

HOUSE OF LORDS

SESSION 2002–03
3rd REPORT

SELECT COMMITTEE ON
SCIENCE AND TECHNOLOGY

**WHAT ON EARTH? THE THREAT TO
THE SCIENCE UNDERPINNING
CONSERVATION: THE GOVERNMENT'S
RESPONSE AND THE COMMITTEE'S
COMMENTARY**

WITH EVIDENCE

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THIRD REPORT

By the Select Committee appointed to consider Science and Technology.

ORDERED TO REPORT

WHAT ON EARTH? THE THREAT TO THE SCIENCE UNDERPINNING CONSERVATION: THE GOVERNMENT'S RESPONSE AND THE COMMITTEE'S COMMENTARY

Background

1. In May 2002 we reported on *What on Earth? The Threat to the Science Underpinning Conservation* (4th Report 2001-02, HL Paper 118(i)). We emphasised how important it is to understand the diversity of living things on the earth, and the crucial expertise that systematic biologists bring to this subject.

2. We made nine recommendations, two-fold in nature, relating to increasing financial support and concerned with collaborating and setting priorities. The Government response, which we received in December 2002, was circulated to the bodies and individuals who submitted evidence to the inquiry, and placed on the Committee's web site. We issued a request for comments on the response, which would help inform our reply to the Government. The Government response is appended to this Report, together with the comments received.

3. In general, we and our witnesses are disappointed with the Government's response, particularly where it concerns grant-in-aid to the major systematics institutions (Recommendation 1.1). We are also disappointed at the Government's failure to publish a clear, concise summary document regarding their policy on biodiversity conservation activity (Recommendation 1.3). However, we are pleased to note that DEFRA has agreed to take the lead in setting up a body bringing together representatives of the systematic biology community (Recommendation 1.8), and to increase funding for the Darwin Initiative (Recommendation 1.9). We call for the co-ordinating body to be set up without delay.

4. Below, we react to the Government's response on each Recommendation, and reflect the comments received where there was agreement between several bodies.

We are very grateful for the substantial comments received from:

- CABI Bioscience
- Linnean Society
- Natural Environment Research Council
- Natural History Museum
- Public Health Laboratory Service
- Royal Botanic Gardens Edinburgh
- Royal Botanic Gardens Kew
- The Royal Entomological Society
- The Royal Society
- Royal Society of Edinburgh
- The Systematics Association

Commentary on the Government's response

Recommendation 1.1: In view of the Government's commitments to biodiversity conservation we recommend that they increase grant-in-aid to the major systematics institutions. We envisage this as providing support to collections—the databases used by systematic biologists and conservationists. In accordance with the recommendation of the Dainton Report,¹ grant-in-aid funding should be increased to the level it would have been had the 1992 figures been maintained in line with inflation. This would allow further digitising of the collections.

5. The Government has responded to this call for increased grants by stating that it will not be possible to increase grant-in-aid funding to the level it would have been at, taking account of inflation since 1992, and pointed to “substantial new resources” that have been made available. There were varying degrees of dissatisfaction with the Government's increased funding from all respondents except Kew, which was “very grateful for this support” (p 6). Several bodies regarded the statement as “misleading” (p 2, p 4, p 11) given previous reductions in grant-in-aid, which the most recent increases do not fully reverse and regret the Government's statement that they will not bring funding back to 1992 levels. Some, including the Natural History Museum, pointed to the wider demands being placed upon them by Government as the result of the Convention on Biodiversity (for example).

6. We are most disappointed that the grant-in-aid will not be increased to the levels we recommended, and urge the Government to reconsider.

Recommendation 1.3: We recommend that the Government develop and publish a clear, concise summary document regarding their policy on biodiversity conservation activity in the United Kingdom and on the international stage.

7. The Government have not done so. Out of five respondents who offered comments, the Royal Botanic Gardens (RBG) Kew, the Natural History Museum and the Royal Entomological Society saw the response as insufficient, and called for the recommendation to be met. RBG Kew stated “there remains an urgent need for a concise document which summarises the UK's overall biodiversity policy” (p 6). RBG Edinburgh took the view that the strategies listed were not concerned with the international stage, and CABI thought that more resources need to be devoted to joined-up UK thinking.

