



THE SOMERSET LEVELS AND MOORS

Water Level Management and
Nature Conservation

CONSULTATION PAPER



JUNE 1991

THE SOMERSET LEVELS AND MOORS

WATER LEVEL MANAGEMENT AND NATURE CONSERVATION

CONSULTATION PAPER

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THE SOMERSET LEVELS AND MOORS: WATER LEVEL MANAGEMENT AND NATURE CONSERVATION



EXECUTIVE SUMMARY OF CONSULTATION PAPER

The Somerset Levels and Moors are recognised as an internationally important wetland of exceptional wildlife, landscape and archaeological interest. Rapid changes have occurred in recent years which threaten the continued existence of these wetlands. Indeed in certain areas some species of wading birds have already become extinct. The present low water levels are unsuitable for the characteristic plants and animals of the Moors and also continue to jeopardise its archaeological interest and the unique moorland landscape. NRA Wessex Region is undertaking a major review of water level management on the Levels and Moors in order to safeguard these interests. The review focuses on the Environmentally Sensitive Area and the sixteen Sites of Special Scientific Interest within the Levels and Moors.

The review has been undertaken by a special sub-committee of the Somerset Local Flood Defence Committee. Wide-ranging discussions have shown a high level of concern over the future of the Levels and Moors and a commitment to retain its special interests at both local and national level. The concept of a mosaic of nature reserves, extensive pastoral farming and intensive farmland is perceived as a viable approach.

NRA Wessex Region recognises that safeguarding the environment will have costs in flood defence terms and will have a real impact on the present agricultural system. It is a difficult balance to strike, and requires a positive approach from all those involved in the Levels and Moors.

NRA Wessex Region proposes to adopt a nine point strategy for water level management on the Levels and Moors:

- 1 NRA Wessex Region recognises the outstanding nature conservation interest of the Somerset Levels and Moors and that this is in decline
- 2 The Authority seeks to restore and maintain the wildlife and landscape of this internationally important wetland, consistent with its given duties, and to conserve the archaeological interest.
- 3 The Authority has a key role in water management, including the control of water abstraction, discharges, water quality, drainage and water levels.
- 4 NRA will give special consideration to the environmental impact of abstraction and discharges throughout the Levels and Moors.
- 5 NRA will review flood defence arrangements and the needs of nature conservation in order to encourage sympathetic management programmes within the ESA and agree formal management plans with English Nature, the Nature Conservancy Council for England (NCC), over activities which affect SSSI's.
- 6 The Authority will adopt a presumption in favour of positive water level management for nature conservation on SSSI's, and in other appropriate areas where there is general agreement. Priority will be given to the core areas of SSSI's.
- 7 Where raised water levels affect agricultural productivity the NRA will support the introduction of a water level premium on ESA payments and/or Section 15 management agreements with NCC to offset these costs

THE SOMERSET LEVELS AND MOORS:
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- 8 The Authority will liaise with relevant organisations to draw up a list of priority sites where enhanced water levels are required to maintain and restore the nature conservation interest
- 9 The Authority will take action after consultation with MAFF, NCCE, IDB's and landowners in order to achieve the conservation objectives.

The success of the proposed strategy will depend on co-ordinated action by many different individuals and organisations. The National Rivers Authority, Wessex Region believes that this strategy represents an important opportunity to safeguard the special character of the Somerset Moors. Your comments are sought on this approach.

Comments should be sent to:

The Regional General Manager,
NRA Wessex Region,
Rivers House,
East Quay,
Bridgwater,
Somerset TA6 4YS.
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THE SOMERSET LEVELS AND MOORS

WATER LEVEL MANAGEMENT AND NATURE CONSERVATION

CONSULTATION PAPER

SUMMARY

NRA Wessex Region has a statutory duty to further the conservation of the wildlife, landscape and archaeology of watercourses and wetlands under Sections 8 and 9 of the Water Act 1989. The nature conservation interest of the Somerset Levels and Moors is deteriorating; concern has been expressed over the gradual drying out of the Moors with particular reference to the Sites of Special Scientific Interest. Somerset Local Flood Defence Committee has examined the situation and has put forward the following strategy:

- 1 NRA Wessex Region recognises the outstanding nature conservation interest of the Somerset Levels and Moors and that this is in decline.
- 2 The Authority seeks to restore and maintain the wildlife and landscape of this internationally important wetland, consistent with its given duties, and to conserve the archaeological interest.
- 3 The Authority has a key role in water management, including the control of water abstraction, discharges, water quality, drainage and water levels.
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- 5 NRA will review flood defence arrangements and the needs of nature conservation in order to encourage sympathetic management programmes within the ESA and agree formal management plans with English Nature, the Nature Conservancy Council for England (NCC), over activities which affect SSSI's.
- 6 The Authority will adopt a presumption in favour of positive water level management for nature conservation on SSSI's, and in other appropriate areas where there is general agreement. Priority will be given to the core areas of SSSI's.
- 7 Where raised water levels affect agricultural productivity the NRA will support the introduction of a water level premium on ESA payments and/or Section 15 management agreements with NCC to offset these costs.
- 8 The Authority will liaise with relevant organisations to draw up a list of priority sites where enhanced water levels are required to maintain and restore the nature conservation interest.
- 9 The Authority will take action after consultation with MAFF, NCC, IDB's and landowners in order to achieve the conservation objectives.

The success of the proposed strategy will depend on co-ordinated action by many different individuals and organisations. The National Rivers Authority Wessex Region believes that this strategy represents an important opportunity to safeguard the special character of the Somerset Moors. Your comments are sought on this approach.

