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Cover Photo Black Turnstone - *photo by Rich ditch*

FIRST OCCURRENCE OF BLACK TURNSTONE IN ARIZONA

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On the evening of 2 June 2005, Tucson birder Roger Eastman was birding at “Cochise Lake,” the large holding pond for treated wastewater south of the Twin Lakes Golf Course in Willcox, Cochise County. In the stubble and mud along the edge of the pond he spotted a Black Turnstone (*Arenaria melanocephala*) and immediately recognized that it was unexpected. Returning to the pond early the following morning he again observed the turnstone and phoned in a report and description of the bird to me. Word quickly went out on the Arizona-New Mexico bird listserv, allowing many birders to see and enjoy the bird during its brief stay. Photographs of the turnstone were obtained by Rich Ditch, Jeff Estis, and me and have been submitted to the Arizona Bird Committee for documentation. The Black Turnstone was last reported on 5 June 2005.



The Black Turnstone is an extremely rare vagrant in the interior west. Given the Willcox bird's age and the date and location of the occurrence, it seems likely that it was a wandering, nonbreeding individual rather than an off-course adult migrant.

Photo by Mark Stevenson

The identification of Black Turnstone is straightforward when the bird is seen well. However, the related Ruddy Turnstone (*Arenaria interpres*) in basic plumage could cause confusion for inexperienced birders. In the Black Turnstone's normal range and habitat, basic-plumaged Surfbird (*Aphriza virgata*) or Rock Sandpiper (*Calidris ptilocnemis*) may also cause uncertainty.

The Willcox bird was a medium-small shorebird with a short, tapering, finely pointed black bill, black eye, and short orange-brown legs. At rest, the upperparts were entirely black to brownish-black. There were fine white streaks on the crown, nape, sides of the neck, and cheeks. A bold white spot at the base of the bill was separated from the eye and supercilium by black feathers. The white supercilia nearly met on the forecrown. The breast was black, with a straight line of divide from the white belly. There were scattered white feathers within the upper black breast and

scattered black feathers just below the black breast. The rest of the underparts were white. White edging was not apparent on the scapulars but was present on the median wing coverts as narrow white tips. At rest, the tips of the primaries showed some brown tone over the black coloration. These brown tones and worn white tail tip suggest that this was a bird in its first spring (Paulson 1993). In flight, the bird showed the distinctive pattern of white longitudinal lower back stripe, black tail with a broad white base (photos of the perched bird showed a minimal white tail tip), and the wing black above with a white wing stripe and white humeral stripe.



The identification of Black Turnstone is straightforward when the bird is seen well. At rest, the Willcox bird showed primary tips with some brown tones over the black coloration. These brown tones and the worn white tail tips suggest this was a bird in its first spring.

Photo by Mark Stevenson

Black Turnstones breed on coastal tundra in western Alaska. Their winter range extends along the rocky Pacific Coast from northern Mexico to southeastern Alaska. Nonbreeding birds may remain in the winter range all year (Hayman et al. 1986). They are fairly common on rocky shores and reefs of the northern Gulf of California, chiefly from September to early April; a few have summered in Sonora (Russell and Monson 1998). North of the Gulf of California at the Salton Sea the Black Turnstone is nearly annual as a rare spring transient (late March to early June) and a casual fall transient (early July to early September), with a few summer and winter records (Patten et al 2003).

Away from the Salton Sea, the Black Turnstone is an extremely rare vagrant in the interior west, not surprising given its coastal distribution and that it does not breed or migrate across the northern coast of Alaska and Canada. The similar Ruddy Turnstone, which does breed across the north of the continent, has strayed to Arizona more than 30 times (Rosenberg and Witzeman 1998). Elsewhere in interior southern California, there are three May records and two early September records (G. McCaskie personal communication). There are also Black Turnstone records from as far inland as Montana and Wisconsin (Paulson 2005). A web search revealed no mention of the Black Turnstone on the checklists of inland states bordering Arizona with the exception of a single accepted Nevada sight record of one bird at Carson Lake 23 April 1998 (J. Cochran, personal communication). The closest previous record to Arizona was of one bird found by Gale Monson on the California side of Lake Havasu on 21 May 1948 (Monson and Phillips 1981).

