

WESTER ROSS FISHERIES TRUST

Conserving, restoring & developing wild fisheries in Wester Ross

NEWSLETTER



January 2012, no 27

2011, a record year for multi-sea winter salmon. Why?

The salmon fisheries of Wester Ross experienced somewhat contrasting fortunes in 2011. Overall, it was another good year. The River Ewe system recorded its highest total rod catch of salmon and grilse since 1992, of about 340 fish (final figures to follow). However, total catches of salmon and grilse from the Gruinard River, Little Gruinard River & River Carron were down on those of 2010.

To investigate further, records of individual rod caught fish for years 2010 and 2011 were provided by Graeme Wilson and Ray Dingwall (keepers for the Little Gruinard River and River Ewe respectively), and Bob Kindness of the River Carron.

The three rivers' catches tell a similar story. In 2010, grilse catches were the highest on record for the Carron and both the Ewe and Little Gruinard also enjoyed a very good year for grilse (see Newsletter 26) However, in 2011, catches of multi-sea winter salmon for all three rivers were the highest since at least 1992; even though the combined total catches (grilse and salmon together) for the Little Gruinard and Carron were slightly less than in 2010.

From a comparison of individual fish data for these rivers, it is already clear that the 2 sea-winter salmon, the survivors of the smolt-year class that emigrated in 2009 from the river systems of Wester Ross, have been unusually successful with high rates of marine survival and return.

Same old story? Well, yes! As explained in both of the last two WRFT Newsletters (and on website www.wrft.org.uk) the late spring and early summer of 2009 were noted for a remarkable abundance of sandeels around the shores of Wester Ross. Sea trout sampled by WRFT in coastal waters and river estuaries in June and July 2009 were the fattest seen since we started recording 'condition factor'.

The catch of two sea-winter [2SW] salmon in 2011 is consistent with the hypothesis that for salmon fisheries, the first few weeks at sea for post-smolt salmon are critical. Given an abundance of prey for post-smolts (e.g. small sandeels) and on abundance of alternative prey (e.g. large sandeels) for the fish-eating birds (e.g. heron, merganser, cormorant, gannet) and fish (e.g. pollack, coalfish, cod) that are known to eat salmon smolts and post-smolts, rates of marine survival for salmon can be much higher than in years when other prey fish are scarce.



Bob Kindness (trying to hide a smile) with a magnificent 20lb salmon caught and released into the River Carron on 26th May 2011. 2012 could be a good year for 3SW salmon of this size (or larger).

The abundance of juvenile fishes in the in-shore marine environment is not simply something that varies randomly in accordance with climate changes and cycles. Sandeels, herring and sprats, use the seabed as spawning habitat. Fisheries target all three. With a list of proposed Marine Protected Areas around Scotland to be published later in 2012, will the Scottish Government be far sighted and take an ecosystem approach to the protection of inshore spawning and nursery areas of 'keystone' fishes: sandeels, sprats and herrings, to the benefit of wild salmon, sea trout and many other fish species and sea birds?

Detailed catch data also supports the view that different rivers continue to support different salmon populations. The Little Gruinard consistently produces a higher ratio of grilse to MSW salmon than the River Ewe. This observation seems to be consistent from year to year. Given the character of respective rivers, an obvious explanation is that it is adaptive and has a genetic basis: grilse are more successful in the Little Gruinard than bigger salmon. In the Ewe, however, there are relatively more places where big salmon can reach and spawn successfully.

For further details and analyses of salmon catches in Wester Ross in 2011, please visit the WRFT website, www.wrft.org.uk. For further information about recent advances in our knowledge of salmon at sea, please visit the 'Salmon Summit (October 2011) website: www.nasco.int/sas/salmonsummit.htm

WRFT News

Trustee update

After a three year term of office, Prof Barry Blake, stood down as a trustee at the end of 2011. Barry has been one of the most active trustees, becoming closely involved with the day to day management of the Trust. Barry represented WRFT on many occasions. With a background in fisheries and natural resource management, Barry's contribution was invaluable. Barry is looking forward to pursuing other interests in his 'retirement'; though will not be too far away should a few words of wisdom be required from time to time!

We are delighted that Dr Melanie Smith of University of Highlands and Islands has accepted the invitation to join the WRFT as a new Trustee. Melanie is head of Research Development at Inverness College UHI and has special interests in long-term woodland ecology (particularly juniper), and salmon and sea trout fisheries with research associations with Beinn Eighe and the River Carron.

Herring Project interviewer

In collaboration with Two Lochs Radio, WRFT has employed a research assistant to carry out a series of interviews of former fishermen around Wester Ross. Local resident Sue Pomeroy, who is known to many in the area through her work with local groups and gardening, has recently interviewed several experienced local fishermen.

Herring populations may have been of particular importance for the sea trout of Wester Ross (including those of Loch Maree) particularly during the 1960s and early 1970s before stocks of herring collapsed, largely as a result of over-fishing.

Interviews will be edited for broadcast later in 2012. From transcripts of interviews, a Wester Ross Herring map and poster will be produced to show places of importance for wild herring, and to highlight the many links between herring, other fisheries and wildlife, and the people of Wester Ross.

