

**Joint Paper on the Management of Fisheries and the Aquatic Ecosystem in England
by the Angling Trust, Atlantic Salmon Trust, Association of Rivers Trusts, Salmon & Trout
Association and Wild Trout Trust**

Executive Summary

1. We believe it is essential that a single body remains responsible for regulating all the activities that affect a river catchment, including fisheries.
2. We are opposed to the creation of a separate national body and/or regional bodies with responsibility for fisheries.
3. We support the continued requirement of freshwater anglers to pay a rod licence fee, but wish to see greater transparency and accountability for the application of these funds to external bodies and local communities.
4. We wish to see Government funding for fisheries, which largely supports salmon and sea trout monitoring and enforcement, maintained.
5. We propose the creation of a national committee with external and senior EA representatives to advise the EA about delivery of its fisheries function and other activities which affect fisheries.
6. We propose that new arrangements to involve anglers and other interested people in the EA's work at local level be developed, with local communities directly involved in its work and decision making.
7. We believe that the Agency should be reformed to become an effective regulator rather than a regulator and a delivery body. Delivery should where possible be carried out by rivers trusts, the Riverfly Partnership, the Angling Trust, the Wild Trout Trust and other third sector organisations, which are much more cost-effective.
8. We would like to see dedicated, specialist fisheries officers as a single point of contact in every catchment.

Introduction

This paper reflects the views of the principal NGOs concerned with angling, fisheries and river conservation on the Environment Agency's role in respect of salmon and freshwater fisheries.

The Environment Agency has a statutory duty to 'maintain, improve and develop' salmon and freshwater fisheries; a ministerial direction to the EA requires it to interpret this as a duty to:

- ensure the conservation and maintain the diversity of freshwater fish, salmon, sea trout and eels and to conserve their aquatic environment;
- enhance the contribution salmon and freshwater fisheries make to the economy, particularly in remote rural areas and in areas with low levels of income;
- enhance the social value of fishing as a widely available and healthy form of recreation.

This interpretation was recommended by the 2000 Review of Salmon and Freshwater Fisheries. In accepting it, the then Government stated that the greatest weight should be given to the first objective; this is concerned with the conservation of fish and their habitat, not with their exploitation. The EA's primary objective under its fisheries duty is therefore an environmental one, to conserve fish biodiversity and the natural aquatic environment. However, the Government also attached importance to the economic and social aspects of the fisheries duty, noting that it was these that distinguished the fisheries duty from the EA's wider conservation and recreational duties.

Another feature that distinguishes the EA's fisheries work from its other activities is that a large

proportion of the former is funded by anglers via the rod licence. Currently, rod licence income accounts for £26m out of a total spent on fisheries of £34m, and the proportion derived from licences has risen consistently over the past decade as grant-in-aid has been cut in real terms.

The EA's Responsibilities and Structure

While there are a number of problems with the way the EA operates at present, and many anglers are dissatisfied with the way it exercises and reports its responsibility for fisheries, we believe it is essential that a single body remains responsible for regulating all the activities that affect a river catchment, including fisheries. We are strongly opposed to suggestions that separate bodies be established to regulate fisheries either locally or nationally. It would make no sense to have a body responsible for fisheries that had no control over abstraction or water quality. However, we do want to see new measures in place to demonstrate that rod licence funds and grant in aid are spent on fisheries and angling, rather than being diverted to other functions of the Agency.

It is also important that the conservation of fish is fully integrated into efforts to conserve other aspects of the aquatic ecosystem. For example, fish depend heavily on invertebrates, both aquatic and terrestrial, for food, as do many bird species, so action to conserve invertebrates will benefit both fish and birds. Indeed, the Water Framework Directive (WFD) makes it necessary to address all issues that affect a water body's ecological status.

At present, many of the benefits of having a single catchment regulator are not realised because the different parts of the EA continue to work in their silos, with inadequate co-ordination, not helped by the fact that the regional and area structures are administrative rather than catchment-based. This lack of integration needs to be changed, with the various teams working together to deliver outcomes that benefit all the EA's objectives. Flood protection schemes, for example, should maximise opportunities to produce environmental benefits. The EA has started to do this, but much more needs to be done.

Third Sector Delivery

Currently the EA operates both as a regulator and a delivery body. Where physical improvements to rivers are needed, such as the removal of barriers, installation of fish passes, re-creation of more natural channels, the EA usually designs, approves and carries out the work, often with the help of external consultants. However, the EA's costs are high, and its procedures complex; as a result, work undertaken by the EA is often significantly more expensive and lengthy than work carried out by bodies such as rivers trusts and the Wild Trout Trust.

Given the need to reduce Government spending, and the significant challenge presented by the need to deliver the WFD objectives, it is essential that river restoration work is carried out as efficiently and economically as possible. We propose that, wherever possible, river improvement work, including work needed under the WFD, is carried out by third sector delivery bodies such as rivers trusts, angling clubs and similar bodies. The funding for this work should be reallocated by Defra from the EA directly to the appropriate delivery bodies, and used to lever further funding and practical delivery work from European funds, charitable trusts, the public, anglers, fisheries owners etc.

We believe that rivers trusts in particular can play a key role in this. The rivers trust movement has developed dramatically over the last 20 years or so, and the largest rivers trusts now have a great deal of experience of river restoration and fund raising. Their work is supported and co-ordinated by the Association of Rivers Trusts which also helps share best practice between trusts and secure funds at a national and European level. Trusts are increasingly employing their own scientists, and are compiling extensive scientific information about their rivers. These trusts are well placed to act as lead partners in river improvement and restoration work, supported by funding from Defra and the EA, and in some regions could help with other tasks such as routine monitoring. Other trusts are smaller, and in some parts of the country have yet to be established. We would like to see the Government and the EA take active steps to promote the creation and development of rivers trusts through start-up

grants, and consider other ways of supporting trusts financially including opening up the restrictive public procurement process which currently favours national commercial consultants.

It is essential, though, that work of this sort remains properly regulated. River restoration is complex, and changes can have unexpected consequences for the hydrology and ecosystem of a river. The EA should therefore retain responsibility for ensuring that conservation activities and remedial measures undertaken within catchments are fit for purpose and carried out on a properly co-ordinated basis. As the competent authority it should also remain responsible for prioritising the work needed under the WFD to attain GES.

The EA should extend partnership working to other areas including the sharing of data and critically, the data handling platforms necessary to analyse and utilise the information. The Riverfly Partnership's Anglers Monitoring Initiative under which anglers are trained to collect and identify aquatic invertebrates, so that they can regularly monitor the water quality in their local rivers, collecting data and reacting to trigger levels that might point to pollution incidents, is an excellent example of what can be done. This system could be used for other types of monitoring, both to help reduce the EA's costs and increase participation among anglers and other members of the public. This community involvement is one of the objectives of WFD delivery.

The Wild Trout Trust provides a unique, practical advisory service to voluntary groups wanting to carry out habitat restoration and other physical improvements to rivers. This advice can be offered at a fraction of the price of paid consultants' and with the experience of countless projects to improve the habitat of trout and invertebrates throughout the country.

