

# **Water Level Management Plans**

**Scoping Study**

**David Noble and Associates**

**R&D Technical Report W85**

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This report will provide useful information to assist in the preparation of Water Level Management Plans. It identifies good practice and areas for future research.

**Research contractor**

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## EXECUTIVE SUMMARY

In 1994 an initiative was launched to promote the preparation of Water Level Management Plans (WLMPs). This was driven primarily by the Ministry of Agriculture, Fisheries and Food (MAFF), with the Environment Agency being one of the supporting organisations. The Agency, in response to the MAFF initiative, are committed to the preparation and reviewing of WLMPs for river systems which impact upon Sites of Special Scientific Interest (SSSIs). Throughout the Agency a large number of WLMPs are affected and it is necessary to assimilate the lessons that have been learnt and problems experienced to date during this process.

This Scoping Study was commissioned with the overall objective to review the experience and issues to date in the preparation of WLMPs within the Agency, in order to make recommendations for further R&D and operational projects. More specifically, key Agency staff and others were to be interviewed on the preparation, undertaking and implementation of WLMPs, with recommendations sought for improvements to current practice. A determination was also to be made on whether the preparation and reviewing of plans in the future would benefit from R&D, and if so, identify the issues that R&D should address.

Currently WLMPs have been restricted to those waterway systems which impact directly or indirectly on SSSIs. English Nature plays a key role in WLMP preparation, in both prioritising sites related to timescale targets and agreeing the plan details for individual sites. In conjunction with the Agency they also set the timescale for the review procedure, which forms an important requirement of the overall WLMP procedure.

During the course of plan preparation a number of difficulties have arisen, many with a high degree of consistency across the Agency, and while these have substantially been overcome, extended timescales and a reduction in the hard evidence needed to support the water levels selected, have resulted. The study has highlighted several major areas of concern, as follows:

- the consultation process
- the quality of site data
- water level control mechanisms
- water level impact on site ecology
- water resource availability
- the use of consultants.

The study also argues that the quality of many WLMPs will only be confirmed after they have been reviewed or re-reviewed, thus highlighting the importance of the review procedure. Being able to confirm a plan or introduce changes however, will only be achieved if sites have been monitored to an appropriate level and the implications of site data fully understood.

With respect to R&D, the study concludes that there is no need to consider any significant R&D project necessary to fill any knowledge gaps which have been exposed. Many of the problems encountered to date with WLMPs are to be expected in projects of this nature, and as plans are so site specific, no model can be prepared to provide any significant assistance. However, with

the likelihood of the WLMP concept being extended to cover non-SSSI situations, on waterways within the Agency's designated Main River system, two possible R&D projects have been offered for consideration. The first involves the preparation of a WLMP handbook for use when preparing and reviewing plans, while the second involves developing a simple ecology monitoring method, thus enabling site monitoring to be undertaken in a way which gives a meaningful measure to its quality relative to particular water level regime. Simple costings and funding details for the above projects have also been included.

## **KEY WORDS**

Water level management plan; scoping study; water level; ecology.



## 1. INTRODUCTION

David Noble and Associates were commissioned in February 1997 to undertake a scoping study, the overall objective of which is to "Appraise the experience to date in the preparation and implementation of plans and identify any aspects which would benefit from a research and development project, with the objective of providing assistance in the preparation, implementation reviewing and monitoring."

## 2. BACKGROUND

In 1994 the Ministry of Agriculture, Fisheries and Food (MAFF) and the Welsh Office (WO), the former taking the lead and supported by the Association of Drainage Authorities, English Nature and the National Rivers Authority (NRA) launched an initiative to promote the preparation of Water Level Management Plans (WLMPs). Whilst the operating authorities, which included the NRA, Internal Drainage Boards and Local Authorities, were charged with plan preparation, it was a voluntary exercise, but one, not surprisingly, which has been widely adopted.

MAFF supported the approach with its publication "Water Level Management Plans - A Procedural Guide for Operating Authorities", which confirmed the approach and identified the sites by virtue of designation and water sensitivity for which plans should be prepared. Within the plan preparation the role of English Nature is key in both prioritising sites related to timescale targets and agreeing the plan details for individual sites.

At this stage WLMPs have been restricted to those waterway systems which impact directly or indirectly on Sites of Special Scientific Interest (SSSI) and English Nature identified that 379 of these would be the responsibility of the Environment Agency, which included some 131 which were designated as 'high priority'. An important requirement within the procedure is to undertake a review against a timescale agreed by the Agency and English Nature.

## 3. PROGRESS

At the time of reporting (1st March 1997), the following position has been confirmed:

**Table 3.1 Progress with water level management plans**

<b>WLMP Progress</b>	<b>Total</b>	<b>High Priority</b>
Completed Plans	45	32
Completed Interim Statements	160	34
Plans in Preparation	91	45
Interim Statements in Preparation	33	4
No Action Taken	50	16
<b>Total</b>	<b>379</b>	<b>13</b>

Whilst progress has not matched the initial MAFF timetable, that was somewhat over-ambitious with the experience of what are often protracted consultation periods. There has also been the understandable tendency to finalise a plan rather than make a submission with a number of holding comments.

## **4. EXPERIENCE**

During the course of plan preparation a number of difficulties have arisen, many with a high degree of consistency across the Agency. These have substantially been overcome, the price paid being in the delays in confirming the plan and in its quality in terms of hard factual evidence to support the water levels selected. The major areas of concern are as follows:-

### **4.1 Consultation**

The period for the consultation was invariably in excess of that anticipated and as such the timescale set by MAFF was quite impossible. Whilst MAFF advocated submissions on time even if certain matters had not been finalised there is an understandable wish to 'complete' the plan. In some regions the English Nature staff have been unable to commit sufficient time to the exercise and have themselves introduced delays.

