

March 7, 2003.

NASF review of the status of the wild salmon stocks
in Ireland, France, Spain, Germany and the UK, sometimes
referred to in salmon biological terms as Southern Europe

Most of the wild salmon stocks native to these countries journey to their main feeding grounds in either the NE Atlantic (around the Faroe Islands) or the NW Atlantic (around Greenland) and feed as they go. It is believed that a great many of these salmon also feed within the Icelandic 200-mile fishery zone where NASF has provided a moratorium in perpetuity. In beginning this review we centre our attention on the NE Atlantic and the NW Atlantic.

A great deal of international scientific advice on salmon management is published in the annual reports produced by ICES (The International Council for the Exploration of the Sea). In their 2001 Report of the Standing Committee on the Precautionary Approach (CNL[00]18 Application of a Precautionary Approach to Management of Salmon Fisheries), ICES considered that the draft decision structure provided a very useful first step in developing a mechanism for guiding managers towards appropriate actions for fisheries, compatible with the underlying goal of conservation requirements (both abundance and diversity) of contributing stocks being achieved.

ICES also noted that management decisions should take account of all sources of uncertainty and felt it was likely that many stocks with an exploitation surplus are also subject to impacts that may cause them to fall below surplus at some future time, if measures to mitigate impacts (for example habitat rehabilitation) are not implemented. Therefore, it was insufficient to recommend implementation of measures only when status had become wholly unsatisfactory.

The ICES (The International Council for the Exploration of the Sea)

2002 - Report of the Advisory Committee on Fishery Management

NORTH EAST ATLANTIC:

In reply to the request for advice on catch options or alternative management advice with an assessment of risks relative to the objective of exceeding stock conservation limits in the NEAC area, ICES reiterates its previously expressed concerns about harvesting salmon in mixed stock fisheries, particularly fisheries that exploit individual river stocks and sub-river populations that are at unsatisfactory low levels.

ICES also stated that "Annual adjustments in quotas or effort regulations based on changes in the mean status of the stocks are unlikely to provide adequate protection to the individual river stocks that are most heavily exploited by the fishery or are in the weakest condition."

ICES also emphasized that the national stock conservation limits discussed above were not appropriate for the management of home-water fisheries, particularly where these fisheries exploit separate river stocks. This is because of the relative imprecision of the national conservation limits and because the fisheries cannot not take account of differences in the status of different river stocks or sub-river populations. Nevertheless ICES agreed that the combined conservation limits for the main stock groups (national stocks) exploited by the distant water fisheries could be used to provide general management advice for these fisheries.

ICES felt that qualitative catch advice was appropriate for southern European MSW stocks:

Southern European 1SW stocks: Recruitment of maturing 1SW salmon in the Southern European stock complex had shown a strong decreasing trend throughout most of the time series (Figure 2.3.7). Moreover the spawning escapement for the whole stock complex had fallen below the conservation limit in four of the previous five years (Figure 2.3.8).

The report added that despite a small surplus above SER (spawning escapement reserve) of around 300,000 fish during the previous two years, exploitation in those years was clearly high enough to prevent conservation requirements being met. ICES therefore considered that reductions in exploitation rates were required for as many stocks as possible and that mixed stock fisheries presented particular threats to conservation.

Southern European MSW stocks:

The PFA (Pre-fishery abundance) of non-maturing 1SW salmon from Southern Europe, the report said, had been declining steadily since the 1970s (Figure 2.3.7), and the preliminary quantitative prediction of PFA for this stock complex indicated that PFA would remain close to the existing low levels for each of the following two years (2003 and 2004). The spawning escapement had not been significantly above conservation limit for the last six years and there is evidence from the prediction that PFA will decrease in the near future (Figure 2.3.8).

The stock group, the report said, was therefore thought to remain very close to safe biological limits, and ICES therefore considered that precautionary reductions in exploitation rates were required for as many stocks as possible, in order to ensure that there was a high probability of conservation requirements being met for each river stock with. ICES again emphasised that mixed stock fisheries presented particular threats for conservation.

NORTH WEST ATLANTIC:

The report claimed that the most abundant European stocks in the North West Atlantic (predominantly in the West Greenland area) were thought to originate from the UK and Ireland.

