

# FIRST SOUTH AUSTRALIAN RECORDS OF THE BLACK-NECKED STORK *Ephippiorhynchus asiaticus* AND OCCURRENCE OF VAGRANTS IN SOUTH-WESTERN QUEENSLAND

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## ABSTRACT

We document five discrete observations of Black-necked Stork *Ephippiorhynchus asiaticus*, two from the Far North East of South Australia and three from the adjacent Channel Country in south-western Queensland. These are the first records for South Australia and we ponder the origins of the birds and whether their appearance so far from their customary range may have been in response to climate change or 'once-off' flooding in the Lake Eyre Drainage Basin. The reappearance of Magpie-Goose *Anseranas semipalmata* in these regions is also noted. Although the floods in the Basin during 2000 and 2001 were large, they were not exceptionally so in the context of the recent past.

## INTRODUCTION

The Black-necked Stork *Ephippiorhynchus asiaticus* is regarded as a moderately common inhabitant of coastal and sub-coastal wetlands of northern Australia (e.g. Storr 1977). It ranges usually from Port Hedland in north-western Western Australia eastwards to the Top End of the Northern Territory and northern Queensland and thence to the central coast of New South Wales. It is much less common south of the Queensland border, and there is an isolated record of a breeding attempt from as far south as the Shoalhaven River in New South Wales (Bell 1963; Pizzey and Knight 1999). The species occurs as a vagrant in Victoria and there are at least two records from the Alice Springs region in the southern Northern Territory (Klapste 1977; Marchant and Higgins 1990; Pizzey and Knight 1999).

The global conservation status of the species is 'Near Threatened' while the Australian subspecies *E. asiaticus australis* is in the 'Least Concern' category (Garnett and Crowley 2000). In New South Wales under the *Threatened Species Conservation Act, 1995*, it is classified as Endangered, while in Queensland it is classified as Rare under the *Nature Conservation (Wildlife) Regulation, 1994* of the *Nature Conservation Act, 1992*. It occurs in a wide variety of habitats including tropical rivers and associated overflow swamps, billabongs, mangroves, estuaries, tidal flats, floodplains, irrigated lands, bore drains,

pools of artesian springs, farm dams, sewage ponds, grasslands and open savannah woodlands (Marchant and Higgins 1990; Pizzey and Knight 1999).

In Queensland Storr (1984) described the Black-necked Stork as nomadic, listing its inland range limits as Mt Isa, Richmond, Longreach and Blackall (headwater regions of major rivers in the Lake Eyre Drainage Basin; Figure 1). More recently it has been described as being mostly sedentary (Marchant and Higgins 1990; Pizzey and Knight 1999). Marchant and Higgins (1990) suggested that a regular inland range limit of the species in Queensland is Boulia (22°55'S, 139°54'E), within the Georgina River catchment, and a locality further south (inland) than that indicated by Storr (1984). As the vagrant records from Victoria and arid Australia show, the species is capable of ranging far outside its customary haunts (Blakers, Davies and Reilly 1984). Until now the species was not known from South Australia. In this article we present five recent observations of Black-necked Storks from the Far North East of South Australia and adjacent south-western Queensland.

## RECORDS

The records are presented in chronological order, and numbered one to five in line with the mapped localities in Figure 1.

**Record 1:** On 4 April 2000 three observers—RJ, JR and Robin Young—saw a single Black-necked Stork on Lake Machattie (24°50'00"S, 139°44'00"E) while conducting aerial waterbird surveys. The bird was standing in shallowly inundated, short grasses/forbs when disturbed by the aircraft. Lake Machattie is part of the Georgina River–Eyre Creek system in south-western Queensland and was substantially flooded but still rising at the time of observation. Lake Machattie is about 120 km N of Birdsville, 260 km N of Lake Goyder, and 330 km N of Moomba. One of the observers (RJ) suspected the bird was immature by the dullness of the



plumage, especially revealed on the upperparts in flight, but the other two observers could not confirm this. Although storks were not recorded on subsequent aerial surveys in the area by Reid and Jaensch (August and November 2000, March 2001), a local property manager informed RJ in April 2001 that a single bird had been sighted in the Lake Machattie district, intermittently, since April 2000 (J. Cobb, pers. comm.).

