Marine Mammal Scientific Support Research Programme MMSS2

SSI 2:
Annual Report

Seals and Salmon Interactions

Sea Mammal Research Unit
Report to
Scottish Government

July 2017
V 4

Harris, R.N. & Northridge, S.
Sea Mammal Research Unit, Scottish Oceans Institute, University of St Andrews, St Andrews, Fife. KY16 8LB, UK.

Quality Control and Editorial Trail			
Author (s)	**Comments**	**Version**	**Date**
R. Harris & S. Northridge	Authors	V1	28/03/2017
P. Irving	Review	V1	03/04/2017
R. Harris	Revision	V2	31/05/2017
S. Northridge	Review	V2	31/05/2017
Steering Group	Comments	V3	29/6/2017
P. Irving	Response to comments	V4	04/07/2017

Citation of report
This report should be citied as follows:
Harris, R.N. and Northridge, S. 2017. Seals and Salmon Interactions. *Report to Scottish Government – SSI.*

Executive Summary

This report provides a brief overview of fieldwork currently underway and due to be completed by 31st March, 2017. Identification of seals, their behaviour in river systems and observed frequency of salmonid predation will provide a better understanding of how seals use the river and help to develop practical options to reduce the need for lethal removal. Information gathered will help assess the effectiveness of non-lethal methods aimed at reducing the conflict between seals and salmon fisheries. A perception held by salmon fisheries is that seals cause serious damage to salmon and trout stocks. The data collected under this effort will provide insights into the potential level of impact of seals on salmonid stocks. Data processing will be conducted over the next few months, and final reporting on this fieldwork is scheduled by 31st August 2017.

Contents

.

1 Introduction

The decline in the abundance of harbour seals on the east coast of Scotland has led to the need to develop non-lethal methods for minimising the interaction between seals and salmon fisheries. The closure of the coastal bag-net fisheries for salmon in 2016 has resulted in the work programme focusing on river salmon fisheries.

Work over the last year (April 2016 to March 2017) has focused on gathering photo-identification data from the River Dee and the nearby harbour seal haulout in the River Don. Data collection is due to be completed on 31st March, 2017. The photographs and sightings information will provide a picture of the behaviour and distribution of seals in the River Dee. In particular, the sightings of seals on the surface with prey items will provide individual diet information and a minimum estimate of the monthly rates of salmonid consumption by seals. Data will be used to provide an indication of the number of seals specializing in the consumption of salmonids in the River Dee and the numbers foraging higher up the river, further increasing potential conflicts with fisheries. The number of individuals and their frequency of incursions up the river will provide information that may enable prediction of the potential effectiveness of mitigation approaches, such as Acoustic Deterrent Devices (ADDs) and hazing methods[1]. The development of a live trap for seals may also provide a method for potentially capturing seals for tagging studies and as part of non-lethal solutions for problem individuals. The additional photo-identification study at the River Don haulout will allow those seals identified in the River Dee to be linked to the haulout and potentially allow known salmonid specialists using the haulout to be targeted for capture.

2 Trap

An application was submitted to Marine Scotland – Licensing Operations Team (MS-LOT) for a Marine Licence to deploy a floating trap for seals at a location in the River Dee. The licence was refused on the basis of public safety, resulting in the need to identify possible new sites further upstream and away from the city.

3 Photo-identification and monitoring

Photo-identification observations were made from fixed locations at sites in Aberdeen Harbour, the Fisherman's Bothy (a site approximately 4 km up the River Dee from the Harbour) and the River Don haulout, which is a harbour seal haulout approximately 1 km up the River Don. The Don mouth is 4 km north of the River Dee mouth. An attempt to collect seal distribution and prey consumption information for more of the tidal River Dee was made during the summer resulting in two additional sites being included, between the harbour and the bothy (approximately 2 km and 3.5 km up the river respectively) with data collected between June and August 2016.

Photo-identification observations were carried out at all stages of the tide, and an attempt was made to get a good spread of data during each month, with the exception of the River Don haulout which was visited within two hours of a low tide, three times each month. Seals sighted were photographed and the location and time recorded. Interactions between seals were recorded along with prey capture events.

3.1 Aberdeen Harbour

Aberdeen harbour forms the mouth of the River Dee through which migratory salmonids pass on their way into and out of the river and an area where seals and dolphins are frequently sighted. The harbour has subsequently been highlighted by the Dee District Salmon Fishery Board (DSFB) as an area where seals and dolphins may exert considerable predation pressure on stocks and may represent a contributory factor to the decline in the river's salmon catches. Where possible, six

[1] Hazing methods currently involve the use of watercraft fitted with ADD to move seals slowly downstream or nominated marksmen placing warning shots on the upstream side of seals to encourage seals to move downstream.

observation periods of five hours were made each month from a fixed location overlooking the harbour (340 hours in total predicted by 31st March 2017). Although it was impossible to observe the entire harbour area from one site, the chosen location provided the largest coverage.

3.2 River Dee tidal limits

Sites in the River Dee were visited in addition to the harbour and Don haulout when resources were available (main effort during the summer of 2016). Approximately 300 hours of observations were made at the Bothy and additional sites within the tidal limits.

3.3 River Dee above tidal limits

Seal sightings have been reported by fishers and gillies at distances over 30 km up the River Dee. In an attempt to identify these seals, the Dee DSFB was provided with a camera. Seal sighting reports were recorded by the Dee DSFB and the collected images will be compared against those collected from the tidal reaches and the Don haulout.

During winter 2016 and early spring 2017 there was an increase in reports of harbour seals regularly ascending the river. Despite the frequency of sightings, few or no images were collected by the DSFB each month. Subsequently, an additional series of observations to those in the tidal reaches were carried out by a SMRU observer in March 2017 to identify the number of harbour seals using the river above the tidal limits. Preliminary results suggest that at this time two harbour seals are habitually patrolling the river Dee above the tidal limits.

4 Support provided to DSFBs and salmon fisheries

Additional support has been provided by SMRU in the form of site visits to the River Findhorn DSFB, the River Ness DSFB and the River Tweed Wild Salmon Company (a sweep net fishery operating at Berwick-upon-Tweed). Site visits involved the discussion of the use of Acoustic Deterrent Devices (ADDs) and their suitability to the proposed site. There were also discussions over the potential to record information on seal predation and on damage caused by seals, as well as the potential for further support in the form of assistance with survey design or the loan of equipment.