

Minutes

14th Meeting of The UK Biodiversity
Research Advisory Group
Held 8th December 2009

Location: Royal Botanic Gardens, Edinburgh, Board Room Annex. 20a Inverleith Row, Edinburgh, EH3 5LR. Tel 0131 552 7171 (switchboard).

In attendance: Peter Costigan, Defra (Chair)
Tina Yates, JNCC, BRAG Secretariat (Minutes)
Helen Baker, JNCC, BRAG Secretariat
Tim Blackstock, CCW
Richard Evans, WAG
Althea Davies, RELU/ESRC research fellow (Observer)
Mary Gibby, RBGE
Scott Mathieson, SEPA
Heath Malcolm CEH (Speaker, item 6 only)
David McCracken,
David McDonald,
Ken Norris, NERC Biodiversity Theme Leader
Paul Rose, JNCC
Mark Spencer, NHM
Andy Swash, Defra
Allan Watt, CEH

Apologies: Sallie Bailey, Forestry Commission; Ian Bainbridge, SNH; Andy Brown, NE; Joanna Drewitt, Scottish Government; Mike Freeman, Jersey; Roland Gauvain, Alderney Wildlife; Andrew Impey, NERC; Michel Kaiser, University of Bangor; Andrew Pullin, BES; Amanda Read, BBSRC; Steven Smith, Guernsey; Kevin Watts, Forest Research; Sarah Webster, Defra; Mark Wright, DoE(NI);

14.1 Welcome and introductions.

The Chair welcomed everyone to the meeting, and introductions were made. Althea Davies explained that she was a RELU/ESRC research fellow, based at Stirling University, who was looking at how ecologists view long-term ecological data.

14.2 Systematics update and Field Guides – Oral report back from first meeting Paper - BRAG 14/1 Draft Terms of Reference

14.2.1 With respect to the House of Lords recommendation on bar-coding, there are small collaborations that are already working well, and bar-coding is on the agenda for the August 2010 meeting of the International Mycological Congress. The UK initiative is functioning well, and linking in to the European network. Documentary evidence back to the House of Lords can be provided with the report from the August 2010 meeting.

Action: Peter Costigan to contact Paul Cannon (currently at CAB International) to ask about activity on bar-coding within his purview.

14.2.2 The sub-group meeting on field guides, held prior to the BRAG meeting (held 7th Dec 2009) had agreed that field guides were essential in engaging and encouraging amateur naturalists, but that they need to be pitched at the right level. There is no definitive knowledge of what guides exist, and what is aimed at amateurs and what is aimed at professional/ laboratory identification.