**Record 2:** At approximately 1400 h on 19 May 2000, Stephen Woods was driving south from Moomba, along the Strzelecki Track in the North East of South Australia, when he saw two adult Black-necked Storks. They were standing close together in clear view on a shallow swamp on the eastern side of the road. Both birds were identified as Black-necked Storks: their massive black bills, striking black and white plumage and long red legs being unmistakable (S. Woods, in personal communication to CB). Woods is familiar with this species having observed it a number of times whilst living in the Northern Territory for six years. The swamp, located at 28°28'00"S, 140°11'30"E and about the size of a football field, was 40 km S of Moomba and 15 km NW of Merty Merty Homestead. This is the first recorded observation of the species in South Australia.

**Record 3:** Three Black-necked Storks appeared on Thundapurry Waterhole, near Durrie Homestead (25°39'00"S, 140°13'00"E), on the Diamantina River in July 2000, and 'stayed for a while' according to D. Trapp (pers. comm.). They appeared about three months after the flood peaked along this reach of the Diamantina. Shallow swampy conditions had been present in the adjacent vast floodplain and around the margins of the waterhole from May 2000. Durrie Homestead lies in Queensland 180 km N of Lake Goyder, 95 km ENE of Birdsville, and 125 km S of Lake Machattie.

**Record 4:** Two Black-necked Storks were seen by Mark Woods on a dam at Durham Downs North 1 Gas Well, Queensland (27°03'30"S, 141°49'10"E), mid-afternoon on about 15 October 2000 (M. Woods, pers. comm.). This location is 9 km WNW of Durham Downs Homestead which itself is beside Cooper Creek. It is 82 km E of the South Australian border, and 225 km NE of the location where S. Woods saw the two storks in May 2000.

**Record 5:** On 15 December 2000, one of us (JR) saw a Black-necked Stork on the north-western shore of Lake Goyder (26°56'30"S,

140°09'00"E), the largest of the Coongie lakes in Innamincka Regional Reserve. The bird did not allow close approach but was judged to be adult or sub-adult because of its dark head and neck coloration. Only a short view at a lengthy distance (c. 1 km through Zeiss 10 x 40 binoculars) was obtained, but the glossy green-black head colour of a full adult was not seen. The bird flew off when approached for closer observation. The habitat was shallowly-inundated short grasses and forbs, and a wide range of wetland habitats was present in the surrounding area.

## DISCUSSION

The occurrence of Black-necked Storks in the Far North East of South Australia was possibly facilitated by the great extent of monsoon-induced flooding in the Channel Country of Queensland and far northern South Australia during summer-autumn of 2000. The Georgina, Diamantina and Cooper river systems each carried major floods at this time, after downpours in northern catchments in late summer. The Diamantina-Warburton system sent large volumes of water through Goyder Lagoon into Lake Eyre North during the first half of 2000. Cooper Creek floodwaters peaked at 7.0 m at Innamincka causeway during mid-April 2000. At the time of Wood's sighting in May a substantial part of the lower Cooper Creek floodplain was under water, with the nearest floodwater 35 km to the north (near Embarka Swamp). By December 2000 the Cooper Creek flood was receding in the Coongie lakes having peaked there in August, but there were many inundated lakes and swamps from Coongie Lake downstream to Lake Killamperpunna near the Birdsville Track. By comparison the floodwaters on the Diamantina-Warburton system had all but disappeared. However, on the Queensland side the limited residual water in the Diamantina system, and greater volumes in lakes of the Georgina (Eyre Creek) and Cooper Creek, were about to be replenished by new floods, minor in the case of the Diamantina and Cooper but major for the Georgina River-Eyre Creek system.

We suspect the storks may have arrived in about March-April 2000 by following floodwaters downstream from north-western Queensland along the Channel Country river systems, all three rivers having their headwaters in the vicinity of the stork's usual range. Although

Cooper Creek floodwater did not rise high enough to overflow substantially down the Strzelecki Creek, local rains and run-off had resulted in a chain of deep pools filling along its course. These included Cunnabuncha, Topwee, Cadrapowie, Wirrarie and Tilpatee waterholes, 10-15 km to the east of the location described in record two. Thunderstorms in April 2000 produced falls of about 100 mm in the Far North East of South Australia and many of the swale wetlands of the Strzelecki Desert were inundated, including the small swamp where the two storks were observed by S. Woods south of Moomba. The storks may have later moved off the creeks and floodplains to exploit this ephemeral habitat.

