

MSC PRE-ASSESSMENT OF NEW ZEALAND ORANGE ROUGHY FISHERIES

20 AUG 2013

1. MSC Pre-Assessment of Selected New Zealand Orange Roughy Fisheries



Fisheries: ORH2A South, ORH2B & ORH3A (Mid East Coast), ORH3B (North West Rise and East & South Chatham Rise), ORH7A (Challenger Plateau)

Orange roughy (Hoplostethus atlanticus)

MSC Pre-assessment Reference List

Princ	Principle 1:				
P.I.	80 Scoring Guidelines	Fishery	References		
	Stock Status - Stock at a level which maintains high productivity	ORH MEC	MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 601-626)		
1.1.1		ORH3B (NWR)	 MPI. (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 635-639, 651-652) Ryan, T., & Kloser, R. (2013) Biomass estimates of orange roughy in June 2012 at Northwest Chatham Rise using a net attached acoustic optical system. Report to Deepwater Group New Zealand. 40p 		
		ORH3B (ESCR)	 MPI. (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 640-650, 652-653) MPI (2013) MPI. (2013) Review of Management Controls for Orange Roughy 3B (ORH3B). MPI Discussion Paper 2013/27. 22p 		
		ORH7A	MPI. (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 657-668)		
1.1.2	Reference Points - Appropriate limits and reference points for the stock	ALL	 MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 601-668) MPI. (2013) Orange Roughy Harvest Strategy MPI (2008) Harvest Strategy Standard for New Zealand Fisheries. Ministry of Fisheries. October 2008. 30p MPI (2007) Operational Guidelines for New Zealand's Harvest Strategy Standard. Ministry of Fisheries. December 2007. 68p MPI (2006) Harvest Strategy Standard – Standards for Stocks managed under s 13 of the Fisheries Act. Discussion Document. Ministry of Fisheries. November 2006. 50p 		

1.1.3	Stock Rebuilding - Where stock depleted - there is evidence of rebuilding	ALL	 DWG (2012) MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 601-668) MPI. (2013) Orange Roughy Harvest Strategy MPI (2010) Review of Sustainability Measures and Other Management Controls for the 2010/11 Fishing Year – Final Advice Paper. Ministry of Fisheries. September 2010. 219p (ORH 3B – see pp119-138; ORH7A - see pp139- 150)
1.2.1	Harvest Strategy - Precautionary and robust harvest strategy in place	ALL	 DWG (2012) Memo re ORH OEO OP Schedule Update 2012-13. September 2012. DWG (2012) ORH OEO Operational Procedure (v4) 2012-13. Schedule 1. September 2012. DWG (2011) ORH OEO Operational Procedure (v4) 2011-12. September 2012. DWG (2011) ORH OEO Operational Procedure (v4) 2011-12. Schedule 1. September 2012. MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 601-668) MPI (2010) National Fishing Plan Deepwater and Middledepth Fisheries Part 1B - Orange Roughy. Ministry for Primary Industries MPI. (2013) Orange Roughy Harvest Strategy
1.2.2	Harvest Control Rules & Tools - Well defined harvest control rules in place	ALL	 MPI (2013) MPI. (2013) Review of Management Controls for Orange Roughy 3B (ORH3B). MPI Discussion Paper 2013/27. 22p MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 601-668) MPI.(2013) Orange Roughy Harvest Strategy MPI (2008) Harvest Strategy Standard for New Zealand Fisheries. Ministry of Fisheries. October 2008. 30p MPI (2011) Operational Guidelines for New Zealand's Harvest Strategy Standard. Ministry of Fisheries. June 2011. 80p MPI (2012) Annual Operational Plan for Deepwater Fisheries 2012-13. July 2012. 71p MPI (2011) Annual Operational Plan for Deepwater Fisheries 2011-12. July 2011. 75p
1.2.3	Information & Monitoring - Relevant Information collected to support harvest strategy	ALL	 MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 601-668) MPI (2013) Annual Review Report. Deepwater Fisheries 2011-12. June 2013. 78p MPI (2012) Annual Operational Plan for Deepwater Fisheries 2012-13. July 2012. 71p MPI (2011) Annual Operational Plan for Deepwater Fisheries 2011-12. July 2011. 75p MPI (2011) Research and Science Information Standard for the New Zealand Fisheries. Ministry of Fisheries. October 2008. 30p MPI (2011) Operational Guidelines for New Zealand's Harvest Strategy Standard. Ministry of Fisheries. June 2011. 80p MPI (2011) Science Working Groups - Terms of Reference. 8p MPI (2010) National Fishing Plan Deepwater and Middledepth Fisheries Part 1A. Ministry for Primary Industries MPI (2010) National Fishing Plan Deepwater and Middledepth Fisheries Part 1B. Orange Poughy Ministry for

