

A UK Cooperative Research Partnership in Freshwater Ecology

- turning concept into reality

Consultation on the practicalities of establishing and running a CRP

1. Background

Major decisions and investments are being made in the UK that seek to protect freshwater ecosystems from damage by human activities, largely resulting from key policy drivers such as the EC Water Framework Directive and the EC Habitats and Species Directive. In the water industry alone, investments in improvements to effluent treatment run to many hundreds of millions of pounds through the period 2005-2010 but, our current lack of understanding of the responses of freshwater communities to these improvements makes predictions of the ecological outcomes uncertain.

In contrast, very little money is being invested in science to underpin these decisions and investments. A recent review (1) concluded that freshwater biological and ecological research in the UK has undergone a major decline over the past 2 decades, seriously impairing our ability to provide the scientific support needed. The research budgets available to the relevant research organisations has dwindled and/or been redirected.

There is a misconception that we know enough about freshwater science to manage freshwater ecosystems with confidence, yet we remain unable to predict the effects of many human pressures on our freshwater ecosystems. For instance, our understanding of the effects of climate change on freshwater habitats, the processes underlying riverine eutrophication, the links between biological communities, hydrology and geomorphology and the impacts of enhanced fine sediment delivery to watercourses remains rudimentary. Recent attempts under the Water Framework Directive to improve our knowledge base have focused on identifying broad correlations between stresses and biological status amidst a host of confounding factors, not least of which is the emerging problem of climate change. Although we have a very rich historical background in freshwater science, our understanding of ecological processes has not advanced rapidly enough to meet our management requirements and the need is now urgent.

A Cooperative Research Partnership in Freshwater Ecology (CRP-FWE) has been proposed (1), which would bring UK researchers and research users/funders together to develop and fund strategic (medium-to-long-term) projects that: 1) allow robust underpinning of environmental management decisions; 2) make the best use of available resources; and 3) rebuild the UK's strength in freshwater ecology.

The CRP would provide a mechanism to identify science requirements, prioritise them and resource them. In this respect, the science requirements of stakeholders are likely to be wide ranging and the CRP cannot be expected to achieve everything at once. The CRP will provide a forum for stakeholders and scientists to meet to identify synergistic research outputs that provide most effective input to policy requirements.

The proposal for a CRP is based on the model of Cooperative Research Centres in Australia (1). In this model, stakeholders and scientists make resources available which are then used to undertake the appropriate science to achieve the agreed priority objectives. The funding structure of the CRP is a critical issue – it needs to be sufficiently flexible to facilitate the

development of research projects, but provide sufficient accountability to those contributing resources. Encouraging investment in training, including post graduate research, is an important element in helping to build a new science base.

2. Purpose of this consultation

This consultation is intended to allow all those with an interest in freshwater ecological science to have an input into the development of the CRP, considering what it might do, how it would be structured, how it would be financed, how we build a community of researchers and research users and how the crucial communication between researchers and research users would be assured. Following the consultation, a business case will be prepared to secure the necessary resources.

3. Consultation questions

The principal questions we are asking are set out below.

1. Do you agree that a CRP in freshwater ecology is a good idea?

If you don't agree, how else do you think the decline in freshwater ecological research can be reversed and detailed science underpinning of management decisions in the freshwater environment be improved?

2. What do you think are the key science questions the CRP should address?

Battarbee et al. (1) provided a list of key research areas drawn from the freshwater research community. A framework for considering different research areas within the CRP has since been generated (2), including a suggested way of structuring research projects to help ensure that they feed into future freshwater management.

3. What do you think the disciplinary scope of the CRP should be?

The core of the CRP relates to biological and ecological research, but there are many scientific disciplines that have close associations and with which the CRP requires strong engagement, e.g. environmental chemistry, hydrology, fluvial geomorphology.

4. How do you think the CRP should be resourced /financed and structured?

There are many possible resource/ funding models for a CRP. A research programme could be funded purely from subscriptions if these were large enough. Alternatively, small subscriptions could fund the development of common interest research proposals (e.g. through short post-doctorate appointments), that are then separately funded by a combination of CRP members and other sources (e.g. NERC responsive mode funding streams, European R&D programmes etc). In terms of CRP structure, does the CRP require a 'centre of gravity'

to provide momentum and coordination and ensure smooth running? If so where should this reside?

5. What do you think are the main obstacles to establishing an effective CRP?

For instance, there may be concerns over intellectual property rights on research ideas and designs and lack of confidence that efforts will be rewarded with project funds - this may inhibit engagement.

6. How do you think these obstacles could best be overcome?

Any ideas you have may increase the strength of the case for the CRP.

7. What would it take for you/your organisation/business to join the CRP?

References

These and other documents can be downloaded from: <http://www.fba.org.uk/index/CRP.html>

1. Battarbee, R. W. *et al.* (2006) A Review of Freshwater Ecology in the UK. Report coordinated by the FBA and CEH.
2. Mainstone, C.P and Brierley, B. (2007) Proposed R&D framework for the Freshwater Cooperative Research Partnership.