



THE NEW WATERLANDS?

**Proceedings of a one day seminar organised by the
Sussex Wildlife Trust
as part of The RSNC Wildlife Trusts Partnership
Water for Wildlife Campaign**

**Held on 17th March 1993
at the University of Sussex, Falmer, Brighton.**



NRA

National Rivers Authority

Southern Region

The Sussex Wildlife Trust is a partner in the largest voluntary organisation in the UK concerned with all aspects of wildlife protection - the RSNC Wildlife Trusts Partnership.



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The papers presented in this document reflect the opinions of the respective authors and their organisations and are not necessarily the views of the National Rivers' Authority or the RSNC Wildlife Trust Partnership.



INTRODUCTION

Tim Sands

The Sussex Wildlife Trust has organised this conference as a contribution to the RSNC Wildlife Trusts' Partnership's WATER FOR WILDLIFE Campaign - to stimulate debate on how we maintain and create an increased "waterland" component to the countryside of the future. By choosing WATER FOR WILDLIFE as our main campaign theme we wanted to underline the fact that we all too often take water and our wetland environment for granted - water is a precious resource which needs careful management. We wanted, in particular, to raise the importance of a healthy and, hopefully, increasing wetland environment for wildlife (as well as for people) up the agenda.

The campaign is calling for

- * less waste of water
- * cleaner water
- * the full recognition of the needs of wildlife
- * coordinated management of our water environment and water catchments

Sir David Attenborough - the Partnership's President - launched the campaign just under a year ago; there have been 200-300 events since then, more than 20 regional projects and several key regional reports. Some of you will have seen considerable media coverage - for example, His Royal Highness the Prince of Wales on TV in torrential rain launching the Partnership's *Dying of Thirst* report, which addressed one of the main themes of the campaign - water quantity. The report looked particularly at low flows in rivers and low water tables and their effect on wildlife.

Despite what seems like almost continuous rain since then, at least up to the beginning of this year, the problems have not gone away. The drought of the previous few years has simply exacerbated the more fundamental problems. In places, we have over-abstracted or been over zealous in draining and starving wetlands of water, with insufficient regard for the effects on the environment. The Daily Telegraph in February 1993 published a poll showing that 94% of those interviewed thought there was "a great deal of unspoilt countryside" 20-30 years ago; only 63% thought that was true today.

In its Water for Wildlife Campaign report, *Wildlife Drying Up*, the Sussex Wildlife Trust reported that in the last 30 years, two-thirds of the county's grazing marshes have been drained.

That report - which was an action plan for safeguarding the water meadows and the wildbrooks of Sussex - is, perhaps, the springboard for this national conference today; today we can take forward our thinking. We want to explore how we can retain and re-create more natural river systems; how we can restore the natural function of flood plains so they hold more water and in turn benefit wildlife? We should now explore what is practical, ensure that safety is considered and that it can all work for those who manage the land in question. We can no longer simply think about a protective 'island' approach to nature conservation - pockets of wildlife which exist in an otherwise

impoverished landscape. We must support - vigorously support - the management of a wide representative sample of what is left, but also look for a vision of the countryside that we want in the future. New opportunities exist with land coming out of food production - we must bring back wildlife.

This is against a backdrop of Rio - a slowly burgeoning debate on sustainability, and the EC Fifth Action Programme for the Environment entitled "Towards Sustainability" (with, incidentally, some useful environmental targets for water resources) and, in particular, against the backdrop of the UK Biodiversity Action Plan which must identify the maintenance and improvement of the UK's biodiversity as a litmus test of whether sustainable development is being achieved.

That may be something which our first speaker this morning will pick up on, because I think we must use the post Rio debates to stimulate action and to achieve change. Before I introduce Elliot Morley I should say we have 4 speakers in all this morning who will be reviewing and questioning the present approach to water management on flood plains; this afternoon there will be plenty of time for discussion and we will be addressing how the situation could change or be changed.

Tim Sands

Director of Conservation at the National Office
of the RSNL Wildlife Trusts Partnership

The Green

Witham Park

Lincoln

FLOOD DEFENCE AND AGRICULTURAL POLICY

A Political Perspective

Elliot Morley MP

The time is right to look in depth at the whole question of wetland management, its flood defence role, its economic role including a cost-benefit examination, and its environmental role.

Flood and water management is a highly political issue and indeed it has been ever since the time of King Canute who discovered the hard way that the Royal Perogative is no substitute for a clay bank.

Originally land reclamation and flood control was to develop agricultural land holdings as much as anything and attracted the interest of the land-holding elite. This process has taken place over centuries in our Eastern Counties with a battle against the floods and tides that was in every sense a life and death struggle. This interest was not uncontroversial then, as it certainly continues to be today, not only in our own country, but within Europe, Holland in particular, and in most developing countries as the desire for land for tourism and agriculture puts increasing pressure on wetlands of international significance.

I was interested to read in a *History of Thorne Moors* by Catherine Cawfield just how violent this history of land drainage has been. Thorne Moors borders my own constituency and at one time was an impenetrable marshland on the flood plains of the Ouse and Trent. In 1625 King Charles I wanted cash to fight the Spanish (an issue which brought him into a somewhat violent disagreement with Parliament). He did a deal over the Royal Hunting Grounds of Hatfield Chase with a Dutch engineer Vermuyden to drain and reclaim the land. The deal was thirds for King, Vermuyden and commoners. The locals didn't appreciate the loss of their traditional way of life, of wildfowling and fishing, and raided the camps of Vermuyden's largely Dutch workforce who had to flee for their lives. The reclamation was never completed.

In the 19th Century, by very dubious means, the common-land was controlled by the Thorne Moors Improvement Company. They did a much better job and eventually were taken over by Fisons. They put in drains and began to exploit the Peat resource, an issue we all know about. What you may not know is the long running battle between local people and Fisons over this drainage policy led by a genuine eccentric known as William Bunting. He had a colourful career including military espionage and took to patrolling Thorne Moors armed with a Webley pistol and sword-stick. He was not unknown to take pot-shots at Fisons officials. He and his group of volunteers, known as "Bunting's Beavers" dammed Fisons' drains so effectively that Fisons had to resort to dynamiting them to unblock them. Fisons obtained an injunction against William Bunting. He retaliated by taking them to court and successfully establishing commoners rights over Thorne Moor - a right that only applied to him.

Today there are two main issues the government must face up to.

1. Since the war it has been virtually 'money no object' to bring agricultural land into food production, including grants for draining land. With the CAP we now have a situation of considerable surplus and expense. Much of it is to do with the overproduction of cereals and the intervention buying and storage with all the problems that go with it.

We also have beef and dairy surpluses within the EC and quota control. We now face a situation where farmers are being paid to take land out of production under the set-aside regime, not the best use of public money. We need to cut production and there is not only no argument to reclaim further land, but considerable doubt on the economic benefits of protecting and draining existing farmland. Hence the concept of planned retreat has raised its head. This brings us to the second point.

2. Apparently this country is slowly tilting to the right. This unfortunate geographical event is also linked with a projected rise in sea-level due to global warming. By how much is disputed by scientists, but is taken seriously enough by coastal MPs, including myself to look at maps of projected flooding to see whose constituency is forecast to disappear. This has already resulted in considerable capital expenditure, the Thames flood barrier for example, and will require the raising and strengthening of many sea and flood defences. The cost will be huge and although I would like to think the government's conversion to the conservation value of wetlands and saltmarsh is out of benign interest I suspect that the costs are always at the back of their minds.

MAFF has been the major lead authority in flood and drainage policy. Drainage has been controlled by local Drainage Boards that have representatives from the farming industry and local authorities on them. They have levied a precept to fund their operations. The Regional Water Authorities also had a major involvement until this was passed on to the NRA set up at the time of privatisation. In the past little regard was given to the conservation value of water courses. Water and Drainage Authorities liked them nice and straight, all the easier to keep them nice and clean and tidy.

If you like there have been three ages of political wetland policy:

1. The age of feudalism, enclosure, reclamation and acquisition as the landed elite grabbed what they could and enclosed it for development.
2. The age of maximising agricultural production. Rivers were tamed and sanitised. Wetlands drained and farmed, agricultural objectives taking the overriding priority.
3. The age of re-evaluation, with agricultural production now an embarrassment and drainage policies no longer standing up to economic examination. Greater public demands for restoration of wetlands and obligations being forced upon the government by international treaties such as Ramsar and EC directives and Special Protection Area designation.

How has the government reacted to these changes?

Firstly drainage grants have been ended, although that in itself has not stopped drainage.

Secondly the pressure from conservationists has been felt. Organisations such as the RSPB have produced excellent handbooks on the maintenance of watercourses for wildlife and many of these ideas have been adopted by the NRA. Many of the water companies have also given high priority to the conservation value and management of wetlands.