		•	Primary Industries MPI (2010) 10 Year Research Programme for Deepwater Fisheries. Ministry of Fisheries. 148p	
1.2.4	Assessment of Stock Status - Assessment of stock status is adequate	•	MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 601-668)	

Princ	Principle 2:			
P.I.	80 Scoring Guidelines	Score	Rationale	
2.1.1	Retained Species Outcome - Does not cause serious or irreversible harm to retained species.	ALL	 Boyd (2013) Assessment of ecological effects of four New Zealand orange roughy fisheries. Report prepared for Deepwater Group Limited. 34p DWG & MPI (2013) ORH Fishery Observer Programme Report. Unpublished Report presented to AEEF Aug 2013. 77p MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 1: Introduction to Jack Mackerel. Ministry for Primary Industries. May 2013. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. Volume 3: Red Snapper to Yellow eyed Mullet. Ministry for Primary Industries. May 2013. MPI (2008) Harvest Strategy Standard for New Zealand Fisheries. Ministry of Fisheries. October 2008. 30p O'Driscoll et al. (2011) A review of hoki and middle-depth trawl surveys of the Chatham Rise 1992-2010 –New Zealand Fisheries Assessment Report 2011/47 	
2.1.2	Retained Species Management - Strategy in place for managing retained species	ALL	 MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 1: Introduction to Jack Mackerel. Ministry for Primary Industries. May 2013. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. Volume 3: Red Snapper to Yellow eyed Mullet. Ministry for Primary Industries. May 2013. MPI (2008) Harvest Strategy Standard for New Zealand Fisheries. Ministry of Fisheries. October 2008. 30p MPI (2013) Annual Review Report. Deepwater Fisheries 2011-12. June 2013. 78p MPI (2012) Annual Operational Plan for Deepwater Fisheries 2012-13. July 2012. 71p MPI (2011) Annual Operational Plan for Deepwater Fisheries 2011-12. July 2011. 75p 	
2.1.3	Retained Species Information - Relevant information to help manage retained species	ALL	 MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 1: Introduction to Jack Mackerel. Ministry for Primary Industries. May 2013. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. Volume 3: Red Snapper to Yellow eyed Mullet. Ministry for Primary Industries. May 2013. O'Driscoll et al. (2011) A review of hoki and middle-depth trawl surveys of the Chatham Rise 1992-2010 –New Zealand Fisheries Assessment Report 2011/47 MPI. (2010) National Fisheries Plan for Deepwater and Middle-depth Fisheries. Part 1A 	

		ORH MEC	 MPI. (2010) National Fisheries Plan for Deepwater and Middle-depth Fisheries. Part Part 1B Orange Roughy Fisheries. Doonan & Dunn (2011) Trawl survey of Mid-East Coast orange roughy, March-April 2010. New Zealand Fisheries Assessment Report 2011/20. 62p MacGibbon (2013) Fishery characterisation and standardised CPUE analyses for alfonsino, (Beryx splendens), (Lowe, 1834) (Berycidae), 1989–90 to 2009–10. New Zealand Fisheries Assessment Report 2013/30. 233p
2.2.1	By-catch Species Outcome - Does not cause serious or irreversible harm to by-catch species	ALL	 Anderson (2013) Fish and invertebrate By-catch in New Zealand deepwater fisheries from 1990–91 until 2010–11. Zealand Aquatic Environment and Biodiversity Report No. 113. 61p Anderson (2011) Fish and invertebrate by-catch and discards in orange roughy and oreo fisheries from 1990–91 until 2008–09. Zealand Aquatic Environment and Biodiversity Report No. 67. 60p Blackwell (2010) Distribution and abundance of deepwater sharks in New Zealand waters, 2000–01 to 2005–06. New Zealand Aquatic Environment and Biodiversity Report No. 57. 51p Boyd (2013) Assessment of ecological effects of four New Zealand orange roughy fisheries. Report prepared for Deepwater Group Limited. 34p DWG & MPI (2013) ORH Fishery Observer Programme Report. Unpublished Report presented to AEEF Aug 2013. 77p MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 1: Introduction to Jack Mackerel. Ministry for Primary Industries. May 2013. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. Volume 3: Red Snapper to Yellow eyed Mullet. Ministry for Primary Industries. May 2013. O'Driscoll et al. (2011) A review of hoki and middle-depth trawl surveys of the Chatham Rise 1992-2010 –New Zealand Fisheries Assessment Report 2011/47 Stevens et al (2010) Age, growth, and maturity of four New Zealand rattail species. New Zealand Aquatic Environment and Biodiversity Report No. 59. 39p.
2.2.2	By-catch Species Management - Strategy in place for managing by-catch species		 Boyd (2013) Assessment of ecological effects of four New Zealand orange roughy fisheries. Report prepared for Deepwater Group Limited. 34p MPI (2012) Aquatic Environment and Biodiversity Annual Review. 390p (see By-catch species pp 120 –158) MPI (2010) National Fishing Plan Deepwater and Middle-depth Fisheries Part 1B – Ora Roughy. Ministry for Primary Industries MPI (2010). Introduction of Bladder Kelp Seaweed, Macrocystispyrifera (KBB), in Fisheries Management Areas 3 and 4 into the Quota Management System on 1 October 2010. Final Advice Paper .24 September 2009. MPI. (2010). Introduction of Patagonian Toothfish (PTO) into the Quota Management System on 1 October 2010: Final Advice Paper. 15 February 2010. ODriscoll et al. (2011) A review of hoki and middle-depth trawl surveys of the Chatham Rise 1992-2010 - FAR 47
2.2.3	By-catch Species Information - Relevant information to help manage by-catch species		Anderson (2013) Fish and invertebrate By-catch in New Zealand deepwater fisheries from 1990–91 until 2010–11.