ICES noted that the PFA of non-maturing 1SW salmon from Southern Europe has been declining steadily since the 1970s, and said the preliminary quantitative prediction of PFA for this stock complex indicated that PFA would remain close to present low levels for each of the next two years (575,000 and 552,000 fish) as there was evidence from the prediction that PFA would decrease in the near future and the spawning escapement had not been significantly above conservation limits for the last six years.

The stock group, ICES warned, was therefore thought to remain very close to safe biological limits and ICES therefore considered that precautionary reductions in exploitation rates were required for as many stocks as possible, in order to ensure there was a high probability that conservation requirements would be met for each river stock. ICES again noted that mixed stocks fisheries presented particular threats to conservation.

The report added that ICES considered that all the stock complexes at West Greenland were outside safe biological limits and warned against any exploitation in North America or in Greenland. As regards Southern Europe stocks, which feed in Greenlandic waters, ICES also claimed that they were also at, or below, their conservation limits and that that this further supported the advice that there should be no fishery at West Greenland.

-----o-----

NASCO vs. UN Law of the Sea Convention

The North Atlantic Salmon Conservation Organisation (NASCO) is the inter-governmental organisation that sets salmon quotas in both the North West and the North East Atlantic. In recent years NASCO has failed to set science-based quotas in the North West Atlantic and failed to set any quota to limit catches in the North East Atlantic.

The worst dangers of this lack of sensible management have fortunately been overcome by the North Atlantic Salmon Fund which, with the aid of its allies, secured economic agreements that will protect the northern feeding grounds for all salmon natal to the Southern European countries.

During the homeward migration most of the salmon that have fed in the NASF sanctuaries have to pass along the coast of Ireland. Ireland is therefore both a country of origin and a host country and has a legal status as such as specified in Article 66 of the United Nations Law of the Sea Convention. Great many European countries wrongly believe that NASCO has jurisdiction for salmon during their migration routes inside 12 miles. This is not the case. Talks with senior officials at the UK Ministry of Fisheries, Water & Natural Protection at the Department for Environment, Food and Rural Affairs revealed they will not accept that the EU Fisheries Commission have any say in this matter. Therefore, the only recourse of action open to Germany, France, Spain, Wales and England is through the UN Tribunal of the Law of the Sea but not through the EU Commission.

As Ireland is currently the only country that has still not decided to end its mixed stock fisheries for Atlantic salmon it is also necessary to focus this review on the management regime in Ireland.

Irish Management Option

Within the Republic of Ireland Fisheries (Amendment) Bill, of December 1999, the Dail provided a legal structure for setting salmon quotas through a body called the National Salmon Commission. Section 22(1) provides for the establishment by order of the Minister of the National Salmon Commission and gives it the duty of advising the Minister on salmon management policies generally and on the setting of a national total allowable catch and quotas for the taking of salmon.

The Commission comprises a Chairperson and 16 members appointed by the Minister. The Department of the Marine appointed a Standing Scientific Committee to advise the Commission on all technical and scientific matters in relation to performance of its functions.

On January 8, 2002 the scientific advisers to the Minister proposed a salmon quota of 117, 000 salmon for the calendar year 2002 which was to be divided amongst the 17 fishery districts where some 1,500 drift and draft netsmen operate.

At a public meeting the following day the Minister of the Marine, having consulted with leading drift netsmen, announced his confirmation of the science-based quotas. He also re-confirmed that the quotas would be individual and non-transferable in line with conservation measures.

The National Salmon Commission reviewed the scientific recommendations but declined to accept the scientific advice. Eventually in March the Commission recommended a quota of 180,000 salmon. Later the Minister decided to hand out an excessively-generous number of tags to draft netsmen. By the end of his term of office in May 2002 he had issued enough tags to allow the draft and drift netters to take a catch of 230,000 salmon - very nearly double the number recommended by the Scientific Committee.

STATISTICS QUESTIONED BY NETSMEN AND ANGLERS ALIKE:

The Federation of Irish Salmon and Sea Trout Anglers (FISSTA) has always queried the accuracy of official Irish netting catch statistics and continues to maintain that there is a very large illegal catch. This is substantiated by statements volunteered by drift netsmen attending a meeting in Dublin in May 2001. They claimed to NASF delegates that there had always been a 50% under-declaration.