8. We consider that the rather long list of separate documents given in the Government response highlights precisely the need for a summary document. This would enable the systematic biology and conservation communities to develop effective strategies in line with the Government's aims.

Recommendation 1.4: We recommend that the Higher Education Funding Councils should consider the role of the Research Assessment Exercise in the decline of systematic biology in universities and explore ways in which to support this subject, as they do with other minority disciplines.

9. There was widespread welcome of the review of the RAE from respondents, and belief that the RAE could go some way to arresting the decline in such a minority subject.

10. Despite the Government's response stating that “the issue of minority subjects and how best to assess and support them” would be considered as part of the review, there is no specific mention of minority subjects in the recently published report by Sir Gareth Roberts. We look to the systematic biology community to consider how the recommendations made in the Roberts Review will affect them, and to respond to the consultation exercise.

Recommendation 1.5: We recommend that the BBSRC should reconsider its decision not to award academic analogue status to Royal Botanic Gardens, Edinburgh and Kew.

¹ House of Lords, Select Committee on Science and Technology. 1st Report, 1991-92. *Systematic Biology Research*. HL Paper 22-I. ISBN 0 10 480692 3

11. The BBSRC has rejected this recommendation. There was agreement amongst five respondents, including from the Linnean Society and Royal Entomological Society, that BBSRC *should* give RBG Edinburgh and Kew academic analogue status. We see no reason why this should not be the case. The fact that they receive core funding from other government departments should not exclude them from obtaining such status, nor from the potential for further funding opportunities that comes with it.

Recommendation 1.7: We recommend that the United Kingdom should take the lead and propose to the Global Biodiversity Information Facility (GBIF) that the GBIF run a pilot with some priority species to form the basis of a trial for Professor Godfray's suggestion of making taxonomy primarily digitised and web-based. A trial would demonstrate the benefits and pit-falls of this approach before implementing it more widely

12. The Government's response to this point was that they support the work of GBIF and has successfully promoted a pilot project in the light of Professor Godfray's recommendation. There was some division on this response from respondents. RBG Kew and the Royal Society were sceptical about GBIF taking on this role. The Royal Society believed that a web-based pilot should be undertaken by a major museum or botanic collection (or group of suchlike). Some others, including CABI, welcomed the Government's support for it but point out that it is not overwhelmingly, financially, beneficial to institutions nor the UK. Several question the relationship of Professor Godfray's idea for a pilot project with GBIF funding – the Natural History Museum, when describing GBIF's calls for proposals said "It is not clear what, if any, connexion exists with Professor Godfray's ideas – our information suggests that GBIF have not adopted this approach at present" (p 5).

13. We are pleased to note that the Government have successfully pushed for a pilot project to "demonstrate GBIF's practical value and usage to the wider conservation community". We understand that whilst GBIF is not trialling the type of community on-line monographs that Professor Godfray has been arguing for, it is supporting the preparation of electronic catalogues and lists that will be essential for proper web taxonomies. This is a positive step forward.

Recommendation 1.8: We recommend that DEFRA takes the lead in setting up a body with the express purpose of bringing together representatives from Government departments, ecologists and conservationists and the systematic biology community, including those based at museums, universities and other institutions. DEFRA should provide funding for administrative support in the early stages, although we envisage that the body should eventually seek to become self-financing with all participants making a small contribution to running costs. The body's main remit would be to:

- (a) **identify priority areas of biodiversity for which taxonomic research is most needed by the conservation community, and for other national purposes, such as health and agriculture.**

Additional remits would be to:

- (b) **assess the taxonomic impediment to conservation action—specifically to analyse the shortage of taxonomic specialists and gaps in taxonomic data;**
- (c) **campaign for resources for taxonomists researching in those priority areas.**

14. Witnesses expressed almost universal praise for DEFRA's agreement to lead such a group. Many respondents have stated explicitly that they are keen to play a role. Some echoed the sentiments of RBG Edinburgh that they hope such a body "will not spend too much time and energy repeating work that was undertaken by the UK Systematics Forum" (p 6).

