

Hansard Report on Hydropower and Fish Passage Debate

Tuesday November 3rd 2009

Asked By Lord Dear

To ask Her Majesty's Government what measures they are putting in place regarding the management of water and the conservation of rivers.

Lord Dear: My Lords, in introducing this debate, I thank those who are going to contribute to it and declare my own position in the question of rivers and angling: I am a keen salmon fisherman; I fish also for trout—in both cases, with variable success—and I am a member of the Salmon & Trout Association.

As many of us know, the European Union's water framework directive establishes a new and integrated approach to the conservation of our rivers and watercourses, and it introduces new, broader ecological

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objectives designed to protect aquatic ecosystems and, where necessary, to restore those that are damaged. However, in particular, it emphasises that it requires member states to bring all natural rivers up to a good ecological status.

There are a range of issues of concern, but I shall focus today on one aspect of the water framework directive: barriers across rivers that obstruct the movement of fish and invertebrates. These are an important reason why many rivers are not achieving the ecological status that is sought. As I think most of us know, the ability to move up and down rivers is critical for migratory fish such as salmon, sea trout and eels, to name but few. However, other fish species also migrate within the river system, and barriers such as weirs and dams can reduce their chances of spawning successfully.

The Government have proposed some ideas for removing unnecessary barriers and installing fish passes, but there is a complicating factor: the fairly obvious one of the growing demand for hydropower schemes, which could lead to the construction of new barriers and new uses for old, obsolete barriers. If these schemes are not introduced in a managed and sustainable way, they could make it impossible to achieve the good ecological status that most of us would seek and the water framework directive requires.

I shall return to hydropower, but first want to address the general issues surrounding barriers. Under existing legislation, anyone who installs a new barrier in a river or stream that obstructs the passage of salmon or sea trout must install a fish pass. If they are altering an old barrier, they have to install a new pass in that way. However, the provision as the law stands has a number of defects. First, it applies only to salmon and sea trout and does not cover other migratory species, such as eels, shad and lampreys, or freshwater fish that migrate within the river system. Secondly, it does not apply to existing, unaltered barriers.

To remedy these defects, the Government issued a consultation paper in January which proposed to extend measures on fish passage to all fish that need access to different parts of the watercourse to help them complete their life cycle. It also required the installation of fish

passes in an existing barrier. Similarly, screens would in principle be required on all abstractions from rivers.

The proposals were welcomed by all fisheries and angling bodies—no surprise there: they would, of course. However, I understand that the Government now intend to delay the necessary regulations until at least May 2011. This is regrettable. It will make it far more difficult to achieve the water framework directive's objectives on the grounds that the Government are, I think, concerned at the economic implications of some of the proposals for small businesses and landowners, and we know that the economic climate is difficult.

While I understand some of the reasons that lay behind that decision to delay, the concerns are in many ways misconceived. Granting additional powers to the Environment Agency need not mean that they would be used immediately—I would in any case expect the agency to use any new powers sensitively. The suggested powers would enable the agency to respond much more effectively to proposals for new hydro schemes, and in ways that did not jeopardise the attainment of the water framework directive's objectives.

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I think that we all recognise that hydropower schemes have the potential to cause significant environmental damage. The Environment Agency estimates that 1,200 schemes will be operating by 2020, and those schemes require barriers. Barriers are needed to create the head of water necessary to drive the turbines. Unless properly-working fish passes are provided, barriers will prevent fish migration and the movement of invertebrates. Fish passes require a good flow of water through them to work effectively. Fish such as salmon are attracted to the very strongest flow in the river if they are moving up it to breed. If that strong flow is at some distance from the fish pass, the fish will not find or use the pass, may not find alternative migration routes, and will be lost to the breeding stock completely.

In addition, barriers can cause migratory fish to mass in unnaturally large shoals below them, attracting increased predation—from seals, for example—increased poaching, which is fairly obvious, and the risk of disease outbreaks. This can be a particular problem when the barrier is the first obstacle that salmon and sea trout encounter at the head of the tide in their return migration to their natural river to breed. An illustration of the damage that can be caused is provided by the monitoring data on the effectiveness of the fish pass in the Tees barrage. It was estimated that only 15 per cent of the fish seeking to go over the barrier there actually made it and that none of them went through the fish pass.