Further evidence of this was disclosed by Frank Doyle, general secretary of the Irish Fishermen's Organisation in a letter published by the commercial fishing newspaper, Fishing News, on 8 February 2002. Mr Doyle wrote: "The official catch figures have long been, and continue to be, inaccurate and not credible."

In any event, NASF is happy to discuss Irish salmon management plans on the merits of the official salmon statistics derived from the reports by the Central Fisheries Board.

SEALS:

In addition to the illegal catch a very substantial extra toll is taken by seals who eat or ruin many salmon that have become enmeshed in drift nets. An article on Irish commercial salmon fishing in Fishing News by John Rafferty on 6 July 2001 said: "A major problem for salmon fisheries in seals. They are abundant around the salmon nets and on average the fisherman gets less than 50% of salmon intact from his nets - the seals take the rest."

Comments expressed by some NASF Coalition partners

regarding Irish salmon quotas for 2003:

A great many salmon are taken by Irish nets before they can return to their home rivers in France, Spain, Germany, England and Wales. This has been confirmed by tagging results over a number of years despite the fact that only a very small proportion of salmon that are raised and released are actually tagged.

So few are tagged in France, for example, that the recovery of no less than 247 French tags indicates that most of the salmon returning to French rivers were intercepted by Irish nets. Even after the drift net season was restricted to June and July and the former 12-mile netting limit reduced to 6 miles from the Irish coast, scientists at the Santander Conference last year were able to show numerous Spanish tags recovered from the Irish net catch in June and July.

WALES:

Expressed by Pat O'Reilly MBE, Chairman, FERAC Wales

Drift-net Fishery, South-West Ireland

"Many thanks for telephoning me to discuss the above issue, which is of great concern to many of us here in Wales. You asked me if I could let you know the position of the Environment Agency on this matter and their view as to what would constitute an acceptable catch quota for the Irish drift-net fishery. I have consulted fisheries colleagues both at the Cardiff office of Environment Agency Wales and at the Agency's Head Office in Bristol.

The Welsh Assembly Government's position on mixed stock salmon fisheries is, I believe, very clear: netting of mixed stocks should cease. As you know, here in Wales we have had to use reducing-to-zero net limitation orders to achieve this objective. This has now resulted in the closure of all mixed stock fisheries in Wales. In our meeting with Glyn Perryman last year you will recall that he said that he was encouraging Ireland to adopt a similar practice, thereby implying a zero quota on mixed stocks.

Environment Agency fisheries managers in Wales and in England remain concerned that significant numbers of salmon originating from Welsh rivers are being caught in the Irish drift nets, and this is compromising the effective management of in-river salmon fisheries in Wales, as indeed it is in many parts of England. Most of our salmon rivers are still below their minimum spawning limits, and that means they are falling a long way short of their full potential as fisheries.

Ireland has in the past two years established quotas for its salmon fisheries, including the drift-net fishery. There was a small reduction in overall quota for the drift nets last year, but the Environment Agency position is that it cannot suggest any catch quota other than zero that would be acceptable in the present circumstances. This view is certainly shared by the angling club officials, salmon fishery owners and managers that I meet with throughout Wales.

Pat O'Reilly

Chairman, Fisheries, Ecology and Recreation Advisory Committee, Environment Agency Wales"

FRANCE:

Views expressed by Marc-Adrien Marcellier, Director NASF (France), M. Jean Yves Kermarrec, AAPPMA and M. Pierre Phélipot, ABPM addressed to Mr. Padraic McKennan Irish Ambassador to France:

"Only a miniscule proportion of French salmon smolts is tagged. These are not wild salmon but smolts of hatchery origin. Fishery scientists accept that the survival rate of hatchery-raised salmon smolts is very low compared with that of wild salmon smolts. A recorded recapture of 247 tags, therefore, really represents a huge proportion of our salmon runs, particularly when Irish efforts to recover tags cannot include the examination of all the salmon that are actually caught off your coasts.