The government has responded to this pressure, although I have to say MAFF fought a rearguard action to strip the proposed Environmental Protection Agency of the flood and drainage responsibilities the NRA currently has. Rightly or wrongly MAFF is seen as being dominated by farming interests with a poor track record on conservation. At last though MAFF is becoming more environmentally aware. Investment appraisals of work by drainage authorities are being revised. So far, however, no guidance has been given on economic appraisals of maintenance work. On 2nd December 1992 John Gummer made an announcement on the environmental aspects of coastal defence policy, to involve consultation with conservation bodies and a proper study of the environmental implications.

Environmentally Sensitive Areas have been introduced for farmers with options for farmers to keep their land wet for wildlife.

The concept of planned retreat has been raised with opportunities to extend saltmarsh and reedbeds. Management agreements have been introduced for wetlands, within SSSIs.

We are talking serious money for all this:

Last year £41.6m was spent on flood defence and drainage and £46.2m is projected this year. Last year English Nature spent £49,404 on new agreements involving wetland sites. Existing agreements cost £5.7m, not all of course on wetland areas. The current budget for ESAs is £11m and this will rise dramatically to £43m over the next three years. A large proportion will go on wetland management. In the Suffolk river valley farmers can get up to £290 per hectare for managing wetland grazing for conservation plus a further £3000 over two years for taking part in an optional conservation plan.

I'm not against this approach, but I do think that there is a serious problem with European Agriculture as a whole in that it has turned into farming for subsidy and that large amounts of public money are regarded by farmers as an inalienable right. There is a very ugly word that has been used by this government in another context that illustrates this, the dependency culture.

I do accept that farming management for conservation gain should be rewarded, but such payments should be for clearly defined objectives and should be subject to close evaluation. They should not be regarded as a substitute for not abiding by reasonable environmental, pollution and planning controls that any business accepts as an obligation on its operations. I believe that we need a radical reform of the CAP with the sweeping away of much of the price support and subsidies and a move as quickly as possible towards a world market in agricultural products. This will release huge sums of money currently open to widespread fraud and expensive bureaucracy. The money saved can be used for financing a proper environmental support package, or Green Premium, along the lines of ESA agreements involving cross compliance of the environmental objectives set down.

Other developments I would like to see as opposition spokesman include:

- * A proper Coastal Zone Planning Policy, drawn up in conjunction with local authorities, agricultural organisations and conservation groups to identify the most appropriate planning use for coastal zones, eg leisure, industry, housing, farming, environmental, fishing etc, including areas that could be developed as buffer zones (wetlands and marshlands) as part of a coastal defence and environmental policy.
- * Apply strict cost-benefit analysis to flood defence projects. I note that Holland spends £280 million a year on flood protection, not including £1.7 billion on their last major sea barrier.

These schemes have actually caused serious problems due to land sinking below sea level as it dries out. Now large areas are to be allowed to revert to lakes and marshland.

- * Alternatives to set-aside need to be considered. One alternative is to take land flooded for marsh or wetland into account. Perhaps this might be a way of compensating farmers who stand to lose land as part of a managed retreat policy.
- * Apply environmental impact analysis to all existing drainage schemes as part of a wide ranging environmental audit.
- * Ensure that conservation groups have appropriate representation on Drainage Boards.
- * Publish an annual Environmental Audit on all government ministries including MAFF.
- * Encourage the development of wetlands for such things as *Phragmites* beds for pollution control, as is currently being piloted by Anglian Water for sewage treatment. It is a better use for land than being subsidised to grow weeds.
- * Ensure that management schemes for wetlands take into account the hydrology of the whole catchment.
- * Clear conservation plans for wetland and potential wetland areas.
- * Reform of Wildlife & Countryside Act to take away compensation arrangements. Farmers and developers must expect similar planning restraints as other business, covering hedgerows, trees and environmental factors.

Elliott Morley MP
House of Commons
London

ARE CURRENT POLICIES SELLING WILDLIFE DOWN THE RIVER?

Roger Martin

1. Introduction

The gap between the rhetoric made by institutions on a subject and the reality of action on the ground is universal to all activities which are organised by an institution - it is not just a problem associated with the organisation of flood defence. In practice, institutions may not necessarily cause problems, but they do prevent solutions.

The National Rivers Authority's Regional Flood Defence Committees are an acute example of this situation.

Over half of the total NRA budget, that spent on direct river engineering, lies outside NRA control. It is the Regional Flood Defence Committees which control this spending. The forthcoming Environmental Agency Bill may be an opportunity for change.

2. History - Blame Hitler

The "drainage culture" flows from the "Dig for Victory" campaign of the Second World War. The need then to vastly improve the efficiency of British farming in order to become basically self-sufficient in food led to a very strong vision for farming in the post-war period. The vision was for improved, efficient farming, maximising food production to provide food for all.

Part of this vision involved the conversion of wetlands into more productive farming land. Under control by the Ministry of Agriculture, Fisheries and Food, and largely driven by the farmers themselves, rivers were 'mained' and wetlands were drained.

No blame should be attached either to farmers or to MAFF. The whole vision had a strong ethical basis and, in particular, had a very strong sense of purpose - it had an aim, a direction, something which may have been missing in more recent years.

3. Ecological Costs

The achievement of this post-war vision does, however, have costs. In ecological terms these include:

- a. wetland destruction
- b. waste of the water resource
- c. lower river quality
- d. worse fisheries
- e. increased flood incidence downstream of where flood alleviation schemes are placed.

4. Financial Costs

We are now in a situation where we are on a treadmill of river maintenance which must be maintained in perpetuity. Improved drainage in order to maximise food production in higher catchments has succeeded in getting water off the land faster, and has brought more of it more rapidly to the former flood plains - many of which no longer flood. Yet flood water must go somewhere - if not into one flood plain then into the next, or into wider, deeper, straighter channels, which in turn exacerbate the flood problems downstream all the way to the sea. Any embankments protecting the flood plains and downstream properties, and the enlarged channels, all cost more capital, and need ever more expensive maintenance.

Fluvial capital expenditure is due to rise over the next five years at an average of £34m per year. This is much more than for tidal or sea defences. Common sense suggests that, if the current land drainage/flood defence strategy had been sound, the fluvial flood problem should by now have been virtually solved.

Altogether this is a classic symptom of an unsustainable society. We are paying more and more each year for services that nature used to provide free.

5. The Flood Defence Committees - a Problem

The Flood Defence Committees are in effect autonomous bodies, funded directly from MAFF with their own executive powers over the NRA. Other committees' relationships to NRA are advisory and have no executive power. By being to one side of NRA, yet having power over it, they prevent integrated NRA management.

Functionally, the Flood Defence Committees are still "land drainage committees". There has been no cultural shift towards a broader view of flood plain management; their role is still seen as one of using technological fixes to achieve land drainage.

The Flood Defence Committees are made up primarily by those interested in drainage, and their followers. The engineers, in order to keep their jobs, need a steady flow of engineering projects. Thus committees with a land drainage culture control a large budget which the engineers are primed to spend in order to fit within that culture. Conservation guidelines are easily ignored.

6. The Financial Paradox

Theoretically, a majority of Local Authority elected members on the Flood Defence Committee look after the interests of the local community, charged for local flood defence works through a local precept, and a minority of MAFF appointees look after the interests of MAFF, who control the MAFF grants. In practice, however, the local precept is now passed through, with a year's delay to the taxpayer. Thus funding comes from the Treasury rather than from the local community. It is a phenomenon widely observed across the democratic world that local politicians, while they strive to minimise real costs charged direct to their local electorate, tend to seek to maximise central government spending in their area. Thus a Flood Defence Committee may wish to spend to the maximum of the available grant, whether they really want the work or not, if only to avoid reductions in grant ceiling next year - a classic treadmill.

Furthermore, as money is ring-fenced for flood defence there is no competition between projects and hence no critical scrutiny of resource allocation. Present cost/benefit rules simply require benefits to exceed costs, even if benefits are very minor or even not required by the people they accrue to. This can give odd results, commonly causing public money to be used to enhance the value of private property. This is rather like accepting that the police force should make a private house burglar-proof or the fire brigade making a house fire-proof.

7. Conclusion

Current practices are bad for wildlife, ie. wildlife is 'being sold down the river', and for the taxpayer.

8. Recommendations

We need a conscious policy decision to reverse four decades of excessive river engineering, and restore a more natural, more sustainable, lower cost system.

As part of wise use of the water resource we should aim to keep as much water, as far inland, as long as possible - by allowing floodplains to flood again.

There should be clear targets for MAFF extensification schemes so that support is available for appropriate farming in flood plains. (The Somerset Levels ESA is a national first in this respect but NRA remains purely responsive rather than proactive.)

Institutional reform, particularly of the Flood Defence Committees, is essential for integrated catchment management.

9. Prognosis

The many good intentions of the MAFF and NRA will not come about while Flood Defence Committees remain sovereign.

We have failed so far to provide any new wetland vision to replace the post-war food for all vision.

