

UK Biodiversity Reporting and Information Group
16th Meeting – 12 March 2008
Ergon House, Defra, London
MINUTES

1. Present

Malcolm Vincent (JNCC, Chair)

Liz Howe (CCW)

Nicola Hutchinson (WCL)

Matt Shardlow (WCL)

Greg Mudge (SNH)

Paul Rose (JNCC)

Ant Maddock (JNCC, Secretariat)

Joanna Drewitt (SG)

Ruth Waters (NE)

Sarah Webster (Defra)

Richard Weyl DOENI)

Deborah Long (SEL)

Malcolm welcomed Deborah Long to her first meeting of BRIG.

2. Final acceptance of minutes of last meeting

WCL requested a number of amendments to the draft minutes of the 15th meeting. The minutes were accepted with WCL's edits incorporated.

3. Actions from previous BRIG meeting (see attached)

Old Actions 3, 6, 9, 10, and 17 were completed; Old Actions 1, 5, 11, 12, 14, and 18 were on the agenda.

Old Action 2: 2005 reporting information - most countries had accessed the 2005 raw data from either the UK BAP website or JNCC for their own use. It was not considered necessary to do anything more with the 2005 Reporting Round data but we would revisit the issue during the 2008 Reporting Round.

Old Action 4: SEL representative - Deborah Long was invited as the SEL representative to BRIG. However, it was reported that the country chairs were not in favour of inviting SEL to join the Standing Committee and preferred the option of WCL representing SEL on Standing Committee. John Everitt (WCL) was coordinating this action for report back to Standing Committee.

Old Action 7: BRIG / BRAG Research workshop - very few BRIG members had volunteered to attend this workshop; Nigel Bourn had sent apologies and no other Link representative had been formally proposed to the organisers. BRIG was to be represented by Malcolm, Ant and Chris Cheffings.

Old Action 8: BRIG / BRAG Research workshop – was to be held on 13 March 2008 at JNCC.

ACTION 1: BRAG secretariat to send a note of the workshop to BRIG.

Old Action 13: Although the definition for the Open Mosaics Habitat was to be developed by a contract being developed by Defra, the outcome would not be available for some time and the contract went beyond the definition issue. BRIG considered that a definition was required before the next Standing Committee meeting.

ACTION 2: Habitat definition. Vicky to send a definition for the Open Mosaics Habitat to BRIG in time to be sent to the Standing Committee (before 7 April 2008)

Old Action 15: Link member on the 2008 Reporting Group - WCL had not sent notification of their representative to Ant. WCL reported that it was probably Robin Wynde.

ACTION 3: LINK to confirm their representative on the 2008 Reporting Group

Old Action 16: BARS member on the 2008 Reporting Group. Megan Ellershaw (NE) was going to represent BARS on the 2008 Reporting Group.

ACTION 4: Carried over. Discussion on National Schemes and Societies to be put on the BRIG agenda for the next meeting

4. Carried over items

4.1 Terrestrial Biodiversity Surveillance Strategy

Lawrence gave an overview of his paper. There are three hierarchical, objectives covered by the strategy:

- Measuring the outcomes needed for biodiversity
- Measuring pressures and effects on biodiversity
- Delivering on UK commitments and obligations

The strategy has two main approaches, namely i) a longer term strategic approach which encourages the redirection of existing surveillance scheme effort so as to address identified surveillance gaps, and ii) immediate action which can be taken now to address priority gaps.

Section 7 of the report would be further developed to include an estimate of costs of the action recommended.

Comments on the paper were generally supportive but the main criticism was that it was difficult to read. Lawrence was asked to prepare a simplified paper for consideration by Standing Committee. Other issues included:

- Make clearer what the paper is intended to cover and what it is not intending to cover
- Refer explicitly to its value to UK BAP reporting
- Emphasise the need to engage with the volunteer community
- Emphasise the need for data access

ACTION 5: Lawrence to simplify the Surveillance Strategy taking account of the above points prior to sending it to Standing Committee in April

4.2 BRIG Communications Strategy

Hillary Alison had been asked if she would be prepared to oversee the scoping of the communication strategy for BRIG and had replied that she needed to understand more of what this entailed. However, it was agreed this might be better undertaken by a sub-group.