15. We look forward to DEFRA taking this Recommendation forward in the near future, noting that the Government Response set itself the target of convening a meeting by the end of 2003. We feel that it may be appropriate for the group to consider issues raised under Recommendations 1.3 and 1.7 above.

Recommendation 1.9: We recommend that the current level of spending on the Darwin Initiative, approximately £3 million per annum, should be earmarked specifically for

projects with a significant taxonomic component, to be used for conservation purposes. This would be used to help build taxonomic capacity in developing countries and should include projects to digitise UK systematics collections. Any additional funds to the Darwin Initiative beyond this core could have a wider remit to include projects with a major focus on development issues or poverty alleviation.

16. All five respondents on this point have welcomed the increased funding for the Darwin Initiative. However, three, including RBG Kew and the Linnean Society, regretted that there was no commitment to earmark funds for those projects with a significant taxonomic component.

17. We reiterate our recommendation and call on the Government to earmark funds for projects with a significant taxonomic component.

APPENDIX 1

Members of the Select Committee

Baroness Finlay of Llandaff
Lord Lewis of Newnham
Lord McColl of Dulwich
Lord Methuen
Lord Mitchell
Lord Oxburgh (Chairman)
Lord Patel
Lord Soulsby of Swaffham Prior
Lord Turnberg
Lord Wade of Chorlton
Baroness Walmsley
Baroness Warwick of Undercliffe
Lord Winston
Lord Young of Graffham

For membership and declared interests of the Sub-Committee which conducted the original inquiry, see the Committee's 4th Report 2001-02, HL Paper 118(i), p 26. For the interests of members of the Select Committee, see the Register of Members Interests, at www.publications.parliament.uk/pa/ld/ldreg.htm

APPENDIX 2

The Government's Response**Introduction**

1. The Government welcomes the Committee's report which highlights the important role of systematics in the conservation of biological diversity. The number of species in the world yet to be identified and classified represents a significant and important challenge to the systematics community.

2. This year, at the World Summit on Sustainable Development in Johannesburg, more than 180 Governments committed themselves to significantly reducing the rate of loss of biodiversity by 2010. Improving our knowledge and understanding of the forms of life which need to be conserved will be an important element in fulfilling this target. But the challenge cannot be tackled by one country alone, although the UK has an honourable tradition of contributing a significant part of the global systematics effort. The Government stresses too that conservation effort should not be dependant on a perfect knowledge and understanding of species yet to be identified, which may be unattainable. We can and should support conservation effort alongside the development of the science of systematics.

The Committee's Recommendations

1.1 In view of the Government's commitments to biodiversity conservation we recommend that they increase grant-in-aid to the major systematics institutions. We envisage this as providing support to collections – the databases used by systematic biologists and conservationists. In accordance with the recommendation of the Dainton Report, grant-in-aid funding should be increased to the level it would have been had the 1992 figures been maintained in line with inflation. This would allow further digitising of the collections.

3. The Government values the work of the three major systematics institutions, not only for their expertise in relation to UK and international systematics but also for their contribution to the country's educational and cultural goals.

4. It will not possible for the Government to increase grant-in-aid funding to the level it would have been taking account of inflation since 1992. However, the Government is making substantial new resources available to each of the three institutions as follows:

- **Royal Botanic Gardens, Kew:** Defra has awarded an additional £3 million towards Kew's operating costs in 2003/04, increasing its operating grant-in-aid baseline to £17.299 million. It has also been granted a capital allocation of £3.4 million in 2003/04; and further capital bids will be entertained should additional money become available during the year.
- **Natural History Museum:** An increase of 4% in 2004/05 and 5% in 2005/06 on the 2003/04 resource grant-in-aid has been provided, to a total of £37.98 million in 2005/06. In addition, £2.1 million has been allocated for capital expenditure in each of the years 2004/05 and 2005/06.
- **Royal Botanic Gardens, Edinburgh:** As noted by the Committee, the Scottish Executive has already increased its recurring grant-in-aid to the institution by some £300,000 per year and, following Spending Review 2002, it now plans to increase funding by almost £600,000 over the next three years to a level of just under £6 million by 2005/06.

5. These additional resources are intended to help the institutions to meet the totality of their functions, of which their work on systematics is of course an important part. It is for the institutions themselves to decide how to allocate the resources in accordance with the objectives set out in their Corporate Plans or Funding Agreements which are approved by Sponsor Departments.