While I do not want to labour the point too much, I shall highlight one particular difficulty to emphasise it: what seems to be the conflict of interest within the Environment Agency. The agency is, first, the protector of the environment, with a duty to oversee implementation of the water framework directive and safeguard fish and fisheries—which is all about the environment. On the other hand, it also has a duty placed on it to further the development of renewable energy and help meet the Government's ambitious targets for it. It is difficult to see how this dual role can easily be managed by one agency and within it.

Against this background, four steps might be taken. First, I hope that the Minister can give an assurance that the agency and the Government can agree that the first duty of the Environment Agency in these circumstances is to protect the aquatic environment and its associated ecosystem. Secondly, the agency has to be empowered to do the job properly. There should be no delay at all in introducing the additional powers that are now at the discretion of Government, particularly where hydropower schemes are concerned, and I contend that we should not have to wait until 2011 for that.

Thirdly, it is essential that the impact of barriers on fish migration is assessed in an integrated and coherent way, by which I mean that where hydro schemes are concerned, they must not be assessed in isolation. While one barrier on the river might be passable to migratory fish, it is fairly obvious to those of us who know anything about fish and rivers that a succession of barriers could constitute a cumulative obstacle that the fish cannot overcome, even if each barrier on its own is in theory passable. Moreover, existing barriers that are not involved in hydro schemes need to be looked at in the same way and at the same time. Lastly,

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I contend, fairly obviously, that the Government should encourage research into new and innovative ways of generating renewable energy that might not require barriers on large river flows and so have less impact on migrating fish.

I conclude by saying that if all this is done, it would be possible to succeed in what is admittedly a difficult balancing act, that of on the one hand reconciling the need to protect the aquatic environment and meet the objectives of the water framework directive, and on the other hand making use of the potential of our rivers to generate renewable energy.

7.41 pm

Lord Smith of Finsbury: My Lords, I am grateful to the noble Lord, Lord Dear, for selecting this subject for debate and for so admirably setting out the issues that confront us. I have a particular interest in engaging actively with this discussion given my role as chairman of the Environment Agency. As the noble Lord clearly spelt out, the challenges we now face with the implementation of the water framework directive are very considerable.

Over the past 10 years or so, we have made substantial progress in cleaning up the rivers and watercourses of this country. Under the old rules of what constituted good ecological status for a watercourse, we were at something like 70 per cent good condition across the rivers of England and Wales. The water framework directive, however, is much more demanding than the old rules. Instead of the five parameters by which we used to have to judge watercourses, we now have 34 parameters that we need to use to judge them, and those include both biological and chemical characteristics. As a result, at a stroke, the percentage of rivers and watercourses in England and Wales qualifying as having good ecological status has fallen from 70 per cent to 26 per cent. That is not because the water has changed in any way, but because the rules have changed. However, the rules are there, the water framework directive is in place, and it is our duty in the Environment Agency to implement those rules and to seek over the coming years to improve as best we possibly can with the resources available to us the quality of the water in our rivers. The task is not going to be an easy one, but we are already setting about it with vigour.

The water framework directive, as well as requiring a range of new tests to be carried out, takes a sensible approach in seeking to look at the whole of a river basin as one, so that we need to look not just at the river itself but also at the estuary, lakes and so forth. Before, under the old rules, we did not have to do so. To achieve an improvement in ecological status and rise above the figure of 26 per cent, which we have to do, we are going to have to look beyond the easy pollution sources—the point source pollution, for example, from a sewage treatment works. We have been doing that intensively over the past 10 to 15 years, and it has been the primary route to improvement over the period. But now we need to look much more actively at issues like diffuse pollution, pollution that comes into watercourses from agricultural land used for both grazing and cultivation. That is a much more difficult

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area for us to tackle, but with the co-operation of the farming community and with new catchment-sensitive farming practices which are now increasingly being adopted, I am sure that we are going to have some success.