ACTION 6: Ant to invite individuals to form a sub-group to prepare a broad scope for the communications strategy by next meeting. This would be used as a Terms of Reference for a longer-term working group.

However, given the recent changes to the UK BAP, there is an urgent need for information to be given to the partnership and BRIG needed to do this while the communications strategy was being developed (see Forward Process item 5.1 below). Essential stakeholders were Lead Partners, LBAPs, country agencies and Species and Habitat Review contacts. BRIG agreed that Ant would use the sub-group to deal with urgent communications in the short term.

ACTION 7: Ant to convene a cross section of BRIG members to handle communications in the short term.

5. Feedback from working groups

5.1 Species & Habitat Priorities Review

Forward process update

This paper was an update on the paper presented at the last Standing Committee meeting and reflected the changes that had happened since the Standing Committee meeting and BRIG's understanding of the decisions taken by Standing Committee. It was an information paper but comments were welcome.

There are two important activities that are not covered in this paper; how the detail of species actions (e.g. survey, research *etc.*) are to be taken forward and the responsibility for reporting species status for species not requiring objectives / targets (see Action 13).

Several comments on the paper were made, including the timeline, and it was agreed that Malcolm would incorporate these into a revision of the paper. By extracting all the points that had been agreed to date, the paper could form a useful a communication to the Partnership (see communication above; 4.2).

ACTION 8: BRIG to send any comments on the Forward Process paper to Malcolm by 27 March 2008.

Consultation data feedback

Ant presented an update on the receipt of consultation data from the contacts; information on 97% of the species had been received by JNCC (see updated table below). The next step was for BRIG to confirm the species with specific management needs (requiring objectives / targets). Identification of these species had been started by JNCC and these data would be sent out to BRIG members during the week of Monday 17 March 2008. Members had until 28 March to comment on these data.

Paul reported that initial indications were that over 600 species could meet BRIG's criteria for specific management. This raised the issue of whether or not the criteria were fit-for-purpose. BRIG had two challenges: presenting an outcome which would be acceptable to the Standing Committee, and providing timely advice.

Group	Number received	Number outstanding	Data due by
Freshwater fish	14		Data received
Lower plants & Fungi	337		Data received
Herptiles	10		Data received
Birds	59		Data received
Vascular plants	212		Data received
Mammals	18		Data received
Terrestrial & Freshwater invertebrates	411		Data received
Marine species	52	36	
Total	1113 (97%)	36 (3%)	

Once the analysis has been completed, the data will be sent to the countries, and, in due course, placed on the UK BAP website.

UK Habitat Groups

BRIG commented on the habitat paper submitted by Vicky Morgan (JNCC) which was generally supported although marine habitats needed to be included. On the Terms of Reference for the Groups, BRIG would need to develop UK guidance for target setting for use by the Habitat Groups. It is likely that target setting will be iterative and involve work between the experts and the UK Habitat Groups. BRIG also considered that the groups should develop habitat condition guidance in accordance with generic guidelines provided by BRIG.

It was felt that the start up phase for the UK habitat groups needed to be closely aligned to the overall implementation timeline. During the start up phase, the groups may need to meet 3 or 4 times a year and then less frequently.

There was a query about the role of the LCNs and the Habitat Groups. The LCNs may be able to provide a secretariat service for the UK Habitat Groups but JNCC would have to consider this carefully as, effectively, this would mean JNCC was funding the secretariat service for all eight groups.

There is an urgency for the Habitat Groups to hold their first meetings; Standing Committee should be asked to give a deadline to the countries to initiate the country habitat group meetings. BRIG would then initiate the first meetings of the UK Habitat Groups.

It was noted that the targets for the existing priority habitats may need adjusting to take account of species issues.

ACTION 9: Malcolm and Vicky to update the paper, circulate it to BRIG and submit it to Standing Committee for the April meeting.

