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Restoration of the Ruddy Shelduck *Tadorna ferruginea* population in „Ascania Nova" nature reserve (Southern Ukraine)

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Abstract. In the XIX century the Ruddy Shelduck was regarded as a common species in Ukraine. Now it is in the Red Data Book of Ukraine and on the Berne Convention List. In 1885 it appeared in the Ascanian Zoo, and a year later there were 16 birds. Nowadays, in the summer and autumn their numbers range from 700 to 1200. The territorial centre of the population are the zoo ponds and the botanical garden, where 48–65 pairs nest. This semi-wild population has been formed as a result of successive acclimatization measures: forming broods with foster parents (*Tadorna ferruginea, Cairina moschata, Anas platyrhynchos*), creating artificial nests, regular feeding, and the availability of unfrozen water in the pond. Free-living birds migrate from Ascania Nova to other places, even to distant regions.

Key words: Ruddy Shelduck, *Tadorna ferruginea,* semi-wild population, reintroduction

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INTRODUCTION

In the XIX century the Ruddy Shelduck was a common species in Ukraine. It inhabited the Poltava and Kharkiv provinces, nested along the Black Sea coasts and in the lower reaches of the Dnieper river. By the beginning of the XX century, however, the number of Ruddy Shelducks declined throughout the whole region adjacent to the Black Sea coast. They remained common only in some localities in the Odessa region and at the salt lakes in the Crimean mountains. In the lower reaches of the Dnister and Dnieper rivers, Ruddy Shelducks have been registered only during their spring migration since the early 1890s. In the mid-20th century, only some pairs nested in the Eastern Crimea. They were considered to be the last wild birds of the species that survived in the European part of the former USSR. Nowadays Ruddy Shelduck is registered in the Red Data Book of Ukraine and the Bern Convention List.

RESTORATION IN XIX–XX CENTURIES

Ruddy Shelducks with partly cut wings have been kept in the Falz-Fein's Zoo since its foundation in 1885; in 1886 there were 16 individuals. The young and injured birds were caught at the Azov Sea coast and on the shores of the steppe lakes. In 1889 the first pair nested in nest box. The wings of some birds were not cut in 1893 and they left Ascania Nova. It was in 1895 when five individuals returned to the reserve from their wintering grounds for the first time.

In 1920, more nest boxes were placed in the park and near ponds, which enabled an increase of breeding birds up to more than 200 individuals, including 24 nesting pairs. There was a dramatic decline in birds' number during the war and post-war period (1945–1948), when only 15 Ruddy Shelducks survived in Ascania Nova.

Two large shipments (46 and 49 birds) were delivered to Ascania Nova in 1957 and 1959. Over the next years, the population number fluctuated

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from 50 to 87 individuals, with 2 to 15 nesting pairs. In 1970–1971 all eggs were withdrawn in the hope that the birds lay eggs again but they left their nests, and only 2-3 pairs remained to nest.

Our predecessors repeatedly released flying Ruddy Shelducks to nature hoping that the birds would not leave Ascania Nova where they had good maintenance in the Zoological Park. But they fly away. At that time only 10–20 Ruddy Shelducks stayed in Ascania Nova in 1970–1971. It was then that ornithologists noted increasing of population of the Ruddy Shelduck on the Kerch Peninsula (Kostin 1983, Lysenko 1991).

RECENT RESTORATION TECHNICS

Nowadays other methods of restoration are used. We use artificial rearing nestling without the parents and provide them with the foster parents (Zubko & Kovtun 1987). The main reason of artificial rearing the Ruddy Shelduck offsprings is predation against Herring Gulls *Larus argentatus*, Carrion Crows *Corvus corone cornix*, and other corvids. A part of eggs is carried from nests with a big brood (double, for instance) to an incubator or put under a Perching Duck *Cairina moschata*.

To create a settled Ascanian population of the Ruddy Shelduck a special method aimed for retaining birds in this locality was used (Zubko & Kovtun 1989). Flying young birds are kept with their parents, one of which (or both) has undergone amputation of the wing palm. Also a minor part of the brood undergoes the same operation. As a rule, the flying birds do not leave their parents. Repeating the procedure several times, gradually weaken migratory instinct and makes birds attached to the locality.

Experiments on preparing birds to reintroduction into natural conditions were carried out on birds bred by their own parents (1217 individuals), and by the foster parents. Ruddy Shelduck, Perching Duck, domestic duck and Mallard *Anas platyrhynchos* were used for this purpose. Since 1983 to 2000 the foster parents reared 2212 fledglings, 3429 birds were set free and 622 birds were used for creating settled population (Table 1).

Broods formed by the foster parents were lodged in the isolated part of the pond from which young birds could fly easily to the main pond. We often observe joint broods of the Ruddy Shelduck under natural and semi-wild conditions. In usual broods of Ruddy Shelduck the number of chicks fluctuated from 7 to 14 and in double ones — from 23 to 58. Using the foster parents we formed broods that consisted even of 70–116 birds. The foster parents taught and protected young, helped them to get familiar with new places when set free.