However, I should like to touch on two further issues. I will come to the first of those in a moment because it relates very specifically to the issue of small-scale hydro power raised by the noble Lord. The second issue, which perversely I shall deal with first, is what is likely to happen over the next 20 to 30 years or so to the rivers of England and Wales as a result of climate change. We know that climate change is very much with us. Whatever happens in the next few weeks at Copenhagen, it is likely that we face a global rise in average temperatures of at least 2 degrees, and it may be a lot more.

We have done some careful work in the Environment Agency looking at what climate change means in terms of flows in the rivers of England and Wales in 20 or 30 years' time. The automatic assumption among most people is that we have plenty of rain in the UK and rivers that flow freely, so it is unlikely that there will be much of a problem. The response to that is yes and no. We will face greater extremes of weather as a result of climate change. The summers will be much drier on the whole, while the winters will be rather wetter. We will have more floods and more droughts. The weather will become more erratic and extreme.

The consequences for the flow of water in our rivers, especially in the drier parts of the south and east of England are, during the summer months, likely to be severe. Our expectation is that in 30 years' time, the level of flow in the summer in rivers in the south and east of England will be down by between 50 per cent and 80 per cent on what it is during the summer months now. The consequences of that will be considerable, not just for the flow of water and for the look and feel of the rivers for people who like to enjoy them, but also for fish populations, for levels of water abstraction, for the water companies and their ability to supply us all with drinking water and for the discharge into rivers—one of the important things is the dilution effect that a good flow can have on levels of pollution where it is discharged. It means that we need to look very carefully at the quality of the water, the levels of flow, and the levels of abstraction and discharge over the period. It also emphasises how important the task of tackling climate change actually is, because it is not just about a rise in sea level, erratic weather or more flooding; it is also about water resources and river flows.

This brings me to the dilemma that the noble Lord so accurately described. In considering the balance in small-scale proposals for hydropower in rivers, we need to bear in mind two potentially conflicting environmental objectives: on the one hand, the quality of water, the

level of flow and the ability of fish to swim up the river in the way that they would naturally wish to do; and, on the other hand, the need to encourage as much as we can the development of renewable energy resources for this country. This is a classic issue where there is a dilemma of environmental objectives. We in the Environment Agency will seek to

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achieve a balance wherever we can. Where we cannot, where it is impossible to have sustainable small-scale hydropower, we will say that it is not sustainable and that we should not do it. Where it is possible to achieve both objectives, we want very much to achieve them.

Let me give the recent example of a small-scale installation on the River Monnow in Osbaston, Monmouthshire. The installation, which was built as an investment by a private house owner; has two Archimedes screws, which raise the water in a fish-friendly manner, in order to power the turbine; it also has a separate fish pass to allow the migration of fish. The installation harnesses around 670,000 kilowatt hours of electricity per year, enough to power 152 homes. The owner of the scheme diverts enough energy to power his own home and sells power on to the National Grid. That scheme has achieved free movement for the fish and renewable energy. In a small way, this has begun the process of tackling climate change. It is the kind of solution that provides a synergy between the two objectives. There will be occasions, of course, where proposals do not provide that kind of synergy, but where we can, we want to try to achieve a good, sensible balance between the two objectives.

Yes, our objective will always be to improve the quality of the water in our rivers and watercourses—that is our duty as the Environment Agency—and we also want, as far as we can, to embed the fight against climate change in everything we do.

7.53 pm

Baroness Scott of Needham Market: My Lords, I thank the noble Lord, Lord Dear, for tabling the debate today. I should say at the outset that I know little about the water framework directive but the debate gives me the opportunity to say a little about water conservation in my home region of East Anglia. Like many other regions across the country, we face the challenges of the impact of housing growth, pollution, climate change and rising customer expectation and demand.

However, it is of particular importance to East Anglia that while we are one of the fastest growing regions in the country in terms of housing, we also have the driest climate. Even in this highly unexceptional summer, we had very little rain indeed. We are therefore highly vulnerable to drought and yet across East Anglia we have many water-dependent conservation sites, some of them designated at European, or even world, level. Some are large and very well known, such as the Norfolk Broads, the RSPB site at Minsmere and Wicken Fen in Cambridgeshire, which is the last remaining piece of original fen. However, we have many other small sites which are important in their own way. Not far from where I live, the Redgrave and Lopham Fen is the home of the great raft spider and is one of the few places in the world where this spider is to be found. It needs to be protected not only for that reason but because the spider is an indicator of the health of the water; it needs unpolluted, alkali water to thrive.

