Main outcomes of the Colloquium on scientific and strategic aspects of the conservation of Aquatic Warblers

15 October 2009 at the Royal Society for the Protection of Birds (RSPB) UK Headquarters, The Lodge, Sandy, SG19 2DL, Bedfordshire

Main topic 1: Conservation of the Pomeranian population (PP)

Status of the Pomeranian population

As opposed to earlier results, new extended research gives no support for genetic separation other than isolation by distance and/or potential drift effect exists from the study of 6 microsatellite loci. Analysing additional loci might increase evidence in either direction. The status of e.g. an evolutionary significant unit would not be justified. The PP may be treated as a management unit, based on

- the distance to other sites,
- connectivity within PP (KK-Rozwarowo and Krajnik-LOVNP),
- its ongoing decline,
- and some degree of isolation.

No indications for loss of genetic diversity and/or inbreeding exist, but evidence from microsatellites is limited.

This PP management unit still deserves a very high conservation priority, because its loss would mean the loss of a large part of the species' current distributional range and the loss of a potential local source population for the re-colonisation of restored habitats in large parts of the species former range.

Any further decline should be prevented if possible, meaning that improving habitat management is the most urgent task. In Germany, funding for AW conservation will probably not be available after 2018 if AW do not return to breeding, as the species will then be classified as "extinct".

We have to improve our understanding of the reasons for the current decline and how to reverse it. Absence of reliable information on breeding productivity is an important gap (Rhys G.). Nest studies should be considered where possible but require a lot of effort. An index based on (e.g. weekly) counts of feeding females in Pomerania and Biebrza/Belarus might be a minimum requirement. If feasible, an inventory method based on experience in Sedge Warbler (tongue colouration / spots) should be able to give preliminary information on recruitment and population health. Whether the tongue spot method works with AW should be found out.

Within or connected to the LIFE project, survival should be estimated based on the currently available colour ringing data from Pomerania and Germany and trends should be estimated for the PP (see priority list). The same should be done with the already existing colour-ringing data from Dyrcz at Biebrza from the 1970ies.

Building a habitat/population bridge of stepping-stones to the core population in Eastern Poland should be pursued. The ideal location of restoration sites in Poland was discussed: in the middle, or closer to either of the two sites. No final consent was found, but there are good arguments for each of the three options, incl. that there already is a non-stable site (Ner) right in the middle between both areas.

Tape luring of birds to restored areas of suitable habitat should be done with precautions in order to avoid creating a biological trap. Breeding success is the penultimate indicator if luring is successful.

Ex situ measures were seen favourably, but only if there is sufficient information on breeding success and security of not creating an ecological trap, i.e. not in the near future. They have currently no high priority as there is no proof that the other conservation measures do not work. They should be considered further as possible measure if habitat improvement fails within the next five years to reverse the trend (David G.). Preparation requires finding the reasons for the decline and predicting the effects of the measures (population model). Even if declines are caused on wintering grounds, buffering a population might "buy time". In any case, it should be made sure that the focus of AW conservation does not shift from in situ to ex situ activities and that such measures are treated (also in the media) very cautiously.
Two possibilities are

- release of birds bred in captivity (higher efforts and costs)
- translocation of birds (nests) from other populations (higher possible impacts on donor population)

Main topic 2: Identification and protection of wintering grounds

Assigning birds captured in Senegal to breeding populations and vice versa
Isotope studies allow no reliable inference in any direction (e.g. because of the effect of the proportion of C3/C4 plants in the moulting habitat). All previous results (e.g. Pain et al. 2004) are to be treated as weak indications that should not guide further practical efforts to find the wintering sites. Based on isotope results, also the restriction to the latitudinal range of 13-20°N is no longer valid.

In particular, there is no convincing evidence of the PP having separate wintering sites, nor that any breeding population would be linked to any specific wintering site. Further work on isotopes to find wintering areas or assign birds to sites is discouraged (including strontium). However, analysing feathers from 2009 would remove uncertainty of effects of inter-annual variation. It might be helpful to complete the study by analysis of the 2009 samples (winter and summer feathers from the same moulting period), although reliable results that would help to assign the Djoudj birds are not expected. Decision about doing the analysis of 2009 samples is at RSPB.
Suggestions for the analysis of the existing data, that came up in the discussion:

- analyse by month of catching in Djoudj
- analyse separately for each year (to remove inter-annual variation)
- analyse separately by catching site within Djoudj
- check also other isotopes that had been analysed

Genetic studies of 6 microsatellite loci cannot reliably assign birds captured in Africa to any sampled breeding population.

Find additional wintering areas
The modelling study by Graeme Buchanan has identified possible sites which may now be checked for AW occurrence on the ground. The southernmost AW records in Guinea-Bissau and N Ghana are outside the range of the model prediction. As this range should for methodological reasons not be extended further south, another attempt to assess the

probability that wintering habitats exist further south can only be done, if we can provide confirmed sites in a more southern location.
Any repeat try, e.g. after additional presences in Africa could be confirmed, should also take into account the NDWI (not only NDVI), and maybe even extent further east (to include the Lake Chad area).
Largest potential habitat patches besides Djoudj and adjacent sites (e.g. Diawling) are located in the inner Niger Delta in Mali and in SE Mauretania (lakes/oases in the desert).
The size of the modelled wintering sites is app. 1000 km² which equals the size of the remaining breeding area. While this of course is only an indication, it highlights the fact that the availability of good wintering habitat has the potential to be/become one of the most important limiting factors to population recovery of the species.

Habitat use in Africa (Cosima's work):
It would be interesting to find out how the available food biomass in Djoudj compares to the biomass in breeding sites, as this could also give a hint on possible densities in Africa.
Also, it would be interesting to find out, how food availability in rice fields compares to food availability in Djoudj (is it really true that pesticides make sure that there is no AW food anyway?)

Use of light-level geolocators
It is recommended to decide first what the questions are. While there is no urgent need to find a separate wintering ground for PP, the problem of identifying the AW wintering grounds outside Djoudj NP remains. The current critical situation of potential habitats in the Sahel zone and the very dynamic transformation of river systems and habitats there makes it likely that wintering habitats could become a bottleneck in the near future.

An interesting additional question would be, whether there exist different wintering sites for declining and stable/increasing AP populations.

Geolocators could be used on every population where the chance of retrieving the tags is big enough, but should not be used with a small and declining population like the Pomeranian at first. Field test of effects and precision (e.g. whether the new 0.5g locators work on birds often hidden in vegetation) on Sedge Warbler or apparently stable AW population are recommended. The central Ukrainian AW population in the Supoj valley was identified as potential study site for a first test of the new logger type, because it is isolated from the core population and bigger (180-200 males) and more stable than the PP. This could also answer the question about the possible "Balkan flyway" of AW.
The PP could follow as second study population, once/if the first test has proven effective and harmless for the birds.

Conservation strategy:
It was repeatedly stated (mainly Juliet V.), that even if the conservation problem was Africa, the answer may still be Europe, i.e. an increased productivity may make up for lower winter survival. Successful conservation work on the breeding sites may at least buy time until there are realistic ways of practically addressing threats in Africa. Hence, even if Africa was suspected as the main problem, active conservation in Europe should still have highest priority.