

English Nature Research Reports, No. 598

Integrated washland management for flood defence and biodiversity

Report Authors: J. Morris, T.M. Hess, D.J. Gowing, P.B. Leeds-Harrison, N. Bannister, and R.M. Vivash, RM., March 2004

Keywords: floodplain washlands, flood management,

Introduction

The purpose of the study was to review the role that floodplain washlands can play in reducing flood risks and contributing to biodiversity targets. This is in the context of a more strategic approach to flood risk management being promoted by the Government and incorporated into Environment Agency programmes through Catchment Flood Management Plans. Defra Flood Management Division co-funded the study with English Nature, and RSPB contributed via a project steering group.

What was done

The work was led by Cranfield University Institute of Water & Environment. The study developed a hydrological classification of washlands and enumerated their management requirements as receptors of flood water and as wildlife habitats. Case studies were drawn from England and Europe. Consideration was given to potential funding mechanisms, both for creation of habitats and for incentives to land managers. A questionnaire survey, followed by a workshop involving drainage engineers and conservation managers, obtained views on the desirability of washland creation and the reasons why they were not more commonly integrated into flood management schemes.

Results and conclusions

The main conflicts between washlands for flood storage, for agriculture and for biodiversity are:

- the seasonality and duration of flood-water storage: flood managers want water off the site as quickly as possible during the winter to enhance capacity for the next flood; farmers want the water levels down in spring and summer for crops and livestock; while conservation managers want standing water in winter for migratory waterfowl and a high water-table in spring for breeding waders.

continued >>>

There are variations in the requirements depending on the land use (eg woodland, extensive grassland and meadow flowers) which would be compatible with shorter duration flood storage. It is recommended that the desired land use and biodiversity is built into the location, design and construction of the washland. Furthermore, washland creation should be considered as part of a catchment-wide flood management strategy and not just as an engineered solution to a particular flooding problem.

Another conclusion was that funding streams for 'integrated' washlands (as opposed to flood defence structures, which met current cost-benefit tests) needed to be clearly established. A contribution from biodiversity funds was recommended.

English Nature's viewpoint

English Nature sees washlands as part of a more sustainable approach to flood management. In most places the natural storage capacity of river floodplains has been removed to permit intensive agriculture and urban development. This in itself has created pinch-points for flooding (usually in towns). With climate change and an increase in intensive rainfall events, it is essential that we work more with natural processes, catchment storage and more natural rivers, to reduce flood risk. Building ever higher hard defences is not sustainable; they have a key part to play, but are not the only tools we have at our disposal for reducing flood risk. The use and management of land within washlands is a key factor in determining the quality of wildlife that can result from integrated schemes.

Selected references

ENGLISH NATURE. 2004. *Action for floodplain biodiversity* (free leaflet).

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

For further information about the work of English Nature, please visit our website at: www.english-nature.org.uk