ACTION 10: Update the figure in the habitat paper showing relationships between the UK and Country Habitat Groups based on latest information from the countries as of 5 April 2008.

Success criteria

The old UK BAP species that had targets set in 2006 and the new UK BAP priority species that required species specific management action would all have targets. The remaining species would have success criteria. However, it was asked if priority habitats would ever come off the priority list under present arrangements. If not, then should success criteria, which indicate removal from the list, be set for habitats?

ACTION 11: Vicky to comment on the need for habitats to have success criteria

Generally, the principle was that targets should be more difficult to meet than success criteria but this may not be true in all cases. There was also discussion about removing species and then these species slipping back into a priority status because management action was reduced or discontinued. Perhaps prior to complete removal there was a case for moving species into a “conservation dependent” category to enable conservation attention to prevent the species slipping back. There is also a need to develop a simple measure of progress for species signposted to wider actions.

Not everyone agreed the rationale identified in section 2 of the paper, though this was believed to represent the view of Standing Committee. It was agreed that the development of success criteria was less urgent than other implementation matter, and could be parked for a while.

The Bird Expert Group had submitted a paper dealing with success criteria and this was tabled on the day (attached to the minutes).

ACTION 12: Malcolm to send a shorter version of the success criteria paper to Standing Committee and emphasising that BRIG feels that unless there is some agreement in the rationale, the issue could be parked while more urgent issues were dealt with

Species expertise and Habitat Groups

This paper dealt with the concerns voiced by the countries at the 2007 Aviemore Partnership Conference that they were unsure if they had sufficient species expertise to support the Country Habitat Groups' species conservation role. The paper proposes how expertise could be made available for the country groups. BRIG noted that this advice should also go to the habitat delivery bodies as well as the Habitat Groups only (targets/objectives).

Two developments need to happen:

- A mechanism to provide broad guidance and support to the Country Habitat Groups and to enable them to provide generic advice on species conservation within priority habitat target setting
- The country delivery bodies need to be able to take on detailed species advice pertaining to the appropriate habitats when carrying out management action on individual areas

BRIG agreed that the countries should lead on this.

Lead Partners (WCL asks that it must be abundantly clear that these papers deal with a devolved issue in England and are the result of ongoing discussions between the NGOs, NE and the EBG. They are not to be tabled as definitive documents, they are for information only and we are not seeking any BRIG endorsement or authorisation of them.)

The WCL papers were discussed and it was agreed that the Lead Body in each country should be responsible for identifying targets. It was further noted that there is no process for reporting and this should be resolved.

ACTION 13: Report to Standing Committee that BRIG is developing a process for reporting on the whole UK List of Priority Species and Habitats.

Procedure and next steps

ACTION 14: JNCC to prepare a paper on what has been agreed for the delivery and management of the UK List of Priority Species and Habitats, to circulate this paper to BRIG prior to submission to Standing Committee in April 2008.

5.2 2008 Reporting

BRIG agreed that all the 2005 Reporting Round questions be asked again in 2008 as this was seen as the most straight forward process. The 2008 Reporting Group needed to build BRIG sign off of the data into their timetable.

6. Standing items

Country Reports

The England report was accepted and Scotland, Wales and Northern Ireland tabled their reports.

ACTION 15: Scotland, Wales and Northern Ireland to send their reports to Ant for inclusion in the minutes

BARS

Ruth said that there were no major developments on the BARS report from last meeting.

BRAG report

The BRAG report was accepted.

NBN

The NBN report was accepted. Jim reported that the John Burnett memorial lecture, the first NBN chairman, was to be held in Oxford on 16 April 2008. The lecture was to be given by Lord Bob May and was entitled "Causes and consequences of the pending extinction spasm".

7. Any other business

Malcolm reported that the consultation on the Fifth Quinquennial Review had started and ends on 4 June 2008. Details are on the JNCC website <http://www.jncc.gov.uk/page-4292>. BRIG is asked to encourage consultation of this list.