Given the bird's age and the date and location of this occurrence, it seems likely that the Willcox Black Turnstone was a wandering, nonbreeding individual rather than an off-course adult migrant.

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NEW BREEDING BIRD ATLAS IS WELCOME RESOURCE FOR ARIZONA BIRDERS

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Arizona Breeding Bird Atlas, edited by T. Corman and C. Wise-Gervais, 2005. University of New Mexico Press, Albuquerque. \$60.00 (hard cover).

Since the publication of Jim Lane's first bird-finding guide more than 35 years ago, birders visiting Arizona have been well served by a number of excellent "birding Baedekers" for finding the state's many specialties. Paradoxically, those of us who live here are not as well off. *The Birds of Arizona*, the classic monograph on distribution and status by Allan Phillips et al., is nearly as old as I am, and with Gale Monson's *Annotated Checklist of the Birds of Arizona* about to celebrate its first quarter century, local birders today can find it difficult to place their sightings in context.

This has changed, dramatically, with the welcome publication of the new *Arizona Breeding Bird Atlas*. Ably edited by two "avian biologists" on the staff of the Arizona Game and Fish Department, and incorporating data collected by over 700 atlas workers (the vast majority of them volunteers), this first major reference work on the state's birds in 40 years is well designed and richly illustrated, and fully deserves the place of honor it will occupy on birders' bookshelves, next to the magnum opus of Phillips, Marshall, and Monson. As large in format as it is rich in information, the book is well worth its price.

The field work for this ambitious project began in 1993 and was completed at the turn of this century. Given the size of the area to be covered and the low number of observers available in all but the most densely populated regions, a system of "priority" blocks was developed for the surveys; the difficulties and the sampling methodologies developed to overcome them are described clearly in the atlas's introductory matter, as are the criteria and definitions used to document each species' breeding status. The block system allowed more than one-sixth of Arizona's land area to be surveyed, an impressive accomplishment in a state so vast; eager birders will note, though, that this leaves some 80% of the state open for new discoveries.

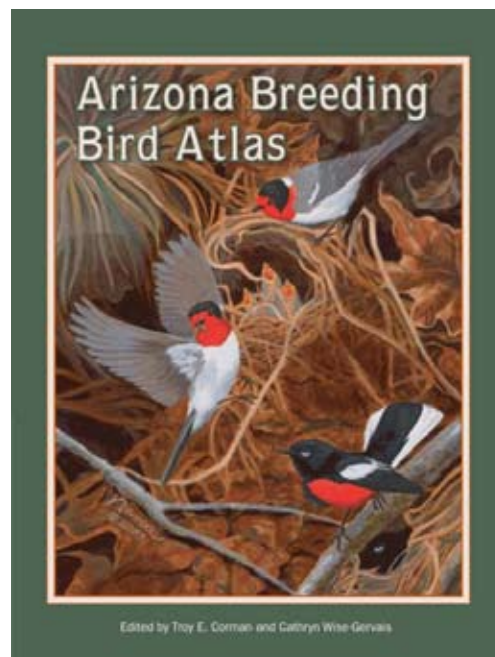
The book's head matter also includes an excellent introduction to Arizona habitats. Covering no fewer than 30 different plant communities, each illustrated in fine photographs, this section will serve all birders, visitors and long-time residents alike, as one of the clearest, most comprehensive overviews of the subject available. It will be particularly useful to those of us whose formative birding days were spent in the East and Midwest, and for whom the effects of altitude are sometimes an easily observed but only obscurely understood mystery.

The results are published in a series of clearly structured species accounts, each of them occupying a full opening and each accompanied by a photograph of the species and a large, easily interpreted map showing the locations of breeding records. The photographs are not strictly speaking necessary, but with few exceptions, they are of good quality and add to the visual appeal of the species accounts. For many species, convenient graphs illustrating breeding phenology and the distribution of breeding records across habitats are also provided.

