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Conservation of the White-headed Duck *Oxyura leucocephala* in Central and South Asia

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**ABSTRACT**

The White-headed Duck *Oxyura leucocephala* is the only stiff-tail (*Oxyurini*) indigenous to the Palearctic. The global population, which was probably over 100 000 in the early twentieth century, has decreased to 8 000-13 000 individuals in 2002. In the Central Asian region, the details of the life cycle of the species and its precise migratory habits largely remain an enigma. As the region undergoes an extended periodic drying cycle, there is a challenge of ensuring maintenance of wetlands in their natural condition, and ensuring allocation to these wetlands of regular water supplies, given that human impacts on wetlands increase from domestic, industrial and agricultural uses. The fate of the small population of White-headed Ducks that migrate to Pakistan remains in question. In 2003, Wetlands International undertook a comprehensive survey and collation of information to ascertain the status and conservation needs of the species.
species, the results of which were published in a report. Surveys in Uzbekistan, Kazakhstan and Pakistan in 2003 and 2004 have provided new information on the important sites for the species. This paper provides an update on the status and conservation needs of the species.

INTRODUCTION

The White-headed Duck *Oxyura leucocephala* is a globally threatened species, currently evaluated as Endangered in the IUCN Red List of Threatened Species (BirdLife International 2004). Its range and population size have decreased drastically since 1900, as a result of habitat destruction and hunting pressure (Green & Hughes 2001). The global population of the White-headed Duck was probably over 100 000 individuals in the early twentieth century, but had fallen to an estimated 19 000 birds in 1991 (Green & Hughes 1996). Since then, numbers have probably declined to as few as 8 000-13 000 individuals (Wetlands International 2002). This has aroused great concern for the conservation of this species.

With funding from the Convention on Conservation of Migratory Species of Wild Animals (CMS), Wetlands International carried out a comprehensive review of the status of the White-headed Duck in 12 Central Asian countries in 2002, and made a series of recommendations for its conservation. This report focused on the status of the White-headed Duck in Afghanistan, China, India, Iran, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Russia (east of the Ural Mountains), Tajikistan, Turkmenistan and Uzbekistan. The report was published in February 2003 (Li & Mundkur 2003). A review of the status of the species in the Central Asian countries of the former USSR was published in 2002 (Kreuzberg-Mukhina 2002).

This paper presents the latest information available on the species in Central and South Asia, based on these reports and additional observations in Pakistan, Kazakhstan, Mongolia and Uzbekistan in 2003 and 2004.

STATUS OF THE WHITE-HEADED DUCK IN PAKISTAN

In Pakistan, the White-headed Duck has been widely recorded at more than 25 sites across four provinces, namely Punjab, Baluchistan, North-West Frontier Province (NWFP) and Sindh (Fig. 1). The numbers of White-headed Duck have dropped from 1 039 in 1968 and 733 in 1987 to only about 10 birds in January 2001. In January-February 2002, Abdul Aleem Chaudhry carried out a field survey in northern Pakistan (Chaudhry 2002); only five birds were observed during the survey in January (at Jahlar Lake), and this number had fallen to three in February. However,

<table>
<thead>
<tr>
<th>Site name</th>
<th>Last count of White-headed Duck</th>
<th>Status of wetlands in January-February 2002</th>
<th>Status of wetlands in January 2004</th>
<th>Threats to White-headed Ducks in Pakistan</th>
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<tr>
<td>Jahlar</td>
<td>8 individuals on 5 January 2004</td>
<td>Following light showers, there was some water in the lake. In the previous year, the lake had been completely dry.</td>
<td>The water storage capacity of the lake had been drastically reduced.</td>
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<td>Khabekki</td>
<td>5 individuals in January 2001</td>
<td>Due to a failure of the rains for the last few years, only about one eighth of the lake area was flooded. Very few waterbirds were seen.</td>
<td>Completely dry.</td>
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<td>Uchali</td>
<td>19 individuals on 15 February 2004</td>
<td>Due to a failure of the rains, the water level was very low. Only a few waterbirds were observed on the lake.</td>
<td>The extent of water had decreased to only about 100 ha.</td>
<td>Drought. Habitat loss and modification. Hunting and disturbance. Introduction of fishes, e.g. Grass Carp and Tilapia.</td>
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<td>Kharal</td>
<td>14 individuals in January 1990</td>
<td>The lake had been drained and was completely dry.</td>
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<td>Kallar Kahar</td>
<td>46 individuals in January 1984</td>
<td>The lake has been developed into a recreational resort, and because of disturbance, very few waterbirds now visit the lake.</td>
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<td>Nammal</td>
<td>3 individuals on 15 December 2003</td>
<td>No appreciable change in character except that the water level had dropped</td>
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<td>Rawal</td>
<td>7 individuals on 28 January 2003</td>
<td>A recreational resort was being developed</td>
<td>Increased disturbance from general public, boating etc.</td>
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higher numbers were recorded in the next two seasons: 33 birds were recorded in January 2003, and 24 birds in January 2004 (Abdul Aleem Chaudhry pers. obs., February 2004). Loss of habitat due to development and drought has been the major threat to the White-headed Duck in Pakistan (Table 1).

