

# INT2015-03: Identification and storage of cold-water coral bycatch specimens 1 July 2018- 30 June 2019 Final Annual Report

*Prepared for Conservation Services Programme, Department of  
Conservation*



*January 2020*

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NIWA CLIENT REPORT No: 2019362WN  
Report date: December 2019  
NIWA Project: DOC16307

Quality Assurance Statement		
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Tracey, D., Macpherson, D., Mills, S. (2019). Identification and storage of cold-water coral bycatch specimens. Final Annual Report prepared by NIWA for the Conservation Services Programme, Department of Conservation. DOC16307-INT201503INT2015-03. NIWA Client Report 2019362WN. 39 p.

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## Executive summary

The Conservation Services Programme of the Department of Conservation Marine Species team recognise that Government Fisheries Observers on commercial fishing vessels are not always able to identify protected cold-water corals at sea with high precision (especially to species level), with the confirmation of bycatch species requiring identification from a coral taxonomist in most cases. This project was initiated to identify to lowest taxonomic level, all retained protected coral specimens and digital images collected from fishing events within the New Zealand Exclusive Economic Zone. Overall identifications of 412 returned protected coral specimens (from observed bycatch and from fisheries surveys) and 663 digital images (from observed bycatch), have been made since the project began in 2017.

This report summarises the specimen sample and digital image identifications made of coral bycatch that occurred during the final year of the project, from 1 July 2018 to 30 June 2019. A total of 12 observer collected coral specimen samples were collected and identified during this reporting period. An additional 17 historical observer and 8 trawl survey samples were identified to achieve target sample numbers. Updates were then made to the Fisheries New Zealand (FNZ)/Ministry for Primary Industries (MPI) (referred to throughout as FNZ) Centralised Observer Database *COD*.

A total of 239 specimens were identified (observer identification confirmed or amended) from digital images. Of the 239 specimens, 178 were protected coral taxa, and 169 of these were able to be georeferenced, leaving nine protected coral specimens with no associated position information due to missing station number or incomplete FNZ photographic logs and 'Benthic Materials Form' data. A description of mis-identified fauna is presented. Loading of the digital image data into *COD* occurred for this reporting period.

Sub-samples from specimens with live tissue were taken for future genetic studies (n= 50 samples now accumulated).

Interactions between protected corals collected and fishing gear are presented. Of the specimen samples received and digital images processed from the observed vessels, most came from bottom trawling targeting orange roughy and arrow squid. Coral bycatch samples were also returned from observed bottom longline tows but in lower numbers. Coral samples returned from the High Seas Fisheries Management Areas were not identified for this reporting period. Both commonly occurring as well as unusual protected coral species continue to be retained as bycatch. A highlight was the rare record (for the region) of the gorgonian octocoral *Victorgorgia*.

# 1 Background

Deep-sea protected coral samples taken as bycatch in commercial fishery operations are collected by government observers on commercial fishing vessels. Over time NIWA has received these coral bycatch samples or sub-samples and been contracted to provide their identification. All corals are identified by experts to the lowest feasible taxonomic level, counted, and the information reported in the relevant databases. Regularly, coral data are presented by fishing method, fishery area, and target fish species in spreadsheet form. This helps to identify interactions between protected corals and commercial fishing activities (Tracey et al 2011; Clark et al 2019).

Data from this research also provides vital baseline information that can help to better inform research underpinning marine protection planning such as predictive modelling (Anderson et al 2014; Georgian et al 2019), benthic risk assessments (Clark et al 2014), and management of benthic marine protected species. It also allows for a more comprehensive mitigation framework to be implemented in future in order to protect cold-water corals in New Zealand waters.

For this three-year contract NIWA has, along with carrying out the identification of specimens, also provided:

- the identification and georeferenced labelling of images and the digital storage there-of, and
- the taking of protected coral tissue samples for future genetic studies.

No more than 200 protected coral samples and no more than 200 specimen images have been contracted to be identified per annum. Often this number has been exceeded when international coral taxonomists have visited the NIC – as part of and or separate to this project.

## 2 Objectives

### 2.1 CSP Service Requirements

The overall objective of the Conservation Services Programme (CSP) service requirements is to determine which protected cold-water coral species are captured in commercial fisheries, and the mode of their capture, while also building on the New Zealand cold-water coral collection sample size for use in future research.

### 2.2 Specific objectives

In Schedule 1 of Contract INT2015-03 the specific objectives are:

1. To determine, through examination of returned cold-water coral specimens and photos, the taxon, and where possible the provenance of cold-water corals killed in New Zealand fisheries (for returned dead specimens).
2. To collect sub-samples of all protected cold-water coral specimens for genetic analysis in future.

There are several milestones for this project; here we report on Milestone 13 which is to produce a DRAFT Final Annual Report “Draft annual report(s) describing work undertaken under each specific objective, methods employed, and results found. The report details all corals identified, and photographs assessed for the period 1 July 2018 – 30 June 2019”.

## 3 Methods

### 3.1 Objective 1:

There are three key activities for specific objective 1:

- the identification of protected coral specimens

For this activity coral bycatch that cannot be identified by Government fisheries observers is identified to the finest taxonomic level by experts ashore. Three-letter MPI codes are assigned to coral specimens to species level wherever possible and when this is not possible, specimens are identified to genus or family level and assigned codes. All identified coral specimens are stored in an appropriate taxonomic collection as required. A sub-sample of each specimen is taken for future genetic analysis. International coral taxonomic experts are often invited to New Zealand for identification of specific coral groups.

- updating species identifications in the FNZ Observer database *COD*

The data loading and updates made to *COD* allow for the potential interactions between corals and fishing gear to be identified, as well as factors that may have contributed to coral mortality. Data are reported by fishery stratum (fishing method, fishery area, and where possible, target species).

- digital photo processing of protected coral images.

This activity identifies digital image to species, genus or family level and codes are assigned. Image quality is assessed. All data are summarised in a spreadsheet with accompanying station data details.

#### 3.1.1 Identification of corals returned to NIWA

The cold-water coral bycatch that could not be identified by Observers at-sea were retained (whole specimens or sub-samples of the specimens) and delivered to NIWA for identification. A similar method used to process bycatch collected by Observers under MPI Project DAE2015-05, (Tracey & Mills, 2016a), was followed.

High Seas samples were not differentiated from within EEZ samples at the time of arrival at NIWA for processing. Trip data are provided on sacks of frozen material but no information on general location is given. As such, High Seas samples were partly processed within this project.

The corals were thawed, sorted into main groups and initially identified to coarse taxonomic level (mostly to order and family level). The tasks of fixing and preserving samples, providing containment, documenting samples (station numbering, labelling), sorting (dividing samples into major or minor taxonomic groups – ‘taxa’ – in the laboratory), were all carried out under the MPI Data Management Project DAT2016-01P. Data were entered into the web-interfaced NIWA Observer Samples Database (*OSD*), then returned to frozen storage, fixed in ethanol, or dried where appropriate.

A catalogue of all samples/specimens received by NIWA was provided to the NIWA Invertebrate Collection (NIC) Manager. Data from *OSD* were uploaded into the NIC Specify database *niwainvert* and the specimens were curated in readiness for formal taxonomic identification.

Experts then identified all corals to the species level wherever possible and when this was not possible, to genus or family level. Specimen handling followed NIWA procedures for identifying fauna and biological specimens housed in the NIC. NIWA currently manages specimens according to the:

“Guidelines for the care of natural history collections” (Committee on Common Philosophies and Objectives, 2010). NIWA also has its own collection policy document: “NIWA Marine Invertebrate Collection Policy and Procedures”, which also guided the process. Specimens retained in the NIC are held in stewardship for DOC.

Identification of the samples was carried out by Sadie Mills, Di Tracey, Peter Marriott, Kate Neill (all NIWA), Dr Marzia Bo (Università degli Studi di Genova, Italy), Dr Dennis Opresko (Smithsonian Institution, USA), Dr Marcelo Kitahara (Universidade Federal de São Paulo, Brazil) and Dr Frederic Sinniger (Sesoko Marine Laboratory, Japan), and updated species names and counts were entered into *niwainvert*. Often identifications of Observer collected coral samples are made incidentally by visiting experts not funded by the Project. However, funding for the international black coral expert Dr Marzia Bo to visit the NIC to identify specimens from 22 January to 1 February 2019 was provided in part by this project (DOC16307).

### 3.1.2 Loading data into COD

To help identify potential interactions between corals collected and fishing gear and identify factors that may have contributed to coral mortality, the FNZ COD database was updated with the expert-confirmed coral identifications.

Sample information for the newly-identified observed coral records extracted from Specify database *niwainvert* were provided to the COD database manager for loading and table updates, as described in Macpherson et al (2019).

### 3.1.3 Photographing corals at-sea

At-sea instructions to Observers for recording protected corals (Tracey & Mills, 2016b) were prepared and provided to CSP and, following their approval, forwarded to the Observer Services Unit of the FNZ Observer Programme in early 2017. The section on the digital collection of photographic images at-sea instructions were emphasised and expanded on in the instructions document. Specifically, it was emphasised that images were to be captured in good light using a plain grey background, if possible, and a size scale, with the specimen label showing trip and tow numbers and the Observer’s name included in the image. The name of the Observer taking the image was to be retained as this is important for feedback, training, and acknowledgement (particularly if the images are used for other purposes, e.g., guide production, Client Reports).

### 3.1.4 Digital photo processing

The digital photo images and associated details collected by Observers for this reporting period were obtained from the FNZ Observer Programme by a CSP Group representative and delivered to NIWA in April 2019 and again in October 2019.

Di Tracey, Rob Stewart, Peter Marriott, Diana Macpherson, Kate Neill (NIWA) along with Dr Phil Alderslade (CSIRO, Australia), Kirrily Moore (Tasmanian Museum, Hobart, Australia), and Dr Marzia Bo (Università degli Studi di Genova, Italy) carried out the identifications of the specimens shown in the images.

The images were then georeferenced (refer to section 3.1.5 below) to determine the location of capture (where possible). Specimens in images that were georeferenced and shown to be from outside New Zealand’s EEZ (i.e. collected within high sea Fishery Management Area’s: Challenger



Plateau (CET), Lord Howe Rise (HOWE), Louisville Ridge (LOUR), Three Kings Rise (TKET) and Wanganella Bank (WANB)) were not identified by experts.

Some image metadata was provided via a handwritten label the Observer is required to include in their photograph. Metadata, including georeferenced data (refer to section 3.1.5 below), were then assembled manually in a spreadsheet. Some of the metadata was then embedded into each image file, including: expert ID in the form of taxonomic name (species, genus or family level); trip and tow number; Observer and expert ID in the form of three-letter MPI species code; specimen count, specimen comments, keywords relevant to the subject of the image; the NIWA Invertebrate Collection catalogue number (where applicable); the Observer name (photographer); and image rating (where the best rating is 1 – very good quality and the worst is 5 – very poor quality). An image rating classification was developed specifically for this project as there is no universal standard (International Press Telecommunications Council 2019). Image ratings help indicate the quality and usefulness of an image and also as part of the workflow, enable the images to be sorted and filtered at a later point in time. Table 3-1 shows the image rating classification used and outlines the factors taken into consideration when assigning a rating to an image.

**Table 3-1: The classification system used to assign a rating to an image.**

<u>Image Rating</u>	<u>Classification</u>
1	Very good quality. The specimen is in focus and the whole specimen has been photographed. Good lighting and background. The image includes a label with complete data. There may also be a scale present. The specimen weight may also be shown in the image.
2	Good quality. All the specimen, or part of the specimen is in focus. The lighting and background are sufficient. The image includes a label with some or complete data. May include more than one coral specimen. There may also be a scale present. The specimen weight may also be shown in the image.
3	Average quality. All the specimen, or part of the specimen is in focus. The image may include a label with some data, and a specimen weight may be shown. Insufficient lighting and background. May include more than one coral specimen.
4	Very poor quality. All the specimen, or part of the specimen may be in focus, or in focus enough to be able to determine what it is. There is no label in the image. It is not photographed against a good background with a scale and good lighting, and/or photographed at an unhelpful angle. The image is of an aggregated group of corals and other specimens, as such it is not clear what the subject of the image is. The image is of a non-coral.
5	Very bad quality. The specimen, or part of the specimen is out of focus and is not able to be identified to a sufficient taxonomic level as a result. There is no label in the image. It is not photographed against a good background with a scale and good lighting, and/or photographed at an unhelpful angle. The image is of an aggregated group of corals and other specimens so it is not clear what the subject of the image is. The image is of a non-coral.

Using the ACDSee Pro 3 (version 3.0) software to manage the metadata information, data for each image was either added manually into the relevant field, or by assigning a value from a drop down 'picklist' (see above). These data are then embedded in the image file. ACDSee Pro 3 is currently unable to embed georeference information as the appropriate fields are not available. As a result, georeference data is stored only in an accompanying spreadsheet form.

### 3.1.5 Georeferencing digital image data

Summary data for each image was produced and included trip station data information sourced from *COD* - e.g., position (the start and end coordinates of the tow that sampled the photographed coral), depth (minimum and maximum depths), along with the collected date, fishing method, target species, and Observer Fisheries Management Area in which the coral was caught.

When the tow number was not shown on a label in the image, efforts were made to obtain these details using the trip number and the date and the time stamp of image (extracted from the digital image properties) to then enable location details to be extracted from the *COD* database, FNZ photographic logs, and 'Benthic Materials' forms. The data interrogation process to georeference the station data for such images was as follows:

- obtain the image timestamp from the digital image
- reconstruct image station number information
- interrogate *COD* database and Observer return forms (photographic logs and Benthic Materials forms), using information such as the trip number, the date and the time stamp of image capture to help obtain tow details.

By applying these methods, we were, with a reasonable degree of confidence, able to assign a station number to several digital images. We noted that some cameras time-date stamps were not set correctly which complicated the task.

## 3.2 Objective 2: To collect sub-samples of all protected cold-water coral specimens for genetic analysis in the future

Tissue sub-samples were taken from all live protected coral samples provided to NIWA by Observers. The sub-samples were stored with their corresponding NIC registration label in standard vials in 99% high grade absolute ethanol and are currently held in the NIC -20°C freezer.

## 4 Results

There were 37 protected corals identified from specimens and 239 protected corals identified from 223 images, for this reporting period. Accumulated tissue samples retained for future genetic studies now numbers 50.

Summaries of these identifications are presented by FMA and target fishery for the specimen samples. The specimens returned for identification were low in number, and the majority of samples came from FMA4 (Chatham Rise) targeting orange roughy.

Most digital image identifications were made from protected corals taken as bycatch on the Chatham Rise (Fisheries Management Area (FMA3), in the Northern Auckland West FMA9, and Southern FMA's (4,5,6) (see Figure 4-1). The target fisheries with the most tows providing coral specimens and digital images were those for orange roughy and arrow squid.

## 4.1 Objective 1: Identification of corals returned to NIWA

### 4.1.1 Physical specimens

NIWA received, processed, and identified 12 observer-collected and 1 research trawl-collected protected coral specimens during this reporting period. Additionally, 17 historical (i.e., collected prior to the current reporting year) observer-collected specimens and seven historical research trawl-collected specimens were identified.

A summary of the 37 specimens identified by experts between July 2018 and November 2019, is provided in the NIWA Invertebrate Collection (NIC) Specify Database *niwainvert* extracts (Appendix A (a–c)). These extracts include identifications of physical specimens carried out by black coral expert Dr Marzia Bo who visited the NIC in January 2019. One historical observer specimen was re-identified during this reporting period by Dennis Opresko (Smithsonian Institution), a black coral *Diplopathes n. sp.* (Opresko et al. in prep). This is a new species and the specimen will likely be the holotype for the species. Additionally, three historical research trawl survey specimens were identified, a scleractinian cup coral *Stephanocyathus platypus*, a scleractinian stony branching coral *Enallopsammia cf. pusilla*, and a black coral *Parantipathes*.

Two specimens initially identified by observers as black corals were identified as the large skeleton secreting zoanthid golden coral *Kulamanamana haumea* (Parazoanthidae; Zoantharia) (see Figure 1 in Macpherson et al., 2019). We note this here to highlight that this species is easily confused with black coral or large gorgonian octocoral taxa. Two of the historic research trawl-collected specimens were misidentified onboard as sea pens (not a protected coral group), but later confirmed as the protected golden whip gorgonian octocoral *Radicipes* sp.

