie Webb.

I also thank our hard-working our associate editors, Doug Faulkner, Thomas Gardali, Daniel D. Gibson, Robert E. Gill, Paul Lehman, Ron LeValley, Kathy Molina, and Dan Reinking, plus featured-photo editors John Sterling and Joseph Morlan, all of whom also serve also as reviewers as they coordinate the review of manuscripts. Western Birds is not possible without their dedication.

I am delighted to welcome as a new associate editor Kenneth P. Able, author of many books and papers on bird migration, ecology, and orientation, long a professor of biology at the State University of New York at Albany, and now a resident of McArthur, California. WFO and Western Birds are fortunate to have Ken contributing his broad expertise as a scientist, author, and editor to our organization and journal.

Philip Unitt
BOOK REVIEW


The Northern Spotted Owl (Strix occidentalis caurina), listed as a threatened subspecies in 1990, has been at the center of forest-management controversies in the Pacific Northwest for more than three decades. The political battles fought over the conservation of the owl and its habitat, and the effects of those battles on the regional economy, are a familiar story. Those battles are barely mentioned in “Population Demography of Northern Spotted Owls,” the new monograph in the Cooper Ornithological Society’s Studies in Avian Biology series. The authors instead present the results of their analyses of demographic data from throughout the range of the subspecies, information that is certain to figure heavily once again in the scientific and political debates.

This monograph presents the results of a meta-analysis of demographic data from 11 study areas across Oregon, Washington, and northern California from 1985 to 2008, as well as summaries of analyses from the individual study areas. This dataset, in various forms, has been analyzed in four previous workshops since the early 1990s, with results published in Studies in Avian Biology 17 and in Wildlife Monographs. The authors’ stated purpose in this edition is to re-examine the Northern Spotted Owl’s vital demographic rates to see if declines in survival and population size previously reported have continued since the last meta-analysis. The authors also incorporate into their analyses additional factors related to weather and climate, as well as the influence of an invasive competitor, the Barred Owl. This is also the first time that Pradel models have been applied in analyzing population change in the Northern Spotted Owl, reducing negative bias due to juveniles’ emigration.

Beginning with a brief description of the scientific and political context within which their studies were initiated, the authors then devote the bulk of the monograph to detailed descriptions of their analytical methods, spending considerable time explaining the challenges they faced incorporating new hypotheses into such a long-established dataset and analyzing it in new ways. Results from individual study areas are tabulated, with discussions in the text. For their rangewide meta-analysis, the authors used a 16-year subset of data, consistent for all 11 study areas.

These 11 areas make up an estimated 9% of the range of the subspecies and span a representative range of latitudes and ecoregions, from far northern Washington to northwestern California, and including wet zones along the coast and dryer areas farther inland. Results varied over this wide range, and the owls responded differently to various factors in different study areas, although there were some general trends. Rangewide declines in fecundity, survival, and population sizes are evident, continuing the long-term trends previously reported. Declines of 5 to 15% were seen in the more stable populations, while in four of the study areas the population declined from 40 to 60%, all in the 16 years from 1990 to 2006.

Because nearly all of the study areas were on public lands where the habitat is protected to varying degrees, the authors suggest that their results are likely to underestimate declines. They attribute the rangewide decline to a combination of reduced recruitment and, primarily, reduced survival. A number of potential causes
are discussed. The authors also report continued and increasing negative effects of the Barred Owl and recommend further study, including more focused studies of the ways in which the two species interact.

The monograph is structured in the familiar format of a scientific paper, making it easy to find information, but its readability is limited. This is not a book to take on vacation as a casual diversion. Rather, it is a serious attempt to present the current status of the species and the statistical methods used to detect changes. Although the background information and discussions are well written and engaging, readers unfamiliar with the language used to describe statistical methods will likely find themselves over their heads in the lengthy explanations of analytical methods and results. Those looking for information on the life history and ecology of the species will be better served elsewhere. This monograph will be of interest primarily to land managers responsible for Northern Spotted Owl habitat and to those with a specific interest in analyzing large, long-term datasets.

