



The Newsletter for the Central & Regional Fisheries Boards
Irisleabhar an Phríomh Bhord Iascaigh agus na Boird Iascaigh Réigiúnach

International salmon stocks in crisis

A greater understanding is needed as to why international salmon stocks are decreasing and how this crisis can be rectified.

Since the 1970's there has been a steady decline in salmon stocks across the world. Many studies have been carried out to determine what factors are causing this decline and how they can be best addressed.

While there are mixed reports of this summers salmon season, salmon stocks in Ireland are in crisis. Stocks have fallen by two thirds since the 1970's. The crisis is also evident internationally, particularly across the North Atlantic range. The worrying factor is that despite reductions in the commercial salmon fisheries because of closures, marine survival of salmon has shown a decreasing trend in the last fifteen years.

In the Southern European Stock Complex, which covers Ireland, the International Council for the Exploration of the Sea (ICES) has reported that the recruitment of maturing one sea winter salmon or grilse shows a strong decreasing trend. The spawning escapement for the whole stock has fallen below the conservation limit in four out of the last five years. In addition, the conservation requirements are not being met. This year,

ICES recommended that reductions in exploitation rates are required for as many stocks as possible, highlighting the particular threat from mixed stock fisheries.

Of prime concern is the very poor survival of salmon. Studies suggest a link between marine mortality and atmospheric and oceanographic indices such as sea surface temperature anomalies and the North Atlantic Oscillation. Greater understanding of these issues is needed.

Salmon Mortality

Different factors regulate salmon mortality. In the Norwegian Sea, research has shown large scale mackerel fishing may pose a serious threat to salmon stocks in the north east Atlantic, as it takes salmon post-smolts as a by-catch. Irish micro-tagged salmon post-smolts have recently been caught in the

Norwegian Sea in the areas where the mackerel fisheries operate. While at a recent workshop in Northern Ireland, which examined the evidence of interaction between seals and salmon, serious concern was expressed at level of the seal predation. In Norway, strong evidence is available that sea lice from marine salmon farms cause significant marine mortality in salmon post smolts.

Our inland waters also harbour threats to salmon stocks. These include eutrophication of rivers, overgrazing causing erosion and siltation and loss of the riparian zone along rivers. Freshwater contaminants, by-products of herbicides and insecticides used in farming and forestry have been implicated in Canadian studies as major contributors to salmon smolt mortality.

Moving Forward

Effecting change at sea will be difficult. However, developments in oceanographic science linked to increased knowledge of the distribution of salmon in the sea will significantly improve our ability to predict the performance of salmon in the sea.

In Ireland, the commercial salmon fishery is now managed by quota, relative to the strength of salmon runs on a district basis. Regulations on the angling fishery have also been introduced. The commitment to the rehabilitation of our degraded inland fisheries environment will be further informed when on September 16th - 19th Ireland hosts the 13th International Salmon Habitat Enhancement Workshop in Westport, Co Mayo.

Let us hope that these new salmon management initiatives in Ireland, together with the scientific research ongoing both in freshwater and at sea, will lead to the long-term survival of a sustainable salmon stock. 



Unlike humans the wet spring and summer has been good for fish and their environment. Despite the rain, which has hampered the Fisheries Boards instream projects, we highlight some of the programs which the Boards have been progressing in our feature on habitat degradation.

The crisis facing international salmon stocks does not seem to be abating, and we, once again, address this most important issue in our cover article. The coming together of international bodies in Westport, Co Mayo this September is a big step in working together to relieve this crisis.

We hope that one of the main areas our new Minister responsible for Fisheries, Mr Dermot Ahern, will be looking at is declining fish stocks, both inland and out at sea. In the next issue we will put questions on the salmon crisis, along with other important issues to Mr Ahern.

As we go to press the funding of the Fisheries Boards is of serious concern and an issue we intend to return to a future issue. While the Government has a major role to play in this issue we must also look at ways to become more efficient and effective.

I hope you enjoy this edition of fin and, once again, thanks to those who contributed articles and photographs – your contributions are always welcome

Eamon Cusack
Editor

Septic tanks and fisheries professional vigilance

In April this year, under instruction from the then Minister for Marine & Natural Resources, the Central Fisheries Board (CFB), set up an Environmental Assessment Team to address concerns of the potential for pollution of fisheries in the Mayo area, from proposed sewerage systems installations.

