

Information on abundance and occurrence of two recently recorded species of ducks for Costa Rica

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ABSTRACT: We present information about the relative abundance and occurrence of the Redhead (*Aythya americana*), and the Ruddy Duck (*Oxyura jamaicensis*) in Costa Rica. The observations were conducted during the winter seasons of 2010 to 2011, 2011 to 2012, and 2012 to 2013 at different wetlands across the country. These sightings represent the southernmost records for each species. What caused these birds to such southern latitudes is unknown, because the regular wintering areas of those species occur in northern Central America or Mexico.

In Costa Rica the duck family (Anatidae) is represented by 20 species (Sandoval and Sánchez 2013), and most of these (16 species) occur only as winter residents from September to April (Stiles and Skutch 1989; Garrigues and Dean 2007). Blue-winged Teal (*Anas discors*) is the only migrant species that is common in the country every winter. All other migrant ducks in the country are considered as uncommon to accidental (Stiles and Skutch 1989; Garrigues and Dean 2007; Sandoval *et al.* 2010; Huertas Villalobos and Sandoval 2012). All species of ducks observed in Costa Rica inhabit natural and artificial freshwater wetlands below 2000 m (Stiles and Skutch 1989, Garrigues and Dean 2007). In recent years several species from different bird families have been recorded for the first time in Costa Rica (Sánchez *et al.* 1998; Garrigues and Dean 2007; Obando-Calderón *et al.* 2010; Sandoval *et al.* 2010), including five members of the duck family. Here we report the relative abundance and occurrence in Costa Rica of two North American migrant duck species, recorded recently in the country, the Redhead (*Aythya americana*; Eyton, 1838), and the Ruddy Duck (*Oxyura jamaicensis*; Gmelin, 1789). Observations of the two duck species were conducted opportunistically from 2011 to 2013 or during the first and second National Duck Census conducted by the Unión de Ornitólogos de Costa Rica (4 February 2012 and 2 December 2012).

Redhead *Aythya americana* (Eyton, 1838) – This species has been seen at four different locations, since the first observation in 2011 (Figure 1). This first observation occurred on 21 November 2011 at a complex of aquaculture ponds (catfish), Carrillo, Guanacaste province (10°32' N, 85°36' W), when JZ observed a male and a female in winter plumage (Sandoval and Sánchez 2011). The ponds used by the Redheads measured 50 x 200 m and were arrayed by other similar ponds, each separated by low earthen dikes. The ducks preferred the ponds that had the most open water and the least amount of shoreline vegetation. Water depth was a maximum of 1.5 m and the ducks would periodically dive in the deeper end of the ponds. On 23

November 2011 JZ observed a female in winter plumage at Pelón de la Bajura, Bagaces, Guanacaste province (10°26' N, 85°22' W). This duck was in an open and recently tilled rice field that was partially flooded. Water depth was only about 0.3 m at the deepest, and most of the field was covered by much shallower water interspersed with patches of mud. On 26 November, at the Carrillo ponds, DV, GCM, and KE also observed a male and female Redhead. On 2 December 2012 was observed a male with adult plumage at Bagatzí, Bagaces, Guanacaste province (10°25' N, 85°19' W). This bird was also in an open water area inside the rice plantations (Fig. 2). On 23 December 2013 SP observed a female at University of Costa Rica, Liberia campus (10°37' N, 85°27' W).

All locations reported here for Redhead are in the lower Río Tempisque basin, the main wintering area for migrant waterfowl in Costa Rica (Stiles and Skutch 1989). Redhead regularly winters south to Guatemala, Jamaica, and the Bahamas (AOU 1998), and the closest record to Costa Rica is from Nicaragua from an unspecified locality, where it is considered accidental (Martínez-Sánchez 2007, Howell 2010). The observations of this species from 2011 to 2012 at different localities may suggest that it could start to be a more common wintering species.

Ruddy Duck *Oxyura jamaicensis* (Gmelin, 1789) – This species has been seen at 6 different locations, since the first observation in 2010 (Fig. 1). The first observation occurred on 13 November 2010 at the same aquaculture complex referenced above for Redhead in Carrillo, Guanacaste province, when DV observed an individual in winter plumage. The next year, on 21 November 2011 we observed one individual here, and on 26 November 2011 two individuals were seen. The second locality where was seen the Ruddy Duck was La Angostura Reservoir, Turrialba, Cartago province (09°52' N, 83°39' W), on 4 January 2011 when EC found four birds swimming on. By 8 January 2011 up to eight individuals were being observed. On 29 January 2011 five birds were seen by SE. The next winter on 14 December 2011, one individual was observed there



FIGURE 1. Wetlands where Redhead and Ruddy Ducks were observed in Costa Rica. 1) Carrillo, 2) Pelón de la Bajura, 3) Bagatzí, 4) Sandillal Reservoir, 5) University of Costa Rica campus, 6) Muelle, 7) Río Medio Queso, 8) Angostura Reservoir, and 9) Cachí Reservoir. Lined squares represent localities where was observed Redhead (*Aythya americana*). Black circles represent localities where was observed Ruddy Duck (*Oxyura jamaicensis*). Black triangle represents a locality where both duck species were observed.

by BW. The third locality where Ruddy Duck was observed was Río Medio Queso, Los Chiles, Alajuela province ($11^{\circ}02' N$, $84^{\circ}41' W$; Figure 3), one individual was observed by DM and PG on 29 November 2011. This is the only natural wetland used so far by Ruddy Duck in Costa Rica. The fourth location for Ruddy Duck was a flooded rice field near Muelle, San Carlos, Alajuela province ($10^{\circ}29' N$, $84^{\circ}29' W$). On 14 December 2011 PSC found one individual with other duck species as Green-winged Teal *Anas crecca* (Linnaeus, 1758) and Northern Shoveler *Anas clypeata* (Linnaeus, 1758). The fifth location was Cachí Reservoir, Cartago province ($09^{\circ}49' N$, $83^{\circ}50' W$). It is along the same drainage as the La Angostura Reservoir just a few miles up river. On 25 December 2011 we observed three individuals and on 29 December 2011 one duck was also seen here by JZ. The last location was Sandillal Reservoir, Guanacaste province ($10^{\circ}27' N$, $85^{\circ}05' W$).