ROGER MARTIN

Director, Somerset Trust for Nature Conservation

Fyne Court

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RIVER VALLEYS AS NATURAL SYSTEMS

A Vision for the Future

B R Johnson

The Legacy

This symposium has been set up to question some basic assumptions about the way in which we use perhaps our most important resource - water - on its way from the hills to the sea.

Conventional land drainage is aimed primarily at:

- * draining soils for agriculture and other uses such as peat extraction.
- * urban use and 'dryland' recreation.
- * flood alleviation of urban and agricultural areas.
- * sea defence.

This manipulation of our hydrological systems has evolved over many decades as a response to the real and perceived threats to agriculture and urban life. With the benefit of hindsight we now realise that conventional land drainage falls short of integration with the other functions of river basins which include:

- * recharging aquifers, maximising the availability of good quality water available for abstraction for domestic and industrial use.
- * minimising water pollution and maximising the capacity of the catchment to deal with pollution.
- * minimising soil loss through erosion and peatland oxidation.
- * reducing the need for 'hard' flood defences by using the natural capacity of catchments to attenuate flood peaks.
- * using water management as a tool to control agricultural production.
- * making the best use of nature conservation, fisheries and leisure opportunities in catchments.

Almost all of these functions can be either enhanced or fulfilled by the application of one simple principle to river engineering:- increasing the detention time of water in catchments by extending existing wetland areas and/or creating new wetlands. This may be possible at any point in the system from the headwaters to the estuary. Hydrological examination of catchments will almost certainly reveal sites of ancient wetlands suitable for functional rehabilitation, together with new sites suitable for wetland creation.

The relative values of the functions performed by wetlands at different points in the system will vary according to factors such as geology, climate, agricultural potential, proximity to urban centres etc. but the enhancement and creation of wetlands will almost certainly benefit the overall functioning of our overdrained catchments.

Catchment management - the challenge

The mismatch between the existing land drainage approach and the aspirations and needs of all those who have a stake in catchment functions has been partly responsible for the recent development of Catchment Management Plans (CMPs) drawn up by the NRA. On the face of it, this is a sensible idea which should lead to integration of catchment functions related to water management.

Unfortunately we rarely see a CMP which addresses anything much more than traditional flood and pollution alleviation. Few NRA Regions see their role as planners extending far beyond the legally defined 'main rivers' system. Most importantly, many CMPs lack vision for the catchment. This should deal with the future role and character of the catchment, drawing on the issues and opportunities identified from a functional analysis of the catchment. We should expect a CMP to identify clearly the options available to all users of a hydrological system, including possible sites for wetland rehabilitation and creation. Without a vision it is difficult to see how to provide clear direction for the strategies which form the 'action plan' part of CMPs.

If we accept that the NRA cannot be solely responsible for achieving the goals of a CMP then the only way by which it can influence the mechanisms which drive land-use change in the catchment is to share a vision with its partners, and solicit support from them. Clearly the goals of a visionary and ambitious plan cannot be achieved without the support of Local Authorities, politicians, MAFF, the conservation agencies and all others who have a stake in the functions performed by a river system. The challenge to the NRA and its partners is to produce plans which genuinely reflect the needs of all people who live and work in river catchments.

I would like to look at the place of wildlife in a vision of the new waterlands, which I take to imply a more natural approach to integrating and optimising river catchment functions.

A Place for Nature

Many people who gaze out over our great drained river basins must be profoundly impressed by the achievements of our ancestors in taming the wetlands. But there is also a great sense of loss and a feeling that most people no longer have a place in the artificial, agriculturally - dominated landscape. It has but one remaining major function - food production. If it is a peatland in the Fens, the Yorkshire Derwent Valley, Lancashire or the Somerset Levels, we suspect that even this function has a limited life as the peat soils waste and blow away. Some of us can remember when these areas were far more natural, even though they were still farmed, albeit at a less productive level. Agriculture then often involved mixed farms with a need for substantial areas of grazing.

To take but one local example, Romney Marsh in the 1950s was a place of 'wet and wilderness' in winter with great flocks of ducks and waders, a place where one could roam with binoculars, a fishing rod or even a gun without having the slightest impact on the abundant wildlife. It was also all farmed land, producing legendary sheep thought by many to be the best in England. Almost all of that has now gone to arable cropping, with the same story repeated throughout the UK. But is this an irreversible trend? For wetlands there is a new opportunity about to arise.

Just add water....

Unlike ancient forests and chalk grasslands, drained wetlands very rarely lost all their natural species when converted to intensive agriculture. Certainly much damage is done (and there are many examples of species loss in the literature) but in the ditches, drains, ponds and river systems many of the 'foundation stone' species for a new wetland survive. Given the right opportunity they will once again recolonise wet grassland and open water because most wetland species, even plants, are highly mobile both within and between river basins.

An example of the dynamic nature of temperate wetlands can be found in the West Country where visitors to the recreated wetlands on the peat excavations of the Somerset Levels have been astonished by the speed of recolonisation and the dramatic reappearances of rare species of birds, invertebrates and plants!(1). Table 1 demonstrates that within 5 years these areas can go from bare peat and clay to good quality wetlands, colonised from the species reservoirs in the surrounding landscape. They will never replace the species-rich wet meadows which were lost to peat extraction but they are certainly valuable additions to the wildlife resource in Somerset.

	Vascular Plants			Breeding Birds				Invertebrates					Total in Groups Sampled
	Meadow Plants	Fen & Aquatic Plants	Total	Meadow Birds	Woodland/Scrub birds	Aquatic Birds	Total	Butterflies	Dragonflies	True Flies	Hymenoptera	Total	
Shapwick Heath	100	150	250	10	42	7	59	28	15	42	8	93	402
Spp of High Conservation Value	20	15	35	1	2	1	4	2	2	3	2	9	48
Westhay Heath	30	60	90	3	26	12	41	8	12	20	4	44	175
Spp of High Conservation Value	1	3	4	-	2	3	5	1	2	-	-	3	12

Table 1 Estimates of numbers of species found on unexcavated (Shapwick Heath) and excavated (Westhay Heath) areas managed for nature conservation. Sampling effort similar on both areas. Westhay Heath was a bare peat and clay excavation 5 years before sampling took place.

There are now many payment schemes available to landowners and occupiers where essentially government agencies 'rent' land for uses other than, or in addition to, agricultural production. In wildlife terms, there is a good argument that conversion of this land to wetland gives the best value for money, if only because the greatest species loss and decline over the past 50 years has been in wetland species. As we have seen, species-rich wetlands can be created on a seasonal or permanent basis. There are many examples of this in the UK, on the Somerset Levels, Martinmere, Minsmere

etc. where conservation bodies have acquired and then rewetted land. There are also areas such as the Ouse Washes where land is used by the Water Authorities for temporary flood storage. Although these agencies have achieved excellent results in wildlife terms, they have also learnt some valuable lessons in land management in wetland situations. MAFF are also contributing to this knowledge using their wetland ESA experience.

But can we apply what we have learnt to the large intensive agricultural areas such as those of Eastern England which lie in our drained river basins? If we decide that as part of our vision for the catchment that they can be used for flood storage, aquifer recharge and other functions, can agriculture survive? This is an important issue for it affects the socio-economic functioning of the catchment. It is also a subject which raises powerful emotions in those who have spent their lives draining these areas, increasing agricultural production to the point of embarrassing surplus. Perhaps we can now go some way towards convincing them that the vision of new waterlands offers a better long-term prospect for land-use than the present system, which even many farmers see as unsustainable.

Firstly, and this is a point rarely aired, new wetlands created on farmland are not necessarily a permanent and irreversible change in land-use. Airports, motorways, business parks and housing are to all intents and purposes permanent changes, but wetland creation actually conserves the land itself, particularly in the case of peatlands. If necessary, it can be brought back into intensive agriculture very rapidly. This was done in the 1940s with the relatively primitive technology available then; it would be much easier to achieve with the modern drainage, farming equipment and expertise available today.

Secondly there is often the assumption that wetlands are for wildlife alone and do not produce anything other than a good crop of birdwatchers. Paradoxically wetlands were the cradles of civilisation not only in the Middle East but also right here in England in, for example, the Thames Valley. Many archaeologists believe that wetland productivity was the driving force behind these civilisations because the people living there learnt to use sustainably the natural species inhabiting wetlands. Is this relevant to the complex urbanised society of Europe in the 1990s?

Some economic values of wetland wildlife

Like the ancient civilisations we face the basic issues of looking for sustainable resources. Taking sustainability as a theme let us have a look at what wetland wildlife has to offer:

- * Seasonally wet natural grasslands are highly productive, even in temperate regions. The MAFF/DoE/NCC grazing and fertilizer experiments on the Somerset Levels (2) found that in annual productivity terms, the natural herb-rich grasslands were in the top third of UK agricultural grasslands, without any addition of artificial fertilizer. Small additions in Summer raised productivity still further even though annual winter flooding of up to 6 weeks was occurring. Even without the use of artificial fertilizer the fields produced a good crop of palatable grass which when examined scientifically (see Fig 1) was shown to be nutritious when cropped for hay used for aftermath grazing. The challenge to agriculture on the new wetlands lies in learning how to exploit seasonally wet grass. Why do we persist with the philosophy of adapting land to machinery when, for example, the Dutch in wet areas do exactly the opposite? They use low ground pressure traction and often remove crops and move livestock using water transport.