Most of the salmon traditionally caught in the Irish drift nets are taken within a mile or two of the coast so that restriction from 12 to 6 miles has made little difference. The huge number of fish that continue to be killed despite the very low global levels of Atlantic salmon stocks is evidence that this is the case.

In addition to the declared and illegal catches a great many other salmon are either eaten or ruined by seals whilst trapped in the driftnets. These fish will never be examined for tags and their numbers are very substantial. Leaders of the Irish netsmen have repeatedly made public statements claiming that they lose up to 50% of their salmon to seals.

Furthermore, the random checks and surveillance programme carried out in Ireland are not subject to independent surveillance. Our groups have never been allowed access to the full data or been able to see how the tag-collecting process is conducted. No doubt you will know that the Minister's assurance that under the new arrangements salmon netting would be restricted to individual non-transferrable quotas was broken in each and every region in Ireland in 2002.

The sad fact is that our international coalition worked with your Government with great goodwill to develop a sensible quota system for the Irish salmon industry and we were shocked to see it totally wrecked when it was introduced.

All the fish that we saved by protecting the high seas feeding grounds from the commercial fishermen of other nations were taken by your nets. Virtually every potential spawner that was returning to the rivers of France, Spain, Germany or the UK was taken by your fishermen as it was passing along your coast.

The United Nations Convention on the Law of the Sea provides our coalition and the other nations that are suffering severely from the effects of your fishery with very substantial rights to share in determining measures - such as total allowable catches (TACs) and catch quotas in individual regions.

The reasons why this remedy is open to us are clearly set out in the enclosed letter to your Taoiseach dated November 15, 2002. You will also note that the EU Commission on the Environment has accepted a case presented by our UK partners against Ireland for serious infringement of the EU Habitats Directive.

We have not received a formal reply to our letter to the Taoiseach and we would be grateful if you were to convey to your Government the seriousness with which we view the salmon issue. We hope you will also emphasise the fact that your mixed stock fisheries present the major obstacle to any meaningful salmon restoration programmes by your EU partners."

SPAIN:

Views expressed by Delfín Puente Roderíguez, Presidente de la Real Asociación Asturiana de Pesca Fluvial and Javier Loring Armada, Director del Fondo para la Protección del Salmón del Atlántico Norte:

(1)

"Unless action is taken to remove or greatly curb the drift nets that operate off Ireland's west coast the future of Spanish salmon stocks looks bleak and many of the individual river populations may face extinction. Salmon was once plentiful in the northern regions of Spain but some of the rivers are now virtually devoid of the fish. Others have a few spawning pairs only.

But the huge efforts by both public and private organisations in Spain to restore river habitats and the stocks of salmon cannot succeed if all the fish continue to be taken off the coast of Ireland.

The length of the fishing season in Spain has been reduced as well as the number of salmon that may be killed. Expensive restoration efforts have been made on some rivers, including the use of hatchery enhancement. But still the stocks continue to vanish.

Tagging experiments of Spanish smolts by the appropriate scientific bodies in recent years have proved that many of the adult fish were unable to return to Spain because they were taken on their homeward migration by the Irish drift nets.

Spanish salmon anglers and conservationists are deeply concerned that the Irish Government allows this untenable situation to continue. It is liable to discourage them from persevering with their restoration efforts because they know that the bulk of the salmon that originate in Spain are actually being caught at sea by the Irish nets. Salmon returning to Germany and France are also taken in the Irish mixed stock fisheries.

We believe that a ban or, at least, a severe limitation of the Irish netting activity is absolutely vital in order to allow our salmon to recover. The scale of the Irish netting is huge and if it continues it will soon be too late to take remedial action."

(2)

"The restoration of salmon stocks in Spain remains at a standstill because the Irish Government has failed to protect the migration routes that lie within Ireland's coastal waters.

Ironically, having themselves never shown any respect for Spanish salmon, the Irish are now asking Spain to help protect the interests of Irish commercial fisheries.

We feel that before Ireland has any right to expect any favours from Spain the Irish Government needs to display an interest in the needs of Spain and that a commitment towards the conservation of the near-extinct salmon stocks of Europe is the minimum the Irish should offer in the way of confidence-building measures. If the Irish were prepared to commit themselves to a few years of cooperation with salmon restoration groups Spain herself will be in a much better position to assist Ireland.