Comments should be sent to:- The Regional General Manager, NRA Wessex Region, Rivers House, East Quay, Bridgwater, Somerset TA6 4YS. Tel No: 0278-457333.

1 INTRODUCTION

The Somerset Levels and Moors are recognised as an internationally important wetland of exceptional wildlife, landscape and archaeological interest. The area is safeguarded by an overlapping network of designations, two of these are of particular relevance - the Environmentally Sensitive Area (ESA), and the sixteen Sites of Special Scientific Interest (SSSI). At an international level the Somerset Moors are a proposed RAMSAR site (under the Convention on Wetlands of International Importance) and also a Special Protection Area (SPA) under the EEC Directive on the Conservation of Wild Birds 1979.

1.1 The NRA and Nature Conservation

As early as 1973 water and drainage authorities were obliged to have regard to the preservation of natural beauty and the conservation of flora and fauna during the course of their work. This duty also covered geology, archaeology, access and amenity (Water Act 1973 Part ii) Section 22). The conservation duty has been strengthened by subsequent legislation. Today, the 1989 Water Act confers a duty to further the conservation of natural beauty, flora and fauna. This duty applies to both the National Rivers Authority and to Internal Drainage Boards and covers all aspects of their work. The NRA has an additional duty to promote nature conservation and recreation in the aquatic environment. The relevant legislation is given in full in Appendix 1.

NRA Wessex Region has a firm commitment to nature conservation, and following early flood alleviation schemes and land drainage work in the 1960's and '70's the past decade has seen a new approach to maintain, rather than lower water tables within the Somerset Levels and Moors. In this context the Authority is responsible for the pumping stations and all major watercourses within the area; smaller watercourses are maintained by the relevant Internal Drainage Board. Close co-operation is required between the NRA and IDB's in order to maintain the present drainage system.

1.2 Recent Problems

Although the Levels and Moors have retained much of their unique character, the cumulative effects of drainage and changes in land management over the past 50 years are becoming apparent. Most of the wildlife interest is now confined to the SSSI's where there has been a dramatic decline in breeding waders over the past 10-15 years. Indeed in certain areas some species of wading birds have already become extinct. Other aspects are giving cause for concern in particular the average numbers of wintering birds has decreased while the botanical interest of areas such as Tealham and Tadham Moors is undergoing a rapid change. These losses are attributed by the major conservation bodies to the drying out of the Moors as a result of the continued maintenance of low water tables.

Details of the damage to nature conservation interests were discussed in an internal report to NRA Wessex Region Management Team (September 1990). This emphasized the need to re-examine water level management on the Levels and Moors, with special reference to SSSI's. Subsequently this matter was raised by a committee member at the Somerset Local Flood Defence Committee which appointed a Sub-Committee to consider the problems in more detail. A list of the Sub-Committee members and the Terms of Reference of the review is given in Appendix 2.

1.3 Work of the Sub-Committee

Over the past nine months the Sub-Committee has considered the issues to be addressed in deciding a strategy for water level management on the Somerset Moors. This report provides a summary of the information available and the views which have been expressed during the consultation process. It also draws attention to additional information which may be relevant to the review.

A timetable of events is given in Appendix 3. To date the Sub-Committee has undertaken extensive consultations including representations from, and discussions with, the IDB's and conservation organisations. MAFF also provided information at a meeting with the Sub-Committee. These deliberations are summarised in Section 2 of the report.

During the course of discussions the Sub-Committee and officers of NRA Wessex Region have also become increasingly aware of the European perspective and, of the detailed scientific work which has been undertaken. Indeed the relationship between water levels, agricultural yields, breeding waders and the botanical interest of grazing marshes has been well studied for example, in the Netherlands - as outlined in Section 3. This work would help NRA to predict the effects of enhanced water levels both on agriculture and wildlife.

Section 4 of the report summarises the principal factors involved in managing water levels for conservation, and reviews important points which have been raised during discussions. The final section brings together the areas of common ground and puts forward the proposed strategy.

1.4 The Water Level Management Steering Committee (WLMSC): TRIAL AREAS.

Concern over the loss of wildlife on the Somerset Moors led to the establishment of the WLMSC in 1988. It includes representatives from conservation, agriculture, IDB's and NRA Wessex. The aim is to set up a series of trial areas in which water levels could be raised and the effects on agricultural productivity and wildlife assessed. To date three trial areas have been established: Southlake, Wetmoor and West Sedgemoor.

The WLMSC was a significant advance in co-operation between farming and conservation organisations and provides a valuable forum for discussion. Implementation of the trial areas has proved slow. Each trial area is designed to run for 5 years with continual monitoring by MAFF, NCCE and NRA. The latest trial on WetMoor, covering 550 acres (220 ha) of privately owned land (mainly SSSI), is a major achievement. However, the question must be asked whether we can afford to wait a further 5 years for the outcome of the trials in view of the rapid deterioration in the wildlife interest.

2 SUMMARY OF CONSULTATIONS

The Sub-Committee invited written comments from a wide range of organisations and certain key individuals. A total of 27 written representations were received. These were grouped into three main areas of interest: the conservation groups headed by NCC, IDB's and the agricultural interests including NFU and CLA. A series of meetings were subsequently arranged to discuss the points raised in greater detail. MAFF also provided valuable information to the Sub-Committee, particularly with regard to the Environmentally Sensitive Area. The key points which emerged during this consultation process are summarized in the following sections 2.1 to 2.4.