In the current reporting year, observers correctly identified all except two specimens (92% accuracy) at least to Class level. The three-letter MPI species codes are compared to obtain this detail. Three of the samples were correctly identified to species level by observers: GDU (*Goniocorella dumosa*) LSE (*Leiopathes secunda*) and DDI (*Desmophyllum dianthus*). The one incorrect identification was CAY (*Caryophyllia* spp.) for a specimen later identified by experts as *Desmophyllum dianthus*. An uncertain observer identification of COF? (*Flabellum*) or ONG?(Porifera) has been confirmed as *Flabellum knoxi*.

### 4.1.2 Summary of physical specimen data loaded into COD

The revised identifications from *niwainvert* database were loaded into COD by the database manager and are provided in Appendix B and summarised in Tables 4-1 and 4-2. This expands on the 20 samples presented in Macpherson et al (2019) and includes data for the nine additional sample identifications made since that report.

**Table 4-1: Summary of protected coral samples by Fisheries Management Area (FMA) or from high seas region (ET), for observer collected protected coral samples identified in this project reporting period.**

(a) Samples collected in the current reporting year (1 July 2018–30 June 2019).

Area	Description	Count of Samples
SOE	South-East (FMA4)	4
SUB	Sub-Antarctic (FMA6)	3
SEC	South-East (Coast) (FMA3)	2
AKE	Auckland East (FMA1)	1

<b>SOU</b>	Southland (FMA5)	1
<b>CHA</b>	Challenger/Central Plateau (FMA7)	1

**(b) Historical samples identified this reporting period but collected earlier.**

Area	Description	Count of Samples
<b>SOE</b>	South-East (FMA4)	5
<b>SUB</b>	Sub-Antarctic (FMA6)	3
<b>AKE</b>	Auckland East (FMA1)	2
<b>HOWE</b>	Lord Howe Rise (ET)	2
<b>SOU</b>	Southland (FMA5)	1
<b>AKW</b>	Auckland West (FMA9)	1
<b>CEE</b>	Central East (FMA2)	1
<b>CET</b>	Challenger Plateau (ET)	1
<b>LOUR</b>	Louisville Ridge (ET)	1

**Table 4-2: Summary of protected coral samples by fishing method and target fishery. TWL = Trawl, BLL = Bottom long line.**

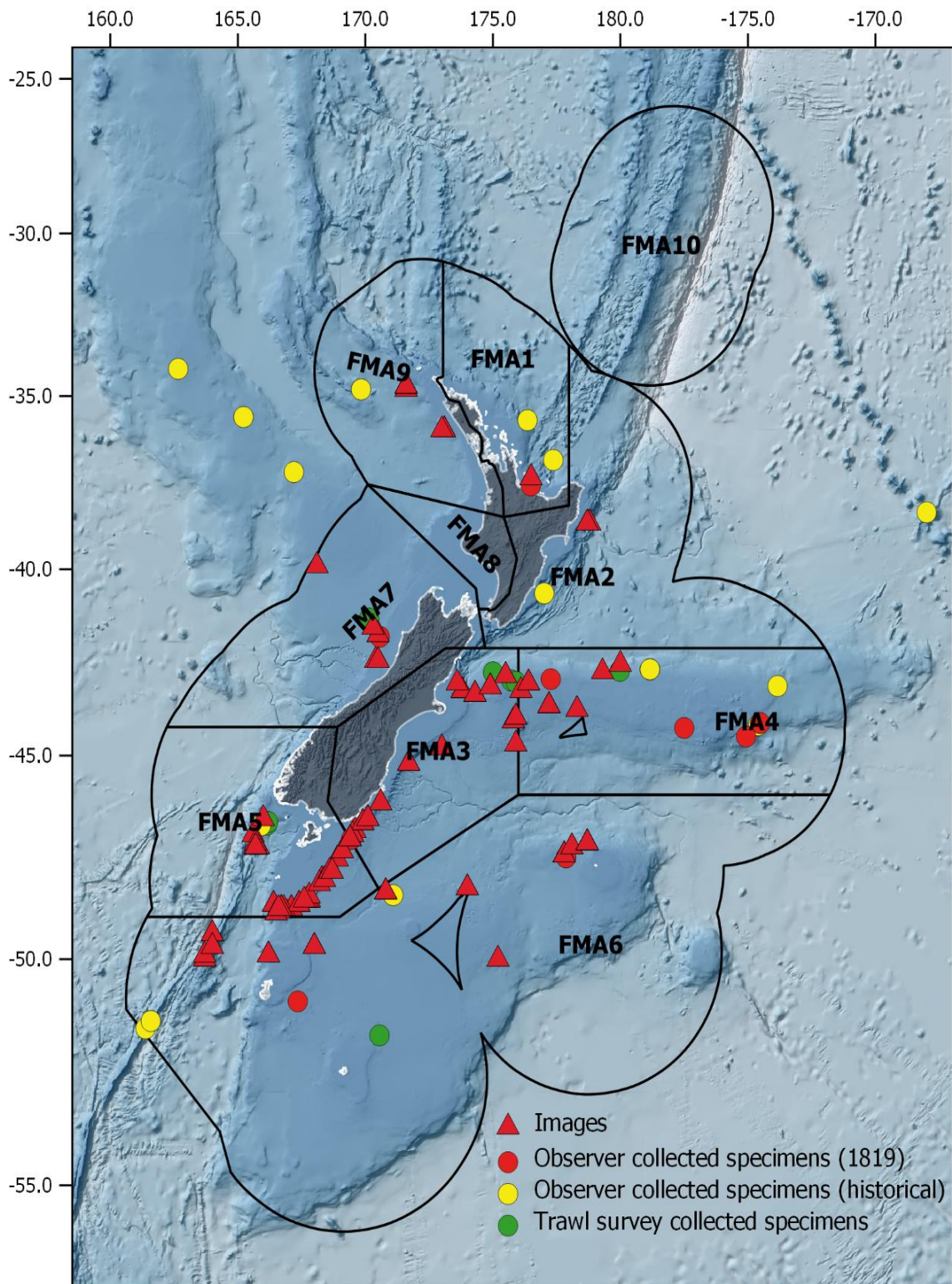
**(a) Samples collected in the current reporting year (1 July 2018–30 June 2019).**

Target Fishery (common name)	FNZ code	Fishing Method	Count of fishing events
<b>Arrow squid</b>	SQU	TWL	3
<b>Orange roughy</b>	ORH	TWL	2
<b>Hoki</b>	HOK	TWL	2
<b>Scampi</b>	SCI	TWL	2
<b>Smooth oreo</b>	SSO	TWL	2
<b>Snapper</b>	SNA	BLL	1

**(b) Historical samples identified this reporting period but collected prior.**

Target Fishery (common name)	FNZ code	Fishing Method	Count of fishing events
<b>Orange roughy</b>	ORH	TWL	11
<b>Patagonian toothfish</b>	PTO	BLL	2
<b>Arrow squid</b>	SQU	TWL	1
<b>Smooth oreo</b>	SSO	TWL	1
<b>Alfonsino</b>	BYS	TWL	1
<b>Alfonsino &amp; long-finned Beryx</b>	BYX	TWL	1

The location of Observer Fisheries Management Areas (FMA) as referred to in the text and tables are shown in Figure 4-1. FMA's South-East (FMA4) and Sub-Antarctic (FMA6) had the highest count of identified physical protected coral samples collected in this reporting period and in historical samples examined.



**Figure 4-1: Location of identified protected coral samples within the Fisheries Management Areas (FMAs), physical specimens (circles), and images data (triangles).**

### 4.1.3 Digital image data

During the reporting period 1 July 2018 to 30 June 2019, NIWA received 631 digital images and 223 of these were processed. In total, 239 specimens were identified from the 223 images that were processed (as sometimes multiple specimens are in a single photo). Of the 239 specimens, 178 were protected coral taxa, and 169 of these were able to be georeferenced, leaving nine protected coral specimens with no associated position information due to missing station number or incomplete FNZ photographic logs and 'Benthic Materials Form' data. The remaining 61 specimens were all georeferenced and were determined to be non-protected taxa: hydroids, sponges, bryozoans, kelp and other seaweeds, sea pens, anemones, worm tubes, whale bone, rocks and other unidentifiable objects (Appendix C).

The most commonly photographed protected coral species was *Desmophyllum dianthus* (n = 44 specimens), followed by *Solenosmilia variabilis* (n = 24 specimens). Species from the octocoral families Isididae (bamboo corals) and Primnoidae (sea fans, sea whips) were the most abundant groups photographed (Table 4-3; Figure 4-2). The taxonomic highlight was the identification from a digital image of a rare record of a *Victorgorgia* octocoral for the region (see cover image).

**Table 4-3: List of species identified by images.**

Taxa	Count of Specimens
<b>Annelida</b>	2
<b>Bryozoa</b>	6
<b>Chordata</b>	
<b>Ascidiacea</b>	1
<b>Mammalia</b>	
<b>Cetacea (whale bone)</b>	1
<b>Cnidaria</b>	
<b>Anthozoa</b>	
<b>Actinaria</b>	3
<b>Alcyonacea</b>	
<b>Chrysogorgiidae</b>	
<i>Chrysogorgia</i>	1
<i>Iridogorgia</i>	1
<b>Coralliidae</b>	
<i>Corallium</i>	2
<b>Isididae</b>	
<i>Acanella</i>	1
<i>Isidella</i>	1
<i>Keratoisis</i>	14
Isididae undet.	11
<b>Paragorgiidae</b>	
<i>Paragorgia arborea</i>	4
<i>Paragorgia</i> undet.	4
<b>Primnoidae</b>	
<i>Metafannyella</i>	18
<i>Perissogorgia</i>	1

Taxa	Count of Specimens
<i>Primnoa notialis</i>	1
<i>Primnoa</i> undet.	1
<i>Thouarella</i>	1
Primnoidae undet.	2
<b>Victorgorgiidae</b>	
<i>Victorgorgia</i>	1
Alcyonacea undet.	3
<b>Antipatharia</b>	
<b>Cladopathidae</b>	
<i>Cladopathes</i>	1
<b>Leiopathidae</b>	
<i>Leiopathes cf. secunda</i>	1
Leiopathidae undet.	1
<b>Myriopathidae</b>	
<i>Antipathella</i>	3
Myriopathidae undet.	2
<b>Schizopathidae</b>	
<i>Bathypathes</i>	1
<i>Dendrobathypathes</i>	1
<i>Parantipathes</i>	1
Antipatharia undet.	1
<b>Pennatulacea</b>	2
<b>Scleractinia</b>	
<b>Caryophylliidae</b>	
<i>Desmophyllum dianthus</i>	44
<i>Goniocorella dumosa</i>	7
<i>Solenosmilia variabilis</i>	24
<i>Stephanocyathus platypus</i>	5
<b>Dendrophylliidae</b>	
<i>Enallopsammia rostrata</i>	1
<b>Flabellidae</b>	
<i>Flabellum knoxi</i>	8
<i>Flabellum</i> undet.	2
<b>Oculinidae</b>	
<i>Madrepora oculata</i>	2
<b>Hydrozoa</b>	
<b>Anthoathecata</b>	
<b>Stylasteridae</b>	
<i>Errina</i>	1
<i>Lepidotheca</i>	1
<i>Stylaster</i>	1
Stylasteridae undet.	3
<b>Leptothecata</b>	

Taxa	Count of Specimens
<b>Aglaopheniidae</b>	1
<b>Zygophylacidae</b>	
<i>Cryptolaria</i>	15
Leptothecata undet.	1
Hydrozoa undet.	3
<b>Echinodermata</b>	
<b>Crinoidea</b>	3
<b>Ochrophyta</b>	
<b>Phaeophyceae</b>	
<b>Fucales</b>	
<b>Sargassaceae</b>	
<i>Cystophora scalaris</i>	1
<b>Porifera</b>	13
<b>Rhodophyta</b>	1
<b>Unidentifiable</b>	8
<b>Grand Total</b>	<b>239</b>





**Figure 4-2: Protected stony coral *Solenosmilia variabilis* (top left), several colonies of protected primnoid sea fan coral *Metafannyella* sp. (top right), protected bamboo coral *Keratoisis* sp. (bottom left), and protected stony cup coral *Desmophyllum dianthus* elongated form (bottom right). [Observer, FNZ]**

The hydroid *Cryptolaria* (Hydrozoa; Zygophylacidae) was commonly photographed (n = 15 specimens) and can be easily confused with protected coral taxa (Figure 4-3). Observers identified these onboard as either coral unspecified (COU), black coral (COB), gorgonian coral (GOC), unidentified (UNI) or sponge (ONG).



**Figure 4-3: Hydroid species *Cryptolaria* can be easily confused with protected coral taxa such as black coral and gorgonian octocoral. [Observer, FNZ]**

Data summaries for the images for this reporting period are provided below and include a specimen count by Observer Management Areas (Table 4-4, also see Figure 4-1) and a count of tows by fishing method and target fishery (Table 4-5).

**Table 4-4: Summary by Fisheries Management Area (FMA) of protected coral specimens identified in images.**

Area	Description	Count of Specimens
<b>SOU</b>	Southland (FMA5)	73
<b>SOE</b>	South East (FMA4)	44
<b>SEC</b>	South-East Coast (FMA3)	44
<b>SUB</b>	Sub-Antarctic (FMA6)	37
<b>AKW</b>	Auckland West (FMA9)	16
<b>CHA</b>	Challenger (FMA7)	8
<b>CEE</b>	Central East (FMA2)	4
<b>AKE</b>	Auckland East (FMA1)	2
<b>SOI</b>	Southern Offshore Islands (SQU6T)	2
	No location data	9

**Table 4-5: Summary of the number of fishing events by method and target fishery.**

Target Fishery (common name)	MPI code	Fishing Method	Count of Tows
<b>Orange Roughy</b>	ORH	Trawl	21
<b>Alfonsino &amp; Long-finned Beryx</b>	BYX	Trawl	1
<b>Smooth Oreo</b>	SSO	Trawl	16
<b>Hoki</b>	HOK	Trawl	10
<b>Ling</b>	LIN	Trawl	6
<b>Ling</b>	LIN	Bottom Longline	2
<b>Arrow Squid</b>	SQU	Trawl	34
<b>White Warehou</b>	WWA	Trawl	1
<b>Barracouta</b>	BAR	Trawl	1
<b>Bluenose</b>	BNS	Bottom Longline	1
<b>Scampi</b>	SCI	Trawl	3

#### 4.1.4 Loading image data into *COD*

The species identification codes for the digital images for the last reporting year of this 3-year project (DOC16307-INT201503) have been loaded into *COD* table, *t\_coral\_images*. For the previous two years of data, the species codes from identified images from DOC16307-INT2016307, will be loaded into *COD* next year, under the next 3-year project DOC20303-INT201904.

The loading of species codes from digital image identification into *COD* was not discussed or budgeted for in the first 3-year project, rather they were to be stored in an image database. Under DOC16307-INT201503, however, all these species identifications will be loaded into a documented table in *COD*. As this is not an agreed task under the new project, this may impact on the target number of identifications for the first year of DOC20303-INT201904.

## 4.2 Objective 2: Sub-samples of protected coral specimens for genetic analysis

Tissue sub-samples taken from Observer collected corals during the sample sorting process is on-going. There are now 50 samples representing various protected coral groups held in storage in readiness for future genetic studies (Table 4-6).

**Table 4-6: Summary of the number of tissue subsamples of live-collected protected corals by group accumulated in the NIWA Invertebrate Collection from March 2017-June 2019.**

Protected Coral Group	No. of tissue subsamples
<b>Alcyonacea (gorgonian octocorals)</b>	12
<b>Antipatharia (black corals)</b>	19
<b>Scleractinia (stony corals)</b>	14
<b>Stylasteridae (hydrocorals)</b>	5

## 5 Summary and conclusions

The objective to identify the protected coral specimen samples and or digital images was met, with the process being reasonably efficient as the identification methods have been on-going and standardised over several years. The required database updates have been made. The difficulty in matching some digital images with trip data in the *COD* database is an ongoing issue but will hopefully improve over time with the recent efforts by FNZ to address methods of invertebrate image data collection at-sea.