- 14.2.3 The sub-group identified that field guides are also essential to BAP work, and recommended that, if a funding body could be identified, a contract should be let to identify the current range and scope of field guides, and to identify gaps in guides. Where gaps exist this may be linked to gaps in national taxonomic expertise. **See Appendix 1 for notes of the meeting, and Appendix 2 for the full recommendations.**
- 14.2.4 In discussion it was pointed out that for those assessing small grant applications to produce field guides, it was often difficult to prioritise the different applications. A contract such as that proposed could be very helpful in identifying research gaps.
- 14.2.5 There was discussion of potential funding sources, such as BBSRC Syntax money, NERC and Defra. The Defra priorities group meets next week (16th December 2009) so it was imperative that there was a prompt note of the sub group meeting and proposal.
Action: Tina Yates and Mary Gibby to circulate note of meeting and proposal by 11th December 2009. (Done).
- 14.3 BES/BRAG 2009 Workshop on the National Ecosystem Assessment Paper - BRAG 14/2 Report of workshop.**
- 14.3.1 The workshop had been extremely successful, with an attendance of over 80 people, and some useful discussions. It was felt that the link with the BES was very helpful, and should be continued. The report of the workshop, as circulated, had been on the BRAG website, but had been withdrawn because one of the group Chairs had sent in some late amendments. So BRAG members were asked to treat the circulated paper as a draft, pending an amended report appearing on the website.
Action: Tina Yates to amend workshop report and put back on BRAG web site as soon as possible.
- 14.3.2 There was consensus that a further event should be held at the September 2010 BES annual meeting, with potential to follow up and present some of the findings of the NEA.
Action: Members to send Tina Yates and Peter Costigan any other ideas.
Action: Tina Yates and Peter Costigan to follow up with the BES and to organise an event jointly with the BES for 2010.
- 14.4. EPBRS (European Platform for Biodiversity Research Strategy) and IPBES (Intergovernmental Platform on Biodiversity and Ecosystem Services) Papers - BRAG 14/3 EPBRS meeting recommendations
BRAG 14/4 Report of Nairobi meeting**
- 14.4.1 The strategy consultation has just closed, with conclusions expected in January 2010. The recommendations from the last meeting, which was in Sweden, have previously been circulated to BRAG members (paper BRAG 14/3). The meeting theme was policy for biodiversity post 2010. The next meeting will be in Mallorca, Spain, 12-15th April, and will be preceded by an e-conference.
Action: Tina Yates to liaise with Allan Watt and circulate details of the e-conference as soon as they become available.
- 14.4.2 In 2010 there will also be a meeting in Belgium, running from 17-20 November, on the theme of "Positive Futures".
- 14.4.3 A revised "Network of Knowledge" concept paper was agreed on 10th September 2009. Further details are available at <http://www.epbrs.org/epbrs/news/show/13>
- 14.4.4 For the future EPBRS will focus on research policy. The idea is to hold specific workshops, with invited experts on particular topics, and to publish papers after these meetings.
- 14.4.5 On IPBES (Intergovernmental Platform on Biodiversity and Ecosystem Services) the report of the Nairobi meeting had been circulated – see paper BRAG 14/4. The idea of IPBES is to

establish an international platform along the lines of the IPCC (Intergovernmental Panel on Climate Change), to strengthen and identify international initiatives for biodiversity. There will be a further international meeting to discuss IPBES proposals in June 2010, which will decide whether to move forward with IPBES, and if so, to agree specific tasks for the platform, prior to its formal formation.

Action: Secretariat to circulate an extract from a recent JNCC committee paper on the development and possible implications of IPBES.

14.4.6 The current idea is that IPBES would build capacity to do assessments and to standardise methodology, and would be a way of following up on the MEA (Millennium Ecosystem Assessment). There are differing views on how IPBES moves forward, with issues such as costs and funding still under debate. The UK is broadly supportive of IPBES, but there are concerns that an international body could reduce support for current multi-national agreements.

Action: TY to circulate web link to the IPBES proposal.

Action: Paul Rose and TY to keep BRAG aware of relevant papers and consultations.

14.5 Report back on Crown Dependencies conference Paper - BRAG 14/5 Report of conference

14.5.1 Tina Yates summarised the previously circulated paper, reminding BRAG members that GBSC deals with Overseas Territories (OT) issues and UK BRAG takes responsibility for engaging with the Crown Dependencies (CDs). BAP lists are not selected with the CDs in mind, and these lists are not generally within the CDs frameworks. At the moment it is difficult to know what role BRAG can realistically play, given that each of the CDs has responsibility for its own biodiversity legislation and research, but maintaining links and sharing information with the CDs is important.

Action: Mark Spencer to send TY contact information for the Isles of Scilly Wildlife Trust, to include in networking. Also to pass on details of the Atlantic Islands' Forum.

14.6. Review of Transboundary Air Pollution (RoTAP) – Heath Malcolm, CEH. Papers - BRAG 14/6 Summary of RoTAP objectives BRAG 14/7 Chemical risks to biodiversity (for information only).

14.6.1 RoTAP began in February 2008, and has had a lot of input from a variety of scientists. It builds on the NEG-TAP (National Expert Group on Transboundary Air Pollution) report published in 2001. For UK BRAG members chapters 5, 8 and 9 are of most relevance.

