

## GLOSSY IBIS RECORDS FOR COLORADO AND NEIGHBORING STATES

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**ABSTRACT:** The Glossy Ibis (*Plegadis falcinellus*) first arrived in the New World in the early 1800s. During the twentieth century, this species expanded its breeding range rapidly, extending as far west as Louisiana. Vagrants have occurred throughout the Great Plains and even to California. Colorado's 35 documented Glossy Ibis through 2002 are more than in any neighboring state by at least 40%. These records represent primarily single birds during spring migration; however, recent records include some of multiple birds, as well as one in fall. Timing of these records, the birds' association with flocks of the White-faced Ibis (*P. chihi*), and lack of nesting sites in Colorado suggest that the Glossy Ibis is continuing its migration outside of Colorado. The increased number of records, increased number of birds per record, and recent reports of potential hybrids in Oklahoma and Colorado also suggest that the Glossy Ibis may be expanding its breeding range west into the Great Plains.

The Glossy Ibis (*Plegadis falcinellus*) is a cosmopolitan species native to the Old World from southeastern Europe to Australia. It probably colonized North America in the early 1800s, with the first record from New Jersey in 1817 (Baynard 1913). During the early 1900s, the Glossy Ibis was known to nest in the United States only in Florida (Bent 1926). Nesting records from other states followed, and by the early 1960s the Glossy Ibis bred along the east coast as far north as New York (Davis and Kricher 2000). Currently, the Glossy Ibis resides permanently along the Gulf coast from eastern Louisiana to Florida and north along the Atlantic seaboard to North Carolina (Davis and Kricher 2000). Its breeding range extends still farther north along the Atlantic coast to southwestern Maine.

Members of the order Ciconiiformes (storks and allies) are well-known as wanderers both before and after the breeding season. The Glossy Ibis is no exception. In spite of this species' rather limited and coastal North American range, the Glossy Ibis wanders regularly throughout the eastern United States, with some recent field guides showing a distribution from east-central Texas north to Wisconsin and east to Newfoundland (Sibley 2000, National Geographic Society 2002).

Through 2002, Colorado had 31 records of 35 individuals of the Glossy Ibis. Most of these records pertain to single alternate-plumaged adults found during spring migration. This paper examines the pattern of vagrancy (dates and locations) of the Glossy Ibis in Colorado, with reference to neighboring states, probes into possible explanations for this pattern, and notes possible hybrids in Colorado. Identification of the Glossy and White-faced Ibises (*P. chihi*) has been treated well elsewhere and is not repeated here (see Pratt 1976, Kaufman 1990, Patten and Lasley 2000). For consistency, I use seasonal definitions established by many national and state ornithological publications: spring (March–May), summer (June–July), and fall (August–November) (e.g., *North American Birds*, *Colorado Birds*). Additionally, unless otherwise noted, I use only records accepted by the respective bird records committee for each state.

## STATUS IN COLORADO

Historical sightings are often difficult to evaluate. A previous lack of understanding about the characteristics distinguishing the Glossy and White-faced Ibises complicated identification issues. Robbins et al. (1966) illustrated the Glossy Ibis with white facial feathering extending around reddish eyes, as in the White-faced Ibis. Therefore, records prior to the mid-1970s, when details on *Plegadis* ibis identification were first available to the general birding public (Pratt 1976), are best considered suspect, except those supported by photographic evidence, excellent written details, or extant specimens.

I found seven published reports of the Glossy Ibis for Colorado prior to the first accepted state record in 1986 (Bailey and Niedrach 1965, Colorado Bird Record Committee [CBRC] files and references therein). Cooke (1900) published the first (date unknown) and second (4 April 1898). Presumably, the first supposed occurrence was between 1897 and 1900, as Cooke (1897) did not mention the Glossy Ibis in this previous book on Colorado birds.