Ireland's failure to control its driftnet fishery or to limit the great damage it is doing to stocks of Ireland's EU partners means that no serious restoration programmes can take place in Spain, France, Germany, Wales and Southern England."

SW ENGLAND:

Views expressed by the South West Rivers Association (Chairman: Humphrey Wood, Secretary : Michael Charleston):

Mr Orri Vigfusson

Chairman, North Atlantic Salmon Fund

Skipholtí 35

105 Reykjavík

Iceland

7 February 2002

Dear Mr Vigfusson

Thank you for sending me a copy of the Standing Scientific Committee's advice to the Irish National Salmon Commission. We feel that the advice is flawed

because it ignores a variety of important factors. I would be grateful if you would pass our comments (below) to Minister John Browne when you meet him.

Yours sincerely

Michael Charleston

Secretary

COMMENTS OF THE SOUTH WEST RIVERS ASSOCIATION

on the

PRECAUTIONARY CATCH ADVICE TABLE 2003

and the manner of its compilation :

"The Catch Advice table

The first and most obvious error is that the Scientific Committee assumes that the entire catch is made up of Irish salmon. The vast majority of rivers here in Britain and on the European mainland do not release or tag fish. Those that do tag only a small percentage of the hatchery fish they release.

In claiming that relatively few English or Welsh salmon are netted Irish scientists ignore the effects of the known extra mortality of hatchery fish and certainly make no allowance for the unknown figure of parr and smolts that die as a result of being handled and tagged.

The evidence that this additional mortality takes place and may also be extremely high is to be found in the disastrous results of trapping and tagging every juvenile and adult salmon that moved up and down the River Axe in Devon. The Ministry of Agriculture, Food and Fisheries began this experiment in 1959.

Salmon runs in Devon rivers were then at a peak and remained so for many years afterwards. However, by the time the Axe trap was discontinued some years later the Axe salmon run had been wiped out and the Environment Agency is now trying to re-establish it. Confirmation that the obvious culprit was the

handling of smolts that the experiment involved may now be coming from the River Bush where there have been recent complaints that a similar trapping programme is ruining the salmon run.

The combination of these factors must mean that the recovered tags represent only a very small fraction of the numbers of wild English, French, Spanish or German fish that end up in Irish nets. This must badly upset the calculations.

Illegal Catches and Seal Damage

The weakest factors in the scientific mathematics is the size of the illegal catch. If the catch is illegal it goes without saying that nobody knows how big it is! So guessing at the maximum and minimum figures gets one nowhere. If one can't be sure of the maximum and minimum figures then running them through a computer produces only a theoretical average which can easily be very wide of the real figure.

Representatives of Irish drift netmen at a meeting in Dublin in 2001 told the SWRA's Secretary , without prompting, that the illegal catch was about 50%. If this is correct, despite the requirement since 2001 to tag netted salmon, the average catch over the last five years is a much higher figure than the Minister's scientists estimate.

We understand the scientists say the illegal catch was only 20%. If this the average figure their computer exercise gives them but the netmen's 50% claim is actually correct the difference between the scientists' estimated catch and the true total is very considerable indeed. In any case, if 20% is the average figure that their computer gives them then the maximum figures they use must be very low and minimum figures ludicrously low.

To make matters far worse they make no allowance for salmon eaten or ruined by seals while enmeshed. This is again put at up to 50% by the netmen. Even if it is 25% it makes a huge addition to the drain netting produces on stocks.

Practically all the figures they use to assess the productivity of a river are assumptions but the mortality of fry, parr and smolts is restricted to the area in which they live. At the moment the limited numbers of salmon probably use the spawning areas that suit them best. Other slightly less attractive areas are ignored. Without knowing how much more of the catchment would be used for spawning if extra fish were allowed up the river there is no way that you can say that a river has reached maximum production.

The only way to establish this is to let it happen and see the result. The fact that thirty or forty years ago it was possible, without harming the stocks, for nets and rods to remove many times the number of fish from most rivers than are caught now is surely proof of this.

In the light of all this we consider the scientists' precautionary catch figure of 139,000 to be much too high and the National Salmon Commission's recommendation to set a TAC of 182,000 to be hugely excessive. We ask the Minister to take the bold and positive action to restore stocks that these figures can never provide.