2.1 Ministry of Agriculture, Fisheries and Food

The ESA concept was explored in depth during the Sub-Committee's meeting with MAFF on 21 January 1991. The following key points emerged:

- (i) The importance of ESA's for political, economic and environmental reasons.
- (ii) The ESA review: higher water levels with improved payments and incentives to return arable to grassland were under consideration.
- (iii) Flooding: the ability to raise water levels, whilst preventing uncontrolled flooding was discussed, together with the impact of higher water levels on agriculture.
- (iv) Trial Areas: MAFF has put considerable work into establishment and monitoring. Existing trials should continue but concern was expressed over the costs of establishing additional areas.

The meeting was considered to be opportune and the NRA review fits in well with MAFF's reassessment of ESA's. It was agreed that enhanced ESA payments for sound environmental benefits would be a useful way forward.

2.2 Conservation Organisations

Written responses were received from NCC, CPRE, RSPB, STNC and the Countryside Commission. These five organisations submitted detailed comments and information which emphasized many of the points raised in the original internal discussion paper. The Sub-Committee met representatives from NCC, RSPB and STNC on 21 January 1991, unfortunately the Countryside Commission was unable to attend. Discussions centred on the NCC's submission and several points were considered in detail, in particular:

- (i) The conditions required to safeguard and restore the conservation interest. Key elements are the maintenance of high water levels in the winter, spring and early summer period; mid-June was seen as the critical point. Actual ground conditions were important. Prolonged "splash" flooding in winter is essential to saturate the peat and to provide suitable areas for wintering birds.

- (ii) Payments: certain points were clarified:- within SSSI's NCC can top up existing ESA payments or can enter into separate Section 15 agreements. A flat rate payment for raised water levels has been successfully introduced on Southlake and is payable to all occupiers including those who do not hold management agreements.
- (iii) The new Environmental Protection Act makes provision for payments outside SSSI's where the land concerned is essential for conservation management for the SSSI. This will be implemented by English Nature, the new organisation which replaced NCC on 1 April 1991. It is likely that the existing mechanism of Section 15 management agreements will be extended to adjoining land if productivity is affected by higher water levels within the SSSI.
- (iv) Drovers: access to the Moors for agricultural purposes is an important consideration. MAFF or other organisations should make capital grants available for improvements to roads and tracks where they are adversely affected by raised water levels.
- (v) Trial Areas: the existing trials should continue and are particularly valuable for monitoring purposes, but there is concern over the cost of creating additional areas.
- (vi) Priority Sites: NCC provided a list of SSSI's on which higher water levels are a priority, the extent of works required to achieve these aims were also considered.

The meeting provided an opportunity to explore key points in depth and improved understanding of the nature conservation interest.

2.3 Internal Drainage Boards, National Farmers Union and Country Landowners Association

Sixteen responses were received from Internal Drainage Boards. In general the responses concentrated on the Board's own areas and did not reflect wider considerations. Five key points emerged:-

- (i) Retention of the status quo - almost all the Boards expressed general satisfaction with the present position, although several complained about lack of maintenance by NRA Wessex Region.
- (ii) Water level Trial Areas - there was general support for the concept and a consensus view that no changes should be made until the results are known.
- (iii) Risk of flooding - over half the responses expressed concern over severe flooding which was seen to be an automatic consequence of raising water levels.
- (iv) Impact on Agriculture - approximately half the responses stated that increased water levels will have a detrimental effect on agriculture.

- (v) The importance of high summer pens - most responses emphasized the role of summer penning for stock fencing, watering and irrigation.

In addition to the above points widespread general concern was expressed over pollution and the need to maintain high water quality.

Responses were received from Regional NFU and local CLA. The NFU response reflected the points raised by the IDB's but took a wider perspective which strongly supported the ESA concept. Both organisations reiterated that the review was premature and changes should only be considered after the results of the trial areas are known.

The meeting with representatives of IDB's, NFU and CLA took place on 7 February 1991. During the course of discussions the following key points emerged.

- 1 Compensation: occupiers of land would consider changes in water level management provided there was adequate compensation. Improved ESA payments are essential.
- 2 All agreements should be voluntary.
- 3 Trial Areas: should continue, separate action at this stage was considered premature.
- 4 Role of IDB's: local control of drainage/water levels by elected bodies should continue.
- 5 Lack of scientific evidence: some representatives expressed doubt over the validity of the conservationists' claims. Predation was identified as a problem.
- 6 Impact on agriculture: the effects on grassland and withy production were raised.
- 7 Technical aspects: including ditch maintenance, retaining water and flood storage.
- 8 Present water level management: concerns over low water levels in some areas and the lack of water in summer were apparent. Concern was also expressed over a general raising of water levels.

It was generally agreed that the meeting was constructive. Follow up discussions have been held with representatives from the Association of Drainage Authorities (ADA) on 13 May and also with a representative of the Withy growers. The production of willows for basketwork, charcoal and other uses is seen as an important rural industry.

2.4 Somerset County Council including Archaeological Considerations

The County Council submitted a concise and perceptive response which brought together many of the key considerations in relation to the Somerset Levels and Moors. Many consultees will be familiar with the key points through the work of the Countryside Forum and these will not be reiterated here. However a copy of the submission is included as Appendix 3.

Consultations with archaeologists were undertaken. Two responses were received, both highlighted the exceptional importance of the Moors for archaeological remains. In order to gain a better understanding of the subject and legal obligations relating to archaeology, NRA officers met the Somerset County Archaeologist in December 1990. Although the meeting was not directly related to this review it emphasized the outstanding archaeological importance of the area and, the vulnerability of these remains to desiccation.

