

CNL(09)36

Applications to conduct scientific research fishing

CNL(09)36

Applications to conduct scientific research fishing

Prior to the Annual Meeting applications to conduct scientific research fishing were received from Canada (Annex 1) and Iceland (Annex 2). These were sent to Heads of Delegation and were unanimously approved. In 2008, the Council had also approved scientific research fishing under the SALSEA-Merge project in both 2008 and 2009.

Secretary
Edinburgh
31 May 2009

Fisheries and Oceans Canada
Newfoundland & Labrador Region
Science Branch
P.O. Box 5667
St. John's, NL
A1C 5X1
Canada

General Secretary
The Atlantic Salmon Conservation Organisation
11, Rutland Square
Edinburgh EH1 2AS
United Kingdom

19 May 2009

Subject: Notification of intent to perform research fishing for post smolts and salmon outside the 12 nm limit of Canada in 2009.

By way of this communication, we hereby give notice of an upcoming international research survey of the northwest Atlantic with the intent to fish for, capture, and land for scientific purposes, samples of post smolts and adult salmon. The overall objective of the survey is to sample the aquatic community of the upper pelagic ecosystem with an emphasis on the position of Atlantic salmon within this broader ecosystem. The expedition is part of the research activities described under "SALSEA-North America - Research Strategy for the Study of Atlantic Salmon Marine Ecology", and interlinks with the SALSEA research initiative advocated by NASCO and the marine surveys being delivered under SALSEA-Merge. The survey is being conducted in collaboration with personnel from NOAA in the US as well as with other Regions within Fisheries & Oceans and governments within Canada. The details of the planned survey are described in attachment A.

Original signed and on file

David Reddin
Scientific leader
Fisheries and Oceans Canada

G. Beaupré, Director General, International Affairs
D. Osborne, Program Co-ordinator, Science Branch NL Region
D. Morse, BIO, Maritimes Region

Attachment A. SALSEA North America planned research activity 2009

The research strategy consists of gillnet and surface trawl survey of the NW Atlantic which builds on sites surveyed in 2008 and previous surveys by Canada in the 1990s. Research activities are linked to the overall marine research program (SALSEA) advocated by NASCO.

Atlantic salmon stocks have declined in both Europe and North America and much evidence points to there having been changes in their ecology and survival in the ocean phase. Concerns about increases in marine mortality of salmon prompted a number of workshops and meetings to consider factors contributing to mortality at sea. The present knowledge of the marine ecology of salmon is insufficient to explain the significant decline in Atlantic salmon abundance since the late 1970s.

Objective for the 2009 pelagic ecosystem survey

Acquire contemporary samples of post smolts and adult Atlantic salmon at sea and examine distribution, relative abundance and river of origin relative to oceanographic features, plankton and other components of the pelagic ecosystem.

Vessel

A Fisheries and Oceans Canada research vessel, “*CCGS Alfred Needler*”, will carry out the survey in the area defined in Figure 1. The *CCGS Alfred Needler* is an offshore science research vessel, 50.3 m in length and 958.9 GRT. The call sign is CG2683.

Survey areas, time frames and contact persons

The ship has been allocated to the survey from Sept. 7 to 30, 2009. During Sept. 7 to 8, the gear will be prepared and loaded aboard the vessel, testing of gear will take place off eastern Canada within Canada’s 12 nm limit. Ship will then proceed to stations south and west of Greenland fishing towards the Labrador coast.

The main part of the survey will take place during Sept. 9 to 29, 2009 in the northwest Atlantic Ocean. The planned survey will take place along transects and opportunistically as described in Figure 1. Several of the stations will be within waters of the West Greenland Commission Area.

