

UK SPA SCIENTIFIC WORKING GROUP

8 May 2002

Passage waders: progress report

Background

The SPA review highlighted a variety of issues regarding treatment of data on passage:

1. Lack of highlighted interest during the migration periods, of sites of importance to waders in midwinter.
2. Issues regarding treatment of turnover (when total numbers using sites are more than the peak (snapshot) count).
3. Issues regarding treatment of mixed populations, especially which thresholds to use in which months?
4. The identification (and use) of national population estimates during the passage period.

This is a brief progress report on work undertaken to date. There are major practical problems in making progress in most of these areas and guidance is sought as to the relative priority of this work.

Revision of national and international 1% thresholds

International

As previously noted, international wader population estimates are currently under revision by the International Wader Study Group. The consultation period on the draft paper concludes at the end of April and it is hoped that the paper will be finalised and submitted for publication in early June (if funding can be located). The revised estimates and thresholds will go forward the third edition of *Waterbird Population Estimates*, for consideration at Ramsar CoP8 in November.

National

The paper revising national wader estimates and thresholds has now been accepted for publication in *Biological Conservation*. They will be formally adopted by JNCC later in the year.

Highlighted interest in the migration period

Where sites are already known to have importance during the migration period as well as during the winter period, this has been highlighted in SPA Review site accounts (Volume 3) with the phrase:

“Note that sites selected for waterbird species on the basis of their occurrence in the breeding, passage or winter periods also provide legal protection for these species when they occur at other times of the year.”

This highlights that whilst the importance of the site may not be specifically highlighted, site-based protection is given nonetheless. Following discussions in the SPA Working Group in 2002, both EN and Scottish Executive sought legal advice in 2000 regarding this question. It is not clear whether this was ever delivered.

ISSUE: Departments to obtain legal advice regarding approach adopted by SPA review with regard to identification of qualifying species in passage periods.

Given the legal provision of habitat protection (above) during the passage period, it is unclear whether the more systematic identification of sites of importance during the migration period would be of practical conservation value (rather than of academic interest). If such sites are already identified for the species

concerned within the wintering period, then the value of additional conservation benefit of such work would seem to be low.

There is a more substantive issue relating to species present in internationally important numbers on a site during passage periods but not qualifying at other times of the year. In such cases, there seems a strong conservation case for the recognition of these instances as new qualifying species.

Action has been taken to ensure that the next WeBS report will present data on numbers in passage periods more systematically than in the past (*i.e.* tabulated site averages calculated on the basis of peak numbers at any time of the year, not just in the wintering (September – March) season.

It should be noted, however, that WeBS Core Count dates often do not coincide with periods of peak passage. For example, it is notable that WeBS counts often miss peak passage periods of Whooper Swans at sites in Caithness. Additional fieldwork/counts at key passage sites for waterbirds would be necessary to improve our understanding of importance of sites at times of migration. There is probably a need to seek to focus WeBS fieldwork in passage periods to obtain more/better data.

QUESTION: Should further work to systematically review numbers of waders at sites during the passage period be undertaken, and what relative priority should this have against other tasks being undertaken by the Working Group?

Turnover issues

Turnover occurs in all seasons to a greater or lesser extent. It is least during mid-winter and greatest during migration periods.

Estimating turnover during passage periods is especially problematic. In essence, the total 'volume' of birds using a site during migration is greater than the peak counted on any one day owing to the continuous nature of arrivals and departures over a period of perhaps two months. At one extreme, rapid-throughput sites may have low numbers counted at any time, yet very large numbers using the site over time (with waders stopping only for very short periods).

An example of high turnover is shown by Dunlin at Teesmouth (peak numbers occur for only a few days), and a large proportion of *alpina* and *schinzii* populations probably use this site. Given that there are few, if any, staging sites between this site and the breeding grounds, this may be a very important re-fuelling area for this species. However, the species is not a qualifying species at this site. Although there may be few such examples, they may be potentially very important for the benefit of some species.

There are a number of ways of estimating turnover (in particular mark and (physical or visual) recapture methods). However, all methods have both practical and theoretical problems¹, and modelling work² has shown that the accuracy of estimates of turnover depend critically on assumptions that are unlikely to pertain in the field³. Further, methods to estimate turnover are potentially costly in that they require intensive fieldwork at each individual site. There are only a few studies that have attempted to estimate turnover rates of waders at British estuaries⁴.

