

OPPORTUNITY FOR NERC POLICY PLACEMENT FELLOWSHIP IN THE ENVIRONMENT AGENCY

TITLE OF PROJECT; UNDERSTANDING THE IMPACTS OF WATER ABSTRACTION AND RIVER FLOWS ON AQUATIC ECOLOGY

The Natural Environment Research Council (NERC) and the Environment Agency (EA), welcome applications for a temporary specialist **Fellow** to work with the Environment Agency based in its Bristol offices at Horizon House, Deanery Road, BS1 5AH, for a period of 12 months, on a full time basis (although part time working will be considered).

The post is being offered as part of the [NERC Policy Placement Fellowship scheme](#) aimed at supporting the science to policy process and improved science evidence for UK policy, enabling environmental scientists to spend time within a partner organisation to undertake policy-relevant research and to develop the research skills of partner employees.

The post holder will also interact on a regular basis with NERC science managers, theme leaders for the “Sustainable Use of Natural Resources” and “Natural Hazards” themes and the NERC Knowledge exchange team. The placement will be jointly funded by NERC and the Environment Agency, and whilst based at the Environment Agency, the Fellow will remain officially employed by his/her institution. The fellowship will cover salary cost (see guidance notes for details) and arrangements will be made to cover travel and subsistence expenses on a case-by-case basis.

Closing date for applications: Friday 14th October 2011

Interviews will be held on: Friday 21st October 2011

For application form and guidance notes please see:

<http://www.nerc.ac.uk/using/publicsector/fellowship.asp>

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Job purpose and description

Increasing pressures on water resources mean we will need greater flexibility in the way water is allocated in the future. We need to explore alternative ways of allocating water to protect the environment in the face of climate change and population growth. The Environment Agency is also required to address unsustainable abstraction, and provide a reasonable level of stability and minimise costs to business.

Hydrology is a supporting element for “Good Ecological Status” (GES) in water bodies, an objective of the Water Framework Directive, and in some situations flow may be the limiting factor for biology. The Environment Agency uses an environmental flow indicator (EFI) to inform abstraction licensing, based on agreed UK flow standards, to indicate how much water needs to be left in the environment. EFI is also used as an indicator to show where flow may not support good ecological status and measures may be needed to address this.

Policy driver and legislation

EU Member States are required by the Water Framework Directive to aim to achieve “Good Ecological Status” of water bodies by 2015. GES is measured through biological quality elements such as fish, macrophytes, and diatoms, and it is achieved by ensuring that human activities have minimal impact on the biological quality of a water body.

Much of this work will also be relevant to the Water White paper which is due to be published in December 2011. The Water White paper will focus on securing sustainable water supplies, and modernising the current regulatory system. This will enable us to respond to pressures from climate change and to limit the risks of a growing supply-demand gap and increasing environmental damage.

Objectives

The purpose of this fellowship is to support the Environment Agency’s work on dealing with water abstraction and other flow regulation pressures which lead to failure to achieve Water Framework Directive requirements. It will also help to set the scene to meet future water abstraction challenges, such as the effects of climate change on future licensing policy.

The Environment Agency seeks to enhance the hydroecological evidence base in a number of areas, and the objectives of this fellowship are:

- To improve the EFI and the evidence base which supports this tool;
- To develop the Agency’s ability to monitor, model and assess the ecological consequences of abstraction pressure;
- To understand the relationship with other pressures, such as habitat modification, and how to gain the best environmental outcome from management interventions.

Key activities will be to:

- Review the technical evidence base for the EFI and identify where it can be strengthened using current science. This work will need to link to our regulatory process and the way we manage abstraction impacts through flow constraints.
- Propose recommendations for investigative monitoring which can underpin decisions on abstraction pressures. We need a clear, evidence based view on monitoring, data and modelling techniques which can support operational decisions.
- Analyse novel techniques and existing tools to identify how they can be adapted for wider use or developed to support investigations; advise on best practice; and provide recommendations for future enhancement of current tools.
- Engage with other organisations to look at the management of regulated flows and ecological indicators of abstraction pressures. Advise how we can use this work to support hydroecological decision making.
- Input to discussions on differences in ecological sensitivities to abstraction between rivers, and make evidence-based recommendations on how these could be assessed.

- Lead discussions on the strengths and weaknesses of WFD classification and supporting tools for incorporating flow into the assessment of status, and work with others to propose options for future direction.

Skills/expertise required

The successful candidate will:

- be a post-doctoral biologist, ecologist or hydromorphologist with a broad understanding of the impacts of water abstraction and flow pressures on biological systems
- have a strong academic and research network
- be able to demonstrate a proven ability to address complex problems and suggest solutions
- be an effective communicator
- have an ability to build on existing approaches and work with practitioners to develop applied solutions

Timescales for delivery of the work.

This placement is for 12 months on a full time basis, although part time working will be considered. Ideally work will commence November 2011.

Background

The Environment Agency is an Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs and a Welsh Government Sponsored Body responsible to the Minister for Environment and Sustainable Development. Its principal aims are to protect and improve the environment, and to promote sustainable development. The Environment Agency plays a central role in delivering the environmental priorities of central government and the Welsh Government through its functions and roles. Science and technology play a vital role in the work of the Environment Agency in providing key information, advice, tools and techniques to support its policies and work in protecting and improving the environment.

NERC funds world-class science in universities and research centres that increases knowledge and understanding of the natural world, through independent research and training in the environmental sciences. NERC's current strategy defines seven themes under which its science will be delivered: climate system, biodiversity, sustainable use of natural resources, earth system science, natural hazards, environment pollution and human health, and technologies. NERC interacts and works regularly with a wide range of stakeholders, including policy-makers, to support the science to policy process and help develop appropriate ways to address environment issues.