Whether the single bird seen at Lake Goyder in December was either of the birds seen by S. Woods can only be speculated upon, but as we have sourced additional records of the species from adjacent parts of south-western Queensland in 2000, it seems likely that a larger number of birds was involved. Figure 1 shows the geographical spread of the five records. It will be seen that the localities are widely and fairly evenly spaced. It is also possible that the Moomba and Durham Downs sightings were of the same two birds, but we think this unlikely. Given the remoteness and vastness of the Channel Country wetland systems, and the extensive areas of inundated country in 2000, it is likely that different birds were involved in all five cases and that others in the region went undetected. For instance, we had not received the additional observations of J. Cobb and D. Trapp until March and April 2001; other property managers may have noticed storks elsewhere in the region. We conclude that a minor influx of Black-necked Storks into the Channel Country of Queensland and adjacent South Australia occurred in 2000, in response to the larger than average floods in the region. We suspect that at least one of these birds stayed over for an additional flood season (summer 2000/01) as judged by the (implied) multiple observations of J. Cobb, presented above, from near Lake Machattie.

Under climate change scenarios, major floods in these northern Lake Eyre Basin river systems may well increase in frequency (CSIRO 2001). In other parts of the world, a body of evidence is steadily accruing to show that some plants and animals are expanding their range polewards in accordance with predictions about the expected biotic responses to climate change induced by

elevated carbon dioxide emissions and global warming (reviewed by Hughes 2000). In this country, therefore, we might anticipate that some northern Australian species should follow this trend, and expand their distribution to the south. It is too early to speculate whether the Black-necked Stork observations reported here are at the vanguard of such a migration, but we argue that waterbirds with the capacity for long-distance dispersal are prime candidates in this respect. Black-necked Storks are capable of long-distance movements, as our introductory section and these records reveal. It remains to be seen whether or not a population of the stork can establish itself on a more regular basis in the irregularly filled wetlands of the Lake Eyre Basin.

Alternatively, these recent observations may be an example of pulses of opportunistic vagrancy linked to extended wetter periods (cycles of several years to decadal time spans), examples of which have been documented in the past. For example influxes of species of egrets and ibis into the south-west of Western Australia were recorded in the 1950s during a wet cycle (Serventy and Whittell 1976; Marchant and Higgins 1990). Under this model, the birds would be expected to vacate the region or perish as conditions became less suitable. It should be noted that climate change predictions are couched in terms of considerable uncertainty (CSIRO 2001). For the arid interior of Australia, it is also possible that flooding events may become less frequent (if more extreme), and so, in general, conditions could become less suitable for waterbirds in the Lake Eyre Basin (Roshier *et al.* 2001).

Another vagrant, of partly tropical origins, has occurred along Cooper Creek in South Australia in recent years. The Senior Ranger at Innamincka Regional Reserve observed four Magpie Geese *Anseranas semipalmata* on Coongie Lake in February 1999 (C. Crafter, pers. comm.), and up to 12 birds were seen by her and other observers at Coongie Lake in December 1997 (see Reid 2000). During the same period as the Black-necked Stork sighting, one of us (JR) saw two pairs of Magpie Geese on the south-western shores of Lake Toontoowaranie (27°07'00"S, 140°09'30"E) on 18 December 2000. Lake Toontoowaranie is 10 km S of Lake Goyder and 10 km N of Coongie Lake. Reese (1924) considered the Magpie Goose to be a resident of the Coongie lakes in the 1920s. Therefore, in this

case it appears that a species may be reinvading its former range, as this species is doing in parts of the Murray–Darling Basin (e.g. Marchant and Higgins 1990; Garnett and Crowley 2000). As with the Black-necked Stork, Magpie Geese have been rarely reported in south-western Queensland in recent decades, but several were sighted by a traveller, and later seen by JR and RJ, in early March 2001 on the drying Eyre Creek floodplain near Glengyle Homestead (15 km W of Lake Machattie).