3 THE NETHERLANDS STUDY TOUR

Members of the Sub-Committee visited the Netherlands for four days in late March 1991. This gave an opportunity to compare water level management, agricultural practices and nature conservation interests between the two countries. Several interesting concepts emerged during the course of discussions and the key points are listed below:-

- (i) Water level management: areas with high water levels are essential for nature conservation.
- (ii) Peat shrinkage due to oxidation is a major problem. Land levels on intensive farmland may change rapidly, in general arable land levels are dropping in relation to permanent grassland.
- (iii) Excess flood water is not a problem in most parts of the Netherlands, this enables very close control of water levels throughout the year.
- (iv) Generally stocking rates and land values are higher in the Netherlands. This is reflected in compensation payments for environmental management which are substantially higher than those in Britain.
- (v) Agricultural land use is part of the planning process, there is a sharper division between designated nature reserves and intensive agricultural use. The British ESA/SSSI systems are not comparable.
- (vi) Detailed studies on nest protection have been undertaken by Millieu Biologie, the environmental section of Leiden University. Their role appears to be analogous to Farming and Wildlife Advisory Group.
- (vii) The Dutch research on breeding waders is of considerable interest. It provided useful guidelines for future management and clearly demonstrated that different levels of agricultural management encourage different species of wading birds.

4 SCIENTIFIC INFORMATION

During the consultation procedure, grave doubts were expressed by representatives over the validity of the conservationists' claims and certain counter-arguments have been put forward eg over the role of predators in the decline of breeding waders. Close examination of the available information by NRA's conservation staff supports English Nature's view that the Somerset Moors are drying out with adverse effects on the nature conservation interest. The main factors are outlined in Appendix 4.

4.1 General Principles

It is apparent that an integrated management approach is required in order to restore the biological interest of the SSSI's. Although there has been a strong emphasis on the restoration of breeding waders the maintenance of suitable conditions for wintering birds, plants and aquatic invertebrates is of equal importance. The principal factors to be addressed in order to maintain and restore the wildlife interest are as follows:-

- i) enhanced water levels;
- ii) annual shallow winter flooding;
- iii) extensive grazing systems;
- iv) intensive species management.

The primary aim is to enhance the characteristic wetland habitats of the Somerset Moors. There is a general concensus that a minimum area of 200 ha (approximately 500 acres) of "core" wetland habitat is required on each SSSI. This will also help to maintain the landscape and archaeological interests.

4.2 Species Management

Once this core area is established it is possible to use special management techniques to maximise the numbers of certain key species. This was clearly illustrated by the Dutch study tour. Here some landowners are encouraged to undertake additional practical measures to improve the success rate of breeding waders which may be applicable to the Somerset Levels and Moors, these include:-

- i) the provision of shallow pools for foraging;
- ii) increasing the numbers of invertebrates on improved pastures by the spreading of farmyard manure;
- iii) control of predators;
- iv) preventing loss of nests and young by trampling and mowing. Marking nests is a useful technique;
- v) the provision of gently sloping banks alongside rhynes to allow chicks to enter the water and forage.

It is important to note that these techniques can only be of benefit within the wider context of providing suitable wetland habitats. Thus for breeding waders it is envisaged that the core wetland area will be supplemented by the provision of appropriate feeding habitats on adjoining land.

5 THE WAY FORWARD

The NRA is heralded as one of the leading environmental protection agencies in Europe, the guardian of the water environment. As part of the NRA, Wessex Region has a special responsibility to safeguard the Levels and Moors as an internationally important wetland and, most importantly, to be effective in this role. Clearly there is a conflict of interests in the present situation, safeguarding the environment will have costs in flood defence terms and will have a real impact on the present agricultural system. It is a difficult balance to strike but with the changing agricultural climate and increasing environmental awareness it is a timely review.

5.1 Common Ground

As a result of the Sub-Committee's work a number of key points have emerged which are of great concern to the majority of consultees. Indeed there was widespread agreement from all interested parties on the following points:-

- (i) That the relationship between agriculture and conservation can be of mutual benefit. The concept of a mosaic of nature reserves, extensive pastoral farming and intensive farmland is perceived as a viable approach.
- (ii) Any necessary changes in agricultural use must be offset through adequate compensation. This option is already available through ESA and SSSI management agreements, however the voluntary ESA system is generally regarded as a more acceptable mechanism by occupiers of land.
- (iii) Wildlife, archaeology and landscape are perceived as essential elements of the Moors environment. Everybody wants to safeguard these elements, the question is "How?".
- (iv) The NRA has an important part to play in managing water levels and should take a leading role in any changes.
- (v) It is essential that the NRA, in conjunction with the IDB's, provides a suitable infrastructure to maintain agreed water levels and to prevent uncontrolled flooding.

In a wider context it has become apparent that many landowners and farmers are looking towards environmental management as the way forward for agriculture. At a political level there are clear indications that the present price support system will change in favour of subsidies in return for environmental benefits. The Sub-Committee is aware of these changes and of the special position conferred on the Levels and Moors by the ESA and other designations. Farmers in the area have been given new options, but these are dependent upon maintaining the landscape and wildlife on the Moors. In this context it is important that the ESA is seen to be working and appropriate water level management has an integral role to play in this process.