The identified samples were collected opportunistically from commercial fishing activity when Observers were uncertain of their identification of the coral specimen, the specimen was caught outside the given depth range or distribution, or when the specimen was considered rare or unusual. Such samples are highly valuable and are regularly being used to highlight interactions between fishing and protected corals.

A total of 37 specimens and 239 specimens by digital images were identified to the finest taxon level possible. Non protected coral or other invertebrates made up a high proportion of the identified images (around 25%). The samples retained for future genetic studies now number 50.

The number of Observer specimens returned for identification from within the EEZ were low for this period, however, we have met and often exceeded the numbers required by the overall 3-year Contract by identifying SPRFMO, historical, and or research trawl samples. Often the contracted numbers have been exceeded thanks to efforts from visiting international experts. For this reporting period we were instructed not to identify SPRFMO samples.

The taxonomic highlight for this reporting period was the identification from a digital image of a specimen of *Victorgorgia* octocoral, a species not often collected in the New Zealand region. Although there was no retained specimen of the photographed *Victorgorgia*, Observers have over time, collected a high number of the overall *Victorgorgia* samples held in the NIWA Invertebrate Collection (n=15).

## 6 Recommendations

- On-going training of Observers is recommended to ensure consistency of identifications at-sea and the collection of digital images. To support this recommendation the instructions to Observers for capturing images at-sea, including the labelling protocol, has progressed. Specimen labels are being redeveloped by FNZ. Draft changes include: a larger sample label with the addition of a 'photo number' field, these labels will be used for retained samples only; and the introduction of a photo label which will be printed on re-useable plastic card and include a scale bar, colour bar and aspect crosses, along with species code, sample number, trip and tow number fields.
- An analysis to compare the accuracy of identifications between observers and experts is recommended. This will help inform the ongoing training of observers.
- Substantial coral catches have been reported from bottom fisheries in the High Seas area, outside of CSP DOC's remit. We recommend FNZ provide support for the identification of the High Sea's bycatch coral samples that have been retained and continue to be retained for identification.

## 7 Acknowledgements

Thanks are extended to the Observers for sample and digital image collection. We acknowledge CSP Group for funding this Project INT2015-03 (NIWA Project Code DOC16307), particularly Ian Angus, Katie Clemens-Seely, and Shannon Weaver. We thank the NIWA experts for their identifications: Di Tracey, Rob Stewart, Peter Marriott, and Kate Neill. Our appreciation is extended to the international coral expert's Drs Marzia Bo, Stephen Cairns, Dennis Opresko, Phil Alderslade, Kirrily Moore, who all provided advice and identifications of the corals, many of which were at no cost to the project. A special thanks to Dean Stotter and Mark Fenwick (NIWA) who process all Observer returned samples under the FNZ DAT2016-01E project, and to David Fisher and Aiden Liu (NIWA) as data managers for their interrogation of the *COD* database and for carrying out the data loading. Finally, we extend our thanks to Owen Anderson (NIWA) for his thorough and timely review of this report.

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## Appendix A Summary of the identification of physical specimens identified for the reporting period 1 July 2018–30 June 2019

(a) Identification of physical specimens collected during the 1 July 2018-30 June 2019 reporting period by observers on commercial fishing vessels

TRIP	Tow No.	NIWA Cat. No.	OSD No.	Initial OBS ID	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	Sample Count	Date	Latitude1	Longitude1	Depth 1	Depth 2	Observer
5419	13	129013	4138	COB	Cnidaria	Anthozoa	Antipatharia	Myriopathidae			Bo, Marzia	04/02/2019	1	08/08/2018	-41.858333	170.563333	433	387	LGRA
5470	20	129027	4157	COB	Cnidaria	Anthozoa	Antipatharia	Leiopathidae			Bo, Marzia	04/02/2019	1	04/10/2018	-44.155	-174.52	750	853	Lucas Reed
5470	50	129017	4154	LSE	Cnidaria	Anthozoa	Antipatharia	Leiopathidae	<i>Leiopathes</i>	<i>cf. secunda</i>	Bo, Marzia	04/02/2019	1	22/10/2018	-44.508333	-175.071667	858	900	
5438	97	129022	4152	ISI	Cnidaria	Anthozoa	Alcyonacea	Isididae	<i>Keratosis</i>		Tracey, Di	03/07/2019	1	05/10/2018	-47.556667	177.87		951	Rick Guild
5581	50	129090	4256	HDR	Cnidaria	Hydrozoa	Anthoathecata	Stylasteridae	<i>Errina</i>	<i>bicolor</i>	Marriott, Peter	19/11/2019	1	02/03/2019	-48.80666667	166.785	166		
5425	33	131514	4271	COF	Cnidaria	Anthozoa	Scleractinia	Flabellidae	<i>Flabellum</i>	<i>knoxi</i>	Tracey, Di	17/10/2019	1	30/08/2018	-50.976667	167.351667	495	500	K.AND
5473	2	129020	4150	COF	Cnidaria	Anthozoa	Scleractinia	Flabellidae	<i>Flabellum</i>	<i>knoxi</i>	Tracey, Di	17/10/2019	1	03/10/2018	-37.623265	176.488628			O.DAL
5438	97	129023	4153	SIA	Cnidaria	Anthozoa	Scleractinia	Oculinidae	<i>Madrepora</i>	<i>oculata</i>	Tracey, Di	15/10/2019	1	05/10/2018	-47.556667	177.87		951	Rick Guild
5503	90	129059	4202	COF?ONG?	Cnidaria	Anthozoa	Scleractinia	Flabellidae	<i>Flabellum</i>	<i>knoxi</i>	Tracey, Di	15/10/2019	2	07/12/2018	-44.283333	-177.496667		515	
5544	6	129098	4267	DDI	Cnidaria	Anthozoa	Scleractinia	Caryophyllidae	<i>Desmophyllum</i>	<i>dianthus</i>	Tracey, Di	15/10/2019	2	02/01/2019	-42.998333	177.271667	335	352	D. BAR
5615	4	131605	4370	CAY	Cnidaria	Anthozoa	Scleractinia	Caryophyllidae	<i>Desmophyllum</i>	<i>dianthus</i>	Tracey, Di	18/11/2019	1	02/04/2019	-47.101667	169.455	126	285	
5615	4	131606	4369	GDU	Cnidaria	Anthozoa	Scleractinia	Caryophyllidae	<i>Goniocorella</i>	<i>dumosa</i>	Tracey, Di	18/11/2019	1	02/04/2019	-47.101667	169.455	126	285	

(b) Identification of physical specimens collected historically by observers on commercial fishing vessels

TRIP	Tow No.	NIWA Cat. No.	OSD No.	Initial OBS ID	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	Sample Count	Date	Latitude1	Longitude1	Depth 1	Depth 2	Observer
2832	30	70727			Cnidaria	Anthozoa	Alcyonacea	Anthothelidae	<i>Anthothela</i>		Mills, Sadie	13/02/2019	1	27/04/2009	-48.478333	171.093333	977	1037	
5220	26	125144	3765	LLP	Cnidaria	Anthozoa	Antipatharia			indet.	Bo, Marzia	04/02/2019	1	21/01/2018	-37.235	167.196667			
3142	56	65935	1088		Cnidaria	Anthozoa	Antipatharia	Antipathidae	<i>Stichopathes</i>	<i>sp. 2</i>	Bo, Marzia	04/02/2019	1	24/06/2010	-38.393333	-167.99	280	280	
4837	31	106591	3681	COB	Cnidaria	Anthozoa	Antipatharia	Cladopathidae	<i>Trissopathes</i>		Bo, Marzia	04/02/2019	1	29/01/2017	-51.59	161.381667	1062	1132	
5274	15	125196	3818		Cnidaria	Anthozoa	Antipatharia	Myriopathidae	<i>Antipathella</i>		Bo, Marzia	04/02/2019	1	04/03/2018	-46.765	165.91	226		
5117	16	106576	3665	CSB	Cnidaria	Anthozoa	Antipatharia	Myriopathidae	<i>Myriopathes</i>		Bo, Marzia	04/02/2019	1	02/09/2017	-40.668333	177.013333	228	564	
5058	37	106564	3606	LIL	Cnidaria	Anthozoa	Antipatharia	Schizopathidae			Bo, Marzia	04/02/2019	2	16/07/2017	-35.716667	176.356667	743	1224	N. BRO
5341	42	131496	4111	COB	Cnidaria	Anthozoa	Antipatharia	Schizopathidae			Bo, Marzia	04/02/2019	1	26/05/2018	-42.735	-178.841667	943		
2744	75	66321	705		Cnidaria	Anthozoa	Antipatharia	Schizopathidae	<i>Bathypathes</i>		Bo, Marzia	04/02/2019	1	30/12/2008	-43.18	-173.838333	987	1297	
3883	55	88617	2665		Cnidaria	Anthozoa	Antipatharia	Schizopathidae	<i>Diplopathes</i>	<i>multipinnata</i>	Opresko, Dennis	2019	1	20/10/2013	-34.181667	162.661667	478	685	
4837	7	106590	3680	COB	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	<i>Parantipathes</i>		Bo, Marzia	04/02/2019	1	18/01/2017	-51.425	161.585	1223	1200	
5341	42	131495	4109	PTP	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	<i>Parantipathes</i>		Bo, Marzia	04/02/2019	1	26/05/2018	-42.735	-178.841667	943		
1731	16	85931			Cnidaria	Anthozoa	Antipatharia	Stylopathidae	<i>Triadopathes</i>		Bo, Marzia	04/02/2019	1	19/01/2003	-44.21166	-174.6	760	1085	
5341	42	131494	4107	LEI	Cnidaria	Anthozoa	Antipatharia	Stylopathidae	<i>Triadopathes</i>		Bo, Marzia	04/02/2019	1	26/05/2018	-42.735	-178.841667	943		Obs J. Sat and M. Ers
1355	2	81286			Cnidaria	Anthozoa	Scleractinia	Dendrophyllidae	<i>Enallopsammia</i>	<i>cf. pusilla</i>	Kitahara, Marcelo	05/11/2018	1	01/05/2000	-34.79999924	169.8333282	770		
1124	65	91269		COB	Cnidaria	Anthozoa	Zoantharia	Parazoanthidae	<i>Kulamanamana</i>	<i>haumea</i>	Sinniger, Frederic	14/02/2019	1	15/08/1998	-36.88466667	177.3671667	787		
3144	55	65948	1122	COB	Cnidaria	Anthozoa	Zoantharia	Parazoanthidae	<i>Kulamanamana</i>	<i>haumea</i>	Sinniger, Frederic	08/03/2019	1	29/06/2010	-35.62	165.223333	903	985	

(c) Identification of physical specimens collected during the 1 July 2018-30 June 2019 reporting period and historically by NIWA staff on fisheries research trawl surveys

Trip	Tow No.	NIWA Cat. No.	Lot No.	Initial OBS ID	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	Sample Count	Date	Latitude1	Longitude1	Depth 1	Depth 2	Observer
KAH1608	75	115822	97	PTU	Cnidaria	Anthozoa	Alcyonacea	Chrysogorgiidae	<i>Radicipes</i>		Neill, Kate	14/01/2019	1	29/09/2016	-43.0336667	175.725	499		
KAH1608	74	139200			Cnidaria	Anthozoa	Alcyonacea	Chrysogorgiidae	<i>Radicipes</i>		Neill, Kate	14/01/2019	2	29/09/2016	-43.0711667	175.9008333	455		
TAN1301	14	115601			Cnidaria	Anthozoa	Antipatharia	Schizopathidae	<i>Bathypathes</i>		Bo, Marzia	01/02/2019	1	05/01/2013	-42.815	175.0043333	963	966	
TAN0617	85	139320		COB	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	<i>Parantipathes</i>		Bo, Marzia	04/02/2019	1	18/12/2006	-46.750833	166.147	906	909	
TAN1610	18	139234	92	DDI	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	<i>Desmophyllum</i>	<i>dianthus</i>	Mills, Sadie	22/01/2019	2	17/09/2016	-51.749	170.5556667	449	461	
TAN0617	68	139324			Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	<i>Stephanocyathus</i>	<i>platypus</i>	Mills, Sadie	31/01/2019	1	15/12/2006	-46.683666	166.187166	851	843	
TAN9908	39	81274			Cnidaria	Anthozoa	Scleractinia	Dendrophylliidae	<i>Enallopsammia</i>	<i>cf. pusilla</i>	Kitahara, Marcelo	05/11/2018	1	10/07/1999	-42.77866745	179.9799957			
TAN1807	35	139226	124	COF	Cnidaria	Anthozoa	Scleractinia	Flabellidae	<i>Flabellum</i>	<i>messum</i>	Tracey, Di	31/01/2019	1	01/08/2018	-41.3612	170.1515	740	731	



## Appendix B Summary of physical specimen data loaded into COD.

(a) Physical specimens collected during the 1 July 2018-30 June 2019 reporting period

trip_number	station_number	target_species	fishing_method	event_start_date	start_obs_fma	start_seabed_depth	trunc_start_latitude	trunc_start_longitude	event_end_date	end_obs_fma	end_seabed_depth	trunc_end_latitude	trunc_end_longitude	expert_species	expert_scientific	phylum	class	order	family	genus	species	determiner	determined_date	count
5419	13	HOK	TWL	8/08/2018	CHA	433	-41.8	170.5	9/08/2018	CHA	387	-41.8	170.5	COB	Myriopathidae	Cnidaria	Anthozoa	Antipatharia	Myriopathidae		Bo, Marzia		4/02/2019	1
5425	33	SCI	TWL	30/08/2018	SUB	495	-50.9	167.4	30/08/2018	SUB	500			COF	<i>Flabellum knoxi</i>	Cnidaria	Anthozoa	Scleractinia	Flabellidae	<i>Flabellum knoxi</i>	Tracey, Di		17/10/2019	1
5438	97	SSO	TWL	05/10/2018	SUB		-47.5	177.8	5/10/2018	SUB	977	-47.5	177.8	BOO	<i>Keratoisis</i>	Cnidaria	Anthozoa	Alcyonacea	Isidiidae	<i>Keratoisis</i>	Tracey, Di		03/07/2019	1
5438	97	SSO	TWL	05/10/2018	SUB		-47.5	177.8	5/10/2018	SUB	977	-47.5	177.8	MOC	<i>Madrepora oculata</i>	Cnidaria	Anthozoa	Scleractinia	Oculinidae	<i>Madrepora oculata</i>	Tracey, Di		15/10/2019	1
5470	20	ORH	TWL	4/10/2018	SOE	1230	-44.1	185.4	4/10/2018	SOE	1241	-44.1	185.4	COB	Leiopathidae	Cnidaria	Anthozoa	Antipatharia	Leiopathidae		Bo, Marzia		4/02/2019	1
5470	50	ORH	TWL	22/10/2018	SOE	1148	-44.5	184.9	22/10/2018	SOE		-44.5	184.9	LSE	<i>Leiopathes cf. secunda</i>	Cnidaria	Anthozoa	Antipatharia	Leiopathidae	<i>Leiopathes cf. secunda</i>	Bo, Marzia		4/02/2019	1
5473	2	SNA	BLL	03/10/2018	AKE		-37.6	176.5	3/10/2018	AKE				COF	<i>Flabellum knoxi</i>	Cnidaria	Anthozoa	Scleractinia	Flabellidae	<i>Flabellum knoxi</i>	Tracey, Di		17/10/2019	1
5503	90	HOK	TWL	07/12/2018	SOE	502	-44.2	182.5	7/12/2018	SOE	512	-44.2	182.2	COF	<i>Flabellum knoxi</i>	Cnidaria	Anthozoa	Scleractinia	Flabellidae	<i>Flabellum knoxi</i>	Tracey, Di		15/10/2019	2
5544	6	SCI	TWL	02/01/2019	SOE	335	-42.9	177.3	2/01/2019	SOE	352			DDI	<i>Desmophyllum dianthus</i>	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	<i>Desmophyllum dianthus</i>	Tracey, Di		15/10/2019	2
5581	50	SQU	TWL	02/03/2019	SOU	166	-48.8	166.8	2/03/2019	SOU				ERR	<i>Errina bicolor</i>	Cnidaria	Hydrozoa	Anthoathecata	Stylasteridae	<i>Errina bicolor</i>	Marriott, Peter		19/11/2019	1
5615	4	SQU	TWL	02/04/2019	SEC	126	-47.1	169.4	2/04/2019	SEC	285	-46.5	170.2	DDI	<i>Desmophyllum dianthus</i>	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	<i>Desmophyllum dianthus</i>	Tracey, Di		18/11/2019	1
5615	4	SQU	TWL	02/04/2019	SEC	126	-47.1	169.4	2/04/2019	SEC	285	-46.5	170.2	GDU	<i>Goniocorella dumosa</i>	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	<i>Goniocorella dumosa</i>	Tracey, Di		18/11/2019	1