2.3.1 Zealand Aquatic Environment and Biodiversity Report No. 113, 61p Anderson (2011) Fish and invertebrate by-catch and all classards in orange roughy and one disharias from 1900-91 unil 2008-09. Zealand Aquatic Environment and Biodiversity Report No. 75, 60p Blackwell (2010) Distribution and abundance of telepreter sharias in New Zealand values Environment and Biodiversity Report No. 75, 61p Blockwell (2010) Distribution and abundance of telepreter sharias in New Zealand values (2000-04) to 2005-80. New Zealand values (2001-04) to 2005-80. New Zealand values (2001-04) to 2005-80. New Zealand (20	113 • And disc 91 Bio • Blaces sha	derson (2011) Fish and invertebrate by-catch and cards in orange roughy and oreo fisheries from 1990—until 2008–09. Zealand Aquatic Environment and diversity Report No. 67. 60p ckwell (2010) Distribution and abundance of deepwater rks in New Zealand waters, 2000–01 to 2005–06. New aland Aquatic Environment and Biodiversity Report No.
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Blackwell (2010) Distribution and abundance of deepwater sharks in New Zealand vaters, 2000-01 to 2005-06. New Zealand Aquatic Environment and Biodiversity Report No. 57, 519 Boyd (2013) Assessment of ecological effects of four New Zealand arrange roughy fisheries. Report prepared for Deepwater Group Limited. 34p DWG & MPI (2013) ORH Fishery Observer Programme Report Diriscoll et al. (2011) A review of hoki and middle-depth trawl surveys of the Chatham Rise 1992-2010 - FAR 47 Ramm. (2011). Conservation Services Programme Observer Report: 1st July 2008 to 30 June 2010. Marine Conservation Services Programme Observer Report: 1st July 2008 to 30 June 2009. Final Draft. Marine Conservation Services, Department of Conservation Services, Organization Services, Department of Conservation Services Programme Observer Report: 1st July 2008 to 30 June 2009, Final Draft. Marine Conservation Services, Department of Conservation Services, Department of Conservation Services Programme Observer Report Services Servi	● Bla sha	ckwell (2010) Distribution and abundance of deepwater rks in New Zealand waters, 2000–01 to 2005–06. New land Aquatic Environment and Biodiversity Report No.
S7. 51p. Boyd (2013) Assessment of ecological effects of four New Zealand orange rought /fisheries. Report prepared for Deepwater Group Limited. 34p DWG & MPI (2013) ORH Fishery Observer Programme Report ODriscoll et al. (2011) A review of hoki and middle-depth trawf surveys of the Chatham Rise 1992-2010 - FAR 47 Ramm. (2011). Conservation Services Programme Observer Report: 1st July 2009 to 30 June 2010. Marine Conservation Services, Department of Conservation. Ramm. (2010). Conservation Services Programme Observer Report: 1st July 2009 to 30 June 2010. Marine Conservation Services, Department of Conservation. Ramm. (2010). Level 1 risk assessment for incidental seabird mortality associated with New Zealand fisheries in the NZ- Suze Baird and Malcolm Clark (2013) Additional notes on Coral distribution and orange roughy fisheries. Distribution maps of protected coral samples — Orders Antibachhecia, Antipatharia, Alcyonacca (Gorgonacca) & Scleractinia & Overlays of ORH trawf tootprint and coral sample distributions for selected Scleractinia, Presentation for Deepwater Group. August 2013. 18p Baird et al. (2012) Distribution of Protected Corals in New Zealand. Department of Conservation. 95p Boyd (2013) Assessment of ecological effects of four New Zealand. Department of Conservation. 95p Boyd (2013) Assessment of ecological effects of four New Zealand orange roughy fisheries. Report Prepared for Depwater Group Limited. 34p DWG & MPI (2012) Aquatic Environment and Biodiversity Annual Review. 390p (see ETP species pp 16-119) Thompson and Berkenbusch (2013) Protected Species bycatch in orange roughy fisheries - 2002-03 to 2011-12. Report for MPI by Dragonfty. 56p Richard & Abraham (2013) Seabird Risk Assessment AEBR 109 Richard & Abraham (2011) Seabird Risk Assessment REPR 109 Richard & Abraham (2011) Seabird Risk Assessment REPR 109 - (Supplementary) Richard & Abraham (2011) Seabird Risk Assessment Rowe (2011) Level 1 Seabird Risk Assessment Policy (2011) Agraine Mammatis Operational Procedures		,
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MPI (2011) Draft Seabirds Policy for addressing fishing		· · ·

