Secretariat provided by the United Nations Environment Programme (UNEP)

Agenda item: 13
Doc: AEWA/TC 5.10
26 February 2004
Original: English

FIFTH MEETING OF THE TECHNICAL COMMITTEE

30th March – 2nd April 2004, North Berwick near Edinburgh, Scotland

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DISCUSSION PAPER ON LONG-TERM DECLINE OF POPULATIONS

INTRODUCTION

In Resolution 2.1, operational paragraph 7, the Meeting of the Parties *'Calls upon the Technical Committee of the Agreement to provide clarification on the term "significant long-term decline*" in the context of Table 1 of the Action Plan'.

At the 4th Meeting of the Technical Committee, which took place from 12-13 May 2003 in Tashkent, Uzbekistan, an intersessional working group (WG), consisting of Mr David Stroud and Mr Preben Clausen, was established to prepare a discussion paper on the term "significant long-term decline".

Please find attached the discussion paper prepared by this WG.

PROPOSAL OF THE SECRETARIAT

The Secretariat proposes to review this discussion paper and to discuss it in plenary during the TC5 meet-ting. Particularly the TC members are requested to take note of the recommendations made in this paper.

Developing consistency of status changes

Background

The Action Plan to the Agreement categorises waterbirds according to various factors (Annex 1). These include:

1. the global threat status as determined by international IUCN Red List status and status under the Convention on Migratory Species;
2. the absolute size of the waterbird population;
3. the degree of concentration on a small number of specific sites at any stage of annual cycle;
4. the dependence on a habitat type which is under severe threat;
5. rate and extent of population decline; and
6. the extent of fluctuation in population size or trend.

Of these, the first factor is unambiguous, with red-listing being the subject of a well-defined process by BirdLife International on behalf of IUCN's Species Survival Commission.

The second is also unambiguous, inasmuch as population sizes are known. A process for reporting population sizes has been established under the Ramsar Convention, with triennial collations of population statistics being published in Wetlands International's *Waterbird Population Estimates*. The process by which these data are gathered, interpreted and then reported to the Ramsar Convention has been outlined elsewhere (Rose & Stroud 1994; Stroud 1996).

AEWA's MoP2 highlighted the need for its triennial meeting to follow that of the Ramsar Convention so that it may benefit from a single international process of waterbird population estimation (Resolution 2.1).

The remaining factors are subject to a degree of interpretation, and the Agreement and Action Plan gives no further guidance as to their interpretation. MoP2 (Resolution 2.1) requested that the Technical Committee provide such guidance so that there could be a greater degree of consistency in the interpretation of these factors, thus allowing for more consistent approaches to the categorisation of populations.[1]

This paper outlines some possible approaches for each of factors 3-6 above (although note that the MoP only requested advice on interpretation of rate and extent of population decline).

1 "*Calls upon* the Technical Committee of the Agreement to develop guidelines for the interpretation of the term "significant long-term decline" in the context of Table 1 of the Action Plan"

Degree of concentration at a few sites

Flyway atlases such as that for Anatidae (Scott & Rose 1996) and the forthcoming wader atlas, as well as Important Bird Area evaluations (*e.g.* Fishpool & Evans 2001) allow for a rather more systematic approach to the application of this factor.

A general approach may be to determine the proportion of a population held on a certain number of sites in any particular season. Thus, a criteria or threshold might be developed that identifies populations where, for example, 'more that **XX**% of the population is held on **YY** sites in either the breeding, migration or wintering periods'.

Evaluation of existing data sources from Flyway Atlases and IBA inventories would be needed to determine what appropriate values for these thresholds (**XX** and **YY** above) might be.

Dependence on threatened habitat types

There is no existing definition as to what a "threatened habitat type" might be in the context of AEWA species evaluations. Possibly as a consequence, this factor appears not to have been used to any extent[2] in current species evaluations.

