INT2022-03 Identification and storage of cold-water coral bycatch specimens

1 July 2022 – 31 December 2022
Milestone 1. Six monthly progress update

Prepared for Conservation Services Programme, Department of Conservation

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Climate, Freshwater & Ocean Science

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Cover image: At-sea digital image of the black coral Telopathes tasmaniensis collected from TRIP6687 by bottom trawl [Observer, FNZ].

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Executive summary

Many protected coral species occur as bycatch in commercial fisheries around New Zealand. The Conservation Services Programme (CSP) of the Department of Conservation (DOC) recognise that Government Fisheries Observers on commercial fishing vessels are not always able to identify this bycatch at sea with high precision (especially to species level), with the confirmation of species requiring identification from a coral taxonomist in many cases. An understanding of deepsea coral bycatch is required to help determine how vulnerable protected corals might be to various anthropogenic impacts such as fishing, and thus help manage and conserve populations.

This project facilitates, through the examination of returned coral specimens and specimen digital images, determination of the taxon and the provenance of corals bycaught in New Zealand fisheries. Summarised are the sample and image identifications of all observed coral bycatch that were returned during the period 1 July 2022 to 31 December 2022 and included is a brief summary of planned genetic analysis for the first year of this project.

A total of six physical coral specimen samples were collected by observers on commercial fishing vessels and returned for identification during the reporting period. Subsamples from each live specimen (n=5) were taken for future genetic studies. A total of 2093 invertebrates (specimens) were identified from 153 digital images taken during the reporting period; 2079 of these invertebrates were protected coral taxa, all images were georeferenced. Physical specimen and digital image data are presented by Fisheries Management Areas (FMA), fishing method, and targeted fishery. Highest coral catches by count came from the South East (Chatham Rise) area (FMA 4), and the South-East Coast and Southland areas (FMA 3 and FMA 5). Most corals were taken by bottom trawl targeting orange roughy and smooth oreo.

1 Background

Protected cold-water deep-sea coral (referred to as coral throughout) specimens bycaught in commercial fishery operations are sampled or photographed by government observers on commercial fishing vessels. The specific objectives for this project are:

1. To confirm or update identifications of coral bycatch reported by Fisheries Observers to the lowest taxonomic level (i.e., to assign codes to coral specimens at the species level wherever possible, or to genus or family level if not possible).
2. To record all identified coral specimens and their metadata (including haplotype/genetic data) and ensure storage of the physical specimens in an appropriate taxonomic collection.
3. To update relevant government coral identification and observer databases.
4. To determine whether genetic taxonomic assessment of coral ID is an efficient means to determine or improve image-based or morphological coral ID, and to use genetic data to better understand coral bycatch.
5. To update and provide input into coral-relevant resources for Fisheries Observers, including reference material and material for observer training.

There are nine milestones scheduled for this project and here we report on the first, Milestone 1: Six monthly progress update with a "summary report of coral specimens, identified from samples and images, bycaught during the period 1 July 2022 - 31 December 2022". Additionally, we briefly summarise the aims for the genetic analysis to be conducted in the first year of the project.

Throughout the report we refer to specimens and samples, for clarity we provide the following explanation of these terms:

- Specimens – Individual animals or colonies
- Specimens from images – Individual animals/colonies captured in a digital image.
- Samples – a bag or jar of one or more individual specimens/colonies collected from one location.

2 Objective 1

To confirm or update identifications of coral bycatch reported by Fisheries Observers to the lowest taxonomic level (i.e., to assign codes to coral specimens at the species level wherever possible, or to genus or family level if not possible).

2.1 Identification of returned protected coral specimens

During the reporting period 1 July 2022 to 31 December 2022, NIWA received, processed, and identified six observer-collected protected coral specimens in six sample lots. All of the physical specimens returned to NIWA were collected by bottom trawl, with four specimens from fisheries targeting orange roughy, one specimen from a fishery targeting smooth oreo and one targeting ling. As part of Objective 2, sub-samples from each live specimen were taken for future genetic studies (n=5).

The NIWA experts identifying specimens returned to NIWA during this reporting period were:

Di Tracey - Scleractinia (stony corals) and Rob Stewart - Antipatharia (black corals).

A summary of protected coral bycatch specimens collected between 1 July 2022 to 31 December 2022 and identified by experts are provided in the NIWA Invertebrate Collection (NIC) *Specify* Database *niwainvert* extract (Appendix A(a)) and presented in Table 1 and Figure 1.

Table 1: Summary of protected coral species. with a count of number of specimens collected by Observers from each Fisheries Management Area (FMA) and target fishery between 1 July–31 December 2022. Refer to Figure 1 for FMA location. LIN = ling, ORH = orange roughy, SSO = smooth oreo.

				FMA (target fishery)			
Order	**Family**	**Genus**	**Species**	**SOU (LIN)**	**SOU (ORH)**	**SOE (SSO)**	**Total no. of specimens**
Anthoathecata	Stylasteridae				1		1
Antipatharia	Schizopathidae	*Telopathes*	*tasmaniensis*		2		2
Scleralcyonacea	Keratoisididae	*Jasonisis*		1			1
		Keratoisis			1		1
	Coralliidae	*Paragorgia*				1	1
Total no. of specimens				**1**	**4**	**1**	**6**