		related mortality of Seabirds. May 2011. 18p Ramm.
		 (2011). Conservation Services Programme Observer Report: 1st July 2009 to 30 June 2010. Marine Conservation Services, Department of Conservation. Ramm. (2010). Conservation Services Programme Observer Report: 1 July 2008 to 30 June 2009, Final Draft. Marine Conservation Services, Department of Conservation.
2.3.3	ETP Species Information - Relevant information to support management of impacts on EPTs	 Suze Baird and Malcolm Clark (2013) Additional notes on Coral distribution and orange roughy fisheries: Distribution maps of protected coral samples – Orders Anthoathecata, Antipatharia, Alcyonacea (Gorgonacea) & Scleractinia & Overlays of ORH trawl footprint and coral sample distributions for selected Scleractinia. Presentation for Deepwater Group. August 2013. 18p Baird et al (2012) Distribution of Protected Corals in New Zealand. Department of Conservation. 95p Boyd (2013) Assessment of ecological effects of four New Zealand orange roughy fisheries. Report prepared for Deepwater Group Limited. 34p DOC (2013) Conservation Services Programme Annual Plan 2013/14. Dept. of Conservation DWG & MPI (2013) ORH Fishery Observer Programme Report. Unpublished Report presented to AEEF Aug 2013. 77p Thompson and Berkenbusch (2013) Protected species bycatch in orange roughy trawl fisheries - 2002-03 to 2011-12. Report for MPI by Dragonfly. 56p
2.4.1	Habitats Outcome - The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis and function	 Anderson (2011) Deep sea bio-physical variables as surrogates for biological assemblages an example from the Lord Howe Rise. Deep-Sea Research II 58 (2011) 979–991 Baird et al (2012) Distribution of Protected Corals in New Zealand. Department of Conservation. 95p Boyd (2013) Assessment of ecological effects of four New Zealand orange roughy fisheries. Report prepared for Deepwater Group Limited. 34p Clark (2013) Information on the Structure and Function of UTF habitats. Presentation prepared for DWG. Aug 2013. Floerl et al (2011) Benthic Patterns Chatham Challenger - AEBR 97 Hewitt et al (2011a) Biotic Habitats Chatham Challenger - AEBR 81 MPI (2012) Aquatic Environment and Biodiversity Annual Review. 390p (see Benthic Impacts pp 159-186) Nodder et al (2011) Physical biogeochemical and microbial characteristics Chatham Rise - AEBR 70 Stewart (2013) Analysis of Orange Roughy Trawl Footprint 2007/08 – 2011/12 and 1989/90 – 2011/12, and Underwater Topographic Feature Trawl Effort Analysis. GNS Science Report for Deepwater Group. August 2013. CLR 2013/190LR. 32p Tilney (2013) Summary of ORH Fishery Trawl Footprint. Report for Deepwater Group by Clement 2013.
2.4.2	Habitats Management - Information is adequate to determine risk of serious or irreversible harm to habitat types	 DOC (2013) Conservation Services Programme Annual Plan 2013/14. Dept. of Conservation Fisheries (Benthic Protection Areas) Regulations 2007 (SR 2007/308) MPI (2013) Annual Review Report. Deepwater Fisheries 2011-12. June 2013. 78p MPI (2012) Annual Operational Plan for Deepwater Fisheries 2012-13. July 2012. 71p MPI. (2010) National Fisheries Plan for Deepwater and Middle-depth Fisheries. Part 1A MPI. (2010) National Fisheries Plan for Deepwater and Middle-depth Fisheries. Part 1B Orange Roughy