The scientific leader will be Dave Reddin, Fisheries and Oceans Canada, St. John’s, NL (Canada). Tel.: 1 709 772 4484. FAX: 1 709 772 3578. Email: Dave.Reddin@dfo-mpo.gc.ca

Gear

The research survey will use an Akrehamn (Norway) experimental postsmolt trawl similar to those in use during the SALSEA Merge surveys in the northeast Atlantic. The surface pelagic trawl will be deployed at all stations in the survey. The trawl will be towed for durations of up to 2 hours depending on conditions. As well, experimental surface gillnets will be used to sample the broader size range of salmon expected in September. Multi-mesh (65 mm, 77 mm, 89 mm, 102 mm, 115 mm, 127 mm) monofilament surface gillnets will be deployed as a single gang

measuring between 1 and 2 km in length (depending on weather conditions, and catches). The nets will be set for 2 to 3 hours before sunrise and retrieved in mid-afternoon, i.e. once per day. Standard CTD data will be collected nearby each of the gillnet stations. Sea glider will be deployed from *CCGS Alfred Needler* at an eastern site on the transect and recovered at a western site yet to be determined.

Estimated catch

Based on catches in other parts of eastern Canada and from previous marine expeditions in the northwest Atlantic, post-smolt catches are expected to be in the range of 300 to 1000 (150 to 500 kg). Catches of adult salmon are expected to be between 100 and 500 fish (200 to 1000 kg). All Atlantic salmon captured will be landed and sacrificed for analyzing growth, age, stomach content, parasites, and physiological parameters and genetic characteristics.

Communication of results

Results will be submitted annually to Fisheries and Oceans Canada, NASCO International Atlantic Salmon Research Board, and ICES Working Group on North Atlantic Salmon.

Figure 1. SALSEA-North America planned pelagic ecosystem survey for September 2009.

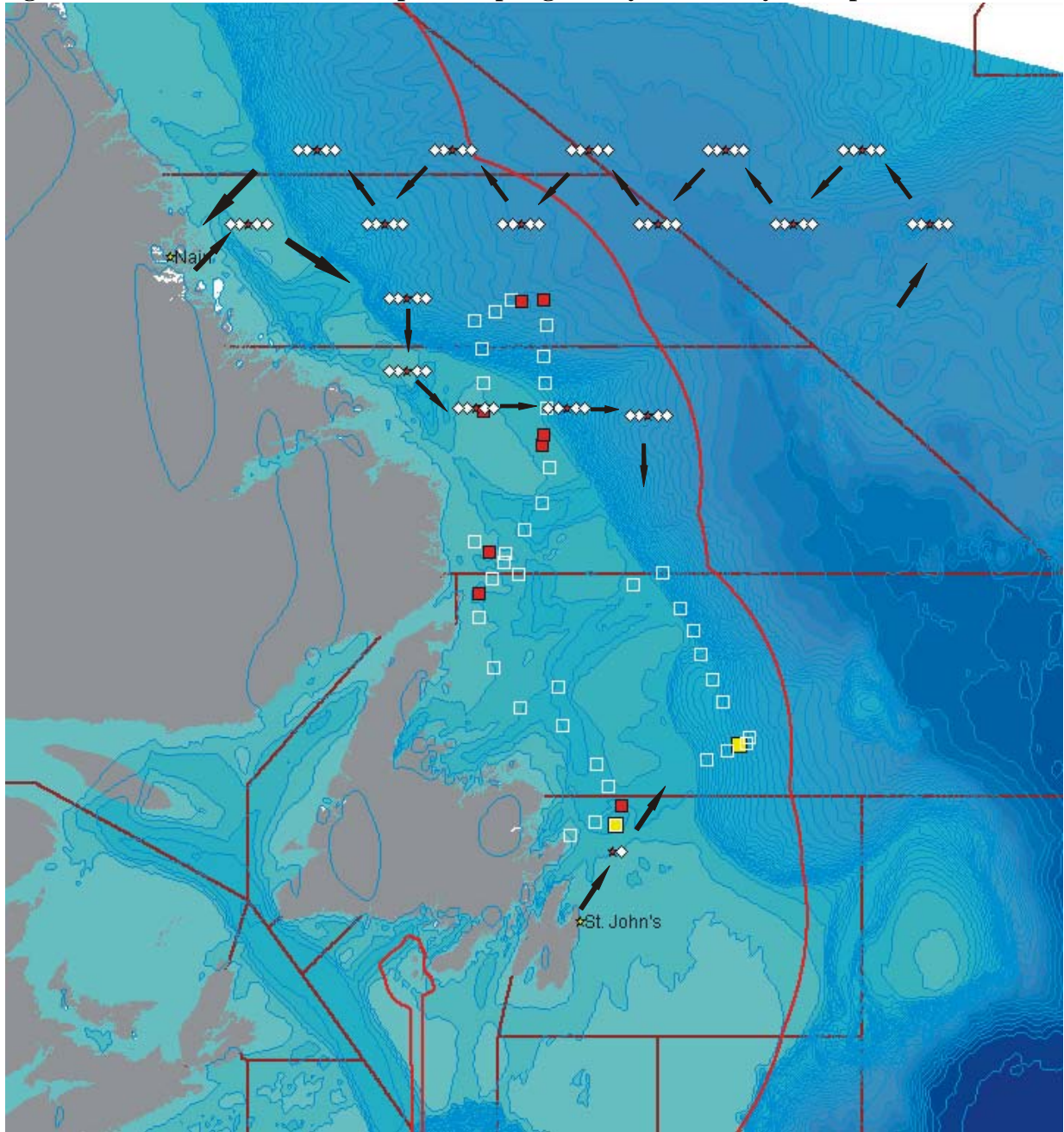
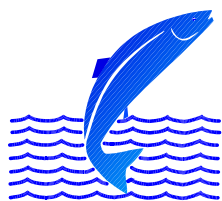