Ant reported that he was attending the “Regional Workshop for Europe on Capacity Building for National Biodiversity Strategy and Action Plans and Mainstreaming of Biodiversity in Vilm, Germany between 26 April and 1 May 2008. The aim of the workshop is to strengthen national capacities for the development, implementation, reviewing and updating of national biodiversity strategies and action plans and the integration of biodiversity considerations in to relevant national policies, strategies and planning processes. It will involve the exchange of experiences and provide an opportunity to identify ways of overcoming problems with implementing national plans. The UK’s current review of the UK BAP is particularly relevant in this regard.

8. Next meeting

Wednesday 18 June 2008, Edinburgh. Venue to be decided. (Secretariat note: subsequently changed to Tuesday 17 June 23008)

UK Biodiversity Reporting and Information Group

16th Meeting: 12 March 2008

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Short paper: an approach to setting success criteria for birds on the UK BAP priority list

1. Introduction

This short paper outlines thinking developed by the Bird Expert Group on ‘success criteria’ for the 59 birds on the UK BAP priority species list. Whilst the instructions from the Priority Review Group suggested that the identification of success criteria should be done “rather quickly and without too much agonising”, the group felt that conducting this process thoroughly and appropriately was of considerable value, given the importance that may be attributed to reaching these success criteria and their potential future role in the UK BAP process. We felt that while the approach we suggest may not be applicable directly to other taxonomic groups (although it may be for some), it might provide a useful framework for setting success criteria across the board, with suitable modification to reflect species’ circumstances and data availability.

The PRG instructions suggest that success criteria should define the point (‘endpoint’) at which a species could be removed from the BAP priority list, but if it is not possible to identify such an endpoint(s) then steps towards final success should be identified (‘milestones’). The instructions envisage that in many cases, such criteria may be quantitative, but in some cases they will not be.

The Bird Expert Group agreed that it was desirable to identify both milestones and endpoints, if possible. Although existing BAP species have targets (revised in 2006), these fit the profile of milestones rather than endpoints, so it would seem sensible to identify endpoints for these species in addition to the existing targets. It was also agreed that as the targets for existing BAP species are set for 2015 and 2020, it would be sensible for the milestones for new BAP birds to be set for these dates, in addition to endpoints that may or may not be dated. We believe that the quantified milestones over a short time-scale may be a very valuable tool for conservation goal-setting, prioritisation and assessment of efficacy.

We have adopted the term ‘de-listing point’ in preference to ‘endpoint’ throughout, as in many cases the point at which a species is removed from the BAP priority list need not, and indeed should not, see the end of targeted conservation action.

This paper presents the approach to defining milestones and de-listing points identified by the bird expert group, and presents examples for a selection of BAP birds.

2. The nature of success criteria

It seems appropriate that milestones and de-listing points for a species should refer to the criteria that led to the original BAP-listing of that species. Hence for those birds listed under criterion 1, international threat, the de-listing point should be when they are downgraded from the IUCN red list. Milestones, if thought necessary, should relate to progress towards this de-listing (we have not attempted to suggest how these milestones might be identified). Likewise, the de-listing points for those species that were listed due to moderate (criterion 2, with internationally important populations) or severe (criterion 3) decline, would be related to a recovery from these declines, and milestones would relate to the progress of this recovery.

For those species that were BAP-listed under more than one criterion, the endpoint should require recovery from all qualifying criteria e.g. removal from red-list and recovery from decline in the case of Lapwing *Vanellus vanellus*.

3. Success criteria to match the BAP-listing criteria

3.1 Options for success criteria for birds qualifying for BAP listing due to international threat status (criterion 1).

As stated above, we would expect down-grading from an IUCN red-list threat status to Near Threatened or Least Concern would be an obvious success criterion for species BAP-listed under criterion 1. There are

however a small number of birds that are BAP-listed due to criterion 1 for which it is difficult to envisage de-listing points at which the species is removed from the list. St Kilda and Fair Isle Wrens *Troglodytes troglodytes fridariensis* and *T. t. hirtensis* and Hebridian Song Thrush *Turdus philomelus hebridensis* are BAP-listed because of international threat due to small population size. These small populations are inevitable given their restricted island ranges, and while the threat status is an accurate portrayal of the susceptibility of such small populations to extinction events, this should not necessarily be regarded as a conservation 'problem' to be 'tackled'. Provided the present approach to qualification for the BAP-list is maintained, we should expect these birds to remain on the list in perpetuity, or for the life of the UK BAP... whichever is shorter.