5.2 Proposed Strategy

As a result of the consultations and discussion undertaken NRA Wessex Region proposes to adopt the following strategy:-

- 1 NRA Wessex Region recognises the outstanding nature conservation interest of the Somerset Levels and Moors and that this is in decline.
- 2 The Authority seeks to restore and maintain the wildlife and landscape of this internationally important wetland, consistent with its given duties, and to conserve the archaeological interest.
- 3 The Authority has a key role in water management, including the control of water abstraction, discharges, water quality, drainage and water levels.
- 4 NRA will give special consideration to the environmental impact of abstraction and discharges throughout the Levels and Moors.
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- 9 The Authority will take action after consultation with MAFF, NCC, IDB's and landowners in order to achieve the conservation objectives.

5.3 Conclusion

The success of the proposed strategy will depend on co-ordinated action by many different individuals and organisations. The National Rivers Authority Wessex Region believes that this strategy represents an important opportunity to safeguard the special character of the Somerset Moors. Your comments are sought on this approach.

Comments should be sent to:- The Regional General Manager,
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Somerset TA6 4YS. Tel No: 0278-457333.

SECTIONS 8, 9 AND 10 OF THE WATER ACT 1989

PART I
General
environmental
and recreational
duties.

8.—(1) It shall be the duty of each of the following, that is to say, the Secretary of State, the Minister, the Director and every relevant body, in formulating or considering any proposals relating to the functions of any relevant body or, as the case may be, that body—

- (a) so far as may be consistent with the purposes of any enactment relating to the functions of that body and, in the case of the Secretary of State and the Director, with their duties under section 7 above, so to exercise any power conferred on him or it with respect to the proposals as to further the conservation and enhancement of natural beauty and the conservation of flora, fauna and geological or physiographical features of special interest;
- (b) to have regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural or historic interest; and
- (c) to take into account any effect which the proposals would have on the beauty or amenity of any rural or urban area or on any such flora, fauna, features, buildings, sites or objects.

(2) Subject to subsection (1) above, it shall be the duty of each of the following, that is to say, the Secretary of State, the Minister, the Director and every relevant body, in formulating or considering any proposals relating to the functions of a relevant body or, as the case may be, that body—

- (a) to have regard to the desirability of preserving for the public any freedom of access to areas of woodland, mountains, moor, heath, down, cliff or foreshore and other places of natural beauty;
- (b) to have regard to the desirability of maintaining the availability to the public of any facility for visiting or inspecting any building, site or object of archaeological, architectural or historic interest; and
- (c) to take into account any effect which the proposals would have on any such freedom of access or on the availability of any such facility.

(3) Subject to obtaining the consent of any navigation authority, harbour authority or conservancy authority before doing anything which causes navigation which is subject to the control of that authority to be obstructed or otherwise interfered with, it shall be the duty of every relevant body to take such steps as are—

- (a) reasonably practicable; and
- (b) consistent with the purposes of the enactments relating to the functions of that body,

for securing, so long as that body has rights to the use of water or land associated with water, that those rights are exercised so as to ensure that the water or land is made available for recreational purposes and is so made available in the best manner.

(4) Without prejudice to its other duties under this section, it shall be the duty of the Authority, to such extent as it considers desirable, generally to promote—

- (a) the conservation and enhancement of the natural beauty and amenity of inland and coastal waters and of land associated with such waters;
- (b) the conservation of flora and fauna which are dependent on an aquatic environment; and
- (c) the use of such waters and land for recreational purposes.

(5) It shall be the duty of a relevant body, in determining what steps to take in performance of any duty imposed by virtue of subsection (3) or (4)(c) above, to take into account the needs of persons who are chronically sick or disabled.

(6) Nothing in this section or the following provisions of this Act shall require recreational facilities made available by a relevant body to be made available free of charge.

(7) In this section—

“building” includes structure; and

“relevant body” means the Authority, a water undertaker, a sewerage undertaker or an internal drainage board;

and references in this section to a water undertaker or sewerage undertaker or to the functions of such an undertaker shall be construed as if those functions included the management, by the company holding an appointment as such an undertaker, of any land for the time being held by that company for any purpose whatever (whether connected with the carrying out of the functions of a water undertaker or sewerage undertaker or not).

9.—(1) Where the Nature Conservancy Council are of the opinion that any area of land—

- (a) is of special interest by reason of its flora, fauna or geological or physiographical features; and
- (b) may at any time be affected by schemes, works, operations or activities of a relevant body or by an authorisation given by the Authority,

Environmental duties with respect to sites of special interest.

the Council shall notify the fact that the land is of special interest for that reason to every relevant body whose works, operations or activities may affect the land or, as the case may be, to the Authority.

(2) Where a National Park authority or the Broads Authority is of the opinion that any area of land in a National Park or in the Broads—

- (a) is land in relation to which the matters for the purposes of which section 8 above has effect are of particular importance; and
- (b) may at any time be affected by schemes, works, operations or activities of a relevant body or by an authorisation given by the Authority,

the National Park authority or Broads Authority shall notify the fact that the land is such land, and the reasons why those matters are of particular importance in relation to the land, to every relevant body whose works, operations or activities may affect the land or, as the case may be, to the Authority.

PART I

(3) Where a relevant body has received a notification under subsection (1) or (2) above with respect to any land, that body shall consult the notifying body before carrying out, or (in the case of the Authority) carrying out or authorising, any works, operations or activities which appear to that relevant body to be likely—

- (a) to destroy or damage any of the flora, fauna, or geological or physiographical features by reason of which the land is of special interest; or
- (b) significantly to prejudice anything the importance of which is one of the reasons why the matters mentioned in subsection (2) above are of particular importance in relation to that land.

(4) Subsection (3) above shall not apply in relation to anything done in an emergency where particulars of what is done and of the emergency are notified to the Nature Conservancy Council, the National Park authority in question or, as the case may be, the Broads Authority as soon as practicable after that thing is done.