Consultants M C O'Sullivan & Co. Ltd. were commissioned to carry out 'independent analysis of the potential for pollution and consequent damage to the relevant fisheries from sewerage systems at selected sites in Co. Mayo'.

The CFB worked closely with the North Western Regional Fisheries Board (NWRFB), the Department of the Marine and the team of consultants to produce a report based on scientific principles. The results of the report vindicate the decisions of the NWRFB, highlighting that appeals lodged to An Bord Pleanála on the grounds of the potential risk to the fisheries resource were indeed justified.

The conclusions and recommendations of the report highlight the deterioration of water

quality in the region over the past number of years and urge the use of the *Precautionary Principle* in relation to locating sewage treatment facilities near sensitive waters. The point was also made that rural housing has been shown to be a significant contributor to phosphorus inputs to surface waters in the region.

Recommendations of the report include further research and the instigation of a public awareness scheme, to inform the public on the issue of developing rural housing close to rivers and lakes, with particular reference to important fisheries.

For a more in-depth understanding of the issues, the report is available for viewing on www.cfb.ie. Copies of the report are also available by contacting the CFB and NWRFB.

News in Brief



Minister of Communications Dermot Ahern T.D.

New Minister, New Responsibilities

The introduction of a new Government brought a change in the portfolio for the Department for the Marine and Natural Resources as well as a new Minister, Mr. Dermot Ahern T.D. Now known as the Department of Communications, Marine and Natural Resources (Roinn Cumarsáide, Mara agus Acmhainní Nadúrtha), the Department has a broad ranged portfolio to include broadcasting, telecommunications, energy and natural resources as well as the marine. John Browne T.D. has been appointed as Minister of State with responsibility for inland fisheries, aquaculture, coastal Zone Management, exploration, mining and petroleum affairs.

Western Regional Fisheries Board Voluntary Code of Practice

Following an increase in catches on Loughs Corrib, Mask and Carra in Co. Galway; the

WRFB in conjunction with the local Federations and Development Society has recommended conservation measures to preserve fish stocks. Anglers are being urged to exercise catch and release and bag limits on these magnificent lakes to protect the Loughs from excessive exploitation. Details of these measures can be obtained from the WRFB.

NWRFB triumph over the Western Board

The first round of the annual angling competition between the North Western Board and their counterparts in the Western Region took place on Lough Conn. The results saw the North Western Board leading into the 2nd leg. In the thirteen years since the competition began, the NWRFB have only won twice. The 2nd leg will take place on the Corrib at the end of the season.

Coarse fish tagging programme

The Central and Regional Fisheries Boards have undertaken a coarse fish tag and recapture programme to investigate the post stocking survival, performance and behaviour of fish stocked into the Canals, the River Barrow and the Shannon-Erne Waterway.

Stocking is a fundamental component of the ongoing fishery development programme for inland waterways and will enhance the fishery status of these particular systems. The tag and recapture programme has been introduced to individually or batch mark fish stocked into these waterways, to closely monitor their long-term survival and to assess suitability of their new habitat.

The programme

The objective of the programme is to investigate the timing and extent of movements of fish away from the stocking site, while also providing information on growth and survival. The monitoring of tagged fish will also indicate the extent to which relocated fish contribute to angler catches.

// Of the fish tagged so far in 2002, tench has represented approximately 70% of confirmed angling recaptures, despite accounting for only 6% of tagged fish //

Coarse fish stocked in the waterways are generally sourced from Lough Sheelin and are disinfected prior to stocking. The fish are tagged with floy tags on the left flank, below the dorsal fin. These tags are relatively harmless, and normal prestocking antiseptic bath helps prevent infection. The Floy tag has an individual code and some tags have a contact telephone number. Each tagged fish has also been marked with an inert blue dye at the base of one or more fins to assist the angler in identifying tagged fish.



Marking a fish with inert blue dye at the base of a fin, to aid anglers with identification of tagged fish.



Bream with a floy tag attached to the left flank, below the dorsal fin.

Results to Date

Species tagged to date include pike, bream, hybrids, roach and tench. Of the fish tagged so far in 2002, tench has represented approximately 70% of confirmed angling recaptures, despite accounting for only 6% of tagged fish.

