The Ruddy Duck *Oxyura jamaicensis* in Flanders

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The Ruddy Duck is a small, dumpy stiff-tailed duck with short neck. Rich chestnut-bodied males have blue bills which make them distinct from brown females.

1. Wild population

The *Oxyura jamaicensis jamaicensis*, which occurs in Europe as an exotic subspecies, breeds mainly in the north west of North America (Fig. 1). The Ruddy Duck winters in the south up to California, Mexico and Florida (Cramp & Simmons 1977). Although this species can be shot, the population is still increasing and numbers half a million birds (Hughes *et al.* 1999).

![Map of North America showing the Ruddy Duck's breeding and wintering ranges.]

*Figure 1. Dispersion of the Ruddy Duck in North America (after: Hughes *et al.* 1999).*
2. Naturalised population

2.1. Numbers and distribution

2.1.1. Great-Britain

All Ruddy Ducks which occur in Great-Britain nowadays are probably all descendants of originally captive birds which could escape into the wild. In the beginning of the fifties several juvenile and adult birds could escape from a reserve of the Wildfowl Trust at Slimbridge in Gloucestershire (Lever 1987). These escapes propagated spectacularly in the wild. In 1996 the population exceeded 4000 individuals. Between 1984 and 1997 the population increased 15% per year (Fig. 2).

![Graph showing the wintering population of Ruddy Ducks in Great-Britain between 1960 and 1997.]

*Figure 2. Wintering population of Ruddy Ducks in Great-Britain between 1960 and 1997 (after: Hughes et al. 1999).*

In Great-Britain the first breeding record of the Ruddy Duck was made in 1960 in Chew Valley Lake, Avon (Hughes et al. 1999). In the beginning there was a strong yearly increase of the British population, but in the beginning of the eighties and in '91/'92 there was a decline. This is probably due to a succession of bad breeding conditions such as dry weather conditions and/or fluctuating water levels.

Most Ruddy Ducks winter in central and southern Great-Britain and breed more in the north. Approximately 700 to 900 pairs of Ruddy Duck breed successfully in 1994.
2.1.2. European mainland

The first Ruddy Duck on European mainland was recorded in Sweden in 1965 (Cramp & Simmons 1977). Following years Ruddy Ducks were seen in several countries lying close to Great-Britain such as France, The Netherlands, Belgium and Ireland. These countries also have the highest number of observations, the highest number of years with observations and the highest number of recent observations.

Till 1996 900 records of 1500 Ruddy Ducks were made from 19 countries (Hughes 1996). In 11 of these 19 countries the species is seen on yearly basis. Those countries are The Netherlands, France, Belgium, Spain, Ireland, Germany, Iceland, Sweden, Morocco, Switzerland and Italy.

During the breeding period Ruddy Ducks were seen within 16 countries of the West Palearctic region. Minimal 10 countries have records of successfully breeding (Hughes et al. 1999). Although the number of records of successful breeding is relatively low in most countries, the number of breeding attempts is increasing. Probably there are yearly breeding attempts in Great-Britain, The Netherlands, Ireland, France, Morocco and probably also Belgium and Germany.

2.1.3. Flanders (Belgium)

The first observation of a Ruddy Duck in Flanders (Belgium) was made on September 22th 1979 at Antwerpen Linkeroever (Blokkersdijk). It concerned a second-year female. Up to 2001 minimally 323 records of Ruddy Ducks were collected in Flanders.

At the end of last century Belgium was the third country in Europe with the highest amount of records of Ruddy Ducks (Hughes et al. 1999). Approximately 10 to 15 Ruddy Ducks appear in Belgium (of which 3 or 4 in Wallonia). Up to 1999 no observations were made in Brussels.
Ruddy Ducks are mostly found solitarily (Fig. 3). Maximum 3 birds were seen together.

Figure 3. Occurrence of the Ruddy Duck in Flanders (Belgium) from 1979 to 2001.

Figure 4. Number of 5x5 squares with Ruddy Ducks per month and monthly maximum of individuals (1979-2001).
The birds are apparently seen during winter months (Fig. 4), with a maximal number of records in December and January. This trend is in response with other European Countries such as The Netherlands, France, Switzerland en Italy (Hughes et al. 1999).

Figure 5. Aantal atlashokken per jaar waarin Rosse stekelstaarten zijn opgemerkt en maximum aantal exemplaren per jaar (1979-2001).

From 1979 on Ruddy Ducks are seen yearly in Flanders. The number of observations increases steadily from the middle of the eighties. The average rate of increase is 6%. In 1998 a maximal number of birds was seen (24).
Figure 6 shows a geographical distribution of the records of the Ruddy Duck between 1979 and 2001. Ruddy Ducks have been seen in all Provinces of Flanders. Most western provinces West-Flanders and East-Flanders have the highest number of localities were the Ruddy Duck was seen. In Limburg (most eastern province) this number is significantly lower (7 localities).

At Ploegsteert (Henegouwen, Wallonia) the Ruddy Duck bred successfully in 1991. As far as we know no successful breeding occurred in Flanders.

