

## Marine Mammal Scientific Support Research Programme MMSS/001/11

### SSI Report

#### Seals and wild salmon fisheries

##### Executive Summary

This document reports on the progress made during 2014 with regard to marine mammal research at wild salmon fisheries. The objectives were: to continue studies into the effectiveness of Acoustic Deterrent Devices (ADDs) and the modification of salmon nets to mitigate the effects of seals on these fisheries; collect shot seals for dietary analysis and provide support to district salmon fishery boards (DSFBs). Activities primarily focused on two sites in the Moray Firth, Portmahomack and Crovie.

During 2013 the salmon net fishery at Portmahomack reported that seals were regularly seen at the net and that salmon landings were damaged by seals despite the use of an ADD. During 2014 seal sightings and salmon landings data were collected and photo-identification of seals from land-based photography was used to identify individual seals. Images were collected (n=1197) and all seal sightings at the net while the ADD was 'on' were attributed to adult male grey seals. Photo-identification revealed only two adult male grey seals were prepared to visit the salmon net while the ADD was 'on'.

During 2013 tests began on the effectiveness of an ADD at Crovie. This work continued in 2014 through the collection and processing of underwater video footage to study the rate at which seals entered the net. The deployment of a C-POD was trialled to provide information on the presence of cetaceans during ADD 'on' and 'off' treatments; however, the elevated noise levels during ADD 'on' periods compromised the C-PODs ability to detect cetaceans. Dolphins and porpoises were regularly detected on the C-POD during ADD 'off' periods. Land-based observations recorded dolphins during both ADD 'off' and 'on' periods. Seal sightings were between five and six times higher during ADD 'off' periods compared to ADD 'on'.

At Crovie in 2014 the evaluation of net modifications continued by examining the effectiveness of a different size of net entrance. Results from the 2014 study suggested that the new design increased salmon landings and reduced fish hesitation in the outer part of the net, an important aspect of reducing depredation from this area.

In April 2014 a report on the diet of seals shot at salmon nets from 2005 to 2013 was produced. The most frequently encountered prey was whitefish, sandeels and flatfish. However, an increase in the proportion of seals testing positive for salmonid DNA since the introduction of ADDs and net modifications may suggest that fewer 'transient' seals are now being shot with lethal control becoming more targeted to those consuming salmon.

Sea Mammal Research Unit (SMRU) personnel have continued to provide presentations on these studies and have provided support to river fisheries when requested. Where requests for support have been received this has led to the formation of a channel of communication between those working in river fisheries and SMRU that is beginning to form the basis for good collaborative work.

This project is continuing to produce encouraging results from the use of ADDs and net modifications at mitigating the effects of seals on these fisheries, and is maintaining positive and open relations with both net and river fisheries.