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WETLAND BIRD SURVEY ALERTS

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BTO/WWT/RSPB/JNCC Wetland Bird Survey (WeBS) counters help to reveal the extent of waterbird declines on some of the UK's important sites.

WeBS data are often used to guide conservation policy and management. Here *Ilya Maclean* and *Graham Austin* describe some of the potential conservation concerns highlighted by the latest WeBS Alerts update.

ALERTAS DE LOS CONTEOS DE AVES EN HUMEDALES

Los observadores de los conteos de aves en humedales (WeBS) del BTO/WWT/RSPB/JNCC ayudan a revelar la magnitud de los declives de aves acuáticas en algunos de los lugares más importantes del Reino Unido.

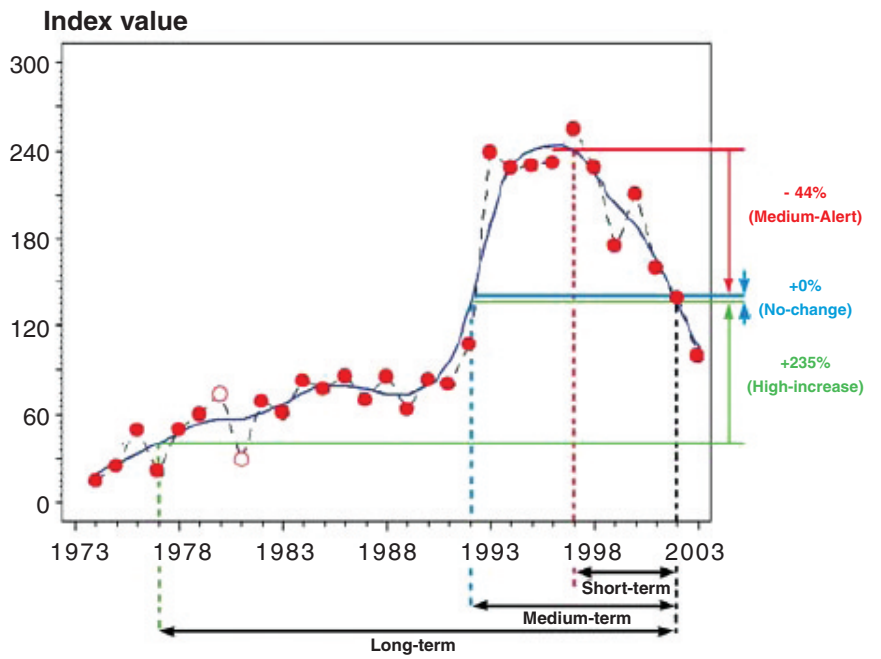
Los datos del programa WeBS son utilizados con frecuencia para guiar políticas de conservación y manejo. *Ilya Maclean* y *Graham Austin* describen algunos objetivos potenciales de conservación que emergen de la última alerta de WeBS.

Of all the bird species in the UK, it is probably waterbirds that are present in the most internationally important numbers. The government has agreed to meet international obligations to protect these birds, but unfortunately the funds available to do so are finite and it is difficult to know where conservation resources would be best used.

One way of guiding conservation policy is to identify those sites that contain the most important numbers of waterbirds and monitor changes in bird numbers on these sites. If one knows which species are declining the most, or which sites have a large number of declining species, resources can then be directed towards assessing why these changes have taken place and then, where possible, managing to reverse them.

Whilst such monitoring is helpful, it does not provide the full answer. Alerting people to declines depends upon placing recent population changes in a long-term context. Also, declines or increases at any given site may not necessarily be due to conditions at that site, but could potentially be linked to large-scale population changes, perhaps driven by conditions on breeding grounds. In order to identify whether local problems are responsible for decreasing bird numbers, it is necessary to compare changes at that site with those occurring regionally and nationally.

The WeBS Alerts System provides a standardised method of doing this (Figure 1). The direction and magnitude of changes in bird numbers are identified at site level and these trends are compared to regional and national trends, allowing distinctions to be drawn between declines due to sitespecific factors and those driven by largescale population changes. Species that have undergone major declines can then be flagged by issuing an Alert.



First, index values are calculated, based on WeBS counts made by volunteers. Then a smoothed trend is fitted through the data using a Generalised Additive Model. Percentage changes in the smoothed trend value over the short (5 year), medium (10 year) and long term (25 year) are calculated. For some Special Protection Areas (SPAs), the percentage change since the site was designated is also calculated. In this instance, the site was designated as an SPA in 2001, so insufficient time has elapsed for a meaningful change to be calculated. Closed circles represent complete counts and open circles represent "imputing" missing or incomplete data. Such values are derived by calculating the proportion of the regional population typically occurring on the site when complete counts are made and then estimating what the number might be by examining trends elsewhere in the region.

A High-Alert is triggered in instances where declines exceed 50% and a Medium-Alert is triggered when declines exceed 25%. Medium-Increases are reported when increases exceed 50% and High-Increases when increases exceed 100%.

FIGURE 1. An example illustrating the standardised way of assessing population trends using the WeBS Alerts system (Grey Plover on the Firth of Forth Special Protection Area).

THE NEW WEBS ALERTS SYSTEM

The WeBS Alerts System has been running for a number of years. However this year's update has seen some important changes in the methodology and has provided some illuminating insights into changes in waterbird numbers. On previous occasions, the WeBS Alerts System reported trends in bird numbers on all Special Protection Areas (SPAs) (aside from a few, which haven't been counted) on a three-year rolling basis and key Sites of Special Scientific Interest (SSSIs) designated for waterbirds on a six-year rolling basis. Thus in any given year we reported on fewer than one third of sites and information was sometimes several years out of date.

