

# STATUS OF THE FERRUGINOUS DUCK IN THE UKRAINIAN DANUBE DELTA AND ADJACENT AREAS

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## Introduction

The Danube is the second-largest river in Europe. At its mouth, in the north-western corner of the Black Sea, it forms a huge delta, which has been developing since the early Holocene and nowadays occupies about 5 640km<sup>2</sup>. The delta was formed by alluvial deposits that have replaced an enormous Paleo-Danube Lake. The Danube Delta extends over two countries - Romania and Ukraine - the Ukrainian portion of which occupies 1 240km<sup>2</sup>, about 20% of which are wetlands. For a number of historical, political, and economic reasons, the Danube Delta has, to a relatively large extent, retained its naturalness, especially in the least accessible places and in the less economically developed parts, adjacent to the sea. However, the delta has been changed considerably by human interfer-

ence, especially its hydrology. The challenge - and the only chance for the future - lies in the combination of restoring natural processes in the delta and its sustainable use by humans.

## Status and Distribution

At the beginning of the 1970s, the Ferruginous Duck was still one of the most numerous species in the wetlands of Ukraine and the former USSR (Isakov, 1970a, 1970b). Subsequently, there has been a widespread decline in Ukraine (Table 1), although the duck is still fairly common in the Ukrainian Danube Delta. Following the minimum counts of Ferruginous Duck in Ukraine in the 1980s, the population has gradually recovered. There are now an estimated 1 000 breeding pairs in Ukraine, 650 of which are in the Ukrainian Danube Delta.

Table 1. Population trends of the Ferruginous Duck in the Ukraine and Ukrainian Danube Delta (after Isakov, 1970a, 1970b; Lisenko, 1991; Zhmud, 1991; Zhmud, 2000; Gorban & Zhmud, 2000; Koshelev et al., 2001; Zhmud, unpubl. data).

	Pre 1960	1980s	1990s	2000-2002
Ukraine	70 000	1 500	550	1 000
Ukrainian Danube Delta	10 000	600	350	650

In spring, Ferruginous Ducks arrive in Ukraine at the end of March in small flocks of 3-10 individuals or in pairs. They settle on breeding wetlands immediately on arrival. Throughout the breeding season (April-June), the ducks occur mostly in pairs or small groups. Average group size then increases between August-November (Table 2).

## Breeding Biology

In the Danube Delta, Ferruginous Duck nest in oligotrophic mosaic reed-beds, which are isolated from the freshwater of the Danube. Nests are often built in Common Gull *Larus canus* and Black Tern *Chlidonias niger* colonies. Nest and egg measurements of Ferruginous Ducks in the Ukrainian Danube Delta are presented in Tables 3 and 4. Clutch size averaged eight eggs.

Table 2. Size of Ferruginous Duck flocks in the Ukrainian Danube Delta (after Zhmud, 1991).

Group size (individuals)	No. of Flocks (%)	
	April – June	August - November
1	5 (10.2)	3 (6.5)
2	26 (53.1)	1 (2.1)
3-10	16 (32.7)	3 (6.5)
11-30	1 (2.0)	21 (45.7)
> 30	1 (2.0)	18 (39.1)
Total	49 (100.0)	46 (100.0)

Table 3. Nest measurements (mm) of 23 Ferruginous Duck nests in the Ukrainian Danube Delta (after Koshelev et al., 2001).

	Mean	Standard Error
Max outer diameter	271.33	9.94
Min outer diameter	245.00	11.09
Max inner diameter	167.00	7.10
Min inner diameter	155.00	7.05
Outer depth	84.33	8.43
Inner depth	63.66	4.23

Table 4. Clutch size and egg measurements (in mm) of Ferruginous Ducks in the Ukrainian Danube Delta (after Koshelev et al., 2001).

	n	Mean	Standard Error	Range
Clutch size	23	8.10	0.45	5-14
Egg Length	156	51.33	0.11	43.10-55.00
Egg Diameter	156	37.66	0.08	35.00-41.00
Egg Mass (g)	40	40.87	0.30	36.00-44.00
Egg Volume (cm <sup>3</sup> )	156	37.18	0.21	30.09-44.58
Diameter / Length index (%)	156	73.41	0.20	67.50-85.85



Photo: Armando Bottelli / LIPIU

### Conservation

Ferruginous Ducks are listed in the Red Data Book of Ukraine (Shterbak, 1994). Although hunting is forbidden, birds are still regularly shot by hunters. The proportion of Ferruginous Ducks in hunting bags varies widely in different regions of Ukraine. It may reach 20%, or even 80% in September, on Limba Island where birds are shot on overgrown shallow waters, whilst in the northern part of the delta where hunting takes place on sand bars and marine bays, it does not exceed 1%. In the Ukrainian Danube Delta, most Ferruginous Duck (up to 3 500 birds) occur at the end of August / beginning of September in the Kiliya branch of the delta. During the breeding season, the Ferruginous Duck is most common on the adjacent Stensovskie Plavni - a wetland with a relatively high and stable water level with numerous open water areas and canals in the reedbeds. More than 450 pairs of Ferruginous Ducks breed here, with only Coot *Fulica atra* and Red crested Pochard *Netta rufina* more numerous. Ferruginous Ducks also commonly occur

on other wetlands of the Ukrainian Danube Delta, such as Kugurlui and Kartal Lakes, and in the Romanian Danube Delta (Radu, 1979; Munteanu, 2000) where it comprised 24.8% of all waterfowl in April-August 2002 (Zhmud, *unpubl. data*).

The main reasons for the catastrophic decline of the Ferruginous Duck in the Ukrainian Danube Delta are thought to be:

1. Acute eutrophication of most wetlands during the 1960s-70s.
2. A significant increase in hunting pressure during the 1960s-70s.
3. The Ferruginous Duck's narrow niche preference for oligotrophic mosaic wetlands throughout its life cycle (unlike many other diving ducks).

The Danube Delta is probably the most important breeding site for the Ferruginous Duck in the world. Hopefully, birds can disperse from here to recolonise its former range.

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