Examples of angler returns include;

- a bream captured 48 hrs after stocking and 200m from the stocking site on the Royal Canal near Leixlip;
- two tench captured near Rhode on the Grand Canal 39 days after stocking and 16 km from the stocking location at Edenderry;
- One tench captured twice in 24 hours having moved 20 km in that time. [f](#)

Anglers Assistance

To assist in the management of Ireland's important angling resource, the Central and Regional Fisheries Boards are calling on all anglers who catch a tagged fish to record the following information and submit it to the Central Fisheries Board (CFB) before releasing the fish back:

- the tag number (do not remove the tag)
- the date, time and exact location of capture and
- the weight and length (from snout to fork of tail).

This information can be submitted to Joe Caffrey / Paul McLoone at the CFB, 01-884 2600. Results from these studies will continue to inform and direct fisheries development policy and practice in inland waterways.

Impact of habitat degradation on fish stocks

Land management practices have had a negative impact on many of our rivers and lakes. Rerouting of channels, changing their natural shape and the removal of bankside vegetation have all impacted on their capacity to support fish and all other forms of wild life.

Habitat Degradation

Many causes of habitat degradation can be blamed on human interference such as increasing domestic and industrial demands for water and intensification of agriculture, leading to trampling of banks and excessive erosion. Fertilisers, and chemicals result in pollution which fish stocks battle to survive.

Different habitats are needed by salmonids at different stages during their lifecycle. It is essential that rivers and channels are maintained or rehabilitated to include the typical physical and ecological features, which accommodate salmonids throughout their life.

What is being done

The Central and Regional Fisheries Boards have been well aware of these problems. Over the period 1995 to 2000 they invested

riverine problems. This involved surveying 2,000km of riverine channel and carrying out rehabilitation programmes on over 400km of channel length. Rehabilitated river and stream reaches varied in width from as little

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as 1m to sections of the lower Cork Blackwater, which were 57m wide.

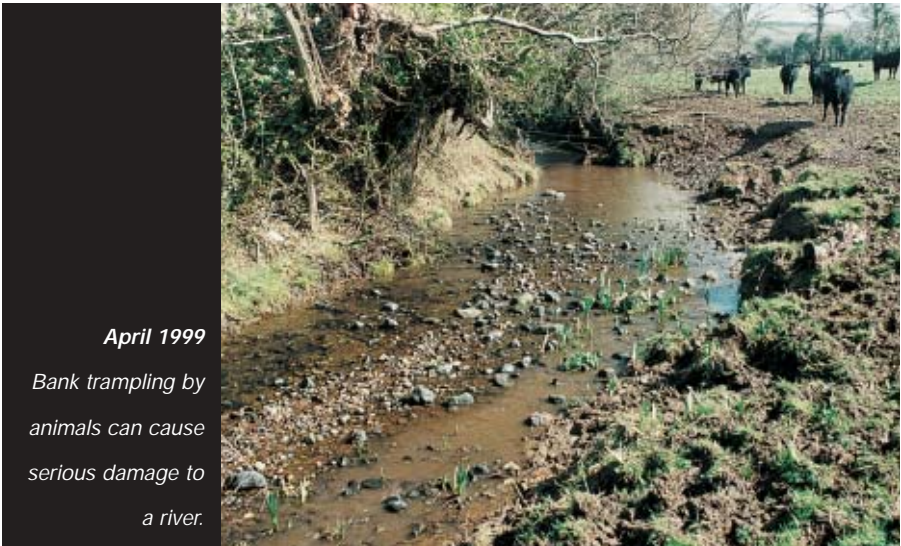
Pool Restoration

The reconstruction of pools is often an essential feature of rehabilitation programmes. They can be constructed in different ways, although particular techniques are only appropriate in certain circumstances.

Pools are important for spawning opportunities in the gravels, which accumulate at the tail of pool areas. Log weirs can maintain excellent pools in small streams, necessary for salmonids to rest and hide when they return to spawn and home to many salmon and trout over one year old during low-flow periods. In vortex rock weirs, flows are concentrated to the centre of the pool, scouring the riverbed, creating depth and providing cover.



