

WESTER ROSS FISHERIES TRUST

Conserving, restoring & developing wild fisheries in Wester Ross

NEWSLETTER



November 2009, no 25

Sandeel glut and fewer lice boost Sea-trout

The summer of 2009 was one of the best in recent years for wild sea trout populations around much of Wester Ross. Not only were levels of infection by parasitic sea lice generally lower than in 2007 and 2008, the abundance of sandeels exceeded anything seen this millennia providing outstanding feeding opportunities.

Between May and September, the WRFT sweep netting team sampled sea trout in Loch Ewe, Loch Gairloch and at the mouth of the River Carron. With funding from the Scottish Government via the Tripartite Working Group (TWG), the primary aim was to catch wild sea trout to gain information about sea lice (*Lepeophtheirus salmonis*) burdens.

Initially few fish were caught. New sites were investigated: one apparent problem was simply that sea trout concentrations were often not present in sweep nettable places. However, in July samples of sea trout were taken from both Loch Gairloch and at Boor Bay (Loch Ewe).

In Loch Ewe, 24 sea trout were taken ranging in size from 147mm to 395mm. 15 of these were taken in a single sweep at Boor Bay on 15th July. Only two of these fish had more than 30 lice. Condition factors ranged from 1.17 to 1.46*.



*With a *condition factor of 1.44, this 37cm sea trout taken from Kerry Bay on 29th June 2009 was one of the fattest fish seen. Note the healed dorsal fin, possibly indicating damage from sea lice in 2008.*

In Loch Gairloch, 23 Sea trout were taken ranging in length from 163mm to 395mm. Lice levels were generally higher than on fish sampled in Loch Ewe, particularly so on the six fish taken from Kerry Bay on 16 July, where lice numbers ranged from 30 to 79 lice per fish. Over 50% of the lice were pre-adult or adult lice rather than early attached stages. With condition factors of up to 1.35* these fish were also plump and had been feeding well. Mackerel were also caught in this sweep; many sandeels were seen escaping from the sweep net by the snorkeler as the net was pulled in.

The traditional fyke net operated by Eilean Darach and Dundonnell Estates at the mouth of the Dundonnell River set to target 'early returned' sea trout in June caught only two fish, only one of which had lice (12 pre-adults). There were no anglers reports of lice infested wild sea trout from Little Loch Broom.

Rod catches provided further evidence of an improvement in the health of local sea trout populations. In the River Ewe

the first finnock were fat fish taken in late June. On 9th & 10th July, 13 finnock of between 228mm and 270mm were taken by rod and line from the Sea Pool of the River Ewe. Lice numbers were low, ranging from 0 to 25 lice. Condition factors of the 6 fish that were weighed were all over 1.30*.

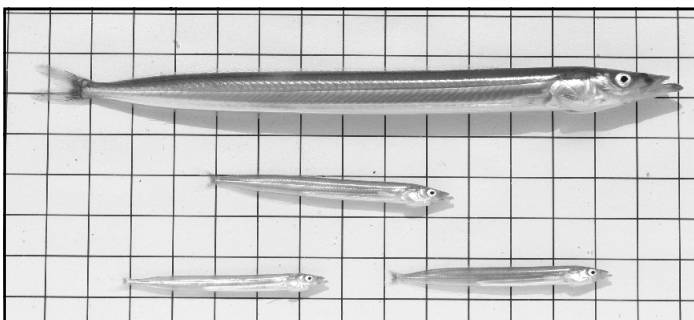
Larger sea trout were also caught and released, with fish of 3lb and 4lb reported from River Ewe, and Dundonnell River. The biggest sea trout reported from the WRFT area was a fish of 6lb taken from the River Carron.

Problem sea lice years are typically those with extended periods of sunny weather in April and May when little freshwater enters sea lochs. In contrast, relatively low sea lice levels on sea trout in early summer 2009 correlate with higher than average rainfall in March, April and particularly May, a critical month for post-smolts survival; in May 2009 NW Scotland had 160% of average May rainfall (Met Office report).

With reports of mass strandings of sandeels from around Wester Ross, the abundance of sandeels is less easily explained. Local stocks of sandeels, amongst the most important food fish for sea trout and other wildlife in the West of Scotland, are not subject to regular scientific monitoring and assessment.