This would be very much in the interests of Ireland (where many rivers are failing their conservation levels), England (where over 70% are failing) and the other European countries where salmon stocks are in even more desperate straits.

It is also greatly in the interests of Irish netmen, most of whom believe they are currently being encouraged to ruin their future and that of the resource itself. END"

NORTHERN IRELAND:

Comments provided by Newell McCreight on behalf of North Atlantic Salmon Fund (Northern Ireland), registered charity:

"In Northern Ireland there are two geographical areas of administration for salmon fisheries. The greater part of the province falls within the Fisheries Conservancy Board (FCB) region while the Foyle and Carlington areas are managed by the Loughs Agency, a cross-border body established by the British-Irish Agreement in 1999.

Both net and rod catches in the FCB area have been in steady decline from the late 1960s to the present day. Government research at the River Bush has shown that the exploitation by coastal nets averages over 60% and can be considerably higher. This programme of work has also revealed that the natural survival rate of Bush salmon at sea, prior to exploitation by coastal nets, has fallen from 30% to around 15% in recent years. This information was critical in convincing our civil servants that urgent action was required and in 2001, a voluntary buy-out scheme was introduced for all commercial salmon fisheries in the FCB area. The scheme is operating over a 3-year period and has been very successful to date over half of the fishermen so far agreeing to accept compensation.

We are optimistic that the buy-out scheme, in conjunction with in-river improvements, will gradually lead to an overall recovery in fish numbers. However we are greatly concerned that returning salmon continue to be harvested at a significant rate by interceptory netting off the Irish coast, especially in the Foyle area which is a joint responsibility of the Irish government. The Bush research has shown that almost 28% of the exploitation of Bush fish is sustained outside of the FCB area, principally in the Foyle region. In relation to the freshwater catchment of the Foyle, we believe that the opportunities for angling development are vast, and could be facilitated by a significant cutback in exploitation both within the Foyle area and the Irish coast in general. To this end the Advisory Forum to the Loughs Agency recently approved in principal, the concept of a voluntary buy-out scheme for the Foyle nets. The Foyle has a very advanced management system and the spawning stock is carefully regulated according to carrying capacity for the catchment. Nevertheless we are convinced that much greater numbers of fish could be accommodated within the system without any long term detriment to stocks, while the benefit to the cross border rural economy through angling tourism could be enormous.

GERMANY

Comments by Peter Olbrich, President of Lachs- und Meerforellen Sozietät e.V.:

" We would like to express the deep concern with which we, and many of those in other bodies involved in the various efforts to restore German salmon stocks, view the Irish drift net fishery..

In Germany millions and millions of euros have been spent during the last 15 years with the aim of regenerating former home rivers of the Atlantic Salmon such as the Rhine, Weser, Ems, Elbe and others. But still the ultimate objective of establishing self-reproducing populations has not been reached.

The recent scientific proof that tags of Rhine-system fish have been found in the landings of the Irish drift net fishery has opened the eyes of many in our country to the possible reasons for the prevailing failure to re-establish salmon populations in our rivers.

With their present low numbers, the minimal populations that our rivers possess are greatly affected by the loss of individuals that could help in reaching the necessary spawning targets. For a river population of maybe 20-30 spawners the loss of each fish that ends its life in the drift nets

inflicts heavy damage on the river's reproductive power and lengthens the severe delay in the process of establishing self-sustaining populations.

Any attempt to manage a migratory species in seas areas where populations mix and the location of their home rivers cannot be distinguished is an irresponsible disregard of the needs to conserve the species. Small populations will always be on the brink of extinction if one net happens to entrap half a river's potential spawners in one haul.

Each single returning salmon in our rivers represents a value of thousands of euros raised by local angling groups and the German taxpayer. The economical nonsense of killing these fish for a revenue of maybe EUR 10 is more than obvious. I do not believe that the EU was founded with the idea of expensively building up resources in one area of the community only to have them destroyed hundreds of miles away in another part of the EU..