6. Currently, the institutions invest in digitisation largely through use of their grant-in-aid or through project funding. As the Committee have noted, Kew made a successful application to the Capital Modernisation Fund for its electronic Plant Information Centre.

1.2 We recommend that the Government consider providing support to systematics collections as part of a bigger project to support biological resource centres, as recently highlighted by the OECD.

7. The Government supports the broad objective of the OECD initiative on Biological Resource Centres, which is to seek to ensure the conservation of biological resources and associated information in an efficient and effective way through the creation of a global network of biological resource centers and, through such a network, to provide improved access to biological resources of an appropriate quality to *bone fide* users in the fields of life sciences and biotechnology. Proposals on how this might be achieved are still under discussion in the OECD but could be completed by the end of 2004. The Government will not be in a position to take a firm view on those proposals until then.

1.3 We recommend that the Government develop and publish a clear, concise summary document regarding their policy on biodiversity conservation activity in the United Kingdom and on the international stage.

8. The UK is a party to all the major international agreements which aim to further biodiversity conservation, including the Convention on Biological Diversity, the Convention on the Conservation of Migratory Species of Wild Animals (also known as the Bonn Convention), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on Wetlands (also known as the Ramsar Convention). The UK has also signed the International Treaty on Plant Genetic Resources for Food and Agriculture which it hopes to ratify soon. The Government subscribes to the objectives of these conventions. It is an active supporter of their work programmes, as well as making substantial financial contributions to help developing countries participate in the work of these Conventions.

9. DEFRA has recently published a biodiversity strategy for England (“Working with the Grain of Nature”, October 2002). The Scottish Executive will consult on a biodiversity strategy for Scotland in 2003. The Welsh Assembly Government will consult on the framework for biodiversity action in Wales later this year and the Northern Ireland Executive published its biodiversity strategy on 7 September 2002.

1.4 We recommend that the Higher Education Funding Councils should consider the role of the Research Assessment Exercise in the decline of systematic biology in universities and explore ways in which to support this subject, as they do with other minority disciplines.

10. The Funding Councils are currently reviewing research assessment in a process that is being led by Sir Gareth Roberts, Wolfson College, Oxford and managed by the HEFCE. The issue of minority subjects and how best to assess and support them will be considered as part of that review and more broadly in relation to the HEFCE’s proposed funding for enhancing capability.

1.5 We recommend that the BBSRC should reconsider its decision not to award academic analogue status to Royal Botanic Gardens, Edinburgh and Kew.

11. At its July meeting, the BBSRC Council considered the background to, and procedures used by BBSRC in defining organisations as academic analogues eligible for responsive-mode funding from BBSRC. The Council agreed that the awarding of such status to organisations that enhance and extend the science base in biotechnology and the biological sciences should be the responsibility of Council, and that status should be reviewed biennially. Specifically, it agreed that the Royal Botanic Gardens Kew and Edinburgh should be eligible for responsive-mode funding when this was for a joint project in collaboration with an already eligible institution, such as a university or BBSRC institute. The Council regarded this as the appropriate way for the unique expertise in the institutions concerned to be made available to the existing wider science base.

1.6 We recommend that the systematic biology community, especially via the Systematics Association and the Linnaean Society, should continue to increase efforts to demonstrate the relevance and importance of systematic biology. This should have the effect both of improving its profile to funding bodies and of making it more attractive to potential professional taxonomists and volunteers. We also hope that systematic biologists who are

members of learned societies, such as the Institute of Biology and the Royal Society, will use their influence to promote the discipline.

12. The Government supports this recommendation.

1.7 We recommend that the United Kingdom should take the lead and propose to the Global Biodiversity Information Facility (GBIF) that GBIF run a pilot with some priority species to form the basis of a trial for Professor Godfray's suggestion of making taxonomy primarily digitised and web-based. A trial would demonstrate the benefits and pit-falls of this approach before implementing it more widely.