(b) Physical specimens collected historically

trip_number	station_number	target_species	fishing_method	event_start_date	start_obs_fma	start_seabed_depth	trunc_start_latitude	trunc_start_longitude	event_end_date	end_obs_fma	end_seabed_depth	trunc_end_latitude	trunc_end_longitude	expert_species	expert_scientific	phylum	class	order	family	genus	species	determiner	determined_date	count
1124	65	ORH	TWL	13/08/1998	AKE	614	-37.1	177.2		AKE	648	-37.1	177.2	ZAH	<i>Kulamanamana haumea</i>	Cnidaria	Anthozoa	Zoantharia	Parazoanthidae	<i>Kulamanamana haumea</i>	Sinniger, Frederic		14/02/2019	1
1355	2	ORH	TWL	1/05/2000	AKW	770	-34.8	169.8		AKW	1100	-34.8	169.8	SIA	<i>Enallopsammia cf. pusilla</i>	Cnidaria	Anthozoa	Scleractinia	Dendrophyllidae	<i>Enallopsammia cf. pusilla</i>	Kitahara, Marcelo		5/11/2018	1
1731	16	ORH	TWL	19/01/2003	SOE	760	-44.2	185.4		SOE	1085	-44.2	185.3	TDP	<i>Triadopathes</i>	Cnidaria	Anthozoa	Antipatharia	Stylopathidae	<i>Triadopathes</i>	Bo, Marzia		4/02/2019	1
2744	75	ORH	TWL	30/12/2008	SOE	1338	-43.1	186.1	30/12/2008	SOE	1270	-43.1	186.1	BTP	<i>Bathypathes</i>	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	<i>Bathypathes</i>	Bo, Marzia		4/02/2019	1
2832	30	SSO	TWL	27/04/2009	SUB	1000	-48.4	171	27/04/2009	SUB	994	-48.4	171	SOC	<i>Anthothela</i>	Cnidaria	Anthozoa	Alcyonacea	Anthothelidae	<i>Anthothela</i>	Mills, Sadie		13/02/2019	1
3142	56	ORH	TWL	24/06/2010	LOUR		-38.3	192	24/06/2010	LOUR		-38.4	191.9	STI	<i>Stichopathes sp. 2</i>	Cnidaria	Anthozoa	Antipatharia	Antipathidae	<i>Stichopathes</i>	Bo, Marzia		4/02/2019	1
3144	55	ORH	TWL	29/06/2010	HOWE	963	-35.6	165.2	29/06/2010	HOWE	992	-35.6	165.2	ZAH	<i>Kulamanamana haumea</i>	Cnidaria	Anthozoa	Zoantharia	Parazoanthidae	<i>Kulamanamana haumea</i>	Sinniger, Frederic		8/03/2019	1
3883	55	BYS	TWL	20/10/2013	HOWE	710	-34.1	162.6	20/10/2013	HOWE	709	-34.1	162.6	COB	<i>Diplopathes multipinnata</i>	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	<i>Diplopathes multipinnata</i>	Opresko, Dennis		2019	1
4837	31	PTO	BLL	29/01/2017	SUB	1062	-51.5	161.3	30/01/2017	SUB	1132	-51.6	161.2	TPT	<i>Trissopathes</i>	Cnidaria	Anthozoa	Antipatharia	Cladopathidae	<i>Trissopathes</i>	Bo, Marzia		4/02/2019	1
4837	7	PTO	BLL	18/01/2017	SUB	1223	-51.4	161.5	19/01/2017	SUB	1200	-51.5	161.4	PTP	<i>Parantipathes</i>	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	<i>Parantipathes</i>	Bo, Marzia		4/02/2019	1
5058	37	ORH	TWL	16/07/2017	AKE	772	-35.7	176.3	16/07/2017	AKE	1454	-35.6	176.3	COB		Cnidaria	Anthozoa	Antipatharia	Schizopathidae		Bo, Marzia		4/02/2019	2
5117	16	BYX	TWL	2/09/2017	CEE	322	-40.6	177	2/09/2017	CEE	570	-40.6	176.9	COB	<i>Myriopathes</i>	Cnidaria	Anthozoa	Antipatharia	Myriopathidae	<i>Myriopathes</i>	Bo, Marzia		4/02/2019	1
5220	26	ORH	TWL	21/01/2018	CET	985	-37.2	167.1	21/01/2018	CET	995	-37.2	167.2	COB		Cnidaria	Anthozoa	Antipatharia			Bo, Marzia		4/02/2019	1
5274	15	SQU	TWL	4/03/2018	SOU	220	-46.7	165.9	4/03/2018	SOU	219	-46.7	165.9	AHL	<i>Antipathella</i>	Cnidaria	Anthozoa	Antipatharia	Myriopathidae	<i>Antipathella</i>	Bo, Marzia		4/02/2019	1
5341	42	ORH	TWL	26/05/2018	SOE		-42.7	181.1	26/05/2018	SOE		-42.7	181.1	COB		Cnidaria	Anthozoa	Antipatharia	Schizopathidae		Bo, Marzia		4/02/2019	1
5341	42	ORH	TWL	26/05/2018	SOE		-42.7	181.1	26/05/2018	SOE		-42.7	181.1	PTP		Cnidaria	Anthozoa	Antipatharia	Schizopathidae		Bo, Marzia		4/02/2019	1
5341	42	ORH	TWL	26/05/2018	SOE		-42.7	181.1	26/05/2018	SOE		-42.7	181.1	TDP		Cnidaria	Anthozoa	Antipatharia	Stylopathidae		Bo, Marzia		4/02/2019	1

## Appendix C Summary of digital images processed for the reporting period 1 July 2018 – 30 June 2019

Reporting Year (Period)	Images received	trip_number	station_number	Filename	trip_key	event_key	fishing_method	target_species	event_start_datetime	event_end_datetime	start_obs_fma	end_obs_fma	trunc_start_latitude	trunc_start_longitude	trunc_end_latitude	trunc_end_longitude	start_seabed_depth	end_seabed_depth	Photographer	Rating	Date/time original	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	NIWA Cat. No.	OSD No.	Initial OBS ID	Specimen count	Expert ID	Specimen comments	specimen_weight_kg	upd_comment		
3 (Jul 2018 - Dec 2018)	Apr-19	5346	22	TRIP5346_022_Stephanocyathus-platypus_a	6224	6224022	TWL	ORH	2018-06-07 14:54:00	2018-06-07 18:11:00	CHA	CHA	-39.9	168.1	-40	168.1	860	909	Lisa Grant	3	2018-06-07 22:00:31	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Stephanocyathus	platypus	Di Tracey	3/07/2019				1	STP		update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5346	22	TRIP5346_022_Stephanocyathus-platypus_b	6224	6224022	TWL	ORH	2018-06-07 14:54:00	2018-06-07 18:11:00	CHA	CHA	-39.9	168.1	-40	168.1	860	909	Lisa Grant	3	2018-06-07 22:00:39	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Stephanocyathus	platypus	Di Tracey	3/07/2019				0	STP		update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5346	119	TRIP5346_119_Acanella	6224	6224119	TWL	ORH	2018-07-09 02:25:00	2018-07-09 08:22:00	AKW	AKW	-36	173.1	-35.9	172.8	886	903	Lisa Grant	3	2018-07-09 11:58:04	Cnidaria	Anthozoa	Alcyonacea	Isididae	Acanella		Di Tracey	3/07/2019				1	ACN		update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5346	119	TRIP5346_119_Alcyonacea	6224	6224119	TWL	ORH	2018-07-09 02:25:00	2018-07-09 08:22:00	AKW	AKW	-36	173.1	-35.9	172.8	886	903	Lisa Grant	3	2018-07-09 11:58:13	Cnidaria	Anthozoa	Alcyonacea				Di Tracey	3/07/2019				1	SOC	gorgonian octocoral		update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5346	119	TRIP5346_119_Antipatharia_a	6224	6224119	TWL	ORH	2018-07-09 02:25:00	2018-07-09 08:22:00	AKW	AKW	-36	173.1	-35.9	172.8	886	903	Lisa Grant	3	2018-07-09 11:58:36	Cnidaria	Anthozoa	Antipatharia				Rob Stewart	14/11/2019				1	COB	Difficult to tell - broken stem and branches		update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5346	119	TRIP5346_119_Antipatharia_b	6224	6224119	TWL	ORH	2018-07-09 02:25:00	2018-07-09 08:22:00	AKW	AKW	-36	173.1	-35.9	172.8	886	903	Lisa Grant	3	2018-07-09 11:58:55	Cnidaria	Anthozoa	Antipatharia				Rob Stewart	14/11/2019				0	COB	Difficult to tell - broken stem and branches		update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5346	121	TRIP5346_121_Isididae	6224	6224121	TWL	ORH	2018-07-10 16:56:00	2018-07-10 19:46:00	AKW	AKW	-36	173	-36.1	173.1	884	851	Lisa Grant	4	2018-07-10 20:22:01	Cnidaria	Anthozoa	Alcyonacea	Isididae			Di Tracey	3/07/2019				1	ISI	gorgonian whip coral		update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5349	--	TRIP5349_Keratoisis	null	null			null	null			null	null	null	null	null	null	Rick Guild	3	2018-07-06 17:14:59	Cnidaria	Anthozoa	Alcyonacea	Isididae	Keratoisis		Di Tracey	3/07/2019				BOO	1	BOO		update observer: original datetime does not make sense, unable to determine station number		
3 (Jul 2018 - Dec 2018)	Apr-19	5394	91	TRIP5394_091_Cladopathes	null	null			null	null			null	null	null	null	null	null	John Yanko	3	2018-06-24 13:43:22	Cnidaria	Anthozoa	Antipatharia	Cladopathidae	Cladopathes		Rob Stewart	14/11/2019				COB	1	COB		0.86	update observer: stn number does not exist and original datetime does not make sense	
3 (Jul 2018 - Dec 2018)	Apr-19	5394	null	TRIP5394_Dendrobathypathes	null	null			null	null			null	null	null	null	null	null	John Yanko	3	2018-07-06 17:13:24	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Dendrobathypathes		Rob Stewart	14/11/2019				COB	1	DEN		0.38	update observer: original datetime does not make sense, unable to determine station number	
3 (Jul 2018 - Dec 2018)	Apr-19	5404	43	TRIP5404_043_Stephanocyathus-platypus	7334	7334043	TWL	ORH	2018-08-09 13:35:00	2018-08-09 17:58:00	SOE	SOE	-42.8	179.3	-42.8	179.6	1073	1035	David Peers	3	2018-08-09 19:07:40	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Stephanocyathus	platypus	Di Tracey	3/07/2019				1	STP		update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5404	50	TRIP5404_050_Solenosmilia-variabilis	7334	7334050	TWL	ORH	2018-08-11 01:18:00	2018-08-11 01:54:00	SOE	SOE	-42.6	180	-42.6	180.1	(null)	1362	David Peers	3	2018-08-11 02:39:15	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis	Di Tracey	3/07/2019				1	SVA		update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5419	13	TRIP5419_013_Myriopathidae_NIWA129013_a	5673	5673013	TWL	HOK	2018-08-08 19:08:00	2018-08-09 04:31:00	CHA	CHA	-41.8	170.5	-41.8	170.5	433	387	Lisa Grant	3	2018-08-09 06:13:07	Cnidaria	Anthozoa	Antipatharia	Myriopathidae			Marzia Bo	4/02/2019	NIWA 129013	4138	COB	1	COB	Probably Antipathella, Rob Stewart 14/11/2019		update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5419	13	TRIP5419_013_Myriopathidae_NIWA129013_b	5673	5673013	TWL	HOK	2018-08-08 19:08:00	2018-08-09 04:31:00	CHA	CHA	-41.8	170.5	-41.8	170.5	433	387	Lisa Grant	3	2018-08-09 06:13:12	Cnidaria	Anthozoa	Antipatharia	Myriopathidae			Marzia Bo	4/02/2019	NIWA 129013	4138	COB	1	COB	Probably Antipathella, Rob Stewart 14/11/2019		update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5426	33	TRIP5426_033_Stephanocyathus-platypus	2339	2339033	TWL	HOK	2018-08-26 19:40:00	2018-08-27 06:20:00	CHA	CHA	-41.6	170.3	-41	170.4	685	644	Ben Dillon	2	2018-08-27 07:54:56	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Stephanocyathus	platypus	Di Tracey	3/07/2019				STP	1	STP		update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_Madrepora-oculata	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	4	2018-10-05 06:30:46	Cnidaria	Anthozoa	Scleractinia	Oculinidae	Madrepora	oculata	Di Tracey	3/07/2019				1	MOC		update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_Keratoisis_NIW A129022_c	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	4	2018-10-05 06:31:06	Cnidaria	Anthozoa	Alcyonacea	Isididae	Keratoisis		Di Tracey	3/07/2019	NIWA 129022	4152	ISI	0	BOO		update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_Keratoisis_NIW A129022_a	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	2	2018-10-05 06:46:17	Cnidaria	Anthozoa	Alcyonacea	Isididae	Keratoisis		Di Tracey	3/07/2019	NIWA 129022	4152	ISI	1	BOO		update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_Keratoisis_NIW A129022_b	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	2	2018-10-05 06:46:22	Cnidaria	Anthozoa	Alcyonacea	Isididae	Keratoisis		Di Tracey	3/07/2019	NIWA 129022	4152	ISI	0	BOO		update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_Paragorgia-arborea_a	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	2	2018-10-05 06:46:56	Cnidaria	Anthozoa	Alcyonacea	Paragorgiidae	Paragorgia	arborea	Di Tracey	3/07/2019				PAB	3	PAB		update with stn provided: update observer		