- * Freshwater fish will increase in abundance and quality in the new waterlands and their associated river systems. This will undoubtedly benefit fish-eating species such as otters and predatory birds, but there may be other and equally important benefits. In England, serried ranks of anglers (some 4 million of them) line our river banks, catch fish and then put them back into the water. To the average world citizen this strange and addictive ritual must seem bizarre, as freshwater fish are an important part of the staple diet in most parts of the globe (3), including parts of Europe. Anyone who has eaten well-cooked eels, perch, pike or carp will vouch for their wholesomeness. Our recent ancestors harvested them so why shouldn't we? Eating wildlife may seem heretical coming from English Nature, but if we want wetlands we cannot justify them solely on wildlife grounds. Harvesting wetland species such as fish and birds is often a sustainable use which can be carried out without significantly harming populations.
- * In permanent new wetlands there is the opportunity to produce high quality reed, unlike some of our more polluted areas which no longer produce reed suitable for thatching. Reed can also be used to produce paper products if large enough quantities are available. Until the 1940s, the UK imported reed for paper-making from, for example, the S'Albufera wetland in Mallorca (4). Again, this is a sustainable use for wetland areas which incidentally would have water quality and fisheries benefits, besides reducing pressure on forests used for paper production.

Besides the direct economic opportunities offered by wetland wildlife, there is also a cultural benefit. Wetlands can absorb large numbers of people, bringing them close to wildlife in ways not possible in other wilderness areas. In a country where membership of voluntary conservation organisations is greater than that of political parties and where most people use the countryside for recreation, the economic benefits arising from 'green tourism' are potentially enormous, offering new job opportunities in rural areas.

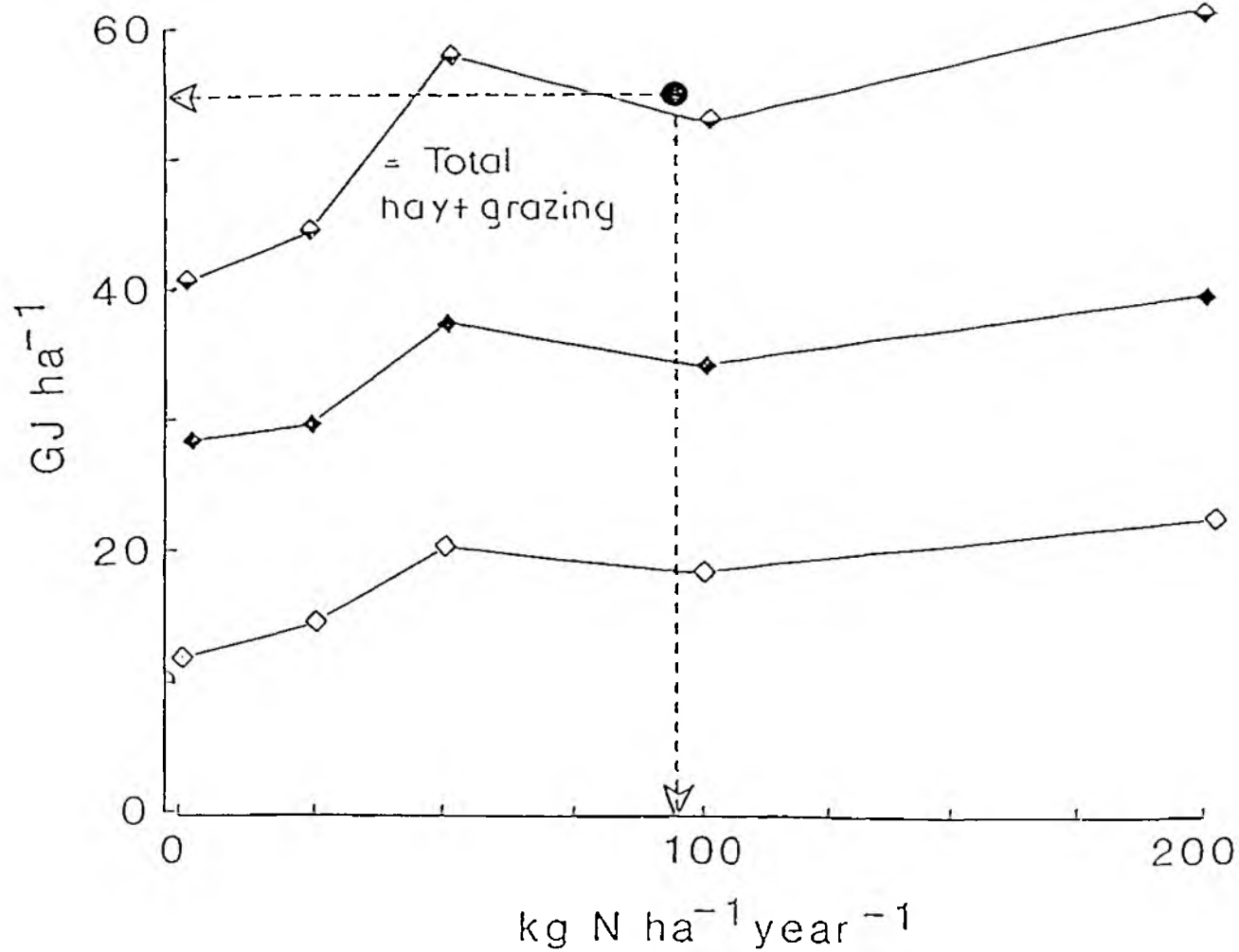
Clearly we cannot regard the potential wildlife value of new waterlands as separate from other functions which they may perform. To do so is to adopt the same isolationist philosophy of the land drainers. If we adopt a more radical approach to the creation of new waterlands they can offer far more than just wildlife benefits. That is the message that we must share with the NRA, MAFF, landowners and local authorities if we are serious about redesigning our river systems using a more natural and integrated vision.

B R Johnson
Lowland Peatlands Project Co-ordinator
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Roughmoor
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Taunton

Fig 1. Overall sward output in terms of utilized metabolisable energy (UME), mean of 4 years

- ◆ from baled hay
- ◇ from aftermath grazing
- ◆ total (99.0% confidence limits)
- Comparison with mean UME output and applied N for top third of non-suckler beef farms

(from Mountford et al, 1991)



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INTEGRATED MANAGEMENT OF THE RIVER CATCHMENT

Mike Clarke

Introduction

The River catchment is the logical planning policy unit for the management of the water environment to meet multiple objectives for land use. Since its establishment, the National Rivers Authority has been developing the concept of Integrated Catchment Management Planning (ICMP) - a step which has been welcomed by environmental and nature conservation agencies.

A first generation of non-statutory, catchment management plans has now been produced by all NRA regions. These have been subject to comment and review by nature conservation organisations; firstly, through the NRA committee structures and, secondly, through the consultation process adopted by the NRA. In addition, a recommended methodology for future plans has been prepared by Land Use Consultants, on behalf of English Nature (1).

Why is ICMP important for nature conservation?

In general terms ICMP is seen as a key mechanism in shaping land use, along with the town and country planning process. There are also several specific factors:

- * The close inter-relationship between wildlife and the water environment. For example wetland habitats support much of the South East's most important wildlife at a UK and international level.
- * Catchment planning should provide a strategic framework for integrating nature conservation and other land uses. This is a necessary condition for sustainable use.
- * It provides a mechanism for influencing use of agricultural land for benefit of wildlife and water environment generally.

The rest of this paper will consider progress towards Integrated Catchment Management Planning with respect to the following:

1. The integration of public policy
2. The management process
3. Strategic planning

1. Integration of Public Policy

Three significant policy areas can be identified where the current process falls short of the aims of ICMP.

- i. **Agriculture** The 1992 reform measures for the CAP, and the agri-environment programme agreed by the EC Council of Ministers, signal a major change in the objectives for agriculture. This means that institutions and policies will need to adapt (2). The NRA has a key role to play in the restructuring and diversification of the agricultural sector; and it must rise to meet the challenge. However, to date this has received little attention in catchment management plans.

This is highlighted, for instance, in the Test Valley catchment management plan (3) by the lack of a chapter considering agriculture, a significant omission in view of its status as an ESA.

The Environmentally Sensitive Areas (Test Valley) Designation Order 1987 is a statutory expression of Government objectives for agriculture in the Test Valley which are stated to be:

- a) to conserve and enhance the natural beauty of the area;
- b) to conserve the flora and fauna and geological and physiographical features of the area
- c) protect buildings and other objects of historic interest in that area.