We now aim to review all sites on an annual basis. This has been possible because the process has become increasingly automated. Complex computer programs have been developed that retrieve all the necessary data off the database, spend hours analysing it, and produce ready-formatted graphs ready for displaying on the internet. This saves tedious hours of manual data analyses and page formatting. It also means

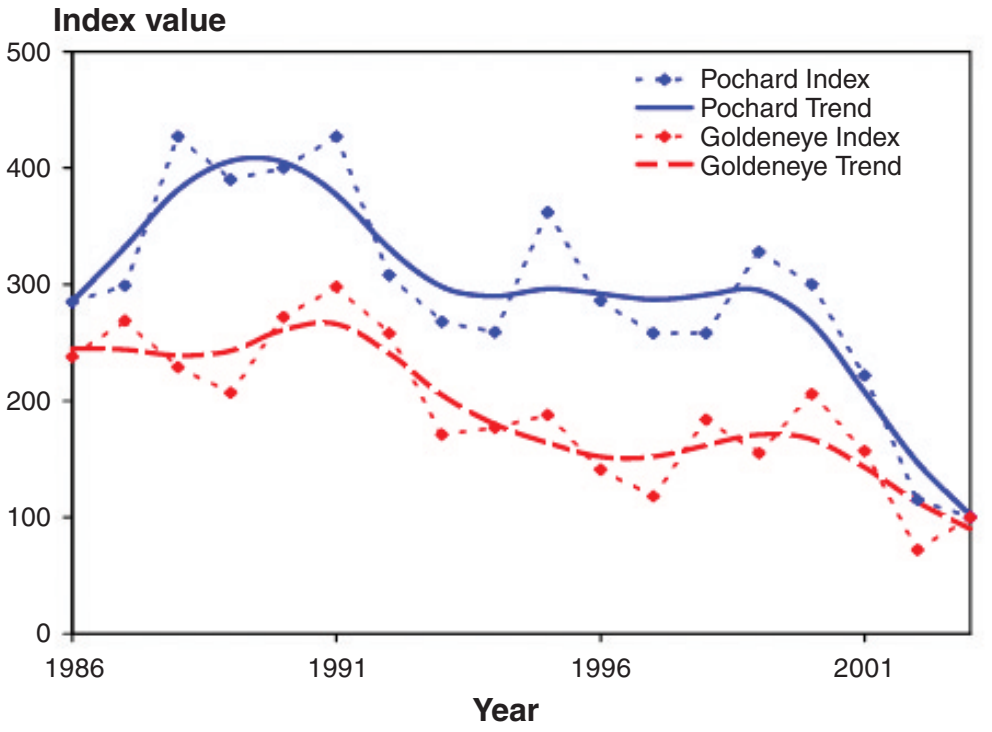
that the whole report is much more user friendly and is available online (www.bto.org/survey/webs/webs-alerts-index.htm). Although the results of the WeBS Alerts System are already used by government bodies such as JNCC and the statutory conservation agencies, it is hoped that this new format will ensure that results are even more widely accessible.

WATERBIRD TRENDS

One of the biggest conservation issues highlighted by WeBS Alerts is the demise of diving ducks on Loughs Neagh and Beg in Northern Ireland (Figure 2). Species such as Pochard and Goldeneye have undergone precipitous declines triggering High-Alerts. This drop in numbers is particularly worrying given the international importance of this site for these species. To illustrate the scale of the problem, back in the winter of 1990/91, these Loughs hosted over 40,000 Pochard, almost 11% of the northern European wintering population and more than three quarters of the UK population. In the winter of 2003/04, fewer than 8,000 were recorded by WeBS counters.

The stories for Goldeneye and Tufted Duck are much the same. Goldeneye numbers peaked in 1990/91, when almost 14,000 were recorded (over 4% of the European wintering population and almost half the UK population). In the winter of 2003/ 04, fewer than 4,500 were recorded. Somewhere along the line, over 55,000 individuals of these three species have disappeared from the site. The Environment and Heritage Service in Northern Ireland has begun to investigate why. Changes in the abundance of chironomid larvae (the main food supply of these diving duck species) in response to eutrophication has been offered as one likely explanation.

The most adversely affected site is Abberton Reservoir, however. Of the 14 species evaluated, nine have had High- Alerts triggered and a



Diving waterfowl such as Pochard and Goldeneye (shown here), but also Coot and Tufted Ducks have undergone drastic declines. The Lough Neagh and Lough Beg Special Protection Area is the most important site in the United Kingdom for waterfowl.

FIGURE 2. Pochard and Goldeneye trends on Lough Neagh and Lough Beg.

further species has a Medium-Alert raised (http://blx1.bto.org/ webs/alerts2005/Results/ UK9009141/ 9009141.htm). English Nature has already begun investigating the reasons for recent declines, including seeking the views of local WeBS counters.

It is not all bad news though. Waders have tended to fare somewhat better than diving ducks, and dabbling duck numbers on some sites have increased substantially. In the UK as a whole for example, Gadwall have increased almost sixfold in the last 25 years.

The new report is now available online at http://blx1.bto.org/webs/alerts/.

THANKS

Thanks to the team of counters who collect data for WeBS, important conservation monitoring projects like this one can be undertaken.
Acknowledgements at the end of the next article.