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## **JOINT NATURE CONSERVATION COMMITTEE**

### **WHAT ROLE DOES JNCC HAVE IN ENVIRONMENTAL RESEARCH?**

**Paper by Richard Ferris**

#### **1. Introduction**

- 1.1 This paper outlines the case for JNCC making greater use of environmental research, in order to provide the evidence base to support policy-relevant advice. It also identifies the need for JNCC to adopt a more proactive role in shaping and directing the research agenda in the UK (and, where appropriate, at European and global scales), through a partnership approach with the country agencies and bodies such as the Environmental Research Funders' Forum (<http://www.erff.org.uk/>).
- 1.2 Through active engagement with the research community, JNCC will be able to make more effective use of existing resources, minimising duplication of effort and improving targeting of funds; and will benefit from the greater efficiency with which science is utilised for the development of policy.

#### **2. Background**

- 2.1 JNCC's strategic objectives make clear the need for a firm evidence base underpinning our advice (Provision of Information) and the intention to take a strategic role in co-ordination, evaluation and leadership for issues affecting nature conservation (UK Co-ordination). Implicit in these objectives is the need to engage with and utilise the outputs of the wider environmental research community.
- 2.2 The need for a firm evidence base to support policy decisions is now widely recognised within the nature conservation community, with the Centre for Evidence Based Conservation (<http://www.cebc.bham.ac.uk/>) taking a lead role in developing methodologies for assessing evidence, including systematic review.
- 2.3 Drawing upon the experience and knowledge of a diffuse community of researchers and policymakers, across a wide range of disciplines - from molecular genetics to landscape ecology - and different ecosystems - terrestrial, freshwater and marine, demands a co-ordinated and integrated approach. Forums such as the Environmental Research Funders' Forum and groups such as the UK Biodiversity Research Advisory Group (<http://www.ukbrag.org>) and the Global Biodiversity Sub Committee ([http://www.ukgecc.org/dvl Biodiversity.htm](http://www.ukgecc.org/dvl_Biodiversity.htm)) of the UK Global Environmental Change Committee can play an important role in sharing information and shaping the direction of environmental research.

- 2.4 UK Biodiversity Research Advisory Group and the Global Biodiversity Sub-Committee have a shared Secretariat, based within JNCC's Biodiversity Information Service, and both include representation from JNCC. This gives JNCC a unique opportunity to influence and make use of the thinking of these two bodies, through access to the extensive networks that have been developed by the Secretariat. JNCC is a corresponding member of the Environmental Research Funders' Forum, and has been invited to take a more active role through becoming a full member, which would give JNCC membership of the Environmental Research Funders' Forum Main Board. Although full membership requires an annual subscription of £10,000, this is a small cost if it yields changes in research priorities. Increasing our involvement with the Environmental Research Funders' Forum would help JNCC maintain an overview of current (and future) research funding, and allow greater engagement with major research funders<sup>1</sup>, to influence priorities. As a minor player in terms of funding environmental research, gaining access to such a community might enable JNCC to 'punch above its weight', i.e. through improvements to its influencing role.
- 2.5 The profile and use of knowledge generated by the environmental research community could be improved within JNCC, through the establishment of a research co-ordination service. For this to function effectively, widespread buy-in across all science/conservation teams will be essential. This will bring a number of added benefits - capacity building (particularly in relation to an interdisciplinary approach to environmental research), new networks within and beyond the traditional nature conservation community, engagement of external researchers with JNCC projects - which are explored in greater detail in subsequent sections of this paper.

### **3. Research co-ordination - benefits to JNCC**

- 3.1 For JNCC's access to and use of environmental research to be enhanced, a research co-ordination project is required. This will benefit JNCC in two main ways, namely: (i) bringing research into the evidence base used to support policy and decision-making, and (ii) contributing to JNCC's *Strategy for Surveillance, Reporting and Research*.
- 3.2 With wide buy-in across the organisation, such a project will be able to deliver timely, high-quality support across the full range of JNCC programmes.

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<sup>1</sup> Main members of the ERFF are: the Biotechnology and Biological Sciences Research Council (BBSRC), the Department for Environment, Food and Rural Affairs (Defra), the Department for International Development (DfID), the Department for Transport, the Environment Agency, the Engineering and Physical Sciences Research Council (EPSRC), the Economic and Social Research Council (ESRC), the Medical Research Council (MRC), the Met Office, the Natural Environment Research Council (NERC), the Scottish Executive, and the Scottish Environmental Protection Agency (SEPA). Corresponding members are: the Department of Trade and Industry (DTI), the Forestry Commission (FC), the Food Standards Agency (FSA), the Health and Safety Executive (HSE), the Welsh Assembly Government (WAG), and JNCC. Natural England have indicated their intention to become full members of the ERFF, English Nature having been a corresponding member.