		Eigheries
2.4.3	Habitats Information - Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat type.	 Fisheries. Anderson (2011) Deep sea bio-physical variables as surrogates for biological assemblages an example from the Lord Howe Rise. Deep-Sea Research II 58 (2011) 979–991 Black et al (2013) Deepwater Trawl Footprint - AEBR 110 Clark (2013) Information on the Structure and Function of UTF habitats. Presentation prepared for DWG. Aug 2013. MPI (2012) Aquatic Environment and Biodiversity Annual Review. 390p (see Benthic Impacts pp 159-186) Tracey et al. (2011) Identification of Protected Corals: distribution in relation to fishing effort and accuracy of observer identifications. Draft Final Report prepared for Marine Conservation Services (MCS), Department of Conservation. Nodder et al (2011) Physical biogeochemical and microbial characteristics Chatham Rise - AEBR 70 Stewart (2013) Analysis of Orange Roughy Trawl Footprint 2007/08 – 2011/12 and 1989/90 – 2011/12, and Underwater Topographic Feature Trawl Effort Analysis. GNS Science Report for Deepwater Group. August 2013. CLR 2013/190LR. 32p
2.5.1	Ecosystem Outcome - The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function. (a) The fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm	 Tilney (2013) Summary of ORH Fishery Trawl Footprint. Report for Deepwater Group by Clement 2013. Boyd (2013) Assessment of ecological effects of four New Zealand orange roughy fisheries. Report prepared for Deepwater Group Limited. 34p Doonan & Dunn (2011) Trawl survey of Mid-East Coast orange roughy 2010-11 Dunn (2013) Ecosystem Impacts of Orange Roughy Fisheries [Unpublished report for Deepwater Group] 17p Dunn et al. (2013) Trophic Interactions and Distribution of Some Squaliforme Sharks, Including New Diet Descriptions for Deania calcea and Squalus acanthias PLoS ONE 8(3): e59938. doi:10.1371/journal.pone.0059938 Dunn & Forman (2010) Hypotheses of Spatial Stock Structure in Orange Roughy Hoplostethus atlanticus inferred from Diet, Feeding, Condition, and Reproductive Activity. PLoS ONE 6(11): e26704 DWG & MPI (2013) ORH Fishery Observer Programme Report. Unpublished Report presented to AEEF Aug 2013. 77p Knight et al (2011) Sustainability of NZ's deepwater fisheries from an energetic perspective – an update. Prepared for Deepwater Group Ltd. Cawthron Institute Report No. 2044. MPI (2012) Aquatic Environment and Biodiversity Annual Review. 390p (see Ecosystem Effects pp 187-205)
2.5.2	Ecosystem Management - Measures are in place to mitigate risk to ecosystem structure and function.	 Boyd (2013) Assessment of ecological effects of four New Zealand orange roughy fisheries. Report prepared for Deepwater Group Limited. 34p DOC (2013) Conservation Services Programme Annual Plan 2013/14. Dept. of Conservation Fisheries (Benthic Protection Areas) Regulations 2007 (SR 2007/308) MPI (2013) Annual Review Report. Deepwater Fisheries 2011-12. June 2013. 78p MPI (2012) Annual Operational Plan for Deepwater Fisheries 2012-13. July 2012. 71p MPI. (2010) National Fisheries Plan for Deepwater and Middle-depth Fisheries. Part 1A MPI. (2010) National Fisheries Plan for Deepwater and

		 Middle-depth Fisheries. Part Part 1B Orange Roughy Fisheries. MPI (2010). Introduction of Bladder Kelp Seaweed, Macrocystispyrifera (KBB), in Fisheries Management Areas 3 and 4 into the Quota Management System on 1 October 2010. Final Advice Paper .24 September 2009. MPI. (2010). Introduction of Patagonian Toothfish (PTO) into the Quota Management System on 1 October 2010: Final Advice Paper. 15 February 2010. ODriscoll et al. (2011) A review of hoki and middle-depth trawl surveys of the Chatham Rise 1992-2010 - FAR 47
2.5.3	Ecosystem Information - Adequate knowledge of impacts of fishery on the ecosystem	 Boyd (2013) Assessment of ecological effects of four New Zealand orange roughy fisheries. Report prepared for Deepwater Group Limited. 34p Doonan & Dunn (2011) Trawl survey of Mid-East Coast orange roughy 2010-11 Dunn (2013) Ecosystem Impacts of Orange Roughy Fisheries [Unpublished report for Deepwater Group] 17p DWG & MPI (2013) ORH Fishery Observer Programme Report. Unpublished Report presented to AEEF Aug 2013. 77p Knight et al (2011) Sustainability of NZ's deepwater fisheries from an energetic perspective – an update. Prepared for Deepwater Group Ltd. Cawthron Institute Report No. 2044. MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 1: Introduction to Jack Mackerel. Ministry for Primary Industries. May 2013. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. Volume 3: Red Snapper to Yellow eyed Mullet. Ministry for Primary Industries. May 2013. MPI (2012) Aquatic Environment and Biodiversity Annual Review. 390p (see Ecosystem Effects pp 187-205) MPI. (2010) National Fisheries Plan for Deepwater and Middle-depth Fisheries. Part 1A MPI. (2010) National Fisheries Plan for Deepwater and Middle-depth Fisheries. Part Part 1B Orange Roughy Fisheries. MPI (2008) Harvest Strategy Standard for New Zealand Fisheries. Ministry of Fisheries. October 2008. 30p ODriscoll et al. (2011) A review of hoki and middle-depth trawl surveys of the Chatham Rise 1992-2010 - FAR 47