Reporting Year (Period)	Images received	trip_number	station_number	Filename	trip_key	event_key	fishing_method	target_species	event_start_datetime	event_end_datetime	start_obs_fma	end_obs_fma	trunc_start_latitude	trunc_start_longitude	trunc_end_latitude	trunc_end_longitude	start_seabed_depth	end_seabed_depth	Photographer	Rating	Date/time original	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	NIWA Cat. No.	OSD No.	Initial OBS ID	Specimen count	Expert ID	Specimen comments	specimen_weight_kg	upd_comment		
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_Paragorgia-arborea_b	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	2	2018-10-05 06:47:05	Cnidaria	Anthozoa	Alcyonacea	Paragorgiidae	Paragorgia	arborea	Di Tracey	3/07/2 019		PAB	0	PAB			update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_Madrepore-oculata_NIWA129023_b	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	3	2018-10-05 06:51:34	Cnidaria	Anthozoa	Scleractinia	Oculinidae	Madrepora	oculata	Di Tracey	3/07/2 019	NIWA 129023	4153	SIA	0	MOC			update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_Madrepore-oculata_NIWA129023_a	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	3	2018-10-05 06:52:14	Cnidaria	Anthozoa	Scleractinia	Oculinidae	Madrepora	oculata	Di Tracey	3/07/2 019	NIWA 129023	4153	SIA	1	MOC			update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_Madrepore-oculata_NIWA129023_c	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	3	2018-10-05 06:52:21	Cnidaria	Anthozoa	Scleractinia	Oculinidae	Madrepora	oculata	Di Tracey	3/07/2 019	NIWA 129023	4153	SIA	0	MOC			update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_BOO_CRI_MOC_NIWA129021-129023	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	3	2018-10-05 07:46:11	Cnidaria	Anthozoa	Alcyonacea	Isididae	Keratoisis		Di Tracey	3/07/2 019	NIWA 129022	4152	ISI	0	BOO	Bagged specimens of Crinoidea, Isididae (Keratoisis) and Scleractinia (Madrepore oculata). 47° 33.1 S, 177° 51.7 E. 05/10/2018; 0547 HRS			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_BOO_CRI_MOC_NIWA129021-129023	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	3	2018-10-05 07:46:11	Cnidaria	Anthozoa	Scleractinia	Oculinidae	Madrepore	oculata	Di Tracey	3/07/2 019	NIWA 129023	4153	SIA	0	MOC	Bagged specimens of Crinoidea, Isididae (Keratoisis) and Scleractinia (Madrepore oculata). 47° 33.1 S, 177° 51.7 E. 05/10/2018; 0547 HRS			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5438	97	TRIP5438_097_BOO_CRI_MOC_NIWA129021-129023	9095	9095097	TWL	SSO	2018-10-05 05:38:00	2018-10-05 05:47:00	SUB	SUB	-47.5	177.8	-47.5	177.8	(null)	977	Rick Guild	3	2018-10-05 07:46:11	Echinodermata	Crinoidea					Di Tracey	3/07/2 019	NIWA 129021	4151	UMB	3	CRI	Bagged specimens of Crinoidea, Isididae (Keratoisis) and Scleractinia (Madrepore oculata). 47° 33.1 S, 177° 51.7 E. 05/10/2018; 0547 HRS			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5438	100	TRIP5438_100_Primnoa-notialis_a	9095	9095100	TWL	SSO	2018-10-05 12:17:00	2018-10-05 12:31:00	SUB	SUB	-47.3	178.1	-47.3	178.1	(null)	935	Rick Guild	2	2018-10-05 13:33:23	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Primnoa	notialis	Di Tracey	3/07/2 019		PMN	1	PMN			update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5438	100	TRIP5438_100_Primnoa-notialis_b	9095	9095100	TWL	SSO	2018-10-05 12:17:00	2018-10-05 12:31:00	SUB	SUB	-47.3	178.1	-47.3	178.1	(null)	935	Rick Guild	3	2018-10-05 13:34:03	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Primnoa	notialis	Di Tracey	3/07/2 019		PMN	0	PMN			update with stn provided: update observer			
3 (Jul 2018 - Dec 2018)	Apr-19	5440	30	TRIP5440_030_Desmophyllum-dianthus_a	1546	1546030	TWL	HOK	2018-09-08 07:38:00	2018-09-08 09:22:00	SEC	SEC	-43.3	173.8	-43.2	173.8	468	(null)	Tara McDonough	3	2018-09-08 19:36:43	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	3/07/2 019				1	DDI			update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5440	30	TRIP5440_030_Desmophyllum-dianthus_b	1546	1546030	TWL	HOK	2018-09-08 07:38:00	2018-09-08 09:22:00	SEC	SEC	-43.3	173.8	-43.2	173.8	468	(null)	Tara McDonough	3	2018-09-08 19:36:52	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	3/07/2 019				0	DDI			update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5440	30	TRIP5440_030_Desmophyllum-dianthus_c	1546	1546030	TWL	HOK	2018-09-08 07:38:00	2018-09-08 09:22:00	SEC	SEC	-43.3	173.8	-43.2	173.8	468	(null)	Tara McDonough	3	2018-09-08 19:37:18	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	3/07/2 019				0	DDI			update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5440	30	TRIP5440_030_Desmophyllum-dianthus_d	1546	1546030	TWL	HOK	2018-09-08 07:38:00	2018-09-08 09:22:00	SEC	SEC	-43.3	173.8	-43.2	173.8	468	(null)	Tara McDonough	3	2018-09-08 19:37:43	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	3/07/2 019				0	DDI			update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5440	47	TRIP5440_047_Solenosmilla-variabilis	1546	1546047	TWL	HOK	2018-09-14 11:53:00	2018-09-14 19:59:00	SOE	SOE	-43.7	177.2	-43.8	177.9	478	610	Tara McDonough	3	2018-09-14 23:31:42	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilla	variabilis	Di Tracey	3/07/2 019				1	SVA			update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5440	47	TRIP5440_047_Lepidotheca_a	1546	1546047	TWL	HOK	2018-09-14 11:53:00	2018-09-14 19:59:00	SOE	SOE	-43.7	177.2	-43.8	177.9	478	610	Tara McDonough	3	2018-09-14 23:34:32	Cnidaria	Hydrozoa	Anthoathecata	Stylasteridae	Lepidotheca		Di Tracey	3/07/2 019				1	LPT	Hydrocoral Lepidotheca growing on a fossil Desmophyllum dianthus			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5440	47	TRIP5440_047_Lepidotheca_b	1546	1546047	TWL	HOK	2018-09-14 11:53:00	2018-09-14 19:59:00	SOE	SOE	-43.7	177.2	-43.8	177.9	478	610	Tara McDonough	3	2018-09-14 23:34:45	Cnidaria	Hydrozoa	Anthoathecata	Stylasteridae	Lepidotheca		Di Tracey	3/07/2 019				0	LPT	Hydrocoral Lepidotheca growing on a fossil Desmophyllum dianthus			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5440	47	TRIP5440_047_Lepidotheca_c	1546	1546047	TWL	HOK	2018-09-14 11:53:00	2018-09-14 19:59:00	SOE	SOE	-43.7	177.2	-43.8	177.9	478	610	Tara McDonough	3	2018-09-14 23:35:13	Cnidaria	Hydrozoa	Anthoathecata	Stylasteridae	Lepidotheca		Di Tracey	3/07/2 019				0	LPT	Hydrocoral Lepidotheca growing on a fossil Desmophyllum dianthus			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5440	47	TRIP5440_047_Desmophyllum-dianthus_a	1546	1546047	TWL	HOK	2018-09-14 11:53:00	2018-09-14 19:59:00	SOE	SOE	-43.7	177.2	-43.8	177.9	478	610	Tara McDonough	3	2018-09-14 23:41:10	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	3/07/2 019				20	DDI			update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5440	47	TRIP5440_047_Desmophyllum-dianthus_b	1546	1546047	TWL	HOK	2018-09-14 11:53:00	2018-09-14 19:59:00	SOE	SOE	-43.7	177.2	-43.8	177.9	478	610	Tara McDonough	3	2018-09-14 23:41:39	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	3/07/2 019				0	DDI			update with stn provided: update observer		





Reporting Year (Period)	Images received	trip_number	station_number	Filename	trip_key	event_key	fishing_method	target_species	event_start_datetime	event_end_datetime	start_obs_fma	end_obs_fma	trunc_start_latitude	trunc_start_longitude	trunc_end_latitude	trunc_end_longitude	start_seabed_depth	end_seabed_depth	Photographer	Rating	Date/time original	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	NIWA Cat. No.	OSD No.	Initial OBS ID	Specimen count	Expert ID	Specimen comments	specimen_weight_kg	upd_comment	
3 (Jul 2018 - Dec 2018)	Apr-19	5530	50	TRIP5530_050_Antipathella_d	188	188050	TWL	BAR	2019-01-01 03:57:00	2019-01-01 09:20:00	SOE	SOE	-43.5	182.6	-43.9	182.7	233	260	Prem Kerai	4	2019-01-01 10:22:33	Cnidaria	Anthozoa	Antipatharia	Myriopathidae	Antipathella		Rob Stewart	14/11/2019		COB	0	AHL			update with stn provided: update observer		
3 (Jul 2018 - Dec 2018)	Apr-19	5536	7	TRIP5536_007_Solenosmilia-variabilis_a	4718	4718007	TWL	SSO	2018-12-21 17:42:00	2018-12-21 17:48:00	SOU	SOU	-47.3	165.7	-47.3	165.7	1456	(null)	Cathy Morrish	3	2018-12-22 10:00:04	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis	Di Tracey	3/07/2019				1	SVA			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5536	7	TRIP5536_007_Solenosmilia-variabilis_b	4718	4718007	TWL	SSO	2018-12-21 17:42:00	2018-12-21 17:48:00	SOU	SOU	-47.3	165.7	-47.3	165.7	1456	(null)	Cathy Morrish	3	2018-12-22 10:00:10	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis	Di Tracey	3/07/2019				0	SVA			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5536	7	TRIP5536_007_Solenosmilia-variabilis_c	4718	4718007	TWL	SSO	2018-12-21 17:42:00	2018-12-21 17:48:00	SOU	SOU	-47.3	165.7	-47.3	165.7	1456	(null)	Cathy Morrish	3	2018-12-22 10:01:11	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis	Di Tracey	3/07/2019				0	SVA			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5536	8	TRIP5536_008_Perissogorgia_a	4718	4718008	TWL	SSO	2018-12-21 21:15:00	2018-12-21 21:30:00	SOU	SOU	-47.3	165.8	-47.3	165.8	925	(null)	Cathy Morrish	3	2018-12-22 16:34:49	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Perissogorgia		Di Tracey	3/07/2019				1	PRI			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5536	8	TRIP5536_008_Perissogorgia_b	4718	4718008	TWL	SSO	2018-12-21 21:15:00	2018-12-21 21:30:00	SOU	SOU	-47.3	165.8	-47.3	165.8	925	(null)	Cathy Morrish	3	2018-12-22 16:35:49	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Perissogorgia		Di Tracey	3/07/2019				0	PRI			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5536	11	TRIP5536_011_Stylaster_a	4718	4718011	TWL	SQU	2018-12-23 06:32:00	2018-12-23 11:15:00	SOU	SOU	-48.6	167.8	-48.5	167.8	146	237	Cathy Morrish	3	2018-12-23 17:55:56	Cnidaria	Hydrozoa	Anthoathecata	Stylasteridae	Stylaster		Di Tracey	3/07/2019				1	STL		Stylaster ?	update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5536	11	TRIP5536_011_Stylaster_b	4718	4718011	TWL	SQU	2018-12-23 06:32:00	2018-12-23 11:15:00	SOU	SOU	-48.6	167.8	-48.5	167.8	146	237	Cathy Morrish	3	2018-12-23 17:57:19	Cnidaria	Hydrozoa	Anthoathecata	Stylasteridae	Stylaster		Di Tracey	3/07/2019				0	STL		Stylaster ?	update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5536	11	TRIP5536_011_Stylaster_c	4718	4718011	TWL	SQU	2018-12-23 06:32:00	2018-12-23 11:15:00	SOU	SOU	-48.6	167.8	-48.5	167.8	146	237	Cathy Morrish	3	2018-12-23 17:57:58	Cnidaria	Hydrozoa	Anthoathecata	Stylasteridae	Stylaster		Di Tracey	3/07/2019				0	STL		Stylaster ?	update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5536	49	TRIP5536_049_Paragorgia-arborea_a	4718	4718049	TWL	SSO	2019-01-02 00:20:00	2019-01-02 00:32:00	SUB	SUB	-48.3	174	-48.3	174	745	(null)	Cathy Morrish	3	2019-01-02 09:20:30	Cnidaria	Anthozoa	Alcyonacea	Paragorgiidae	Paragorgia	arborea	Di Tracey	3/07/2019				1	PAB			update with stn provided: update observer	
3 (Jul 2018 - Dec 2018)	Apr-19	5536	49	TRIP5536_049_Paragorgia-arborea_b	4718	4718049	TWL	SSO	2019-01-02 00:20:00	2019-01-02 00:32:00	SUB	SUB	-48.3	174	-48.3	174	745	(null)	Cathy Morrish	3	2019-01-02 09:22:12	Cnidaria	Anthozoa	Alcyonacea	Paragorgiidae	Paragorgia	arborea	Di Tracey	3/07/2019				0	PAB			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5447	14	TRIP5447_014_Keratosis_a	4953	4953014	TWL	SSO	2018-09-21 07:15:00	2018-09-21 07:31:00	SEC	SEC	-45.2	171.7	-45.2	171.7	829	926	Mike Erskine	3	2018-09-21 13:02:03	Cnidaria	Anthozoa	Alcyonacea	Isididae	Keratosis		Di Tracey	18/11/2019			COU	1	BOO			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5447	14	TRIP5447_014_Keratosis_b	4953	4953014	TWL	SSO	2018-09-21 07:15:00	2018-09-21 07:31:00	SEC	SEC	-45.2	171.7	-45.2	171.7	829	926	Mike Erskine	3	2018-09-21 13:02:16	Cnidaria	Anthozoa	Alcyonacea	Isididae	Keratosis		Di Tracey	18/11/2019			COU	0	BOO			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5447	21	TRIP5447_021_Enallopsammia-rostrata	4953	4953021	TWL	SSO	2018-09-23 07:44:00	2018-09-23 09:57:00	SEC	SEC	-45.2	171.7	-45.3	171.7	829	977	Mike Erskine	3	2018-09-23 12:45:13	Cnidaria	Anthozoa	Scleractinia	Dendrophylliidae	Enallopsammia	rostrata	Di Tracey	18/11/2019			COU	1	ERO		Long dead	update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5447	26	TRIP5447_026_Goniocorella-dumosa	4953	4953026	TWL	BYX	2018-09-25 00:03:00	2018-09-25 00:33:00	SEC	SEC	-43.1	173.6	-43.1	173.6	349	822	Mike Erskine	3	2018-09-25 09:57:58	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Goniocorella	dumosa	Di Tracey	18/11/2019			COU	1	GDU			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5479	24	TRIP5479_024_Desmophyllum-dianthus	4362	4362024	TWL	SCI	2018-11-05 15:17:00	2018-11-05 22:53:00	SOE	SOE	-43.3	176.1	-43.1	176.4	362	346	Shane Hart	2	2018-11-06 01:24:45	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	18/11/2019			SIA	3	DDI			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5479	40	TRIP5479_040_Goniocorella-dumosa	4362	4362040	TWL	SCI	2018-11-13 03:29:00	2018-11-13 11:45:00	SOE	SOE	-43.1	176.4	-43.3	176.1	351	341	Shane Hart	3	2018-11-13 14:05:49	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Goniocorella	dumosa	Di Tracey	18/11/2019			SIA	1	GDU			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5479	44	TRIP5479_044_Goniocorella-dumosa_Desmo-phylum-dianthus	4362	4362044	TWL	SCI	2018-11-14 12:37:00	2018-11-14 18:51:00	SOE	SOE	-43.1	176.4	-43.3	176.1	354	353	Shane Hart	2	2018-11-14 21:07:58	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Goniocorella	dumosa	Di Tracey	18/11/2019			SIA	1	GDU		Goniocorella dumosa attached to Desmophyllum dianthus	update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5479	44	TRIP5479_044_Goniocorella-dumosa_Desmo-phylum-dianthus	4362	4362044	TWL	SCI	2018-11-14 12:37:00	2018-11-14 18:51:00	SOE	SOE	-43.1	176.4	-43.3	176.1	354	353	Shane Hart	2	2018-11-14 21:07:58	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	18/11/2019			SIA	2	DDI		Goniocorella dumosa attached to Desmophyllum dianthus	update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5538	61	TRIP5538_061_Desmophyllum-dianthus_Porifera	3366	3366061	TWL	SQU	2019-01-29 03:38:00	2019-01-29 11:41:00	SOU	SOU	-48.6	167.7	-48.7	167.6	138	505	Scott Yeoman	3	2019-01-29 14:00:42	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	18/11/2019			DDI	2	DDI		Desmophyllum dianthus attached to sponge	update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5538	61	TRIP5538_061_Desmophyllum-dianthus_Porifera	3366	3366061	TWL	SQU	2019-01-29 03:38:00	2019-01-29 11:41:00	SOU	SOU	-48.6	167.7	-48.7	167.6	138	505	Scott Yeoman	3	2019-01-29 14:00:42	Porifera						Di Tracey	18/11/2019			DDI	1	ONG		Desmophyllum dianthus attached to sponge	update with stn provided: update observer	