The newly-formed Angling Trust, which is due to incorporate the Angling Development Board in the next year, is the representative and governing body for angling. It could play an important role in delivering low cost, but highly effective enforcement by helping to recruit volunteer bailiffs, who could check rod licences and provide intelligence to the EA's own dedicated enforcement teams. It could also deliver greater angling participation and licence sales by training coaches, improving facilities, organising angling events and marketing rod licence sales. Many of these activities are eligible for third party funding and can be delivered much more cost-effectively in the third sector than by the EA. Changes in the police force, including the employment of partly warranted Community Support Officers and increased use of special constables, provide experience of this approach.

The EA's Fisheries Role

As stated above, many anglers and fisheries interests are dissatisfied with the EA's performance. There are several reasons for this. One is a loss of confidence in the way rod licence income is used, caused at least in part by a lack of transparency. Another is the lower visibility of fisheries staff on the ground; a series of reorganisations has reduced numbers of dedicated fisheries staff and led to the creation of multi-functional teams. This reorganisation was intended to promote an integrated approach across the many related issues the EA deals with, but has had the effect of diluting specialist knowledge of fisheries, and further lowering the profile of fisheries in the EA. It has also in many areas removed a knowledgeable local point of contact for anglers within the Environment Agency.

To remedy this situation, we propose:

- a national fisheries committee comprising national angling, fisheries and conservation NGOs should be established to oversee, in an advisory capacity, how rod licence income and other dedicated fisheries funds are spent. This committee should meet regularly, include a representative of the RFERACs, two members of the EA board and be attended by senior EA staff, and independently chaired.
- new arrangements to involve anglers and other interested people in the EA's work at local level should be developed, with local communities directly involved in its work and decision making. Greater use of partnership planning and working will inevitably mean that local communities are more involved in decisions and work on improvements to their local rivers and fisheries. There is no general formula for involving local communities that can be applied

universally. Some areas have well-established angling consultative committees, others have catchment level bodies; some have both. The EA needs to work with the Angling Trust, river trusts, fisheries NGOs and local bodies to develop local consultation arrangements, based on existing structures (where these work well) and factors such as the size and capabilities of local angling clubs, fisheries associations, rivers trusts etc.

- the EA needs to make greater efforts to provide a satisfying career structure for fisheries specialists, recognising that fisheries work is a specialism that requires particular training and expertise. It should also ensure that localities have their own dedicated and visible fisheries officers.
- links between the national fisheries team and local fisheries officers should be strengthened, and fisheries given a higher profile within the EA

Fisheries Funding

Fisheries is fortunate in having a hypothecated source of income, the rod licence fee. We support the retention of rod licences and the use of rod licence income to help fund the EA's fisheries activities and further its fisheries and angling objectives. In this connection we support the use of funds to promote angling participation and rod licence sales, which has been shown to generate more licence revenue than it costs and is important to maximise the benefits of angling to communities, the local and national economy and in maintaining and increasing a constituency of people who are willing to volunteer and help fund environmental improvements. However we do not believe that the Agency has to be the delivery body for these activities for which a number of voluntary and charitable organisations already exist. We also support the use of licence income to fund improvements to rivers that will help achieve good ecological status under the WFD, provided that they improve fish conservation; wherever possible it should be used in ways that attracts further funding from other sources.

We support the EA policy of not using money raised from coarse and trout anglers to fund work on salmon and sea trout. This means that Government funding via GIA remains essential for the conservation of salmon and sea trout in England and Wales. The vast majority of salmon and sea trout rivers are failing to meet their conservation targets and are failing Water Framework Directive criteria as a result. There is significant work to be done to reverse the decline in salmonid populations on many rivers.

It is particularly important that the EA maintains adequate levels of monitoring, involving the third sector where possible, and improves its fisheries enforcement, which are at the heart of its regulatory role. The former is necessary if we are to keep track of how stocks respond to the effects of climate change, both at sea and in freshwater, and monitor the performance of fisheries management. Illegal fishing can threaten vulnerable stocks; effective action against it requires the use of dedicated, properly trained enforcement teams, supported by the local community, and is very important to anglers and fishery owners who suffer the consequences of organised poaching.

Joint Response to the invitation to Shape the Nature of England

by the Angling Trust, Atlantic Salmon Trust, Association of Rivers Trusts, Salmon & Trout Association and Wild Trout Trust

Introduction

1 We are all organisations dedicated to the conservation of the aquatic environment. We have different roles, which we outline in Annex A, but we work closely together to further our objectives. This response pulls together our views on a range of key issues, and complements the individual responses we have submitted. It is accompanied by two supporting policy papers, on the Management of Fisheries and the Aquatic Ecosystem in England, and on implementation of the Water Framework Directive.

2 This response focuses on freshwater. However, we believe that it is equally important to improve conservation of the marine environment, including estuaries. Diadromous species such as salmon, sea trout, eels and shad spend important parts of their lives at sea and are affected by human activities there. We therefore note here our support for the introduction of a comprehensive network of Marine Conservation Zones and reform of the CFP to ensure that all fishing in EU waters is on a sustainable basis and to give priority to the conservation of the marine ecosystem.

The State of the Aquatic Environment

3 Water is an essential part of the natural environment. Rivers, streams, lakes and ponds are not only provide a rich variety of aquatic ecosystems, they are also necessary for terrestrial ones. But aquatic ecosystems are especially vulnerable. Pollution on land usually ends up in water, and throughout history rivers and streams have served as sewers and drains; by the end of the 19th century many were devoid of aquatic life.

4 The move away from heavy industry, increasingly stringent legislation on water quality and substantial investment in sewage treatment, have greatly improved matters; as a result, fish have returned to previously dead rivers (although fish access remains a problem on many of these recovering rivers). The Tyne is a good example. In the 1950s, salmon catches in the river averaged less than 5 a year, while in 2008 over 3,000 were caught. This year the fish counter on the Tyne has recorded a record number of salmon returning to the river. The restoration of the Tyne is a striking demonstration of the fact that degraded habitats can be restored and locally threatened species can recover, with significant benefits for regional economies.

5 But while pollution from industry and sewage has fallen dramatically, intensive farming methods, with greater reliance on fertilisers and chemicals, population growth, hydropower and development for housing and transport continue to threaten the aquatic environment. These threats include:

- diffuse pollution from agriculture, including soil run-off leading to excess sediment in water and spawning gravels and increased nutrients, especially nitrogen and phosphates;
- complex cocktails of pesticides and household chemicals which have been introduced in the last 50 years and end up in waterbodies;
- pollution from urban and industrial sources, including run-off from roads and discharges of sewage from Combined Sewage Outflows;
- excessive water abstraction from rivers and from the groundwater sources that feed them;
- hydropower development in rivers, possible tidal barrages in estuaries and historic barriers such as weirs which have the potential to severely limit the ability of salmon, trout, eels and other fish to carry out essential migrations;
- drainage schemes which not only destroy habitat for many aquatic organisms but also crucially reduce the natural capacity of the land to hold water, reducing flows during droughts and aggravating high flows (and flood risks) during periods of heavy rain.

6 As a consequence, only 26 % of rivers in England are assessed as being of Good Ecological Status (GES) under the Water Framework Directive. One of the principal reasons why rivers do not achieve GES is the poor state of their fish stocks. Fish are not only an essential element in the aquatic environment; they are a key indicator of a healthy aquatic ecosystem.