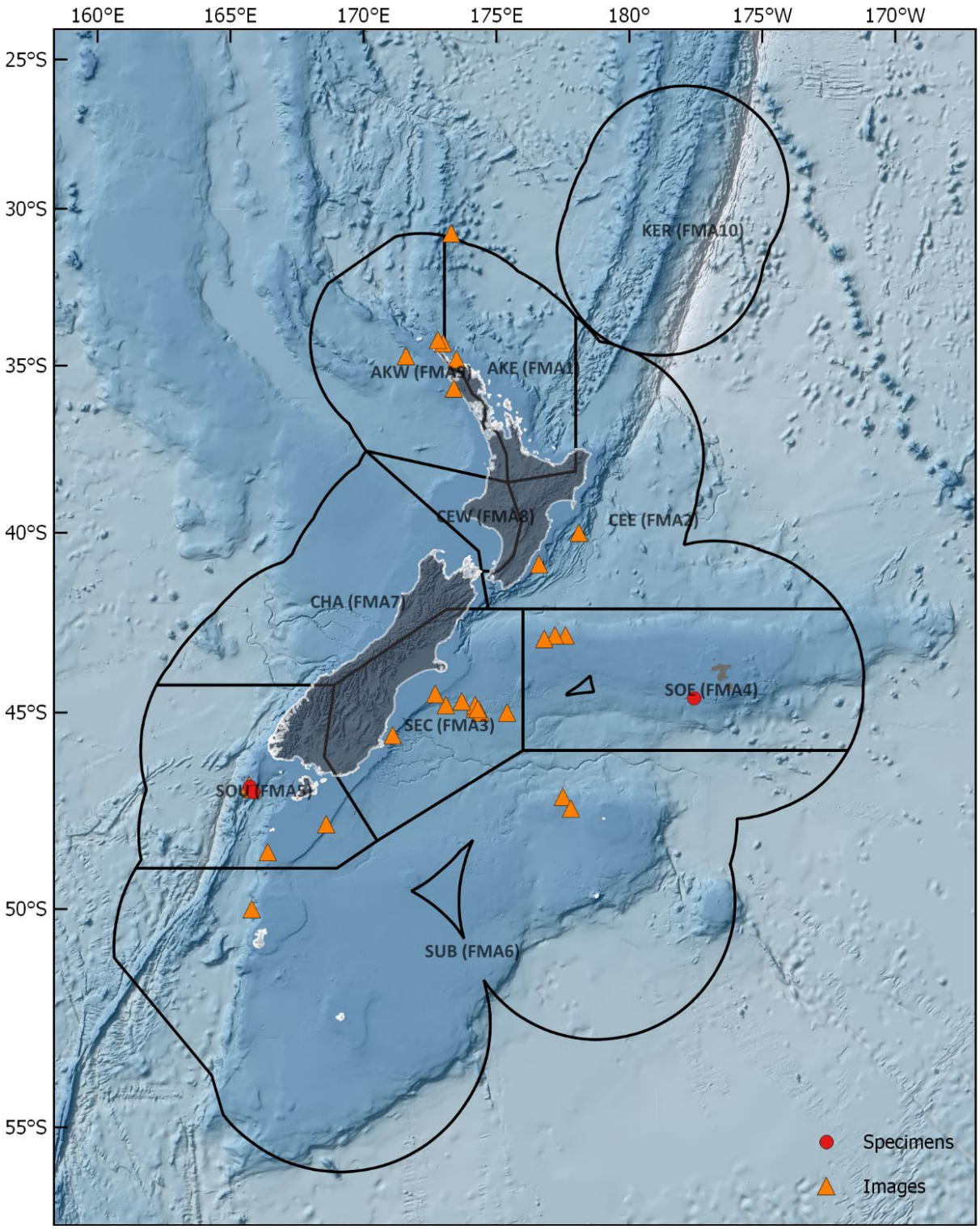

Figure 1: Observer collected bycatch coral specimens (red circles), specimens from images (orange triangles), collected 1 July–31 December 2022.

2.2 Processing and identification of specimens from images

During the reporting period 1 July 2022 to 31 December 2022, NIWA received 153 digital images and all of these were processed using methods outlined in Mills et al., 2023.

The NIWA experts identifying specimens from images during this reporting period were:

Di Tracey - Scleractinia (stony corals); Jaret Bilewitch – Scleralcyonacea and Malacalcyonacea (gorgonian octocorals); Rob Stewart - Antipatharia (black corals); Peter Marriott (hydrocorals). International experts Marcelo Kitahara (University of São Paulo, Brazil) (Scleractinia) and Stephen Cairns (Smithsonian Institution, USA) (Scleractinia) were consulted.

Species identified by Observers as corals that were non-corals were identified by NIWA experts Caroline Chin (hydrozoans) and Dennis Gordon (bryozoans).

In total, 2093 specimens were identified from the 153 selected images, noting that at times there were multiple images of the same specimen as well as images of multiple specimens. The specimen count is dominated by two separate, large catches of stony corals where individual specimens were too many to count. An estimate of 1000 individuals was recorded for each. (Figure 2).

Figure 2: Two large catches of stony coral: a and b: total catch in a large pile, reported as 800 kg and closeup of *Solenosmilia variabilis*; c and d: total catch in several fishbins, reported at 115 kg and closeup of *Desmophyllum dianthus*.

Of the 2093 identified specimens, 2079 were protected coral taxa (of which 79 were not part of the two large catches), and 14 were other non-protected invertebrates (sponges, bryozoa and hydroids). All samples were able to be georeferenced, despite a large number of images not having labels with tow details.

Images were returned from a total of 43 tows over 19 separate trips. Stony corals (Order Scleractinia) were caught in a total of 19 separate tows. Bubblegum corals (Genus *Paragorgia*) and bamboo corals (Family Keratoisididae) were both caught in nine separate tows each. Black corals (Order Antipatharia) were caught in a total of seven separate tows. Several large bubblegum coral colonies were photographed and are shown in Figure 3, the largest colony was reported as weighing 80 kg (Figure 3a).

Figure 3: Three separate catches of bubblegum coral Paragorgia. a) very large, 80 kg individual colony caught in FMA 4 (SOE), targeting smooth oreo by bottom trawl; b) fishbin full of broken bubblegum coral colony caught in FMA 6 (SUB) while targeting smooth oreo by bottom trawl; c) fishbin full of large bubblegum coral colony caught in FMA 3 (SEC) while targeting smooth oreo by bottom trawl.

All processed images were photographed within New Zealand's Exclusive Economic Zone (EEZ) except for two photographed from the High Seas (ET).

The highest number of photographed specimens were from the South East (Chatham Rise) region (FMA 4), and the South-East Coast and Southland areas (FMA 3 and FMA 5) (Table 2). Even when the two 1000 individual stony coral catches are treated as single specimen catches rather than multiple specimens, the Fisheries Management Area (FMA) with the highest number of specimens photographed remains South East (Chatham Rise, FMA 4). The target fisheries with the highest number of tows with bycatch identified as coral by observers were the bottom trawl fisheries for orange roughy and smooth oreo (Table 3).

Table 2: Summary of number of all specimens identified by observers as corals in specimen images by Fisheries Management Area (FMA).

Area	Description	Total no. of specimens
AKE	Auckland East (FMA1)	1
AKW	Auckland West (FMA9)	4
CEE	Central East (FMA2)	2
ET	Beyond the EEZ	2
SEC	South-East Coast (FMA3)	23
SOE	South East (Chatham Rise) (FMA4)	2025
SOI	Southern Offshore Islands - Auckland & Campbell Is. (FMA6A)	2
SOU	Southland (FMA5)	18
SUB	Subantarctic (FMA6)	2
Total	All FMAs	2079

Table 3: Count of tows and specimens in images identified by observers as corals by fishing method and target fishery. BLL = Bottom Longlining, BT = Bottom Trawl, PRB = Precision Seafood Harvesting Bottom Trawl.