Figure 1. Gillnet (red star) and trawl stations(white triangles) to be fished in 2009. Open squares are sites fished in 2008 with no postsmolts and red squares are 2008 sites with postsmolts. Yellow squares are gillnet sites in 2008. Bathymetry, 200 mile economic zone for Canada and St. Pierre et Miquelon is also shown.

Proposal on scientific research fishing on salmon post-smolts in the Irminger Sea southwest of Iceland



Institute of Freshwater Fisheries

Freshwater Fisheries • Freshwater Biology • Research • Consulting



MARINE RESEARCH INSTITUTE

Introduction

The Institute of Freshwater Fisheries in cooperation with the Marine Institute in Iceland hereby applies to the NASCO Secretariat for a licence to undertake scientific research fishing on Atlantic salmon post smolts in accordance with the Resolution by the parties to the convention for the conservation of salmon in the North Atlantic ocean concerning scientific research fishing (CNL (96)60).

Background of study

The year 2008 marked the initiation of the SALSEA-Merge project, on the marine ecology of Atlantic salmon, through a partnership of ten European nations. The project is funded under the EU 7th framework. The overall objective of SALSEA-Merge is, by merging ecological and genetic research, to advance understanding of stock specific migration and distribution patterns and overall ecology of the marine life of Atlantic salmon and gain insights in increases in marine mortality of the species.

In SALSEA-Merge an important part of the project is to acquire samples of post-smolts and associated critical oceanographic information in key marine areas of the North Atlantic. In 2008 three cruises were taken to areas in the Northern Atlantic that were considered to be on the migratory route for post-smolts from European salmon stocks (Jacobsen et.al 2008, Holm et.al 2008, Maoiléidigh et.al 2008).

Initial proposal of SALSEA-Merge sampling of post-smolts included sampling of the Irminger Sea southwest of Iceland, but due to insufficient funding, the area was not included in the project. The Irminger area is on the junction of warm Gulf current and the cold Greenland current and the area is rich in nutrients (Greene et.al. 2003). Toledano (2006) found relationships between the runs of Icelandic salmon from the west coast of Iceland and SST at certain times and location as well as to abundance of certain groups of zooplankton in the Irminger Sea southwest of Iceland. Recently, continuous 18 months data on temperatures encountered by Icelandic salmon during their marine stay recorded by data storage tags indicates a strong possibility that the Irminger area is the main habitat for Icelandic salmon at least from the south and west Iceland (Guðjónsson et.al. 2008). Furthermore the area may also been utilized by North American stocks and some European stocks.