Principle 3: Orange Roughy 3B North-west Rise (NWR) Fishery				
P.I.	80 Scoring Guidelines	Score	Rationale	
3.1.1	Legal/Customary Framework - Management system exists with legal/customary framework • Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2;	ALL	 Deed of Settlement 1992. Her Majesty the Queen& Maori. DWG (2010) Memorandum of Understanding between the Ministry of Fisheries and the DeepWater Group. Continuing a partnership between the Ministry of Fisheries and the deepwater fishing industry for the management of New Zealand's deepwater fisheries. December 2010. 12p. Fisheries Act 1996 No 88. Fisheries Commercial Fishing Amendment Regulations No 2. 2009 Fisheries (Benthic Protection Areas) Regulations 2007 (SR 2007/308) Fisheries (Reporting) Regulations 2001 (SR 2001/188) Fisheries (Commercial Fishing) Regulations 2001 (SR 	

			 2001/ 253) Fisheries (Satellite Vessel Monitoring) Regulations 1993 (SR 1993/354) Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 No 121. Lock, K and Leslie, S. (2007), New Zealand's Quota Management System: A History of the First 20 Years, Motu Working Paper 07-02. Motu Economic and Public Policy Research (April 2007). 75p. MPI (2008) Review of Sustainability Measures and Other Management Measures. Volume 2: Initial Position Papers and Summary of Submissions
3.1.2	Consultation, Roles & Responsibilities - Management system has clear processes	ALL	 Fisheries Act 1996 MPI (2013) Review of Management Controls for Orange Roughy 3B MPI (2010) Statement of Intent. Ministry of Fisheries MPI (2009) Stakeholder Consultation Process Standard. Ministry of Fisheries
3.1.3	Long Term Objectives - Management policy contains clear long-term objectives	ALL	 DOC (2013) Conservation Services Programme Annual Plan 2013/14. Dept. of Conservation DWG (2012) ORH OEO Operational Procedure (v4) 2012-13. Schedule 1. September 2012. DWG (2012) Marine Mammals Operational Procedures (v7) 2011-12. September 2012. DWG (2011) Reporting Operational Procedures (v5) 2011-12 MPI (2013) Annual Review Report. Deepwater Fisheries 2011-12. June 2013. 78p MPI (2012) Annual Operational Plan for Deepwater Fisheries 2012-13. July 2012. 71p MPI (2011) Annual Operational Plan for Deepwater Fisheries 2011-12. July 2011. 75p MPI (2011) Research and Science Information Standard for the New Zealand Fisheries. Ministry of Fisheries. October 2008. 30p MPI (2011) Operational Guidelines for New Zealand's Harvest Strategy Standard. Ministry of Fisheries. June 2011. 80p MPI (2011) Science Working Groups - Terms of Reference. 8p MPI (2010) 10 Year Research Programme for Deepwater Fisheries. Ministry of Fisheries. 148p MPI (2010) National Fishing Plan Deepwater and Middledepth Fisheries Part 1A. Ministry for Primary Industries MPI (2010) National Fishing Plan Deepwater and Middledepth Fisheries Part 1B - Orange Roughy. Ministry for Primary Industries
3.1.4	Incentives for Sustainable Fishing - Management system has sustainability incentives	ALL	 Fisheries Act 1996 No 88. Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 No 121. Lock, K and Leslie, S. (2007), New Zealand's Quota Management System: A History of the First 20 Years, Motu Working Paper 07-02. Motu Economic and Public Policy Research (April 2007). 75p.
3.2.1	Fishery Specific Objectives - Fishery has clear and specific outcome objectives	ALL	 DOC (2013) Conservation Services Programme Annual Plan 2013/14. Dept. of Conservation DWG (2012) ORH OEO Operational Procedure (v4) 2012-13. Schedule 1. September 2012. DWG (2012) Marine Mammals Operational Procedures (v7) 2011-12. September 2012. DWG (2011) Reporting Operational Procedures (v5) 2011-12 MPI (2013) Annual Review Report. Deepwater