Target Fishery (common name)	FNZ code	Fishing Method	Count of Tows	Total no. of specimens
Bluenose	BNS	BLL	1	2
Black oreo	BOE	BT	1	2
Ling	LIN	BT	1	1
Orange roughy	ORH	BT	15	2026
Scampi	SCI	BT	4	4
Snapper	SNA	PRB	1	1
Squid	SQU	BT	1	13
Smooth oreo	SSO	BT	12	28
Tarakihi	TAR	PRB	2	2
Total			**38**	**2079**

Protected corals were identified from a total of 13 different families within four orders (Table 4). A selection of images is presented in Figure 4 showing catches of black coral, sea fans, bamboo coral and stony coral.

Table 4: Count of specimens of each species identified by experts from images.

Phylum	Class	Order	Family	Genus	Species	Total no. of specimens
Cnidaria	Anthozoa					1
		Antipatharia	Leiopathidae	*Leiopathes*		1
			Myriopathidae	*Cupressopathes*		1
			Schizopathidae	*Dendrobathypathes*		1
				Dendropathes		1
				Saropathes		1
				Telopathes	*tasmaniensis*	2
			Stylopathidae	*Tylopathes*		1
		Malacalcyonacea	Alcyoniidae	*Anthothela*		2
			Isididae			1
			Paramuriceidae			1
		Scleractinia				2
			Caryophylliidae	*Desmophyllum*	*dianthus*	1007
				Goniocorella	*dumosa*	5
				Solenosmilia	*variabilis*	1006
			Dendrophylliidae	*Enallopsammia*		3
			Rhizangiidae	*Culicia*	*rubeola*	13
		Scleralcyonacea	Coralliidae	*Paragorgia*		9
				Paragorgia?		1
			Keratoisididae	*Jasonisis*		1
				Keratoisis		9
					?hikurangiensis	1
					?magnifica	1
			Primnoidae			1
				Callogorgia		1
				Primnoa	*notialis*	6
Total no. of specimens						2079

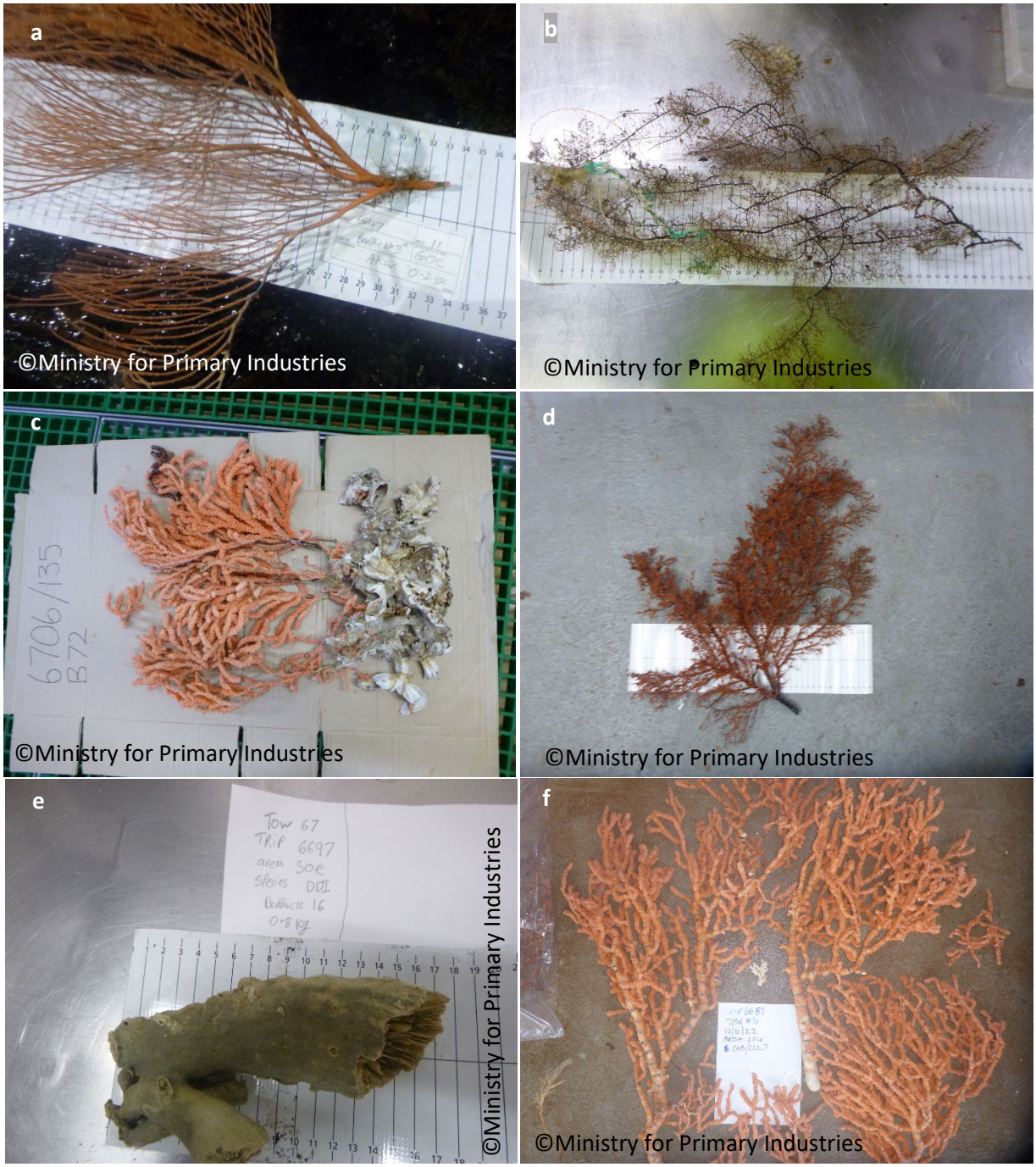

Figure 4: Example observer specimen images. a) *Callogorgia* (CLG); b) Black coral *Tylopathes* (TYL); c) *Primnoa notalis* (PMN is the genus level code, there is no species code for *Primnoa notalis*) growing on fossilised gorgonian octocoral; d) Black coral *Dendrobathypathes* (DEN), covered in live tissue; e) Stony coral *Desmophyllum dianthus* (DDI); f) large bamboo coral *Keratoisis* (BOO), covered in orange, live tissue.

3 Objective 2

To record all identified coral specimens and their metadata (including haplotype/genetic data) and ensure storage of the physical specimens in an appropriate taxonomic collection.

The specimen identifications reported in section 2.1 of this report have been updated in the NIC database *niwainvert* and specimens are stored as appropriate in the NIC wet and dry collections.

4 Objective 3

To update relevant government coral identification and observer databases.

Expert identifications of both physical specimens and imaged corals will be uploaded into the Centralised Observer Database (COD) and reported on in the draft Final Report.

5 Objective 4

To determine whether genetic taxonomic assessment of coral ID is an efficient means to determine or improve image-based or morphological coral ID, and to use genetic data to better understand coral bycatch.

