

Not to be cited without prior reference to Marine Scotland, Marine Laboratory, Aberdeen.

MFV *Sunbeam* FR487

Survey 0718H

## **PROGRAMME**

04-16 May 2018

**Loading:** Fraserburgh 3 May 2018

**Sailing:** Fraserburgh 4 May 2018

**Unloading:** Fraserburgh 16 May 2018

In setting the survey programme and specific objectives, etc the Scientist-in-Charge needs to be aware of the restrictions on working hours and the need to build in adequate rest days and rest breaks as set out in Marine Scotland's Working Time Policy (Lab Notice 34/03). In addition, the Scientist-in-Charge must formally review the risk assessments for the survey with staff on-board before work is commenced.

In the interest of efficient data management it is now mandatory to return the Survey Report, to I Gibb and the Survey Summary Report (old ROSCOP form) to M Geldart, within four weeks of a survey ending. In the case of the Survey Summary Report a nil return is required, if appropriate.

## **Personnel**

R Kynoch (SIC)  
R Gardiner  
R Main  
R Watret  
P Stainer  
M Watson

## **Scientific gear:**

1. Smolt trawl, Thyboron type 15vf pelagic trawl doors (6m<sup>2</sup>), Dyneema sweep rig and Fenders (dia 300mm with 215kg buoyancy) attached 4 per side of the trawl.
2. Video frame/box incorporating pit tag detector.
3. Self-contained underwater camera systems

## **Objectives**

1. To undertake smolt trawl surveys in and just outside the Moray Firth, and off the Firths of Tay and Forth.

**Estimated Days per Project:** 13 days – 20332, RE0050

## **Procedure**

All trawl gear, video frame box and scientific equipment will be transported to Fraserburgh and rigged aboard MFV *Sunbeam* on 3 May. *Sunbeam* will sail on 4 May and undertake shakedown tows to practice shooting/hauling the smolt gear and video box. Once SIC and

skipper are happy the gear is operating correctly the vessel will make passage, depending on the weather, to either the Moray Firth or Tay/Forth areas to commence the smolt survey. The survey will finish in Fraserburgh on the morning of 16 May with all staff and fishing gear/scientific equipment returning to the Marine Laboratory.

### **Trawl gear**

The smolt trawl is designed to operate with its headline held at the surface and the footrope at approximately 12m deep. The headline and top sweeps of the net are supported using 50 x 200 mm floats (headline) and 8 x 1400 mm long fender floats (top sweep). The trawl doors are designed to fish just below the surface (max depth 50-60 m) and buoyant Dyneema rope used throughout the sweep rig. The video frame is attached to the trawl using netting with supporting bridles and made neutrally buoyant using a combination of 275 mm and 200 mm floats. A rigging specification is given in Guidance note 1.

### **Trawling plan**

The surveys will build on the successful survey work in the Moray Firth in 2017, and will further investigate the migration routes of salmon smolts from Moray Firth rivers across the Moray Firth and carry out the first surveys of smolts off the Firths of Tay and Forth. The net requires a minimum depth of about 40 m for operation and is deployed in an arc, or arcs, so that the ship wash misses the net. Short tows of two hours or less will be carried out with a cod end in place and smolts retained for genetic assignment to rivers and/or regions of origin. The by-catch will be recorded by species. This year, a larger mesh inner net will be deployed within the cod end to keep larger fish separate from the smolts, so that they will be in better condition. The captured video and pit tag recordings will be used to identify where fish and pit tagged fish were caught on the tows. It is also likely that the net will also be deployed open ended at times, instead of using a cod end, potentially for longer tows, but not providing samples for genetic assignment. A combination of tows with and without the cod end in place may allow survey work to be carried out for up to 16 hours a day. All necessary licenses for the work will be in place. Indicative locations of tows are given in Guidance Note 2.

Normal contacts will be maintained with the laboratory.

Submitted:  
R Kynoch  
25 May 2018

Approved:  
I Gibb  
26 May 2018

## Guidance Note 1. Smolt Trawl Rig Details

Trawl (4 panel constructed from PA netting):

- Mesh size (Full mesh in mm):
  - Wings - 800
  - Front/side panel sections – 800
  - Lower cover/belly sections – 800
  - Reducing 400-200-120-80-60 and end taper 40
  - Straight extension – 40
  
- Frame lines and net opening:
  - Headline length – 70.2m
  - Side line length – 15.9m
  - Footrope length – 59.8m
  - Wing stretch length (nominal) – 62m
  - Trawl tapered body stretched length (nominal) – 69.6m
  - Straight extension stretched length – 8m
  - Fishing circle – 224m
  - Nominal net mouth opening at fishing circle (assumes meshes roped (hung) at 50% of full mesh size) – 844.8m<sup>2</sup>.

Sweep rig and otterboards:

- Sweeps – 150m x 28mm dia. Dyneema
- Backstrops – 15m x 28mm dia Dyneema
- Headline/footrope extensions – 3m x 13mm long-link chain
- Otterboards – Thyborøn type 15vf pelagic otterboards:
  - Surface area – 6m<sup>2</sup>
  - Weight (each otterboard) – 1000kg + 200kg additional (8 x 25kg)

Flotation (headline):

- 50 x 200mm floats (each float 2.47kg buoyancy)
- 1 x Polyform (A2) H= 510mm Dia.= 300mm Buoyancy = 35kg
- Fenders (Blue Line JF2255):
  - 1 per side at quarters - L = 1400mm Ø = 300mm buoyancy = 215kg

3 per side at wingends (attached to chain extensions) - L = 1400mm Ø = 300mm buoyancy = 215kg

## Guidance Note 2. Indicative Locations of Tows