For these birds, it may be more appropriate to create milestones based on maintaining the population at the current level (or at a higher level if research suggests that the population is depleted currently), or linked to actions (e.g. establish regular monitoring of St Kilda Wrens) rather than biological outcomes.

It should be remembered that as IUCN threat classifications are concerned with the (near-) immediate risk of extinction and not any other aspects of conservation status, populations that stabilise following decline will lose their threatened status once the period of decline lies outside of the three generation/ten-year time window used to assess population trend. Therefore, whilst IUCN de-listing is a valid conservation goal, it does not necessarily constitute a measure of 'final' conservation success.

3.2 Options for success criteria for birds qualifying for BAP listing due to moderate population decline and international importance (criterion 2).

The group's approach to assessing recovery from population declines, and hence setting success criteria, is discussed below under the severe decline BAP criterion below. The same issues, and possibilities for endpoints, should apply to the consideration of moderate decline for birds for which the UK holds internationally important populations.

The other issue for birds listed under this criterion is how to treat the loss of 'internationally-important' status. If the UK population of a species or race loses its internationally important status (falls below 25% of the international population) as a consequence of population increases in the rest of the range, it seems sensible that this could allow de-listing (unless it qualifies under other criteria e.g. severe decline). However, if this loss of internationally important status is due to declines in the UK population this should not qualify for de-listing: it would be perverse if a decline in the UK population could result in removal from the BAP list.

3.3 Options for success criteria for birds qualifying for BAP listing due to severe population decline (criterion 3).

Those species that are BAP-listed due to severe decline should be removed from the list only when they have recovered from that decline: the expert group were agreed that merely no longer qualifying under criterion 3 was not sufficient, as this could be achieved by a levelling of the rate of decline (or even continued decline at a slower rate) until the decline within a moving 25-year time window was no longer over 50%. This has already occurred for some species listed in the first BAP list, such as Corncrake *Crex crex* and Linnet *Carduelis cannibina*, which were retained on the revised list under criterion 4 only ('other' reasons). The definition of what constitutes recovery is problematical, however, and the group considered a number of different options, eventually settling on what might be considered the least ambitious:

- A recovery to the point that at which the decline since the start of the measured trend period is no longer severe (over 50% decline) i.e. $\leq 49\%$ decline (51% of starting level).

The corresponding recovery for those species listed due to internationally important populations (criterion 2, see above) is:

- A recovery to the point that at which the decline since the start of the measured trend period is less than moderate (over 25% decline) i.e. $\leq 24\%$ decline (76% of starting level).

Neither recoveries are 'complete', to the population level at the beginning of the measured trend period (what might be termed the 'restoration level'), but rather to what could be referred to as the 'de-listing level'. An important issue is that the population trend should be measured across the period since the start of the time window in which the species originally qualified for BAP-listing (i.e. as far back as 1969 if the species was listed on the original UK BAP due to severe decline). By doing so we avoid the problem of species which have shown no recovery since BAP-listing (or even continued decline, albeit at a reduced rate) qualifying for de-listing as the main period of decline shifts to before the most recent 25-year time window.

It is possible, indeed likely, that the trends for some species may fluctuate around the threshold for de-listing (whether from criterion 2 or 3), and it is important to avoid removing species from the BAP list only for them to decline back below the de-listing threshold shortly after. The solution proposed by the group would be to use smoothed trends (to dampen fluctuation and better reveal underlying trends) and to require the trend to remain above the de-listing threshold for five successive years before a species is de-listed.