The Test Valley ESA area encompasses some 2670ha of the floodplain within the CMP. Of particular relevance to NRA functions, is the maintenance of seasonally high water levels in ditches, the retention of water in ditches at all times, and the creation of reed-beds under Schedule 1 of the Order.

ii. **Development plans** The other principal strategic planning process affecting land use within the catchment is the structure and local plans system. The Government has recently re-emphasised the need for close integration between these considerations in PPG 12. (4). This is clearly a two way process - the NRA requires early consultation but the current generation of catchment management plans suggests that local authorities also need to be more closely involved in catchment planning. The catchment plan is an important vehicle for promoting NRA advice to local authorities on floodplain risk, as required by Circular 30/90 on development and flood risk (5).

iii. **Estuaries** The estuarine reaches of rivers have been excluded from nearly all catchment management plans to date (with the exception of the attention given to estuaries by local and central Government, in the wake of the House of Commons Environment Committee report on coastal zone planning (6).

Estuaries are also of particular significance in conservation terms. For example, the Rivers Test, Itchen, Stour and Medway all have estuaries recognised by Government as qualifying for special protection from damage and under the EC Directive on the Conservation of Wild Birds (79/409/EEC) and the Ramsar Convention on Wetlands of International Importance (Cmnd 64/65). However, these estuaries are excluded from the catchment management plans. This shortfall prevents a more strategic approach being taken to the implementation of international obligations for an integral part of the catchment.

An integrated approach is needed to major debates such as coastal zone management and coastal defence. We have recently seen some significant developments from Government in its policy for coastal defence. In an announcement (7) during December 1992, the then Agriculture Minister John Gummer stated that:

“The primary aim of both flood and coastal defence is to protect life and to reduce the risk of flooding or erosion causing damage to the natural and built environment”.

The announcement also emphasised the need for the protection of coastal habitats and the opportunities presented by managed retreat.

This new policy may be less memorable than the old policy "to protect life and property" - which features in the NRA Mission Statement - but it represents a major change of approach and raises a number of questions for the NRA in catchment planning.

- * How will it implement this policy in its decision making process?
- * Will this also apply to works not granted-aided by MAFF?
- * Will this apply to inland flood defence and land drainage?

(Subsequent to the Conference, the Minister has said that it will apply to inland works and this will be confirmed in the MAFF Flood and Coastal Defence Strategy, in press).

2. The Management Process

If we are to achieve closer integration of policy objectives, then we need to manage the process of catchment planning. There are several factors to take into account:

- * Joint action for complex problems -

The NRA has little control over many factors affecting the catchment, especially away from the river corridor - this requires an emphasis on close working relationships and a partnership approach with other agencies.

- * Consultation and Collaboration -

A partnership approach is based on the development of common aims between organisations and this is in large measure achieved through the joint identification of strategic issues for catchment management plans at the preparatory stage. This approach has been taken with some success by NRA Thames region, but in most cases catchment management plans have been internally formulated only.

- * Implementation -

Functional integration has been a core management task for the NRA. Many in nature conservation see the river catchment management plans as a key mechanism to ensure that the NRA's resources and actions are directed at national objectives which satisfy national priorities (for example, the changing need for land drainage). An important way of achieving this is the development of ICMPs which will drive the work programmes of all NRA functions on the ground.

3. Strategic Planning

A common feature of many plans is that they fail to take a holistic view which sets out a vision for the whole catchment and the strategies to achieve it. Words like 'protection', 'safeguard', and 'maintenance' often appear but the plans rarely stress opportunities for enhancement. This feature is reinforced in many cases by the lack of any historical assessment of the catchment and the use of the status quo as the benchmark. The ICMP approach effectively represents the development, through consultation and consensus, of a NRA policy and plan of action to realise the potential of

the catchment. As such, it has a wider role than simply as an internal guidance document for NRA duties and permissive powers. It provides the way for a strategic direction to be set for the catchment in which environmental considerations underpin all aspects of management. Further development of the ICMP approach should have three aims:

- * Sharing objectives
- * Identifying change
- * 'Wise use' of resources

Conclusion

In summary, there is a growing case for the integration, management and planning of catchments to take account of the following:

- * Land use impacts on the water environment
- * Land use in lowland Britain is largely determined by development plans and agriculture
- * Agricultural change is a major positive opportunity

The NRA is to be congratulated in starting the process, but it is important that the ICMP continues to develop. The NRA needs to set out in catchment plans long-term, strategic objectives - the 'vision' which is currently lacking. This, coupled with a clear statement of NRA policies for the catchment, would move the catchment plans from the reactive footing of the current generation to one which is positive and forward-looking. Future catchment plans should identify opportunities for changes in land use, which would benefit the environment and provide the basis for NRA input into the development plan system.

Acknowledgements

This paper follows a series of workshop meetings between the Sussex Wildlife Trust, Surrey Wildlife Trust, Kent Trust for Nature Conservation and the RSPB. I would like to thank colleagues in the county trust movement and Roger Buisson for sharing their ideas and to David Harvey for drawing English Nature's report to my attention.

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THE NATIONAL RIVERS' AUTHORITY APPROACH TO INTEGRATED CATCHMENT MANAGEMENT PLANNING

John Chandler

In September 1989 responsibility for managing the water environment in England and Wales passed from the ten Water Authorities (which then ceased to exist) to the newly-formed National Rivers Authority. This involves the NRA in the direct management of some functions (eg: flood defence, fisheries management), whilst control over other aspects of the water cycle (eg: water abstraction, effluent disposal) is achieved by a system of regulation and licensing. The NRA is also a statutory consultee on planning matters, seeking to influence local authority policies and decisions to ensure that its environmental objectives are achieved.

In the exercise of its functions (including the regulatory functions) the NRA has an overriding duty to further conservation. Faced with a number of players whose interests do not always coincide, but whose activities interact, the Authority considers it essential that they should agree on integrated game-plan to define their objectives, resolve conflicts and ensure that resources are used efficiently. The natural area for this exercise is the catchment, including either a single river or a group of adjacent streams draining an area of a convenient size. By April 21998 the NRA intends to have produced some 190 integrated Catchment Management Plans covering the whole of England and Wales.

The production of a Catchment Management Plan falls into two phases. The initial task is to produce a Consultation Report which reviews the current and potential water-related uses of the catchment and identifies a range of issues and targets, and the management options available to achieve them. The consultation process involves local authorities, interest groups and landowners, and usually culminates in a public meeting.

The second phase is the publication by the NRA of the Catchment Final Plan. This takes account of the views of consultees and includes definite proposals for the improvement of the catchment (not all of them within the province of the NRA) and an outline timetable against which progress can be judged.

Plans have already been produced for the Test, Ichen and Medway catchments: the Darent and Kentish Stour plans are in preparation, and in Sussex, plans are proposed for the E. Rother Catchment in 1993/4, the Arun/W Sussex streams in 1994/5, the Ouse/Adur (joint plan) and the Cuckmere/Pevensy/Bexhill area in 1995/6. All Final Plans will be subject to regular review.

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RE-NATURALISING THE WATER CYCLE

David Hill

(Written contribution)

The Natural Cycle

In the natural water cycle about one third of rainfall returns through evaporation and transpiration, about one third infiltrates into aquifers and the remainder runs off via rivers to the sea. Man interferes with this natural pattern in three ways: he abstracts water from aquifers and rivers and returns it as effluent, often direct to the sea; drains land and trains rivers to speed surface water in an headlong rush to the sea; and then constructs defences to protect 'his' property from the resultant flood.

Re-Cycling

The damage to wetlands from these actions is compounded by an antipathy towards re-cycling; a prejudice against reuse; and an irrational fear of drinking even properly treated effluent. Changes in these attitudes would mean reduced primary abstraction and cleaner rivers: both of considerable benefit to aquatic wildlife.

Of the 20,000 Meggalitres (ML) of water supplied by the Water plcs each day 8000 ML is discharged direct to the sea and the remainder to rivers and thence to the sea. With only 10% recycled this is an unacceptable waste of a precious resource. This means that 90% of water supplied comes from primary abstraction, a third from aquifers and the remainder taken from surface waters having no augmentation from sewage effluent. If reuse was only doubled, abstraction from over worked aquifers and depleted rivers would be reduced by 2000 ML/day. This would need much firmer implementation of the Control of Pollution Act to clean up industrial discharges to waterways and sewers and the addition of tertiary processes at Sewage Treatment Works. It would provide a great incentive to demanding cleaner rivers! It is feasible and, with proper treatment, it is safe.

Land Drainage

Land drainage not only reduces ground water levels but also demands chanelised rivers to speed rainfall on its way to the sea. Retention times in upper reaches is shortened, robbing aquifers of recharge and rivers of delayed dry weather flows. The benefits from a return to natural drainage and re-introduction of meanders and flood plains would greatly outweigh the reduction in intensive agricultural production on marginal land.