			 Fisheries 2011-12. June 2013. 78p MPI (2012) Annual Operational Plan for Deepwater Fisheries 2012-13. July 2012. 71p MPI (2011) Annual Operational Plan for Deepwater Fisheries 2011-12. July 2011. 75p MPI (2011) Research and Science Information Standard for the New Zealand Fisheries. Ministry of Fisheries. October 2008. 30p MPI (2011) Operational Guidelines for New Zealand's Harvest Strategy Standard. Ministry of Fisheries. June 2011. 80p MPI (2011) Science Working Groups - Terms of Reference. 8p MPI (2010) Final Advice Paper - Review of Sustainability Measures (01 Oct 2010) MPI (2010) 10 Year Research Programme for Deepwater Fisheries. Ministry of Fisheries. 148p MPI (2010) National Fishing Plan Deepwater and Middledepth Fisheries Part 1A. Ministry for Primary Industries MPI (2010) National Fishing Plan Deepwater and Middledepth Fisheries Part 1B - Orange Roughy. Ministry for Primary Industries
3.2.2	Decision Making Processes - Management system includes effective decision making	ALL	 MPI (2013) MPI. (2013) Review of Management Controls for Orange Roughy 3B (ORH3B). MPI Discussion Paper 2013/27. 22p MPI (2013) Annual Review Report: Deepwater Fisheries 2011-12. June 2013. 78p MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 601-668) MPI. (2013) Orange Roughy Harvest Strategy MPI (2012) Annual Operational Plan for Deepwater Fisheries 2012-13. July 2012. 71p MPI (2010) Review of Sustainability Measures and Other Management Controls for the 2010/11 Fishing Year – Final Advice Paper. Ministry of Fisheries. September 2010. 219p (ORH 3B – see pp119-138; ORH7A - see pp139-150) MPI (2010) Statement of Intent. Ministry of Fisheries MPI (2010) Stakeholder Consultation Process Standard. Ministry of Fisheries
3.2.3	Compliance & Enforcement - Monitoring, control and surveillance mechanisms in place	ALL	 DWG (2012) ORH OEO Operational Procedure (v4) 2012-13. Schedule 1. September 2012. DWG (2012) Marine Mammals Operational Procedures (v7) 2011-12. September 2012. DWG (2011) Reporting Operational Procedures (v5) 2011-12 Fisheries Act 1996 No 88. Fisheries Commercial Fishing Amendment Regulations No 2. 2009 Fisheries (Benthic Protection Areas) Regulations 2007 (SR 2007/308) Fisheries (Reporting) Regulations 2001 (SR 2001/188) Fisheries (Commercial Fishing) Regulations 2001 (SR 2001/253) Fisheries (Satellite Vessel Monitoring) Regulations 1993 (SR 1993/354) Kazmierow et al (2010) Commercial Fishers Compliance Decision Making: Perceptions, Experiences and Factors Influencing Regulatory Compliance. Report Prepared for Ministry of Fisheries. 106p MPI (2013) Fisheries Observer Tables 2010-11 &

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			 2011-12 MPI (2009) Compliance Information Sheet 01 Misreporting. MPI (2009) Compliance Information Sheet 02 - Benchmarking of New Zealand Fisheries MPI (2010) Compliance Information Sheet 03 - Accuracy of Reporting MPI (2010) Compliance Information Sheet 04 - Conversion Factors MPI (2010) Compliance Information Sheet 05 - registration names and numbers MPI (2010) Compliance Information Sheet 06 - Seabird Mitigation Devices MPI (2010) Compliance Information Sheet 07 - Benthic Protection and Seamount Closures
3.2.4	Research Plan - Research plan that addresses management needs are in place	ALL	 DOC (2013) Conservation Services Programme Annual Plan 2013/14. Dept. of Conservation MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 601-668) MPI (2013) Annual Review Report: Deepwater Fisheries 2011-12. June 2013. 78p MPI (2012) Annual Operational Plan for Deepwater Fisheries 2012-13. July 2012. 71p MPI (2011) Annual Operational Plan for Deepwater Fisheries 2011-12. July 2011. 75p MPI (2011) Research and Science Information Standard for the New Zealand Fisheries. Ministry of Fisheries. October 2008. 30p MPI (2011) Operational Guidelines for New Zealand's Harvest Strategy Standard. Ministry of Fisheries. June 2011. 80p MPI (2011) Science Working Groups - Terms of Reference. 8p MPI (2010) 10 Year Research Programme for Deepwater Fisheries. Ministry of Fisheries. 148p MPI (2010) National Fishing Plan Deepwater and Middle-depth Fisheries Part 1A. Ministry for Primary Industries MPI (2010) National Fishing Plan Deepwater and Middle-depth Fisheries Part 1B - Orange Roughy. Ministry for Primary Industries
3.2.5	Management Performance Evaluation - There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives and here is effective and timely review of the fishery-specific management system.	ALL	 DOC (2013) Conservation Services Programme Annual Plan 2013/14. Dept. of Conservation DWG (2010) Memorandum of Understanding between the Ministry of Fisheries and the DeepWater Group. Continuing a partnership between the Ministry of Fisheries and the deepwater fishing industry for the management of New Zealand's deepwater fisheries. December 2010. 12p. MPI (2013) Fisheries Assessment Plenary May. Stock Assessments and Yield Estimates. Volume 2: John Dory to Red Gurnard. Ministry for Primary Industries. May 2013. (pp 601-668) MPI (2013) Annual Review Report. Deepwater Fisheries 2011-12. June 2013. 78p MPI (2012) Annual Operational Plan for Deepwater Fisheries 2012-13. July 2012. 71p MPI (2011) Annual Operational Plan for Deepwater Fisheries 2011-12. July 2011. 75pMPI (2010) 10 Year Research Programme for Deepwater Fisheries. Ministry of Fisheries. 148p MPI (2010) National Fishing Plan Deepwater and Middle-depth Fisheries Part 1A. Ministry for Primary Industries