3.4 Retention of the trend start point – avoiding 'resetting the clock'

The Bird Expert Group were content to suggest the approach to de-listing outlined above, with one significant proviso: that for any subsequent assessments of BAP list species the original start date of the trend by which a species qualified is retained as the starting point for measuring trends, even if the species has been de-listed subsequently. If this approach is not taken, it is possible to envisage a scenario whereby a species can undergo a severe decline and thus be BAP-listed, then recover only partially, but sufficiently for BAP de-listing. If the species then declines again but is not assessed against the original start point it could fall to well below the severe decline threshold, as compared to the original starting point, without ever qualifying for re-inclusion on the BAP priority list.

4. Setting milestones

We have developed a process using the recent population trend for a species, assessments of future conservation action (as a result of BAP-listing) and the likely population-level response to this, in order to project a population trend into the future from which predicted population values for 2015 and 2020 (milestones) can be derived. These 'recovery curves' are based on a three-stage process of continuing decline, stabilisation, and then increase. The course of these curves is calculated assuming that BAP-listing leads to a process of research (if required) and the deployment of effective conservation measures at an adequate scale, in a timely fashion (with this process assumed to start in 2009). The projected curves give a reasonable guide as to what might be expected in the short-term given such an appropriate conservation response.

The Bird Expert Group decided that these projected trends should be determined by the state of our knowledge of the conservation needs of a species (and hence how much time is needed until conservation measures can be deployed), and the scale of action required (hence how fast it could be deployed at the appropriate scale and thus a positive species response can be expected). We also decided that species ecology should be factored in to the projected recovery rate in order to make the response as realistic as possible. Our approach was informed by that used to set targets for farmland birds as part of the last BAP review.

4.1 Approach to calculating recovery curves

As described above, the projected curves rely on three stages, outlined below.

4.1.1 Continuing trend until recovery action initiated.

We agreed that the current population trend (calculated over the last ten years, or similar recent period, dependant on data) should be projected to continue unchanged until research had been conducted to

identify the conservation action required, and thus this action could be undertaken. This would depend on our current knowledge of conservation issues and hence species needs, in three classes:

- Good knowledge = one year continuation of current trend, e.g. Skylark *Alauda arvensis*, Tree Sparrow *Passer montanus*.
- Okay knowledge = three year continuation of trend, e.g. Yellow Wagtail *Motacilla flava*, Arctic Skua *Stercorarius parasiticus*.
- Poor knowledge = five year continuation of trend, e.g. Wood Warbler *Phylloscopus sibilatrix*, Common Scoter, *Melanitta nigra*.

4.1.2 'Turnaround period'.

It would seem unrealistic to expect an instant population response to the initiation of conservation action for a species (following the research period described above), particularly given that conservation action will not be delivered instantaneously across the entire range: it is inevitable that there will be a lag before an increase in response to action. The length of this lag will be determined by the scale of conservation action required: this scale is a combination of the range of the species and abundance of the habitat(s) it uses (i.e. a farmland bird would require larger scale action than a wetland bird, even if the ranges were the same when measured at a coarse spatial scale). The intensity of action required (i.e. ELS-type action could be regarded as lower intensity than wetland creation) may also influence this, but is harder to factor into calculations, particularly given that for many species we do not yet know what the action required will be.

The group assigned the scale of action required for species into three categories:

- Large scale = roll-out of conservation action may take three years, so response delayed by this period, e.g. Linnet, Cuckoo *Cuculus canorus*.
- Medium scale = two year lag, e.g. Hawfinch *Coccothraustes coccothraustes*, Nightjar *Caprimulgus europaeus*.
- Small scale = one year lag, e.g. Red-necked Phalarope *Phalaropus lobatus*, Cirl Bunting *Emberiza cirlus*.

During this period we envisaged a 'turnaround' in the species trend, changing smoothly over the lag period to start increasing at the recovery rate envisaged (see below) at the end of the one, two or three year period.

4.1.3 Subsequent rate of increase.

We felt that this would also be governed by the scale of effort required, as this would influence what proportion of the population would be reached by targeted action:

- Small = small range and/or restricted habitat use = rate of increase 50% over 5 years (8.5% per annum).
- Medium = moderate range size, or large range with restricted habitat use within it = 30% over 5 years (5.4% per annum).
- Large = large range and use of widespread habitat type = 15% over 5 years (2.8% per annum).