Thank you to MS FRS Shildaig project staff, Tournais Estate and all volunteer helpers for support with sea lice monitoring.

*Condition factor = weight in grams x 100 / (length in cm cubed)



Greater and Lesser Sandeels taken from Strath Bay, Gairloch in July 2009. Sandeels provided a feeding bonanza for local sea trout, mackerel and breeding sea bird. Grid squares 1cm. (photo by Steve Kett)

WRFT News

• Trustee update

The Trust is delighted to welcome Prof Andrew David Barclay on to the Board of Trustees. David lives within the WRFT area, is an enthusiastic and experienced wild trout angler and has supported the Trust, both as a member and bucket carrier! As one of the UK's leading forensic scientists, we look forward to David's contribution particularly regarding some of the more complex scientific issues, and speaking up for wild trout!

• New RDO for Wester Ross

We are also very pleased to welcome new TWG Regional Development Officer for West Sutherland and Wester Ross, Dr Donna-Claire Hunter to the area. With a background in GIS analyses and modelling, we look forward to Donna-Claire's input towards improved surveillance, monitoring and analysis of fish-health related issues especially sea-lice occurrence.

We would also like to wish former RDO, Ailsa McLellan, well with her new job as coordinator for the newly formed North West Inshore Fisheries Group (IGS). The IFG will develop a fisheries management plan for the area and is initially expected to focus on shellfish fisheries.

• Sea lice data review

Following a meeting with Government scientists, RDOs and other biologists from other Trusts at the Lochaber Fisheries Trust Offices in September, the Scottish Government's 'Marine Scotland' [MS] has agreed to support a review of existing west coast wild fish sea lice data.

Sea lice data from Fisheries Trusts within the West of Scotland will be pooled to investigate relationships between lice levels on wild fish and salmon farming. This also follows on from the Wester Ross Sea Lice review meeting in April 2009 (see: WRFT Review May 2009).

The analyses which will be carried out by MS (formerly FRS) scientists and Trust biologists working in partnership, will investigate relationships between sea lice infection of wild fish, proximity to salmon farms, and salmon farm production cycles.

Wild salmon recolonise spawning streams in the hills above Glenelg In Brief

Juvenile salmon were found in all the rivers that were surveyed by the WRFT electro-fishing team between July and October 2009, including two headwater streams where they had not been recorded before.

In the north of the WRFT area, only salmon parr were found in the upper **Kanaird** above the Langwell falls; below the falls, healthy populations of fry and parr were found. In the Rhidoroch River (**Ullapool**) salmon fry and parr were found at all sites to the top of the accessible area at relatively high *CPUE. Ross Gardiner of Marine Scotland has surveyed 4 sites in the River **Broom** most years since 1990; fry densities were higher this year than after the 2008 drought.

In the upper **Gruinard**, fry and parr CPUE were higher in the Abhainn Gleann na Muice than previously recorded and high at sites in Abhainn Strath na Sealga. Above the 'Bathing Pool Falls' only a few very large parr (14-16cm) were found in the Abhainn Loch a Nid.

Around the Fionn Loch salmon fry and parr were recorded at all sites surveyed; but also the first minnow on record from the **Little Gruinard**, and a charr fry. Salmon fry and parr were found throughout the accessible area at **Tournaig**; in the **Sguod** system



Heading home after a particularly successful expedition: in July 2009, wild juvenile salmon were found for the first time by the WRFT electro-fishing team (and helpers) in the headwaters of the Glenmore (Glenelg) River above Bealachasan. Since 2002, the area had been surveyed on three occasions. Only trout and eels had previously been found above the falls.

(left-right) Peter Macdonald, Jamie Kugelmann, Anna Macdonald, Colin Macdonald and Billy Kugelmann.

salmon fry were found at highest CPUE by an area of enhanced spawning habitat

In both tributaries above Loch Kernsary (**Ewe**) salmon fry and parr CPUE were high; in the Tollie burn (stocked in 2008) parr were present at high CPUE. In spawning burns around Loch Maree, juvenile trout CPUE was high; salmon fry were found at moderate CPUE in the Kinlochewe River (rapid growth downstream of village!) and 4km up the Docherty burn. Salmon fry and parr were recorded at high CPUE in the A' Gairbhe below the Cruive Pool and in rivers above Loch Coulin; a little Brook trout was also found at the highest site.