After consultation with the CSP team, it was agreed that in the first year of the project genetic tools for the delineation and identification of protected corals should focus on specimens belonging to a potentially new family of gorgonian octocorals. This approach meets part two of the objective; using genetic data to better understand coral bycatch. This group was first recognised in DOC Project BCBC2020-26 and to date eight specimens have been found in the NIC, as part of identifications conducted under Project POP2022-04. All specimens originated from the Andes Seamounts at the eastern end of the Chatham Rise and occur at trawlable depths (600-1200m). These specimens will be sampled and included in genomic sequencing of Ultra-Conserved Elements (UCEs) conducted under Project INT2023-05 for other protected gorgonians. A phylogenomic analysis of their relationship to other octocorals will be used to confirm their identity and systematic relationships within the Octocorallia. Additional samples from other known octocoral families (Primnoidae, Keratoisididae, Mopseidae, Chrysogorgiidae) will be included in the analysis, to provide comparative reference data.

Additional genetic assessments conducted in Year 1 of the contract may include a broadening of the sampling scope of INT2023-05, to include additional diversity within the Paramuriceidae found outside the focal regions of that study (FMA4 and 6). In particular, additional samples from the genus *Acanthogorgia* (a common component in trawl bycatch) have been identified for UCE sequencing and inclusion in the analysis of INT2023-05, to broaden our understanding of cryptic and undocumented species diversity.

The project team also discussed the approach for the genetics component of this research for years 2 and 3. Although subject to change depending on returned specimens and parallel projects, the initial plan is that in years 2 and 3 the focus will be on (respectively) comparing genetic and observer identifications for octocoral bycatch then a non-octocoral protected group (stony corals or stylasterids). This would ensure that part 1 of Objective 4 – to assess genetic identification – could also be explicitly addressed.

6 Objective 5

To update and provide input into coral-relevant resources for Fisheries Observers, including reference material and material for observer training.

The Ministry for Primary Industries (MPI) recently revised its Observer Training programme for new Observers. The Department of Conservation CSP and NIWA were asked to review the Benthic Materials online training module. This training module included a large section on protected corals and multiple corrections and suggestions for improvement were made by NIWA and DOC CSP, particularly around specimen labelling and coral identification. The time for NIWA to review this module was funded through Objective 5 DOC 23303 – INT2022-03.

As a result of DOC and NIWA's involvement in the review of the Benthic Materials online training module, MPI contracted a parallel project (MPI24302) which contributed to Observer training and improving coral identification skills through two workshops.

In November 2023 MPI arranged with NIWA to host two in-person Observer training workshops. The first workshop is for new Observers covering benthic bycatch. A large component of this workshop will cover protected coral. Training will highlight the importance of clear labelling in images and for specimens returned, demonstrate the difference between easily confused invertebrates, i.e. black corals and feathery hydroids, and show Observers how to correctly use Coral and Invertebrate Identification guides.

The second workshop is for current Observers. This workshop will be an opportunity to refresh Observer coral identification skills, emphasise the importance of labelling specimens correctly, pass on recommendations that have come up from previous coral bycatch project reports (Macpherson et al. 2021; Macpherson et al. 2022; Mills et al. 2023) and answer questions that Observers have regarding coral identification.

7 Recommendations

Octocoral taxonomy has recently been revised by McFadden et al. (2022). This taxonomic revision has implications for the three letter MPI "species" codes, particularly those that are more generic and refer to multiple families or orders of coral. One major change that resulted from this paper is the synonymy of Order Alcyonacea into Octocorallia. Families that were within Alcyonacea are now spread between two new Orders, Malacalcyonacea and Scleralcyonacea.

Due to the taxonomic hierarchy changes (McFadden et al. 2022) it is recommended that a review of existing three letter MPI coral codes is undertaken to ensure the meanings and scientific names for higher level codes are correct. For example, the scientific name for code ISI is still listed as Isididae (according to MARLIN (https://marlin.niwa.co.nz/species_codes/ Nov 2023) but in the notes it has been amended to: *Over-arching code to use to describe coral with bamboo-like skeleton (includes Families Keratoisididae and Mopseidae*). These notes align with the recent revisions, but the scientific name is incorrect. Isididae now sits within Order Malacalcyonacea whereas the bamboo coral families Keratoisididae and Mopseidae are now both within Order Scleralcyonacea. There are now no species of the genera encompassed within family Isididae known from the New Zealand region.

Another recommendation includes the creation of a new three letter code for the coral family Paramuriceidae. Most of the genera formerly within family Plexauridae (PLE) have been moved to family Paramuriceidae. The only genus in the New Zealand region in family Plexauridae is *Swiftia*.

We recommend ongoing training on protected coral identification be undertaken by all observers to ensure accuracy in at sea identifications. One example during this reporting period is highlighted: The Observer on trip 6677 only used two coral codes PRI (Primnoidae (Family) and CLL (Precious coral, *Corallium* spp.) throughout the trip. Forty-five instances of coral were reported across 24 sets on this trip. Photographs were taken of only two specimens at the start of the trip, and the accuracy of ID for the two specimens photographed was low, with the incorrect phylum being used. The specimens reported as PRI and CLL by the observer, were identified by the NIWA expert as two different species of Bryozoa. *Corallium* is not a commonly collected coral group, so to see it recorded so frequently is unusual and the identifications used on this trip may be incorrect.

8 Acknowledgements

Our thanks to the FNZ observers for their on-going efforts at sea and to the various coral experts who provided identifications for this reporting period. These include Di Tracey, Rob Stewart and Jaret Bilewitch (all of NIWA) as well as overseas experts Marcelo Kitahara (University of São Paulo, Brazil) and Stephen Cairns (Smithsonian Institute, USA). We acknowledge Dean Stotter for processing the Observer samples and the NIWA Invertebrate Collection team for providing curatorial support for the specimens. Our thanks to Caroline Wood (NIWA) for COD data extracts and Dennis Gordon (Emeritus, NIWA) and Caroline Chin (NIWA) for identifying non- coral taxa – bryozoans and hydrozoans. Thanks to reviewer Owen Anderson for his comments on this report. Finally, we thank the CSP team, particularly Programme Coordinator Hollie McGovern for providing coral images, and Marine Science Advisor, Lyndsey Holland. This work was funded by DOC CSP Project INT2022-03.

9 References

Macpherson, D., Tracey, D., Mills, S. (2021) INT2019-04 Identification and storage of cold-water coral bycatch specimens: 1 July 2019 -30 June 2020: final annual report. *NIWA Client Report* 2021116WN: 62.

Macpherson, D., Mills, S., Tracey, D. (2022) INT2019-04 Identification and storage of cold-water coral bycatch specimens: 1 July 2020 -30 June 2021: final annual report. *NIWA Client Report* 2022075WN: 49.