Several specimens taken in Colorado in the early 1900s were reported as the Glossy Ibis. Niedrach and Rockwell (1959) mentioned two specimens, although neither was available to them for examination. One apparently "in full plumage" was collected by W. W. Cooke (1900), and the other was taken in June 1905 at Barr Lake, Adams County. An extant specimen (Denver Museum of Nature and Science 39079) collected on 22 May 1916 and identified by H. C. Oberholser was reidentified in the mid-1980s by Mark Holmgren and Joe Strunch as a White-faced Ibis (CBRC files).

I found no mention of the Glossy Ibis in the Colorado literature again until the 1950s, when 15 were reported; however, several descriptions of these mentioned the defining character as the "lack of white at point of bill attachment" or "no white apparent on face" (Thatcher 1955, 1957, Bailey and Niedrach 1965). The latter feature characterizes several plumages of the White-faced Ibis and was one of the reasons for not accepting a 1985 Colorado report (Gent 1986).

The first Colorado bird list published by the Colorado Field Ornithologists included the Glossy Ibis because of the extant specimen previously mentioned (Reddall 1973). After the specimen was reidentified, however, a later CBRC report removed the species from the state list (Gent 1987). The first recognized Colorado record was of a bird found in the western part of the state at Sweitzer Lake State Park, Delta County, 27 March 1986, associating with a flock of White-faced Ibises (Bunn 1988). This record was based on excellent written descriptions by two observers as well as a sketch.

After 1986, there were only three additional records until 1995, and none from 1991 to 1994 (Figure 1). Since 1995, the Glossy Ibis has occurred annually, with most records (28 of 35; 80%) coming from two areas east of the continental divide: the Arkansas River valley and the northern Front Range (Figure 2). In most cases, records pertain to single alternate-plumaged adults in spring associated with flocks of White-faced Ibis. Thirty-three of the 35 individuals (94%) occurred between 27 March and 31 May, and 27 of the 35 (77%) occurred between 16 April and 15 May (Figure 3). Multiple birds have been encountered since 2000: two records, one each in 2000 and 2001, are of two Glossy Ibises observed together, and a third record in

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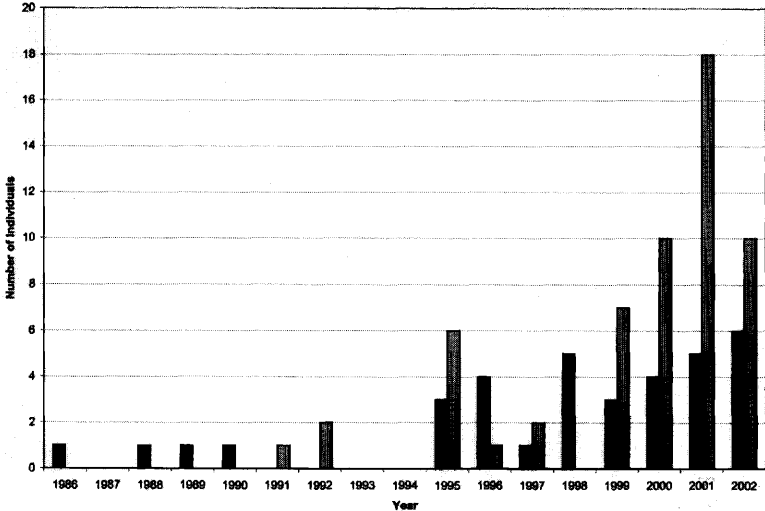


Figure 1. Yearly occurrence and number of individuals of the Glossy Ibis in Colorado (black) and neighboring states (gray).

2002 is of three birds together. Outside of spring migration, Colorado has a single summer record, 4 July 1990, from Huerfano County, and a single fall record of a bird still in alternate plumage photographed at Loloff Reservoir, Weld County, 27 August 2002 (Leukering and Semo 2004).

Recent observations have suggested hybridization between the Glossy and White-faced Ibises in North America (Arterburn and Grzybowski 2003). Possible interspecific hybrids have also been observed in Colorado. In May 2002, a possible hybrid was photographed in Broomfield County (Wood and Semo 2002). Another individual exhibiting hybrid characteristics was photographed in El Paso County, July 2003 (pers. obs. of photos). Both reports, however, have yet to be submitted to the CBRC.