In the south of the WRFT area, salmon fry and parr were found at high CPUE at the tops of accessible areas for salmon in the **Croe** and **Ling**. Wild juvenile salmon were found for the first time in headwater areas above the falls in the **Glenmore** and **Glenbeag** rivers. However, only a few salmon parr (no fry) were found in the **Barrisdale**.

Reports with further details will be prepared during the winter.

Thank you to volunteers Jamie Kugelmann and family, Alex Day, the SNH Beinn Eighe NNR French students and all the estate proprietors and staff for much help and support.

*Catch Per Unit Effort

• **Wester Ross and Lochalsh Biosecurity Plan (funded by SG)**

An updated draft has been prepared and is posted on the WRFT website. The aim of the plan is to develop a strategic approach to prevention, control and eradication of invasive non-native species within the WRFT area, developing close collaborative working relationships with all interested parties. **The WRFT biologist requests feedback before mid December** with a view to finalising a plan by the end of the year.

• **Tournaig trap (funded by Marine Harvest).** Only 5 salmon and 4 finnock entered the upstream trap. These are the lowest totals for both salmon and sea trout since 2003. Some fish may have bypassed the trap during very high flows in September.

The return of sea trout to the **FRS Shieldaig trap** has been much higher with 8%+ marine survival of sea trout smolts.

• **Rod catches** Salmon catches have been mixed, with generally more MSW fish but fewer grilse than 2008. Sea trout catches have been better, with 160 taken on the Carron system. **Please copy any returns to WRASFB or WRFT.**

• **Salmon Genetics (FASMOP) funded by Scottish Government via RAFTS.** Samples from the Ullapool, Dundonnell, Lower Gruinard, Upper Gruinard, Little Gruinard, Ewe (Kinlochewe), Ewe (Coulin), Kerry, Torridon, Carron, Ling and Croe collected by WRFT are being analysed at the FRS Freshwater Laboratory by Lucy Webster and colleagues. A meeting will be held early in 2010 to discuss initial findings.

• **Bruachaig restoration project** Approximately 30,000+ salmon fry were stocked into the Bruachaig River in June, progeny of rod caught salmon taken from Kinlochewe River and tributaries in 2008. These fish were reared by Neil Morrison and Simon Stewart at Coulin hatchery. This is the largest stocking of fry into the system as part of the on-going programme.

Thank you to Angus Morrison and Coulin Estate for project support.

Collaborative study to clarify 'carrying capacity' underway

Fishery Trust biologists are frequently asked 'are there as many juvenile fish as there should be?' when presenting electro-fishing survey results.

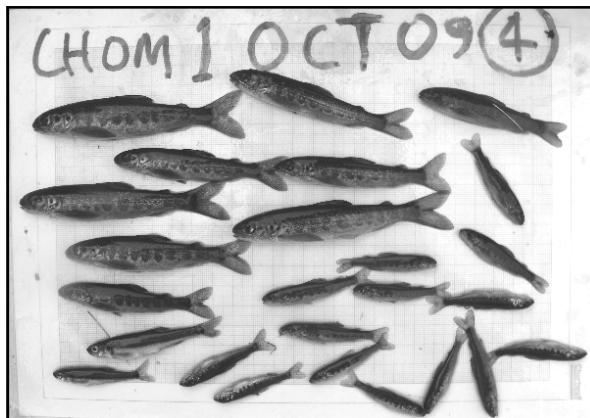
A project is currently underway to learn more about the numbers of juvenile salmon that can live in different types of habitat, using a series of study streams within the upper Conon catchment. During August and September, the WRFT e-fish team carried out fully-quantitative surveys of stream sections which had been stocked to over-capacity with salmon eggs during the winter 2009.

All fish caught in respective sections were measured and weighed, and a photograph of the anaesthetised catch taken. Shallow 'riffly' sites were usually dominated by salmon fry, larger fish were more abundant in deeper water.

This project is the first phase of a three year programme which will be delivered by a partnership between the Cromarty Firth Fisheries Board & Trust (Simon McKelvey), Fisheries Research Services (John Armstrong), US Forest Service (Keith Nislow), Trondheim University (Sigurd Einum), and WRFT with funding from the Scottish Government.



(above) David Mullaney by a stop-netted electro-fishing site near Achnasheen, and (below) the anaesthetised combined three-run catch of salmon parr and fry, trout and minnow.



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