For me and many fishery bodies in Germany the answer is quite clear. Drift-net fishing of Atlantic Salmon in salt water is definitely not in line with sound modern principles of making sustainable use of resources. It should therefore be ended as soon as possible in order to develop the ecological and economical value of the species and the fishery should stay closed until salmon stocks return to a safe level of abundance throughout their geographical distribution.

SOUTH ENGLAND - THE WESSEX SALMON AND RIVERS TRUST

Comments by Brian Marshall, Chairman

"Since the last ice age the lowland rivers of Southern England have nurtured healthy populations of North Atlantic salmon. This stock has, since the 18th century, sustained socially and economically important sporting and commercial draft net fisheries. Since the late 19th century these fisheries have been

controlled and latterly subject to licence in order to protect the stocks from over exploitation.

Both rod and net fisheries are currently licensed by the Environment Agency and those on 'Candidate Special Area of Conservation' rivers (cSAC) are also under the jurisdiction of English Nature under the terms of the European Habitats Directive. *Salmo salar* are an annexe II listed species in that directive and a 'primary reason' for the designation of these rivers.

Until the mid 1980's spawning escapement, recruitment and catches by rod and draft net were healthy and stable. On the River Hampshire Avon for example, the most seriously affected river, the combined catch in 1986 was 1,800 fish. This river is a cSAC. It should be noted here that agricultural practices, water management and discharge controls then were broadly similar to now.

By the early 1990's the populations on all of these lowland rivers had collapsed to levels that threatened the survival of the indigenous species. Using the same example River Avon, combined catches for similar effort were reduced to just 200 fish.

Since 1992, the year when this trust was founded, massive co-operative restoration and conservation efforts have been made by the authorities and the private sector; supported by the best scientific research and advice, and with the investment of millions of pounds of partnership funding. Sadly no recovery is taking place.

Some examples are;

* Draft nets: These have either been closed, reduced in number and/or their season has been significantly curtailed. Again on the R. Avon 100% catch and release of netted salmon is in it's tenth year of operation. (The sea trout fishery continues and is thriving with record catches).

* Rods: The rod fishing season has been reduced. Method and bait restrictions are in force, both mandatory and voluntary. Enforced catch and release of spring fish and on many rivers 100% catch and release for the whole season. This is the 10th year of this voluntary measure on the R. Avon.

* Habitat enhancement: A comprehensive 'Landcare' project is established by the Environment Agency and others, promoting and advising on best tillage practice and agricultural management to reduce diffuse pollution and siltation. Increasingly stringent discharge controls are in place. Extensive gravel cleaning operations take place annually to maximise recruitment.

* Stock support: A number of rivers have developed stock support

schemes using indigenous brood stock, kelt re-conditioning, in stream incubators, parr and smolt introduction etc.

The authorities, scientists, fishery managers and the voluntary sector agree that there is little more, if anything, that can be done on an individual or collective catchment management basis.

Cause of decline and solutions toward recovery must be sought elsewhere and the only remaining conclusion is poor marine survival and/or escapement.

The Northern European moratoria on feeding ground exploitation brokered and managed by international effort and co-operation means that Greenland, Iceland and the Faeroes can no longer be held responsible.

Thus indisputably the only possible cause of the continuing demise of the salmon fisheries of the whole of southern and south western English and Welsh salmon fisheries is the mixed stock Irish west coast fishery.

In accordance with the terms of European and International law, this fishery and it's licensing authority; the Irish Government, must submit to international management of this international resource."

The following information were provided by Simon Evans, Head of Fisheries, Westcountry Rivers Trust in letters and conversations between late February and early March 2003

The existing direct evidence about the exploitation of salmon from the rivers of South Western England is limited due to a lack of research in this subject. Only a very small number of fish have been tagged from south western rivers although this has increased since 2001 with the CEFAS study on the Tamar and only a few tags recovered to date in the Irish fishery.

There is insufficient data to estimate exploitation rates with any degree of confidence and numbers could be very high or very low. Due to the lack of a substantial fishery in St Georges Channel and Irish Sea there is no evidence either for or against salmon migration taking that route.

There is circumstantial evidence in the scientific literature that suggests that significant numbers of salmon destined for the salmon river of Devon and Cornwall, are being intercepted in the Irish coastal fishery.