14.6.2 Acidification and sulphur dioxide emissions have decreased in the last 20 years, leading to a decrease in acid deposition, but critical loads are still exceeded, even if not to the same degree. There are signs of recovery of acid sensitive species, but this is slow, and estimates are that by 2020 around 40% of habitats will still exceed critical loads.

14.6.3 Eutrophication due to NO_x is also down, although not sufficiently for 2010 targets to be met. Reduced NO_x emissions have only resulted in a deposition reduction of around 15% however, because NO_x spend little time in the atmosphere before being re-deposited.

14.6.4 Ammonia (NH₃) emissions have only been monitored since 1990, but are showing a downward trend, however ammonium ion (NH₄) measurements are staying about the same. Nitrogen, which is accumulated in soils, is still a problem with no evidence of recovery. The review has identified that reducing NH₄ in the environment is a priority.

14.6.5 With ground level ozone, peak concentrations now seem smaller than previously, but overall mean background levels have increased, and there is no evidence of recovery from ozone. As this is a pollutant that circulates in the hemisphere, emissions from India and China will affect Europe – it is a particular problem in the Mediterranean area.

14.6.6 Heavy metal emissions are down, but as these don't degrade they are continually re-emitted once they are in the environment.

14.6.7 The RoTAP report is open for review (deadline for comments 11th January 2010)

14.6.8 RoTAP has very broad recommendations and it is likely that specific research projects will follow in the future. Louise Heathwaite, the Natural Resources theme leader for NERC is looking at how NERC research should follow up specific issues. For BRAG the key issue is probably any link between Transboundary Air Pollution and species' ability to recover from, or adapt to, climate change. There is also the issue of how much to spend on maintaining monitoring, and whether or not to divert monitoring money to improving modeling.

14.6.9 After discussion, the group agreed that it was not necessary to do a coordinated UK BRAG response, but that it would be useful to see the response that the Air Pollution Lead Coordination Network would be making.

Action: TY to check with the Air Pollution LCN and to send round their response to BRAG members for information.

14.7 LWEC (Living with Environmental Change) Systematic Reviews: pilot studies

**Papers - LWEC Review Catchment planning
LWEC Review Contribution of Marine Protected
LWEC Review Ecosystem Resilience
LWEC Review Limits and Resilience
LWEC Review Managing conflicts
LWEC Review The biological limits to adaptation**

14.7.1 These reviews follow on from suggestions at the December 2008 BRAG meeting in Bangor. They are scoping studies that identify strengths and gaps in current research fronts, but will be followed in some cases by full systematic reviews. The studies circulated are all published on both the Defra and NERC web sites.

14.7.2 When reading the reviews, BRAG members were asked to bear in mind a forward look for BRAG.

14.7.3 EPBRS are following the methodology for their Network of Knowledge proposals and future work.

14.8 Priority Species sub group (BRIG-BRAG work).

14.8.1 A sub-group was set up at the 13th meeting of BRAG, on 9th July 2009, to consider potential for grouping research actions identified by the BAP species review. Members are Helen Baker, Paul Rose, Andy Brown, Kevin Watts, Ian Bainbridge, Mark Stevenson, Mark Spencer, Tim Blackstock, Michel Kaiser and Mary Gibby. The group had not been able to meet to date, but a meeting would be prioritised for early 2010. Ken Norris asked to be kept informed of outputs.

Action: Secretariat to also invite WCL to join Priority Species sub group.

14.9 UK BRAG Future Directions

Paper- BRAG 14/8 Review and Future Priorities

14.9.1 BRAG work to date is having an impact, but the question is whether we can increase or improve that impact. BRAG reviews are at a depth not being done at other levels. BRAG is very good at steering issues, but measurement of the impact that the group has is difficult, given that BRAG needs to be influential but must not make researchers feel that they are facing more competition.

