

Ornithological Observations



An electronic journal published by BirdLife South Africa and the Animal Demography Unit at the University of Cape Town



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Editor: Arnold van der Westhuizen

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Recommended citation format:

Harebottle D, Vanderwalt B 2014. Hybridisation between White-faced and Fulvous Ducks in the wild: further evidence from South Africa. *Ornithological Observations* Vol 5:17-21.

URL: <http://oo.adu.org.za/content.php?id=109>

Published online: 24 January 2014

- ISSN 2219-0341 -



HYBRIDISATION BETWEEN WHITE-FACED AND FULVOUS DUCKS IN THE WILD: FURTHER EVIDENCE FROM SOUTH AFRICA

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Introduction

Hybridisation in the Anseriformes, a group of birds that makes up the whistling ducks, and the true ducks and geese, is generally well known and well-studied (Grant, Grant 1992, Rhymer *et al.* 1994). It has been documented quite extensively in captive birds where it tends to occur more frequently, while it is generally less well known and studied in wild populations (Rand 2008).

The best documented cases of hybridisation in wild duck populations occur in the genus *Anas*, particularly between introduced Mallards *Anas platyrhynchos* and indigenous *Anas* species – examples here include Yellow-billed Duck *A. undulata* in South Africa (Vernon and Dean 2005, pers. obs.), American Black Duck *A. rubripes* in North America (Simberloff 1996, Mank *et al.* 2004) and the Pacific Black Duck *A. superciliosa* in New Zealand and Australia (Gillespie 1985, Rhymer *et al.* 1994). Mallards are known to hybridise with at least 40 other duck species (Simberloff 1996), the majority being *Anas* species. The Mallard drake is known to have aggressive and



Fig 1 - A single White-faced x Fulvous Duck hybrid (shown by the red circle) at Paarl Bird Sanctuary. Inset is a cropped image of the hybrid bird.

Photo © Trevor Hardaker.

dominant sexual behaviours and is thus able to outcompete males from indigenous duck populations (Kross 2013). In most cases Mallard hybridisation regularly produces fertile hybrids which then continue interbreeding with indigenous species and this ultimately threatens the genetic integrity of indigenous duck populations (Kross 2013, Rhymer, Simberloff 1996).

In southern Africa, little is known about hybridisation between indigenous duck species in the wild and there are few reported and/or documented cases (Hockey *et al.* 2005). Clark (1974) provided the first detailed description of hybridisation between two



dendrocygnids ('whistling-ducks') – White-faced Duck *Dendrocygna viduata* and a Fulvous Duck *Dendrocygna bicolor*.

In this paper we provide evidence of two additional records of hybridisation in the wild between White-faced and Fulvous ducks in the Western Cape, South Africa. We examine the extent of hybridisation and consider some of the conservation implications.

The first record is of a bird photographed at Paarl Bird Sanctuary S33°41.333' E18°58.867' on 26 May 2012 by Trevor Hardaker (Fig 1). The sanctuary comprises the old settling ponds of the Paarl Waste Water Treatment Works. The bird clearly shows white on the cheeks (but not extending up and over the eye) and the base of the throat, a brown forehead and crown, rufous chest and belly and white streaking on the flanks. These characteristics tended to suggest that bird showed more Fulvous than White-faced duck characteristics. The bird was observed together with a flock of White-faced ducks and three pure-bred Fulvous ducks; other species that were present included Yellow-billed Duck, Red-billed Teal *A. erythrorhyncha*, Hartlaub's Gulls *Larus hartlaubii* and a hybrid Mallard.

The second record is of a bird observed and photographed by Mr Wessel Uys, a farmer from the Ceres district who recorded the suspected hybrid on a dam on his farm, Sterkwater, 19 km north-west of Prince Alfred Hamlet S33°13.667' E19°14.683' (Fig 2). This individual had a large white patch on either side of the head, a dark brown forehead, crown and nape, a dark rufous chest fading into a lighter brown (fulvous) on the upper belly, faint horizontal barring on the wings, black and white barring on the lower belly and faint white streaking on the flanks. The bill was greyer and more similar to *D. bicolor*. The bird was observed together with a small flock of White-faced ducks, Red-billed Teal and a single pure bred Fulvous Duck.



Fig 2 - A single White-faced x Fulvous Duck hybrid (shown by the red circle) at Sterkwater farm dam, Ceres district, South Africa. Inset is a cropped image of the hybrid bird. Photo © Wessel Uys.

Overall the bird has stronger affinities to a Fulvous Duck than a White-faced Duck and the fact that it was seen and photographed together with a pure bred Fulvous individual (Fig 3) suggests that this bird was one of the pair. The images of this specimen were sent to Richard Hearn, head of the Duck Specialist Group, based at the Wildfowl and Wetlands Trust in the United Kingdom, who confirmed that it is a hybrid.