Fish and Fisheries

7 Fish differ from other aquatic fauna in that they are of economic as well as environmental importance. In the past, migratory and freshwater fish were exploited for food. Only small residual commercial fisheries for salmon, sea trout and eels still exist, but recreational angling is of considerable economic significance.

8 The Environment Agency's *Economic evaluation of inland fisheries*, published in December 2007, found that: "[Freshwater] Angler gross expenditure across the whole of England and Wales was £1.18 billion, with coarse angling responsible for £971 million of this. Household income of £980 million and 37,386 jobs were generated across England and Wales."

9 Angling in freshwater has minimal impact on fish stocks; virtually all coarse fish caught are returned unharmed, and exploitation of salmon and sea trout is both strictly regulated and reduced by voluntary measures, with over 50% of salmon, (including all salmon caught before June 16th), returned.

10 Overall, angling has a positive impact on the environment. Fishery owners and angling clubs invest considerable amounts in maintaining and improving rivers, lakes and streams. For example, a 2005 Survey on Rivers Test & Itchen showed that anglers spent £3.25m pa on fees to fish, of which fishery owners invested £3m on management of the rivers, supporting 120 full/part time jobs, plus at least a further £0.25m into ongoing conservation projects. Angling and fisheries organisations also form a strong lobby for environmental improvement; the Salmon and Trout Association, for example, was formed in 1903 to protect rivers from the effects of industrialisation. The Anglers' Conservation Association (now Fish Legal) was formed in 1948 and has successfully fought more than 2,000 legal cases on behalf of angling clubs and riparian owners to recover civil damages from polluters and others who have damaged fisheries. These funds have been used to restore and restock waters affected. For example, compensation of more than £400,000 was secured for pollution on the River Eden, which was used as seed corn funding to support the foundation of the Eden Rivers Trust. The development of the Rivers Trust Movement and the Wild Trout Trust has seen aquatic habitat protection and enhancement focussed at both a river catchment and reach scale. Anglers themselves are vigilant in reporting pollution incidents and striving to protect the waters where they fish; the Riverfly Partnership, a cooperative of angling clubs monitoring water quality through their invertebrate life is a very practical example of this. The economic benefits of angling and the capital value of angling rights to landowners and the local community act as a powerful deterrent to those who would cause pollution, habitat damage or over-abstraction.

11 Because migratory and freshwater fish are an economic resource, they have long been subject to specific legislation, and the Environment Agency has a duty enshrined in primary legislation to 'maintain, improve and develop' salmon and freshwater fisheries. A ministerial direction to the Agency makes it clear that this duty includes a duty to maintain the biodiversity of these fish and to conserve their habitat. The Agency's work in respect of fisheries is thus an important element of its broader work on environmental protection and conservation. We support the continued existence of specific fisheries legislation and the Agency's regulatory fisheries role. Nevertheless, we believe that this could be improved, and our proposals on how this could be achieved are set out in the attached **Policy Paper on the Management of Fisheries and the Aquatic Ecosystem in England**

Water Framework Directive (WFD)

12 Achieving the WFD's objectives will make a massive contribution to improving the aquatic environment. At present, plans to implement WFD are unambitious, and envisage only modest improvements in ecological status by 2015 and 2022. Even these will be difficult to achieve, given reductions in public spending. It is clear that if real progress is to be made, very substantial changes in current arrangements are needed.

13 A key change will be a much more integrated approach to the delivery of environmental objectives. At present the Government spends very large sums of money, but in an uncoordinated way. Less money, spent more effectively, would achieve much more by targeting priority issues on a catchment basis against sound baseline data.

14 Diffuse and point-source pollution from agriculture is a major problem for the aquatic environment. The current CAP single payment scheme and agri-environment payments are not well designed to reduce this. Changes to cross-compliance rules would be helpful, and agri-environment schemes need to be targeted on water protection measures to support Catchment Sensitive Farming and WFD River Basin Plans. There also needs to be much more effective enforcement of cross-compliance. In the longer term, the CAP needs to be reformed to enable CAP spending to be focused much more on environmentally-friendly farming practices. In addition, both cross-compliance and agri-environment schemes need to be properly policed. We are aware of numerous examples of poor farming practice that contravene cross-compliance rules, and of failures to comply with, and even to apply, the conditions of EL and HL schemes.

15 Water companies should contribute more (via ecosystem service payments) to improve water quality and hydromorphology in rivers and streams. This will often be more cost-effective for the companies themselves than paying to clean-up water post abstraction, may allow greater resilience of the ecosystem to abstraction pressures and will contribute substantially to the wider environment. There are already examples of this from PR09 (South-West Water is funding widespread river restoration and water resource protection measures on a number of South West river systems for just 60p per customer - a scheme branded 'Upstream Thinking' funded out of charges approved by Ofwat), but in future rounds it is essential that the regulator recognises the need to promote ecosystems service payments and allows these to be funded through the water pricing mechanism.

16 Wherever possible, flood protection expenditure should be used in ways that benefit the environment. In many places recreating wetlands, re-establishing flood plains and restoring the capacity of the land to retain water will reduce the scale and frequency of flooding and the need for hard defences. Indeed, the Pitt Review – Lessons Learnt from the 2007 Floods – recommended the wider use of natural processes within flood risk management. Use of such measures will often contribute to WFD objectives.

17 It will be equally important to ensure that the money available is spent as effectively as possible. Government agencies usually have higher costs than third sector organisations such as rivers trusts. For this reason Government bodies should not act as deliverers; instead, other organisations should be funded to deliver river improvements and similar measures. Rivers trusts and other Third Sector deliverers like the Wild Trout Trust, for example, have an impressive record of drawing in additional funding and are able to make use of local expertise and enthusiasm. They are also usually more trusted than government agencies to provide advice on such things as environmentally-friendly farming methods, since they do not have an enforcement role.

18 Where Government Agencies do undertake work, via contractors, procurement rules prevent the great majority of third sector organisations from competing. These rules need reforming to ensure that charitable and locally based organisations can bid for work intended to help achieve WFD objectives. Such organisations also need access to relevant data held by Government agencies, which is not currently the case.

19 The attached **Policy Paper on the Practical Implementation of the WFD** sets out in more detail the changes we believe are needed to improve implementation of the WFD.

Fish Passage

20 It is essential to ensure that there is no further deterioration in the state of the aquatic environment. There is, of course, a formal rule under WFD requiring competent authorities to avoid deterioration in ecological status, but even if this provision is not breached, **any** deterioration will make eventual compliance more difficult to achieve. Barriers to fish migration have been identified as a key reason why fish stocks in many rivers are below the level needed for good ecological status.

With the growing interest in hydropower, there are hundreds of proposals for new barriers to be installed, or existing ones modified (hence preventing their future removal), on a large number of rivers. There is legislation on barriers to fish passage, but this only applies to salmon and sea trout rivers and most recently eels, and has a number of flaws. The previous Government postponed new legislation designed to remedy the situation; this now needs to be taken forward urgently and, at the minimum, the Environment Agency should be given the power to require the installation of an effective multi-species fish pass whenever a new barrier is constructed, or an existing one modified, in any river (not just a salmon and sea trout one), in recognition of the importance of free passage along a river for many of its fish species.