However, we also felt that species biology should be factored in, as this controls how fast a population may increase, with k-selected species likely to show slower responses to conservation action. We have attempted to incorporate this using generation length (taken from *Birds in Europe ii* and previously used by the Bird Expert Group for UK IUCN red-listing), pooled into three classes :

- <3.3 years = short generation length, e.g. Corncrake, Twite *Carduelis flavirostris* = rate of increase (see above) multiplied by 1.5.
- 3.3-5 years = medium, e.g. Curlew *Numenius arquata*, Black Grouse *Tetrao tetrix* = rate of increase multiplied by 1 (i.e. unchanged).
- >5 years = long, e.g. Roseate Tern *Sterna dougallii*, Stone-curlew *Burhinus oedicephalus* = rate of increase multiplied by 0.5.

This approach gives projected rates of increase from 1.4% (e.g. Arctic Skua) to 12.75% per annum (e.g. Cirl Bunting). A review of known rates of population increase in response to conservation action suggests that for the most part the rates suggested are feasible and in line with actual observed increases or, if anything, are on the conservative side. For example:

- Widespread farmland passerines are projected to increase at 4.2% p.a.: the recent increase in Tree Sparrow has averaged 5.8% p.a.
- Localised (i.e. requiring small scale action) passerines such as Marsh Warbler *Acrocephalus palustris* and Cirl Bunting would be given projected increases of 12.7% p.a. – the actual increase in Cirl Bunting over recent years has been at 16.9% p.a.
- Long-lived, localised species such as Stone-curlew and Roseate Tern are projected to increase at 4.25% (recent Stone-curlew increase has been 7.6% p.a.).
- Bittern *Botaurus stellaris* (localised, with a medium generation length) is projected to increase in response to conservation action at 8.5%: the recent increase in response to concerted action has been 7.7% p.a.

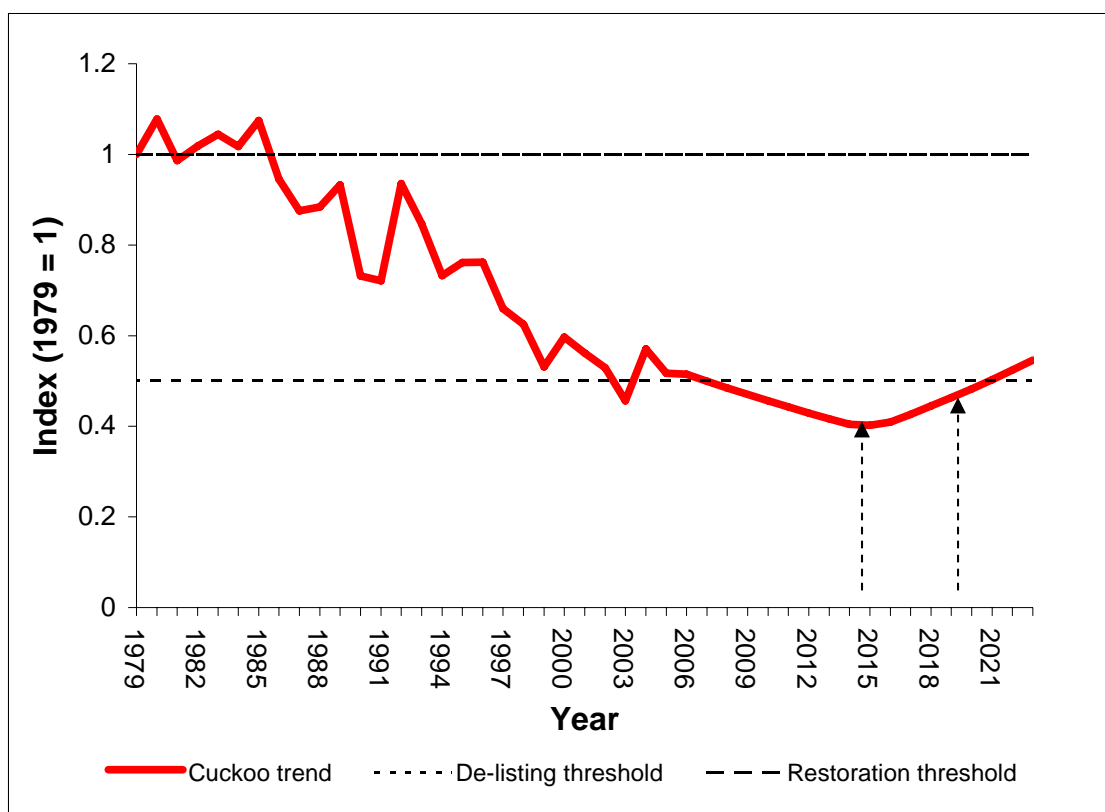
Whilst not comprehensive, this and other comparisons suggest that the projected recovery rates used to create species recovery curves (and thus calculate milestones) are sensible and in line with what might be expected given appropriate conservation action. Table 1 gives examples of assessments used to generate recovery curves for a selection of UK BAP birds.