Although they were contributed by no fewer than 19 different authors, the prose accounts are generally uniform in style; only in the short anecdotal paragraphs introducing each account does the voice of the individual author intrude. The "meat" of each account is rigorously and consistently structured, making it easy to scan for specific types of information. A detailed description of the habitat preferences of each species is followed by a clear summary of the bird's breeding biology in Arizona, including full and often carefully analyzed information on timing, nest construction, and behavior.

Each account concludes with a discussion of the map data. Many of the most interesting comments here are those addressing the apparent absence of some species (Lewis's Woodpecker, for example) in areas where they might be expected to breed. Careful readers will note many opportunities for research into these and other topics.

The appendices include a table summarizing information collected during the atlas surveys on cowbird brood



parasitism and a nearly 20-page bibliography. The latter is a significant contribution to the resources available on Arizona ornithology, with most of the titles cited post-dating Anderson's 30-year-old *Bibliography of Arizona Ornithology*.

As its title suggests, the book covers only those species known or suspected to have bred in Arizona. But even outside of the breeding season, the splendid maps and well-illustrated habitat descriptions will be tremendously useful to birders, visitors, and locals alike.

Editor's note: \$10 or more discount prices for the *Arizona Breeding Bird Atlas* are available from <http://www.amazon.com> and the Arizona Game and Fish Department offices or at its website at: <http://www.azgfd.gov/e/pubs/publications.shtml>.

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THE STATUS OF MOTTLED DUCK (*ANAS FULVIGULA*) IN ARIZONA

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Searching Cornell's eBird for "Mexican Duck" (*Anas platyrhynchos diazi*) does not find it. If you enter "Mexican Duck" in the species search box of the online "Birds of North America" (BNA), you won't find it, and you won't be offered Mallard (*A. platyrhynchos*), which is where Mexican Duck is treated as a subspecies, *A. p. diazi*. To be fair, the BNA account of Mallard (Drilling et al. 2002) does contain useful information on Mexican Duck (and a keyword search will find it), and it reflects current, official species-level taxonomic treatment, but it illustrates how far Mexican Duck has slipped below the radar screen of both birdwatchers and ornithologists. And to give some credit, the Christmas Bird Count still does treat Mexican Ducks as a reportable entity. My title is deliberately provocative (Mottled Ducks in Arizona?), but it is more relevant than you might think, as this note will explain. Mexican Duck deserves more attention, and there is growing evidence that treatment as a full species is the best course. In this article "Mallard" refers to the green-headed species, "mallard" to the whole complex of 14 or so species, and "Mexican Duck" to, officially, "Mexican" Duck, *A. p. diazi*.

Mexican Duck occurs from southeastern Arizona, southern New Mexico, and southwestern Texas south through the central highlands of Mexico; at no season is it characteristically a bird of the coastal lagoons. While not migratory in the sense of having entirely separate breeding and wintering ranges, the species certainly shifts locally on a seasonal basis, dispersing with the onset of the summer rainy season to breed in small, often seasonal, wetlands, and congregating at larger bodies of water in drier, winter periods; the length and variability of the dry season may be the critical variables for this species (Williams 1980). The population has been estimated at 55,000 (Williams 1980); winter wildfowl counts in Mexico typically record 15,000 to 20,000 birds, exceptionally 49,000. Although subject to substantial fluctuations, the overall population trend is stable to increasing (Pérez-Arteaga et al. 2002). This is encouraging, given that the populations in the U.S. (particularly) and Mexico were thought to be heading toward the endangered level (Aldrich and Baer 1970).

Mexican Duck was treated as a full species in the American Ornithologists' Union Check-list of 1957 (5th ed.), but it was included in Mallard by 1983 (6th ed.) based on "extensive hybridization in southeastern Arizona, southern New Mexico, and west-central Texas" that "compels merger into a single species (Hubbard 1977)" (A.O.U. 1998).