Action: All to let secretariat know when and where they hear of BRAG papers being quoted or used in any way.

14.9.2 Discussion consensus was that there is scope for further BRAG review work. Whether or not BRAG does more interpretation work, which takes more resources, was not decided. More interpretation would be good, but it was recognized that resources are limited.

- 14.9.3 A suggestion was made that we should look at the expertise of BRAG members and if possible invite further organizations who could supply representatives that would fill any gaps in expertise. With this in mind, it could be helpful to meet at sites of other research organizations, especially when wanting to engage particular researchers in specific reviews.
- 14.9.4 Further discussion agreed that re-visiting some previous reviews areas, in light of changing biodiversity focus – for example bringing in socio-economic work – should not be ruled out. NERC for example is developing ways of linking organizations to look at valuation and how it is done. When TEEB (The Economics of Ecosystems and Biodiversity) is published it will then be timely for BRAG to look at ecosystem services to see if there are further research gaps.
- 14.9.5 On the topic of air pollution impacts, it was agreed that RoTAP is at a national level and is very broad in scope. Possible issues for BRAG are likely to be more focused, and particularly looking at non- nitrogen issues, as a lot of recent air pollution research seems to have concentrated on nitrogen effects.
- 14.9.6 Accessibility of non- specialists to BAP issues and processes was another topic raised. The BRIG-BRAG Priority Species work is very species specific, but it would also be useful to look at how habitat biogeochemistry affects species.
- 14.9.7 Other topics considered were agriculture, and how the increasing demands for food can be reconciled with reducing emissions and adaptation to climate change, and also how these conflicting demands will affect biodiversity. Emerging issues suggested were energy forestry, light and noise pollution, climate change, habitats and biodiversity, energy and greenhouse gases, halides and their relation to the Biodiversity Action Plan. Island issues were also highlighted as needing consideration. BRAG could play a key role in linking issues.
- Action: Helen Baker and Peter Costigan to do an amended paper in light of discussion.**

10. Minutes and actions from BRAG 13.

No proposals for any changes to the minutes were received. All actions had either been completed or were in progress.

11. Any other business.

The next meeting will be on 16th June 2010, at the Natural History Museum, London.

Summary of Action Points from the 14th meeting of BRAG, 8th December 2009.

Reference in minutes	Description	Action	Progress
14.2.1	Contact Paul Cannon (currently at CAB International but moving to Kew) to ask about activity on bar-coding within his purview.	Peter Costigan	
14.2.5	Circulate note of meeting of sub group looking at field guides, and proposal put by group, by 11 th December 2009	Tina Yates and Mary Gibby	Done by due date.
14.3.1	Amend report of BES-BRAG workshop and put back on BRAG web site as soon as possible.	Tina Yates	Done
14.3.2	Members to send Tina Yates and Peter Costigan any ideas for a topic for the 2010 joint BES-	All	

	BRAG event.		
14.3.2	To follow up with the BES and to organise an event jointly with the BES for 2010.	Tina Yates and Peter Costigan	In progress
14.4.1	Liaise with Allan Watt and circulate details of the next EPBRS e-conference as soon as they become available.	Tina Yates	Done – reminder to be sent out when conference opens.
14.4.5	Circulate an extract from a recent JNCC committee paper on the development and possible implications of IPBES.	Secretariat	
14.4.6	Circulate web link to the IPBES proposal	Tina Yates	Done via IUCN web site as specific IPBES site does not appear to have been updated at the time of writing the minutes..
14.4.6	Keep BRAG aware of relevant papers and consultations pertaining to EPBRS and IPBES	Paul Rose and Tina Yates	
14.5.1	Send Tina Yates contact information for the Isles of Scilly Wildlife Trust, to include in networking. Also to pass on details of the Atlantic Islands' Forum.	Mark Spencer	
14.6.8	Check with the Air Pollution LCN and circulate round their response to RoTAP to BRAG members for information.	Tina Yates	
14.8.3	Invite WCL to join Priority Species sub group.	Secretariat	
14.9.1	All to let secretariat know when and where they hear of BRAG papers being quoted or used in any way.	All BRAG members	
14.9.7	Helen Baker and Peter Costigan to do an amended future directions paper in light of discussion	Helen Baker and Peter Costigan	

Appendix 1. UK BRAG Sub group tasked with following up House of Lords Systematics and Taxonomy recommendations on field guides.