The Broads Authority in Norfolk has shown the value of an integrated approach and the work done by the RSPB and the National Trust has been absolutely

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invaluable. Across East Anglia there are small local organisations, such as the East Anglian Waterways Association, which work tirelessly to clear riverbanks, clean ponds, inspect canals and so on. In the north of the county, the Otter Trust in Bungay was so successful in reintroducing the otter that it has now disbanded, although I accept that the health of otters may not be too beloved of the noble Lord, Lord Dear, and fellow anglers. I am patron of the Pickerel Project in Stowmarket, in which volunteers look after the River Gipping on a regular basis. It is with the help of such organisations that East Anglians are trying to conserve their rivers; without them we would be in a far worse situation. However, it will require a lot more than local action by volunteers, however welcome that might be.

At our recent party conference in Bournemouth, the Liberal Democrats introduced a natural heritage policy paper which outlines some thinking in this area. How much thought are the Government giving to introducing to water conservation the kind of measures that they have introduced for energy conservation: for example, providing building control guidance in favour of rainwater harvesting; supporting energy efficiency in existing homes by the introduction of smart metering in water-stressed areas; and providing grants or preferential VAT rates for rainwater harvesting systems, water butts and dual flush toilets.

It seems apparent that the regulatory regime under which Ofwat operates is still a hangover from a bygone era; it appears to pay no serious attention to environmental or social concerns. It is time to alter Ofwat's remit to put water resource efficiency at the heart of water companies' plans, to include tougher leakage targets and provision to protect water quality through land management.

As the noble Lord, Lord Smith, pointed out, the other side of the drought equation in East Anglia is that we suffer badly from flooding. Annual flood damage now costs an estimated £2.3 billion a year across the country. This total is rising as climate change increases the variability of weather patterns. Both the Stern and Foresight reports state that major urban flooding is now inevitable and that costs will rise to £21 billion per annum later this century. Floods caused by flash rainfalls and overflowing rivers in England in June and July 2007 caused a number of deaths as well as £3 billion-worth of damage to homes, businesses and agriculture. This shows the extent of the impact of flooding.

Current funding is inadequate. The ABI, the Foresight report and the Environment Agency have all called for spending to be increased. What is the latest thinking on funding to deal with flooding? Equally, how much research is being done to improve our knowledge of flooding and the risks that it brings? How will we protect the vital utilities, such as water and electricity, and ensure that infrastructure is not irrevocably damaged when flooding takes place? What more can be done to regulate future developments, particularly building on flood plains?

There have been approximately 1,500 serious river pollution offences in the past five years—some of which have killed hundreds of thousands of fish and destroyed wildlife habitats and ecosystems—and yet

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the average fine for each breach is just over £4,400. This is not enough to deter businesses from polluting. Many of them, I fear, regard it as a business cost; a risk that is worth taking. While I commend the Environment Agency for the work that it has done so far in cleaning up the rivers, I hope that it will consider whether it is doing enough to deter polluters.

In conclusion, I again thank the noble Lord, Lord Dear. British rivers are an important part of our natural heritage and environment and play a key role in our lives. It is time that we began to take them seriously.

8 pm

Lord Greaves: My Lords, I, too, congratulate the noble Lord, Lord Dear, on introducing this debate. Although it has ranged from the wide to the specific, it has nevertheless been very useful. It carries with it the advanced ripples of the coming debates that we hope we are going to have on the major Bill on floods and water management, which we hope that the Government will bring forward in the new Session.

My noble friend Lady Scott of Needham Market talked much more generally than the noble Lord and others on this topic, and did so usefully. She reminded me that in the part of the country where I live, our rainfall is somewhere around twice that experienced in the heart of the Fens in the northern part of East Anglia. If the forecasts that the noble Lord, Lord Smith, referred to are accurate, that difference is expected to increase, so part of the country will get even more rainfall than it does at the moment while other parts will be more subject to drought and extremes of rainfall, perhaps between summer and winter or even between different periods of weather. This is important because it introduces the element of diversity, to which I shall return in a while when we are talking about the necessity of finding a balance between the interests of small-scale hydropower and the preservation and enhancement of the fish stocks in our rivers.

