

SGFR(12)7

Current status of samples taken for SALSEA Merge and additional samples and work to be completed from the SALSEA Merge post-smolt programme.

Fish samples

Details of external biological characteristics of all captured fish (approximately 1,700 post-smolts and 53 adults) have been recorded and entered in a SALSEA Merge database. Details include whether the fish were wild or hatchery origin, their length, weight, scale loss, presence of cataracts, presence of external parasites, presence of external tags or finclips. Sex information was noted for 1,300 plus samples. Summaries based on this material were presented in the SALSEA Merge report. There is more scope for further publication on the detail of this information.

In addition, all fish were sampled for genetic stock identification. The origin of these samples (either to river or area of origin) have been reported in the SALSEA Merge final report and in subsequent papers. Further work is being considered to refine assignments using SNPS and it is likely that further publications will arise from the original SALSEA Merge samples. Samples are held at various SALSEA partner institutions.

Scales were removed from all fish and the results of the post-smolt analyses have been presented in the SALSEA Merge report and in subsequent publications. There is scope here for further publications relating post-smolt growth and marine survival/conditions.

In addition, over 23,000 scales of Atlantic salmon from seven rivers, located in six countries have now been analysed with the new scale reading technique. Most scales are from 1970 to the present, with some limited information for one stock extending back to earlier periods. The number of circuli laid down in the marine zone of the scales in specific periods as well as the distance between the circuli were measured, and this information was summarised in the final SALSEA Merge report. Since then a MI Ireland, IMR Norway and Loughs Agency, Ireland/N.Ireland study has been initiated which will increase the number of sample rivers from which archive scale material is available and the results generated in SALSEA Merge will be extended and reinterpreted at a larger scale.

Gonads were preserved and retained for further analyses from approximately 270 post-smolts. These tissues have not been analysed as yet and would provide more insights into the developmental rate of post-smolts at different stages of the migration. Samples are stored with the agencies who collected the samples.

The presence of internal parasites was noted and in most cases enumerated for samples dissected on-board the vessels or in labs. Whole fish were retained and preserved in formalin from approximately 10% of samples taken in the Irish trawl surveys and these have been processed. A small number of samples remain frozen for processing and will be included within the MI Ireland, IMR Norway and Loughs Agency, Ireland/N.Ireland study.

Tissues samples from approximately 1,000 fish were retained for stable isotope analyses and a similar number of fish was sampled for lipid content analyses. These tissues have not been analysed. Gills and viscera were retained either frozen or preserved in alcohol from

approximately 1,200 samples. Samples taken in the Irish trawl surveys have been included in a PhD programme initiated by MI Ireland, IMR Norway and Loughs Agency, Ireland/N.Ireland as an immediate follow up to the SALSEA Merge programme.

Stomach contents were made available for approximately 750 post-smolts, while 1,400 stomachs from other pelagic species (herring and mackerel) were also available. Preliminary analyses were presented in the final SALSEA Merge report and were also presented verbally at the SALSEA symposium in La Rochelle. Data and samples are with IMR in Norway. Remaining samples from Irish trawl surveys have been included in a PhD project initiated by the MI Ireland, IMR Norway and Loughs Agency, Ireland/N.Ireland.

Oceanographic information

206 plankton tows were carried out using both horizontal tows and vertical tows. 26 specific krill tows were also taken. These samples have not been analysed extensively to date but are with the IMR in Norway.

173 stations were sampled using Constant Temperature and Depth sensors (CTD). Information from these sensors was included within the migration model which was presented in the final SALSEA Merge report and as a subsequent publication. The model is capable of providing putative migration routes for salmon by varying oceanic parameters and is, therefore, useful for more exploratory analyses than have been carried out to date. The model is available from IMR, Norway.

Chlorophyll samples were retained from 120 stations and 97 samples were retained for nutrients at sea. These samples require analysis

A range of oceanographic parameters was recorded from on-board ship monitors including salinity, temperature, depth etc. Most of the data have been included within the oceanographic model. However, there is scope for more in depth analyses of oceanic factors affecting the migrations of salmon post smolts.

For additional information regarding the status or results from any of the SALSEA Merge samples or data, please feel free to contact Dr Niall Ó Maoiléidigh, Marine Institute, Ireland (omaiole@marine.ie).

A table detailing the samples taken during each survey is available from Dr Ó Maoiléidigh or from the NASCO Secretariat.