McFadden, C.S., van Ofwegen, L.P., Quattrini, A.M. (2022) Revisionary systematics of Octocorallia (Cnidaria: Anthozoa) guided by phylogenomics. *Bulletin of the Society of Systematic Biologists,* 1(3): 8735, pp. 1-79

Mills, S., Connell, A., Macpherson, D., Tracey, D. (2023) INT2019-04 Identification and storage of cold-water coral bycatch specimens. Milestone 9. Final Annual Report. Prepared for Conservation Services Programme, Department of Conservation *NIWA Client Report* 2023073WN. 51 p

Appendix A

Summary output from NIWA Invertebrate Collection (NIC) Specify Database niwainvert updated with revised expert identifications of six bycatch specimens (in six sample lots) collected by observers between 1 July 2022 to 31 December 2022.

This publicly accessible website can be used to search the target species, initial observer and expert ID species codes: https://marlin.niwa.co.nz/species_codes/ and FMA codes: https://marlin.niwa.co.nz/area_codes/. The fishing method codes are as follows: BT = Bottom Trawl. OSD = Observer samples database used in NIWA to record all incoming observer collected samples (including fish, invertebrates, seabirds and mammals).

Table A1: Summary output from NIWA Invertebrate Collection (NIC) Specify Database niwainvert updated with revised expert identifications of six bycatch specimens (in six sample lots) collected by observers between 1 July 2022 to 31 December 2022.

NIWA Cat. Num.	TRIP	Tow	OSD Num.	Initial ID Code	Phylum	Class	Order	Family	Genus	Species	Expert ID code	Date	Latitude1	Longitude1	Depth 1	FMA	Gear code	Target species	Count
147271	6687	16	6266	COB	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	*Telopathes*	*tasmaniensis*	TEO	14/10/2022	-47.1	165.9	988	SOU	BT	ORH	1
147272	6687	16	6267	COB	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	*Telopathes*	*tasmaniensis*	TEO	14/10/2022	-47.1	165.9	988	SOU	BT	ORH	1
147266	6679	33	6252	BOO	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	*Jasonisis*		JAS	01/10/2022	-46.9	165.7	466	SOU	BT	LIN	1
147274	6687	16	6269	ISI	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	*Keratoisis*		BOO	14/10/2022	-47.1	165.9	988	SOU	BT	ORH	1
147273	6687	54	6268	PAB	Cnidaria	Anthozoa	Scleralcyonacea	Paragorgiidae	*Paragorgia*		PAB	28/10/2022	-44.6	-177.6	960	SOE	BT	SSO	1
147275	6687	16	6270		Cnidaria	Hydrozoa	Anthoathecata	Stylasteridae			COR	14/10/2022	-47.1	165.9	988	SOU	BT	ORH	1

Appendix B

Spreadsheet summary of digital images processed, and identified for the reporting period 1 July 2022 to 31 December 2022

Only a portion of the photographed specimens were also returned from sea as physical specimens. Where a physical specimen was also returned to NIWA the NIWA Invertebrate Collection catalogue number has been provided for reference. Duplicate rows in this appendix indicate where multiple images were taken of the same specimens, and in these cases the specimen count is reduced to zero to avoid double counting of the same specimens. This publicly accessible website can be used to search the target species, initial and expert ID species codes and FMA codes: https://marlin.niwa.co.nz/species_codes/. The fishing method codes are as follows: BLL = Bottom Longlining, BT = Bottom Trawl, PRB = Precision Seafood Harvesting Bottom Trawl.

Table B2: Spreadsheet summary of digital images processed, and identified for the reporting period 1 July 2022 to 31 December 2022.

Trip	Tow	gear_code	target_species	event_start_date	start_obs_fma	trunc_start_latitude	trunc_start_longitude	start_seabed_depth	Phylum	Class	Order	Family	Genus	Species	NIWA Cat No	Initial OBS ID	Specimen count	Expert ID
6706	135	BT	SSO	5/12/2022	SEC	-45	175.4	1101	Arthropoda	Thecostraca						CBB	7	BRN
6706	135	BT	SSO	5/12/2022	SEC	-45	175.4	1101	Arthropoda	Thecostraca						CBB	0	BRN
6677	1	SN	SPO	27/09/2022	SEC	-45.6	171.1	125	Bryozoa	Gymnolaemata	Cheilostomatida	Celleporidae	Celleporina	grandis		CLL	1	CEG
6677	1	SN	SPO	27/09/2022	SEC	-45.6	171.1	125	Bryozoa	Gymnolaemata	Cheilostomatida	Celleporidae	Celleporina	grandis		CLL	0	CEG
6677	1	SN	SPO	27/09/2022	SEC	-45.6	171.1	125	Bryozoa	Stenolaemata	Cyclostomatida	Cinctiporidae	Cinctipora	elegans		PRI	1	CEL
6733	28	MW	BAR	31/12/2022	SOU	-48.6	166.4	171	Bryozoa						160338	LSE	1	COZ
6707	18	BLL	BNS	6/11/2022	ET	-30.8	173.3	666	Cnidaria	Anthozoa	Antipatharia	Leiopathidae	Leiopathes			GOC	1	LEI
6707	18	BLL	BNS	6/11/2022	ET	-30.8	173.3	666	Cnidaria	Anthozoa	Antipatharia	Leiopathidae	Leiopathes			GOC	0	LEI
6647	17	PRB	TAR	13/08/2022	AKW	-34.2	172.8	113	Cnidaria	Anthozoa	Antipatharia	Myriopathidae	Cupressopathes			DEN	1	COB
6647	17	PRB	TAR	13/08/2022	AKW	-34.2	172.8	113	Cnidaria	Anthozoa	Antipatharia	Myriopathidae	Cupressopathes			DEN	0	COB
6688	2	BT	ORH	3/10/2022	AKW	-34.7	171.6	973	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Dendrobathypathes			LEI	1	DEN
6688	48	BT	ORH	29/10/2022	CEE	-40	178.1	813	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Dendropathes			TPT	1	DDP
6647	20	PRB	SNA	24/08/2022	AKE	-34.8	173.5	72	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Saropathes			DEN	1	SRO
6647	20	PRB	SNA	24/08/2022	AKE	-34.8	173.5	72	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Saropathes			DEN	0	SRO
6647	20	PRB	SNA	24/08/2022	AKE	-34.8	173.5	72	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Saropathes			DEN	0	SRO