Mike McDonald

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**WFO establishes the Harry S. Swarth Award in Western Field Ornithology**

WFO’s Board of Directors has decided to establish the *Harry S. Swarth Award in Western Field Ornithology*, to honor a body of work that significantly advances field ornithology in the West. Subjects could include status and distribution, life history, identification, behavior, or other important aspects of the study of western North America’s birds.

The award’s name commemorates Harry S. Swarth (1878–1935), a giant of field ornithology who worked in much of western North America during the late 19th and early 20th centuries and who contributed more than 200 publications to the literature. His publications included surveys of the birds and mammals of sizable regions, taxonomic revisions, treatises on the identification of troublesome species, descriptions of new taxa, and, for the *Condor*, dozens of short reviews or summaries of current publications. Swarth’s career was memorialized in the *Condor* 38(4):155–168 (1936) and in the *Auk* 54(2):127–134 (1937).

The Harry S. Swarth Award will be presented from time to time at WFO’s annual conference. Honoring the work of individual living ornithologists, whether professional or nonprofessional, is the focus of the award, but consideration will also be given to long-time collaborators.

Members who wish to nominate a potential recipient of the award are invited to contact the Awards Committee Chairman, currently Dave Quady (davequady@att.net; 39 The Crescent, Berkeley, CA 94708), for guidance on how to do so. Please submit nominations by 1 April 2012.
FIRST EVIDENCE FOR ECCENTRIC PREALTERNATE MOLT IN THE INDIGO BUNTING: POSSIBLE IMPLICATIONS FOR ADAPTIVE MOLT STRATEGIES

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In the family Cardinalidae, the prealternate molt varies in extent from none in the Northern Cardinal (Cardinalis cardinalis) to including all secondary coverts, three tertials (secondaries 7–9), and four central rectrices in the Indigo Bunting (Passerina cyanea; Pyle 1997a, b). But replacement of primaries during the prealternate molt has not been documented within the family. In fact, in North American landbirds as a whole, replacement of primaries during definitive prealternate molt is rare, so far documented only in the Yellow Warbler (Dendroica petechia), Nelson’s Sparrow (Ammodramus nelsoni), Bobolink (Dolichonyx oryzivorus), and Lesser Goldfinch (Spinus psaltria; Pyle 1997a, Willoughby 2007, Pyle and Kayhart 2010). Pyle and Kayhart (2010) postulated that prealternate molt originally evolved from the need to replace bleached and dysfunctional feathers, and that colorful alternate plumage is a result of subsequent sexual selection. Here, we present evidence from a wild living Indigo Bunting for an eccentric definitive prealternate molt in which outer but not inner primaries are replaced (Pyle 1997b, 1998).

On 18 April 2011, we captured a single alternate-plumaged male Indigo Bunting in the Peveto Woods Bird Sanctuary in Cameron Parish, Louisiana. The upper image on this issue’s outside back cover shows the right wing of this bird; the pattern of replacement in the left wing was identical. Primaries 6–9, secondaries 6–9, rectrices 1–2, all secondary (lesser, median, greater, carpal, and alula) coverts, and the lesser (but not greater) alula were replaced, presumably during the previous definitive prealternate molt. We aged it as older than its second calendar year on the basis of the definitive primary coverts being broad with blue edges and black centers (Pyle 1997b). All flight feathers were similarly edged blue and centered dark. Our record represents the first evidence of primary replacement during the prealternate molt in the Cardinalidae (Pyle 1997a).