Since the lump with Mallard, studies of duck genetics have revealed much about the evolution of the Mallard group, although substantial questions remain about some aspects. With regard to Mexican Duck, however, the picture has been clear and consistent in three separate studies (Johnson and Sorenson 1999, McCracken et al. 2001, and Kulikova et al. 2004): The closest relative of Mexican Duck is *not* Mallard, rather, it is Mottled Duck, the closest relative of these two is American Black Duck (*A. rubripes*), all of which are in turn related to the Spot-billed Duck group (*A. poecilorhynchos* or *zonorhynchos*) (see also Livezey 1991).

Everyone is comfortable with the generality of a mallard in size, shape, and quacks and whistles. The white ones in parks are not a puzzle, and the various species around the world without green heads are still familiar. The evolutionary trees in these studies show a group of "monochromatic mallards" (the current and perhaps more neutral phrase than the oft-used "hen-plumaged mallards") that includes Mexican, Mottled, and American Black, a group recognized by earlier taxonomists such as Hellmayr and Conover (1948) and Palmer (1976). Analysis of avian genetic material is increasingly revealing relationships that cannot be deduced easily from field or external characters, and the recent studies of mallard genetics have not been focused specifically on Mexican Duck, but more on the evolution of the green-headed and monochromatic groups. The desire is to create an accurate evolutionary tree for the mallards that will reveal the branchings between and within the monochromatic and green-headed lineages. So far the interpretation is that the ancestral mallard was monochromatic, but the situation is very complicated and probably involves a pinch of incomplete lineage sorting and multiple dashes of invasion, hybridization, and introgression, requiring studies with bigger samples and more taxa.

As an illustrative aside, consider the recent (re-)split of Green-winged Teal (*A. carolinensis*) from Common Teal (*A. crecca*). In part, this decision was based on a genetic study that showed that Common and Green-winged Teal were not each other's closest relatives (Johnson and Sorenson 1999). The closest relative of Green-winged Teal is Speckled Teal (*A. flavirostris*), a monochromatic teal of South America (and if you want to stretch your brain further, why are so many waterfowl of tropical latitudes and in the Southern Hemisphere monochromatic and/or "dull"?). The genetic distance between Common and Green-winged Teal is comparable to that between Mallard and Northern Pintail (*A. acuta*), hence great. All of this contributes to the increasing realization that in waterfowl some plumage similarities

represent tremendous plumage conservatism over time while outstanding plumage differences may be more recent changes.

And as a further aside, in terms of green-headed Mallards, the green-headed Mallards of North America primarily share certain genetic material with the monochromatic mallards and evidence “substantial genetic structure between Old World and New World” (Kulikova et al. 2004, 2005). Don’t expect a split of Mallard soon, but it is an interesting situation, and complicated. And don’t expect a split of Mottled Duck soon, although the eastern and western populations evidence “an enduring geographic split” (McCracken et al. 2001).

Returning to Mexican Duck, the current situation is that it is lumped with a species, Mallard, which is not its closest relative, while its closest relatives (progressively, Mottled, American Black, and [E.]Spot-billed) are split from Mallard. This is not a consistent position. One way of addressing it would be to lump all 14 mallards, monochromatic and dichromatic. Another would be to remove Mexican Duck from Mallard and lump it with Mottled, Mexican’s closest relative. That adds Mottled Duck to the Arizona list and cleans up the inconsistency of lumping Mexican with Mallard. And it makes my title look prophetic, but it strikes me as inconsistent with current taxonomic trends that tend to accord specific status to populations that show genetic distance, morphological distinctions, and differences in ecology. Simply, we are looking at different ducks living different lives on the coastal plain of the Gulf Coast (Mottled) and the interior plateaus of Mexico and the Southwestern U.S. (Mexican). Williams (1980) urged consistency, one of the recent studies recommended that Mottled and Mexican “be designated as species so that the nomenclature is consistent with phylogeny” (McCracken et al. 2001), while the other recent studies simply treat it in a matter-of-fact way as a separate species, *Anas diazi*.

