Home Office

NON-TECHNICAL SUMMARY

Survival of commercially caught and released marine fish

Project duration

Years **5**
Months **0**

Project purpose

- (a) Basic research
- (d) Protection of the natural environment in the interests of the health or welfare of man or animals.
- (e) Research aimed at preserving the species of animal subjected to regulated procedures as part of the programme of work.

Key words

Fish, fishing, discards, survival

Retrospective assessment

The Secretary of State has determined that a retrospective assessment of this licence is required, and should be submitted within 6 months of the licence's revocation date.

Objectives and benefits

Description of the project's objectives, for example the scientific unknowns or clinical or scientific needs it's addressing.

What is the aim of this project?

To increase our understanding of the survival of marine fish after they have been caught by fishing vessels and released back to the sea. This knowledge will be used to advise UK and international government, stakeholders and NGOs and support sustainable fisheries management.

Potential benefits likely to derive from the project, for example how science might be advanced or how humans, animals or the environment might benefit - these could be short-term benefits within the duration of the project or long-term benefits that accrue after the project has finished.

What are the potential benefits that will derive from this project?

There are two main benefits; i) fishermen are permitted to release unwanted fish catches back to the sea only when it can be shown that these fish survive when returned to the sea. Without this evidence, many unwanted fish will be brought ashore and will die, which could reduce the sustainability of fishing; ii) in setting the permitted amount of fish catches, it is important to know how many fish are killed by commercial fishing. Currently, it is assumed that unwanted fish catches that are returned to the sea do not survive. Information on the amounts of fish that do survive, will improve the data used in setting sustainable fishing levels.

Species and numbers of animals expected to be used

What types and approximate numbers of animals will you use over the course of this project?

Adult, sub-adult and juvenile marine fish. Up to 4000 animals would be used over the 5-year period of the work.

Predicted harms

Typical procedures done to animals, for example injections or surgical procedures, including duration of the experiment and number of procedures.

In the context of what you propose to do to the animals, what are the expected adverse effects and the likely/expected level of severity? What will happen to the animals at the end?

There are two procedures proposed, i) attaching tags to fish and releasing them back to the sea; ii) using holding facilities to observe and monitor fish that would have been released back to the sea.
i) The tagging is assessed as 'Mild' severity. Possible adverse effects are pain during tagging, scarring and/or infection of the tagging location. Where needed, pain relief will be used on the tagging location. Adverse effects will be minimised by using practiced tag attachment methods. Aseptic precautions will minimise the risk of infection. After the tag has been attached, tagged fish will be discharged from the Act and returned to the sea.
ii) The observation method is assessed as 'Severe'. The aim of the work is to estimate how many fish survive after release, and it is possible that some fish will die during the monitoring period. We will introduce humane end points at the earliest point of the monitoring period. Fish will be killed if they display a health condition that is linked with a low chance of survival or they stop feeding. Therefore,

the procedures will evolve as we learn more about how the health of fish relates to its chance of survival. At the end of the monitoring period, the fish will be killed by an approved method.

Application of the three Rs

1. Replacement

State why you need to use animals and why you cannot use non-animal alternatives.

The project will provide knowledge on the survival levels of commercially caught and released fish. This information does not exist, and the survival levels are likely to be different depending on the species of the fish, and on how the fish are caught. It is currently not possible to find a non-protected animal alternative. The project will seek, review and incorporate alternatives throughout the project duration.

2. Reduction

Explain how you will assure the use of minimum numbers of animals.

The methods and numbers of animals used will be based on experience and previous research. There will be input from a statistical team and the Animal Welfare and Ethical Review Body, so that the minimum number of animals are used.

We will find out how the health of fish, at the time they would be released from the fishing vessel, relates to their survival chances. If a relationship can be found, it will be possible to assess the fish at the time they are released, to predict their survival levels, and there will be no need to tag or observe fish.

This method will also be used within studies. The tagged and observed fish will show how health condition relates to chances of survival. A larger number of fish will have their health assessed at the point they would be returned to the sea. The health-survival relationship will be applied to all of these assessed fish to give an overall survival estimate. This reduces the number of fish needed for tagging and observation.

Where possible, data and knowledge from other research will be used instead of using animals. For example, sharing of knowledge and data will continue at the International Council for the Exploration of the Seas Working Group on Methods for Estimating Discard Survival. Opportunities to reduce the number of animals used will be assessed throughout the project.

3. Refinement

Explain the choice of species and why the animal model(s) you will use are the most refined, having regard to the objectives. Explain the general measures you will take to minimise welfare costs (harms) to the animals.

The project will provide new knowledge on the survival levels of commercially caught and released fish. This information does not exist, and the survival levels are likely to be different depending on the species of the fish, and on how the fish are caught. It is not possible to find a non-protected animal alternative. A range of commercial fish species will be studied.

Where survival chances are shown to be high, this work will support requests to allow fish to be released back to the sea. Therefore, the species and fisheries selected for study will be those where the potential for survival is highest.

The methods proposed are based on direct experience of fish tagging and husbandry techniques developed over 20 years. The tag attachment method will be one that minimises pain and suffering. Tagged fish will be checked that they are fit enough to be released to the wild, and those assessed not to be fit, will be killed by an approved method.

For the observation method, the holding facilities and husbandry techniques will be chosen to minimise suffering to ensure reliable results. Humane end-points will be used at the earliest point in the monitoring time for fish that are unlikely to survive. This will be continuously evaluated so that any suffering is minimised and the results are useful. The monitoring periods will be as short as possible while still producing robust results.

Refinements will be reviewed throughout the project; information will be sought from other relevant research and from NVS/NACWO.