Alternatively, this Indigo Bunting may have interrupted its previous prebasic molt and subsequently reinitiated it at the same time as the prealternate molt. The contrast of inner and outer primaries may simply reflect suspension of molt, as proposed by Howell (2010) for the Lesser Goldfinch, in contrast to Willoughby (2007), who assumed primaries were replaced during the prealternate molt. Thus the second phase of the prebasic molt of some Lesser Goldfinches (in the spring, prior to breeding) could be coinciding with the prealternate molt, giving the false appearance of an extensive prealternate molt (Howell 2010). In this Indigo Bunting, however, we do not believe such a suspension occurred because primary coverts are typically replaced with the corresponding primaries during the definitive prebasic molt. If the prebasic molt had been suspended the 5th and 6th primary coverts should also contrast (in the upper photo on the outside back cover, note that the first primary covert is almost entirely obscured by the outer greater covert). Conversely, during eccentric molts zero to three outer primary coverts are typically replaced (Pyle 1997a), and the lack
of contrast among the 4th, 5th, and 6th primary coverts supports our assertion that primary replacement was part of an eccentric definitive prealternate molt. The central rectrices and tertials were also replaced in the prealternate molt—if they were of the basic plumage they would have been molted first and so more worn than the other feathers, normally grown later in molt. The extensiveness of this prealternate molt further suggests that the replacement of the outer primaries was a continuation of this molt (Pyle 1997a). Additionally, interruption of the prebasic molt has never been documented in the Indigo Bunting. We believe that the most parsimonious explanation for the replacement of primaries in this Indigo Bunting is an incomplete prealternate molt rather than an interrupted prebasic molt.

The molt strategies of the Indigo Bunting are unique among North American birds. Its formative and basic plumages often don’t occur in the United States because the preformative, prebasic, and prealternate molts typically take place away from and south of the breeding range. The Indigo Bunting’s preformative and prealternate molts are more extensive than those of most other North American passerines, with many individuals replacing all secondary coverts during both molts and some individuals replacing outer primaries during the prealternate molt (as demonstrated by the example we present here). Among North American passerines, eccentric prealternate molts have been noted only in Nelson’s Sparrow and, as discussed above, possibly in the Lesser Goldfinch (Pyle 1997b). Similar replacement of outer primaries has also been found in adults, after their second year, of certain shorebirds, such as the Little Stint (Calidris minuta), Bristle-thighed Curlew (Numenius tahitiensis), and Lesser Sand Plover (Charadrius mongolus) (Pearson 1984, Marks 1993, Balachandran and Hussain 1998). Like the passerines mentioned above, these shorebirds can undergo extensive and eccentric preformative molts and definitive prealternate primary molts (see Pyle 2008). The similarities in molt strategy and extent between these shorebirds, the passerines mentioned above, and the Indigo Bunting, are presumably due to similar selective pressures—based on increased exposure to sun due to habitat preferences and seasonal migration—driving convergent evolution (Pyle 2008).

In addition to their distinct patterns of molt, the male Indigo Bunting’s age-related patterns of plumage coloration are also unique. For example, in definitive basic plumage, male Indigo Buntings after their second year are typically predominantly brown, many showing brown-edged tertials and wing coverts (Pyle 1997b), as in the lower image on the outside back cover of an after-second-calendar-year male captured on 8 March 2010 in Oaxaca, Mexico. Note the predominantly brown inner and predominantly blue outer greater coverts forming a color gradient; the shift implies a change in the hormonal cues responsible for the deposition of brown melanin and the structure responsible for blue coloration during the prebasic molt. Conversely, second-calendar-year males in their formative plumage have, on average, more extensive blue in the replaced tertials and wing coverts than their older counterparts (Pyle 1997a, Migration Research Foundation 2011), as shown in the upper image on the inside back cover, of a second-year Indigo Bunting captured on 18 April 2011 at Peveto Woods, the same day as the after-second-year male with prealternate molt of primaries discussed previously. Note that this individual was undergoing the first prealternate molt (e.g., replaced outer median coverts in photo) and, in contrast to after-second-year males, had identifiable retained juvenile primary coverts (brown and worn), inner primaries, and outer secondaries in an eccentric preformative replacement pattern (outer primaries 5–9 and inner secondaries 6–9 are of the formative plumage). Although this individual has more blue coverts than does the older male in the lower image, it shows a similar trend toward bluer-edged feathers from proximal to distal in the greater coverts.