21 Both Government policy and legislation need to recognise that in many cases the most effective measure that can be taken to improve fish passage is the removal of a barrier. This will often not be possible; many weirs are historic structures, and have created valuable landscapes and ecosystems. However, there should be a presumption in favour of barrier removal, with the onus on those who wish to retain a barrier to show that this is desirable.

Hydropower

22 One source of proposals for new and modified barriers is the growing number of applications for hydropower schemes, driven at least in part by the introduction of the Feed-in Tariff. We are concerned that fisheries and the aquatic environment are being jeopardised in a drive to promote green renewable energy from hydropower. While we are not against using river flows to create energy it is essential to ensure that hydropower schemes do not adversely affect the aquatic environment and its dependent species. All proposals for hydropower schemes should be rigorously scrutinised, and should only be authorised if adequate measures are in place to ensure that they do not impede fish migration; intakes must be adequately screened to prevent fish being drawn in and flows through turbines must be regulated to ensure adequate flows in any depleted reaches. It is also important to assess the cumulative impact of successive hydropower schemes on the ability of fish to complete their natural lifecycles. The attached **Institute of Fisheries Management Position Statement on Hydropower**, which has our full support, sets out the principles and practices that should govern the regulation of hydropower.

Invasive Non-Natural Species

23 Invasive non-native species (INNS) - are the second biggest threat to global biodiversity after habitat loss. They show no regard to human boundaries and borders. Prioritising action to tackle INNS in the UK, the EU and beyond is therefore crucial if biodiversity decline is to be halted, commitments to binding instruments (e.g. the CBD) are to be fulfilled, and severe economic consequences are to be averted (in the EU alone, damage caused by INNS is currently estimated to cost at least €12 000 million pa). In the EU, the failure of any one Member State to take coordinated action on INNS puts the entire Community at risk. Research commissioned by the European Commission shows that, currently, domestic arrangements across EU Member States are increasingly varied, disparate, and generally ineffective. Therefore, any piece-meal gap-filling approach to INNS legislation would be prohibitively complex and problematic to enforce. Strong EU legislation that guarantees a minimum standard of provision across the EU is required. The Invasive Non-native Species Framework Strategy for Great Britain was commended recently by the European Environment Agency as 'an outstanding example of Government commitment to tackling biological invasions'. The Government can cement its reputation as a fore-runner in this field by showing its support for the immediate priority - the introduction of a dedicated EU legal instrument to ensure Member States adopt a consistent approach towards tackling this issue.

24 The Association of Rivers Trusts has joined with Rivers And Fisheries Trusts Scotland and more recently the Angling Trust, Atlantic Salmon Trust, Salmon & Trout Association and Wild Trout Trust, to develop a UK wide INNS bio-security and management programme in association with the Defra Non Native Species Secretariat.

Answers to Questions

Question 1: What do we need to do to embed the true value of our natural resources in decision making **at all levels**?

We strongly support the principle of payment for ecosystem services. It is important that mechanisms are identified that enable payments to be made to those such as farmers that are providing the services. In some cases this will be relatively simple (see paragraph 14 above; in others, where benefits are widely spread, it is more difficult.

The Environment Agency has evaluated the ecosystem service benefits of a number of schemes, and found that the schemes studied yield very significant benefits against modest costs. For example, it was estimated that the Westcountry Rivers Trust's Tamar 2000 scheme yielded annualised ecosystem service benefits of some £3.9million; assessed over 25 years with a discount rate of 3.5%, this equates to a gross benefit of £65.3 million against gross costs of £600,700.¹ Other schemes which yielded substantial benefits were the Alkborough flats managed realignment scheme² and the River Glaven Sea Trout Restoration Project.³

Ecosystem Service Payments need to be closely linked to the associated principle of polluter pays. Those responsible for costs to society should be responsible for meeting those costs. Again, in some cases this is simple; the person responsible for a pollution incident should pay the costs of cleaning it up. Similarly, the water user should pay for the cost to the environment of water abstraction. South West Water is trialling the use of innovative tariffs to curb demand. If successful these should be reflected in the abstraction charges paid to the Agency, i.e. higher volumetric charges for higher, environmentally damaging abstractions.

In other cases the costs to the environment, and to society, are less direct. In these cases it is important that all the costs of, for example, a housing development are correctly identified, and charged to the developer; this should not be regarded as a regulatory burden.

All Government departments should be made aware of the importance of the environment to the recovery of the economy and should be required to demonstrate that their activities are environmentally sustainable.

Ultimately it is public support that will drive change and the importance of the natural environment to a healthy human population is often overlooked or under-represented. Government could do much in deeds and words to correct this and turn the environment from a cost on society to a benefit to society

Question 2: Have we identified the right overarching challenges for the White Paper to consider?

Yes.

Climate change and demographic trends pose particular problems for the availability of water, especially in Southern England. The latest predictions indicate that river flows in late summer and autumn in Southern England could be reduced by up to 80 %. This will substantially increase the problems caused by abstraction and pollution, and together with higher temperatures will pose a direct threat to the survival of some fish species, including salmon and trout. The Wild Trout Trust is working with rivers trusts on practical measures to combat river warming, using appropriate management of riparian vegetation to try to limit summer temperatures. Predicted higher winter flows, with more flooding and more frequent damage to spawning gravels, may also cause problems.

¹ <http://publications.environment-agency.gov.uk/pdf/SCHO0409BPVM-E-E.pdf>

² As above

³ <http://publications.environment-agency.gov.uk/pdf/SCHO0110BRTZ-e-e.pdf>

- a. If not, what should we focus on?**
b. How should we approach these challenges?

Our answer to this question is essentially the same as our answer to question 4: what is needed is an integrated approach, with regulation complementing cost-effective initiatives to conserve and restore the natural environment, funded from payments that reflect the value of the services provided by ecosystems to society.

Question 3: What are the existing policies and practices aimed at protecting England's natural assets (including but not limited to those set out above on our biodiversity, seas, water bodies, air and soil) that currently work most effectively?

- a. What works less well – what could we stop doing or do differently?**

Our comments on the **WFD** are set out above.

As indicated above, the existing rules on **fish passage** are inadequate and need strengthening.

The current rules on **moving and stocking fish** are ineffective. Unauthorised fish movements can adversely affect resident fish stocks and spread disease and parasites. The Government has consulted on an improved system. This should be introduced as soon as possible.

Making Space for Nature reviews the current system of wildlife sites. It concludes that the existing network of wildlife sites does not constitute a resilient and coherent ecological network. It also stresses the need to improve connectivity between sites.

These conclusions seem particularly apposite for fish. Isolated wildlife sites are of limited benefit to fish; even when these improve riverside habitat, the effect is usually local. Because fish are mobile, and there is increasing evidence that many freshwater species migrate within rivers, conservation measures need to be on a catchment scale to be effective. Equally, of course, pollution in one part of a river will impact adversely on the rest of the river downstream of the pollution.

This emphasises the need, so far as fish and the aquatic environment is concerned, to operate on a catchment scale. This applies also to agri-environment measures. The Salmon and Freshwater Fisheries Review, published in 2000, set out the benefits of managed buffer strips along river banks (**Annex B**), and these arguments remain valid. Extensive strips of vegetation along the banks of rivers and streams can benefit the aquatic ecosystem and provide terrestrial fauna with a natural system of corridors to link up isolated sites. Managed buffer strips also provide an opportunity to increase tree growth along rivers, and thus shading, which will help reduce the impact of climate change on water temperatures.