Inland Flood Defence

The need for flood defence has been increased by land drainage and associated chanelisation of rivers and a return to natural systems would allow costly maintenance to be relaxed. Some defences such as barrages in upper reaches, as at Leigh on the Medway, were designed to be emptied, wastefully, as rapidly as possible after filling, missing the opportunity to transfer the contents to pumped storage reservoirs for dry weather river flow augmentation or public water supply. Their potential for making better use of resources within the catchment should be re-examined before new sources are exploited.

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Ambleside

Cumbria

INTRODUCTION - AFTERNOON SESSION

David Hill

Introducing the second half of the conference, David Hill said that the first papers had discussed political views and the concerns of conservationists. There would now be an opportunity to consider the views of agriculture and the National Rivers Authority.

It had to be accepted that all human activity, beyond mere survival, caused damage to natural habits and this was no less true of wetlands. Intensive agriculture, and the land drainage which was often a prerequisite of it, was just one such activity and yet it must sometimes seem as if the whole armoury of the conservation movement, and public opinion, was being mounted against the farming community.

The last hundred years had seen population increase by two and a half times whilst the area of land under cultivation had remained virtually stable. No one had starved: to the contrary Britain had become self sufficient in almost everything except sugar, potatoes and dairy produce. For this the farming community rightly deserved our gratitude.

And yet there was a growing realisation that producing vast surpluses benefited no one. Short term gains from land drainage, chemical fertilisers and pesticides were not worth the long term loss of wildlife habitat and damage to our environment and to our health.

In the words of Elliot Morley MP we had moved out of the 'Age of food production maximisation' into the 'Age of re-evaluation'. Was agricultural policy truly moving towards sustainable agriculture and into an 'Age of Conservation'? Could this be achieved in partnership with the farming community?

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DEVELOPMENT IN AGRICULTURAL POLICIES

Colin Bodrell

The balance of MAFF policies has shifted in recent years towards affording greater conservation and enhancement of our countryside and its environmental assets and it is my aim to highlight the changes in direction of agricultural policies that have occurred or are in train. I will try to explain something of the limitations (be they legal or financial) on our ability to move faster, and will also indicate how I think we can best make use of the policies and resources at our disposal.

My Division of the Ministry is primarily concerned with the Environmentally Sensitive Areas (ESA) scheme, but I also keep closely in touch with colleagues responsible for all other measures which have an environmental dimension including Set-Aside and Livestock Extensification.

Let me first say something about the developments in agricultural policies which are likely to be of general help in environmental terms. The reforms to the Common Agricultural Policy which were agreed last year included some useful steps in the direction favoured by environmentalists. Importantly, the reductions in end-price support (via export subsidies or purchases of surplus production by the intervention authorities) and the switch towards payments for arable crops on an area basis coupled with an obligation to set aside 15% of arable land, mean that the incentives to maximise yield are reduced. This should lead to lower inputs of fertilizer and pesticides and more extensive production systems as farmers seek to reduce their input costs. Since the area payments are not available on land under permanent grass at 31 December 1991, the incentive to plough up grassland is also much reduced. These policy changes represent a significant move away from a system which maximised food production regardless of market need. The revised systems permit better fine tuning of agricultural support to ensure levels of production more in line with market demand and to reduce the incentives for maximum output per hectare regardless of the cost to the environment.

Our government has been very keen to try to persuade our partners in the EC that care for the environment should be integral to agricultural policy. We have therefore promoted the concept that, whenever practicable, the receipt of any agricultural subsidy should be subject to the beneficiary avoiding environmental damage on his land. This approach has come to be known as "cross compliance". In the CAP reform negotiations we secured a Council declaration affirming that environmental protection requirements must be pursued as an integral part of the CAP and calling on the Commission to make early proposals to that effect. So far we have secured EC legal provisions allowing us to attach such conditions to the Hill Livestock Compensatory Allowances, the Suckler Cow Premium Scheme and to the Set-Aside Scheme. We are pressing in this year's Price review negotiations for amendments to EC law to allow the same concept to be applied to the Sheep Annual Premium Schemes and the Beef Special Premium Schemes.

It is proving an uphill struggle to persuade our partners in the Community of the merits of this approach. They see their agricultural industries facing reduced returns and they are anxious to avoid imposing new conditions upon them. But we have had some success and are determined to press ahead with our objective of making environmental care central to the development of modern agricultural policies.

There are practical limitations, of course. One cannot attach environmental conditions to any payment which is not made directly to the farmer. A payment by the intervention authority to a grain merchant cannot readily identify the farm on which the grain was produced. That is a further benefit of the switching of payments to a per hectare basis directly to the farmer. It provides us with the means of attaching the conditions that we think appropriate. The important thing is that such conditions should not be disproportionate. It would be nonsensical to attach conditions which would cost the farmer more to comply with than the payments which he was obtaining particularly where these payments are primarily designed with a quite different objective in mind. We have also to avoid placing our producers at a disadvantage compared with their competitors in other EC countries. We need them to stay in business to manage the land, for without agricultural management the environmental interests would certainly not flourish. So, cross compliance provisions must be reasonable and should essentially be to avoid environmental damage. They cannot, in general, be used to achieve environmental gains.

That is where the schemes dedicated to environmental conservation and enhancement come into play, chief among which is the Ministry's ESA scheme. In brief, that scheme's provisions are as follows:

1. It applies only in areas that are specially designated for their particular valued landscape or wildlife characteristics.
2. Designation is by the Minister of Agriculture on the advice of English Nature, the Countryside Commission and the Secretary of State for the Environment.
3. It is voluntary; farmers are not obliged to participate.
4. Those who do, receive annual payments per hectare for managing their land in ways specified under the scheme.
5. There are higher tiers in the scheme with higher payment for meeting more demanding conditions including, for example, the re-creation of hay meadows, heather moorland, or wetlands in suitable areas.
6. Payments are also available for necessary capital works to assist in the achievement of the individual schemes' objectives, e.g. the provision of sluices to hold water levels.
7. The EC contributes up to 25% of the cost of these measures and there are plans to increase their contribution to up to 50% this year.

There are presently 16 designated areas in England. A further 6 will be introduced later this year when the scheme will cover over a million hectares, about 10% of agricultural land. Annual payments to farmers are expected to reach £43m in England by 1994/5.

The other MAFF schemes each make their contribution to environmental protection and gains on agricultural land. Payments under the Farm Woodland Premium Scheme in 1993/4 should approach £3m while under the F&CGS, £31m per annum is being spent mostly on systems for safe disposal of manure and farm wastes - of some importance to the avoidance of pollution to rivers. The scheme also covers such things as hedgerow planting and laying, and dry-stone walling.

Turning now to the protection, enhancement and restoration of wetlands, some of the established ESAs are already dedicated to this in the Somerset levels, the Broads, the Suffolk River Valleys and the Test Valley and, among the recently designated ESAs, the North Kent Marshes and Avon

Valley ESA. Others in the pipeline will also include a "wet" focus, namely the Upper Thames Tributaries and the Essex Coast ESAs.

With the review of ESA policy last year we took a major step forward in the design of these schemes. We moved decisively from a position of simply seeking to protect what we had got from further degradation (by paying farmers not to intensify further) to a position where we now pay them to manage in ways which achieve positive environmental gains. For example, in the Somerset Levels with active support of NRA and IDBs we are now trying to get back the wetland conditions that characterised the area before agricultural improvements took place. The payments to achieve this are necessarily very high since the farmer is being asked to forgo substantial income from farming his land to its economic optimum. It is good to hear that we can expect quick results in wildlife terms. That is important, because we are dispensing taxpayers' money and we have to satisfy ourselves that the prescribed management is bringing back the numbers of wader birds, and that the characteristic wetland flora is returning. So we are monitoring the results with great care. There is, course, a substantial cost in doing that too. We also fund a substantial research programme aimed at providing the scientific basis for the land management conditions that we prescribe to achieve the desired environmental results. That alone accounts for about £1.6m per annum. Expenditure on ESA schemes is set to increase four-fold by 1995 despite the pressure for financial cuts.

Fortunately, the ESA scheme is not the only vehicle that can be used to restore our wetlands. The Countryside Commission's Countryside Stewardship which has great similarities to the ESA scheme, but is not confined to designated areas, also includes in its coverage waterside landscapes and coastal areas. Between them these habitats are already covered by management agreements under this scheme covering about 15000 hectares. There should also be scope under the expected non-rotational Set-Aside arrangements for the sympathetic management of new areas of wet grassland.

To explain the multiplicity of different schemes for environmentally sensitive farming, the fact is that each of the schemes has different objectives and is made under different legislation - mostly at EC level reflecting the different needs of the Member States. So, it is not a simple matter to amend the legislation or to rationalise. As an example, the Set-Aside Scheme is primarily intended to reduce arable production. Set-Aside land must not produce any agricultural crop. But we in the UK have sought to give it an environmental dimension. The ESA scheme on the other hand was originally devised in this country and then taken up by the Community to encourage environmentally sensitive agricultural management. It is incidental that such management also achieves some reduction in output. Countryside Stewardship, on the other hand, is very similar to the ESA scheme, but because it is made under legal powers which the Countryside Commission alone enjoys, it does not need to be restricted to designated areas. Moreover, Sites of Special Scientific Interest, which English Nature designates and in the management of which is able to enter into agreements with farmers, have a quite different legal base and justification.