To confirm that formative-plumaged male Indigo Buntings show, on average, more blue than definitive-plumaged males we reviewed specimens at the Louisiana State University Museum of Natural Science (Wolfe), University of California, Berkeley,
Fifteen males collected in Honduras, Mexico, and Panama between 16 October and 7 March, in formative ($n = 5$) and basic ($n = 10$) plumage, support the assertion that formative-plumaged males, on average, are bluer than their counterparts in definitive basic plumage (Figure 1). Thus, in winter, many young male Indigo Buntings are brighter in coloration than adult males, a pattern unique, to our knowledge, among North America's migratory landbirds.

Variation during winter in the male Indigo Bunting's plumage color appears to be due in part to differences in the timing of the preformative and prebasic molts with respect to variation in the hormones responsible for the synthesis of the feather structure responsible for blue coloration. For example, the definitive prebasic molt of wing coverts could occur earlier, prior to a hormonal shift necessary for the generation of blue. If a later preformative molt of greater coverts occurs after this shift, bluer plumage may develop. Bluer plumage reflecting later molt may signal a second-year individual's low quality and poor condition on the wintering grounds. Such males are less cryptic than their more mature counterparts and may suffer higher levels of predation (Froehlich et al. 2005). However, this shift toward blue can also be seen among the greater coverts within individuals of both age groups; inner coverts are typically replaced earlier than outer coverts (Pyle 1997a, b), and in some individuals these inner coverts are edged brown, with distal and later-replaced coverts becoming bluer gradually. For example, the after-second-year individual shown on the lower inside back cover was also captured at Peveto Woods on 18 April, and it had replaced four bright blue inner greater coverts (alternate) and retained three brown central (basic) and two predominantly blue (basic) outer greater coverts.

Surprisingly little is known about where and when Indigo Buntings undergo the preformative and prebasic molts (Pyle 1997b, Pyle et al. 2009). Our examination of specimens revealed that in some birds the preformative molt takes place on the winter grounds in November and December, whereas others largely complete the definitive prebasic molt at molt-migration stopover locations in August and September, before arrival on the winter grounds (see Pyle et al. 2009). This implies a hormonal shift leading to bluer feather edging in both age groups from September to November. At McGill Bird Observatory in Montreal, Canada, however, hatching-year male Indigo Bunting have been captured in or after preformative molt, and after-hatching-year males have been captured in or after prebasic molt during fall (McGill Bird Observatory 2011, M. Gahbauer pers. comm.). Males undergoing preformative molt were captured later (late September to early October) than those undergoing prebasic molt (early to mid-September), further supporting our inference that later preformative molt may result in bluer plumage. Individual variation in the timing of both molt and hormone levels could explain individual variation in the amount of blue in the coverts, especially in definitive basic plumage. The location and timing of molts of the Indigo Bunting and other molt-migrants appear to be very plastic, depending on breeding success and climatic conditions (Pyle et al. 2009), and such flexibility could also help explain the extensive color variation in male Indigo Buntings of both age groups.

The definitive alternate plumage of the male Indigo Bunting is much more brilliantly blue than the brown and duller blue definitive basic plumage (Pyle 1997a, Migration Research Foundation 2011), whereas the first alternate plumage is variably brown and blue. The variability of the brown in these alternate plumages is due to the relationship between two factors: (1) the variation in the amount of blue and brown arising during the preformative and definitive prebasic molts, as described above, and (2) the subsequent extent of prealternate molts. Thus some after-second-year male buntings with less complete definitive prealternate molt retain brown-edged wing coverts, as shown in the lower image on the inside back cover. Because the Indigo Bunting's basic and formative plumages occur largely on the winter grounds they are not well treated by North American field guides. Ornithologists, bird watchers, and banders encountering
Indigo Buntings may intuitively, and mistakenly, associate the amount of blue in a male Indigo Bunting’s plumage with age. Rather, we recommend that age determination be based primarily on the color and condition of the primary coverts: black, blue, and relatively fresh in older adults and brown and worn in second-year birds. In spring, this criterion may be critical because outer primaries can be replaced on the winter grounds in both age groups, during the preformative molt in second-year birds and during the prealternate molt in after-second-year birds, as we have demonstrated.