The Water Industry Price Review mechanism provides a powerful potential tool for delivering environmental improvements. In the past this process has not valued properly the benefits these bring to society, and has tended to encourage "end of pipe" infrastructure instead of more sustainable catchment management solutions. The review mechanism needs to adopt an ecosystem services approach so that water charges reflect the full cost to the environment of bringing clean water supplies to consumers.

Question 4: What mechanisms should we focus on to ensure we manage our natural systems more effectively in future?

The individual mechanisms are less important than an integrated approach. WFD, agri-environment and the single payments schemes and wildlife protection policy need to be implemented in an integrated and coherent way, both to make the best of limited resources and to prevent one scheme impacting adversely on another.

Firm but fair government regulation of agriculture and industry should complement creative and innovative locally-led initiatives to restore and improve the water environment through habitat management and helpful, appropriate advice to land managers from independent bodies. We have

proposed a coherent mechanism in our Policy Paper whereby a reorganised Environment Agency fisheries function in England and Wales works efficiently with proven Third Sector delivery partners to produce maximum environmental benefit.

The focus should be on ecosystem functions and restoring these. If habitats do not provide suitable food, shelter and breeding conditions for plants and animals, then they will not sustain abundant and diverse flora and fauna and be resilient to stressors, such as climate change. For example, it has been shown that aquatic ecosystems are more resilient to reduced flows if they have high habitat diversity. Restoration of aquatic habitat diversity should not be restrained by continuation of unsustainable activities, such as land drainage in peat soils.

a. How should we define success?

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In our view the key measure of success will be a reversal in the current decline in biodiversity. This should include, but not be limited to, meeting specific species targets, including those for eels and conservation limits for salmon.

We would also like to see a reduction in polluting emissions to the environment and pollution incidents.

b. How can we agree on common goals and assess our progress towards them?

Common goals need to be agreed in consultation with third sector partners and interested members of the public; it is important that they are not seen as imposed by Government.

Question 5 – How best can we reduce our footprint on the natural environment abroad, through the goods, services and products we use?

No comment

Question 6: What best practice and innovative approaches to protecting and enhancing our natural environment do you think should be considered as we develop the White Paper?

The Government needs to do more to harness the enthusiasm, knowledge and skill of the third sector. As Making Space for Nature acknowledges, bodies such as the RSPB, the Woodland Trust and local Conservation Trusts already provide an important network of wildlife sites. River trusts, and some fisheries and angling organisations, could produce analogous benefits for rivers and streams with more support. While in this case ownership would remain with existing proprietors, trusts and other organisations are well placed to work with fisheries owners, farmers and government agencies to ensure that funds are spent in ways that maximise the gain to the natural environment, as is shown by the Tamar 2000 project cited above.

A further example is provided by the Wild Trout Trust, which has delivered habitat enhancements on over 400 sites and 150 rivers throughout England and Wales (and beyond across the British Isles), working with government agencies, the private sector, rivers trusts and local volunteer groups.

Question 7: How best can we harness and build on public enthusiasm for the natural environment so people can help improve it through local action, as informed consumers or by shaping policy?

People need to be directly involved in actions to conserve the natural environment. River trusts provide an example of the way volunteers can participate in conservation work on rivers; Thames21 have some 5,000 volunteers on their database with hundreds turning out for river "clean up" days and the smaller Wandle River Trust fields over 80 volunteers for fortnightly work groups. Similarly proactive volunteer groups are active under the Wild Trout Trust's *Trout in the Town* programme in Colne, Huddersfield, Greater Manchester, Nottingham and Sheffield.

Angling clubs and river associations do similar work; Annex C shows the contribution angling and

fisheries organisations make to environmental improvement and conservation in the Ribble catchment.

The Riverfly Partnership's Anglers' Monitoring Initiative trains anglers, fishery managers and other interested people to regularly monitor their local rivers through invertebrate sampling, thereby quickly identifying potential pollution events and bringing in the Environment Agency at the earliest opportunity to investigate. It is an ideal way for communities to become involved in the management and conservation of their local rivers, as well as being a significant addition to the EA's monitoring programmes.

Question 8: What should be our vision for the role of Civil Society in managing and enhancing the natural environment and for engaging individuals, businesses and communities in setting the agenda for that work?

A range of Third Sector organisations such as the Angling Trust, Salmon & Trout Association, rivers trusts and river associations, the Riverfly Partnership and the Wild Trout Trust currently provide an effective framework for co-delivery of environmental enhancement by individuals, communities and businesses. The ability of these organisations to leverage public funds from the private sector and to deliver highly cost-effective partnership projects should be the model for the future.

New arrangements to involve angling, fisheries and conservation interests in the EA's work at national and local level should be developed, with local communities directly involved in the Agency's work and decision making. Angling clubs and riparian owners own billions of pounds of fishing rights, the amenity and capital value of which are directly affected by the actions of the Environment Agency in managing the water environment and fisheries.

Question 9: How best can Government incentivise innovative and effective action on the natural environment, across England, at the local level?

a. How best can local government and other local partners work together to improve local outcomes on the natural environment, and pursue a more integrated approach linking a healthy natural environment to economic prosperity, sustainable development and a better quality of life, health and wellbeing?

The answers to questions 6, 7 and 8 apply equally here. Local government must also learn to take proper account of the value of ecosystem services.

b. What are the most effective mechanisms for managing the natural environment where cross-boundary issues are involved, and making the link to other mechanisms for economic growth, transport and planning?

The water environment in particular should, wherever possible, be managed in a co-operative way across boundaries in catchment units. The imposition of man-made boundaries on catchment management is a major impediment to the achievement of environmental improvement objectives.

c. How best can the value of the natural environment be considered within local planning?

New developments should either have to pay the true value of the damage caused to the natural environment (see polluter pays above) or should have to fund compensatory measures to prevent net damage. For example, new housing developments should be as water efficient as possible, but should be required to fund installation of water efficiency devices in other properties within the same catchment to reduce water use by the amount that the new development increases it.

Question 10: How best could the economy reflect the true value of nature's services in the way business is done, to drive smarter, greener growth?

The ecosystem services approach discussed in our answer to question 1 is equally relevant to business. We would also like to see environmentally sustainable businesses have a lighter fiscal

burden to reflect their reduced cost to society.

Question 11: Responsible businesses are already looking for ways to reduce their impact on the environment. How can we encourage more action like this?

The answer to question 10 applies equally here.

Question 12: What are the barriers to joining-up and seeking multiple benefits from our natural assets?

The principal barrier is that our natural assets are declining in value through soil erosion, land contamination, over-abstraction and pollution of water and destruction of habitats. Arresting this decline is critical to realising the benefits. In addition, Government bodies and departments must be incentivised to collaborate to identify and maximise win:win developments. For example, flood risk management should always first seek solutions which assist in achieving environmental benefits in the form of restored floodplains and natural water storage. We have in the past spent considerable sums on destroying natural river morphology to reduce flood risk, while at the same time spending large amounts subsidising drainage systems which increased flood risk, damaging the environment in the process.