Trip	Tow	gear_code	target_species	event_start_date	start_obs_fma	trunc_start_latitude	trunc_start_longitude	start_seabed_depth	Phylum	Class	Order	Family	Genus	Species	NIWA Cat No	Initial OBS ID	Specimen count	Expert ID
6647	20	PRB	SNA	24/08/2022	AKE	-34.8	173.5	72	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Saropathes			DEN	0	SRO
6647	20	PRB	SNA	24/08/2022	AKE	-34.8	173.5	72	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Saropathes			DEN	0	SRO
6687	16	BT	ORH	14/10/2022	SOU	-47	165.8	988	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Telopathes	tasmaniensis	147271	BTP	1	TEO
6687	16	BT	ORH	14/10/2022	SOU	-47	165.8	988	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Telopathes	tasmaniensis	147272	BTP	1	TEO
6687	16	BT	ORH	14/10/2022	SOU	-47	165.8	988	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Telopathes	tasmaniensis	147271	BTP	0	TEO
6687	16	BT	ORH	14/10/2022	SOU	-47	165.8	988	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Telopathes	tasmaniensis	147272	BTP	0	TEO
6687	16	BT	ORH	14/10/2022	SOU	-47	165.8	988	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Telopathes	tasmaniensis	147271	BTP	0	TEO
6687	16	BT	ORH	14/10/2022	SOU	-47	165.8	988	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Telopathes	tasmaniensis	147272	BTP	0	TEO
6687	16	BT	ORH	14/10/2022	SOU	-47	165.8	988	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Telopathes	tasmaniensis	147271	BTP	0	TEO
6687	16	BT	ORH	14/10/2022	SOU	-47	165.8	988	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Telopathes	tasmaniensis	147272	BTP	0	TEO
6724	35	BT	ORH	26/12/2022	SOE	-42.6	182.9	1375	Cnidaria	Anthozoa	Antipatharia	Stylopathidae	Tylopathes			COU	1	TYL
6724	35	BT	ORH	26/12/2022	SOE	-42.6	182.9	1375	Cnidaria	Anthozoa	Antipatharia	Stylopathidae	Tylopathes			COU	0	TYL
6724	35	BT	ORH	26/12/2022	SOE	-42.6	182.9	1375	Cnidaria	Anthozoa	Antipatharia	Stylopathidae	Tylopathes			COU	0	TYL
6724	35	BT	ORH	26/12/2022	SOE	-42.6	182.9	1375	Cnidaria	Anthozoa	Antipatharia	Stylopathidae	Tylopathes			COU	0	TYL
6724	35	BT	ORH	26/12/2022	SOE	-42.6	182.9	1375	Cnidaria	Anthozoa	Antipatharia	Stylopathidae	Tylopathes			COU	0	TYL
6724	35	BT	ORH	26/12/2022	SOE	-42.6	182.9	1375	Cnidaria	Anthozoa	Antipatharia	Stylopathidae	Tylopathes			COU	0	TYL
6724	35	BT	ORH	26/12/2022	SOE	-42.6	182.9	1375	Cnidaria	Anthozoa	Antipatharia	Stylopathidae	Tylopathes			COU	0	TYL
6706	130	BT	SSO	4/12/2022	SOE	-44.5	180.7	1015	Cnidaria	Anthozoa	Malacalcyonacea	Alcyoniidae	Anthothela			COU	1	ANB
6706	130	BT	SSO	4/12/2022	SOE	-44.5	180.7	1015	Cnidaria	Anthozoa	Malacalcyonacea	Alcyoniidae	Anthothela			COU	0	ANB
6706	130	BT	SSO	4/12/2022	SOE	-44.5	180.7	1015	Cnidaria	Anthozoa	Malacalcyonacea	Alcyoniidae	Anthothela			COU	0	ANB
6706	130	BT	SSO	4/12/2022	SOE	-44.5	180.7	1015	Cnidaria	Anthozoa	Malacalcyonacea	Alcyoniidae	Anthothela			COU	0	ANB
6706	130	BT	SSO	4/12/2022	SOE	-44.5	180.7	1015	Cnidaria	Anthozoa	Malacalcyonacea	Alcyoniidae	Anthothela			COU	0	ANB
6706	130	BT	SSO	4/12/2022	SOE	-44.5	180.7	1015	Cnidaria	Anthozoa	Malacalcyonacea	Alcyoniidae	Anthothela			COU	0	ANB
6706	135	BT	SSO	5/12/2022	SEC	-45	175.4	1101	Cnidaria	Anthozoa	Malacalcyonacea	Alcyoniidae	Anthothela			CBB	1	ANB
6641	28	BT	BOE	6/08/2022	SEC	-44.9	174.2	1020	Cnidaria	Anthozoa	Malacalcyonacea	Isididae				ERR	1	ISI

Trip	Tow	gear_code	target_species	event_start_date	start_obs_fma	trunc_start_latitude	trunc_start_longitude	start_seabed_depth	Phylum	Class	Order	Family	Genus	Species	NIWA Cat No	Initial OBS ID	Specimen count	Expert ID
6641	28	BT	BOE	6/08/2022	SEC	-44.9	174.2	1020	Cnidaria	Anthozoa	Malacalcyonacea	Isididae				ERR	0	ISI
6707	18	BLL	BNS	6/11/2022	ET	-30.8	173.3	666	Cnidaria	Anthozoa	Malacalcyonacea	Paramuriceidae				GOC	1	
6697	50	BT	SCI	11/11/2022	SOE	-42.9	177.6	360	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		DDI	1	DDI
6697	50	BT	SCI	11/11/2022	SOE	-42.9	177.6	360	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		DDI	0	DDI
6697	67	BT	SCI	17/11/2022	SOE	-42.9	177.2	346	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		DDI	1	DDI
6697	67	BT	SCI	17/11/2022	SOE	-42.9	177.2	346	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		DDI	0	DDI
6698	12	BT	SCI	28/10/2022	SOE	-43	176.8	384	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		DDI	1	DDI
6698	12	BT	SCI	28/10/2022	SOE	-43	176.8	384	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		DDI	0	DDI
6699	20	BT	SCI	14/11/2022	CEE	-40.9	176.6	371	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		SIA	1	DDI
6699	20	BT	SCI	14/11/2022	CEE	-40.9	176.6	371	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		SIA	0	DDI
6699	20	BT	SCI	14/11/2022	CEE	-40.9	176.6	371	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		SIA	0	DDI
6715	113	BT	SSO	18/12/2022	SEC	-44.9	174.3	992	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		DDI	3	DDI
6715	113	BT	SSO	18/12/2022	SEC	-44.9	174.3	992	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		DDI	0	DDI
6706	79	BT	ORH	25/11/2022	SOE	-44.5	185.1	1284	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		CUP	1000	DDI
6706	79	BT	ORH	25/11/2022	SOE	-44.5	185.1	1284	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		CUP	0	DDI
6706	79	BT	ORH	25/11/2022	SOE	-44.5	185.1	1284	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		CUP	0	DDI
6706	79	BT	ORH	25/11/2022	SOE	-44.5	185.1	1284	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		CUP	0	DDI
6706	79	BT	ORH	25/11/2022	SOE	-44.5	185.1	1284	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus		CUP	0	DDI
6641	28	BT	BOE	6/08/2022	SEC	-44.9	174.2	1020	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Goniocorella	dumosa		COU	1	GDU
6715	32	BT	ORH	27/11/2022	SOE	-42.7	182.4	1209	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Goniocorella	dumosa		GDU	2	GDU
6715	32	BT	ORH	27/11/2022	SOE	-42.7	182.4	1209	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Goniocorella	dumosa		GDU	0	GDU
6715	124	BT	SSO	20/12/2022	SEC	-44.7	173.7	960	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Goniocorella	dumosa		GDU	2	GDU
6675	107	BT	SSO	31/10/2022	SOI	-50	165.8	998	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis		SIA	1	SVA
6706	79	BT	ORH	25/11/2022	SOE	-44.5	185.1	1284	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis		COU	1	SVA
6706	79	BT	ORH	25/11/2022	SOE	-44.5	185.1	1284	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis		COU	0	SVA