**POPULATION SIZE AND TRENDS OF NON-BREEDING/WINTERING BIRDS**

The following summary of the population status of the White-headed Duck in South and Central Asia is based on Li & Mundkur (2003), but incorporates the latest information available from Pakistan and Uzbekistan (Table 2 and Fig. 2).

**South Asian population**

As noted above, the wintering (non-breeding) population in Pakistan decreased rapidly from 1 039 birds in 1968 to only about 10 birds in 2001 and 2002, 33 birds in January 2003, and 25 birds in January 2004. The species is rarely recorded in India, and the last record is of a single individual in January 1997 in Uttar Pradesh.

**East Mediterranean & South-west Asia population**

The numbers of birds recorded in Iran and Turkmenistan in January vary widely from year to year, with the total for the two countries reaching a peak of 1 300-1 500 birds.

In Uzbekistan, large numbers of White-headed Ducks were recorded for the first time in January 2000, when 1 137 birds were counted. Only 14 birds were counted in January 2002, but this low number should be treated with caution, as the count at Dengizkul Lake, where most of the White-headed Ducks were recorded in 2000, was incomplete because of poor access due to flooding. In January 2003, there was a very high count of 5 146 birds in Uzbekistan, mostly at Dengizkul Lake which in this year was being affected by natural drought and abstraction of water for agriculture. In January 2004, a total of 1 192 birds were recorded at several wetlands in Bukhara Province in Uzbekistan. It should be noted that in 2004 a significant amount of water that had been used for agricultural purposes was discharged into Dengizkul Lake. This changed the ecological conditions of the lake and led to a decrease in the numbers of wintering waterbirds including White-headed Ducks (Elena A. Kreuzberg-Mukhina pers. obs., March 2004). Observations have shown that there are no regular wintering sites for the White-headed Duck in Uzbekistan. Rather, it seems that the birds move from site to site depending on where conditions are favourable. Records of climatic conditions indicate that there has been a northward shift in the 0ºC isotherm in January, and this is enabling birds to spend the non-breeding period further north than in previous years.

The numbers of White-headed Ducks in Turkey and Azerbaijan have fallen consistently over the past ten years. In

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**Fig. 2.** Distribution of the White-headed Duck *Oxyura leucocephala* in Central and South Asia in 1990-2004.

**Notes:** Blue circles indicate breeding areas; red circles indicate wintering (non-breeding) areas; black triangles indicate staging areas during the migration periods. The large symbols indicate sites at which there have been counts of over 1 000 White-headed Ducks during the last five years.
Table 2. Mid-winter counts of the White-headed Duck *Oxyura leucocephala*: 1990-2004.

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Published sources of information are listed in Li & Mundkur 2003. Additional information provided by: Abdul Aleem Chaudhry (Pakistan), Alex Filatov (Uzbekistan), Andy Green (overall range), Bahtiyar Kurt (Turkey), Baz Hughes (overall range), Behrouz Behrouzi-Rad (Iran), Elena Kreuzberg-Mukhina (Uzbekistan), Evgeniya Lanovenko (Uzbekistan), Gradimir Gradev (Bulgaria), Hamid Amini (Iran), Hichem Azafzaf (Tunisia), José Torres (Spain), M. Zafar-ul Islam (India), Myrrhy Gauser (Turkmenistan), Paul Isenmann (Tunisia and Algeria), Rahat Jabeen (Pakistan), Sadegh Sadeghi Zadegan (Iran), Vladislav Vasilyev (Turkmenistan), Yavar Shahbazi (Iran), and Zulfiqar Ali (Pakistan).

**Note:** Most counts were undertaken in January. In some countries where coverage has been poor, data from November and December of the previous year and February have been included.