Representatives of conservation interests, including English Nature, did not have sufficient appreciation of the workings of waterway systems and the limitations on the ability to control water levels in some situations.

On occasions consultees would have varying views as to water level requirements, this applying where different groups sought the ideal conditions for their particular interest.

In many cases the majority of consultees, including landowners, did not comment on proposals or complete questionnaires. The interpretation of this lack of action is difficult and there must be some concern that they will register interest at the review stage, possibly raising new issues.

### **4.2 Site Data**

With notable exceptions, the data for the SSSI in terms of water levels prevailing at the time of designation and the detailed ecology of the site was not available. At designation, a general comment is made as to the interest in the site, but no actual measure of that interest is available against which to measure improvement or decline. A common perception of 'site drying out' could often not be supported by any real evidence.

### **4.3 Water Level Control**

There is some evidence that the full range of simple mechanisms to control water levels were not always fully appreciated and this can lead to a disinclination to introduce additional water control measures, or alternatively to do so, but in a way which is over complicated and costly.

#### **4.4 Ecology**

Conservation staff felt that little information was available to support particular water level regimes against the impact on particular plant species.

#### **4.5 Water Resources**

Whilst the control of water levels is always possible in low lying catchments, the water must be there in order for such control to be effective. In many areas the lack of flow entering the system and indeed in some cases the abstractions from it were significant influences on what could and could not be achieved.

#### **4.6 Water Quality**

Whilst water quality is not addressed within the plans, this can materially affect the quality of the habitat. Salinity levels are an issue, and will influence adversely what are ostensibly fresh water habitats. In some situations, options are available which will influence both water and salinity levels and should be selected from a position of some knowledge.

#### **4.7 Use of Consultants**

This has had mixed success, ranging from total disappointment to providing excellent results. In the main the consultants have been on the same learning curve as Agency staff and their engagement, more often than not, has been to counter workload problems, rather than bringing a specific level of expertise to the exercise.

There is evidence that in some cases consultants have over-complicated the plan preparation and not fully understood the true objective, but in others a combination of ecological expertise and an understanding of waterway systems has progressed plan preparation in an effective way. On balance the smaller consultancies appear to have been more effective and this may relate to the general small scale nature of the individual projects.

There is a view that, as with other areas of the Agency's work, the use of consultants deprives the staff of a knowledge-gathering work experience which would be of considerable benefit in reviews and add to the ownership feel for the plans.

### **5. REVIEWS**

It could be argued that the quality of the many plans will only be confirmed after they have been reviewed or even re-reviewed. This will be the case particularly where plans are little more than statements of the existing situation or where some adjustment in water level has been made to derive what may only be a presumed benefit.

When reviews take place there will be an expectancy that more information will be available upon which a sound case for confirming the plan or introducing some changes can be made. This will

only be achieved if sites have been monitored to an appropriate level and whilst in ecological terms this is clearly a matter for English Nature, there must be some doubts as to whether, within their resources, this can be delivered. The monitoring of water levels will be relatively easy, but it is the impact of those water levels which is the sole purpose for introducing water level management plans.

## **6. DISCUSSION**

From the experience to date there is no need to consider any significant R&D project necessary to fill any knowledge gaps which have been exposed. Indeed, many of the problems encountered are those to be expected in any exercise of this nature and when anticipated can generally be dealt with more effectively. There is no magic solution to speed up a meaningful consultation process and, as plans are so site specific, no model which can be prepared to provide any significant assistance.

The nature of some of the problems is such that the risk is high that these may re-emerge during subsequent reviews. This, if it happens, will be against the higher expectations of consultees, who will expect more information to be available in order to confirm or fine tune water levels to deliver positive benefits. It is with this possibility in mind and the likelihood of the Water Level Management Plan concept being extended to non-SSSI situations, on waterways within the Environment Agency's designated Main River system, that two R & D projects are offered for consideration.

## **7. PROJECTS**

### **7.1 Prepare Water Level Management Plan Handbook**

This would constitute a reference book for use when preparing and reviewing plans and would provide information on the following:-

- Mechanisms for controlling water levels
- Water tolerance of plant species
- Relationship between water level and water table
- Key indicators for plan effectiveness
- Advice on consultation process
- References to useful publications \*

\* A number of useful publications are and will soon become available and people involved need to have knowledge of these. To identify them in a single handbook will be extremely useful. Some are of general application and others, such as the many reports on the Somerset Levels, will be of considerable benefit to those addressing plans within similar peat areas.

### **7.2 Develop a Simple Ecology Monitoring Method**

This would enable monitoring of the sites to be undertaken in a way which gave a meaningful

measure to its quality relative to particular water level regime. It would seek to identify key indicators within both the aquatic and wetland habitat and derive an acceptable methodology for quantitative and qualitative assessment. This would enable a simplistic base to be established to which all future monitoring would be related. Initially the study should focus on plant life developing to include birds and invertebrates.

## **8. COMMENT**

The order of priority of the identified projects is as set out below, with an estimate of project cost.

### **8.1 Prepare Water Level Management Plan Handbook**

<i>Est. Cost</i>	<i>£5,000</i>	<i>Total</i>
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### **8.2 Develop a Simple Ecology Monitoring Method**

<i>Est. Cost</i>	<i>£5,000</i>	<i>Total</i>
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It is suggested that the Agency would fund 8.1 100% and 8.2 50% in partnership with English Nature.

Whilst no project has been offered to consider water quality, particularly salinity levels, it is an issue which is flagged up and should be monitored to confirm the impact and the need for any future specific attention.