The noble Lord, Lord Dear, referred to weirs and dams. This is a historic legacy on many rivers. I come from a part of the country where, if you walk and up and down any of the rivers, you can frequently find at least the remains or evidence of weirs that were used to power the local textile mills and, before that, small-scale mills for milling grain, bobbins and all sorts of other things. They are still there. The historic legacy of weirs and barriers on our rivers is one aspect of this. The other is the question of new schemes and perhaps upgrading and using existing weirs for new schemes, if they are not exactly new ones.

There are two issues here. The noble Lord suggested that there was a conflict within the Environment Agency, but it is not just within the agency. We are all in favour of the development of sustainable energy supplies, whether large-scale, medium-scale or small-scale, as a matter of principle, but we are also in favour of preventing those schemes from having undesirable ecological consequences. That is the dilemma. It is not just a question of small-scale microhydroelectric schemes; it is something that crops up whenever we talk about renewable energy. Even if you can find a perfect site

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for developing renewable energy, there is then the problem of the transmission lines. There is

a major debate in the Scottish highlands at the moment on that. To what extent are we prepared for wind farms—“wind factories”, some people call them—severely to affect the environment on the great open moors and fells of this country, as well as at the coastal sites, which might be ideal for this? Even if we are talking about marine wind and the development of electricity from marine currents and tidal barrages, whenever we look at this, there are environmental pluses from the development of green energy and environmental minuses from the impact that these schemes have on the environment, ecology and the net carbon balance of carrying them out. Whenever we do this, there are these questions to be answered, and this occasion is no different.

When we come down to the issue of small-scale hydropower, which the noble Lord, Lord Dear, raised, everyone has been saying that a difficult balance has to be achieved. The noble Lord said that it is a difficult balancing act. Those were his words. Yet there are two sides to this and two arguments, and the position that each of the two sides would end up with is rather different. Where people think that the desirable balance would occur is different if you are a passionate believer in microhydropower or, on the other hand, if your main concern is the preservation of fish stocks. It is not possible, in my view or the view of my party, to take an extreme view on this; there has to be a balance. There will have to be compromises.

I looked on the Environment Agency website and I shall quote what it says:

“Where schemes would not be compliant with environmental or other legislation by, for example, preventing the passage of migratory fish or increasing flood risk, we will not support their development”.

The question is not prevention, though; it is to what extent the scheme hampers or affects those aspects and to what extent it is acceptable to cause problems with the migration of fish, even if you do not completely prevent it, in order to achieve a scheme in a particular place. The noble Lord, Lord Smith, said that it is possible to achieve perfect synergy in some cases. That may be the case, but in most cases I rather think that a perfect synergy will not be possible and compromises will have to be made.

I come back to diversity. It may well be that the answer that people should come up with on one particular river, or in one particular river basin, is different from the one they will come up with regarding another. It may be that in one case the balance has to go one way while in another it is sensible for the balance to go the other way. This is not easy; it is messy; but I cannot see that it is possible to come up with a level of balance that will be the same in every place.

The dilemma of environmental objectives is with us all the time. Where it is possible to achieve both objectives, in the words of the noble Lord, Lord Smith, that is wonderful, but in most cases it will not be possible to achieve both objectives to the full extent that people would like. Compromises are going to have to be reached.

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My other point is about cost. It is often possible to achieve a better and more ideal scheme if someone somewhere is prepared to put the money in. But who will it be? Should it always be the owners of weirs, of obstructions in rivers or of microgeneration schemes who have to bear the cost? Is that always reasonable, particularly when we are talking about the legacy of existing barriers and weirs? If the true cost has to be borne by those people, the schemes may become unreasonably expensive and not go ahead because they are not feasible. If, on the other hand, there is a public policy requirement to achieve the benefits to the fish stocks in the rivers or to fish migration, it may be that some funding from public sources might be required, and that might be sensible. Again, these are balances that have to be achieved. If the fish lobby, if I may put it that way, takes an extreme position, it is not clear that many of these microgeneration schemes will go ahead.