Sea trout monitoring update

Levels of infection by parasitic sea lice (*Lepeophtheirus salmonis*) on sea trout sampled by WRFT sweep netting teams were variable in 2011.

In early June, lice numbers on small sea trout sampled in Loch Ewe were low (less than 10 lice per fish). Towards the end of June sea trout taken from the Kanaird estuary and Gruinard Bay had moderate to high numbers of small chalimus lice. Several small sea trout taken in a fyke net at Dundonnell in early July also carried over 100 lice.

Six sea trout were caught in Loch Gairloch on 4th August. The two largest fish were over 450mm & 1kg in weight; one of these fish carried over 200 pre-adult and adult lice and had a raw eroded dorsal fin. This was the odd one out: the other trout had only 12 lice and was in much better condition. This fish was recognised as one caught earlier in the year in February at the mouth of the River Kerry (visit the Trout Scale Catalogue on the 'downloads' page of WRFT website for further details).

Three of the sea trout caught on 27th September were also identified from photographs as recaptures. The fish that had over 200 lice on 04/08, had only 80 lice on 27/09, and was by far the lousiest fish in the September sample.

Sea trout of over 1kg were also taken in Gruinard Bay and Loch Ewe. None of the fish were as fat as those seen in 2009. However, terns, which also feed on sandeels and



BBC Scotland filming WRFT Biologist, Peter Cunningham counting sea lice on a sea trout by Loch Ewe in July 2011 (photo by WRFT)

'whitebait' (sprats and herring fry), bred successfully in Loch Ewe in 2011.

Lice levels were highest during periods of drier weather when there was the least discharge of freshwater into sea lochs. The relationship between sea lice levels on wild sea trout and the salmon farming industry continues to be the subject of investigation by Marine Scotland Science in collaboration with RAFTS.

The sweep netting programme in May, June and July was part-funded by the Scottish Government as part of the RAFTS Aquaculture Project. Thank you to all the estates and helpers, especially volunteers, for their support with sweep netting.

A more detailed report for 2011, including all results from the WRFT sampling area will follow on the website www.wrft.org.uk.

Dimorphic charr recorded in the lochs of the River Carron system

The third WRFT Arctic Charr 'discovery' week took place from 31st October to 4th November 2011. One aim was to learn more about the seldom seen charr of the lochs of the River Carron system. Charr were caught using gill nets. Many of the fish were in colourful spawning condition with bright red-orange bellies; all were photographed and DNA samples taken for analyses.

In one of the hill lochs, charr were found in the absence of trout. There are only a handful of lochs in Wester Ross where charr are present without trout.

In Loch Sgamhain both trout and charr were caught. A trout that regurgitated fish eggs (assumed to be those of charr) was caught along with many charr, suggesting close proximity to a charr spawning area.

Further down the system in Loch Dughail, mature male charr were variable in appearance, with two distinct male morphs (*above*).



One morph has orange-yellow ventral colouration and a lower jaw that tucks in under the top of the head. Another morph has a bright red-orange belly and a long lower jaw that protrudes out in front of the head.

Morphological divergence and evolution of land-locked populations of charr in post-glacial lochs has been much studied. Loch Dughail is a classic example of a relatively small loch with more than one form of arctic charr.

Genetic samples taken will supplement those taken by Marine Scotland scientists in July 2008, and may help to explain how morphological variation relates to population structuring.

Thank you to all helpers, especially Brian Fraser and Graeme Wilson (Eilean Darroch Estate), Alex Lyle, Ruth Watts and Aly Ainsworth, Richard Wilson, Chris MacKenzie and Nick Hardy-Thomson for provision of boat.

In Brief

• Responses to salmon farm applications

In response to a planning application from Marine Harvest to increase the size of the Loch Duich farm, the Trust modified its position from one of objection to a 'letter of concern' subject to an agreement with Marine Harvest that the on-farm salmon biomass will be reduced if lice levels exceed agreed levels below the industry's Code of Good Practice.

The Wester Ross Area Salmon Fishery Board submitted an objection to a planning application from the Scottish Salmon Company [SSC] for a new 2000 tonne salmon farm in Outer Loch Torridon, on the advice from WRFT that the SSC has been unable to demonstrate an ability to adequately control sea lice levels at existing farms within Loch Torridon.

• River Carron Research Update

Plans are now underway to conduct a genetic analysis of the on-going River Carron stocking program. The proposed program will allow an assessment of the success of fish stocked at various life stages, allowing the identification of the most efficient stocking techniques. The research program, run through Inverness College, also hopes to identify other factors influencing the success of salmon in the river such as changes in landscape use, hydrology and climate, as well as the influence of aquaculture and the effects that the increased salmon populations may have upon the catchment ecosystem. It is hoped that the findings will help inform efficient future management of the Carron and other salmon and sea trout rivers. Further details can be found at:

<http://www.rivercarron.org.uk/>

• Congratulations Jonah!

Jonah Tosney successfully defended his PhD thesis at Durham University in December 2011. Jonah's thesis was entitled: 'Short Duration Reservoir Release Impacts on Impounded Upland Rivers' and included studies of brown trout and invertebrates.

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