A vortex rock weir concentrates the flow to the centre of the pool, creating depth and providing cover.




*April 1999
Bank trampling by
animals can cause
serious damage to
a river.*



*The same river one
year later, healthy
and protected by
fencing.*

Cattle trampling can double the width of a small stream, making it too shallow and muddy to support fish stocks.

Where instream and bankside stability is restored, there is a marked recovery in the aquatic flora, fauna, fish stocks and bird life. Typically, four years after restoration works have been completed, increases will have been recorded in fish stocks. In one case a 350% increase in one year old salmonids was noted. Additional bird species will be present and the physical form of the river will be a single channel, with good bank cover. 

What should a healthy river look like?

General physical form: larger catchments contain a wide variety of channel types, which include certain typical physical or ecological features.

Clean and well-oxygenated water is essential for salmonids, along with clean loose gravels for spawning.

In upland valleys, boulder-strewn riffle / pool sequences are important as spawning and nursery areas and are also likely to support resident stocks of small adult trout.

The deep water of pools provide shelter and refuge. Lower down, rivers tend to be slower and more sinuous. Riffles tend to form on either side of a bend, providing an area for salmon and trout to spawn.

River banks

Bankside vegetation will vary depending on altitude, soil, rainfall and other climatic conditions. Vegetation needs to be maintained to prevent excessive bank erosion, to provide cover, food and shade for fish, to reduce high summer temperatures and to limit silt and fertiliser run-off.

Natural materials (rocks and logs) were used to restore channels and subsequently repaired channels were always fenced off to

Boulders placed on the bed will create scour channels, providing more individual territories.

// It is essential that rivers and channels are maintained or rehabilitated to include the typical physical and ecological features, which accommodate salmonids throughout their life //

allow the bankside vegetation to regenerate. Planting of native deciduous trees is a key element of many river enhancement programmes providing additional stabilisation to the bankside areas. Where flood relief demands an excavated channel, the construction of a two-stage channel, confining summer flows to the original width can prove very successful.

The removal of obstacles is often the most cost-effective way of increasing available habitat. Fish passes can be expensive but provide access to large areas of good habitat on a permanent basis. Fencing of bankside areas can greatly aid the rate at which vegetative recovery takes place once grazing pressure is eliminated.

Courtwatch

Closed season salmon fine

Michael O'Connor of Dingle was fined €4,800 at Dingle District Court in May and ordered to pay costs and witnesses' expenses totalling €3,000 after being found guilty of eight breaches of the fishing regulations relating to fishing during the closed season and being in the possession of salmon.

Three convicted of poaching salmon

Sean Kavanagh, Robert Allen and Michael Crane of Cork claimed they had been lamping rabbits when accused by Fishery Officers of poaching salmon during the closed season. A five month suspended sentence was imposed on each defendant, subject to payment by each of €1,000 to the Fisheries Boards and €300 costs. The defendants were also ordered to stay out of District Court Area No. 18 for six years.

Fine for prawn bait user

Castlebar District Court fined Michael McAuley from Northern Ireland €75 for using illegal prawn bait while fishing on the River Moy. Mr. McAuley denied knowledge of the prohibition of using the bait. The defendant pleaded guilty, stating it was never his intention to fish with this illegal bait.