This procedure also helped young birds reared by the foster parents in open-air cages to enter company of young Ruddy Shelducks reared by their own parents on the ponds (Zubko & Kovtun 1987, 1989, Zubko & Semenov 1990). They acquired wild behavioural stereotype under the effect of communication with the foster parents and young birds reared by their own parents. Joining of young birds reared by the foster parents with birds developing in wild is an obligatory prerequisite to the shortest period of adaptation to wild nature.

Results of reproduction under natural and artificial conditions of breeding are very different. Whereas under conditions of the Zoological Park in the wild Ruddy Shelduck average 50–66.7% of fledglings remain alive by the time of taking wing, our technology allows to get 90.5–97.9% of fledglings from a pair of ducks.

An experiment of putting eggs of the Ruddy Shelduck into nests of the Mallard in the Dendrological Park proved to be very successful. Eight nests of the Mallard with fully replaced eggs had been observed for three years. No losses were noticed in them. The Mallard is widely spread and numerous, therefore use of it for breeding the Ruddy Shelduck may become a promising method of restoring this species in its natural area.

Table 1. Introduction of reared fledglings of the Ruddy Shelduck to the wild.

Species of the parents	Years			Total
	1983–85	1986–90	1991–2000	
Tadorna ferruginea	250	452	515	1217
Cairina moschata and *Anas platyrhynchos*	670	632	910	2212
Total	920	1084	1425	3429
Birds used for creating settled populations	230	212	240	622

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PRESENT STATUS OF THE RUDDY SHELDUCK

Reintroduction of artificially reared birds, in the Ascanian population of the Ruddy Shelduck formed three categories of birds:

1) those with an amputated wing (70–90 birds);

2) flying ducks artificially attached to the locality („settled");

3) absolutely free ducks.

The first two groups constitute the basis of the local population of the Ruddy Shelduck. Around them a group of free birds concentrates. The free birds can nest outside the Reserve and fly away.

Restoration of the Ruddy Shelduck population proceeded slowly (Fig. 1) and only in 1980–1983 it reached 85–105 birds (15–23 nesting pairs). Nowadays, in the summer and autumn seasons they number from 700 to 1200 birds and every year 48–65 pairs nest.

In Ascania Nova for the last ten years Ruddy Shelducks stay annually for wintering in the number of 200–300, and occasionally their number reached 700–1000.

Since 1978 about 1670 Ruddy Shelducks were ringed, including about 800 for the last five years. 358 of them were met again, including 345 records in Ascania Nova. In 253 cases the birds nested or then had chicks and wintered on the ponds of the Zoological Park. Also flying birds without rings were met in Ascania Nova.

The Reserve „Ascania Nova" has played a great role also in increasing population of the Ruddy Shelduck in Ukraine. Ruddy Shelducks reared and ringed in Ascania Nova were recorded in many regions of Ukraine and also in Azerbaijan, Russia and Georgia (Abkhaziya).

The Ruddy Shelducks met on the Lower Danube, in Bulgaria, and possibly in other areas must have originated from Ascania Nova (e.g., Belik 1984, Khokhlov & Kukish 1984 and others). Many birds were not ringed, as they were reared by their own parents or the Mallard-mothers. They might migrate to other regions where the Mallards ringed in Ascania Nova usually winter (Arkhangelsk, Volgograd, and Smolensk provinces in Russia, Bulgaria, Romania, Poland).

Thus, birds reared under conditions of semi-wild maintenance can breed successfully in nature and be able to migrate. Therefore, they can be used in supporting the natural populations.

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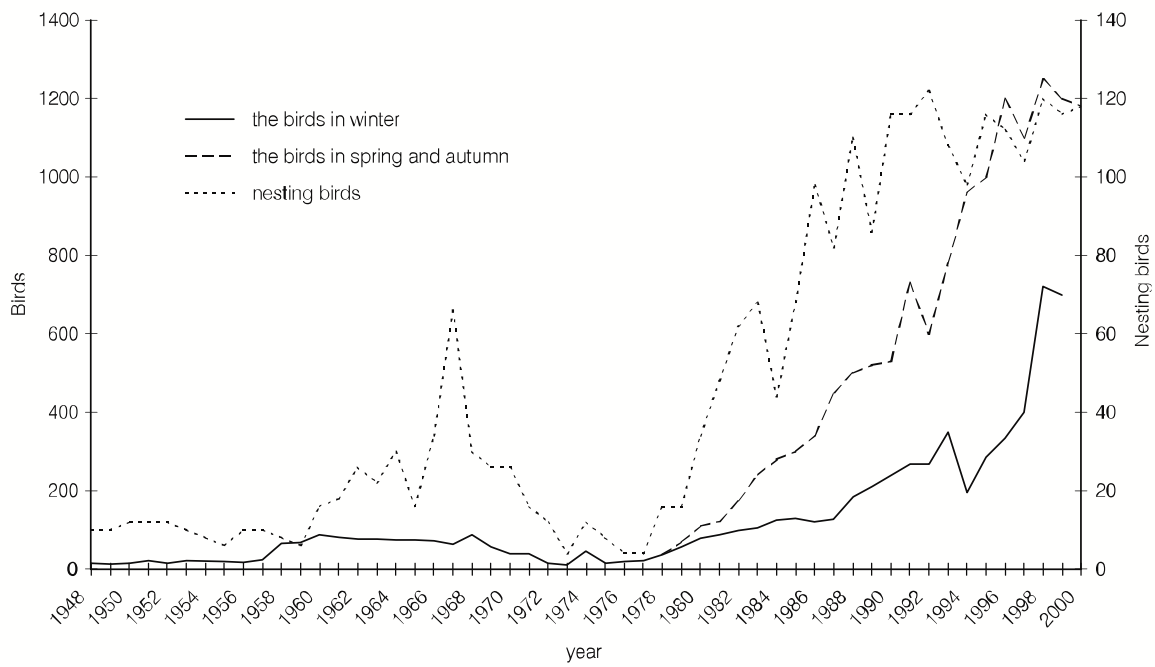


