



Analysis & Reporting

Monitoring ecosystems; identifying pollution causes & impacts

Major issues over the last three months:

- Eel friendly tidal flaps
- Llyn Padarn Char monitoring
- WFD investigations
- Upper Dee investigation

Eel friendly tidal flaps

We have been working closely with the operations delivery team and asset team to promote eel access. The teams are now using the eel friendly tidal flaps pictured. The buoy holds a small cat flap open on the tidal flap which allows increased access before the tide pressure closes both the flap and the cat flap.

Llyn Padarn Char monitoring

We have been working with the fisheries assessment team to monitor the Padarn char. We have been using DIDSON and a number of underwater cameras to monitor their spawning in the Afon y Bala. Currently the number of spawning fish looks exceptionally low. We believe this is the influence of the mild winter.



Title: Llyn Padarn Char



Title: Eel friendly tidal flap

Water Framework Directive Investigations

We are currently planning 15 investigation on failing tributaries across North Wales. At present we are working with members of the Environment Management team to look at water quality on the Llugwy and Lledr. This is to investigate whether there are issues with acidic flushes and metals on these catchments.

Upper Dee – WFD investigation

We are carrying out a project to investigate fisheries failures for WFD on the tributaries above the Bala sluices. This will involve investigating the effects of the sluices on migration, stocked fish survival and juvenile monitoring for three years. In 2011 salmon recruitment was poor on all tributaries on the upper Dee. Above natural barriers on these tributaries resident trout numbers were good ruling out water quality issues.

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Environmental Crime

Reducing illegal fisheries and waste activities in North Wales.

Major issues over the last three months:

- **Disturbing Spawning Fish**
- **Cockle Enforcement**

Disturbing spawning fish

In November 2011, acting on information received by members of the public, Environmental Crime Officers apprehended two men for illegally disturbing fish on a tributary of the River Dee.

The officer observed the two men lamping a section of the river for 25 minutes before leaving in their vehicle. The vehicle was stopped by North Wales Police and the men were questioned by Environmental Crime officers. Two lamps and batteries were seized from the men and they were reported for fisheries offences. Enforcement action is pending.



Title: Salmon migrating up river



Title: Helicopter footage of illegal cocklers

Cockle enforcement

In December 2011 the Environmental Crime Team assisted by North Wales Police carried out several operations on the Dee estuary targeting illegal cockling.

During these operations 10 men were apprehended on suspicion of cockling illegally. These men were questioned and items used for illegal cockling were seized. The items included a vehicle, two trailers, two outboard engines, cockling equipment and the cockles they had collected illegally. Enforcement action is pending.

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Technical Fisheries

Maintaining and improving fisheries

Major issues over the last three months

- **Charr programme**
- **Angler caught kelts**
- **American Crayfish distribution**
- **Mawddach gravel traps**

Charr programme

In October 2011 we stocked out 800 Charr into Llyn Padarn to strengthen the existing population. Crafnant received 1600 Charr to continue developing a 'back up' population and during December and early January we collected 3000 eggs from adult spawning Charr to be on-grown for stocking out this October.



Title: Charr

Angler caught kelts

Last year we were helped by Bangor on Dee salmon anglers to catch 5 salmon kelts as part of a trial for the fish to be reconditioned to produce viable eggs at our Maerdy Hatchery. The trial has been successful and 17000 eggs were produced for on growing as part of the Dee mitigation programme.



Title: Mawddach gravel trap

American Crayfish distribution

American Crayfish are becoming more of an occurrence on North Wales rivers. As a species they impact on fish populations by predating on juvenile fish, so we are interested in tracking their spread on all North Wales rivers and especially above horseshoe falls on the Dee. If sighted; note the date, location and numbers of signal crayfish seen and then ring the customer services line 03708 506 506 and ask to speak to a local biodiversity officer.

Mawddach gravel traps

A sustainable fisheries scheme to establish spawning areas for salmon on the Mawddach has been completed. A series of upward facing groins using boulders and trees have been placed to encourage the build up of gravel for fish to spawn on. This project is to compensate for the loss of gravel after the 2001 flood.