Trip	Tow	gear_code	target_species	event_start_date	start_obs_fma	trunc_start_latitude	trunc_start_longitude	start_seabed_depth	Phylum	Class	Order	Family	Genus	Species	NIWA Cat No	Initial OBS ID	Specimen count	Expert ID
6706	79	BT	ORH	25/11/2022	SOE	-44.5	185.1	1284	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis		COU	0	SVA
6706	94	BT	ORH	26/11/2022	SOE	-44.2	185.3	1248	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis			1	SVA
6715	32	BT	ORH	27/11/2022	SOE	-42.7	182.4	1209	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis		GDU	3	SVA
6715	32	BT	ORH	27/11/2022	SOE	-42.7	182.4	1209	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis		GDU	0	SVA
6715	55	BT	ORH	1/12/2022	SOE	-44.2	185.4	1120	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis		GDU	1000	SVA
6715	55	BT	ORH	1/12/2022	SOE	-44.2	185.4	1120	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis		GDU	0	SVA
6715	55	BT	ORH	1/12/2022	SOE	-44.2	185.4	1120	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis		GDU	0	SVA
6715	7	BT	SSO	21/11/2022	SEC	-44.8	174.2	892	Cnidaria	Anthozoa	Scleractinia	Dendrophylliidae	Enallopsammia			CBR	3	ERO
6715	7	BT	SSO	21/11/2022	SEC	-44.8	174.2	892	Cnidaria	Anthozoa	Scleractinia	Dendrophylliidae	Enallopsammia			CBR	0	ERO
6632	1	BT	SQU	9/07/2022	SOU	-47.9	168.6	232	Cnidaria	Anthozoa	Scleractinia	Rhizangiidae	Culicia	rubeola		SIA	13	CUR
6706	59	BT	SSO	21/11/2022	SOE	-44.5	182.1	992	Cnidaria	Anthozoa	Scleractinia					COU	1	SIA
6706	59	BT	SSO	21/11/2022	SOE	-44.5	182.1	992	Cnidaria	Anthozoa	Scleractinia					COU	0	SIA
6706	79	BT	ORH	25/11/2022	SOE	-44.5	185.1	1284	Cnidaria	Anthozoa	Scleractinia					CUP	0	SIA
6706	135	BT	SSO	5/12/2022	SEC	-45	175.4	1101	Cnidaria	Anthozoa	Scleractinia					CBB	1	SIA
6706	135	BT	SSO	5/12/2022	SEC	-45	175.4	1101	Cnidaria	Anthozoa	Scleractinia					CBB	0	SIA
6641	52	BT	SSO	12/08/2022	SUB	-47.2	177.5	1068	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			COU	1	PAB
6641	52	BT	SSO	12/08/2022	SUB	-47.2	177.5	1068	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			COU	0	PAB
6675	142	BT	SSO	8/11/2022	SUB	-47.5	177.8	869	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	1	PAB
6675	142	BT	SSO	8/11/2022	SUB	-47.5	177.8	869	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6675	142	BT	SSO	8/11/2022	SUB	-47.5	177.8	869	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6687	54	BT	SSO	28/10/2022	SOE	-44.6	182.4	981	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	1	PAB
6687	54	BT	SSO	28/10/2022	SOE	-44.6	182.4	981	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6687	54	BT	SSO	28/10/2022	SOE	-44.6	182.4	981	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6687	54	BT	SSO	28/10/2022	SOE	-44.6	182.4	981	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6687	54	BT	SSO	28/10/2022	SOE	-44.6	182.4	981	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB

Trip	Tow	gear_code	target_species	event_start_date	start_obs_fma	trunc_start_latitude	trunc_start_longitude	start_seabed_depth	Phylum	Class	Order	Family	Genus	Species	NIWA Cat No	Initial OBS ID	Specimen count	Expert ID
6687	54	BT	SSO	28/10/2022	SOE	-44.6	182.4	981	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6687	54	BT	SSO	28/10/2022	SOE	-44.6	182.4	981	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6706	18	BT	SSO	11/11/2022	SEC	-44.9	174.2	943	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			COU	1	PAB
6706	18	BT	SSO	11/11/2022	SEC	-44.9	174.2	943	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			COU	0	PAB
6715	113	BT	SSO	18/12/2022	SEC	-44.9	174.3	992	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	1	PAB
6715	113	BT	SSO	18/12/2022	SEC	-44.9	174.3	992	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6715	113	BT	SSO	18/12/2022	SEC	-44.9	174.3	992	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	37	BT	ORH	26/12/2022	SOE	-42.6	182.9	1450	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	1	PAB
6724	37	BT	ORH	26/12/2022	SOE	-42.6	182.9	1450	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	37	BT	ORH	26/12/2022	SOE	-42.6	182.9	1450	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	37	BT	ORH	26/12/2022	SOE	-42.6	182.9	1450	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	37	BT	ORH	26/12/2022	SOE	-42.6	182.9	1450	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	37	BT	ORH	26/12/2022	SOE	-42.6	182.9	1450	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	37	BT	ORH	26/12/2022	SOE	-42.6	182.9	1450	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	37	BT	ORH	26/12/2022	SOE	-42.6	182.9	1450	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	37	BT	ORH	26/12/2022	SOE	-42.6	182.9	1450	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	37	BT	ORH	26/12/2022	SOE	-42.6	182.9	1450	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	37	BT	ORH	26/12/2022	SOE	-42.6	182.9	1450	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	38	BT	ORH	26/12/2022	SOE	-42.6	182.6	1350	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	1	PAB
6724	38	BT	ORH	26/12/2022	SOE	-42.6	182.6	1350	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	0	PAB
6724	39	BT	ORH	27/12/2022	SOE	-42.6	183.1	1311	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	1	PAB
6724	39	BT	ORH	27/12/2022	SOE	-42.6	183.1	1311	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia			PAB	1	PAB
6724	36	BT	ORH	26/12/2022	SOE	-42.6	182.7	1417	Cnidaria	Anthozoa	Scleralcyonacea	Coralliidae	Paragorgia?			PAB	1	PAB
6679	33	BT	LIN	1/10/2022	SOU	-46.9	165.7	470	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Jasonisis		147266	BOO	1	JAS
6679	33	BT	LIN	1/10/2022	SOU	-46.9	165.7	470	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Jasonisis		147266	BOO	0	JAS