### STATUS IN NEARBY STATES

A specimen was obtained in Oklahoma in 1954 (Sutton 1955). Among Colorado's neighboring states, that specimen remained the region's only confirmed Glossy Ibis until 1991, when the second was documented for Oklahoma. Kansas quickly followed Oklahoma's second with its first state record in 1992, but it was not until 1999 that Nebraska recorded its first Glossy Ibis (Sharpe et al. 2001). From 1946 to 1964, however, Nebraska birders had reported 10 Glossy Ibises, although none of them was sufficiently documented (Sharpe et al. 2001). Since 1999, at least one Glossy Ibis has been recorded annually for Kansas and Oklahoma. Except for two records from Colorado and one from New Mexico, all of the region's summer and fall records come from these three states.

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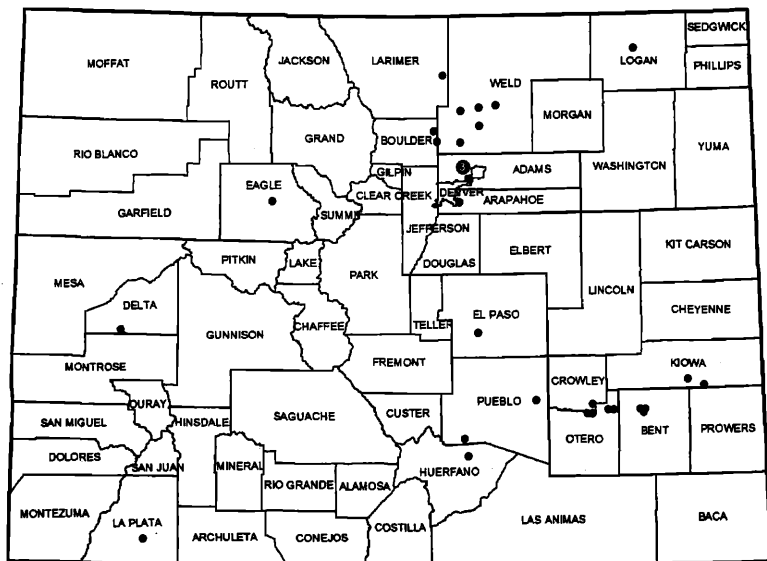


Figure 2. Distribution of Glossy Ibis records in Colorado through 2002.

Of the states north or west of Colorado (Montana, Wyoming, and Utah) only Wyoming has any accepted Glossy Ibis records. Wyoming's first was of an adult observed near Ocean Lake 5 May 1992 (Luce et al. 1997). The state's second occurred in 1999, when an adult was found near Jackson 4 May (Truan and Percival 1999). Both of these records are from the western half of the state. In 2002, four birds were reported from Wyoming, all still under review by the Wyoming Bird Records Committee. I observed one of these, an adult in definitive alternate plumage near Cheyenne 5 May. Two weeks later, on 18 May, two alternate-plumaged adults were also seen near Cheyenne by experienced observers Steve Dinsmore, Jr., and Joe Fontaine. The last sighting was of an adult near Dubois, in the western half of the state (Wyoming Bird Records Committee files). Montana lists the Glossy Ibis as hypothetical on the basis of a convincing report of an adult on 24 May 2002 near Choteau, Teton County (Lenard et al. 2003).

Arizona and New Mexico both have Glossy Ibis records, with Arizona's sole record in May 2001 (Rosenberg and Jones 2001). New Mexico's first record came in 1995, followed by three in 1999 and five in 2001, the last including the state's first fall record, of a single bird photographed in September. Four more individuals were recorded in 2002, including two birds together at Las Vegas National Wildlife Refuge on 5 May (New Mexico Bird Records Committee files).