Only tagging going on is in the Frome and the Tamar. The Tamar effort is a CEFAS operation AND WE HAVE NO INFORMATION FROM THEM ABOUT RESULTS.

There is ample scientific work that shows that removing a net does very little good on its own because the remaining nets will take its catch as well as their own.

Nobody has done any work on whether tags are actually being returned or whether fishermen eliminate them from their landings.

Scientific work on the R Bush in Northern Ireland where the drift nets have just been removed shows that the nets took 86% of the fish.

A publication in 2000 - Ocean Life of the Atlantic by Derek Mills - contains clear evidence that fish from SW England migrate along the Irish coast.

A substantial trial of tagged hatchery salmon on the Taff showed how few got back. Of 12,000 hatchery smolts released only 10 returned as adults and it was estimated that Irish coastal nets had an exploitation rate of 40-45% of these Welsh fish.

Work on the Wye in 1991 by the then NRA to estimate fitness of hatchery fish over wild fish extrapolated that over 15% of the Wye's summer stock was being exploited in the Irish drift and bag net fishery.

In the Wye trial the recovery by Irish driftnets of tags from wild smolts trapped and released showed that the Irish net catch probably equalled or came very close to the river's rod catch. Some 7,689 wild smolts were tagged and the rods caught 75 of them when they returned to the Wye as adults. Ignoring the fact that there must have been some more tags that that were not returned in Ireland because the fish were caught illegally or were eaten by seals while enmeshed in the drift nets or that some tags were not returned, 57 of the tagged fish were taken by Irish netsmen and were identified as being the Wye's wild smolts..

The trial showed the Irish nets were taking 30-40% of the Wye's grilse stock. This figure is of particular significance for the rivers of South West England as the catches there are now almost entirely made up of grilse.

There is circumstantial evidence in the scientific literature that suggests that significant numbers of salmon destined for the salmon river of Devon and Cornwall, are being intercepted in the Irish coastal fishery.

As noted previously, scientific work on the R Bush in Northern Ireland where the drift nets have just been removed shows that the nets took 86% of the fish.

Work conducted by Crozier and Kennedy (1994) in Northern Ireland from 1983-1991 is the most detailed study of the fate of wild and hatchery salmon. This paper is available from the Trust offices. 100,885 tagged hatchery smolts were released between 1983 and 1990 and 13,924 wild smolts were captured and tagged between 1986 and 1990.

The numbers of tag recoveries from various fisheries were assessed against the number of fish returning to the trap at Bushmills in order to estimate the % of the run being exploited in the coastal fishery. 7003 tags were recovered. Coastal fisheries were proved to be exceedingly efficient exploiters of the Bush fish taking a mean of 69.8% of the returning wild grilse and a mean of 44.7 of wild 2SW salmon. Exploitation rates of hatchery fish was significantly higher (mean 72.5%).

Significantly a mean of 25.1% of the total stock were found to be caught in the Republic of Ireland coastal drift net fishery despite the river being sited to the North of the Bulk of the fishery and there being a 'straight line of sight' from the feeding grounds to the Bush without the need to migrate past the ROI fishery.

As already stated there is no conclusive evidence for South West England salmon's principle migration route being past the West and South Western Coast of the Republic of Ireland. Significant numbers of tagged salmon from hatchery smolts released from the Test have been recorded in the Irish fishery. If fish destined for Welsh and Hampshire are returning round the West Coast of Ireland it is reasonable to assume that the salmon destined for the rivers of Devon and Cornwall are following the same route.

The vulnerability of salmon to exploitation in coastal fisheries is explained by a review of the existing literature published in 2000 by Hansen & Jacobsen when following return from the high seas salmon were recorded moving over 370km along the Norwegian coast line as they approach the natal river. During this period they are moving within 6m of the surface and between 100m and 5km offshore. With this route in mind they would be highly susceptible to near shore drift and bag nets.

References

Crozier W W & Kennedy G J A (1994) Marine Exploitation of Atlantic salmon from the river Bush, NI. *Journal of Fisheries Research* 19 pp141-155

Hansen L P & Jacobsen J A (2000) Distribution and Migration of Atlantic salmon in the Sea. *The Ocean Life of Atlantic salmon* Ed. Derek Mills. Fishing news books