2.2. Problems

Ruddy Ducks are a treat for the strongly related and rare White-headed Duck *Oxyura leucocephala* (e.g. Hughes 1996; Vitaloni 1996; Hughes *et al.* 1999). This European breeding bird decreases severely from the 20th century (Camp & Simmons 1977). The population of White-headed Duck in Eurasia comprises 19,000 birds. Thanks to protection strategies (see lower) the population of White-headed Duck in Spain – the only country in Europe the bird is breeding in – is increasing from 22 individuals in 1977 to 786 in 1992 (Arenas & Torres 1992). The trend and status of this species is monitored sharply in most of the countries round the Mediterranean and East-Europe (e.g. Castro Román & Torres Esquivias 1997; Castro Román *et al.* 1997; Djahida 1996; Essetti 1996; Handrinos 1996; Khan *et al.* 1996; Munteanu 1996 en Torres Esquivias & Alcalá-Zamora Barrón 1997).
Besides direct competition between Ruddy Ducks and White-headed Ducks because of a large overlap in niche, hybridisation is a major treat to White-headed Ducks. Those hybrids are fertile and can copulate with other hybrids as well as with other White-headed Ducks (Hughes et al. 1999). In Spain hybrids and Ruddy Ducks seem to be dominant to White-headed Ducks during mating season. It even happens that male Ruddy Ducks copulate with female White-headed Ducks even when females of their own species do occur. Scientists in Great-Britain are also afraid, although not yet proved, Ruddy Ducks can compete with native bird species such as Black-necked Grebe Podiceps nigricollis and Little Grebe Tachybaptus ruficollis because they frequent the analogous breeding habitats (Hughes et al. 1999). Icelandic nature conservationists express the same anxiety towards possible competition with the decreasing population of Horned Grebe Podiceps auritus. Ruddy Ducks are ought to attack Great Crested Grebes during breeding season, but the fact they live together with Horned Grebe, Black-necked Grebe P. n. californicus, Pied-billed Grebe Podilymbus podiceps and Least Grebe Podiceps dominicus in North-America, indicates that the amount of niche separation is enough to let Ruddy Ducks and Grebes live together in Great-Britain and Iceland.

2.3. Management

To date two symposia were organised about the relation Ruddy Duck/White-headed Duck (March 1993 in England and September 1994 in Spain). It is expected that without any control measurement Ruddy Duck will colonize more rapidly the European mainland. This is why control measures have to be worked out amongst all European countries.

In the Action Plan for the White-headed Duck (Oxyura leucocephala) in Europe (Green & Hughes 1994) several goals are formulated to minimise the threat by Ruddy Ducks on a European scale.

On the European mainland several countries control Ruddy Ducks. As a member of the European Union Belgium has got to take its responsibilities in eradicate the Ruddy Duck. On a juridical scale it is perfectly possible but to date no practical strategy is functional. Large ponds in Flanders were Ruddy Ducks are frequently observed are mostly protected areas. It is not possible to shoot or to catch the birds over there. The use of lead during hunting can cause serious disturbance and lead poisoning (Tavecchia et al. 2001).

To realise the Action Plan for the White-headed Duck in Flanders in the field, we propose:

- **Ruddy Ducks in captivity**: In association with societies of bird-breeders clear agreements have to be made. All Ruddy Ducks staying in captivity should be marked with a clearly visible ring and all birds (number and place) should be recorded in a central database.

- **Discourage trade**: this should be applied to all exotic waterbird species. A 'list' system for governing the trade of species should be worked out. A similar list
is already worked out for mammals Belgian Federal Ministry of Social Affairs, Public Health and Environment. When a species is placed on the list, it is possible to have it in captivity. There are several criteria:

It has got to be:
- "No species for which is proved clearly that they could survive into the wild after escape and become an ecological threat."
- "They should not be aggressive and/or dangerous or be of any particular danger to human health."

- *Cooperation between services*: Records of Ruddy Ducks should be stocked as quick as possible in a database. Afterwards field workers can decide how to eradicate the individuals.
3. Discussion

Origin and numbers of Ruddy Ducks in Flanders
Ruddy Ducks observed in Flanders are originally captive birds or individuals that came from abroad. In Belgium the number of Ruddy Ducks in captivity is estimated 300–500 individuals (pers. comm. W. Van den Bossche). Because of improvements of breeding techniques in captivity, this is possibly an underestimation. In The Netherlands the number of pairs in captivity is estimated 1500–2000 (Groot 1997). By means of this cited author, each year 10 individuals do escape.

The proposition that Great-Britain is a source area could not be proved by means of recaptures of individually marked birds. All 5 recaptures of the 138 in England ringed birds were all done in England. Observations of Ruddy Ducks in The Netherlands are mostly done in the west of the country (Groot 1997). This is also what we found in Flanders (Fig. 6). The fewest observations in the eastern provinces. Another result is that the highest number of observations is made during winter. In North-European countries (Norway, Sweden, Finland, Denmark en Iceland) the opposite occurs: most records are made during summer months. This supposes that during winter Ruddy Ducks from more Northern-European countries reach Flanders.

Of all exotics amongst waterbirds the Ruddy Duck is possibly the best documented, also in Belgian specialised literature. Not only about the ecology and threat of White-headed Duck a lot is known, also the observations are consequently published. This is why we can conclude to have a very complete view of the number of observations and the number of Ruddy Ducks in Flanders. The decrease of the number of Ruddy Ducks and the numbers of 5×5 Squares where they occur in 1999 and 2000 could be a result of the introduction of the European Action Plan towards this species.

Problems/management
Towards several species, such as the Ruddy Duck, it is very difficult to apply management strategies because this species often frequent protected areas. Because of this it is very important to work out a prevention management strategy like realising a list system. Based on the criteria formulated to several species of mammals, the draft of an analogue list to exotic water birds seems a must.
4. Literature Cited


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