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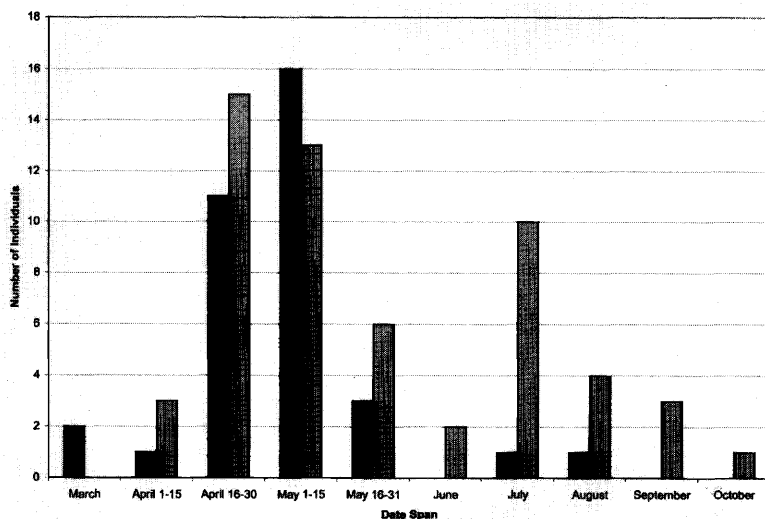


Figure 3. Seasonal distribution of Glossy Ibis records in Colorado (black) and neighboring states (gray) through 2002.

## DISCUSSION

The concentration of Colorado's Glossy Ibis records in spring is not surprising. All records through 2002 are of adult birds in definitive alternate plumage (CBRC files). Adult *Plegadis* ibises differ most in this plumage, worn in spring, so a Glossy is more likely to be picked out of a flock of the White-faced at this time of year. The period of concentration of Glossy Ibis records, 16 April to 15 May (Figure 3), coincides with the peak migration period of the White-faced Ibis in Colorado (Andrews and Righter 1992). A potential source of bias contributing to this concentration of records is increased birder activity. If this factor is significant, however, then birders are under-reporting the Glossy Ibis in Colorado in summer and fall when it is difficult to distinguish from the White-faced Ibis.

Records from adjacent states, primarily Kansas, Nebraska, New Mexico, and Oklahoma, also follow this general pattern (Figure 3), peaking sharply from 16 April to 15 May. A smaller peak occurs in July (10 records). Records outside of the spring period (June–October) are dominated by Kansas and Oklahoma, encompassing 17 of 22 individuals (77%), and thus are not representative of the region as a whole. These summer and fall records probably refer to postbreeding wanderers. Kansas and Oklahoma are more likely to receive postbreeding wanderers because those states are nearer to the Glossy Ibis's known breeding locations than the other states addressed in this paper.

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All but four of Colorado's 35 Glossy Ibis records in Colorado are for 1995 and later. The pattern in neighboring states, especially Kansas, is similar. Of the 15 Glossy Ibises reported in Kansas through 2002, all but one have occurred since 1995, with only 1998 lacking a record. Since 1999, the Glossy Ibis has been reported annually in Nebraska, New Mexico, and Oklahoma, in some cases as multiple individuals. In these states the lag between 1995 and the upsurge of reports in 1999 may have been due only to a lag in birders' vigilance for this easily overlooked species.

The concentration of Glossy Ibis records in Colorado relative to neighboring states is most likely due to the concentration of birders along the heavily urbanized base of Colorado's Front Range. This area also features many reservoirs and wetlands used by the White-faced Ibis during migration. Also, the Arkansas River valley from Pueblo east to the Kansas border is visited nearly daily by birders from late April to mid-May (pers. obs.). The major wetlands where the White-faced Ibis occurs in Kansas (e.g., Quivira National Wildlife Refuge), Oklahoma (Salt Plains National Wildlife Refuge), and Nebraska (Valentine National Wildlife Refuge) are in the central or western portions of these states where the human population is low.