That Mexican Ducks and Mallards hybridize is certainly relevant, but hybridization is increasingly not regarded as outcome determinative. Hybrids are known among over 10% of the bird species on earth (Grant and Grant 1992). Hybridization occurs between (green-headed) Mallard and virtually every monomorphic mallard species, whether naturally in the wild or from introduced populations (for examples, see Kulikova et al. 2004). Hybridization does indicate some level of shared ancestry, but not necessarily that hybridizing populations are conspecific or even an especially close relationship (consider all the inter-generic hybrids in birds, including waterfowl and warblers).

My guess is that in Arizona we are dealing with two general issues. First, Mexican Duck is a variable bird that looks like a Mallard to start with because both share a mallard ancestor and it further shows some Mallard characters because there have been periods of hybridization between the two. For instance, part of the problem with which many researchers (most recently Kulikova et al. 2004, 2005) have struggled is that New World Mallards share haplotypes with the monochromatic mallards that Old World Mallards do not possess; periods of hybridization between New World Mallards and New World monochromatic mallards in past millennia would seem to be part of the explanation. Second, there will be ongoing hybridization between pure or relatively pure birds as a result of contact when pair bonds are being formed.

My recent experience in eastern Cochise County and environs is not of the “extensive” hybridization that influenced the decision to lump the two. Rather, it is of no obvious hybridization, because I have not seen an obvious Mallard during the breeding season in the areas I bird, areas in which Mexican Ducks breed at a number of localities in small to moderate numbers. Inspection of the range maps in the *Arizona Breeding Bird Atlas* (Corman and Wise-Gervais 2005) suggests limited opportunities for hybridization (indeed, I can find no overlap of “confirmed” blocks, although there is overlap of “confirmed” with “probable” squares). Brown (1985) found that “there is a marked tendency to maintain racial fidelity” and that hybridization is limited (there is no hybrid swarm). Monson and Philips (1981) state that the extent of hybridization is “unknown.” Hybrids may be more numerous in parts of New Mexico and western Texas, but I am unaware of recent, published material on this subject. A 1984 study found no morphological evidence of an ongoing, southward spread of Mallard characters, and, while finding clinal variation from north to south in Mexico (from more to less Mallard like), concluded that “large, genetically uniform populations” of Mexican Ducks occur in many areas of Mexico, including northwestern Chihuahua (Scott and Reynolds 1984).

Of course part of my problem is distinguishing a hybrid. I’m not sure how one would tell, for instance, a second or third generation recent hybrid from a variable northern Mexican Duck. On the basis of the scoring system of Hubbard (1977) and Scott and Reynolds (1984), which evaluates 18 characters, the only pure Mexican Ducks, scoring 36 points, are at the southern edge of the range in Central Mexico, and even that population averages only a 34.5. Birds from northwestern Chihuahua score 26, and others from the New Mexico/Texas border less (a pure Mallard scores 0). Thus, what looks to me typical of Mexican Duck and probably is Mexican Duck will not score close to a perfect 36. So it is not surprising that one observer has seen few “pure” males in Arizona (Taylor 2005). (For a comparison, how many streaks on the flanks of an otherwise typical Hermit Warbler are “too many” and how do you treat a Red-naped Sapsucker that looks fine except for its small, pink nape?) I am suggesting that Mexican Duck is a valid species but

that its identification will often not be a comfortable situation (OK, often an ugly situation) because of the “background noise” of Mallard characters in the plumage of Mexican Duck. We have learned to live with background noise in flickers, buntings, orioles, and, in particular, American Black Duck, and I am sure that we can live with it in Mexican Duck as well.