The skill that the Environment Agency will need, with the people it is working with in local authorities and so on, is to achieve the balances and compromises that are appropriate and that apply in each river. That will not be easy, but it is how it will have to be.

8.09 pm

Lord Taylor of Holbeach: My Lords, I thank the noble Lord, Lord Dear, for tabling this Question, which is a timely opportunity to challenge the Government on their plans in this direction. I declare an interest as a farmer and grower. We are also subscribers to a project designed to better manage the fresh water available in the Wash area and Holbeach Marsh for farm irrigation. It may help the noble Baroness, Lady Scott of Needham Market, to tell her that I am born and bred a fen-man.

Our attempt to conserve winter water to use in the summer is but one indication of how water is beginning, not before time, to have value. Water is an increasingly valuable resource. Managing it and finding a balance between sometimes conflicting uses and making a judgment as to priorities is one of the great issues facing government.

If my speech appears to be broad, I hope that it is not too slow and meandering. I am reminded of my O-level class on the structure of rivers. I am not suggesting that some of the speeches have been torrential, but they have been narrow and confined. Mine takes the lowland phase and tries to treat this subject on a broad basis.

What plans do the Government have for the flood and water management Bill? It has taken a long time. From the floods of 2007 and indeed the year before, the preliminary Pitt report, the final Pitt report, the draft Bill and the EFRA Committee's evaluation of that Bill, time has marched on. Scrutiny by the EFRA Committee challenged some of the assumptions on which the Government had based the Bill. Where do the Government intend to go from here? What is the Government's response to the EFRA Committee? More to the point, what happens to the Bill? There are many people, not least those flooded in these catastrophic events—indeed those of last weekend—who will want to know the answer.

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Whatever happens, the key will surely lie in improvements led by engineering and science. I am, I should declare, a vice-president of the Association of Drainage Authorities and, by coincidence, had a meeting with the chief executive, Dr Jean Venables, earlier today. For those noble Lords not aware, she is handing over the presidency of the Institution of Civil Engineers this evening, and the House should pay tribute to her distinction as the first woman to hold that office in the history of that institution. It would come as no surprise that she rightly wishes to see engineers at the heart of the Government's strategy, and I agree with her.

The question posed by the noble Lord, Lord Dear, hangs on the effectiveness of catchment area management. The river basin management plans will need to incorporate the characteristic of the river basin district—its geology, its geography, its topography and the nature of its economy. Many factors affect water levels; not just rainfall but the conflicting uses of rivers need careful management and balance. All speakers, particularly the noble Lord, Lord Greaves, wanted noble Lords to be mindful of that factor. As the noble Lord, Lord Dear, explained, and the noble Lord, Lord Smith, also mentioned, even small rivers are being considered for microhydropower. Some impressive examples already exist of quite small courses generating appreciable electricity. The noble Lord, Lord Smith, referred to one of these. They could make a real contribution to the renewable energy budget, but they need to take account of the impact of such schemes on the biology and biodiversity of the river system and, in particular, the passage of migrating fish.

That brings us in turn to the beat of the noble Lord, Lord Dear, and the importance of proper consideration of the recreational use of rivers. It also brings us to the question of water quality. With only 26 per cent of rivers classified as good, under the new water framework directive, the threat of pollution is ever present. What has become of water protection zones? How many have been identified so far and how many orders has the Secretary of State signed? How many appeals have been completed and how many remain in the pipeline? What progress has been made on the water protection zone charter, as suggested by the National Farmers' Union, the Country Land and Business Association and the Agricultural Industries Confederation?

A further problem is overabstraction. Winter storage is key to resolving this problem. We need to facilitate the construction of on-farm reservoirs. The technical obstacles are considerable. Is there room for the Environment Agency to assist with free advice and assist in the complex data submissions? A few successful exemplars could provide a real impetus in this direction.