The Ministry and the DoE and its agencies work closely together to ensure that there is no overlap between the measures adopted and as far as possible to rationalise the range of schemes. What is important, above all, however, is that the schemes are run in a coherent and complementary fashion, and the management and restoration of river valley wetland provides an example of the kind of coherence that we are striving to achieve. We recently had discussions, initiated by the Wiltshire Wildlife Trust, to see what scope there was to encourage the creation of buffer zones alongside our rivers. The Trust would have liked to see a new free-standing scheme for River Corridor Enhancements but accepted that this was not likely to be possible. However, together with

my colleagues who look after the Arable Area Payments Scheme, the proposed new long-term Set-Aside Scheme, the Nitrate Sensitive Areas Scheme and the Ministry's flood defence policies we discussed the possibilities for using the opportunities presented by all these measures plus ESAs and Countryside Stewardship to achieve in a coordinated way the beneficial management of riverside habitats along significant stretches of rivers. We agreed to consider further with the Countryside Commission the possibilities for piloting such an approach alongside the Hampshire Avon taking account of the NRA Catchment Plan. We will take this forward with the RSNC and the Trust, the NRA and the countryside agencies when the proposals for long-term and non-rotational set-aside have been published.

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GROUP FARM APPROACHES

Examples of What Can Be Achieved

Richard Knight

I am going to talk about the practical approach; that is when we actually get on to the land and how we then persuade people to do things. I feel that the following factors are of critical importance in guiding a future practical approach:

We in FWAG, have come to the conclusion that looking at individual sites is a strictly limited approach; there is much more that we can do if we take a broader view. We would like to capture the whole potential of an area.

There are major opportunities in the wider countryside. Please do not focus all your attentions on designated areas and, dare I say it, on grant schemes. The potential outside that is vast.

We need to go forwards, not backwards. We should use technology which is appropriate for today, both in farming techniques and in the conservation side.

We will also need to adapt existing technology, that is talk to conventional farmers about what is happening in the organic movement.

Farmers have to be the key decision makers; it is their businesses we are talking about and they have to be part of the decision making process.

We want to keep costs down and get value for money.

We must work alongside other projects such as ESAs and Countryside Stewardship.

We must beware of long-term financial commitment and the resulting dependency. It is better for people to do things because they understand why they need to do them, and this can result in a reduced financial commitment.

We, and by this I mean both farmers and non-farmers, must be able to compete on a world market, therefore we must be careful that we do not stifle our enterprise. Let us have viable, environmentally sound farming operations.

We must guide diversification on farms. Let us see where it is going and what effects it might have on the environment. I urge caution because it might be worse than we have been getting from the farming.

We must guide rural development.

The remainder of Mr Knight's talk was illustrated by slides of sites in Herefordshire, Cornwall and elsewhere. A precis of his remarks follows:

FWAG advised on the creation of 690 ponds in the nine months April - December 1992 and it thought that about 500 of those would actually be created. Areas of shallow marsh were being built into them. One slide showed a pond which had been built to be shallow. It was built for dense vegetation, partly for birds but particularly for invertebrates, and that was at the wishes of a farmer.

A farm must be seen as a complete unit. It is the whole farm that is important and this ties in with farmers' thinking because the farmer thinks of his farm as a complete unit.

FWAG's priorities are: first, to find out what the existing creatures are and maintain them and manage them correctly. Secondly, farm practices can be adjusted to benefit the environment and, if they are not adjusted, they can be damaging. Only thirdly do we talk about the creation of new habitats.

A key factor is to retain the wetlands as we see them, preventing rather than minimising pollution. It is important to have farm waste management plans, making farmers aware of areas on which they can put their farm waste and areas they must not, or the areas which they must buffer. Crop protection is vital but we must make sure that the materials that are put on hit their target exactly e.g. by leaving a two metre wide strip where no fertilizers or pesticides are used round the edges of fields.

What we are trying to do in FWAG is to unite the conservation of wildlife and the landscape with farming priorities. FWAG have set up some Group Farm Schemes in Cornwall. The main reason for going for Group Farm Schemes is to extend our thinking on the idea that wildlife does not respect farm boundaries, moreover some species also need larger areas than exist on one farm. To maintain viable populations, we must maintain means by which those populations can move around the countryside, so there is no sense in looking at either single sites or even single farms on their own. We now have close to 30 land-owners working together at St Keverne, Cornwall. Not only are they working together, but they are allowing the wildlife to be managed in a large area. As part of the project, the FWAG advisers have brought in expertise from other organisations.

Our biggest scheme is in the Pang Valley where concern was brought about by the lowering of the water table. Now we have a Project Officer there, who will be working with farmers and land-owners on ways of improving the habitat and looking after the use of water, in conjunction with other organisations.

It is sometimes necessary to make farmers aware of the habitat requirements of wildlife, e.g. trees and hedges for robins and dead wood for Greater Spotted Woodpeckers.

We need to talk to farmers in language that they understand, so that we can take groups of, say dairy farmers or pig farmers, or whatever, and look at the possibilities available in their particular type of farming. Praise sometimes goes a long way. Perhaps we could soften our hearts occasionally and give people a nudge in the right direction.

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INVOLVEMENT BY THE NATIONAL RIVERS AUTHORITY (NRA) IN WILDLIFE CONSERVATION IN HAMPSHIRE, SUSSEX AND KENT

Maldwyn Drummond

The NRA is directly, and indirectly, involved in many wildlife conservation projects throughout the region. Outlined below is an overview of the range of work that is being done at present. These works show some of the ways that the NRA is responding to environmental legislation (Appendix 2) and is achieving its conservation objectives (Appendix 1).

Regional

The Otter Project

Covering the region over a three year period the first phase is to identify by survey where there are still existing otter populations. Suitable unused otter habitat is also being recorded with a view to encouraging the spread of existing populations or the possible introduction of animals bred in captivity. Kent is due to be covered in 1992/93.

The NRA are in partnership with the RSNC and the County Trusts and work over the first fifteen months will cost £17,000. With similar costs over the next two 12 month periods additional sponsors are being sought and it seems likely that Southern Science may join the partnership.

The Crayfish Survey

This work is being carried out internally by John Foster with help at weekends. John and friends will be surveying all the main rivers in the region to discover the current situation of the native crayfish populations. The decline of the native species has been dramatic since the introduction of the crayfish plague with American imports. A licence has been granted by English Nature to search for these protected species.

A sum of £500 has been budgeted.

Hampshire

Penton Mewsey Pond, Andover

A collaborative scheme involving the Parish Council, Test Valley Borough Council and Greenspace which aims to enhance the landscape and conservation value of the village pond. The cost of the scheme is £2,240 and a contribution of £400 is being sought from the NRA which has been involved from the beginning.

Sussex

Sussex Wetlands Report

Sussex Wildlife Trust has proposed a full programme for the year beginning with a report on the changes in grazing marshes, looking particularly at Amberley Wildbrooks and Pevensey Levels. It will review available data from several sources and will conclude with a number of recommendations for safeguarding the grazing marshes of Sussex. The cost is £6,068 and it is recommended that the NRA contributes £3,000.

Adur Valley Project

Proposed grant of £3,500 towards this collaborative project tackling both conservation and recreation schemes and centred on the River Adur. Financial support comes from the District Council, County Council, Sports Council and the Countryside Commission.

Atherington Ponds, Climping

This involves the cleaning out of two ponds on National Trust land in collaboration with Arun District Council, through Andrew Blake, the Arun Valley Countryside Project Officer. The NRA contribution will be £500.

Railway Land Trust, Lewes

This is a project to encourage traditional wet meadow land farming and improve the ecological value of the badly silted ditch system. The Trust involves the local community and schools and the site forms an integral part of a larger wildlife area supported by the District Council, Sussex Wildlife Trust and English Nature. The NRA will assist by desilting and restoring a number of the ditches on the site. This work will be carried out by flood defence staff from Pevensey and recharged to the conservation budget. The estimated cost is £3,000.

Marine Survey, Littlehampton

The strong interest in marine conservation has highlighted the difficulty in obtaining information from the sea bed. There is, however, information available which requires to be collected to provide a baseline for future studies. The coast off Littlehampton is ecologically more interesting than adjacent areas and it is proposed to collate all available information for this area. The intention is to fund a researcher for three months at a cost of £3,000. This is a collaborative venture with contributions from English Nature, Chichester Harbour Commissioners, Arun District Council and possibly WSCC and Chichester District Council. The NRA contribution will be £750.

