Ministry for Primary Industries
Manatū Ahu Matua

3rd November 2014

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Dear Bob

Ministry for Primary Industries Deepwater Research Planning

As part of the assessment of the three orange roughy fisheries for MSC Certification, you requested some details about the research plans for these fisheries, especially with respect to P1. There has been a 10-Year Deepwater Research Programme (10-Yr Programme) in place since 2010[1]. This programme is currently being revised and updated and thus is not in a form that we can provide you with at present. We expect this programme to be finalised within the next two months and will provide MRAG Americas with a copy of the Request for Proposals when it is released at that time. In the mean time, some background and a description of the overall shape of the research around orange roughy for the next five to ten years is provided below.

Research Planning Background

The current 10 Yr Programme (2010-2020) includes a clearly defined work programme for research and monitoring for orange roughy, including for those fisheries currently seeking MSC certification. For example, there was an annual acoustic survey of spawning aggregations for the East and South Chatham Rise (ORH 3B) stock that directly fed into the provision of management advice (MPI Fisheries Assessment Plenary, 2013). This note provides both a recent historical perspective and an overview of the of monitoring and research on orange roughy currently being planned. Over the last three years, where additional research was identified that was not covered by the 10 Yr Programme, MPI and industry collaborated to plan and deliver the required research in a timely manner to support management. This mechanism will be retained in future long term research planning.

Current Planning Development

It is intended that the 10-Yr Programme will be updated every five years. Four years into the current 10-Yr Programme, the planned update was initiated to refresh the Programme and bring it up to date for the next ten years. This was specifically planned to address changes in, for example, approach and technology that the earlier Programme was unable to cover. This update has been in process since June 2014 and is expected to be completed in the next two months. The process has involved a series of consultations with various stakeholders. Once finalised, proposals will be sought from research providers for projects covering the next five years.

Research and monitoring for the orange roughy fisheries: P1.

The 10-Yr Programme for 2015-2025 will include both monitoring and research for orange roughy. Table 1 shows the planned acoustic surveys for the principle orange roughy stocks.

This includes coverage of the three stocks that support the fisheries undergoing assessment for MSC Certification and also a fourth stock (Mid-East Coast) that has provided key information about steepness, *h*, for use in all of the orange roughy assessments and management strategy evaluations and is expected to continue to improve our understanding in this area. The timing of surveys in the different areas has been staggered to ensure the availability of equipment and expertise at the most appropriate times of year for each area.

[1] http://deepwatergroup.org//wp-content/uploads/2013/08/MPI-2010-10-Year-Research-Programme-for-Deepwater-Fisheries.-Ministry-of-Fisheries.-148p1.pdf

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Table 1: The expected frequency and type (trawl, hull mounted acoustics, multi-frequency acoustic system) of survey for orange roughy relevant to the certification of the Challenger, NWCR and ESCR fisheries.

Financial Year	*Challenger ORH 7A trawl & acoustic survey (hull & MFAS)*	NWCR & Mt Muck ORH 3B acoustic survey (MFAS)	ESCR spawning plumes ORH 3B acoustic survey (hull)	Mid-East Coast ORH 2A south, 2B & 3A acoustic survey (MFAS)
2015-16	July 2015			*Review of survey*
2016-17		June –July 2016	June –July 2016	
2017-18				June –July 2017
2018-19	July 2018			
2019-20		June –July 2019	June –July 2019	
2020-21				June –July 2020
2021-22	July 2021			
2022-23		June –July 2022	June –July 2022	
2023-24				June –July 2023
2024-25	July 2024			

A range of additional data will be collected from the surveys and from the commercial fisheries to support stock assessments and plan future surveys. These data include:

- *Orange roughy surveys:* orange roughy age frequencies and length frequencies by sex. Surveys are planned to occur more frequently than the management strategy evaluation (MSE) suggested would be necessary. This choice has also been informed by the relative newness of the modelling approach and the need to be adequately precautionary. Improvements from the previous research programme include a more appropriate survey frequency given we now apply an assessment based management approach in these stocks, and the development of a survey series for the NWCR stock based on recently developed multi-frequency acoustic techniques.
- *MPI Observer Programme:* orange roughy age and length frequencies from commercial catches from each area. Gonad development by date will also be collected, which can assist in the planning of survey timing. Planned observer coverage for these fisheries is expected to be of the order of about 30% per year for each fishery.

Using samples and input data from the surveys and observer programme, both ageing and stock assessment timings have been developed. Table 2 shows the expected frequency and timing of stock assessments for the four relevant stocks (including MEC to provide further information about *h*). Assessments will be conducted in the same financial year as the surveys, and will thus follow the same staggered pattern as the surveys. This ensures resources to conduct and peer review the assessments are not limiting.

Aging will be scheduled to be completed to provide age frequency datasets for each assessment in a timely manner. It is expected that age frequencies will be mostly drawn from the surveys but otoliths will continue to be collected from the commercial fisheries through the observer programme.

Table 2: The expected frequency and timing of stock assessments to support the certification of the Challenger, NWCR and ESCR orange roughy fisheries.

Financial Year	*Challenger (ORH 7A including Westpac Bank)*	NWCR (ORH 3B)	ESCR (ORH 3B)	Mid-East Coast (ORH 2A south, 2B & 3A)
2015-16	Assessment			
2016-17		Assessment	Assessment	
2017-18				Assessment
2018-19	Assessment			
2019-20		Assessment	Assessment	
2020-21				Assessment
2021-22	Assessment			
2022-23		Assessment	Assessment	
2023-24				Assessment
2024-25	Assessment			

Wider ecosystem research (P2)
The understanding of the wider relationship between the three orange roughy fisheries and the P2 elements of the MSC Standard will be addressed both through this 10-Yr Programme and also through MPI's fisheries wide Aquatic Environment Research Programme.

The following deepwater monitoring projects will be scheduled through the 10-Yr Programme, to provide up to date, detailed information on:

- PIs 2.2 and 2.3 - catch volume of retained and bycatch species taken in the orange roughy fisheries (scheduled for 2015-16);
- PI 2.4 - the size, distribution and intensity of the trawl footprint of the commercial fishery;
- PI 2.5 – information on the deepwater ecosystem and biomass estimates for certain deepwater species will be delivered via multi-species trawl surveys on the Chatham Rise[2].

New Zealand also takes a holistic 'whole of fishery' approach to managing fishery impacts on the environment. This includes the approach to prioritising research, monitoring and mitigation. Thus the research and monitoring for directed towards ETP species for example, is centrally funded under the Aquatic Environment Research Programme. The current approach to research and monitor this aspect of these fisheries will continue unchanged, including seabirds, marine mammals and other ETP species. The now well established risk-based approach used for seabirds, is being developed and applied or other at risk groups including sea lions and sharks, with programme elements planned to deliver outputs on risk management for the tier 3 deepwater fish species (generally discarded bycatch species), marine mammals and sharks in over the next two to three years.

The 10-Yr Programme signals that funding will be allocated for placeholder projects that can respond to the outputs of the risk assessments as necessary, when they are delivered.

Specific monitoring for the three orange roughy fisheries will also include:

- *MPI Observer Programme (i.e. from the fisheries):* Detailed information about incidental capture of any protected species. Planned observer coverage for these fisheries is expected to be of the order of about 30% per year for each fishery.

Hopefully this will be sufficient information until we can provide a copy of the full Programme once finalised.

Yours sincerely

Geoff Tingley
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- [2] http://deepwatergroup.org//wp-content/uploads/2013/09/ODriscoll-et-al-2011-FAR-471.pdf