Turkey, numbers have fallen from 10 927 birds in January 1991 to about 1 000 birds in January 2000, 2001 and 2002, and in Azerbaijan, from 3 520 birds in January 1991 to 334 in January 2000. However, in the eastern Mediterranean, White-headed Duck numbers have apparently increased: 2 213 and 1 472 birds were recorded in Greece in January 1997 and 2000, respectively; 2 213 and 1 472 birds were recorded in Greece in January 1997 and 2000, respectively; 1 970 birds were recorded in Bulgaria in January 2001; and 520 birds were recorded in Romania in January 2001. This could suggest that the main wintering grounds of the White-headed Duck are shifting westwards.

During the period 1998 to 2002, the total number of White-headed Ducks recorded in January in the East Mediterranean & South-west Asia region was between 3 260 and 4 852. However, these data may give an incomplete picture of the wintering population in this region, as there was a lack of information from some countries in some years. In the 2003 review, Li & Mundkur (2003) therefore used the highest count of 4 852 birds (in January 2000) as the minimum estimate for the Eastern Mediterranean & South-west Asia population, and gave the population estimate as around 5 000-10 000 birds. This estimate now needs to be revised in light of the new data from Uzbekistan, where 5 146 birds were recorded in January 2003.

**UPDATE FROM MONGOLIA AND KAZAKHSTAN ON MIGRATION AND BREEDING POPULATIONS**

According to Li & Mundkur (2003), the White-headed Duck breeds mainly in Kazakhstan, southern Russia, Uzbekistan and western Mongolia. Their report suggests that the Mongolian breeding population could be around 250 pairs and that in Kazakhstan, at least 300-500 pairs. Recent observations in Mongolia and Kazakhstan have provided further information on the size the breeding populations in these two countries. In Mongolia, 400 White-headed Ducks were observed in Khur Us Lake in July 2004 (Simba Chan pers. comm., September 2004). Belyalov & Kovshar (2004) provide information on the White-headed Duck in Kazakhstan in 2003. Highlights of their report include: a total of 1 021 adult birds with (uncounted) juveniles and chicks in the Tengiz-Korgalzhyn Lakes region in late August; 2 000 birds at Kyzylkol Lake, southern Kazakhstan, in September; and 162 birds at Sorbulak Lake in early April. Observations of birds at new sites include: a pair in Ustkamenogrsk region, eastern Kazakhstan, in June; 17 birds in Karaganda region, central Kazakhstan, in September; up to five birds at south Balchasch Lake (Lepsy River and Topar Lake) during May and June; and three to four birds at Sasykkol Lake, south-eastern Kazakhstan, from May to August.
THREATS TO THE WHITE-HEADED DUCK

Drought
The drought in Central Asia in 2000-2002 has greatly reduced the amount of wetland habitat for White-headed Ducks and other waterbirds. Many important sites for the White-headed Duck have dried out completely, or have had a much lower water level and greatly reduced water surface in some years. The long-term effects of drought on the viability of the White-headed Duck population are unknown but potentially serious.

Habitat loss
The natural drought conditions have caused significant loss of habitat for the White-headed Duck. In addition, the unsustainable use of water resources for irrigation and the pollution of wetlands have further reduced the extent of suitable habitat. Water levels in the remaining wetlands of importance for the White-headed Duck have also been reduced.

Hunting and disturbance
Although hunting of the White-headed Duck is banned in most countries, illegal hunting still occurs. Additionally, fishing, over-grazing and agricultural activities in and around lakes have both direct and indirect effects on the White-headed Duck.

RECOMMENDATIONS
Li & Mundkur (2003) made six main recommendations for the conservation of the White-headed Duck in Central Asia, and these remain a priority.

- All countries need to undertake a review of their national policy and legislation to ensure adequate legal protection for the White-headed Duck and its enforcement. (National government agencies in the Range States).
- Sustainable management of water resources is needed to ensure adequate allocation of water to maintain the viability of wetland habitats used by the White-headed Duck. (National government agencies in the Range States).
- Site conservation measures, such as the establishment of an international network of sites of importance for migratory waterbirds including the White-headed Duck, need to be pursued. (Convention on Migratory Species and national government agencies in the Range States).
- A flyway-wide project should be developed for the conservation of the White-headed Duck and its wetland habitats through building and strengthening links between wetland managers and organizations involved in the conservation of the White-headed Duck across the region. (Convention on Migratory Species, national government agencies in the Range States, Wetlands International).
- A comprehensive population-monitoring programme should be developed to monitor the distribution and status of the White-headed Duck in the Central Asian region during the wintering, migratory and breeding seasons. (National government agencies in the Range States, site management authorities, NGOs).
- Research is urgently required to define the migration routes of the White-headed Duck and identify the population boundaries. Population surveys at all historical sites and all potential sites for the species are an immediate concern. (Research institutes, universities, NGOs).

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