The annual floods down the major rivers of the Channel Country in the summers of 1999–2001 were much larger than average annual flows, and were linked to a *La Niña* wet climatic phase which is the customary driver for large floods in this region (Roshier *et al.* 2001). However, they were not as great as the largest floods experienced during previous *La Niña* events, such as the periods 1974–76, in particular, but also 1989–91, for the Cooper (Justin Costelloe, pers. comm.). Yet there were no records of Magpie Goose or Black-necked Stork reported from north-eastern South Australia during these earlier, larger flood events (e.g. Parker, Eckert and Ragless 1985; Reid 2000). Nor have we been able to trace any records of either species from the Channel Country of far south-western Queensland from these two periods, although our knowledge of the ornithological literature for this region is incomplete.

There is a field atlas record of Black-necked Stork from the Windorah region of Cooper Creek (August, undated to year but in the period 1977–81; Blakers *et al.* 1984). In fact, this appears to be the only published record of either species deep within the Channel Country in south-western Queensland (Blakers *et al.* 1984; Marchant and Higgins 1990). The nearest western Queensland locality at which we have observed Black-necked Stork is Caiwarroo Waterhole on the Paroo River (28°43'S, 144°43'E) in the Murray–Darling Basin, 30 km NE of Hungerford and 340 km ESE of Durham Downs Homestead; a solitary adult was seen there by JR on 4 January 1979 (unpublished observation). A search of all issues of the Queensland ornithological journal *Sunbird* published from 1973 to present failed to reveal records of either species from far south-western Queensland. We conclude, therefore, that the intrusion of Black-necked Stork and Magpie Goose into these parts is highly unusual, and may not have occurred in the recent past, despite there

having been larger flood events in the Lake Eyre Basin than those of the past two years. It remains to be seen whether either species attempts to breed in the Far North East of South Australia and adjacent parts of Queensland. As judged from accounts of nesting sites in Marchant and Higgins (1990), suitable nesting habitat would appear to exist for both species, periodically at least, in the ephemeral wetlands of the Lake Eyre Basin.

As both the Black-necked Stork and Magpie Goose are of conservation significance—Magpie Goose is listed as Endangered under the South Australian *National Parks and Wildlife Act, 1972*—these potentially population-founding individuals in the Far North East of South Australia and Channel Country warrant close attention and appropriate protection, particularly should breeding populations establish.

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## CORRIGENDA

The following list of corrections applies to Vol. 32, Part 6, Supplement, 'List of English and scientific bird names, recommend for use in papers submitted to the *South Australian Ornithologist*' (inserted between pp. 102 and 103). The disk file kindly supplied to the editors was understood at the time to be a correct copy of the species list in 'The taxonomy and species of birds of Australia and its Territories'.

- p. i, col. 1, Anatidae, insert \* after Swan, Mute.
- p. i, col. 2, Anatidae, insert \* after Mallard.
- p. ii, col. 2, Threskiornithidae, for both Spoonbill, Royal and Yellow-billed change *Platelea* to *Platalea*.
- p. iv, col. 1, Columbidae, insert \* after Turtle-Dove, Laughing.
- p. iv, col. 1, Columbidae, insert \* after Turtle-Dove, Spotted.
- p. vi, col. 1, Pardalotidae (cont.), delete <sup>E</sup> after Gerygone, Norfolk Island.
- p. vi, col. 1, Pardalotidae (cont.), insert <sup>E</sup> after Gerygone, Lord Howe.
- p. viii, col. 2, Zosteropidae (cont.), insert <sup>E</sup> after White-eye, Robust.

In Vol. 33, Part 7:

- p. 127, 'The birds of Munyaroo Conservation Park and adjoining coast', Abstract, line 8, 'Grey-shrike Thrush' should be 'Grey Shrike-thrush'.
- p. 139, 'First record of the Black-faced Monarch in South Australia', para. 2, line 10, replace 'Satin Flycatcher' with 'Rufous Fantail' (The next occurring 'Satin Flycatcher' on lines 10-11 is correct.). My apologies to John Eckert for the transcription error—Ed.