Illegal possession of salmon

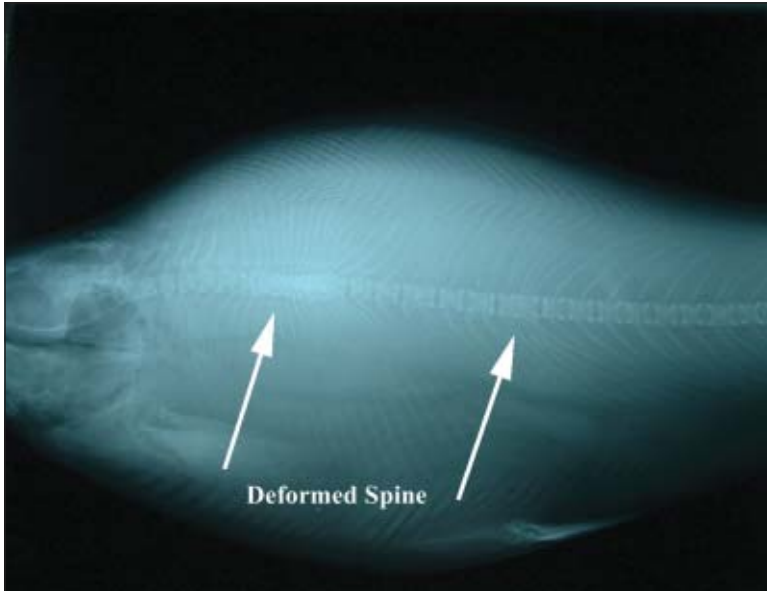
In January, Padraic B. O'Donnell and Tony O'Donnell appeared at Ballycastle Court, Co Mayo on charges of fishing during the closed season and being in the possession of salmon. The skipper of Tony O'Donnell's boat on the day was 16-year-old Jonathon O'Donnell who had been put forward as a nominee on his licence. Judge Mary Devins convicted Tony O'Donnell of aiding and abetting and imposed a fine of €500 with costs. Padraic B. O'Donnell was fined €300, with costs, for fishing during the closed season and a sum of €65, with costs, for possession of salmon.

Quarry Company convicted

Hanly Brothers Ltd, a quarry company from Roscommon was convicted and fined €1,200 with costs of €2,750 at Strokestown District Court for allowing deleterious matter to enter a tributary of the River Suck in the Shannon region.

Forrestry training

Training is being provided by the Forest Service in co-operation with the Woodlands of Ireland Group to all relevant stakeholders in our native woodlands, as part of the new Native Woodland Scheme. Its relevance to Fisheries staff concerns the maintenance and establishment of native riparian woodlands. These 3-day courses will help to inform on appropriate native riparian woodland management. The course is free and places are reserved for Fisheries staff from all Boards. The next course will be in October/November. To book a place please contact Kevin Collins, Forest Service, Leeson Lane, Dublin 2. Tel: 01-6199383. E-mail: kevin.collins@dcmnr.gov.ie



Deformed salmon found in Shannon Estuary

A strange salmon was caught recently in the Lower Deel, Shannon Estuary and The Shannon Regional Fisheries Board (ShRFB) was immediately notified.

A ShRFB investigative team examined the fish which looked very similar to the North Pacific pink salmon, rarely seen in Irish waters. Pink salmon males, also referred to as the humpback salmon, develop a pronounced hump on their backs prior to spawning. However closer examination in the laboratory confirmed it was in fact a deformed Atlantic salmon.

A spinal deformity was suspected as the cause of the unusual shape of the fish and a subsequent X-Ray at a local veterinary hospital clearly showed some of the vertebrae had fused together at two points along the spine, causing the fish to grow abnormally. These spinal deformities can occur in salmon, if young fry have been exposed to a trauma.

With this deformity, it is unusual that the fish survived to make it to sea and back, at a time when normal healthy salmon are having trouble surviving at sea. Analysis of the fish's scales showed that the fish was a wild salmon, had spent two years in the river and one year at sea, returning as a grilse.

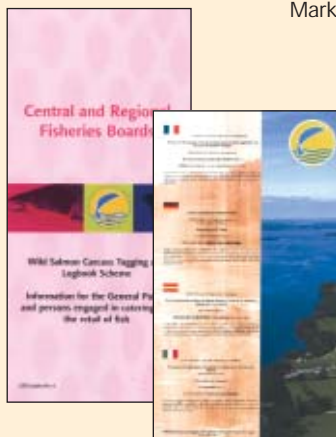
A further examination is being carried out to try and identify the likely cause of the deformity.



Publications

Consultation Document – Outline Proposal for the Development and Management of Angling in Donegal

The Northern Regional Fisheries Board, in conjunction with Donegal County Development Board, has produced a public consultation document for the development and management of angling in Donegal. The 78-page document covers topics such as the ownership and administration of fisheries in Donegal, outlines the rationale for Angling Management, documents examples of Fishery Management and Marketing of the World's Best Salmon Rivers and details the Irish Angling Market Experience.

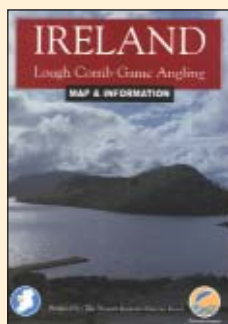


Guidelines for Wild Salmon Carcass Tagging and Logbook Scheme & Revised Foreign Language leaflet.