Reporting Year (Period)	Images received	trip_number	station_number	Filename	trip_key	event_key	fishing_method	target_species	event_start_datetime	event_end_datetime	start_obs_fma	end_obs_fma	trunc_start_latitude	trunc_start_longitude	trunc_end_latitude	trunc_end_longitude	start_seabed_depth	end_seabed_depth	Photographer	Rating	Date/time original	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	NIWA Cat. No.	OSD No.	Initial OBS ID	Specimen count	Expert ID	Specimen comments	specimen_weight_kg	upd_comment	
3 (Dec 2018 - Jun 2019)	Oct-19	5588	7	TRIP5588_007_Cryptolaria_Rhodophyta	5291	5291007	TWL	SQU	2019-02-28 04:47:00	2019-02-28 12:10:00	SOU	SOU	-48.8	166.7	-48.6	167.6	210	136	Shane Hart	3	2019-02-28 13:42:33	Rhodophyta					Diana Macpherson	29/10/2019			GOC	1	RHO			update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5588	10	TRIP5588_010_Cryptolaria	5291	5291010	TWL	SQU	2019-03-01 12:50:00	2019-03-01 19:20:00	SOU	SOU	-48.7	167.4	-48.7	167.4	138	205	Shane Hart	4	2019-03-01 20:21:40	Cnidaria	Hydrozoa	Leptothecata	Zygophylacidae	Cryptolaria	Diana Macpherson	29/10/2019			GOC	6	HDF	Unable to get accurate specimen count, more than 6.		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5588	30	TRIP5588_030_Stylasteridae	5291	5291030	TWL	SQU	2019-03-12 04:20:00	2019-03-12 13:24:00	SOU	SOU	-48.6	167.6	-48.6	167.7	138	315	Shane Hart	2	2019-03-12 18:57:45	Cnidaria	Hydrozoa	Anthoathecata	Stylasteridae		Peter Marriot	21/11/2019			CBR	1	COR			update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5588	37	TRIP5588_037_Bryozoa_NIWA129076	5291	5291037	TWL	SQU	2019-03-22 06:02:00	2019-03-22 10:53:00	SOU	SOU	-48.1	168.3	-48.4	168	170	169	Shane Hart	3	2019-03-23 04:46:35	Bryozoa					Diana Macpherson	29/10/2019	NIWA 129076	4252	UNI	1	COZ			update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5588	37	TRIP5588_037_Bryozoa_NIWA129077	5291	5291037	TWL	SQU	2019-03-22 06:02:00	2019-03-22 10:53:00	SOU	SOU	-48.1	168.3	-48.4	168	170	169	Shane Hart	3	2019-03-23 04:47:14	Bryozoa					Diana Macpherson	29/10/2019	NIWA 129077	4253	UNI	1	COZ			update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5613	60	TRIP5613_060_Aglaopheniidae_a	1939	1939060	TWL	SQU	2019-04-19 16:50:00	2019-04-19 23:30:00	SOI	SOI	-49.9	166.2	-50.2	166.6	189	159	John Hart	3	2019-04-20 01:35:31	Cnidaria	Hydrozoa	Leptothecata	Aglaopheniidae		Diana Macpherson	29/10/2019				1	HDF			update observer: update from original datetime > last event end time, ONG & COU in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5613	60	TRIP5613_060_Aglaopheniidae_b	1939	1939060	TWL	SQU	2019-04-19 16:50:00	2019-04-19 23:30:00	SOI	SOI	-49.9	166.2	-50.2	166.6	189	159	John Hart	3	2019-04-20 01:35:42	Cnidaria	Hydrozoa	Leptothecata	Aglaopheniidae		Diana Macpherson	29/10/2019				0	HDF			update observer: update from original datetime > last event end time, ONG & COU in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5613	60	TRIP5613_060_Leptothecata	1939	1939060	TWL	SQU	2019-04-19 16:50:00	2019-04-19 23:30:00	SOI	SOI	-49.9	166.2	-50.2	166.6	189	159	John Hart	3	2019-04-20 01:34:22	Cnidaria	Hydrozoa	Leptothecata			Diana Macpherson	29/10/2019				1	HDR			update observer: update from original datetime > last event end time, same species found in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5613	79	TRIP5613_079_Cryptolaria	1939	1939079	TWL	SQU	2019-04-25 06:47:00	2019-04-25 09:51:00	SOU	SOU	-48.8	166.7	-48.8	167	230	(null)	John Hart	3	2019-04-25 14:08:38	Cnidaria	Hydrozoa	Leptothecata	Zygophylacidae	Cryptolaria	Diana Macpherson	29/10/2019				1	HDF			update observer: update from original datetime > last event end time, PPH recorded in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5613	101	TRIP5613_101_Pennatulacea_a	1939	1939101	TWL	HOK	2019-05-02 12:36:00	2019-05-02 15:03:00	SEC	SEC	-43.4	174.3	-43.2	174.4	575	(null)	John Hart	3	2019-05-02 16:52:21	Cnidaria	Anthozoa	Pennatulacea			Diana Macpherson	29/10/2019				1	PTU			update observer: update from original datetime > last event end time, PPH recorded in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5613	101	TRIP5613_101_Pennatulacea_b	1939	1939101	TWL	HOK	2019-05-02 12:36:00	2019-05-02 15:03:00	SEC	SEC	-43.4	174.3	-43.2	174.4	575	(null)	John Hart	3	2019-05-02 16:52:30	Cnidaria	Anthozoa	Pennatulacea			Diana Macpherson	29/10/2019				0	PTU			update observer: update from original datetime > last event end time, PPH recorded in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5613	101	TRIP5613_101_Stephanocyathus-platyplus_NIWA131886_a	1939	1939101	TWL	HOK	2019-05-02 12:36:00	2019-05-02 15:03:00	SEC	SEC	-43.4	174.3	-43.2	174.4	575	(null)	John Hart	3	2019-05-02 16:51:10	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Stephanocyathus	platyplus	Di Tracey	18/11/2019	NIWA 131886	4746	COF	1	STP	Piece of cup coral most likely Stephanocyathus platyplus		update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5613	101	TRIP5613_101_Stephanocyathus-platyplus_NIWA131886_b	1939	1939101	TWL	HOK	2019-05-02 12:36:00	2019-05-02 15:03:00	SEC	SEC	-43.4	174.3	-43.2	174.4	575	(null)	John Hart	3	2019-05-02 16:51:18	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Stephanocyathus	platyplus	Di Tracey	18/11/2019	NIWA 131886	4746	COF	0	STP	Piece of cup coral most likely Stephanocyathus platyplus		update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5613	103	TRIP5613_103_Desmophyllum-dianthus_a	1939	1939103	TWL	HOK	2019-05-03 01:00:00	2019-05-03 05:15:00	SEC	SEC	-42.9	175.5	-42.9	175.1	515	(null)	John Hart	3	2019-05-03 07:24:04	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	18/11/2019			DDI	1	DDI			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5613	103	TRIP5613_103_Desmophyllum-dianthus_b	1939	1939103	TWL	HOK	2019-05-03 01:00:00	2019-05-03 05:15:00	SEC	SEC	-42.9	175.5	-42.9	175.1	515	(null)	John Hart	3	2019-05-03 07:24:43	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	18/11/2019			DDI	0	DDI			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5613	109	TRIP5613_109_Cystophora-scalaris_a	1939	1939109	TWL	SQU	2019-05-04 16:15:00	2019-05-04 18:25:00	SEC	SEC	-43.2	174.9	-43.1	175.1	200	(null)	John Hart	3	2019-05-04 23:11:21	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae	Cystophora	scalaris	Kate Neill	4/11/2019				1	PHA			update observer: update from original datetime > last event end time, SEO recorded in benthic: update with stn provided	
3 (Dec 2018 - Jun 2019)	Oct-19	5613	109	TRIP5613_109_Cystophora-scalaris_b	1939	1939109	TWL	SQU	2019-05-04 16:15:00	2019-05-04 18:25:00	SEC	SEC	-43.2	174.9	-43.1	175.1	200	(null)	John Hart	3	2019-05-04 23:11:29	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae	Cystophora	scalaris	Kate Neill	4/11/2019				0	PHA			update observer: update from original datetime > last event end time, SEO recorded in benthic: update with stn provided	



Reporting Year (Period)	Images received	trip_number	station_number	Filename	trip_key	event_key	fishing_method	target_species	event_start_datetime	event_end_datetime	start_obs_fma	end_obs_fma	trunc_start_latitude	trunc_start_longitude	trunc_end_latitude	trunc_end_longitude	start_seabed_depth	end_seabed_depth	Photographer	Rating	Date/time original	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	NIWA Cat. No.	OSD No.	Initial OBS ID	Specimen count	Expert ID	Specimen comments	specimen_weight_kg	upd_comment
3 (Dec 2018 - Jun 2019)	Oct-19	5613	109	TRIP5613_109_Cystophora-scalaris_c	1939	1939109	TWL	SQU	2019-05-04 16:15:00	2019-05-04 18:25:00	SEC	SEC	-43.2	174.9	-43.1	175.1	200	(null)	John Hart	3	2019-05-04 23:12:07	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae	Cystophora	scalaris	Kate Neill	4/11/2019			0	PHA		update observer: update from original datetime > last event end time. SCO recorded in benthic; update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5615	4	TRIP5615_004_Goniocorella-dumosa_Desmo-phylum-dianthus_NIWA131605_NIWA131606_a	2293	2293004	TWL	SQU	2019-04-02 04:44:00	2019-04-02 14:31:00	SEC	SEC	-47.1	169.4	-46.5	170.2	126	285	Samuel Darling	3	2019-04-02 16:13:52	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Goniocorella	dumosa	Di Tracey	18/11/2019	NIWA 131605 and 4369 and NIWA 131606	4370 and 4369	GDU	1	GDU		0.92	update with stn provided; update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5615	4	TRIP5615_004_Goniocorella-dumosa_Desmo-phylum-dianthus_NIWA131605_NIWA131606_a	2293	2293004	TWL	SQU	2019-04-02 04:44:00	2019-04-02 14:31:00	SEC	SEC	-47.1	169.4	-46.5	170.2	126	285	Samuel Darling	3	2019-04-02 16:13:52	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	18/11/2019	NIWA 131605 and 4369 and NIWA 131606	4370 and 4369	GDU	10	DDI		0.92	update with stn provided; update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5615	4	TRIP5615_004_Goniocorella-dumosa_Desmo-phylum-dianthus_NIWA131605_NIWA131606_b	2293	2293004	TWL	SQU	2019-04-02 04:44:00	2019-04-02 14:31:00	SEC	SEC	-47.1	169.4	-46.5	170.2	126	285	Samuel Darling	3	2019-04-02 16:15:15	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Goniocorella	dumosa	Di Tracey	18/11/2019	NIWA 131605 and 4369 and NIWA 131606	4370 and 4369	GDU	0	GDU		0.92	update with stn provided; update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5615	4	TRIP5615_004_Goniocorella-dumosa_Desmo-phylum-dianthus_NIWA131605_NIWA131606_b	2293	2293004	TWL	SQU	2019-04-02 04:44:00	2019-04-02 14:31:00	SEC	SEC	-47.1	169.4	-46.5	170.2	126	285	Samuel Darling	3	2019-04-02 16:15:15	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	18/11/2019	NIWA 131605 and 4369 and NIWA 131606	4370 and 4369	GDU	0	DDI		0.92	update with stn provided; update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5615	4	TRIP5615_004_Goniocorella-dumosa_Desmo-phylum-dianthus_NIWA131605_NIWA131606_c	2293	2293004	TWL	SQU	2019-04-02 04:44:00	2019-04-02 14:31:00	SEC	SEC	-47.1	169.4	-46.5	170.2	126	285	Samuel Darling	4	2019-04-02 16:22:21	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Goniocorella	dumosa	Di Tracey	18/11/2019	NIWA 131605 and 4369 and NIWA 131606	4370 and 4369	GDU	0	GDU		0.92	update with stn provided; update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5615	4	TRIP5615_004_Goniocorella-dumosa_Desmo-phylum-dianthus_NIWA131605_NIWA131606_c	2293	2293004	TWL	SQU	2019-04-02 04:44:00	2019-04-02 14:31:00	SEC	SEC	-47.1	169.4	-46.5	170.2	126	285	Samuel Darling	4	2019-04-02 16:22:21	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Desmophyllum	dianthus	Di Tracey	18/11/2019	NIWA 131605 and 4369 and NIWA 131606	4370 and 4369	GDU	0	DDI		0.92	update with stn provided; update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5615	13	TRIP5615_013_Annelida	2293	2293013	TWL	SQU	2019-04-07 07:34:00	2019-04-07 09:02:00	SEC	SEC	-46.2	170.6	-46.2	170.5	154	186	Samuel Darling	3	2019-04-07 11:59:33	Annelida						Di Tracey	18/11/2019			1	ANN	Worm tube		update observer: update from original datetime > last event end time, not exists in benthic; update with stn provided	
3 (Dec 2018 - Jun 2019)	Oct-19	5615	13	TRIP5615_013_P1030582	2293	2293013	TWL	SQU	2019-04-07 07:34:00	2019-04-07 09:02:00	SEC	SEC	-46.2	170.6	-46.2	170.5	154	186	Samuel Darling	3	2019-04-07 09:32:35							Di Tracey	18/11/2019			1	UNI	Possibly Bryozoa? Unidentifiable		update observer: update from original datetime > last event end time, but tow not exist in y_benthic; update with stn provided	
3 (Dec 2018 - Jun 2019)	Oct-19	5615	27	TRIP5615_027_P1030592_b	2293	2293027	TWL	SQU	2019-04-13 05:40:00	2019-04-13 09:30:00	SOU	SOU	-47.4	169.1	-47.2	169.4	131	295	Samuel Darling	4	2019-04-13 10:08:57							Di Tracey	18/11/2019			0	UNI	Possibly sponge (Porifera) or ascidian (Ascidacea). Unidentifiable	0.19	update observer: update from original datetime > last event end time; update with stn provided	
3 (Dec 2018 - Jun 2019)	Oct-19	5615	27	TRIP5615_027_P1030593_a	2293	2293027	TWL	SQU	2019-04-13 05:40:00	2019-04-13 09:30:00	SOU	SOU	-47.4	169.1	-47.2	169.4	131	295	Samuel Darling	3	2019-04-13 10:09:32							Di Tracey	18/11/2019			1	UNI	Possibly sponge (Porifera) or ascidian (Ascidacea). Unidentifiable	0.19	update observer: update from original datetime > last event end time; update with stn provided	
3 (Dec 2018 - Jun 2019)	Oct-19	5615	40	TRIP5615_040_P1030633_b	2293	2293040	TWL	SQU	2019-04-20 06:01:00	2019-04-20 14:08:00	SEC	SEC	-44	175.9	-44	175.9	155	233	Samuel Darling	3	2019-04-20 16:00:44							Di Tracey	18/11/2019			1	UNI	The underside of a kelp holdfast? Unidentifiable		update observer: update from original datetime > last event end time, SEO, OSC, HMT recorded in benthic; update with stn provided	
3 (Dec 2018 - Jun 2019)	Oct-19	5615	40	TRIP5615_040_P1030634_a	2293	2293040	TWL	SQU	2019-04-20 06:01:00	2019-04-20 14:08:00	SEC	SEC	-44	175.9	-44	175.9	155	233	Samuel Darling	3	2019-04-20 16:01:21							Di Tracey	18/11/2019			0	UNI	The underside of a kelp holdfast? Unidentifiable		update observer: update from original datetime > last event end time, SEO, OSC, HMT recorded in benthic; update with stn provided	