I should say how useful has been the contribution of the noble Lord, Lord Smith of Finsbury, to this debate. Indeed, we acknowledge his wider role as chairman of the Environment Agency, a job to which he has taken as if a duck to water—if that is not stretching the theme of this debate to too a dreadful an analogy. The noble Lord referred to climate change and indicated that unsustainable levels of abstraction are a real problem. We know from the Written Answer in the House of Commons *Hansard*, at col. 526W on 28 January, that 2,970 water resources licences have

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been investigated, while 274 may be causing damage to Natura 2000 sites. Even outside SSSIs and other habitat sites, some rivers are dying. The Government say that they are keen on voluntary agreements. What differences of opinion and strategy exist which stop these

progressing? Indeed, given that there are consultations ongoing for all the 11 river basin districts covering England and Wales, each consisting of documents of over 2,000 pages, how is the analysis coming on? The consultation closed in June. Will reports be ready for publication on 22 December as planned? I am sure that the Minister will be looking for some Christmas reading.

Meanwhile, there is yet more reading in prospect. What is the state of play on the report commissioned by the Government from Anna Walker, which is likely to address matter such as metering and tariffs? Both are key in the effective management of water as a consumer resource. It will be interesting to hear from the Minister his views on the water companies' role here.

This has been a useful debate and certainly opportune in its timing. I congratulate the noble Lord, Lord, Lord Dear, on securing it. He has cast his fly with skill, and one hopes that he will be content with his catch. He can judge as will we all, when we hear what the Minister has to say.

8.18 pm

The Parliamentary Under-Secretary of State, Department for Environment, Food and Rural Affairs (Lord Davies of Oldham): My Lords, I begin by congratulating the noble Lord, Lord Dear, on securing this debate and on introducing our deliberations with a very considered contribution. He had a precise focus, to which I hope to give some replies, but I am also obliged to respond to those broader issues of the debate that inevitably arose in the context of water management and river conservation, which is a major challenge for us all. I am obviously grateful to my noble friend Lord Smith for putting that into the context not only of his own particular responsibilities at the Environment Agency but of climate change and the challenges that we all face there.

There is no doubt that water is an important resource that needs management. The Government demonstrated their commitment to its long-term management in our water strategy for England, *Future Water*, which we published in February 2008. *Future Watersets* out my department's long-term vision for water and the framework for water management. The strategy looks at the whole water cycle, from precipitation and drainage through to treatment and discharge, and considers matters such as the sustainable delivery of secure water supplies. The noble Baroness, Lady Scott, introduced that point into her speech and was supported, as I would expect, by her noble friend Lord Greaves, who also ranged widely over the issues involved in how we improve and protect the water environment. That is an important and, I think, crucial resource, which we all recognise may be the determinant of very substantial decisions worldwide, given the difficulties over water supplies in the world.

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Already, at times, very real difficulties on these matters are being shown. We only have to look at a country such as Australia, wrestling with its climate problems in recent years, to appreciate just what a challenge climate change represents to these points. I think that the

House will appreciate that there are major factors to consider in contributing to the balance of the environmental and socio-economic requirements for water. Water is commonly seen as an unlimited resource, but clearly it is not. Climate change presents that major problem, as my noble friend identified. As he said, forecasts predict significant changes to both the spatial and temporal distribution of rainfall in the United Kingdom, with real implications for us all.

I want to emphasise that the Government are responding to all the initiatives regarding the use of water to which we are obliged to respond. We all recognise the significance of the water directive. The noble Baroness, Lady Scott, also suggested that we might solve some of these problems by being more careful about water and by using less of it. I agree with her; certainly, a part of our strategy has to be encouraging the nation to recognise how valuable water is. *Future Water* outlined an ambition to reduce the average per capita water use to 130 litres per person per day by 2030. That is a pretty ambitious target, because it is 20 litres fewer than are used at present. I hope that noble Lords will be aware that on 24 September we launched a water efficiency campaign, under the “Act on CO2” banner, which indicates the Government’s determination to operate successfully there.

I will come on to the hydro issue and the whole question of hydropower in a moment and I want to respond to the particular questions from the noble Lord, Lord Dear, on fishing. Before I do so, let me say that hydropower has its role to play in the more general sense with regard to energy generation. We all recognise that climate change imposes significant changes to our electricity generation. That is why we all appreciate the significant change in government policy regarding energy resource. However, hydropower’s present contribution is very limited and we should not exaggerate how important it is. It is certainly green, and successful in those terms, but in comparison to those regions with significant hydropower resources that are easy to generate—Scandinavia is one obvious illustration—Britain’s role is comparatively minor in our ability to operate hydropower.