Preventing soil erosion protects the natural asset of soil, while preventing damage to river habitats, reducing the cost of water treatment, and reducing the cost of dredging ports in estuaries.

We need a better understanding of natural processes so that these benefits can be maximised.

Question 13: What are the barriers to thinking big and taking a landscape scale approach to managing our natural assets?

As explained in our response to question 3, too many mechanisms, such as those for protected sites, operate only in relation to specific sites. Much greater emphasis needs to be given to connectivity and to a landscape scale approach. In this connection, there is a need for River Basin Plans to be much more accessible and deliver a clear vision and guidance for all interested parties for delivery at a catchment scale. The current plans run into thousands of pages and are laid out in a way which renders them inaccessible to all but the most dedicated third sector people.

Question 14: What should be the priorities for the UK's role in EU and international action, to protect and enhance the natural environment at home and abroad?

CAP reform, to enable CAP spending to be focused much more on environmentally-friendly farming practices. Common Fisheries Policy reform to ensure that all fishing in the EU is on a sustainable basis and to give priority to the conservation of the marine ecosystem.

And finally

Question 15: If you could choose just one priority action for the Natural Environment White Paper to drive forward locally, nationally or internationally – what would it be?

We would like to see the benefits to society of a healthy natural environment properly valued for in all Government policies. Over time the cost of activities which affect the natural environment should reflect the cost of protecting and where necessary restoring that environment, including the cost of remediating historic damage.

Annex A

Fisheries and Angling Organisations and their Roles

The Salmon and Trout Association was established in 1903 to address the damage done to our rivers by the polluting effects of the Industrial Revolution. For 107 years, the Association has worked to protect fisheries, fish stocks and the wider aquatic environment on behalf of game angling and fisheries. In 2008 it was granted charitable status. S&TA's charitable objectives empower it to address all issues affecting fish and the aquatic environment, supported by strong scientific evidence from its scientific network. Its charitable status enables it to take the widest possible remit in protecting salmonid fish stocks, and the aquatic environment upon which they depend.

The Atlantic Salmon Trust is a UK based charity with Atlantic wide interests which works for the conservation of wild salmon and sea trout. Set up in 1967, it

- supports marine and freshwater research
- gives independent research-based advice to governments, international and national authorities and to commercial enterprises
- co-ordinates activities with other conservation, environmental, fishery, heritage and wildlife agencies and organisations
- holds and supports seminars and workshops to investigate specific issues
- publishes high quality reports and booklets to inform and to educate.

The Association of Rivers Trusts (ART) is an independent environmental registered charity and the umbrella body of the Rivers Trust Movement in England and Wales (including Afonydd Cymru, a Welsh grouping of Rivers Trusts) and Northern Ireland. ART also has a Memorandum of Understanding (MoU) and a close working relationship with its sister body Rivers and Fisheries Trusts Scotland (RAFTS) and an MoU with the Atlantic Salmon Trust. ART also has a national partnership agreement with the Environment Agency and Natural England.

The Wild Trout Trust, established in 1997, is a registered charity that works for the conservation of wild trout in the UK and Ireland through the protection and restoration of habitat. The Trust acts as a catalyst in stimulating hands-on, in-the-water, habitat-improvement projects at a grass-roots level, effectively helping others to help themselves in the most cost-effective and efficient way. The Wild Trout Trust delivers projects through partnerships with the Environment Agency, Defra, industry, Rivers and Wildlife Trusts, community volunteer groups and interested individuals.

The Angling Trust is the representative body for all game, sea and coarse anglers in England. Formed by a merger of several predecessor bodies in January 2009, it is also recognised by Sport England as the National Governing Body for angling. It is a membership organisation with 1,400 angling clubs, riparian owner and fishery members, along with 13,000 individual anglers. The Trust campaigns for the protection of the freshwater and marine environments for the benefit of recreational anglers and promotes the many benefits of angling to society. Its development arm, the Angling Development Board, is charged with increasing participation in angling. Its legal arm, Fish Legal, employs three in-house lawyers to take action on behalf of its members who own and lease waters to recover compensation for pollution and other damage to their fishing rights, and to stop damage occurring.

ANNEX B

Extract from the 2000 Salmon and Freshwater Fisheries Review

6.34 We are persuaded by the evidence, notably from the Wye Foundation and the Tweed Foundation, that fencing to protect rivers, streams and some standing waters from cattle and sheep is often the most effective measure that can be taken to improve habitats. Along lowland river valleys beef and dairy cattle often use marginal river habitats at high densities stripping them bare of vegetation and breaking down river banks. In some upland areas sheep have a similar effect. The over-grazing of river banks damages fish habitats in several inter-related ways: marginal plant cover is lost, insect food inputs are reduced, the river channel is widened by erosion, siltation increases, current speeds and water depths are reduced. Using fencing to prevent grazing allows the re-establishment of riparian vegetation, bank stabilisation, channel narrowing, increasing water depths and current speeds and the sweeping away of silt deposits to expose gravel river beds. Fencing, therefore, can be a very cost-effective way of enhancing river habitats. To maintain and enhance biodiversity, it is important to manage for a varied mosaic of river habitats, leaving some areas of natural bank erosion and bare silt as these have their characteristic animal and plant communities including some rare species.

6.34 In arable farming areas uncultivated buffer strips along rivers and streams can play a similar role and reduce the risk of bank erosion. Set aside can make a contribution here but a more extensive scheme to encourage the creation and management of buffer strips along rivers and streams should be considered. Better protection of streams, in particular, would provide enhanced nursery areas for many species of coarse fish. Buffer strips can also serve to reduce the input of pollutants, including sediments although to be effective there may be a need to block field drains.

6.35 A more elaborate version of these options would be to bring together provisions for fencing and buffer strips in single watercourse corridor schemes, intended to protect rivers and streams from erosion and to encourage the growth and management of bankside vegetation. Ideally these schemes would be applied across the whole of England and of Wales. As well as providing benefits to fisheries, such schemes would yield other substantial conservation benefits: they would improve habitat for a wide range of both vertebrates and invertebrates, encourage a more diverse flora and provide wildlife corridors in intensively cultivated lowlands and heavily grazed uplands. With imaginative promotion a scheme encouraging the development of such 'green veins' across the countryside might well attract lottery funding as well as support from other agencies and conservation organisations.

Government together with its agencies, should promote co-ordinated measures to protect watercourses on as wide a scale as possible. In particular, Government should consider schemes to encourage fencing in livestock farming areas and uncultivated buffer strips in arable farming areas. Ideally, these schemes should be combined into single, national watercourse corridor schemes. (Recommendation 156)

Box 4 Buffer strips

Strips of land alongside water courses or around still waters can provide a buffer between activities on neighbouring land and the freshwater ecosystem. They are referred to in a variety of ways, including riparian 'buffer zones' or 'buffer strips'. Buffer strips may have a number of functions, including:

| stabilising and protecting river banks;

| reducing the movement of nutrients from neighbouring land to surface waters;

| filtering sediment (plus adhering contaminants such as pesticides) from water entering the watercourse or stillwaters;

| providing marginal cover for fish;

| providing input of invertebrates as fish food from riparian vegetation;

| providing habitat for bank-side species such as birds, amphibians and invertebrates;

| moving polluting activities (e.g. spray application) further from the watercourse;

| improving aesthetic value; and

| act as wildlife corridors for terrestrial animals and birds.