The Marine Institute of Iceland is planning 2 cruises to the Irminger area in the summer of 2009, in cooperation with Germany and Russia due to research effort on redfish. These cruises create a unique opportunity to include sampling of salmon post-smolts to the cruise

program. However the cruises must be extended by some days to be able to include sampling of salmon.

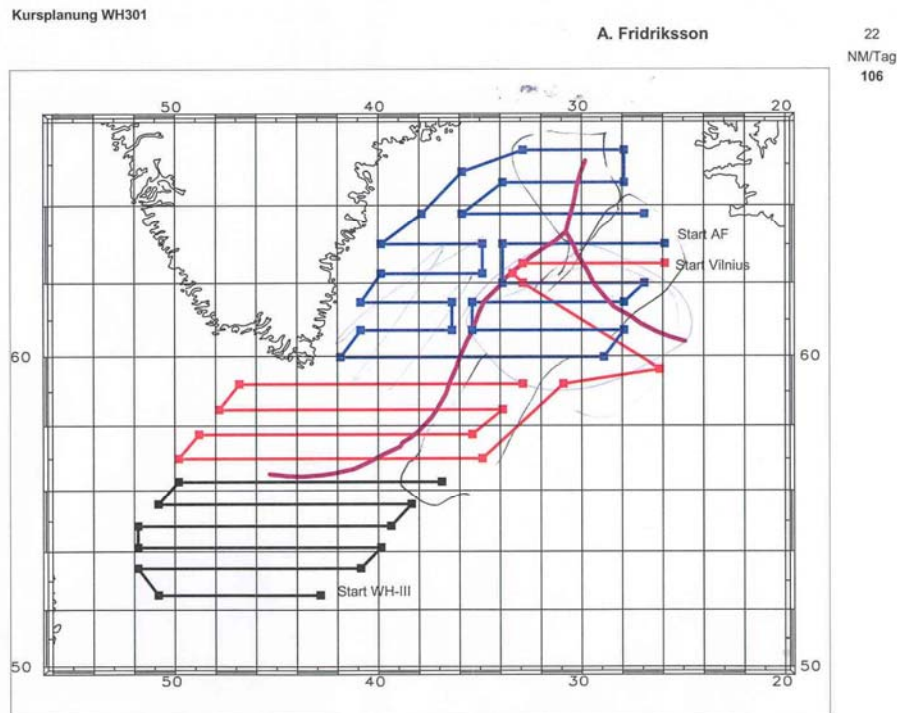


Fig.1. Research area in research fishing on salmon post smolts in the Irminger Sea southwest of Iceland in the summer of 2009.

Research proposal

The main objective of the proposal is to acquire samples from salmon post-smolts and other oceanographic information in the Irminger area (Fig. 1). The cruise will start in late in June and will last almost to the end of July 2009. The largest research vessel of Marine Research Institute, Arni Fridriksson will be used. Personnel from Institute of Freshwater Fisheries will be on board throughout the cruise. Another shorter cruise is planned in the autumn subject to sufficient funding. The SALSEA methodology created for previous cruises for the sampling will be followed in the project and same type of sampling gear will be used. A special live capture trawl will be used to sample salmon post-smolts (Fig. 2).