I wanted to respond to the point made by the noble Lord, Lord Greaves, about the extent to which the Government were concerned about alternative energy issues. Indeed, we are. The Government are responsible for contributing half the cost of the billion pound programme to look at alternative energy strategies. Eleven major companies have each put in £50 million and the Government have put in the other £550 million—half the cost—to fund a programme to look at alternative strategies. However, these will take time to bear fruit. None of us is in a position to be absolutely certain which strategies will develop successfully. That is why it is only right that we covet and respect all forms of energy generation, even the relatively minor one of hydropower, as that form of generation would counteract climate change.

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As the noble Lord, Lord Dear, so ably identified, tricky decisions have to be taken when hydropower is used, as one needs to balance the benefits of generating electricity from this renewable resource against the necessity of protecting migrating fish. My noble friend Lord Smith referred to the Environment Agency’s interest in this issue. Indeed, it plays an important role in the development of hydropower, but it has to balance a range of duties, which my noble friend identified. It has to wrestle with difficult decisions with regard to

water use. As I said, we must balance the need for electricity generation against the necessity to protect fish. Some schemes may have a relatively minor impact on fish, but others might have a considerable impact, as the noble Lord, Lord Dear, said.

The noble Lord added that there should be no delay in introducing additional powers with regard to the passage of fish. My honourable friend the Minister for Fisheries will lay an order this year on the provision of eel passes and screens. Eels are in a particularly parlous state and a number of obstructions prevent or reduce their upstream migration, thus constraining the colonisation of suitable habitats. It should be emphasised that not all obstructions need to be modified and I have no doubt that the Environment Agency will prioritise the most critical barriers to migration. Measures for additional powers for the provision of fish passes and screens for other species will be laid in 2011.

We are fully cognisant of the point that the noble Lord expressed so succinctly and accurately. I assure him that we intend to act. He also emphasised that passes will not work unless they are in the right place as regards flow. We understand that point. The Environment Agency will need to work closely with owners and occupiers of obstructions to ensure that fish passes are effective. There is absolutely no point in making provision in this regard if fish are not able to negotiate the passes to reach the areas that they need to get to. I accept the emphasis laid by the noble Lord, Lord Dear, on that dimension.

The Environment Agency and government must ensure that we safeguard the interests of fishing and protect species, or particular variants of species, that might otherwise be threatened. I reassure the noble Lord in that regard. Our hydropower good practice guidance sets out requirements for fish screens, which are risk-based according to the potential for damage to fish from different types of hydropower turbines. A great deal of thought is given to this issue. I take sustenance from the contribution of my noble friend Lord Smith, who indicated his interest in the Environment Agency.

As ever, I find myself desperately constrained by the time limit in replying fully to the issues raised. The noble Lords, Lord Taylor and Lord Greaves, were bound to ask me to produce my version of the Queen's Speech some three weeks or so before it is due. That was a good try, but I am a little too long in the tooth to fall for that one. They emphasised the importance of taking measures to conserve water and prevent flooding. They know only too well how enthusiastic my department is to meet the requirements of the Pitt report, which clearly identified necessary action, and how much progress we wish to see being made. However, they will

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have to contain their impatience for a mere 14 or 15 days and all will be revealed. No doubt we will then discuss these matters in a different framework.

On the more general issues that the noble Baroness, Lady Scott, raised about building on flood plains, of course we are concerned about planning issues that relate to the problems that too much water can provide in certain areas. She will know that we have guidance on how to undertake flood-risk planning. We expect our partners—particularly our fellow department, CLG—to manage these issues effectively.

I have responded all too inadequately to the wide range of issues that have been raised. I emphasise that issues around climate change put the whole question of water into a new, more dramatic and important dimension, but the noble Lord, Lord Dear, is only too right to remind us that particular usages of water are highly valued by members of our community. Their interests also need to be taken into account and balanced.