In the context of the future development of the SPA network, the development of more accurate methods of estimating turnover appears to JNCC to be of low general importance.

QUESTION: Is there value in seeking to develop methods of estimating turnover and what priority should this have against other tasks relating to the development of the SPA network?

¹ e.g. Frederiksen, M., Fox, A.D., Madsen, J. & Colhoun, K. 2001. Estimating the total number of birds using a staging site. *Journal of Wildlife Management* 65(2): 282-289.

² Fox, A.D. 1999. XXXXXXXXXXXX Unpublished report to JNCC.

³ Catching and marking birds the instant they arrive and seeing them the instant they depart.

⁴ Moser, M. & Carrier, M. 1983. Patterns of population turnover in Ringed Plovers and Turnstones during their spring passage through the Solway Firth in 1983. *Wader Study Group Bulletin* 39: 37-41.

Mixed populations

The WSG analysis allows the identification of those species where more than one biogeographical population will occur in the UK during migration periods (see Annex for details). These species are:

- Ringed Plover
- Golden Plover
- Snipe
- Black-tailed Godwit
- Bar-tailed Godwit
- Whimbrel
- Redshank
- Turnstone
- Knot
- Dunlin

(Possibly also Sanderling based on recent unpublished work from Durham University).

On the basis of most recent taxonomy, a number of the species above comprise newly identified biogeographical populations (e.g. Whimbrel). Anticipated review of international population definition of Purple Sandpipers and other species may result in the future identification of further 'mixed population' scenarios.

The degree to which populations mix, varies.

- For Ringed Plover, Black- and Bar-tailed Godwits, Turnstone and Knot populations which winter in the UK are joined for a short period by other populations passing through UK to more southerly wintering areas.
- For Whimbrel, those on passage through the UK probably derive from two populations, one comprising breeders from Scotland and Iceland to the north-west, the other being birds breeding in Fennoscandia and Russia in the north-east.
- For Dunlin, migration is complex with up to five populations possibly present in the UK – perhaps simultaneously.
- For Redshank and Golden Plover, the situation is complex with birds in the UK deriving from mixed populations not just in the passage period but also in winter.
- The degree to which mixed populations of Snipe occur is largely unknown.

For all these situations, the next step is to clarify in which months mixed populations occur, and to provide guidance on the use of appropriate thresholds in these months. This is probably best undertaken after the formal adoption of the new international thresholds for waders by Ramsar CoP in November 2002.

National passage totals

Identification of relevant thresholds during the passage period at an international scale is relatively simple for many species. It is much more problematic at a national scale owing to continuous migration through the country. Considering the UK as a single huge 'site', the issues can be thought of in similar terms to estimating turnover at a smaller scale. Thus the total number of birds using the UK during the passage period is (significantly) greater than the number counted at any one time.

Further thought needs to be given to this issue, but it may transpire that the concept of national thresholds in passage periods is methodologically intractable.

WWT suggest that there may be no need to calculate national passage totals or to use a 1% threshold approach. Given that large proportions of a population may be moving from site to site through the migration period, one may obtain a combined site peak total many times higher than the national

passage total. It would be very difficult to identify an appropriate suite of sites based on this approach across species since some species use more staging sites than others. However, if selection criteria were based on combining site peak totals it should be possible to select an 'appropriate' suite of sites, *i.e.* supporting a defined proportion of the combined site peak total.

Suggestions as to other possible approaches to derive these would be welcomed.

Conclusions and recommendations

Most of the issues outlined above are of significant technical complexity. Progress is likely to be most effective through appropriately focussed research contracts.

- **Request** Departments to continue to seek legal advice regarding approach adopted by SPA review with regard to identification of qualifying species in passage periods. (Establish a deadline for the receipt of such advice).
- **Note** the progress in this work area to date and give guidance as to priorities.
- **Note** the significant anticipated changes to national (GB) and international waterbird (especially wader) 1% thresholds expected to come into effect later in 2002.

David Stroud, JNCC
1 May 2002

Acknowledgements

Thanks to Helen Baker, Nigel Buxton, Mel Kershaw, Rowena Langston and James Robinson for comments.