They may vary in width from a few metres to several hundred metres, depending upon their main purpose. The vegetation that is permitted to establish may vary from gross to welldeveloped woodland, and it will generally need to be managed to avoid deleterious effects such as excessive shading in smaller watercourses. Wetlands may also provide important buffer areas close to rivers, streams and other water bodies.

Annex C

Contributions by Fisheries and Organisations

To Environmental Conservation and Improvement

Within the Ribble Catchment

It should be noted that for the majority of works the angling and fisheries community has worked collaboratively with many partners and fellow stakeholders both local and national.

Across the catchment as a whole Partners, Involvement, Facilitators	Project details
Ribble Fisheries Consultative Association, E.A., Angling Clubs	Facilitate discussion, distribution of material and encourage participation in the Celtic Sea Trout Project
Ribble Fisheries Consultative Association, E.A., Angling Clubs	Facilitate discussion, distribution of material and encourage participation in the Salmon Project undertaken by Southampton University.
Ribble Fisheries Consultative Association Pollution Officers, E.A. Pollution Team, Angling Clubs and volunteers	Facilitate discussion and encourage club and individual participation in spotting and reporting pollutions. Follow up by the E.A. leading to prosecutions
Ribble Fisheries Consultative Association Poaching Officer, E.A.	Launched a similar system to that used for poaching to address poaching information feedback and follow up
Ribble Fisheries Consultative Association, Salmon & Trout Association, and Angling Trust, Fish Legal and Anglers' Conservation Association	Pressed a campaign for recompense from convictions for poaching and pollution to be made available to the catchment that suffered the offence.
Ribble Fisheries Consultative Association, E.A.Hodder Consultative, Lancashire Consultative, Calder Group	River Watch Campaign – involvement in the design and launch of the scheme Intelligence based enforcement Project
Ribble Fisheries Consultative Association, E.A., Hodder Consultative, Lancashire Consultative, Calder Group	Collaborative working to address the decline in salmon stocks within the Ribble system - two fish kill byelaw and 80% catch and release
Ribble Fisheries Consultative Association, Hodder Consultative, Lancashire Consultative, Calder Group, North West Fisheries Consultative Council, Salmon & Trout Association	Co-ordination and facilitation of information regarding the siting and building of mini Hydro plants on a migratory river system
E.A., Ribble Fisheries Consultative Association	Act as a consultee on Hydro matters across the catchment and further afield.

Ribble Fisheries Consultative Association, Hodder Consultative, Lancashire Consultative, Calder Group, North West Fisheries Consultative Council, Angling Trust, Salmon & Trout Association,	Prepare and distribute information on Hydro Schemes - impacts and objecting
Ribble Fisheries Consultative Association, Hodder Consultative, Lancashire Consultative, Calder Group, North West Fisheries Consultative Council, Lune and Wyre Consultative	Facilitate seminars and discussions on stocking - including discussion of the diploid/triploid policy
Ribble Fisheries Consultative Association, Hodder Consultative, Lancashire Consultative, Calder Group, North West Fisheries Consultative Council, Salmon & Trout Association,	Facilitate discussion and making a contribution to the RBMP
Ribble Fisheries Consultative Association, Hodder Consultative, Lancashire Consultative, Calder Group, North West Fisheries Consultative Council, Salmon & Trout Association, Angling Trust	Collaborative working regarding the Water Based Recreation Strategy for the Northwest
Ribble Fisheries Consultative Association, Hodder Consultative, United Utilities, E.A.	Work collaboratively with United Utilities regarding the blocking of grips on the moors
Hodder Consultative, Ribble Fisheries Consultative Association, United Utilities, E.A.	Work collaboratively with United Utilities regarding the re-use of gravels taken from the river at abstraction points
Ribble Fisheries Consultative Association, Ribble Catchment Conservation Trust	Support in the acquisition of survey equipment and training
Ribble Catchment Conservation Trust, Angling Clubs & volunteers	Habitat improvement programmes across the catchment Fish movement improvements on many tributaries
Ribble Catchment Conservation Trust and E.A.	Removal of weirs to ease fish movement - in particular Padiham, Montford, and Barrowford weirs
Ribble Catchment Conservation Trust, Salmon & Trout Association	Trout in the Classroom Project Teacher support - the Big Trout Book

Ribble Catchment Conservation Trust	Angling Passport Scheme.
Ribble Catchment Conservation Trust, Angling Clubs & volunteers	Fly life and invertebrate surveys. Juvenile fish population surveys.
Ribble Catchment Conservation Trust, Hodder Consultative, Ribble Fisheries Consultative Association, United Utilities, E.A.	Work collaboratively with partners to create off river spawning channels
Ribble Catchment Conservation Trust, Ribble Fisheries Consultative Association, Hodder Consultative, United Utilities, E.A. and volunteers	Work collaboratively with partners to plant trees to reduce acid run-off and improve habitat.
Ribble Fisheries Consultative Association, E.A. Angling Clubs, Other Consultatives	Work collaboratively with our local officers, facilitate a regular interchange of ideas, act as conduit for the circulation and collection of fisheries information
Salmon & Trout Association, Ribble Fisheries Consultative Association, Consultatives and clubs	Monitoring of discharge and abstraction applications; Co-ordination of responses to these. (e.g. Plans for Wycollar)

Ribble Fisheries Consultative Association, Angling Trust, Salmon & Trout Association	Collaborative responses to a wide range of issues and consultations (e.g. Preston Barrage, Savick Brook, Ribble FAP, Salmon Action plans, Cypermethrin, invasive species - crayfish, RBMP, Water Based Recreation - Access, Canatxx)
Ribblesdale Angling Association, Prince Albert Angling Society, Colne Water AA	Open Days, Casting tuition to raise public awareness and encourage angling
Ribble Fisheries Consultative Association, E.A.	Provision of webcams for use by angler members of Ribble Fisheries Consultative Association and the E.A.
Ribble Fisheries Consultative Association, E.A., Hodder Consultative, Calder Group, Lancashire Consultative, Range of other Bodies/Groups	Encourage the reporting of suspicious activity, poaching, pollution etc. to the E.A. and police

E.A., Ribble Fisheries Consultative Association	Act as a source of good practice for other areas across the N.W. (e.g. system of pollution monitoring, reporting and follow up)
Ribble Fisheries Consultative Association, Angling Trust,	Participate in the collection and circulation of information between the Angling Trust, Consultatives, local clubs and owners and anglers in general

Specifically Ribble and tributaries Partners, Involvement, Facilitators	Project details
Ribble Fisheries Consultative Association, Angling clubs and volunteers	Data collections for the E.A.
Ribble Fisheries Consultative Association, Angling Clubs and Riparian Owners	Surveys of angling clubs as to state of play on Sea Trout catches and views
Ribble Fisheries Consultative Association, Angling clubs and volunteers	Surveys of fish eating birds
Ribble Fisheries Consultative Association, E.A.	Examination of a scheme to improve fish stocks in the upper Ribble, principally sea trout using in-stream boxes
Ribble Fisheries Consultative Association, ACA (Fish Legal), E.A. (Pollution, Consents and Engineering)	Co-ordination of responses and representation regarding the laying of a gas pipeline by Entrepose
Angling Clubs E.A.	Trout stocking programmes with E.A. consents
Ribble Fisheries Consultative Association, Ribblesdale A.A, E.A.	Salmon monitoring programme at Waddow.
Mid Ribble Angling Society, E.A.	Provision for E.A. to undertake Fauna surveys at Jumbles
Mid Ribble AS, Ribblesdale AA	Continuing carcase tagging amongst members to support two fish kill limit byelaw