Hammonds Farm mill race , near Hassocks

This waterway is not a main river and runs alongside a public footpath. The race is lined by trees on both sides. Many have suffered storm damage and have fallen into the channel, causing siltation and excessive reed growth. Conservation staff have agreed works which will enhance the existing habitat and the owner has been quoted £3,000. WSCC are contributing £500, and it is proposed that NRA also contribute £500.

Barn Owl Project

The NRA are sponsoring the construction, erection and monitoring of barn owl nesting boxes. These are to be sited along the lower valley of the Eastern Rother, where suitable habitat exists to encourage the spread of barn owls from the population on Romney Marsh.

This work is a partnership between the Hawk Trust and NRA and will cost £9,000 over three years.

Kent

The Kent Wildlife Habitat Survey

It is proposed to survey all 3,700 km² of countryside in Kent and classify it into one of 130 different habitat types. The survey will result in a series of colour coded maps and target notes for each site. A computerised data base linked to a GIS enables the information to be analysed and mapped.

The project will last 3 years until the end of 1993 and the NRA will contribute £30,000 towards a projected total cost in excess of £180,000.

Sponsoring organisations include:

- Kent County Council
- Kent Wildlife Trust
- English Nature
- National Rivers Authority
- BR - Rail Link Project
- Kent District Councils

The knowledge gained will allow wildlife habitats to be properly protected through the planning procedures and allow the NRA to make more meaningful comments on the likely effects of planning applications and consent applications.

North Kent Marshes Study

The study area stretches from Gravesend to Whitstable and includes the grazing marsh which borders the Thames, Swale and Medway estuaries. Much of this land is of high value for wildlife and this project is a study of the conflicting pressures threatening to destroy these marshes. The finished document should provide guidance to allow sustained development whilst avoiding over exploitation and destruction of its unique character. The plenary group consists of:

- Kent County Council
- Canterbury City Council
- Gravesham Borough Council
- Rochester upon Medway City Council
- Gillingham Borough Council
- Swale Borough Council

- MAFF
- Medway Ports Authority
- Port of London Authority
- Countryside Commission
- Kent Wildlife Trust
- English Nature
- Royal Society for the Protection of Birds
- National Rivers Authority
- Regional Sports Council

The NRA has contributed £4000 to this study.

KWT Reserves

With help from flood defence staff in removing silt and reed, the NRA has been able to improve the wildlife interest of the KWT Swale reserve. The creation of areas of open water has diversified the available habitat. In addition, technical advice from relevant NRA staff has been arranged in respect of Ham Fen and Collingwood reserves.

Medway Project

Specific funding for projects including a detailed wildlife survey of the project area and help in purchasing materials for the ICI nature walk at Yalding have been met from the conservation budget. To date the cost has been £6,000.

Hedge and Tree Planting

The Conservation section has funded hedge and tree planting on the River Darrent at Horton Kirby and at the Leigh office on the River Medway costing £1,500.

Bushy Rough Lake

In collaboration with Dover District Council and the local angling and conservation societies the NRA contributed £1,000 towards the desilting, landscaping and habitat improvement at this lake. Technical assistance was also provided to the project.

Stodmarsh National Nature Reserve

This is a very important wetland site and the NRA and English Nature are working in partnership to maintain the wildlife interest. One of the main waterways is in need of desilting but because of the surrounding reed beds it is not possible to work from the banks. The intention is to use a floating dredger, owned and operated by the NRA. English Nature will contribute 50% of the cost and the local angling club and the conservation section will fund the remainder. The NRA's contribution will be £1,500.

APPENDIX 1: NRA Responsibilities in Conservation

Overall Aim

To take account of the responsibilities of the NRA, to further the conservation of flora, fauna and natural beauty and where desirable to promote conservation and recreation in Southern Region.

Within this overall aim the conservation staff:

- * encourage compliance with the conservation duty
- * provide technical support and advice
- * maintain and circulate updated records of designated sites
- * encourage liaison
- * gather information through surveys
- * participate in research and development
- * develop management plans for NRA sites
- * sponsor collaborative projects
- * promote the NRA through talks and presentations
- * screen applications by third parties
- * influence regional and national policy

This is achieved by working closely with colleagues in other functions and maintaining good communications with organisations whose conservation and recreation aims are similar to our own.

APPENDIX 2: Relevant Legislation, Statutory Instruments and EC Directives

The conservation duties are set out in sections 2(2)2, 16 and 17 of the Water Resources Act 1991 and these last two sections are mirrored by sections 12 and 13 of the Land Drainage Act 1991.

Section 2(2)2 of the Water Resources Act gives the NRA alone a duty 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 inland for recreational purposes.

Environmental duties in S16 Water Resources Act 1991:

- * To exercise any power conferred on it (so far as may be consistent with the purposes of any enactment relating to the NRA functions) with respect to the proposals as to further the conservation and enhancement of natural beauty and the conservation of flora, fauna and geological and physiographical features of special interest.
- * To have regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural or historic interest.
- * To take into account any effect which proposals would have on the beauty or amenity of any rural or urban area or on any flora, fauna and geological or physiographical features of special interest and on buildings, sites and objects of archaeological, architectural or historic interest.

Other Relevant Legislation

S 17 Water Resources Act 1991:

S 13 Land Drainage Act 1991:

English Nature inform the NRA of any land which in their opinion is both:

- a) of special interest;
- b) may be affected by activities carried out or authorised by the NRA.

The NRA must notify in advance English Nature before carrying out or authorising any activities which appear likely to damage the special interest of the land in question.

In an emergency the notification must be given as soon as practicable after the action has been carried out.

S 114 Water Resources Act 1991:

Duty to maintain, improve and develop salmon fisheries, trout fisheries, freshwater fisheries and eel fisheries.

Ancient Monuments and Archaeological Areas Act 1979:

Provides for compilation and maintenance of a schedule of ancient monuments. Special consent (scheduled monument consent) is required from DoE before any potentially damaging works are carried out.

Wildlife and Countryside Act 1981 (as amended):

Procedures regarding SSSI's and marine nature reserves. Special protection is given to certain species through a series of schedules.

Badgers Act 1973 and 1991:

Protection of badgers and their setts.

National Parks and Access to the Countryside Act 1949:

Establishment of national parks, NNRs and SSSIs. Local authorities empowered to create local nature reserves.

Statutory Instruments (SIs)

Environmental Assessment

EC Directive 85/337/EEC on the Assessment of the Effects of Certain Public and Private Projects on the Environment has been implemented in the UK by a number of statutory instruments, of which the most important are:

SI 1988 No 1217 The Land Drainage Improvement Works (Assessment of Environmental Effects) Regulations 1988. The UK regulations which give effect to Directive 85/337/EEC with respect to improvements to land drainage and flood defence works, which as permitted development do not require planning permission. Copies of ESs produced under these regulations must be sent to CC and EN/CCW. The Schedule to the regulations specifies the type of information required in an EA: this includes a description of likely significant effects on flora, fauna, landscape and the cultural heritage and appropriate mitigation and enhancement features.

SI 1988 No. 1199 The Town and Country Planning (Assessment of Environmental Effects) Regulations 1988. The UK regulations which give effect to Directive 85/337/EEC with respect to projects requiring planning permission.

Other relevant SIs include:

SI 1981 No xxxx? Ancient Monuments (Application for Scheduled Monuments Consent) Regulations 1981. Form of application for consent to carry out works on scheduled monuments.

SI 1986 No. 1510 Control of Pesticides Regulations 1986. Made under Food and Environment Protection Act 1985. Protection of the aquatic environment from use and storage of pesticides (including herbicides).

SI 1988 No 1813 Town and Country Planning General Development Order 1988 (as amended). Planning authorities required to consult EN/CCW before granting permission for land development within an SSSI or in any consultation area around an SSSI defined by EN/CCW. Also required to consult with certain conservation bodies when considering planning applications.

SI 1989 No 424 Harbour Works (Assessment of Environmental Effects) (No 2) Regulations. Implementation of Directive 85/337/EEC for harbour works below medium low water, for which planning consents are not needed, including works under the Coastal Protection Act 1949.

EC Directives and Regulations

a) Implemented in the UK as at 1 November 1992

Regulation 797/85/EEC on Improving the Efficiency of Agricultural Structures.

Introduction of the concept of ESAs (Article 19).

Directive 79/409/EEC on the Conservation of Wild Birds. Amongst other protection measures, the establishment of SPAs to conserve habitats of rare or vulnerable species and regularly occurring migratory species. In the UK, these are notified as SSSIs under the Wildlife and Countryside Act 1981.

Directive 85/337/EEC on the Assessment of the Effects of Certain Public and Private Projects on the Environment. Establishment of methodology, scope and application of EA procedures for development projects.

b) Not yet implemented in the UK

Directive 90/313/EEC on the Freedom of Access to Information on the Environment. Environmental information collected by public authorities to be freely available.

Directive 91/271/EEC concerning Urban Waste Water Treatment. Requirement for more stringent waste water treatment in 'sensitive areas'. These have not yet been defined in the UK but will probably include SSSIs and some other conservation areas.