 MPI (2010) National Fishing Plan Deepwater and Middle-depth Fisheries Part 1B - Orange Roughy Ministry for Primary Industries MPI (2010) Overview of New Zealand Fishery Sc. Peer Review Processes. Ministry of Fisheries. 10 2010. 24p 	ience

Orange Roughy Fisheries Indicative Score Sheet (MSC Performance Indicators) – 2013

PI No.	Performance Indicators	ORH MEC	ORH3B (ESCR)	ORH3B (NWR)	ORH 7A (Chall)	Notes
1.1.1	Stock Status - Stock at a level which maintains high productivity					
1.1.2	Reference Points - Appropriate limits and reference points for the stock					
1.1.3	Stock Rebuilding - Where stock depleted - there is evidence of rebuilding					
1.2.1	Harvest Strategy - Precautionary and robust harvest strategy in place					
1.2.2	Harvest Control Rules & Tools - Well defined harvest control rules in place					
1.2.3	Information & Monitoring - Relevant Information collected to support harvest strategy					
1.2.4	Assessment of Stock Status - Assessment of stock status is adequate					
P1 ALL	Sustainability of Exploited Stock					
2.1.1	Retained Species Outcome - Does not cause serious or irreversible harm to retained species					
2.1.2	Retained Species Management - Strategy in place for managing retained species					
2.1.3	Retained Species Information - Relevant information to help manage retained species					
2.2.1	By-catch Species Outcome - Does not cause serious or irreversible harm to by-catch species					
2.2.2	By-catch Species Management - Strategy in place for managing by-catch species					
2.2.3	By-catch Species Information - Relevant information to help manage by-catch species					
2.3.1	ETP Species Outcome - Meets national and international requirements for EPTs protection					
2.3.2	ETP Species Management - Precautionary management strategies in place					
2.3.3	ETP Species Information - Relevant information to support management of impacts on EPTs					
2.4.1	Habitats Outcome - Does not cause serious or irreversible harm to habitat structure					
2.4.2	Habitats Management - Information is adequate to determine risk to habitat types					
2.4.3	Habitats Information - Information adequate to determine risk to habitats					
2.5.1	Ecosystem Outcome - Does not cause serious or irreversible harm to ecosystem					
2.5.2	Ecosystem Management - Measures are in place to mitigate risk to ecosystem					
2.5.3	Ecosystem Information - Adequate knowledge of impacts of fishery on the ecosystem					
P2 ALL	Maintenance of Ecosystem					
3.1.1	Legal/Customary Framework - Management system exists with legal/customary framework					
3.1.2	Consultation, Roles & Responsibilities - Management system has clear processes					
3.1.3	Long Term Objectives - Management policy contains clear long-term objectives					
3.1.4	Incentives for Sustainable Fishing - Management system has sustainability incentives					
3.2.1	Fishery Specific Objectives - Fishery has clear and specific outcome objectives					
3.2.2	Decision Making Processes - Management system includes effective decision making					
3.2.3	Compliance & Enforcement - Monitoring, control and surveillance mechanisms in place					
3.2.4	Research Plan - Research plan that addresses management needs are in place					
3.2.5	Management Performance Evaluation - Performance Evaluation processes in place					
P3 ALL	Effective Management System					

<60 (Fail)

Key: Indicative Aggregate Scores

Pass

Fail

60-80 (Condition)

>80 (Pass)

Key: Indicative Assessment Scores