Table 1: Assessments of research knowledge, scale of conservation action required, and generation length for UK BAP birds, and the subsequent parameters from recovery curves.

	Current annual trend ¹	Knowledge	Scale of action	Lag in action	Turnaround period	Generation length	Rate of annual increase ²
Cuckoo	-2.9	Poor	Large	5	3	Short	4.2
Curlew	-3.8	Okay	Large	5	3	Medium	5.4
House Sparrow	-0.5	Okay	Large	3	1	Short	4.2
Lapwing	-1.5	Good	Moderate	0	1	Moderate	2.8
Reed Bunting	2.8	Good	Large	0	0	Short	4.2
Spotted Flycatcher	-2.8	Okay	Moderate	3	3	Short	4.2
Wood Warbler	-8.6	Poor	Moderate	5	3	Short	4.2
Bittern	7.7	Good	Small	0	0	Medium	8.5
Lesser Spotted Woodpecker	-7.3	Poor	Moderate	5	3	Short	8.1

Therefore for Cuckoo, we might predict a continued decline of 2.9% per annum for five years while research for the cause of decline and hence feasible and affordable remedial action is conducted, followed a turnaround to an increasing trend over three years in response to the rollout of these conservation actions, and then a subsequent increase of 4.2% per annum. Figure 1 shows the projected recovery trend for Cuckoo. The de-listing threshold (50% of starting level) and restoration threshold (100%) are shown.

Figure 1: trend since 1979, and projected recovery curve, for Cuckoo



Milestones for 2015 and 2021 can be calculated from this curve: in the case of Cuckoo, they are index values (compared to the 1979 starting value of 1) of 0.40 in 2015, and 0.48 in 2021, and are indicated by arrows on the figure above. Note that the most recently available index value for Cuckoo was 0.51, in 2006 (there was an upward fluctuation since BAP-listing based on a 2004 trend value), so these represent a fall from the current population level. It can also be seen that the threshold for de-listing is predicted to be exceeded in 2021; assuming that the Cuckoo trend continues to increase in response to action as predicted, the species could be removed from the BAP list in 2026 after five years above this threshold. It is possible to calculate an 'ETA' at the de-listing point in this way for all species. Although this seems sensible in the case of Cuckoo, it may be less so for those species for which this requires projection of the recovery curve far into the future (e.g. Wood Warbler, with a predicted de-listing date in the early 2040s).

As yet, recovery curves have been generated and milestones calculated for approximately half of the birds on the BAP priority list, with the intention of completing this for the rest of the bird list shortly. The outputs so far seem sensible, and reaching the projected milestones is feasible as long as suitable action is taken, as stated before, in a timely fashion and at a suitable scale. The Bird Expert Group believes that this approach is a sensible response to the need for success criteria, and would encourage BRIG to consider this approach, not just for birds but also for other taxonomic groups.

Mark Eaton, on behalf of the Bird Expert Group March 2007