Notes of meeting held 7th December 2009 at Royal Botanic Gardens Edinburgh.

In attendance;

Tim Blackstock CCW
Mary Gibby (Chair)
Neville Kilkenny (Consultant mycologist)
Jim Macintosh BSBI
Mark Spencer NHM and NBN
Andy Swash Defra
Tina Yates JNCC UK BRAG Secretariat

Apologies:

Rebecca Farley Field Studies Council

1. Introductions were made and Mary Gibby explained the background and reasons for convening the meeting. (see terms of reference, Appendix 1) There was agreement that at future sub group meetings it would also be useful to invite David Cutler from the Linnaean Society.

Action: Mary Gibby to provide Tina Yates with David Cutler's contact details.

2. Popular groups already get good coverage for lay people. Most specialist guides are of no interest to commercial publishers but essential for the biological community. If one is looking at paying authors for their time and work then the costs would be impossible to recover on the cover price of the book/download so grants are needed.
3. The Swedish Government are currently putting in funding to produce a series of high quality guides with the aim of increasing their population's knowledge of biodiversity. Their aim is for all schools (at secondary education level) and libraries to have all the completed guides available.

Action: Mary Gibby to circulate the url to the Swedish web site of their field guides project.

4. UK BRAG should ensure that the UK Government knows of the Swedish project and their anticipated costs and benefits.

Action: Mary Gibby to try to find a contact on the Swedish project (via EPBRS and/or the Scandinavian mycology network) to see if it is possible to obtain a statement of the work, aims, costs and benefits of the Swedish project, and to see if there is someone prepared to give a presentation at a future UK BRAG meeting.

5. An initial challenge is assessing what is currently available, how accessible it is, the media by which it is available, and at what level it is aimed.

Action: Tina Yates to circulate the list of on-line guides sent by Rebecca Farley.

6. Once gaps are identified there will also be the need to find specialists able to construct guides – there is a possibility that gaps in guides indicate a lack of specialist taxonomic skills in that field.

7. A well received suggestion was that an assessment of currently available guides should be made by allocation to a matrix along the lines of;

	Techniques	Targets	Locations
Specialist			
Generalist			
Popular			

Each section should include notation as to whether the guide is a book only, or also available on line or as a phone app.

8. A demonstration was given of an online mycological synoptic key. This form of key is much more user friendly than traditional dichotomous keys, and is also known as a fuzzy logic system.
9. A discussion of the historic development of Natural History expertise and guides concluded that much of the UK expertise comes from a dependence on expert amateurs, and that to keep a flow of such amateurs depends very much on accessible field guides being available. There is a danger that knowledge held by a few specialist researchers may not be developed and passed on once the current cohort of specialists reaches retirement.
10. **There was agreement that good field guides are essential for enthusing amateurs, and that gaps must be filled if understanding of the function biodiversity amongst the general population is to increase. Good field guides are also essential to develop engagement with the UK BAP.**
11. **There was agreement that there should be a recommendation to let a contract to examine the current availability and level of field guides, with identification of where gaps exist.** A call for expressions of interest would be useful prior to invitations to tender for such a contract. There would be an expectation that the contractor would be someone with the knowledge and contacts amongst expert groups to consult and sub contract to specialist groups. There would be a need to differentiate between genuine field guides, expert guides, and identification guides aimed at laboratory examination, for example those that require dissection of insect genitalia under the microscope. Ideally the contract, if the idea is accepted and a contract let, should also be aligned to the UK BAP, as it is critical that site managers know what is on their sites, how to identify BAP species, and how to manage their sites to maintain these species.
12. The next step, once gaps are identified, would be to examine how experts can be persuaded to produce guides to fill such gaps, especially when gaps in guides could correlate with gaps in expertise and knowledge.
13. If agreement in principle from a funding organisation can be reached, then members of the sub group will need to be nominated to form a steering group to draw up a specification for the call for expressions of interest, to write the tender specification, and to oversee the contract and quality of the final report.
14. Key dates to which the work could be linked are 22nd May 2010, when the Angela Marmont centre of the NHM is likely to be formally opened – it would be good to be able to announce the commencement of the work at this occasion. There is also the CoP in October 2010, when it would be a very useful piece of work for the UK to announce as part of its contribution to the International Year of Biodiversity.
15. Next meeting of the sub group will depend on how the recommendation for letting the suggested contract is received by funding agencies.