(5) In this section—

1988 c. 4.

“the Broads” has the same meaning as in the Norfolk and Suffolk Broads Act 1988;

“National Park authority” means a National Park Committee or a joint or special planning board for a National Park; and

“relevant body” has the same meaning as in section 8 above.

Codes of practice with respect to environmental and recreational duties.

10.—(1) The relevant Minister may by order approve any code of practice issued (whether by the relevant Minister or another person) for the purpose of—

- (a) giving practical guidance to the Authority or to water undertakers and sewerage undertakers with respect to any of the matters for the purposes of which sections 8 and 9 above have effect; and
- (b) promoting what appear to him to be desirable practices by the Authority or such undertakers with respect to those matters,

and may at any time by such an order approve a modification of such a code or withdraw his approval of such a code or modification.

(2) A contravention of a code of practice as for the time being approved under this section shall not of itself constitute a contravention of any requirement imposed by section 8 or 9 above or give rise to any criminal or civil liability, but the Secretary of State and the Minister shall each be under a duty to take into account whether there has been or is likely to be any such contravention in determining when and how he should exercise his powers by virtue of this Act in relation to the Authority or any water undertaker or sewerage undertaker.

(3) The power of the relevant Minister to make an order under this section shall be exercisable by statutory instrument subject to annulment in pursuance of a resolution of either House of Parliament.

(4) Except in the case of an order made before the transfer date, the relevant Minister shall not make an order under this section unless he has first consulted the Authority, the Countryside Commission, the Nature Conservancy Council, the Historic Buildings and Monuments

Commission for England, the Sports Council, the Sports Council for Wales and such water undertakers, sewerage undertakers and other persons as he considers it appropriate to consult.

PART I

(5) In this section "the relevant Minister" means—

- (a) in relation to the Authority, the Secretary of State or the Minister;
and
- (b) in relation to a water undertaker or sewerage undertaker, the Secretary of State.

WATER LEVEL MANAGEMENT
ON THE
SOMERSET LEVELS AND MOORS
DEVELOPMENT OF NRA STRATEGY

- 1 At its meeting on 5 October 1990, the NRA's Somerset Local Flood Defence Committee resolved that a comprehensive review should be undertaken of the policy and practice on water level management for the Somerset Levels and Moors inherited, and hitherto perpetuated, by the National Rivers Authority, Wessex Region.
- 2 It was felt that the review should:-
 - (a) Commence with a fundamental reappraisal of objectives for the Somerset Levels and Moors and of the role of the NRA in contributing towards those objectives;
 - (b) Have regard for:-
 - * the requirement to protect people and property from flooding
 - * the land drainage and irrigation requirements of agriculture
 - * the need to recognise and protect the conservation value of the Levels and Moors as an internationally important wetland
 - (c) Take account of the powers and duties of the National Rivers Authority towards flood defence, land drainage and conservation given under the Water Act 1989.
 - (d) Examine the economics pertaining to the Somerset Levels and Moors (most especially SSSI and ESA payments) and consider ways of incorporating water level management within current arrangements.
 - (e) Produce an NRA strategy for water level management on the Somerset Levels and Moors.
- 3 To progress the review it was agreed that a special Sub-Committee be formed, comprising:

S H Chedzoy - Chairman
R H Baker
H P N Temperley
P Maltby
D Phillips

The Sub-Committee would be advised and serviced by Senior NRA Officers.

NOTE: Mr R Martin was subsequently appointed to the Sub-Committee.

- 4 The task of the Sub-Committee would be to produce a report of its thoughts and recommendations for an NRA strategy on water level management in the Levels and Moors for the consideration of the next meeting of the Somerset Local Flood Defence Committee on 4 January 1991.
- 5 It was essential that the issue be progressed openly, in order not to arouse unnecessary fears. To this end it was agreed that all relevant interests be advised of the SLFDC's resolution and be invited to submit written comments for the consideration of the Sub-Committee.
- 6 The "relevant interests" were defined as to include:
 - Internal Drainage Boards
 - Countryside Forum
 - Nature Conservancy Council
 - Other Conservation Bodies
 - Ministry of Agriculture, Fisheries and Food
 - NRA's Regional Rivers Advisory Committee
 - Somerset County Council
- 7 The first meeting of the special Sub-Committee was scheduled for Monday 22 October 1990 in Rivers House, Bridgwater.

NIGEL READER
Regional General Manager

FRC/662/P

10 October 1990

NRA WESSEX REGION: REVIEW OF WATER LEVEL MANAGEMENT
TIMETABLE OF EVENTS

- 25 September 1990 NRA Wessex Management Team discuss the original report - amendments suggested and incorporated to produce a Draft Strategy and Discussion Paper.
- 27 September 1990 NRA officers met Mr A Anderson to obtain Counsel's opinion regarding the Authority's duties towards conservation and land drainage.
- 5 October 1990 Somerset Local Flood Defence Committee (SLFDC) at a routine meeting, raised the matter and appointed a special Sub-Committee.
- 22 October 1990 First meeting of the Sub-Committee. Discussion Paper and Draft Strategy was presented, considered and amended. Agreed that interested parties should be invited to submit comments. Conservation member appointed to the Sub-Committee.
- 7 December 1990 Second meeting of Sub-Committee to consider responses. Agreed to meet representatives of certain organisations.
- 19 December 1990 NRA Wessex submitted comments to MAFF on the ESA Review.
- 21 January 1991 Sub-Committee and NRA officers met:
- (i) MAFF;
 - (ii) NCC, RSPB and STNC.
- 7 February 1991 Sub-Committee and NRA officers met representatives of the IDB's, NFU and CLA.
- 23-26 March 1991 Visit to the Netherlands.
- 12 April 1991 Third Sub-Committee meeting to consider interim report.
- 29 April 1991 NRA Officers met English Nature (NCCE) to discuss core areas.
- 13 May 1991 Fourth meeting of the Sub-Committee to approve the draft consultation document.
- Meeting between the Sub-Committee and ADA representatives.
- 31 May 1991 Final revision of Consultation Paper by Sub-Committee
- 14 June 1991 Sub-Committee reports to Somerset Local Flood Defence Committee, consultation paper approved.
- 21 June 1991 Draft strategy issued for consultation.