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Technical Fisheries

Maintaining and improving fisheries

Major issues over the last three months:

- Wild Fishing Wales mapping project
- Catchment fisheries surgeries
- Outdoor activity groups
- Circle Hooks

Wild Fishing Wales mapping project

As part of the Wild Fishing Wales project, fishing clubs are being offered the chance to have maps of their waters produced free of charge. If any club would like their club waters mapping please get in touch with joel.rees-jones@environment-agency.wales.gov.uk.

Wild Fishing Wales is an Environment Agency Wales initiative part-funded by the European Regional Development Fund through the Welsh Assembly Government and a component element of the Countryside Council for Wales' Communities and Nature strategic project



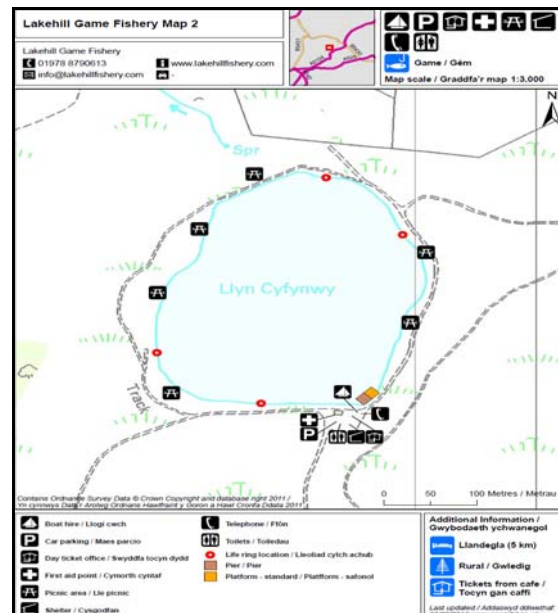
Catchment Fisheries Surgeries

We attended 11 fisheries surgeries in November 2011 covering 13 angling clubs / associations from across North Wales. We talked through fishery issues at the surgeries and recorded 80 actions. Approximately two thirds of the actions recorded were for the Environment Agency to deal with by the end of March 2012.



Title: Circle Hook example

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Title: Fishery map example

Outdoor activity groups

Environment Agency Wales staff have been giving presentations to outdoor activity groups in North Wales. The presentations welcomed by outdoor centres and associations have raised awareness of the critical times of year when salmon and sea trout are laying eggs in river gravels.

Circle Hooks

We have produced a fact sheet on circle hooks in Northern area to promote and advise anglers on the use of Circle Hooks. The fact sheet was produced as a response to a question from a recent meeting with anglers from the Clwyd Federation.



Fish Culture

Mitigating damage to fisheries

Major issues over the last three months:

- Precocious parr used to fertilise ova.
- Celyn mini test hatchery.
- Ovaprim used to induce fish to spawn.
- Red vent syndrome significantly reduced

Precocious parr used to fertilise ova

Last Autumn a proportion of the broodstock for the Dee, Mawddach, Seiont and Conwy rearing schemes were fertilised with young precocious parr. For each specific river, between 20-30% of the total number of ova laid down were fertilised with these young male salmon. The ova is being kept separately to adult salmon fertilised eggs at the hatcheries to monitor and compare hatching survival rates.

Oviprim induces fish to spawn at Maerdy

To aid with timing of our stripping activities, 5 hen fish were injected with Oviprim. This is a hormone based in vivo preparation which allows us to develop late spawners to coordinate maturation during the spawning season at the hatchery. Oviprim does not affect viability or fecundity of eggs.



Title: Precocious parr



Title: Red vent example in salmonid adult

Celyn mini test hatchery

A mini hatchery below Celyn dam has been set up, with 800 salmon ova close to the site of the proposed new Salmon Centre. At the mini hatchery we will monitor the condition and survival of salmon ova and fry grown, to investigate if the water source for the proposed new Salmon Centre is of a high standard for salmon rearing.

Red vent syndrome significantly reduced

A reduction in the incidence of red vent syndrome has been noted in this year's broodstock. The nematode worm *Anisakis simplex* is the cause of red vent and is commonly found in the body cavity of marine fish. Please ring the Fisheries Technical Service to report any future incidences, (01480 483802).

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