

**Project Title:** Angler monitoring of blue cod populations and release mortality rates and causes from the recreational fishery in the Marlborough Sounds.

**Project Code:** BCO2009/05

**Start Date:** 1 December 2009

**Completion Date:** 30 September 2010

**Vessel Use:** Subject to tender

**Overall Objectives:**

1. To initiate a robust community lead monitoring programme for BCO in the Marlborough Sounds.

**Specific Objectives:**

1. To design an annual blue cod recreational fishing CPUE survey programme for the Marlborough Sounds. The recreational fishing community will lead the implementation of programme with support from MFish. The programme should include CPUE, fish length, observed release mortality and cause as well as bycatch information.
2. To design and provide a standard reporting form and training material for the community group.
3. To design an appropriate database that will collate and report data for current and future surveys.
4. To include in the design a reporting regime to record causes of incidental mortality including: fish length, presence of piscivorous birds ie, shags, and observations of predation from piscivorous birds and fish, influence of fishing practices (such as handling methods, number and type of hooks used, fishing method used, release methods such as PVC tubes).
5. To include in the reporting design: location, time of year, water depth, water temperature.

**Reporting Requirements:**

**Research Reporting**

Objective 1-2

1. To submit to the Chief Scientist MFish a Progress report as specified in Research Reporting form 4 by 14 March 2010.

2. To present the report in 3 below to meetings of the Inshore Fishery Assessment Working Group in June 2010 in Wellington or Auckland. Presentations to more than one meeting may be required.
3. To submit to the Chief Scientist MFish a Final Research Report as specified in Research Reporting form 5 or a draft Fishery Assessment Report as specified in Research Reporting form 7 by 30 September 2010.

### **Project Update Reports**

No Project Update Reporting is required for this project.

### **Work In Progress Reports**

Monthly Work In Progress Reporting is required for this project in accordance with the Conducting Research with the Ministry document.

### **Data Reporting**

To submit any data generated, collected or modified during the course of this project to the Research Data Manager, MFish by 30 September 2010.

### **Rationale:**

Blue cod is the most important recreational fish species in the Marlborough Sounds. In July 2008 the Minister, announced a temporary four-year no-take closure for recreational fishing for blue cod across most of the enclosed Marlborough Sounds. The no-take closure will take effect from 1 October 2008. The intent of the closure is to prevent further decline of blue cod and provide time for the community to decide on how they want the fishery managed. To manage the fishery effectively there are a number of high-risk areas where there has been little previous research. A greater understanding of these factors is required to guide future management initiatives.

The serial depletion of blue cod in the Marlborough Sounds has been a long-term issue. The recent Minister's decision has created a window of opportunity to tackle the issue of serial depletion within the community. It is imperative that MFish advance the management of blue cod in the Marlborough Sounds during the closure period to seize this opportunity for improving this fishery. The Minister endorsed this approach in his recent announcement on measures for blue cod in the Marlborough Sounds.

The research design is necessary because:

1. The next blue cod abundance survey in the Marlborough Sounds is not due until 2011. Implementing an annual abundance survey programme will allow a greater understanding of affect of the recreational 'no-take' areas on blue cod populations. This information is important for deciding on a management strategy for reopening the 'no-take' areas in 2012.
2. Having the research designed by a science provider and approved by the Working Group will ensure the survey is as robust as possible and meets

standards acceptable for scientific review. (It is envisaged that the survey will utilise MFish observers to minimise fisher reporting bias).

3. The proposed research will increase community buy-in for the 'no-take' closure and participation in management and ownership of issues facing the fishery.
4. In addition, angler CPUE information will assist with the wider community accepting findings of the abundance survey programme. These are both essential for the future management Challenges.
5. Anecdotal and research evidence for blue cod and similar species shows that incidental mortality from recreational fishing can be a contributing factor to local depletion. Compounding of this impact over a fishing year is likely, since NIWA tagging studies report high recapture rates for blue cod.
6. The most recent blue cod abundance survey in the Marlborough Sounds recorded a decline of juvenile blue cod across all strata. There is a concern that high recreational fishing mortality may be contributing to this decline.
7. Estimation of the incidental mortality rates from recreational fishers and associated causes is currently an unknown, but anecdotally reported to have a high impact on the survival of released blue cod.
8. Understanding the different factors that influence incidental mortality will help to guide future management solutions and fisher practices. The future benefits of new information on incidental mortality will help to minimise impacts to blue cod populations and improve fishing practices within the recreational sector.
9. The lack of data and scientific evidence for incidental mortality rates and causes has a stifles the uptake of management initiatives by the recreational fishers to reduce this impact. This proposed research has the potential to assist with innovation to improve fisher practices and release methods of blue cod.
10. Recreational fisher stakeholder groups would like to see the current MLS of 30 cm raised to 33 cm. MFish Nelson Inshore team are concerned that raising the MLS will have a secondary effect of increasing the incidental mortality of blue cod, because a greater number of undersized fish are caught for each fisher taking their daily bag limit. The proposed research here will assist with guiding this management decision.

For these reasons, this project has a **high** priority.

#### *Objectives 1, 2, 3, 4 and 5*

To design an annual blue cod recreational fishing survey programme for Queen Charlotte Sound, Pelorus Sound, Port Underwood and Croisilles Harbour areas that can be run by a recreational community group such as that run by the Guardians of

Fiordland. The programme should include measurements of CPUE, fish length, observed release mortality and cause, and bycatch information.

The reporting form should also provide for recording of release method, presence of shags and abiotic factors such as water and air temperature, location, depth of release and turbidity.

This project is for one year but will form part of a long-term monitoring programme if successful.

*Weighting of Objectives:*

Weightings indicate the relative importance of each of the objectives. The weightings for the objectives in this project are (in order): 0.2, 0.2, 0.2, 0.2 and 0.2.