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Mr K Brown
my reference

5418
your reference

KB/TC/CQUZ2/5

NFR/AEH/57

28 NOV 1990

26 November 1990

Dear Mr Reader

REVIEW OF WATER LEVEL MANAGEMENT-ON-THE SOMERSET LEVELS AND MOORS

Thank you for your consultation letter on the NRA's proposed strategy. This has been considered at both the Countryside Forum, chaired by this Council, and at the Council's Environment Committee at their meeting on 21 November 1990. I am delighted to report that the review was welcomed by both meetings, who saw it as a much-needed initiative to try to resolve some of the difficulties now facing the Levels and Moors.

As a result of these discussions, the County Council would wish your sub-committee to consider the following observations:-

1. The context of the Council's involvement is provided by the Levels and Moors Strategy and the Draft Structure Plan. The Strategy, published in 1984, is now of course somewhat overtaken by events, but the main thrust of the Council's attitude and approach to the Levels and Moors is still embodied in its policies.

Policy AG1 states:-

THE COUNTY COUNCIL PROPOSES THAT WITHIN THE SITES OF SPECIAL SCIENTIFIC INTEREST AND AREAS OF EXCEPTIONAL WILDLIFE INTEREST FARMING SHOULD CONTINUE IN A WAY WHICH RESPECTS THE NATURE CONSERVATION INTEREST AND EXPECTS THIS TO BE ACHIEVED BY THE NATURE CONSERVANCY COUNCIL AS A RESULT OF THE FORMAL NOTIFICATION OF SITES OF SPECIAL SCIENTIFIC INTEREST.

Policy AG2 states:-

THE COUNTY COUNCIL PROPOSES THAT, OUTSIDE THE SITES OF SPECIAL SCIENTIFIC INTEREST AND AREAS OF EXCEPTIONAL WILDLIFE INTEREST, AGRICULTURAL AND LAND DRAINAGE CHANGES SHOULD BE CARRIED OUT IN A MANNER WHICH RESPECTS THE PREDOMINANTLY PASTORAL LANDSCAPE, ARCHAEOLOGICAL AND WILDLIFE INTERESTS.

continued

To Mr Reader

26 November 1990

The Draft Structure Plan identifies the Levels and Moors as a Special Landscape Area, and the supporting statement of the general policy C2 states that:-

High priority will be given to the protection of the Levels and Moors as an internationally important wetland habitat and archaeological area. In this regard particular attention will be given to the maintenance of water levels appropriate to the conservation needs of Sites of Special Scientific Interest and other identified sites of special ecological value, Scheduled Monuments, Archaeological Sites of County Importance, and Areas of High Archaeological Potential. In associated Environmentally Sensitive Areas traditional farming practices will be supported.

2. With this background, it is the view of this authority that the proposed strategy for water-level management should:-
- (i) acknowledge the international conservation importance of the Levels and Moors;
 - (ii) address the problem of the continuing decline in that conservation value;
 - (iii) accept that water management is critical to both the conservation interest and the land use of the area, and that the Authority's actions are fundamental to the future;
 - (iv) establish the legal basis for the NRA's actions in the light of the need to balance the conservation duty with those of flood defence;
 - (v) be based upon a clear understanding of the conditions necessary to restore and enhance the wildlife value of the area and the means of achieving them;
 - (vi) make the case for much closer co-operation between all the bodies involved in the Levels and Moors. Whilst the NRA has a key role, its actions and policies need to be closely integrated with those of the other agencies with duties and interests in the Levels and Moors;
 - (vii) recognise the need for enhanced funding to maintain the traditional farming system whose future is so closely-linked with the achievement of conservation objectives;

continued

To Mr Reader

26 November 1990

- (viii) accept the need for continued research, evaluation and trial application, and in particular must seek the proper co-ordination of this research to ensure that future decisions are based upon the best available information.
- (ix) put in place an achievable and sustainable policy for water management not only within protected sites but within whole catchments.

The last point is considered to be most important as the evidence appears to suggest that special measures applied to "island-sites" within catchments have thus far proved ineffective in arresting the decline of wildlife interest.

The outcome of the Sub-Committee's deliberations will be keenly awaited, and I hope that there will be a further opportunity for consultation on their recommendations.

Yours sincerely

K. Brown.

Principal Planning Officer
for Acting Head of Department

SUMMARY OF RELEVANT SCIENTIFIC INFORMATION

A considerable amount of research has been carried out which is of relevance to the decline in the wildlife interest of the Levels and Moors. This work can be conveniently divided into 3 sections:- breeding waders, plants and soils. Certain trends are apparent from this work and the key points are outlined below.

