

English Nature Research Report 619

Development of eco-hydrological guidelines for wet woodland - Phase 1

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Introduction

Many European Sites and Sites of Special Scientific Interest support habitat types which have some dependency on water resources, although our understanding of the specific eco-hydrological requirements of these habitats is often limited. A collaboration between English Nature, the Countryside Council for Wales and the Environment Agency is progressing a programme of work to further our understanding of the eco-hydrology of a range of such habitats. Work initially focussed on mire and wet grassland habitats and developed an approach to conceptualising water requirements termed the 'Wetland Framework'. Having recognised the value of this approach for other wet habitats, this report presents the results of a review of the eco-hydrological requirements of wet woodland habitats, and where possible gives 'interim' advice for establishing eco-hydrological guidelines to assist casework.

What was done

English Nature in partnership with the Countryside Council for Wales commissioned a review and evaluation of information on the eco-hydrology of residual alluvial forest and bog woodland in Britain in order to assess how far it is currently possible to identify their water supply mechanisms and preferred regimes for water and nutrients. There were three main elements of the work:

1. A review of published and unpublished eco-hydrological information on wet woodlands
2. A critical evaluation of the reviewed information
3. Development of a preliminary conceptual framework for 'how wet woodlands work'.

A subsequent case study applied the findings to an alluvial forest site and made recommendations for the development of site specific advice.

Results and conclusions

The review provides a description of wet woodland NVC types and their eco-hydrological requirements. An assessment of the distribution, nature and classification of wet woodlands in the UK follows, with information on specific hydrological and nutrient requirements of key component species.

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The adequacy of available literature for setting robust eco-hydrological targets is addressed, starting with an evaluation of the knowledge base regarding floristic composition, distribution, landscape setting and substratum type for each habitat. A series of conceptual models are then developed to describe current understanding of the main water supply mechanisms that underpin different wet woodland types. The extent of knowledge on specific water, nutrient and management regimes is considered, including an assessment of vulnerability to eco-hydrological change.

A case study of Hurcott and Podmore Pools SSSI is presented as an Appendix. The outputs of the phase 1 work are assessed as material that can be drawn upon to develop site-specific recommendations for the eco-hydrological regime and management for conservation purposes. A generic methodology is outlined.

English Nature's viewpoint

The review represents the first step in establishing robust eco-hydrological guidelines for wet woodland habitats. The use of a case study has been invaluable to test the application of the report findings, and the generic methodology suggested will be useful as a framework for the provision of advice in the absence of more quantitative data. Further research is needed to develop robust eco-hydrological guidelines, and this report will be useful to steer the direction of future work.

Selected references

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Further information

For the full report or other publications on this subject, please contact the Enquiry Service on 01733 455100/101/102 or email enquiries@english-nature.org.uk

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