Specifically Hodder and tributaries Partners, Involvement, Facilitators	Project details
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B & W Focus Group, Hodder Consultative, Ribble Fisheries Consultative Association, Ribble Catchment Conservation Trust, Salmon & Trout Association, and a range of interested parties.	Brennand & Whitendale low flow alleviation scheme. Pressed for a change in the abstraction regime for the upper Hodder
Hodder Consultative, Ribble Fisheries Consultative Association members and volunteers	Cleaning and repair to smolt release ponds, fin clipping.
Hodder Consultative, Ribble Fisheries Consultative Association members, volunteers and sponsors	Creation and maintenance of smolt release ponds for salmon and sea trout propagation
E.A., Dunsop Hatchery, Hodder Consultative, Ribble Fisheries Consultative Association members, volunteers and sponsors	Collection of brood stock, laying down of ova, transfer and feeding of fry etc.
Angling Clubs E.A.	Trout stocking programmes with E.A. consents
Mid Ribble AS, Prince Albert AS, E.A. Hodder Consultative	Co-operation regarding the siting and operation of the Smolt trap to facilitate the collection of data on the smolt production within the Hodder against the natural propagation.
Lancashire Fly FA	Reclamation work, relief channel work and tree planting (Willows and Alder) with local farmer - Newton
Ribble Catchment Conservation Trust, Ribble Fisheries Consultative Association, Hodder Consultative, Angling Clubs, E.A.	Assist with investigations and improvements Hodder Flow Gauging Weir and act as the conduit for angling clubs that could be affected

INSTITUTE OF FISHERIES MANAGEMENT

Position Statement

RUN-OF-RIVER HYDROPOWER

The drive to provide renewable energy has resulted in a proliferation of schemes to develop small hydropower projects, especially run-of-river, which are those which have no capacity to store large quantities of water. The majority rely on an impoundment to create a head of water or to facilitate the abstracting structure. Others rely on the natural gradient of the river to create a head by diverting water into a separate channel.

The forms of turbines, fish passage arrangements and effects on water flows in the associated environments are among the major factors affecting the ecological impacts of run-of-river hydropower schemes.

Position

- The Institute of Fisheries Management understands the desire to develop renewable energy in the form of hydropower, but believes that this should form part of a strategic assessment of sources of power and environmental risks. The IFM will support appropriate hydropower developments where it can be clearly demonstrated that they will not cause damage to fish populations or prevent a river reach from achieving Good Ecological Status or Potential as required by the Water Framework Directive.
- The Institute proposes that prior to any more hydro schemes being approved a strategic review of river catchments is undertaken. This would identify priority catchments where hydropower should be prohibited. Furthermore any impoundments which are blocking migration (for diadromous as well as potamodromous) should firstly be assessed for removal or lowering. Hydropower should only be permitted on obstructions that cannot be removed and where suitable fish passage facilities (upstream and down) are included (on all channels).
- The Institute will work with environmental regulators, the hydropower industry and other interested parties to promote and support science to further our understanding of the relationship between fish ecology and hydropower schemes and the development of measures to minimise impacts of schemes on the environment and fisheries.
- The Institute does not support the building of new dams or weirs or retention of existing dams or weirs solely for hydropower purposes unless accompanied by mitigation measures that will maintain or improve the river reach to good ecological status or favourable conservation status for fish species that are features of interest of an associated Special Area for Conservation or otherwise protected.
- The Institute supports the development and use of turbine types that present low risks of damage and mortality of fish, either direct or indirect, and thereby obviate the need to install screens or other measures to protect fish from damage.
- The Institute supports such regulatory or mitigation measures in relation to run-of-river hydropower developments as are necessary to maintain or encourage natural population movements and abundance of fish both up and downstream.
- The Institute does not support run-of-river hydropower developments that may involve fish entering reaches from which their exit is unnaturally constrained or where they may be put at risk from adverse environmental conditions associated with flow diversion.
- The Institute calls upon regulators to adopt the precautionary principle and require a form of environmental risk assessment relating to all fish stocks present and the fisheries affected by each hydropower development proposal. Monitoring should be required of any scheme where doubts remain as to the effectiveness of the regulatory measures adopted in relation to the risks identified.

- The Institute recognises the likelihood of cumulative effects from series of hydropower developments within a catchment and calls upon regulators to develop overall catchment strategies for hydropower development.
- The Institute encourages the development of run-of-river hydropower schemes that include mitigation measures, such as fish passes, where the overall benefits to fisheries and the local economy far outweigh any damage caused by the hydropower elements.

Issues

Turbines may be situated on or adjacent to a weir or on separate channels ranging from a few metres to several kilometres. Diversions of flow to or away from turbines may similarly leave depleted reaches of such lengths.

When water is diverted from the natural river channel this may impact on the morphology and ecology of the depleted reach.

Current environmental approach to depleted flows is that all elements of a flow regime are important, including floods, medium and low flows (see IFM Position Statement on Flows).

A typical flow regime for hydropower is to leave a “hands-off” amount of between Q_{95} and Q_{100} and then take any additional flow up to the mean or greater.

Installing the turbine on, or immediately adjacent to, an impounding structure avoids a long depleted reach. However, on many heavily impounded low gradient rivers the weirpools provide important habitats for rheophilic species. The loss of energy into this system may have a severe impact.

Impoundments fragment habitats and impede migration of diadromous and potamodromous fish. Some impounding structures and natural obstructions may be passable to fish at certain flows.

Diversion of water may eliminate or decrease the window of migration opportunity.

Where there are multiple channels, upstream migrating fish are usually attracted to the greater flow. If this has no fish passage facility, migration will be delayed or prevented. Even if fish find the correct channel, depleted flows may impede passage.

Where there is a fish passage facility on an obstruction, the greater flow from a turbine may prevent fish from finding it.

Constrained flow turbines are inherently impassable to upstream migrating fish and may require screens to divert them from attempting to ascend by this route.

Downstream migrating fish may be impeded by being unable to find a passage route, or damaged or killed by contact with structures associated with a hydropower scheme.

Fish entrained into a turbine may be killed or injured, the severity depending on the type of turbine, its size, operation in relation to design flows and the length, body form and behaviour of the fish.

Some turbine designs are inherently more fish-friendly than others. For downstream migrant fish, guide vane and turbine blade impacts are often a major source of mortality, but shear forces and pressure changes may also cause mortalities. Disoriented fish may also be subject to increased indirect mortality from predators.

Vulnerable sizes and species of fish should, where necessary, be prevented from entering the turbine by appropriate screening and by-wash channel. However, screen impingement may also be a source of mortality.

When considering the impact of a scheme, the cumulative effects of existing, or potential, schemes on the river catchment must be taken into account.