The Central and Regional Fisheries Boards have produced revised guidelines on the wild salmon carcass tagging and logbook scheme for the general public and those engaged in catering and retail of fish. The leaflet provides details of the colour coding system and instructions regarding the removal of tags and record keeping for caterers. A revised foreign language leaflet for anglers has also been produced in French, German, Spanish and Italian.

Annual Report 2001

The Annual Report for 2001, is a comprehensive overview of the Central and Regional Fisheries Boards activities. It looks at the core activities of the Fisheries Boards as well as reviewing specific regional projects. It has detailed analysis of catch, expenditure, staff and environmental aspects such as fish kills. The report is also available online at www.cfb.ie



Lough Corrib Game Angling Map & Information

The Western Regional Fisheries Board has produced a waterproof game angling guide to Lough Corrib. The publication contains a detailed description on the many angling spots with a map showing their location. It also provides information on facilities in the area, angling regulations and boat hire.

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The Brown Trout (*salmo trutta*)

The brown trout (*salmo trutta* L.) is a member of the salmonid family and, as such, a “first cousin” to the Atlantic salmon.

An indigenous Irish fish species, the brown trout has lived in our waters since the glaciers melted some 10,000 years ago. Their ancient ancestor was a marine species, which colonised our freshwater systems after the last ice-age. Indeed they have not entirely lost their links with the ocean – some of our brown trout leave freshwater systems to feed in the ocean for short periods before returning to spawn (sea trout).

Life Cycle

While brown trout can live in all our freshwater habitats, they must have access to loose gravel beds in relatively fast flowing rivers and streams in order to reproduce. In the late autumn/early winter period mature fish migrate to such areas to spawn. The female, lying on her side, uses her tail to excavate a “nest” in the gravel bed. As she lays the eggs they are immediately fertilised by one or more adjacent male fish. The female then covers the fertilized eggs with a mound of loose gravel. The completed “nest” is called a “redd”. Eggs laid in the October/November normally “hatch” in the following March/April period and the young fish quickly distribute themselves over the available streambed area feeding initially on aquatic insect larva. Most brown trout, like the Atlantic salmon, return to spawn in the stream where they were born.

Once hatched there is a huge variation in the life cycle of the brown trout. Some fish will spend their entire lives in the stream in which they were born. Others will migrate downstream to live in larger rivers and lakes or in the sea only returning to their natal stream to spawn. The wide variation in their lifestyle is reflected in the huge variety of brown trout in our waters – an adult brown trout in a small mountain stream might be only 15cm in length at five years of age. A trout of the same age, which migrated downstream as a juvenile to one of our large rich lakes, could be 45cm in length. A small proportion of our trout (Ferox trout) who live as adults in our lakes, become piscivorous once reaching 30cms in length and can subsequently grow to a very large size (up to ten kgs.). Most brown trout in Irish rivers have a short life span (less than five years). Lake dwelling fish tend to live a year longer on average. Ferox trout and some of our sea trout can live to 12 years of age.

The Brown Trouts Range

Brown trout are native to Europe – from Finland east through the Baltic’s and on to Turkey. Their range also extends southwards to Spain, Portugal and northern Italy.

They have also been introduced to Australia, New Zealand, the Falkland Islands, Chile, throughout North America and in various parts of Africa. Naturally spawning populations have now become established in all of these countries. The brown trout introduced to North America came principally from two sources – Germany and Scotland (Loch Leven fish).



finfacts

- Many brown trout can grow up to 45cm in rich waters
- Record catch for brown trout is 26lbs 2ozs in Lough Ennell, Co. Westmeath
- Brown trout can live for up to 12 years



Brown Trout – A Misnomer?

In the 18th and early 19th century fishery biologists often regarded brown trout from different waters as separate species or sub-species. Through the first half of the 20th century the perceived wisdom in fishery circles was that all brown trout were a single species. Today, thanks to the pioneering genetic studies of Professor Andy Ferguson at Queens University, we now know that our predecessors from 150 years ago were correct! Professor Ferguson’s view is that there are in fact a number of different species of brown trout in Ireland.