1 Breeding Waders

- 1.1 The habitat requirements of breeding waders are well understood. Each species has preferred areas, snipe, for example, occur in wet, tussocky grassland and require an extended period of wet ground conditions in order to feed. Lapwing, in contrast, will nest successfully on drier ground providing there is sufficient insect food available for their young chicks.
- 1.2 These species preferences are clearly demonstrated on West Sedgemoor RSPB reserve where water levels have been raised to create 400 acres of wetland. Snipe are located in the wettest core area with a broad pattern of redshank, curlew and lapwing on the progressively drier margins.
- 1.3 Breeding waders tend to return to traditional nesting sites. Thus Redshank hatched on West Sedgemoor have a strong tendency to return to the same part of West Sedgemoor as adults to breed. In general Redshank, Black Tailed Godwits and Snipe are strongly traditional. Lapwing less so. Interestingly breeding waders will choose to nest in sub-optimal habitats on their traditional breeding Moor, rather than move into optimum habitats on another Moor.
- 1.4 Predation:- The widely stated view that the decline in breeding waders is directly due to predation is too simplistic and is not supported by ecological studies of the species and the mechanism of predation. Breeding waders have evolved alongside predators and have developed various strategies to avoid and mitigate the effects of predation. The two most important strategies are second clutches and mobbing behaviour.
 - 1) Second Clutches:- in stable wader populations a high number of eggs and chicks may be eaten by predators, especially early in the season (Beintema and Muskens 1987, and Green 1988). Predation decreases as the season progresses, thus birds re-nest and produce a second clutch of eggs which are more likely to survive predation. In wetland conditions a large percentage of birds which have lost their first clutch will re-nest. However, this can only occur if ground conditions remain soft so that long-billed waders such as snipe and redshank can probe for food. If conditions are unsuitable ie too dry then the waders cannot lay a second clutch and their breeding success will therefore decline.

Studies by Visser (in Beinstema and Muskens 1987) indicate that predation pressure may increase as the ground becomes drier as the nests and young are more accessible to predators. Interestingly Hancock and McGeoch (1991) have shown that the numbers of breeding snipe, have declined on Tealham and Tadham Moors. Snipe are completely dependant on wet ground for food, and therefore rarely have sufficient food to lay a second clutch if their first is lost to predators. A similarly vulnerable ground nesting bird, the yellow wagtail, which is not dependant on wet ground for feeding, has been able to maintain its numbers in the face of a similar level of predation.

- ii) **Mobbing:-** Many waders protect their nests by mobbing intruders and potential predators, lapwings mobbing carrion crows are a familiar example. The effectiveness of such a strategy is linked to the density of breeding pairs, thus birds breeding at high densities sustain fewer losses than those which are widely spaced. It is likely that the numbers of breeding waders on the Somerset Moors has fallen to critically low levels, making the few remaining pairs increasingly vulnerable to predation.

As indicated in Section 4 of the consultation paper predation can be tackled in several ways. The first requirement is to restore suitable wetland habitats to increase the population of breeding waders, this can be supplemented by nest protection and control of predators.

2 Plants

- 2.1 Recent work, carried out by Silsoe College and the Institute of Terrestrial Ecology on Tadham Moor is particularly relevant. A multi-disciplinary team have been studying the effects of the height of the water table the way in which it changes throughout the year in relation to the plants present. Such work has also been carried out in parts of Europe, the British study is in its final year. Results so far confirm that the average height of the water table determines the plant species which occur and that on Tadham Moor the water level is now too low to support the original floristically rich meadows. An important aspect of this work is the development of a computer modelling system to predict the changes in vegetation which will occur as a result of alterations to the water table. Thus we have the capacity to accurately predict future changes.
- 2.2 A MAFF report on botanical diversity of the ESA is due to be published in the near future.
- 2.3 Botanical changes on the Somerset Moors have also been documented by Bolas (1990) and Hill-Cottingham and Smith (1990).

3 Soils

- 3.1 The oxidation of peat soils as a result of lowered water tables and intensive agricultural management is giving growing concern on the Somerset peat moors.

- 3.2 Bolas (1990) working on the peat areas of the north Somerset Moors reported a loss of surface organic matter, humification and the formation of hard, unwettable "peds" or nodules on drained land. Once, so transformed, it is very difficult to rewet the surface crust and to achieve the normal soft winter condition of a peat soil.
- 3.3 Hooghoudt et al (1960) working on peat soils in Holland, showed that once low water tables had created an "irreversible" drying, grass production fell by approximately 20%. Reduced agricultural productivity was cited as an inevitable consequence of lowering water tables below 50cms of the ground surface by several workers during the Dutch study tour.
- 3.4 The rate of land shrinkage as a result of peat oxidation has been well documented in Eastern Britain. These effects can also be clearly seen on West Sedgemoor RSPB reserve where fields previously used for arable cultivation are substantially lower than those supporting permanent grassland.

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G L O S S A R Y

- BTO - British Trust for Ornithology
- CLA - Country Landowners Association
- CPRE - Council for the Protection of Rural England
- ESA - Environmentally Sensitive Area
- IDB - Internal Drainage Board
- MAFF - Ministry of Agriculture, Fisheries and Food
- NCCE - English Nature: The Nature Conservancy Council for England
- NFU - National Farmers Union
- NRA - National Rivers Authority
- RAMSAR - Site designated under the Convention on Wetlands of International Importance
- RSPB - Royal Society for the Protection of Birds
- SCC - Somerset County Council
- SPA - Special Protection Area designated under Conservation of Wild Birds 1979
- SSSI - Site of Special Scientific Interest
- STNC - Somerset Trust for Nature Conservation
- SUB-COMMITTEE - working group appointed by Somerset Local Flood Defence Committee
- WLMSC - Water Level Management Steering Committee