

# A possible Canvasback x Ruddy Duck hybrid

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## Introduction

Hybridization among birds—the production of offspring when members of two different species breed—is a common occurrence, especially among Anseriformes, the family of waterfowl (Grant and Grant 1992). Hybrid offspring often show intermediate physical characteristics between their two parent species, such as overall size, colouration and structure. The eBird/Clements checklist lists 545 known hybrids of birds worldwide, with 137 (25.1%) of those hybrids belonging to Anseriformes (Clements *et al.* 2021). However, these are only the hybrids that have been reported, and likely do not represent a complete listing of the world's bird hybrids (McCarthy 2006). The true number of hybrids may be much higher, as hybridization tends to be a rare event and not all bird families are as amenable to the detection of hybrids as are waterfowl, and so the probability of detecting a hybrid is generally low (Grant and Grant 1992; Aliabadian and Nijman 2007).

Canvasback (*Aythya valisineria*) is a duck species that hybridizes with other duck species. Some confirmed hybrids with Canvasback include Redhead (*Aythya americana*; Haramis 1982), Common Pochard (*Aythya farina*; Vinicombe 2003) and Ring-necked Duck (*Aythya collaris*; McCarthy 2006). Less occurring but confirmed hybrids within the *Aythya* genus include Lesser Scaup (*Aythya affinis*; McCarthy 2006), Greater Scaup (*Aythya marila*; Gray 1958, Sibley 2000) and Tufted Duck (*Aythya fuligula*; Gillham and Gillham 2000). Most natural hybridizations involving Canvasback appear to be within the *Aythya* genus, but there also exist records of hybridizations across genera, such as with Mallard (*Anas platyrhynchos*; Phillips 1922, McCarthy 2006) and possibly American Wigeon (*Anas americana*; Edscorn 1974).

Ruddy Duck (*Oxyura jamaicensis*) has also been shown to hybridize, but to a much lesser extent than Canvasback. Only one hybrid involving a Ruddy Duck is usually acknowledged, that being a Ruddy x White-headed Duck (*Oxyura*

*jamaicensis x leucocephala*; McCarthy 2006, Reeber 2014) which appears to have resulted due to the introduction of Ruddy Ducks in Europe in the 1960s (Muñoz-Fuentes *et al.* 2006). However, it is also thought that the *andina* subspecies of Ruddy Duck may actually be a natural hybrid of Ruddy x Ferruginous Duck (*Oxyura jamaicensis x ferruginea*; Fjeldsá 1986). Additionally, a hybrid with Greater Scaup has also been reported (Sibley 1938); however, the origins of this hybrid are still uncertain. Regardless, it is clear that Ruddy Duck tend to hybridize less than Canvasback.

#### Observation

On 5 February 2022 at 4:33 PM EST, M.B. observed a duck that appeared to be a hybrid of Canvasback and Ruddy Duck (i.e., a presumed *Aythya valisineria x Oxyura jamaicensis*; Figure 1). The duck was observed at Guthrie Park in Corunna, Ontario (N 42.9027, W -82.4575424), approximately nine metres off shore of the St. Clair River. M.B. followed the duck for about 5 minutes and noted that his initial impression of the individual was that it was the previously reported Ruddy Duck in the area. However, upon further examination, the duck had the appearance of a small female Canvasback. Photographs of this duck also revealed intermediate features between these two species, including a slightly higher eye placement and a dark-feathered, upright, and “stiff” tail as seen in Ruddy Duck, a clearly sloped forehead and bill profile as seen in Canvasback, and back feathering with colours between that of a Ruddy Duck and Canvasback (see Figure 2 and

Figure 3, and see Macaulay Library catalog entry ML294553181 for Ruddy Duck features). This individual was considerably smaller than nearby male and female Canvasbacks (Figure 2). The duck continually swam with a low profile but kept its tail in an upright position, similar to a Ruddy Duck. This individual is listed as “duck sp.” in M.B.’s eBird checklist, which can be found at <https://ebird.org/canada/checklist/S102106559>.

To our knowledge, this presumed hybrid of Canvasback x Ruddy Duck appears to be the first recorded observation of this combination. This hybrid does not exist in Clements *et al.* (2021), nor has it been described in any literature of which we are aware (McCarthy 2006, Reeber 2014). As such, it is important to rule out other possibilities to explain the features of this duck. One such possibility could be a nutrient deficiency, whereby a lack of food for this individual could cause a decrease in body mass (Jorde *et al.* 1995). However, given this individual’s overall small stature instead of an appearance of emaciation, it is likely that a nutrient deficiency would have had to have occurred when it was young, stunting its growth. Alternatively, this individual could have been an unhealthy, late-hatched young Canvasback with delayed pre-alternate moult, but this does not necessarily explain the overall small stature compared to other Canvasbacks.

With this particular hybridization combination not being reported previously, the determination of this individual being a hybrid should be taken cautiously, and the natural history of both parent species must be taken into account.



Left. Figure 1. Presumed Canvasback x Ruddy Duck hybrid, observed at Guthrie Park in Corunna, Ontario, St. Clair River.

Below left. Figure 2. Presumed hybrid (foreground) with female Canvasback (left) and male Canvasback (right).

Right. Figure 3. Presumed hybrid (left) with female Canvasback (right). Note the smaller proportions of the presumed hybrid, higher eye placement, spiky tail and intermediate-coloured back. Photos: Mike Bouman



Breeding ranges of both species overlap in the prairie pothole regions of North America, and both species tend to use marshes, stock ponds and reservoirs (Batt *et al.* 1989, Johnson *et al.* 1989). This natural range overlap is often involved in hybridization and raises the probability of a hybridization to occur (McCarthy 2006). However, courtship displays are very different between Ruddy Duck and Canvasback, whereby Ruddy Ducks will perform a “Bubbling Display” (Johnsgard 1965) and display flight (Miller *et al.* 1977), compared to Canvasback that has a large repertoire of courtship behaviours including neck-stretch, inciting, kinked-neck, head-throw and turn-the-back-of-the-head (Mowbray 2020). Additionally, most interspecific interactions between Canvasback and Ruddy Duck are aggressive chases by male Canvasbacks in similar foraging areas (Thompson 1992), although Ruddy Ducks have also been

known to position themselves above submerged Canvasbacks to feed off food items that are dislodged by Canvasbacks feeding underwater (Thompson 1992).

Hybridization in waterfowl continues to be an active area of research, and certainly the possibility exists to continue to detect new hybridizations as more people report their findings to open-access citizen science platforms such as eBird. Photos of unusual-looking birds such as the individual presented here offer valuable data to researchers studying hybrids and hybrid ranges in waterfowl and other bird families. In the absence of the ability to genetically test this individual, careful examinations of the photos presented here by experts could help confirm this individual as a Canvasback x Ruddy Duck hybrid, or could also help present alternative explanations to the unique features observed.

### Acknowledgements

The authors thank Ken Abraham and Mike Anderson for their extremely useful insight and bibliographic resources to improve this note. We acknowledge that Guthrie Park in Corunna, Ontario, is part of the ancestral land of the Chippewa, Odawa, and Potawatomi peoples, referred to collectively as the Anishinaabeg.

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