Reporting Year (Period)	Images received	trip_number	station_number	Filename	trip_key	event_key	fishing_method	target_species	event_start_datetime	event_end_datetime	start_obs_fma	end_obs_fma	trunc_start_latitude	trunc_start_longitude	trunc_end_latitude	trunc_end_longitude	start_seabed_depth	end_seabed_depth	Photographer	Rating	Date/time original	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	NIWA Cat. No.	OSD No.	Initial OBS ID	Specimen count	Expert ID	Specimen comments	specimen_weight_kg	upd_comment
3 (Dec 2018 - Jun 2019)	Oct-19	5616	8	TRIP5616_008_Porifera	Z204	2204008	TWL	SQU	2019-04-03 11:41:00	2019-04-03 19:40:00	SOU	SOU	-48.8	166.7	-48.8	166.8	259	187	Greg Hosken	4	2019-04-04 09:06:27	Porifera					Di Tracey	18/11/2019			3	ONG		update observer: update from original datetime > last event end time, but tow not exist in y_benthic: update with stn provided			
3 (Dec 2018 - Jun 2019)	Oct-19	5616	50	TRIP5616_051_Bryozoa_NIWA131874	Z204	2204050	TWL	SQU	2019-04-20 12:25:00	2019-04-20 19:15:00	SOU	SOU	-48.2	168.2	-48.3	168	270	137	Greg Hosken	3	2019-04-20 23:41:13	Bryozoa					Di Tracey	18/11/2019		CBR	1	COZ		update observer: update from original datetime > last event end time, stn not exists in benthic: update with stn provided			
3 (Dec 2018 - Jun 2019)	Oct-19	5616	56	TRIP5616_056_Bryozoa	Z204	2204056	TWL	SQU	2019-04-23 06:00:00	2019-04-23 11:15:00	SOU	SOU	-48.1	168.4	-48.4	168	145	236	Greg Hosken	3	2019-04-23 01:16:47	Bryozoa					Di Tracey	18/11/2019		CBR	1	COZ		update with stn provided: update observer			
3 (Dec 2018 - Jun 2019)	Oct-19	5628	27	TRIP5628_027_Paragorgia	3112	3112027	TWL	SSO	2019-05-27 15:35:00	2019-05-27 15:52:00	SEC	SEC	-44.7	175.9	-44.7	175.8	890	(null)	Michael Pickett	3	2019-05-27 17:35:29	Cnidaria	Anthozoa	Alcyonacea	Paragorgiidae	Paragorgia		Di Tracey	18/11/2019		PAB	2	PAB		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5630	6	TRIP5630_006_Cryptolaria	1780	1780006	TWL	SQU	2019-04-15 13:30:00	2019-04-15 18:43:00	SOU	SOU	-48.8	166.6	-48.8	166.7	290	280	Marli Dee	2	2019-04-16 11:41:11	Cnidaria	Hydrozoa	Leptothecata	Zygophylacidae	Cryptolaria		Diana Macphers	29/10/2019		COU	1	HDF		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5633	1	TRIP5633_001-Bathypathes	9882	9882001	TWL	ORH	2019-04-19 02:26:00	2019-04-19 02:56:00	CEE	CEE	-38.7	178.7	-38.8	178.7	941	(null)	Janet Houston	1	2019-04-19 04:34:53	Cnidaria	Anthozoa	Antipatharia	Schizopathidae	Bathypathes		Rob Stewart	14/11/2019		COB	1	BTP		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5633	3	TRIP5633_003-Stephanocyathus-platypus	9882	9882003	TWL	ORH	2019-04-19 07:31:00	2019-04-19 08:04:00	CEE	CEE	-38.7	178.8	-38.8	178.7	945	1011	Janet Houston	1	2019-04-19 09:18:07	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Stephanocyathus	platypus	Di Tracey	18/11/2019		STP	1	STP		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5633	4	TRIP5633_004-Chrysogorgia	9882	9882004	TWL	ORH	2019-04-19 14:48:00	2019-04-19 15:18:00	CEE	CEE	-38.7	178.7	-38.8	178.7	951	1051	Janet Houston	1	2019-04-19 17:42:31	Cnidaria	Anthozoa	Alcyonacea	Chrysogorgiidae	Chrysogorgia		Di Tracey	18/11/2019		CHR	1	CHR		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5633	4	TRIP5633_004-Corallium	9882	9882004	TWL	ORH	2019-04-19 14:48:00	2019-04-19 15:18:00	CEE	CEE	-38.7	178.7	-38.8	178.7	951	1051	Janet Houston	1	2019-04-19 17:41:13	Cnidaria	Anthozoa	Alcyonacea	Coralliidae	Corallium		Di Tracey	18/11/2019		CLL	1	CLL		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	2	TRIP5639_002-Actinaria	57	57002	TWL	SQU	2019-04-27 12:00:00	2019-04-27 18:17:00	SEC	SEC	-46.9	169.6	-46.9	169.6	294	265	Dallas Abel	3	2019-04-27 20:24:02	Cnidaria	Anthozoa	Actinaria				Diana Macphers	29/10/2019		1	ANT		update observer: update from original datetime > last event end time, HMT, NIUD in benthic: update with stn provided			
3 (Dec 2018 - Jun 2019)	Oct-19	5639	63	TRIP5639_063-Solenosmilia-variabilis	57	57063	TWL	SSO	2019-06-01 15:16:00	2019-06-01 15:24:00	SOU	SOU	-47.2	165.7	-47.2	165.7	893	1058	Dallas Abel	3	2019-06-01 17:34:34	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis	Di Tracey	18/11/2019		GDU	1	SVA		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I_Sl_PRI_SVA_a	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:50:09	Cnidaria	Anthozoa	Alcyonacea	Isididae			Di Tracey	18/11/2019		2	ISI	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilia variabilis.		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I_Sl_PRI_SVA_a	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:50:09	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Metafannyella		Di Tracey	22/11/2019		5	PRI	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilia variabilis. Unable to get accurate specimen count, more than 5.		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I_Sl_PRI_SVA_a	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:50:09	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis	Di Tracey	18/11/2019		1	SVA	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilia variabilis.		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I_Sl_PRI_SVA_b	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:50:48	Cnidaria	Anthozoa	Alcyonacea	Isididae			Di Tracey	18/11/2019		1	ISI	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilia variabilis.		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I_Sl_PRI_SVA_b	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:50:48	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Metafannyella		Di Tracey	22/11/2019		5	PRI	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilia variabilis. Unable to get accurate specimen count, more than 5.		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I_Sl_PRI_SVA_b	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:50:48	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis	Di Tracey	18/11/2019		1	SVA	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilia variabilis.		update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I_Sl_PRI_SVA_CR B_EC_N_ZAH	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:35:40	Cnidaria	Anthozoa	Alcyonacea	Isididae			Di Tracey	18/11/2019		1	ISI	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilia variabilis. Also present are a crab (Brachyura), urchin (Echinoidea) and encrusting zoantharian (Zoantharia).		update with stn provided: update observer		

Reporting Year (Period)	Images received	trip_number	station_number	Filename	trip_key	event_key	fishing_method	target_species	event_start_datetime	event_end_datetime	start_obs_fma	end_obs_fma	trunc_start_latitude	trunc_start_longitude	trunc_end_latitude	trunc_end_longitude	start_seabed_depth	end_seabed_depth	Photographer	Rating	Date/time original	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	NIWA Cat. No.	OSD No.	Initial OBS ID	Specimen count	Expert ID	Specimen comments	specimen_weight_kg	upd_comment
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I SI_PRI_SVA_CR B_ECN_ZAH	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:35:40	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Metafannyella		Di Tracey	22/11/ 2019			1	PRI	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilla variabilis. Also present are a crab (Brachyura), urchin (Echinoidea) and encrusting zoantharian (Zoantharia).		update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I SI_PRI_SVA_CR B_ECN_ZAH	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:35:40	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilla	variabilis	Di Tracey	18/11/ 2019			1	SVA	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilla variabilis. Also present are a crab (Brachyura), urchin (Echinoidea) and encrusting zoantharian (Zoantharia).		update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I SI_PRI_SVA_EC N_ZAH	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:35:45	Cnidaria	Anthozoa	Alcyonacea	Isididae			Di Tracey	18/11/ 2019			1	ISI	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilla variabilis. Also present are an urchin (Echinoidea) and encrusting zoantharian (Zoantharia).		update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I SI_PRI_SVA_EC N_ZAH	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:35:45	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Metafannyella		Di Tracey	22/11/ 2019			1	PRI	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilla variabilis. Also present are an urchin (Echinoidea) and encrusting zoantharian (Zoantharia).		update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I SI_PRI_SVA_EC N_ZAH	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:35:45	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilla	variabilis	Di Tracey	18/11/ 2019			1	SVA	Fish bin shot showing corals belonging to Isididae, Metafannyella and Solenosmilla variabilis. Also present are an urchin (Echinoidea) and encrusting zoantharian (Zoantharia).		update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I sididae_1	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	3	2019-06-02 18:36:29	Cnidaria	Anthozoa	Alcyonacea	Isididae			Di Tracey	18/11/ 2019			1	ISI	The broken off base of an Isididae coral		update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I sididae_2	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:50:16	Cnidaria	Anthozoa	Alcyonacea	Isididae			Di Tracey	18/11/ 2019			1	ISI	Long dead Isididae		update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I Metafannyella	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:50:23	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Metafannyella		Di Tracey	22/11/ 2019			5	PRI	Unable to get accurate specimen count, more than 5.		update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I Metafannyella_a	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	3	2019-06-02 18:30:53	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Metafannyella		Di Tracey	22/11/ 2019			1	PRI			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I Metafannyella_b	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	3	2019-06-02 18:31:26	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Metafannyella		Di Tracey	22/11/ 2019			0	PRI			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I Metafannyella_c	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	3	2019-06-02 18:31:39	Cnidaria	Anthozoa	Alcyonacea	Primnoidae	Metafannyella		Di Tracey	22/11/ 2019			0	PRI			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I Paragorgia	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	3	2019-06-02 19:33:14	Cnidaria	Anthozoa	Alcyonacea	Paragorgiidae	Paragorgia		Di Tracey	18/11/ 2019			PAB	1	PAB			update with stn provided: update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5639	70	TRIP5639_070_I Solenosmilla- variabilis	57	57070	TWL	SSO	2019-06-02 17:15:00	2019-06-02 17:25:00	SOU	SOU	-47.3	165.7	-47.2	165.7	897	1037	Dallas Abel	4	2019-06-02 18:36:02	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilla	variabilis	Di Tracey	18/11/ 2019			1	SVA			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5639	78	TRIP5639_078_I Bone_a	57	57078	TWL	SSO	2019-06-05 07:54:00	2019-06-05 08:06:00	SUB	SUB	-48.4	170.8	-48.4	170.8	1013	1056	Dallas Abel	3	2019-06-06 11:15:09	Chordata	Mammalia	Cetacea			Di Tracey	18/11/ 2019			1	WHU	Whale bone		update observer: update from original datetime > last event end time, ROK in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	78	TRIP5639_078_I Bone_b	57	57078	TWL	SSO	2019-06-05 07:54:00	2019-06-05 08:06:00	SUB	SUB	-48.4	170.8	-48.4	170.8	1013	1056	Dallas Abel	3	2019-06-06 11:15:28	Chordata	Mammalia	Cetacea			Di Tracey	18/11/ 2019			0	WHU	Whale bone		update observer: update from original datetime > last event end time, ROK in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	78	TRIP5639_078_I Bone_c	57	57078	TWL	SSO	2019-06-05 07:54:00	2019-06-05 08:06:00	SUB	SUB	-48.4	170.8	-48.4	170.8	1013	1056	Dallas Abel	3	2019-06-06 11:15:35	Chordata	Mammalia	Cetacea			Di Tracey	18/11/ 2019			0	WHU	Whale bone		update observer: update from original datetime > last event end time, ROK in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	78	TRIP5639_078_I Rock_a	57	57078	TWL	SSO	2019-06-05 07:54:00	2019-06-05 08:06:00	SUB	SUB	-48.4	170.8	-48.4	170.8	1013	1056	Dallas Abel	3	2019-06-05 09:04:30						Di Tracey	18/11/ 2019			1	ROK	Most likely authigenic carbonate rock		update observer: update from original datetime > last event end time, ROK in benthic: update with stn provided		

Reporting Year (Period)	Images received	trip_number	station_number	Filename	trip_key	event_key	fishing_method	target_species	event_start_datetime	event_end_datetime	start_obs_fma	end_obs_fma	trunc_start_latitude	trunc_start_longitude	trunc_end_latitude	trunc_end_longitude	start_seabed_depth	end_seabed_depth	Photographer	Rating	Date/time original	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	NIWA Cat. No.	OSD No.	Initial OBS ID	Specimen count	Expert ID	Specimen comments	specimen_weight_kg	upd_comment
3 (Dec 2018 - Jun 2019)	Oct-19	5639	78	TRIP5639_078_Rock_b	57	57078	TWL	SSO	2019-06-05 07:54:00	2019-06-05 08:06:00	SUB	SUB	-48.4	170.8	-48.4	170.8	1013	1056	Dallas Abel	3	2019-06-05 11:11:34						Di Tracey	18/11/2019			1	ROK	Most likely authigenic carbonate rock	0.09	update observer: update from original datetime > last event end time, ROK in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	78	TRIP5639_078_Rock_c	57	57078	TWL	SSO	2019-06-05 07:54:00	2019-06-05 08:06:00	SUB	SUB	-48.4	170.8	-48.4	170.8	1013	1056	Dallas Abel	3	2019-06-05 11:11:41						Di Tracey	18/11/2019			0	ROK	Most likely authigenic carbonate rock	0.09	update observer: update from original datetime > last event end time, ROK in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5639	99	TRIP5639_099_Keratosis_a	57	57099	TWL	SSO	2019-06-10 17:15:00	2019-06-10 17:34:00	SUB	SUB	-47.2	178.7	-47.2	178.7	(null)	(null)	Dallas Abel	3	2019-06-10 20:17:31	Cnidaria	Anthozoa	Alcyonacea	Isididae	Keratoisis		Di Tracey	18/11/2019			BOO	1	BOO	Keratoisis coral with colonising epizoanths (Zoantheria; Epizoanthidae)	0.09	update with stn provided: update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5639	99	TRIP5639_099_Keratosis_b	57	57099	TWL	SSO	2019-06-10 17:15:00	2019-06-10 17:34:00	SUB	SUB	-47.2	178.7	-47.2	178.7	(null)	(null)	Dallas Abel	3	2019-06-10 20:17:10	Cnidaria	Anthozoa	Alcyonacea	Isididae	Keratoisis		Di Tracey	18/11/2019			BOO	0	BOO	Keratoisis coral with colonising epizoanths (Zoantheria; Epizoanthidae)	0.09	update with stn provided: update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5639	99	TRIP5639_099_Paragorgia_a	57	57099	TWL	SSO	2019-06-10 17:15:00	2019-06-10 17:34:00	SUB	SUB	-47.2	178.7	-47.2	178.7	(null)	(null)	Dallas Abel	3	2019-06-10 18:25:25	Cnidaria	Anthozoa	Alcyonacea	Paragorgiidae	Paragorgia		Di Tracey	18/11/2019			GOC	0	PAB	Bubblegum coral base	0.05	update with stn provided: update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5639	99	TRIP5639_099_Paragorgia_c	57	57099	TWL	SSO	2019-06-10 17:15:00	2019-06-10 17:34:00	SUB	SUB	-47.2	178.7	-47.2	178.7	(null)	(null)	Dallas Abel	3	2019-06-10 18:25:41	Cnidaria	Anthozoa	Alcyonacea	Paragorgiidae	Paragorgia		Di Tracey	18/11/2019			GOC	0	PAB	Bubblegum coral base	0.05	update with stn provided: update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5639	99	TRIP5639_099_Solenosmilia-variabilis	57	57099	TWL	SSO	2019-06-10 17:15:00	2019-06-10 17:34:00	SUB	SUB	-47.2	178.7	-47.2	178.7	(null)	(null)	Dallas Abel	3	2019-06-10 18:22:33	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis	Di Tracey	18/11/2019			GDU	7	SVA	Fish bin shot of several clumps of coral Solenosmilia variabilis	0.05	update with stn provided: update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5639	99	TRIP5639_099_Solenosmilia-variabilis_a	57	57099	TWL	SSO	2019-06-10 17:15:00	2019-06-10 17:34:00	SUB	SUB	-47.2	178.7	-47.2	178.7	(null)	(null)	Dallas Abel	3	2019-06-10 18:22:21	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis	Di Tracey	18/11/2019			GDU	1	SVA	Factory shot of coral Solenosmilia variabilis amongst fish.	0.05	update with stn provided: update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5639	99	TRIP5639_099_Solenosmilia-variabilis_Paragorgia_b	57	57099	TWL	SSO	2019-06-10 17:15:00	2019-06-10 17:34:00	SUB	SUB	-47.2	178.7	-47.2	178.7	(null)	(null)	Dallas Abel	3	2019-06-10 18:25:13	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis	Di Tracey	18/11/2019			GDU	2	SVA	Fish bin shot of several clumps of corals Solenosmilia variabilis and Paragorgia (base section only)	0.05	update with stn provided: update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5639	99	TRIP5639_099_Solenosmilia-variabilis_Paragorgia_b	57	57099	TWL	SSO	2019-06-10 17:15:00	2019-06-10 17:34:00	SUB	SUB	-47.2	178.7	-47.2	178.7	(null)	(null)	Dallas Abel	3	2019-06-10 18:25:13	Cnidaria	Anthozoa	Alcyonacea	Paragorgiidae	Paragorgia		Di Tracey	18/11/2019			GDU	1	PAB	Fish bin shot of several clumps of corals Solenosmilia variabilis and Paragorgia (base section only)	0.05	update with stn provided: update observer
3 (Dec 2018 - Jun 2019)	Oct-19	5643	2	TRIP5643_002_Actiniaria_1	6337	6337002	TWL	SQU	2019-05-03 12:24:00	2019-05-03 19:06:00	SEC	SEC	-46.6	170.1	-46.9	169.7	(null)	(null)	Staci King	3	2019-05-03 20:41:23	Cnidaria	Anthozoa	Actiniaria			Diana Macphers on	29/10/2019			1	ANT		0.09	update observer: update from original datetime > last event end time, ONG, CRM, COU, ACS, LBI, HMT in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5643	2	TRIP5643_002_Actiniaria_2	6337	6337002	TWL	SQU	2019-05-03 12:24:00	2019-05-03 19:06:00	SEC	SEC	-46.6	170.1	-46.9	169.7	(null)	(null)	Staci King	3	2019-05-03 20:43:08	Cnidaria	Anthozoa	Actiniaria			Diana Macphers on	29/10/2019			1	ANT		0.09	update observer: update from original datetime > last event end time, ONG, CRM, COU, ACS, LBI, HMT in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5643	2	TRIP5643_002_Hydrozoa_a_1	6337	6337002	TWL	SQU	2019-05-03 12:24:00	2019-05-03 19:06:00	SEC	SEC	-46.6	170.1	-46.9	169.7	(null)	(null)	Staci King	3	2019-05-03 20:39:46	Cnidaria	Hydrozoa				Diana Macphers on	20/11/2019			COU	1	HDR		0.04	update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5643	2	TRIP5643_002_Hydrozoa_a_2	6337	6337002	TWL	SQU	2019-05-03 12:24:00	2019-05-03 19:06:00	SEC	SEC	-46.6	170.1	-46.9	169.7	(null)	(null)	Staci King	3	2019-05-03 21:04:18	Cnidaria	Hydrozoa				Diana Macphers on	20/11/2019			COU	0	HDR		0.05	update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5643	2	TRIP5643_002_Hydrozoa_b_1	6337	6337002	TWL	SQU	2019-05-03 12:24:00	2019-05-03 19:06:00	SEC	SEC	-46.6	170.1	-46.9	169.7	(null)	(null)	Staci King	3	2019-05-03 20:39:52	Cnidaria	Hydrozoa				Diana Macphers on	20/11/2019			COU	0	HDR		0.04	update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5643	2	TRIP5643_002_Hydrozoa_b_2	6337	6337002	TWL	SQU	2019-05-03 12:24:00	2019-05-03 19:06:00	SEC	SEC	-46.6	170.1	-46.9	169.7	(null)	(null)	Staci King	3	2019-05-03 21:04:12	Cnidaria	Hydrozoa				Diana Macphers on	20/11/2019			COU	1	HDR		0.05	update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5643	3	TRIP5643_003_Annelida	6337	6337003	TWL	SQU	2019-05-04 05:47:00	2019-05-04 14:04:00	SEC	SEC	-47	169.5	-46.6	170.1	127	271	Staci King	3	2019-05-04 17:33:31	Annelida					Di Tracey	18/11/2019			1	ANN	Worm tube	0.05	update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5643	4	TRIP5643_004_Bryozoa_a	6337	6337004	TWL	SQU	2019-05-04 15:23:00	2019-05-04 19:00:00	SEC	SEC	-46.6	170.1	-46.8	169.8	305	258	Staci King	3	2019-05-04 20:50:39	Bryozoa					Di Tracey	18/11/2019			1	COZ		0.02	update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5643	4	TRIP5643_004_Bryozoa_b	6337	6337004	TWL	SQU	2019-05-04 15:23:00	2019-05-04 19:00:00	SEC	SEC	-46.6	170.1	-46.8	169.8	305	258	Staci King	3	2019-05-04 20:50:45	Bryozoa					Di Tracey	18/11/2019			0	COZ		0.02	update with stn provided: update observer		
3 (Dec 2018 - Jun 2019)	Oct-19	5643	6	TRIP5643_006_Porifera_1	6337	6337006	TWL	SQU	2019-05-05 13:56:00	2019-05-05 18:34:00	SOU	SOU	-47.9	168.6	-47.9	168.6	256	152	Staci King	3	2019-05-05 21:04:52	Porifera					Diana Macphers on	29/10/2019			1	ONG		1.03	update observer: update from original datetime > last event end time, CIG, CRM in benthic: update with stn provided		
3 (Dec 2018 - Jun 2019)	Oct-19	5643	6	TRIP5643_006_Porifera_2	6337	6337006	TWL	SQU	2019-05-05 13:56:00	2019-05-05 18:34:00	SOU	SOU	-47.9	168.6	-47.9	168.6	256	152	Staci King	3	2019-05-05 21:05:16	Porifera					Diana Macphers on	29/10/2019			1	ONG		0.05	update observer: update from original datetime > last event end time, CIG, CRM in benthic: update with stn provided		