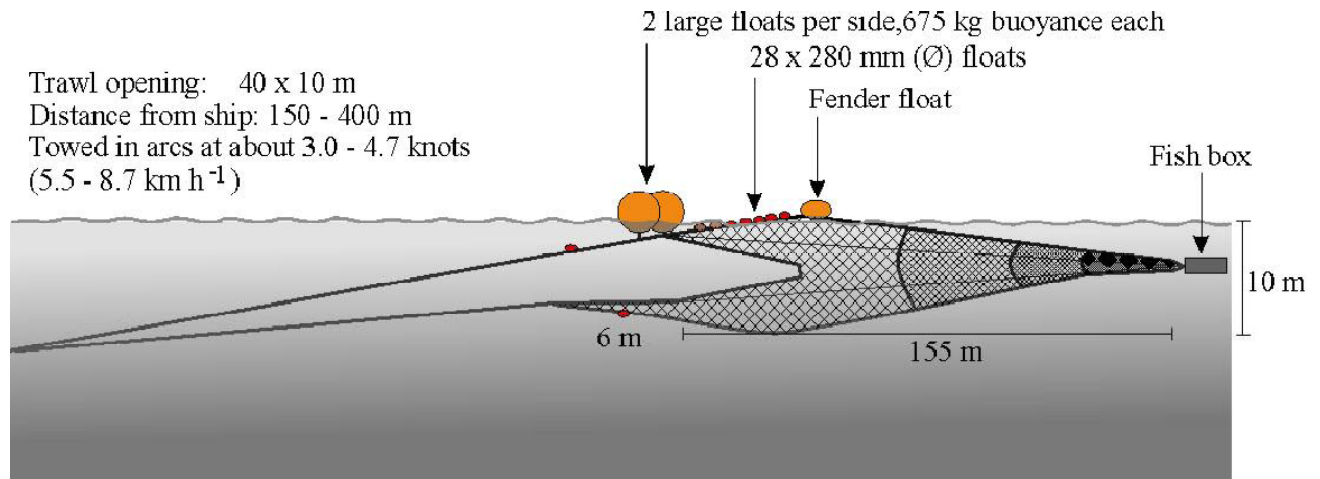


Fig. 2. Design of the live capture salmon trawl.

References

- Greene, C.H., Pershing, A.J., Conversi, A., Planque, B. Hannah, C., Sameoto, D., Head, E., Smith P.C., Reid P.C., Jossi, J., Mountain, D., Benfield, M.C., Wiebe, P.H. and Durbin, E. 2003. Trans-Atlantic responses of *Calanus finmarchicus* populations to basin-scale forcing associated with the North Atlantic Oscillation. *Progress in Oceanography*, 58: 301–312.
- Gudjonsson, S., Einarsson, S.M. and Jonsson, I.R. 2008. Observation of the ocean temperatures and marine routes of Icelandic Atlantic salmon using DST-tagged smolts. International Council for the Exploration of the Sea. Atlantic salmon working group. Working Paper 2007/37
- Toledano, J. H.F. 2006. Fluctuations in the rod catch of Atlantic salmon, *Salmo salar*, L. stocks in West Iceland in relation to oceanographic conditions in the North West Atlantic. M. Sc. Thesis. University of Iceland. 84p.
- Maoiléidigh N.Ó., Boyd J., Bond, N., Thomas K., McGinnity P., White J. and Nivan A. 2008. Irish Research Cruise Report 2008. Salsea Merge. 10 p.
- Holm M., Melle W., Årnes C., Tangen Ö. and Fagerheim K.A. 2008. Ecosystem Survey & Whale Observations in Southeast Greenland Sea and Northern Norwegian Sea. Part 2. 26 July-09 August 2008. Salsea-Merge cruise#3. 9p.
- Jacobsen J.A., Wennevik V., Lamhauge S. and Kristansen I. 2008. Research on salmon post-smolts north of the Faroes in July 2008. Salsea-Merge cruise #2. Faroese Fisheries laboratory. 15. p.

For further contact:

Institute of Freshwater Fisheries
 Sigurdur Mar Einarsson sigurdur.mar@veidimal.is
 Sigurdur Gudjonsson sigurdur.gudjonsson@veidimal.is

Marine Research Institute
 Thorsteinn Sigurdsson steini@hafro.is
 Kristjan Kristinsson krik@hafro.is