

# CALL FOR PROPOSALS



## RESEARCH REQUIREMENT

<b>PROJECT</b>	SARF098	PAMP Refreshment Study
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### **Context:**

Following the authorisation of medicinal products for the treatment of sea lice in Scottish waters a 5 year project known as the PAMP (Post Authorisation Monitoring Project)<sup>1</sup> study was undertaken to examine whether the use and release of these substances had any subtle and longer term impacts on marine biota. The study was comprehensive, examining the potential effects on a number of environmental compartments and on a number of different biotic communities.

The main conclusion of the PAMP study was that there were no effects of the use of sea louse medicines which could be discerned beyond the natural variability seen in the marine environment and the natural changes that may be seen in marine communities.

It is eight years since the PAMP study reported and 14 years since its inception, during which time the use of Slice, which became available in 2001 (mid-way through the study), has increased significantly and a new product, Deltamethrin, has also become available. While there is no reason to suspect that the on-going use of sea louse medication has led to wide scale environmental impacts, the cumulative use of various products at a large number of sites may be significant and is increasing with discharges arising from both cages and well boats.

A project to detect and define any significant marine ecosystem changes attributable to such long term medicine use is justified and timely. It is proposed that in the first instance an analysis of historic data sets be undertaken at a number of sea loch locations linked to the PAMP study. The project should focus on places with substantial existing biological and chemical data, and where there has been significant use of sea louse medicines or where a number of treated sites are in close proximity. The project will seek to identify such medicine-related changes either in sea loch ecology and biological community structure near fish farm premises or at larger scales within water-bodies, based upon the historic monitoring records.

A subsequent SARF project, if justified by outcomes from SARF098, may undertake field investigation at the relevant sea loch locations linked to the PAMP study.

### **Outline Research Requirement:**

SARF requires research that updates the original PAMP project and assesses the possible effects of more recently introduced sea lice treatment chemicals and the on-going long term use of these products at single or multiple fish farms within a single water body.

It is envisaged that the research will be require a desktop study, aimed at reviewing literature and developments in the subject area, but mainly concentrating on analysing the large volume of monitoring data that SEPA has acquired during the years since the initial PAMP study. SEPA has identified the potentially useful databases it holds, going back to 2005, in various formats:

- 70 SEPA full audit surveys (benthic, visual and medicines residues)
- 30 SEPA visual surveys
- 940 self-monitoring benthic surveys (80 baseline)

<sup>1</sup><http://www.sams.ac.uk/kenny-black/pamp>

- 180 self-monitoring visual surveys (90 baseline)
- 15 self-monitoring teflubenzuron residues surveys
- 700 self-monitoring emamectin benzoate residues surveys.

It will be important to assess the statistical uncertainty in the findings of the analysis and the identification of change, and to highlight the potential limitations of the data being analysed – for instance if it is limited to sedimentary organisms.

The project is intended to be a refresh of the original PAMP study, but with a slightly tighter focus on environmental receptors – i.e. concentrating on the benthos.

If the findings of the analysis of SEPA-held data suggest that there is any requirement for subsequent validation through new field investigations, this should be incorporated into the project report in the form of recommendations for further work.

In addition, subject to the initial literature review and the findings of the analysis, it may be possible to put forward suggestions for additional further analytical (in the first instance) work that might be commissioned in the future – using other data sources – that would be concerned with wider environmental impacts. Areas of interest might include hard substrate species and inshore fisheries.

**Impact:**

All SARF applied research projects must consider the opportunity for project outcomes to contribute to further activities that might, in due course, lead to measurable positive impacts on Scottish aquaculture production.

**Objectives:**

The research objectives should be clearly set out in relation to the different requirements and themes outlined in the sections on Context and Research Requirement above. Specifically:

1. Review of all relevant literature
2. Develop a SEPA data analysis protocol
3. Analyse historic SEPA data and present findings
4. Identify the need for further research
5. Written report

**Approach:**

Applicants are invited to suggest their preferred approach to the project, but should note that in order to access the relevant SEPA databases, a Memorandum of Understanding (MOU) will be required.

**Project Management:**

There will be a SARF Steering Group assigned to this project. (Applicants should factor the cost of attending 2 steering group meetings, probably in Edinburgh, into their applications)

**Deliverables:** A Draft and then Final Report

<b>Anticipated Duration:</b>	9 months
<b>Maximum Cost:</b>	£40,000 + VAT
<b>Proposed Start Date:</b>	First Quarter of 2014
<b>Commissioning Mode:</b>	Open Competition
<b>Deadline for Applications:</b>	<b>27<sup>th</sup> September 2013</b>

<b>Application Forms:</b>	Application forms together with SARF's standard terms and conditions of contract are available at: <a href="http://www.sarf.org.uk/downloads.html">http://www.sarf.org.uk/downloads.html</a>
<b>Contact:</b>	Richard Slaski – email: <a href="mailto:r.slaski@sarf.org.uk">r.slaski@sarf.org.uk</a> Tel: 01387 740098