PROPOSAL FROM UK BRAG SUBGROUP ON FIELD GUIDES TO UK BRAG

Background

In 2008 the House of Lords Science and Technology Committee published its Systematics and Taxonomy follow up: report with evidence.

In its conclusions and recommendations, paragraph 7.20, UK BRAG is specifically tasked to, "...explore the options for commissioning the production of new and updated identification guides for the UK fauna and flora.". This refers to Chapter 5 of the report, which looks at funding, and specifically to paragraph 5.8 where the authors, "... **recommend the establishment of a new process for commissioning the production of identification keys and field guides, involving joint actions between users setting priorities, funders supporting fixed-term appointments, host institutions providing access to collections and literature resources, and established series publishers producing the volumes. We also recommend that UK BRAG should explore the options for commissioning the production of new and updated identification guides for the UK fauna and flora.**"

Proposed action

Much of the UK's taxonomic expertise is held by expert amateurs, supported by the rare professional taxonomist. Despite the broad public interest in natural history, both amateur and professional experts - particularly of non-charismatic groups - represent an aging and declining cohort. Identification keys and field guides are essential tools to enhance engagement of the public with natural history and enable them to gain the skills to contribute to conservation, survey and monitoring. For example, it is remarkable that while the revised UK BAP list (2007) includes some 76 species of fungi there is no guide to their identification; the ability to contribute to recording of these priority species remains severely hampered.

To respond to the House of Lords' request we propose the following approach:

- 1. We recommend that a contract should be let to examine the current availability and level of field guides, and identify where gaps exist.**
- 2. Once gaps are identified we will explore how expertise can be gathered to produce guides to fill such gaps, especially when gaps in guides could correlate with gaps in expertise and knowledge.**
- 3. The format for delivery of future guides - hard copy, on-line resources, downloadable guides, etc. - will be determined through seeking feedback from the user-community.**

This work could form a key element of the UK's contribution to the International Year of Biodiversity.

PROPOSED CONTRACT – TO IDENTIFY CURRENT AVAILABILITY AND LEVEL OF FIELD GUIDES/IDENTIFICATION KEYS FOR UK BIODIVERSITY AND IDENTIFY WHERE GAPS EXIST

There would be an expectation that the contractor would be someone with the knowledge and contacts amongst expert groups to consult and sub contract to specialist groups. There would be a need to differentiate between genuine field guides, expert guides, and identification guides aimed at laboratory

examination, for example those that require dissection of insect genitalia under the microscope. Ideally the contract, if the idea is accepted and a contract let, should also be aligned to the UK BAP, as it is critical that site managers know what is on their sites, how to identify BAP species, and how to manage their sites to maintain these species.

If agreement in principle from a funding organisation can be reached, then members of the sub group will nominate a steering group to draw up a specification for the call for expressions of interest, to write the tender specification, and to oversee the contract and quality of the final report.