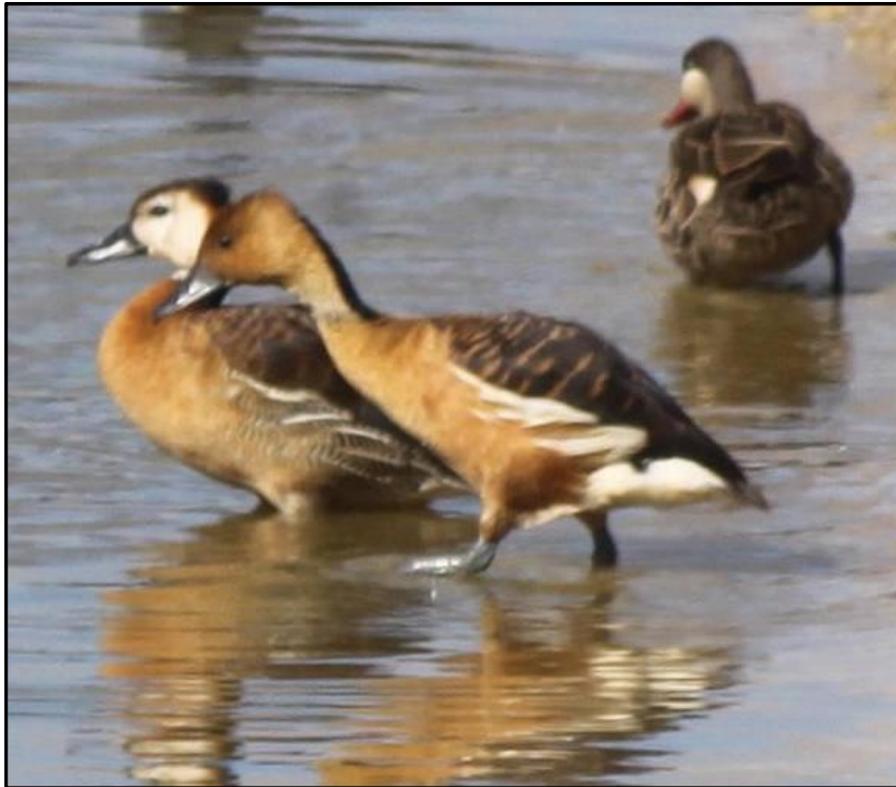


Fig 3 - An adult Fulvous Duck seen with the hybrid individual at Sterkwater farm dam, Ceres district, South Africa. Photo © Wessel Uys.

Discussion

Although the hybrid individuals in both photographs show similar plumage patterns (e.g. the white face and narrower white streaking on the flanks), the Paarl Bird Sanctuary (PBS) individual does not show any barring on the lower belly compared with the Ceres bird which clearly shows feint barring (Figures 1 and 2); the barring on pure bred White-faced Ducks is generally darker and more extensive on the belly (Ogilvie, Young 1998). The PBS bird also had uniform

pale-rufous underparts (throat to belly area) compared to the Ceres bird which has a distinctly darker, more rufous throat (Fig 3).

Although both birds show the typical mixing of plumage characteristics, typical of hybridisation between two similar or congeneric species, the individuals described here show two distinct hybrid plumage patterns. Overall, the Ceres specimen tended to show greater overlap in aberrant plumage between the two species than the PBS bird. The extent of plumage variation is likely to be driven by gene traits and/or gene dominance in the individuals when mating occurs.

Clark (1974) describes the hybrid he found near Johannesburg in 1972 as having a fulvous breast and belly, a black hind-neck stripe, off-white cheeks and throat extending to the base of the neck, and vermiculations (streaking) on the wings that were coarser than *D. viduata*. Based on this description, the PBS bird described here seems to match Clark's bird the closest. Clark (1974) managed to track this hybrid individual for about nine months and found that the bird was nearly always seen with a small flock of White-faced Ducks and never Fulvous Duck which he described was a rare bird to the area; he heard it calling a single high-pitched whistle but never the three-note whistle of the White-faced Duck. Both the PBS and Ceres birds were seen together with White-faced and Fulvous ducks, but in both instances there were more White-faced than Fulvous individuals. None of these birds were heard calling.

Whether these hybrids are fertile or infertile is unknown. In waterfowl hybrids are generally known to be fertile (Grant, Grant 1992) but tend to occur infrequently in wild populations (Muñoz-Fuentes *et. al.* 2007). This probably explains the low number of individuals actually observed in the wild. However it is also likely that hybrid individuals



may be less fit and therefore have reduced reproductive success and/or survival (Liou, Price 1994; Coyne, Orr 2004) contributing to low reporting rates in wild populations.

These hybrids are probably of no conservation concern to the avifauna in South Africa but we would suggest that additional hybrids be reported from wild populations, particularly where species ranges overlap, in order to further document the occurrence, frequency and distribution of hybridisation in the Anatidae, and particularly the whistling-ducks.

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Acknowledgements

We are grateful to Trevor Hardaker and Wessel Uys for supplying the photographs for this article, and to Richard Hearn for his input.

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