- 3.3 Once established, a research co-ordination project will contribute to JNCC's work by:
- i. increasing 'knowledge gain' through review and research approaches;
  - ii. linking projects within the *Policy-relevant Information and Reporting* programme;
  - iii. encouraging communication between programmes, and promoting cross-sectoral thinking;
  - iv. improving engagement of key internal and external stakeholders, and building a broad science-policy network;
  - v. responding to JNCC's needs, addressing the major pressures on UK biodiversity in a proactive manner; and
  - vi. helping to refine and improve programme targets.

#### **4. Research Co-ordination - benefits beyond JNCC**

- 4.1 By taking a more active role in using and shaping environmental research, JNCC will be in a stronger position to meet its Mission, as laid out in *JNCC's Vision and Strategy*. In particular, the organisation will be better placed to:
- i. provide advice based on a sound understanding of the science of nature conservation;
  - ii. optimise the collection, management and sharing of environmental information; and
  - iii. facilitate (and contribute to) partnership working between stakeholders in the environment.
- 4.2 The establishment of a research co-ordination project is particularly timely with respect to the developing research strategies of the country agencies, notably Natural England and SNH. As recognised in SNH's *Research and Development Strategy 2007-2012*, the scope of biodiversity related research is considerable, necessitating co-ordination of effort across the research agencies and institutions.
- 4.3 While it is entirely appropriate for JNCC to take on a co-ordination role in partnership with each of the country agencies (without constraining the development of their own research strategies), the priority has to be to meet JNCC's requirements. The continued operation of each of the inter-agency groups will remain unaffected by any new research co-ordination activity, and it can be anticipated that they will play an important role in providing an interface between the environmental research community and nature conservation practitioners.

- 4.4 JNCC's staff address a wide range of nature conservation issues, across all ecosystems, and operate at national and international scales. As such they have considerable expertise to share with the wider community. In addition, their role as 'translators' of research (into policy advice), places JNCC staff in an important and well-informed position when it comes to identifying policy-relevant research needs.

## **5. Exploiting existing mechanisms**

- 5.1 For the period 2003-2006, the UK Biodiversity Research Advisory Group operated by way of a Service Level Agreement known as Co-ordination of Biodiversity Research Activity between Defra and JNCC; the Global Biodiversity Sub-Committee was added to this Agreement in 2005. JNCC has provided the secretariat for UK Biodiversity Research Advisory Group throughout this period, acting in an independent role to support the research needs of the UK Biodiversity Action Plan in its widest sense; and has performed the same function for UK engagement with global biodiversity issues through the Global Biodiversity Sub-Committee. From April 2007, this secretariat role has been delivered via the Grant in aid settlement, as part of the corporate plan, without a separate service level agreement. Such an approach gives JNCC much more flexibility about how the service is delivered.
- 5.2 Both UK Biodiversity Research Advisory Group and the Global Biodiversity Sub-Committee have established memberships, comprising Research Councils, Defra, Department for International Development, Foreign and Commonwealth Office, Scottish Executive, Welsh Assembly Government, Scottish Environment Protection Agency, Royal Botanic Gardens Kew, Royal Botanic Garden Edinburgh, Forestry Commission, Forest Research, British Ecological Society, country agencies, and number of academic institutions. In addition, specialist sub-groups have been established to address specific themes, extending the network of influence exerted by each group.
- 5.3 The Environmental Research Funders' Forum exists as a focus group, comprising the UK's major public sector sponsors of environmental science. It brings together the main UK public bodies which fund or use environmental science, alongside members of the science community, in order to maximise the coherence and effectiveness of UK environmental sciences funding.
- 5.4 Although instigated by Defra, both UK Biodiversity Research Advisory Group and the Global Biodiversity Sub-Committee exist to meet the needs of the wider biodiversity research community (funders, researchers, and users, addressing biodiversity issues at national/European and global scales, respectively). The same is true of the Environmental Research Funders' Forum, which operates independently of Natural Environment Research Council (who host the Environmental Research Funders' Forum Secretariat). Therefore, opportunities exist to make fuller use of the thinking and outputs of these various bodies, in order to meet JNCC's strategic objectives. Conversely, they also present an opportunity for JNCC to influence funding and research priorities of a wide stakeholder community.

- 5.5 Increasing JNCC's engagement with UK Biodiversity Research Advisory Group, the Global Biodiversity Sub-Committee and the Environmental Research Funders' Forum, places a greater demand on those individuals responsible for representing the organisation. With existing commitments, it is unlikely that increasing their engagement could be achieved. It is recommended that a wider range of JNCC staff should become involved with research co-ordination activities as part of their overall responsibilities. It should be emphasised that this does not need to be a major commitment.
- 5.6 In addition to these mechanisms, JNCC should formalise links with the Centre for Evidence Board Conservation (see paragraph 2.2), in order to trial systematic review methods for the key issues within different policy advice areas. To date, there has been only limited engagement with this approach to developing an evidence-base for JNCC's advice.
- 5.7 There are likely to be benefits from a strengthening of engagement with the European Platform for Biodiversity Research Strategy<sup>2</sup> (<http://www.epbrs.org/>), as well as the European Commission's Research Directorate-General (in order to contribute to and utilise the outputs from Framework Programme 7).

