Research Information Note

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Flood defence standards for designated sites

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Introduction

Flood risk management on coasts and estuaries can impact conservation sites. Recent practice has often been to provide a high standard of protection. The present guidance in Flood and Coastal Defence PAG3 suggests a standard of 50 – 200 years for international sites. However many sites have developed their current conservation interest with a history of regular or intermittent flooding such that a high standard of protection may not be appropriate. English Nature recognises the need to advise on appropriate standards of defence based on the conservation objectives for a particular site, but there is little information relating to 'what standards may be appropriate'. This issue is of particular importance for those sites where the sole justification for the scheme is the site's status as a Natura 2000 site.

What was done

English Nature commissioned a report to assist staff in making informed decisions regarding 'appropriate' standards of flood defence for designated sites on the coast and tidal rivers.

The report
- introduces standards of defence & reviews 'appropriate' standards;
- provides generic guidance & applies to a series of cast studies;
- provides information on the recovery of species after flooding;
- suggests further studies that are required.

A literature review was also undertaken but little information of relevance was found.

Results and conclusions

The report recommends using the 'do-nothing' option (no active intervention) as the base-line case against which all other options are compared.

A flood defence strategy (if available) should provide a detailed description of what may happen under the do-nothing option and provide a useful indication of which features could be affected. If the do-nothing option is expected to cause changes to the site that are not considered acceptable, then the appropriate standard of protection should be identified using the following information: site citation and conservation objectives, flood history, flood risk management (past & present), predicted future changes to site (eg with climate change), and impacts associated with different standards of protection.

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Since every site is unique, it is difficult to predict generalised effects of flooding on a particular site. Five factors can be used to give an indication of the immediate effects of a flood on a site: floodwater velocity, area inundated, depth of floodwater, water quality of floodwater and time required for floodwater evacuation.

The timescale for recovery will be dependent upon: i) changes in the physical and chemical condition of the site that could affect the suitability of the site as a habitat, ii) the degree of connectivity with similar habitats that could provide a source of colonists, and iii) the succession that would be required before species could recolonise.

It may be necessary to look at the site within the context, not just of the site itself, but also its proximity to other sites, its location with regard to options for rolling back the site (or migration of the conservation interest) and how this sits within the overall coastal ecosystem in the general area.

English Nature's viewpoint

English Nature's view is that the standard of protection required varies according to what features of nature conservation interest are present, or should be present, on any particular site. It is not possible to provide a fixed standard of protection that covers all sites.

This report provides a useful framework to help English Nature staff provide consistent and justified advice on the 'appropriate' standard of defence for a particular designated site. It also provides a valuable summary of information on species recovery from flooding that could be turned into a searchable database and kept updated.

It is important to recognise that the case study assessments have been undertaken by RPA and do not necessarily represent the views of English Nature as to the flood defence requirements of any of the sites. Neither do the results provide any recommendations for future flood defence standards at the case study sites.

The approach is based on qualitative description of impacts, supported by quantitative information, where available. More information/data are required on the impacts/benefits of different types of flooding at specific sites, the impact of repeate flood events on the conservation interest and the time-scales required for recovery. Following consideration of this report English Nature has offered revised advice to Defra on indicative standards of protection for sites of national and international conservation interest.

Selected references

MAFF. 1999. *Flood and coastal defence appraisal guidance - economic Appraisal* (FCDPAG3).

Further information

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