The only historic report of Ruddy Duck from Costa Rica is a single individual apparently collected in 1857 (Stiles and Skutch 1989) on Irazú Volcano, Cartago province. There is some doubt as to the validity of this record as the specimen has disappeared. Furthermore, at that time, Masked Duck had not yet been described, and the bird collected may have been this species (Stiles and Skutch 1989). Therefore these present reports represent the first documented records for Ruddy Duck in Costa Rica.

The two species reported here migrate south during the northern hemisphere winter, but their usual southern limits occur far north of Costa Rica for Redhead (AOU 1998), and regularly to south and central Nicaragua for Ruddy Duck (Martínez-Sánchez 2007, Howell 2010). Although Ruddy Duck has reproductive populations in South America (Remsen et al. 2014), due the observation dates in Costa Rica of this species, we believe that observed

individuals come from northern migrant populations. Therefore, what pushed these ducks further south is unknown. However, we think that the recent contamination and reduction of natural fresh water wetlands covering Central America countries (Ellison 2004), or the occurrence of recent droughts in southern of United State and north of Mexico (Seager et al. 2014), may be the main reason that ducks are migrating further south than usual. The regular observation of individuals of these two species may indicate that both species are establishing as a more regular winter residents in the country, since both the number of birds seen and the number of locations, have increased since first encountered. However is necessary more observation in the future to corroborate or not this assumption.



FIGURE 2. Adult male Redhead (*Aythya americana*) in eclipse plumage observed on 26 November 2011, at Carrillo ponds, Carrillo, Guanacaste province. Photo by David Vargas.



FIGURE 3. Ruddy Duck (*Oxyura jamaicensis*) in winter plumage observed on 29 November 2011, at Río Medio Queso, Los Chiles, Alajuela province. Photo by Daniel Martínez.

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LITERATURE CITED

American Ornithologists' Union. 1998. *Check-list of North American Birds. 7th edition*. Washington: American Ornithologists' Union. 829 pp.

Ellison, A.M. 2004. Wetlands of Central America. *Wetlands Ecology and*

- Magnum* 12(1): 3–55.
- Garrigues, R. and R. Dean. 2007. *The birds of Costa Rica, a field guide*. London: Christopher Helm. 416 pp.
- Howell, T.R. 2010. Thomas R. Howell's check-list of birds of Nicaragua as of 1993. *Ornithological Monographs* 68: 1–108.
- Huertas-Villalobos, J.A. and L. Sandoval. 2012. Ten new bird species for Isla del Coco, Costa Rica. *Check List* 8 (3): 568–571.
- Martínez-Sánchez, J.C. 2007. *Lista patrón de las aves de Nicaragua con información de nuevos registros, distribución y localidades donde observar aves*. Managua: Alianza para las aves silvestres. 102 pp.
- Obando-Calderón, G, J. Chaves-Campos, R. Garrigues, A. Martínez-Salinas, M. Montoya, O. Ramírez and J. Zook. 2010. Lista Oficial De Las Aves de Costa Rica, Actualización 2010. *Zeledonia* 14(2): 47–56.
- Remsen Jr., J.V., C.D. Cadena, A. Jaramillo, M. Nores, J.F. Pacheco, J. Pérez-Emán, M.B. Robbins, F.G. Stiles, D.F. Stotz and K.J. Zimmer. 2014. *A classification of the bird species of South America*. American Ornithologists' Union: Version January 2014. Accessible at <http://www.museum.lsu.edu/~Remsen/SACCBaseline.html>. Captured on 20 January 2014
- Sánchez, J.E., K. Naoki and J.R. Zook. 1998. New information about Costa Rican birds. *Ornitología Neotropical* 9(1): 99–102.
- Sandoval, L. and J.E. Sánchez. 2011. *Lista de aves de Costa Rica: tercera actualización*. San José: Unión de Ornitólogos de Costa Rica. 28 Pp.
- Sandoval, L. and J.E. Sánchez. 2013. *Lista de aves de Costa Rica: undécima actualización*. San José: Unión de Ornitólogos de Costa Rica. 30 Pp.
- Sandoval, L., C. Sánchez, E. Biamonte, J.R. Zook, J.E. Sánchez, D. Martínez, D. Loth and J. O'Donahoe. 2010. Recent information and status on new and rare bird species in Costa Rica. *Bulletin of the British Ornithologists' Club* 130(4): 237–245.
- Seager, R., L. Goddard, J. Nakamura, N. Henderson and D.E. Lee. 2014. Dynamical causes of the 2010/11 Texas-northern-Mexico drought. *Journal of Hydrometeorology* 15: 39–68.
- Stiles, F.G. and A.F. Skutch. 1989. *A guide to the birds of Costa Rica*. Ithaca: Cornell University Press. 511 pp.

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