Another question could be: “Of what consequence is that hybridization?” The answer must involve the fact that currently no native green-headed Mallards are breeding in the areas of Mexico in which the vast preponderance of Mexican Ducks breed. Although there had been fears that Mallard was going to swamp Mexican Duck, Scott and Reynolds found no evidence of the “hybrid zone” shifting south. Finally, how “natural” is the hybridization? What part of the hybridization represents breeding of Mallards established as a result of man’s activities in the original range of Mexican Ducks or (re-) introduction of Mexican Ducks in areas that now have Mallards? Recent hybridization of American Black Ducks with Mallards is attributed to human alterations of northeastern North America, including introductions of Mallards; that fact is one that influenced the A.O.U. Check-list Committee to maintain the specific status of American Black Duck (A.O.U. 1998).

Behind the issue of hybridization are some interesting aspects of biology. In general, in ducks the pair bonds are formed yearly on the wintering grounds, and this is true of Mallards (Drilling et al. 2002). Further, ducks differ from most groups of birds in that breeding philopatry (faithfulness as a breeder to the natal location) is “female based,” meaning that when a pair bond is formed on the wintering grounds, often involving birds from different regions, the male will return with the female to breed at the female’s natal area. The number of Mallards wintering in the range of Mexican Ducks is not huge, and that number is decreasing, as Mallards have been short-stopped by improving feeding conditions in the U.S. (Scott and Reynolds 1984, Pérez-Arteaga et al. 2002). Also, it has been suggested (Brown 1985, Corman 2005) that pair formation in Mexican Ducks may occur before that of Mallards, thus decreasing the likelihood of mixed pairs (most migratory northern Mallards are relatively late arrivals in fall, potentially arriving after pair formation by most Mexican Ducks, but this does not exclude the possibility of Mexican Ducks hooking up with golf course pond Mallards). Williams (1980) noted that pairs were present in the population at all seasons, and detected other suggestions of a strong pair bond. Brown (1985) further wonders if most adult Mexican Ducks re-pair, which would decrease the likelihood of hybridization. We have much to learn to see if hybridization is a continuing, major issue in Arizona or anywhere else.

Finally, it may be a good idea to deal with birder scuttlebutt, which over the last few decades has included this facet: A reluctance on the part of some to advocate splitting Mexican Duck from Mallard stems from a concern about how a split could create a de facto threatened species in the U.S. (it was listed from 1967 to 1978, then de-listed, in part on the perception that it was a much-hybridizing subspecies), especially a concern about how that could affect the popular sport of duck hunting. As “Cactus” Ferruginous Pygmy-Owl slips through our fingers, I don’t wish to trivialize the importance of preserving the U.S. populations of taxa that are more common elsewhere, but the fact remains that after over 25 years of unprotected status as a subspecies of Mallard (although the ESA can protect populations, species are higher profile), Mexican Ducks are still here, and the species has shown positive trends in Mexico (Pérez-Arteaga et al. 2002, 2005), where well over 90% of the population occurs (98%: Williams 1980). If you will forgive me for some perverse humor, you couldn’t imagine the stock tanks of Cochise County being declared critical habitat, could you?

I expect that eventually Mexican Duck will be split officially from Mallard. The A.O.U. Check-list Committee may not jump on the recent studies. It may reasonably seek further information (e.g. on hybridization) and further studies of what is a very complicated group (e.g., what is the relationship between Mexican Duck and the two groups of genetically isolated Mottled Ducks?); we all dislike the back-and-forth of many past decisions, even though all the decisions seemed reasonable at the time (e.g., Northern Oriole). And where should we, ornithologists in the field in Arizona, go from here? I think we should study Mexican Duck as though it will be split. First, we could benefit from some brave volunteer providing this journal with an article about identifying these ducks, and their hybrids. Second, we should all keep track of Mexican Ducks and Mallards, most particularly of breeding birds and any hybrids (or even situations in which hybrids might occur). Third, we should carefully note the timing of arrivals and departures of both Mallards and Mexican Ducks, and their numbers. Finally, residents of this region should anticipate a growing interest from visitors in seeing Mexican Ducks, and develop better information about their haunts.

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Arizona Birds *Online*

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