## 6. Establishing new mechanisms

- 6.1 The experience gained through provision of the secretariat for both UK Biodiversity Research Advisory Group and the Global Biodiversity Sub-Committee can be applied to meeting the need for an evidence base to support JNCC's advice, and a dedicated team is already in place to coordinate this work.
- 6.2 By establishing a central focal point within JNCC, it will be possible to:
- i. provide staff with a 'one-stop shop' for information on research, to ensure consistency in approach and avoid duplication of effort;
  - ii. pull together the network of research contacts that are already in use by particular teams and individuals;
  - iii. coordinate production of research reviews, syntheses and policy summaries, and
  - iv. maintain a research presence on the JNCC website (to some extent this has already been achieved through UK Biodiversity Research Advisory Group), including a catalogue of experts.
- 6.3 At present, most JNCC staff derive their own way of achieving the interpretation of research that is required for their own area of work, since there are few formal procedures in place to assist them. Therefore, the key roles of any new mechanism will be to identify JNCC's research needs and decide

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<sup>2</sup> EPBRS is a forum for scientists and policymakers, to ensure that research contributes to halting the loss of biodiversity by 2010. Each of the Member States is represented at EPBRS meetings, which take place twice per year. UK BRAG acts as the National Platform for biodiversity research in the UK.

when and how we get others to undertake research. A lack of 'in-house' expertise and/or resources is likely to make this necessary.

- 6.4 There are three important strands to this work, to:
- i. establish what research is being undertaken (and required) in-house by JNCC staff, through their own projects and programmes;
  - ii. identify JNCC's research priorities (e.g. through an assessment of the *Corporate Plan 2005-2008* and the *Draft Strategy for Surveillance, Reporting and Research*) and determine how these fit in with existing research, and
  - iii. working through the JNCC Science Group, identify which research will give the most effective gains for nature conservation. Members of the Science Group could usefully act as the interface between the focal point and their advisory teams.

## 7. Identifying Thematic Priorities

- 7.1 The cross-cutting themes addressed by UK Biodiversity Research Advisory Group - the impact of introduced species; habitat and ecosystem management, the role of biodiversity in ecosystem function, conservation of genetic and native species diversity, monitoring of biodiversity and evaluation of actions, developing tools to optimise policies to favour biodiversity, socio-economic issues, climate change and adaptation - have been identified by the Biodiversity Research Working Group in the report *Science in Action for Biodiversity*<sup>3</sup>; and as a result of emerging priorities identified by UK Biodiversity Research Advisory Group.
- 7.2 Whether these themes remain the most relevant is open to debate, and there may be benefits from revisiting them. Through the detailed analyses undertaken by specialist sub-groups of UK Biodiversity Research Advisory Group, new areas for research have been identified; and the emergence of interdisciplinary approaches, integrating natural sciences, social sciences and environmental economics, make this a particularly important avenue for further exploration. However, there should be no presumption against entirely new themes emerging from consultation within JNCC or, indeed, from external stakeholders.
- 7.3 Working in partnership with UK Biodiversity Research Advisory Group and the Global Biodiversity Sub-Committee to identify priorities for research has the advantage that these are both established networks, representing a wide range of stakeholders. Although the country agencies are represented on UK Biodiversity Research Advisory Group, there are likely to be benefits from establishing a closer working relationship between the focal point and their Scientific Advisory Groups.

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<sup>3</sup> *Science in Action for Biodiversity: a report of the Biodiversity Research Working Group, 1998-2001*, was published by Defra (2001), and was used as the basis for much of the subsequent work of UK BRAG.

- 7.4 Opportunities exist for novel approaches such as brainstorming workshops, as used successfully by the British Ecological Society, e.g. 'The identification of 100 ecological questions of high policy relevance in the UK'<sup>4</sup>; and JNCC could use the *Conservation Challenge* series<sup>5</sup> to stimulate discussion among the wider environmental research community.
- 7.5 It is important that JNCC anticipates future information needs, e.g. through the use of horizon-scanning approaches, and learns from past experiences, taking a backward look, e.g. using European Commission Impact Assessments.