The contrast in number of Glossy Ibis records between eastern Colorado and regions west of the continental divide may be related to where White-faced Ibis populations winter. Banding studies in the 1960s suggest that White-faced Ibises breeding in Utah and other states west of the divide winter in western Mexico, outside the winter range of the Glossy Ibis. Ibises breeding east of the divide winter along the northern shore of the Gulf of Mexico (Ryder 1967). Therefore Glossy Ibises wandering from the southeastern U.S. are more likely to join flocks of the White-faced Ibis of the eastern population and accompany them north, provided that these flocks remain intact through spring migration and do not cross the continental divide. The few Glossy Ibises recorded in California, Arizona, and western Mexico (see Patten and Lasley 2000) may have joined flocks of the White-faced wintering in western Mexico, then migrated north with them to far western states.

Might the greater concentration of Glossy Ibis records in Colorado be due to the Colorado Bird Records Committee having a lower standard for acceptance of these records than other state records committees? I discount this hypothesis because all of Colorado's Glossy Ibises records are of birds in definitive alternate plumage. In reviewing the records I found that observers consistently mentioned the species' salient characteristics: blue facial skin, dark eyes, reduced white border on facial skin, and red tarsus joints with otherwise dark legs. Some records include diagnostic photographs as well. The documentation is adequate to exclude the possibility of hybrids, which are more likely in areas where the breeding ranges of the White-faced and Glossy overlap than in Colorado. Reports of possible hybrids in Colorado in 2002 and 2003, however, do raise the bar for future Glossy Ibis documentations.

## BREEDING AND HYBRIDIZATION

The final destination for the Glossy Ibises occurring in Colorado is unknown. There is only one known nesting location for the White-faced Ibis

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in eastern Colorado, the privately owned Lower Latham Reservoir in Weld County. Because the site is birded heavily it is doubtful that Glossy Ibises summer there.

Each summer, the Rocky Mountain Bird Observatory surveys all accessible wetlands in Colorado as part of large-scale breeding-bird monitoring (Leukering et al. 2000). It is doubtful that ibises could nest anywhere in eastern Colorado without the site being documented at least once in the past five years of this program. Furthermore, the recent multi-year drought has severely reduced the number of wetlands on the eastern plains suitable for waterbird nesting (pers. obs.). Therefore, because the Glossy Ibis is recorded predominantly in eastern Colorado, especially along the northern Front Range (Adams, Boulder, Larimer, and Weld counties), the species is likely continuing its migration with White-faced Ibises to breeding areas farther north. The increase in reports for Wyoming, especially in 2002, provides some support for this idea, though Montana has only one convincing sighting. These states' low density of human population, hence of birders, may be responsible for this dearth of records.

The Glossy Ibis is not known to nest in Colorado or in neighboring states, though it may. In a wetland in south-central Nebraska an apparent pair of the Glossy was found in summer 2001 after a nearby colony of the White-faced Ibis was abandoned (Dinsmore 2001). Also, in summer 2002, four adult Glossy Ibises were at Salt Plains National Wildlife Refuge, Oklahoma, in a recently established breeding colony of the White-faced (Grzybowski 2002). The Glossy is also becoming regular in Kansas in summer at Quivira National Wildlife Refuge and Cheyenne Bottoms, sites of 13 of that state's 15 records, although it is possible these birds were postbreeding wanderers. No breeding was documented by the Kansas Breeding Bird Atlas (Busby and Zimmerman 2001).

Observations of apparent Glossy  $\times$  White-faced Ibis hybrids in the United States are recent, although these species have interbred freely at the London Zoo (Gray 1958, Palmer 1962). Up to five apparent hybrids were discovered in Oklahoma at Salt Plains National Wildlife Refuge in summer 2002 (Arterburn and Grzybowski 2003). Two have been reported in Colorado (see under Status in Colorado). The source of these potential hybrids is unknown. They may originate from farther east where the White-faced and Glossy overlap or be the result of mixed pairings in the Great Plains at unknown locations.

Since the first accepted state record in 1986, the Glossy Ibis has become a regular, if rare, spring migrant in Colorado. The species' increase in the region suggests that it may be expanding its nesting range further. Glossy Ibis nesting should be looked for throughout the Great Plains, particularly during the late spring and summer, at known nesting locations for the White-faced Ibis.

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