There would be merit in considering a definition of the term and providing guidance for its use. To seek coherence with other legal mechanisms, there would be merit in using existing categories of types of threatened habitats (for example Priority Habitats listed under Annex 1 of the European Union's Directive 92/43/EEC on the conservation of natural and semi-natural habitats and of wild fauna and flora). There are additionally other major habitat types (steppe, tundra habitats, tropical and sub-tropical habitats) that are not found in Europe. These would need appropriate consideration also.

Rate and extent of population decline

Populations "showing significant long-term decline" may be listed in either Columns A or B of Table 1 of the Action Plan. The terms "significant" and "long-term" can and should be further defined.

One possible approach is that that which has been adopted in the UK over many years. Batten *et al.* (1990) originally adopted a 50% decline over 25 years for determining "persistent long-term decline" in the context of developing a national red data list. They noted that the exact thresholds were arbitrary, but in practice, further evaluations have shown this level to be robust in selecting species that other evidence suggest are in severe long-term decline ((Gibbons *et al.* 1996; Gregory *et al*. 2002)

More recent evaluations have considered two rates of decline (of 25-49% and of >50% from a baseline), which can theoretically be applied across three periods:

- Five years – equating to short-term,
- Ten years – equating to medium-term, and
- Twenty-five years – equating to long-term.

2 Only in support of the Action Plan listings of Dark-bellied Brent Goose *Branta bernicla bernicla* and Jack Snipe *Lymnocryptes minimus.* However, it is not clear which habitats these species use that are not also used by other waterbirds listed in the Action Plan.

		Period of decline		
		5 years	**10 years**	**25 years**
Extent of decline	**25-49% decline**	25-49% over five years	25-49% over 10 years	25-49% over 25 years
	>50% decline	>50% over 5 years	>50% over 10 years	>50% over 25 years

In practice and for the recent assessment of Birds of Conservation Concern (BOCC) in the UK, the two rates of decline have been applied over a 25 year period as follows:

For UK BOCC Red listing

- Rapid (>50%) decline in the UK breeding population over the last 25 years; or
- Rapid (>50%) contraction of the UK breeding range over the last 25 years.

For UK 'Amber' listing

- Moderate (25-49%) decline in the UK breeding population over the last 25 years; or
- Moderate (25-49%) contraction of the UK breeding range over the last 25 years.

More recently, a more sophisticated approach has been developed by BTO in the UK and by SOVON in The Netherlands, based on the concept of 'Alert Limits' (Atkinson *et al.* submitted).

In essence this is a system of processing annual waterbird census data to derive 'alerts' as to significant changes for species at national, regional or site scales. It provides for objective evaluation of significant volumes of count data and means of placing these into historical and geographic contexts. The model raises an 'alert' if population declines are equal to or greater than 50% over a 25 year period either for a particular site, or for the entire national dataset (for a species). The development process for the Alerts system has shown it to be robust, and it will shortly be publicly available as a web-based reporting and interpretation system in the UK.

Certainly a criterion of a 50% decline over 25 years has proved robust in evaluating long-term declines in the UK at the scale of individual sites as well as at national scale. It has also been used not only for waterbirds but also for other species. The Technical Committee should consider whether the criterion may also be useful in the context of the AEWA evaluations.

Other approaches?

A further approach, but one which would need a modification to the Action Plan, and thus potentially modification of national legislation in some countries, would be to redefine the criteria as related to "significant decline" only.

Defining "significant decline" might thus allow consideration of different rates of decline in either long, medium and short terms.

The advantage of such an approach would be that rapid short-term declines may be a signal of even more serious concern, calling for immediate management issues.

Issues for discussion:

- Only a minority of waterbird populations in the AEWA region have precise population estimates. The majority have either population ranges (*e.g.* 24,000 – 30,000) or are categorised in *Waterbird Population Estimates* into broad ranges (*e.g.* Category C = 25,000-100,000) reflecting de-

grees of uncertainty as to size of populations. Adopting a more quantitative approach to determining rate of decline becomes more problematic under these circumstances.

