UNEP

on the move to 2010

CONVENTION ON MIGRATORY SPECIES

Distr.
GENERAL

UNEP/CMS/Inf. 8.27
27 October 2005

ORIGINAL: ENGLISH

EIGHTH MEETING OF THE
CONFERENCE OF THE PARTIES
Nairobi, 20-25 November 2005
Agenda item 14 (a)

INVESTIGATING AQUATIC WARBLER WINTERING GROUNDS

Note by the Secretariat

The CMS Secretariat is circulating herewith, for the information of participants in the Eighth Meeting of the Conference of the Parties to the Convention, a short note submitted by the Royal Society for the Protection of Birds entitled "Investigating Aquatic Warbler Wintering Grounds" summarizing the CMS/Defra sponsored project to identify Aquatic Warbler wintering grounds. The report is being reproduced unedited in the form and the language in which it was received by the Secretariat.

Investigating Aquatic Warbler Wintering Grounds

The project has been implemented by The Royal Society for the Protection of Birds (RSPB) and was financially supported by the Convention on the Conservation of Migratory Species of Wild Animals (CMS) and the Department for Environment Food and Rural Affairs (DEFRA) of the UK government

Executive summary

Following large-scale habitat destruction, the globally threatened aquatic warbler *Acrocephalus paludicola* has a fragmented breeding population across central Europe, largely in Belarus, Poland and Ukraine. The species' sub-Saharan African wintering grounds have not yet been discovered, and this significantly hampers conservation efforts.

We recently used stable isotope profiles in feathers to investigate the links between breeding and wintering areas, and to provide preliminary information on the possible location of wintering areas (Pain et al., 2004). Stable isotope ratios vary geographically with a range of biogeochemical factors and isotope profiles in organisms reflect those in their food and environment. For inert tissues like feathers, isotope profiles reflect the environment in which they were formed. Aquatic warblers grow their flight feathers on their African wintering grounds, and we analysed stable isotope ($\delta^{13}C$) ratios in a tail feather of adults from six main breeding sites (subpopulations) across Europe to determine whether different breeding subpopulations formed a single mixed population on the wintering grounds. Significant differences in mean $\delta^{13}C$ existed between subpopulations. $\delta^{13}C$ varies with habitat, and, over broad geographical scales, plant $\delta^{13}C$ appears to vary with latitude. As aquatic warblers are habitat specialists, our results suggested that feathers reflect the latitudinal variance in plant $\delta^{13}C$ rather than habitat differences, and that different breeding subpopulations moult at different latitudes within sub-Saharan Africa (Pain et al. 2004).

To further investigate wintering grounds, and to narrow down potential moulting latitude, we needed to confirm that $\delta^{13}C$ in feathers reflects the known latitudinal gradient in carbon isotope ratios in plants in sub-Saharan West Africa. To do this, feathers were collected from African resident and sedentary surrogate species. We consider the most appropriate surrogate species for aquatic warbler to be winding cisticola *Cisticola galactotes*; a common endemic wetland resident that feeds on invertebrates and has been found in a similar habitat to aquatic warblers. Feathers samples were collected from this, and a range of other species, at a range of latitudes and longitudes across West Africa. Unfortunately, due to water levels, winding cisticola were only found at 3 sites, so samples were also collected from grey-backed camaroptera *Camaroptera brachyura* from 7 sites. Results from these samples suggest that there is a relationship between $\delta^{13}C$ in bird feathers and the latitude of feather growth. A preliminary comparison of aquatic warbler and winding cisticola $\delta^{13}C$ values suggests that aquatic warbler moulting sites are in an area of rapidly changing vegetation $\delta^{13}C$ gradient, and that aquatic warbler feathers may possibly have been grown in the Niger floodplain belt of the Sahelian zone across Senegal, Mali, Burkina Faso, Niger etc. from about 13-20°N. This result does, however, remain tentative, due to the small number of sites sampled for winding cisticola. Additional samples from winding cisticola are required (collected earlier in the season). Samples have already been collected from Nigeria (from another project) are currently being analysed; additional sample collection is planned in Senegal in 2006.

The results confirm evidence from the scarce field records of the species during winter. Combined evidence of the two approaches suggest that the species winters in an area of approximately 1.4m km^2.

The results of this project will be written up for publication in 2006 when additional results are available.

prepared by
Debbie Pain, RSPB Head of International Research
and Lars Lachmann, Country Programmes Officer
on 10/01/2004