Trip	Tow	gear_code	target_species	event_start_date	start_obs_fma	trunc_start_latitude	trunc_start_longitude	start_seabed_depth	Phylum	Class	Order	Family	Genus	Species	NIWA Cat No	Initial OBS ID	Specimen count	Expert ID
6679	33	BT	LIN	1/10/2022	SOU	-46.9	165.7	470	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Jasonisis		147266	BOO	0	JAS
6679	33	BT	LIN	1/10/2022	SOU	-46.9	165.7	470	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Jasonisis		147266	BOO	0	JAS
6679	33	BT	LIN	1/10/2022	SOU	-46.9	165.7	470	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Jasonisis		147266	BOO	0	JAS
6679	33	BT	LIN	1/10/2022	SOU	-46.9	165.7	470	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Jasonisis		147266	BOO	0	JAS
6706	3	BT	SSO	7/11/2022	SEC	-44.8	173.1	1065	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis	?hikurangiensis		COU	1	BOO
6706	3	BT	SSO	7/11/2022	SEC	-44.8	173.1	1065	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis	?hikurangiensis		COU	0	BOO
6687	28	BT	ORH	18/10/2022	SOU	-47	165.8	923	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis	?magnifica		ISI	1	BOO
6687	28	BT	ORH	18/10/2022	SOU	-47	165.8	923	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis	?magnifica		ISI	0	BOO
6687	28	BT	ORH	18/10/2022	SOU	-47	165.8	923	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis	?magnifica		ISI	0	BOO
6675	107	BT	SSO	31/10/2022	SOI	-50	165.8	998	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			LLE	1	BOO
6675	107	BT	SSO	31/10/2022	SOI	-50	165.8	998	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			LLE	0	BOO
6687	16	BT	ORH	14/10/2022	SOU	-47	165.8	988	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis		174274	ISI	1	BOO
6687	16	BT	ORH	14/10/2022	SOU	-47	165.8	988	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis		174274	ISI	0	BOO
6687	16	BT	ORH	14/10/2022	SOU	-47	165.8	988	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis		174274	ISI	0	BOO
6688	2	BT	ORH	3/10/2022	AKW	-34.7	171.6	973	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			LLE	1	BOO
6706	75	BT	ORH	24/11/2022	SOE	-44.5	185.2	1318	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			BOO	1	BOO
6715	113	BT	SSO	18/12/2022	SEC	-44.9	174.3	992	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			ISI	3	BOO
6715	113	BT	SSO	18/12/2022	SEC	-44.9	174.3	992	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			ISI	0	BOO
6724	39	BT	ORH	27/12/2022	SOE	-42.6	183.1	1311	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			LLE	2	BOO
6724	39	BT	ORH	27/12/2022	SOE	-42.6	183.1	1311	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			LLE	0	BOO
6724	39	BT	ORH	27/12/2022	SOE	-42.6	183.1	1311	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			LLE	0	BOO
6724	39	BT	ORH	27/12/2022	SOE	-42.6	183.1	1311	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			LLE	0	BOO
6724	39	BT	ORH	27/12/2022	SOE	-42.6	183.1	1311	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			LLE	0	BOO
6724	39	BT	ORH	27/12/2022	SOE	-42.6	183.1	1311	Cnidaria	Anthozoa	Scleralcyonacea	Keratoisididae	Keratoisis			LLE	0	BOO
6647	11	PRB	TAR	10/08/2022	AKW	-34.3	173	173	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Callogorgia			GOC	1	CLG

Trip	Tow	gear_code	target_species	event_start_date	start_obs_fma	trunc_start_latitude	trunc_start_longitude	start_seabed_depth	Phylum	Class	Order	Family	Genus	Species	NIWA Cat No	Initial OBS ID	Specimen count	Expert ID
6647	11	PRB	TAR	10/08/2022	AKW	-34.3	173	173	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Callogorgia			GOC	0	CLG
6647	11	PRB	TAR	10/08/2022	AKW	-34.3	173	173	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Callogorgia			GOC	0	CLG
6647	11	PRB	TAR	10/08/2022	AKW	-34.3	173	173	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Callogorgia			GOC	0	CLG
6706	75	BT	ORH	24/11/2022	SOE	-44.5	185.2	1318	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Primnoa	notialis		UNX	1	PMN
6706	75	BT	ORH	24/11/2022	SOE	-44.5	185.2	1318	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Primnoa	notialis		UNX	0	PMN
6706	135	BT	SSO	5/12/2022	SEC	-45	175.4	1101	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Primnoa	notialis		CBB	5	PMN
6706	135	BT	SSO	5/12/2022	SEC	-45	175.4	1101	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Primnoa	notialis		CBB	0	PMN
6706	135	BT	SSO	5/12/2022	SEC	-45	175.4	1101	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Primnoa	notialis		CBB	0	PMN
6706	135	BT	SSO	5/12/2022	SEC	-45	175.4	1101	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Primnoa	notialis		CBB	0	PMN
6706	135	BT	SSO	5/12/2022	SEC	-45	175.4	1101	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Primnoa	notialis		CBB	0	PMN
6706	135	BT	SSO	5/12/2022	SEC	-45	175.4	1101	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae	Primnoa	notialis		CBB	0	PMN
6715	35	BT	ORH	28/11/2022	SOE	-42.8	183	752	Cnidaria	Anthozoa	Scleralcyonacea	Primnoidae				GOC	1	PRI
6715	35	BT	ORH	28/11/2022	SOE	-42.8	183	752	Cnidaria	Anthozoa						CBR	1	COU
6733	5	MW	BAR	23/12/2022	SEC	-44.5	172.7	161	Cnidaria	Hydrozoa	Leptothecata	Lafoeidae	Cryptolaria				1	CRT
6733	28	MW	BAR	31/12/2022	SOU	-48.6	166.4	171	Cnidaria	Hydrozoa	Leptothecata	Lafoeidae	Cryptolaria		160337	DEN	1	CRT
6706	20	BT	SSO	12/11/2022	SEC	-45	174.4	1014	Cnidaria							COU	1	
6706	20	BT	SSO	12/11/2022	SEC	-45	174.4	1014	Cnidaria							COU	0	