  - For ranges based on census information (*e.g.* 24,000-30,000 changing to 18,000 – 20,000) consistency is needed in treatment of ranges. Thus is the rate of change determined from changes in the range maxima (30k-20k), minima (24k-18k) or the midpoints (27k-19k)? Each potentially yields a different rate of decline.

  - For ranges based on 'best evaluations' in the absence of sound population-level statistics, then some qualitative criteria or guidance is required to guide evaluation of 'severe long-term decline'. In these circumstances, information on contraction on range (cessation of breeding or wintering in particular countries/regions) may be more readily available than population evaluations.

- Some (many) waterbird populations within the region do not have 25 years of monitoring data. Under these circumstances can this factor be applied? Or should AEWA evaluation be based on other approaches?

- Care will be needed in applying this criterion to monitoring data uncritically. There may be instances where a change of a population's range or distribution results in a decrease in numbers of a population counted, as a consequence of a greater proportion of the population now occurring in areas where there is less monitoring activity (as has been suggested for the apparent decrease in numbers of Mallard *Anas platyrhynchos* in Europe). In such (and other instances) instances, 'raw' counts will need expert interpretation.

- The evaluation of species trends raises the important issue of transparency and audit. For some populations, it is currently far from clear how evaluations were made for previous Action Plan revisions. There seems to be a clear need to place on record an explicit statement as to the data sources (or other judgements) used to evaluate 'significant long-term declines' — as well as other factors used to determine species status. This will make the process more transparent and reduce the potential for future challenge. It will also aid the process of future revision by documenting reasons for status changes as they are made.

Degree of fluctuations in population size and trends

There is no existing definition as to what the term "showing extreme fluctuations in population size or trend" might mean in the context of AEWA species evaluations. Possibly as a consequence, this factor appears not to have been used to any extent in current species evaluations[3].

Any consideration of defining "extreme fluctuations in population size or trend" will need to be aware of inherent differences between species in population dynamics. Thus, for example, variation in breeding success and hence population size is more variable for Dark-bellied Brent Geese *Branta bernicla bernicla* than for other goose species. It would be important to be aware of such differences to avoid the potential for regular listing and delisting of species.

There would be merit in considering a definition of the term and providing guidance for its use.

Recommendations

1. MoP2 requested guidance on interpretation of the term 'significant long-term decline' in the context of species status evaluations. A number of other factors remain undefined and are similarly ambiguous in their potential interpretation. The Committee should consider whether to recommend to MoP3 that there would be merit in defining these other factors also. This would yield more consistent application of species categorisations that are less liable to challenge.

3 Only in support of the Action Plan listing of the west and central Asian population of Mute Swan *Cygnus olor.*

2. Before its next meeting, the Technical Committee should assess the suggested criterion related to 'significant long-term decline' against real data to assess the extent to which they sensibly identify declines in populations that are generally considered to be significant and long-term. Issues to be determined relate to establishing quantitative criteria, where good population trend data exist, and more qualitative approaches in the absence of such information.

3. There should be greater transparency as to exactly which data sources and what judgements are made (in the event of non-quantitative approaches) in the application of various categorisation factors. This audit should form an explicit section of each species accounts within the Species Status report submitted to each MoP (*e.g.* Wetlands International 2000).

4. In terms of process, it is recommended that a draft paper for MoP3 be further developed by a Working Group of the Committee and circulated for comment to the full Committee by the end of 2004 at the latest. This will allow the Committee to approve a final text at its next meeting for submission to MoP3.

References

Atkinson, P.W., Austin, G.E., Baillie, S.R., Rehfisch, M.M., Baker, H, Cranswick, P., Kershaw, M., Robinson, J., Langston, R., Stroud, D.A. & Turnhout, C. van submitted. Raising 'alerts' for changes in waterbird numbers: the effects of missing data, population variability and count period on the interpretation of long-term survey data in the UK. *Journal of Applied Ecology*

Batten, L.A., Bibby, C.J., Clement, P., Elliott, G.D. & Porter R.F. (eds.) 1990. *Red Data Birds in Britain.* NCC/RSPB. T. & A.D. Poyser.