Reporting Year (Period)	Images received	trip_number	station_number	Filename	trip_key	event_key	fishing_method	target_species	event_start_datetime	event_end_datetime	start_obs_fma	end_obs_fma	trunc_start_latitude	trunc_start_longitude	trunc_end_latitude	trunc_end_longitude	start_seabed_depth	end_seabed_depth	Photographer	Rating	Date/time original	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	NIWA Cat. No.	OSD No.	Initial OBS ID	Specimen count	Expert ID	Specimen comments	specimen_weight_kg	upd_comment					
3 (Dec 2018 - Jun 2019)	Oct-19	5643	11	TRIP5643_011_Bryozoa_a	6337	6337011	TWL	SQU	2019-05-08 13:29:00	2019-05-08 16:08:00	SOU	SOU	-47.9	168.7	-47.6	168.9	304	145	Staci King	3	2019-05-08 20:35:54	Bryozoa					Di Tracey	18/11/2019		COU	1	COZ			0.46	update with stn provided: update observer						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	11	TRIP5643_011_Bryozoa_b	6337	6337011	TWL	SQU	2019-05-08 13:29:00	2019-05-08 16:08:00	SOU	SOU	-47.9	168.7	-47.6	168.9	304	145	Staci King	3	2019-05-08 20:36:07	Bryozoa					Di Tracey	18/11/2019		COU	0	COZ			0.46	update with stn provided: update observer						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	12	TRIP5643_012_P1010721_b	6337	6337012	TWL	SQU	2019-05-09 06:24:00	2019-05-09 14:38:00	SEC	SEC	-47	169.5	-46.6	170.1	231	374	Staci King	3	2019-05-09 17:21:05	Porifera					Diana Macpherson	29/10/2019			0	ONG			0.15	update observer: update from original datetime > last event end time, HMT, ACS, ONG, WOD in benthic: update with stn provided						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	12	TRIP5643_012_P1010724_a	6337	6337012	TWL	SQU	2019-05-09 06:24:00	2019-05-09 14:38:00	SEC	SEC	-47	169.5	-46.6	170.1	231	374	Staci King	3	2019-05-09 17:21:20	Porifera					Diana Macpherson	29/10/2019			1	ONG			0.15	update observer: update from original datetime > last event end time, HMT, ACS, ONG, WOD in benthic: update with stn provided						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	22	TRIP5643_022_Hydrozoa	6337	6337022	TWL	SQU	2019-05-20 09:13:00	2019-05-20 12:18:00	SEC	SEC	-46.7	169.9	-46.6	170.1	278	329	Staci King	3	2019-05-20 14:23:48	Cnidaria	Hydrozoa				Di Tracey	18/11/2019			1	HDR					0.05	update with stn provided: update observer				
3 (Dec 2018 - Jun 2019)	Oct-19	5643	22	TRIP5643_022_P1010780_a	6337	6337022	TWL	SQU	2019-05-20 09:13:00	2019-05-20 12:18:00	SEC	SEC	-46.7	169.9	-46.6	170.1	278	329	Staci King	3	2019-05-20 14:22:24	Porifera					Diana Macpherson	29/10/2019			1	ONG			0.05	update observer: update from original datetime > last event end time, HMT, ROK, CBB, ONG, PLE in benthic: update with stn provided						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	22	TRIP5643_022_P1010781_b	6337	6337022	TWL	SQU	2019-05-20 09:13:00	2019-05-20 12:18:00	SEC	SEC	-46.7	169.9	-46.6	170.1	278	329	Staci King	3	2019-05-20 14:22:31	Porifera					Diana Macpherson	29/10/2019			0	ONG			0.05	update observer: update from original datetime > last event end time, HMT, ROK, CBB, ONG, PLE in benthic: update with stn provided						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	29	TRIP5643_029_Ascidiacea_a	6337	6337029	TWL	SQU	2019-05-26 14:16:00	2019-05-26 17:47:00	SEC	SEC	-47.1	169.4	-46.9	169.7	295	319	Staci King	3	2019-05-26 18:44:50	Chordata	Ascidiacea				Diana Macpherson	21/11/2019			1	ASC			0.45	update observer: update from original datetime > last event end time, HOO, ACS, CRM, ZFP, ONG, PLN in benthic: update with stn provided						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	29	TRIP5643_029_Ascidiacea_b	6337	6337029	TWL	SQU	2019-05-26 14:16:00	2019-05-26 17:47:00	SEC	SEC	-47.1	169.4	-46.9	169.7	295	319	Staci King	3	2019-05-26 18:44:45	Chordata	Ascidiacea				Diana Macpherson	21/11/2019			0	ASC			0.45	update observer: update from original datetime > last event end time, HOO, ACS, CRM, ZFP, ONG, PLN in benthic: update with stn provided						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	29	TRIP5643_029_P1010845_b	6337	6337029	TWL	SQU	2019-05-26 14:16:00	2019-05-26 17:47:00	SEC	SEC	-47.1	169.4	-46.9	169.7	295	319	Staci King	3	2019-05-26 18:44:19	Porifera					Diana Macpherson	21/11/2019			0	ONG			0.09	update observer: update from original datetime > last event end time, HOO, ACS, CRM, ZFP, ONG, PLN in benthic: update with stn provided						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	29	TRIP5643_029_P1010846_a	6337	6337029	TWL	SQU	2019-05-26 14:16:00	2019-05-26 17:47:00	SEC	SEC	-47.1	169.4	-46.9	169.7	295	319	Staci King	3	2019-05-26 18:44:26	Porifera					Diana Macpherson	21/11/2019			2	ONG			0.09	update observer: update from original datetime > last event end time, HOO, ACS, CRM, ZFP, ONG, PLN in benthic: update with stn provided						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	29	TRIP5643_029_Porifera	6337	6337029	TWL	SQU	2019-05-26 14:16:00	2019-05-26 17:47:00	SEC	SEC	-47.1	169.4	-46.9	169.7	295	319	Staci King	3	2019-05-27 19:39:52	Porifera					Diana Macpherson	14/11/2019			1	ONG			0.13	update observer: update from original datetime > last event end time, CRM, PHL, ONG, PHB, PLE, ACS, HMT, ZFO in benthic: update with stn provided						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	2	TRIP5643_002_Porifera_a	6337	6337002	TWL	SQU	2019-05-03 12:24:00	2019-05-03 19:06:00	SEC	SEC	-46.6	170.1	-46.9	169.7	(null)	137	Staci King	3	2019-05-03 20:42:03	Porifera					Diana Macpherson	29/10/2019			1	ONG			0.06	update observer: update from original datetime > last event end time, ONG, CRM, COU, ACS, LBI, HMT in benthic: update with stn provided						
3 (Dec 2018 - Jun 2019)	Oct-19	5643	2	TRIP5643_002_Porifera_b	6337	6337002	TWL	SQU	2019-05-03 12:24:00	2019-05-03 19:06:00	SEC	SEC	-46.6	170.1	-46.9	169.7	(null)	137	Staci King	3	2019-05-03 20:42:12	Porifera					Diana Macpherson	29/10/2019			0	ONG			0.06	update observer: update from original datetime > last event end time, ONG, CRM, COU, ACS, LBI, HMT in benthic: update with stn provided						
3 (Dec 2018 - Jun 2019)	Oct-19	5650	11	TRIP5650_011_sidella_a	2934	2934011	BLL	LIN	2019-06-23 19:07:00	2019-06-24 07:53:00	CHA	CHA	-42.5	170.5	-42.5	170.4	339	458		3	2019-06-24 08:12:40	Cnidaria	Anthozoa	Alcyonacea	Isididae	Isidella	Phil Alderslade	19/11/2019		ISI	1	ISI						0.06	update with stn provided			
3 (Dec 2018 - Jun 2019)	Oct-19	5650	11	TRIP5650_011_sidella_b	2934	2934011	BLL	LIN	2019-06-23 19:07:00	2019-06-24 07:53:00	CHA	CHA	-42.5	170.5	-42.5	170.4	339	458		3	2019-06-24 08:12:47	Cnidaria	Anthozoa	Alcyonacea	Isididae	Isidella	Phil Alderslade	19/11/2019		ISI	0	ISI								0.06	update with stn provided	
3 (Dec 2018 - Jun 2019)	Oct-19	5650	19	TRIP5650_019_Goniocorella-dumosa	2934	2934019	BLL	LIN	2019-06-30 16:25:00	2019-07-01 08:24:00	CHA	CHA	-42.5	170.4	-42.6	170.4	431	480		3	2019-07-01 10:01:21	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Goniocorella	dumosa	Di Tracey	18/11/2019		SVA	2	GDU							0.06	Goniocorella dumosa coral with hydroids (Hydrozoa) attached	
3 (Dec 2018 - Jun 2019)	Oct-19	5650	1	TRIP5650_001_P1030715	2934	2934001	BLL	BNS	2019-05-21 17:03:00	2019-05-22 07:59:00	CHA	CHA	-42.5	170.5	-42.5	170.4	502	424		3	2019-05-22 11:45:14						Di Tracey	18/11/2019			1	UNI	Rock or kelp holdfast? Unlikely a coral base. Unidentifiable					0.06	update from original datetime > last event end time, ROK in benthic: update with stn provided			
3 (Dec 2018 - Jun 2019)	Oct-19	5680	8	TRIP5680_008_Keratosis_a	3053	3053008	TWL	SSO	2019-06-16 01:00:00	2019-06-16 01:26:00	SEC	SEC	-44.8	173	-44.8	173	1065	1120	David Peers	4	2019-06-16 17:24:20	Cnidaria	Anthozoa	Alcyonacea	Isididae	Keratosis		Di Tracey	18/11/2019			BOO	2	BOO							0.06	update with stn provided: update observer

Reporting Year (Period)	Images received	trip_number	station_number	Filename	trip_key	event_key	fishing_method	target_species	event_start_datetime	event_end_datetime	start_obs_fma	end_obs_fma	trunc_start_latitude	trunc_start_longitude	trunc_end_latitude	trunc_end_longitude	start_seabed_depth	end_seabed_depth	Photographer	Rating	Date/time original	Phylum	Class	Order	Family	Genus	Species	Determiner	Determined Date	NIWA Cat. No.	OSD No.	Initial OBS ID	Specimen count	Expert ID	Specimen comments	specimen_weight_kg	upd_comment
3 (Dec 2018 - Jun 2019)	Oct-19	5680	8	TRIP5680_008_Keratosis_b	3053	3053008	TWL	SSO	2019-06-16 01:00:00	2019-06-16 01:26:00	SEC	SEC	-44.8	173	-44.8	173	1065	1120	David Peers	4	2019-06-16 11:22:03	Cnidaria	Anthozoa	Alcyonacea	Isididae	Keratosis		Di Tracey	18/11/2019		800	0	800			update with stn provided: update observer	
3 (Dec 2018 - Jun 2019)	Oct-19	5680	120	TRIP5680_120_Solenosmilia-variabilis	3053	3053120	TWL	SSO	2019-07-24 02:00:00	2019-07-24 02:09:00	SUB	SUB	-50	175.2	-50	175.2	950	1025	David Peers	3	2019-07-24 10:16:05	Cnidaria	Anthozoa	Scleractinia	Caryophylliidae	Solenosmilia	variabilis	Di Tracey	18/11/2019			1	SVA			update observer: update from original datetime > last event end time, ROK in benthic: update with stn provided	