## 8. Challenges to be overcome

- 8.1 The overall aim of a research co-ordination project is to lever research into the evidence base used by JNCC. For JNCC to **make better use of specialised knowledge**, it needs to:
- i. raise awareness of what it needs to know, both now and in the future;
  - ii. identify the experts and innovators in the field (characterising the UK environmental research landscape - work by the Environmental Research Funders' Forum can help to inform this); and
  - iii. interpret and translate this knowledge to provide information.
- 8.2 There is pressure on researchers to focus on novel findings within a narrow field, publish in academic journals, and seek additional funding. **Incentives for researchers to engage in policy-relevant work** are needed. JNCC can help to:
- i. engage researchers with the policymaking, advice and implementation processes (JNCC staff need to establish effective working relationships with the environmental research community);
  - ii. engage the wider nature conservation community to create a demand for this collaboration (e.g. through shared provision of funding for research contracts); and
  - iii. create appropriate reward structures, including opportunities for publication. This needs to include peer-reviewed journals, in addition to JNCC reports. Recognising this, JNCC should act as an advocate for the inclusion of policy-relevant science in existing journals such as *Biological Conservation* and *Journal of Applied Ecology*; and could exploit the opportunity to suggest topics for publication via the British Ecological Society *Ecological Issues* series.

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<sup>4</sup> The identification of 100 ecological questions of high policy relevance in the UK, by Sutherland et al. (2006), was published in the *Journal of Applied Ecology*, **43** (4), 617-627. It resulted from a two-day workshop at which policy-makers and academics prioritised a long list of more than 1,000 questions, generated by 28 organisations involved in conservation policy, and 10 academic institutions.

<sup>5</sup> The *Conservation Challenge* series, published by JNCC, was launched with the publication of *Ideas for a UK nature conservation framework* by Malcolm Vincent (2006). Conservation Challenge No.1. JNCC, Peterborough 2006.

- 8.3 JNCC does not commission a large amount of research, and is more likely to make use of work commissioned by other funders. However, the **funding of environmental research in the UK** is of importance to JNCC and others involved in nature conservation, and thought needs to be given to how the organisation can influence the levels and direction of funding. Useful actions should include:
- i. maintaining an overview of current (and future) research funding. This would include:
    - a. identification of key areas of policy relevance for which research is required;
    - b. identification of mismatches in funding provision and needs for support to policy;
    - c. undertaking horizon scanning activities to identify future growth areas;
  - ii. taking a more active role in the Environmental Research Funders' Forum (i.e. becoming a full member), and promoting the public service benefits of research in relation to nature conservation;
  - iii. inviting external research programme managers to work alongside JNCC staff, and direct collaborations with researchers;
  - iv. contributing to consultations on research priorities of major funders such as the Research Councils, and lobbying for redirection of research funds;
  - v. looking for opportunities to share funding of research priorities, and brokering funding partnerships.

## 9. Conclusions and Next Steps

- 9.1 JNCC is well-placed to play an important role in the co-ordination of environmental research in the UK (specifically in relation to the conservation of biodiversity and geodiversity), making use of the secretariat function it performs for both UK Biodiversity Research Advisory Group and the Global Biodiversity Sub-Committee.
- 9.2 As a minor player in funding research, JNCC can be viewed as occupying a neutral position. The organisation is well-regarded and has many of the networks in place which will be needed to make a success of a research co-ordination role.
- 9.3 There are numerous benefits to JNCC and the wider nature conservation community resulting from this, e.g. making more effective use of existing resources, and improving the efficiency with which science is utilised for the development of policy.

- 9.4 As a consequence of both UK Biodiversity Research Advisory Group and Global Biodiversity Sub-Committee being delivered via the agreed Grant in aid settlement, JNCC now 'owns' this research co-ordination role. This ownership gives the organisation an opportunity to:
- i. establish itself as a focal point for identification and prioritisation of environmental research (more specifically, research in support of nature conservation policy); and
  - ii. make better use of the knowledge and expertise available in the research community, to inform and strengthen the evidence-base to support JNCC's advisory function.
- 9.5 In the first year of this work, the following activities stand out as priorities:
- i. identify key areas of policy relevance for which research is needed;
  - ii. undertake horizon scanning activities to identify future growth areas;
  - iii. establish what research is being undertaken in-house by JNCC staff, through their own work project and programmes;
  - iv. identify JNCC's research priorities, and determine how these fit in with existing research;
  - v. raise awareness, both within JNCC and externally, of what we need to know, both now and in the future;
  - vi. assess current sources of information to support JNCC's evidence-base, including existing networks, and identify gaps in knowledge and expertise;
  - vii. utilise existing research networks through UK Biodiversity Research Advisory Group and the Global Biodiversity Sub-Committee to address these gaps;
  - viii. where necessary, identify additional experts and innovators in their field, in order to begin development of new networks with the research community;
  - ix. formalise links with the Centre for Evidence Based Conservation (in order to trial systematic review methods for key issues within different policy advice areas); and
  - x. raise awareness, within JNCC and externally, of the research co-ordination project, including the establishment of a prominent web-based presence.