Fishpool, L.D.C. & Evans, M.I. (eds.) 2001. *Important Bird Areas in African and associated islands: priority sites for conservation.* Newbury and Cambridge, UK: Pisces Publications and BirdLife International (BirdLife Conservation Series No. 11). 1144 pp.

Gibbons, D.W., Avery, M.I., Baillie, S.R., Gregory, R.D., Kirby, J., Porter, R.F., Tucker, G.M. & Williams, G. 1996. Bird species of conservation concern in the United Kingdom, Channel Islands and Isle of Man: revising the Red Data List. *RSPB Conservation Review* 10: 7-18.

Gregory, R.D., Wilkinson, N.I., Noble, D.G., Robinson, J.A., Brown, A.F., Hughes, J., Procter, D., Gibbons, D.W. & Galbraith, C.A. 2002. The population status of birds in the United Kingdom, Channel Islands and Isle of Man: an analysis of conservation concern. *British Birds* 95: 410-448.

Rose, P.M. & Stroud, D.A. 1994. Estimating international waterfowl populations: current activity and future directions. *Wader Study Group Bulletin* 73: 19-26.

Scott, D.A. & Rose, P.M. 1996. *Atlas of Anatidae populations in Africa and Western Eurasia.* Wetlands International Publication, 41.

Stroud, D.A. 1996. Estimating international waterbird populations: use of Criterion 3(c). Pp. 37-44. In: *Proceedings of the 6th Meeting of the Conference of the Contracting Parties to the Convention on Wetlands. Brisbane, Australia, 19-27 March 1996. Technical Sessions E and F.* Ramsar Bureau, Switzerland.

Wetlands International 2000. *Report on the Conservation Status of Migratory Waterbirds in the Agreement Area. Report to first Meeting of the Parties to the African-Eurasian Waterbird Agreement, Cape Town, South Africa, 6-9 November 1999.* AEWA Technical Series No. 1. 154 pp.

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24 February 2004

Annex 1. Categorisation of species in Table 1 of AEWA's Action Plan

STATUS OF THE POPULATIONS OF MIGRATORY WATERBIRDS

KEY TO CLASSIFICATION

The following key to Table 1 is a basis for implementation of the Action Plan:

Column A

Category 1: (a) Species which are included in Appendix I to the Convention on the Conservation of Migratory species of Wild Animals;
(b) Species which are listed as threatened in Threatened Birds of the World (BirdLife International 2000); or
(c) Populations which number less than around 10,000 individuals.

Category 2: Populations numbering between around 10,000 and around 25,000 individuals.

Category 3: Populations numbering between around 25,000 and around 100,000 individuals and considered to be at risk as a result of:

(a) Concentration onto a small number of sites at any stage of their annual cycle;
(b) Dependence on a habitat type which is under severe threat;
(c) Showing significant long-term decline; or
(d) Showing extreme fluctuations in population size or trend.

For species listed in categories 2 and 3 above, see paragraph 2.1.1 of the Action Plan contained in Annex 3 to the Agreement.

Column B

Category 1: Populations numbering between around 25,000 and around 100,000 individuals and which do not fulfill the conditions in respect of column A, as described above.

Category 2: Populations numbering more than around 100,000 individuals and considered to be in need of special attention as a result of:

(a) Concentration onto a small number of sites at any stage of their annual cycle;
(b) Dependence on a habitat type which is under severe threat;
(c) Showing significant long-term decline; or
(d) Showing extreme fluctuations in population size or trend.

Column C

Category 1: Populations numbering more than around 100,000 individuals which could significantly benefit from international cooperation and which do not fulfill the conditions in respect of either column A or column B, above.