The occurrence of prealternate molt is correlated positively with migration (Svensson and Hedenstrom 1999, Pyle 2008, Howell 2010), supporting the hypothesis that prealternate molt evolved in response to increased feather wear and was subsequently repurposed by sexual selection (Pyle and Kayhart 2010). The breeding success of birds migrating to the neotropics is affected by the quality of habitat encountered on the winter grounds, that is, conditions migrants experience in tropical latitudes affect subsequent summer breeding (Nott et al. 2002, Norris et al. 2004). Similarly, survivorship over the winter may limit migrants’ population growth (Saracco et al. 2008). Honest signals reflecting the quality of an individual’s winter territory may be critical for the establishment of social hierarchies and in sexual selection for breeding. Therefore, while in North America establishing territories for breeding, migrant birds that undergo prealternate molt in the winter range wear an honest signal representative of the parasites, stress, and food resources they experienced in the tropics.
Despite strong theory for the prevalence of prealternate molt among migrants, the relationship between evolutionary history and contemporary environmental influences on the presence and extent of prealternate molt has not been studied. Female Indigo Buntings undergo molts that are similar in extent to those of males (Pyle 1997a; specimen examination), yet their color changes little, further supporting the hypothesis that extensive prealternate molts of both sexes evolved in response to feather wear and that males’ blue evolved after the prealternate molt was in place.

Here we have provided the first evidence of an eccentric prealternate molt in the family Cardinalidae. Our observation supports previous assertions that extensive prealternate molt should be expected among long-distance migrants that occupy open habitats and experience levels of solar exposure higher than those of their resident counterparts (Pyle 2008). We recommend that ornithologists, banders, and bird watchers be aware of and investigate the possibility of eccentric definitive prealternate molts in other species with such patterns of life history.

ACKNOWLEDGMENTS

Special thanks to Marcel Gahbauer from McGill Bird Observatory in Quebec, Canada, for sharing his knowledge of the timing of Indigo Bunting molt with us and Manuel Grosselet for use of his photograph. Edits and suggestions by John Sterling and an anonymous reviewer greatly improved the manuscript. This study would not have been possible without assistance from dedicated Bluebonnet Bird Monitoring Project (BBMP) banding volunteers, Kristin Brzeski, Emma DeLeon, John Hartgerink, Erik Johnson, Eric Liffmann, Falyn Owens, Dave Patton, Luke Powell, Jerry Seagle, Phil Stouffer, and Sherri Utley, and all the participants of the 2011 BBMP Advanced Banding Workshop conducted in Baton Rouge, Louisiana, 14–18 April 2011 with Peter Pyle. Thanks to collaborators and contributors to BBMP, a Western Bird Banding Association 2010 research grant, and the Parks and Recreation Commission of the parish of East Baton Rouge. We also thank James Van Renssen and the curators of specimen collections at the Louisiana State University (Donna Dittmann, Steve Cardiff), Museum of Vertebrate Zoology (Carla Cicero, Luanne Wilson), and California Academy of Sciences (Maureen Flannery) and Nick Lethaby for assistance with our examination of specimens. This is a contribution of BBMP and contribution 411 of the Institute of Bird Populations.

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SY Indigo Bunting captured on 18 April 2011 in Cameron Parish, Louisiana, undergoing the first prealternate molt.

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ASY Indigo Bunting captured on 18 April 2011 in Cameron Parish, Louisiana, undergoing the definitive prealternate molt.

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