



British Ecological Society

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Sir John O'Reilly FREng
Director General, Knowledge and Innovation
Department for Business and Skills
1 Victoria Street
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17 May 2013

Dear Sir John,

Science, research and innovation funding priorities: request for views

I write on behalf of the British Ecological Society (BES) in response to your consultation on strategic priorities for science and research funding for the financial year 2015/16.

The British Ecological Society is the UK's learned society for the science of ecology, and is the oldest such organization in world. Our membership comprises over 4,000 ecologists worldwide, including those working at the country's top research institutions, and our centenary membership drive in 2013 aims to expand our membership base further.

The BES is pleased to respond as a stakeholder on this topic. Our comments focus on the unique character of ecological research and the need to construct criteria for determining priorities carefully to ensure that ecology is not inadvertently disadvantaged.

In general, the criteria developed for the prioritization of science and research funding in 2010 continue to be valid, and we are particularly keen to see investment in the next generation of researchers recognized as an ongoing priority. Nevertheless, this support for the 2010 criteria should be taken in the context of the specific comments below regarding how the criteria are interpreted:

1. Contribution to economic growth

It is natural to aim to maximize the contribution of the research base to economic growth, but in doing so it is essential to consider also the extent to which science research contributes to the

avoidance of costs to the public purse. The costs avoided due to environmental science are well documented,¹ and examples of suitable investment to avoid later costs would include flood estimation, understanding overexploitation of fish, tree health, and the impacts of climate change. The cost of inaction through lack of evidence will always be greater here than the costs of investment in the relevant research. Without including this aspect in the exercise there is a risk any that growth will be outweighed by costs to society that could otherwise be avoided, and we can only support 'contribution to economic growth' as a criterion if it is interpreted in this way.

Similarly, the 2010 criterion relating to 'national capability to support government departments that deal with crises such as foot and mouth disease and extreme weather events' must be interpreted to include prediction of future vulnerability to such crises through understanding how to protect the ecosystem, not just responsive work when a crisis emerges. As in the field of public health, prevention is much better than cure, and a prioritization exercise must recognize this.

Moreover, it is important not to measure economic growth merely in terms of short-term increases in GDP. Growth should be characterized by long-term sustainability and economic prosperity; the government's Natural Capital Committee² notes that 'there is a danger that short-term decisions based solely on what is currently measured by national accounts may prove to be costly in the long-term'³. The concept of Natural Capital, in the sense of the environment being a national asset from which we derive benefits, is rooted in the idea that understanding and preserving this capital is an essential part of sustainable economic growth. Ecological research can be considered to be an important part of this picture, which makes continued investment a prerequisite for economic prosperity – again, this facet needs to be incorporated within the assessment criteria to avoid future costs.

It should also be noted that economic impacts can go undocumented if the effect is small at the level of the individual making use of knowledge from ecological research, but the total effect across the country can still be very large. For instance, evidence relating to the means by which farmers provide nectar for pollinators could make a relatively small difference to the individual farmer; this information would be too small to be recorded, but when the advice is implemented nationally the impact is significant. Thus, the assessment of contribution to economic wellbeing should also reflect the possibility of saving a large number of people a small amount of money each, despite there being no conspicuous sales of a 'widget' to record.

Finally, we note that ecological research can have social as well as economic impacts – particularly given the evidence for the improvement of human health through access to nature. The boundaries between social and economic effects are fuzzy – in this case, better health also means less expenditure on healthcare – but the two should be considered together.

2. Supporting national objectives

Ecological research is making a significant contribution to the understanding of 'ecosystem services' – the services that the natural environment provides essentially for free – and the need to value these appropriately. This approach lies at the heart of the Natural Environment White Paper⁴, which

¹ See, for instance *Economic Benefits of Environmental Science*, NERC (2006) available from http://www.nerc.ac.uk/publications/corporate/documents/economic_benefits_report.pdf

² <http://www.defra.gov.uk/naturalcapitalcommittee/>

³ <http://www.defra.gov.uk/naturalcapitalcommittee/files/State-of-Natural-Capital-Report-2013.pdf>

⁴ *The Natural Choice: Securing the value of nature*, TSO (2011) <http://www.official-documents.gov.uk/document/cm80/8082/8082.pdf>

itself draws on the Lawton review of nature⁵ and the National Ecosystem Assessment⁶, and demonstrates the political importance of this area of research. An understanding of ecosystem services includes an appreciation of their contribution to UK health, wellbeing, and quality of life, which links to national objectives through the National Wellbeing Programme⁷. The assessment of contribution to national objectives should be interpreted to include this.

3. Challenges for the science and research budget

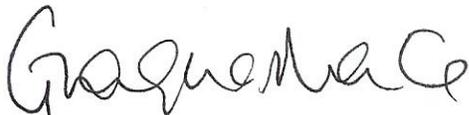
Sustainable growth will rely on careful management of environmental resources, and this needs to be informed by science. There are also new opportunities to be realized from good environmental science, e.g. helping farmers to plan for changing or more variable climate in the future, and preparing to avoid impacts of future tree diseases that we know will recur in the decades ahead. Ultimately, science-based knowledge and understanding leads to prosperity and security, even if the immediate products are hard to identify.

4. Cross-Council research into strategic and national challenges

We strongly support the coordinating role that programmes such as LWEC⁸ and RELU⁹ play in terms of bringing together relevant disciplines to address national challenges – particularly in the multidisciplinary area of ecology and environmental change. Without this coordination, there would inevitably be gaps and overlaps in both research and policy. The significance of such programmes is increased with current pressures on public expenditure, and further investment in joining up areas of work in this way would be justified.

We look forward to contributing further as the outcomes of the Spending Review become clear, and would be pleased to expand on any of the points above as needed.

Yours sincerely



Professor Georgina Mace FRS
President
British Ecological Society

⁵ *Making Space for Nature*, Lawton (2010) <http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

⁶ <http://uknea.unep-wcmc.org/>

⁷ <https://www.gov.uk/government/publications/national-wellbeing>

⁸ <http://www.lwec.org.uk/>

⁹ <http://www.relu.ac.uk/>