Figure 1. Dynamics of the numbers of the Ruddy Shelduck in the Biospere Reserve "Ascania Nova".

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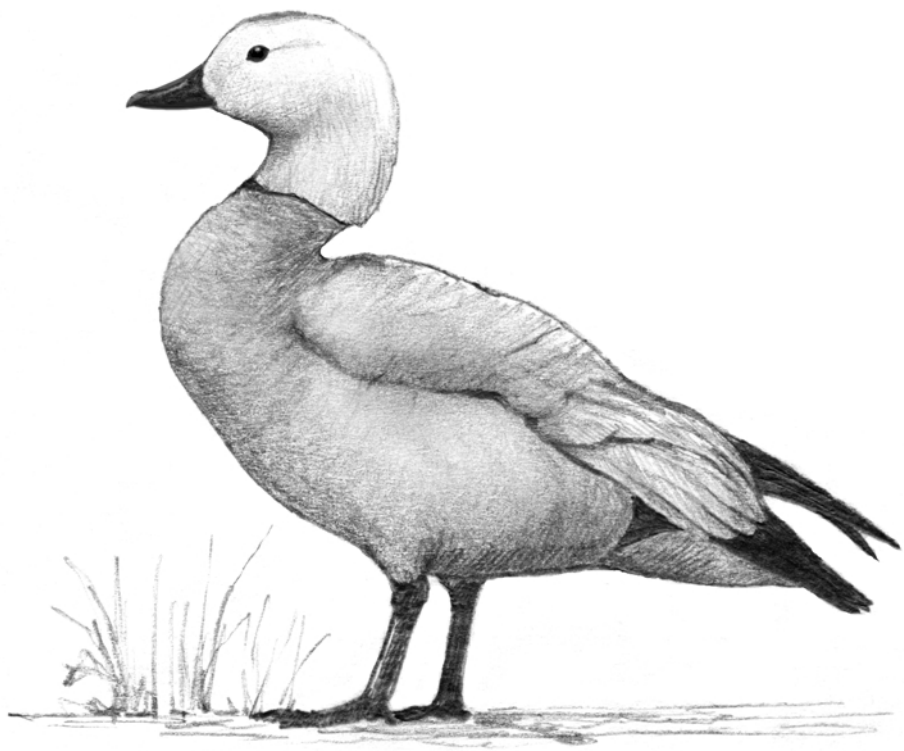
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STRESZCZENIE

[Restytucja populacji kazarki w rezerwacie „Askania Nowa" na Ukrainie]

W XIX wieku gatunek ten był pospolity na terenach obecnej Ukrainy, natomiast aktualnie jest wykazany w Czerwonej Księdze tego kraju i w załączniku do Konwencji Berneńskiej. W parku zoologicznym „Askania Nowa" w 1886 r. było 16 kazarek. Od tamtego czasu podejmowano próby osiedlenia i pół-naturalnej hodowli tych ptaków. Jednak dopiero od niedawna zastosowano właściwą metodykę, dzięki czemu obecnie liczba kazarek przebywających w parku latem i jesienią osiągnęła liczbę 700–1200 osobników, a gnieździ się 48–65 par (Fig. 1).

Pół-dzika populacja osiadła została stworzona drogą formowania lęgów z przybranymi rodzicami — kazarkami, krzyżówkami i piżmówkami amerykańskimi (Tab. 1). Przybranych rodziców pozbawia się zdolności lotu, dzięki czemu potomstwo przywiązuje się do okolicy. Sprzyja temu też regularne dokarmianie i utrzymywanie zimą wody wolnej od lodu. Wyniki obrączkowania i inne stwierdzenia wykazały, że część wyhodowanych w ten sposób kazarek odlatuje wzmacniając dziką populację na Ukrainie i w innych krajach.



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