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## SHORT COMMUNICATION

# North American Ruddy Ducks *Oxyura jamaicensis* in the United Kingdom – population development and control

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The Ruddy Duck *Oxyura jamaicensis* is a native of the Americas, where it has a stable population of around 500,000 birds (Wetlands International 2006). The United Kingdom (UK) population originates from four males and three females imported to the Wildfowl Trust (now the Wildfowl & Wetlands Trust) at Slimbridge in Gloucestershire in 1948 (Hughes, 1992). A captive breeding programme was started in 1949 and following a series of escapes in the late 1950s and the deliberate release of three immature females in 1961 (Hudson 1976), a small feral population became established in the south-west of England. Numbers grew from as few as 20 birds in late 1962 to at least 350 birds in winter 1975/76 (Hudson 1976). During this period the species' range was largely restricted to the area of western England between Avon and Cheshire. A significant increase in both range and numbers began in the late 1970s and, by 1990, Ruddy Ducks had successfully colonised parts of Wales and Northern Ireland, central and southern Scotland, and much of England.

It was during this period that increasing numbers of Ruddy Ducks began to be recorded in continental Europe, especially France, the Netherlands and Belgium (Hughes *et al.* 1999), leading to concerns about possible hybridisation with the native White-headed Duck *Oxyura leucocephala* in Spain. In 1991 Ruddy Ducks began to be reported annually in Spain and the first Ruddy Duck x White-headed Duck hybrids were seen in the same year (Hughes *et al.* 1999). White-headed Duck numbers in Spain had fallen to only 22 in 1977 as a result of hunting and habitat loss (Torres 2003). However the species is now heavily protected from hunting, and most of its breeding and wintering sites are protected under European legislation. As a result numbers have risen in recent years, although the population now seems to have stabilised at between 2100 and 2600 birds (Carlos Gutierrez pers. comm.). As a result of these other threats being removed, hybridisation with Ruddy Ducks is now widely recognised as the most significant threat to the long-term survival of the Spanish White-headed Duck population (Hughes *et al.* 2006). Between 1991 and 2008 at least 182 Ruddy Ducks were recorded in Spain (Carlos Gutierrez pers. comm.), but numbers have fallen in recent years in line with the fall in the UK population (see below). Only six individuals were recorded in 2008 (Mario Saénz de Buruaga pers. comm.).

Spain has had a procedure for the reporting and control of Ruddy Ducks since 1993. However, as the likely source of the birds appearing in continental Europe was the expanding UK population, the British Government commissioned small-scale research into the feasibility of control between 1993 and 1996. The conclusions drawn from this work were that eradication was feasible, but that larger scale control was required to better define the timescale and costs involved (Hughes 1996). Shooting was identified as the most effective method of control. Breeding season trapping and egg oiling were identified as alternative, but significantly less effective methods. Additional research on a larger scale took place between 1999 and 2005, which confirmed that numbers could be reduced to very low levels within five years (CSL 2002). This extended period of research allowed the development of a good understanding of the most effective methods of controlling Ruddy Ducks, their behaviour and distribution.

In September 2005, the Central Science Laboratory (now The Food and Environment Research Agency) received funding from EU LIFE-Nature and the UK Department of the Environment, Food and Rural Affairs (Defra) for a five-year control programme. The aim is to eradicate Ruddy Ducks from the UK by late 2010 or, if this is not achieved, to model the time and effort required for full eradication of any remaining birds.

Traditionally, Ruddy Ducks have concentrated in winter on several key sites which have held a large proportion of the UK population. The strategy, therefore, has been to concentrate control on large wintering flocks, but also to minimise breeding success by targeting the best breeding sites nationally. Control of Ruddy Ducks is carried out with the agreement of the landowner, but access to all sites nationally is not required for successful eradication because Ruddy Ducks move between sites as part of seasonal migration or in response to changing weather conditions (Henderson 2006).

Especially in the winter months, Ruddy Ducks tend to fly within a site rather than leave it when culling is taking place (Henderson, in press). This makes control more effective and means a high proportion of birds tend to be shot on any one visit. The proportion of birds shot per visit depends on the nature of the site and the weather conditions, but typically 50-75% of the birds present are culled per visit. This proportion has risen slightly in recent winters as the size of the flocks has fallen, and winter control accounts for over 80% of the birds culled. Importantly, there is no evidence that Ruddy Ducks have abandoned traditional wintering sites to any great degree as a result of the disturbance caused by shooting. During the breeding season the population is much more dispersed and birds tend to be found on smaller waters. Most breeding season control now involves shooting birds on the water surface using small-calibre sound-moderated rifles which cause very little disturbance to other species. The main target at this time of year is breeding females, with the aim of reducing productivity. It was considered possible that productivity would rise as the population fell, due to reduced competition for food and breeding sites, but this appears not to have happened to any significant degree.

Since September 2005, over 6200 Ruddy Ducks have been culled on 110 sites from Easter Ross in the north to Kent and Devon in the south (Henderson in press). The current population (September 2009) is unlikely to be significantly higher than 300-400 adults plus immature birds hatched in 2009, and ongoing work over the next year is expected to lead to significant further reductions in numbers (see Austin *et al.* 2008 for the Great Britain trend to winter 2006/07). Eradication in the short to medium term still appears to be highly feasible.

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