13. The Government supports the work of the Global Information Biodiversity Facility (GBIF). The UK has been involved in GBIF since its inception and became a full voting participant in September 2001. It is clear that the digitisation of taxonomy will be an important factor in achieving GBIF's goal of making the world's biodiversity data freely available, and resulting in the utilisation of the data by a wider range of disciplines. As such, GBIF has already identified the digitisation of biodiversity data, including taxonomic data, as one priority in achieving its goal. In support of this, GBIF's work programme includes initiating additional digitisation efforts, following a review of existing technologies and digitisation efforts. The "Catalogue of Life"; a joint initiative between the UK-based Species 2000 and North America's Integrated Taxonomic Information System will also contribute to the GBIF work programme. This aims to create a unified catalogue of the 1.75 million known species of living organisms on earth.

14. The Government agrees with the Committee that new approaches to digitising taxonomy to make it more accessible through the world wide web should be piloted. In the light of Professor Godfray's recommendation, the UK successfully promoted a pilot project at the recent Governing Board meeting to demonstrate GBIF's practical value and usage to the wider conservation community within a meaningful timeframe. We agree with Professor Godfray that this should be limited in scope, and believe that the pilot needs to be focussed on a restricted group of species or one ecosystem. The pilot now forms part of GBIF's two-year work programme. The digitisation of a particular group of species will be a core component of this pilot.

1.8 We recommend that DEFRA should take the lead in setting up a body with the express purpose of bringing together representatives from Government departments, ecologists and conservationists and the systematic biology community, including those based at museums, universities and other institutions. DEFRA should provide funding for administrative support in the early stages, although we envisage that the body should eventually seek to become self-financing with all participants making a small contribution to running costs. The body's main remit would be to:

(a) identify priority areas of biodiversity for which taxonomic research is most needed by the conservation community, and for other national purposes, such as health and agriculture.

Additional remits would be to:

(b) assess the taxonomic impediment to conservation action – specifically to analyse the shortage of taxonomic specialists and gaps in taxonomic data;

(c) campaign for resources for taxonomists researching in those priority areas.

15. The Government broadly accepts this recommendation and will be working with interested organisations to take it forward. The Government believes that the initial task of such a body should be to develop an overall strategic view of priorities for UK systematics policy within a clearly defined timescale, perhaps eighteen months to two years. At that stage, it may be appropriate for Government to step back. Responsibility for articulating the needs of UK systematics should primarily be the responsibility of the systematics community itself. In any event, it is not appropriate for the Government to participate in campaigns for additional resources for taxonomists. Defra plans to convene a meeting with interested parties next year to decide the next steps.

1.9 We recommend that the current level of spending on the Darwin Initiative, approximately £3 million per annum, should be earmarked specifically for projects with a

significant taxonomic component, to be used for conservation purposes. This would be used to help build taxonomic capacity in developing countries and should include projects to digitise UK systematics collections. Any additional funds to the Darwin Initiative beyond this core could have a wider remit to include projects with a major focus on development issues or poverty alleviation.

16. The Government welcomes the Committee's recognition of the role of the Darwin Initiative in furthering the conservation of biodiversity. The Initiative has done a great deal to help countries rich in biodiversity but poor in resources to meet their obligations under the Convention on Biological Diversity. A considerable proportion of the £27 million already committed to projects in nearly 100 countries has supported work on systematics. The Government is proud of the record of Darwin projects in delivering benefits beyond the resources put in and in leaving a lasting legacy in host countries after Darwin funding ceases. The Government therefore agrees with the Committee that an additional injection of funds for the Initiative is deserved. For this reason, the Prime Minister announced an increase in the Darwin budget to £7 million per year by 2005. The budget will rise next year from £3 million to £4 million. The additional money will double in each of the two successive years, bringing the budget for 2004/05 to £4 million and for 2005/06 to £7 million.

17. The Secretary of State for Environment Food and Rural Affairs is advised on awards to projects and on the development of the Darwin Initiative by the Darwin Advisory Committee. The Secretary of State accepts the Committee's advice that Darwin Initiative funds should not be earmarked for systematics work. Systematics is a significant component of many projects, and the increase in the budget will mean a proportionate increase in support for systematics work. But the Committee does not believe that earmarking will help sustain the pressure for excellence that the Darwin Initiative strives to achieve.

Department for Environment, Food & Rural Affairs

December 2002