Table 1: video annotation attributes

|  |  |  |
| --- | --- | --- |
| Field | Format | Description |
| Log\_ID | Number | Unique sequential record ID. Relatable to the ROV navigation. |
| Date | yyyy-mm-dd | Date recorded by the ROV (in GPS time). |
| Time | hh:mm:ss AM/PM | Time recorded by the ROV (in GPS time). |
| Dive\_ID | R#### | ROV ROPOS dive number. |
| Transect | #-T# | Expedition dive group followed by the transect. e.g., 1-T2 = the second transect on the first dive. |
| Depth | Number | Depth of the ROV from the surface (in meters; from the ROV navigational system). |
| SurveyMode | 3 letter code | Contains descriptors of entries that define the survey technique being employed. |
| View | Numerical code | Index of the resolution limit of video. Can be  used to indicate what types of analysis can be conducted on different sections of video. Often an  indication of camera footprint, the zoom of the  camera, and video quality (focus, lighting, etc). |
| Seascape | Letter code | Large-scale context of a record based on location with regards to geological features, depth and topography. |
| Slope | Letter code | Physical classification based on the incline of the seafloor per record. |
| Bedrock | Percent | Quantitative field indicating % cover of seabed.  % cover determined from area of ~ 1–2 m2. Increments = 5 %; 1 = not recorded. |
| Boulder | Percent | X > 256 mm. Quantitative field indicating % cover of seabed. % cover determined from area of ~ 1–2 m2. Increments = 5 %; 1 = not recorded. |
| Cobble | Percent | 64 mm < X < 256 mm. Quantitative field indicating % cover of seabed. % cover determined from area of ~ 1–2 m2. Increments = 5 %; 1 = not recorded. |
| Pebble | Percent | 4 mm < X < 64 mm. Quantitative field indicating % cover of seabed. % cover determined from area of ~ 1–2 m2. Increments = 5 %; 1 = not recorded. |
| Sand | Percent | 0.0625 mm (63 μm) < X < 4mm. Quantitative field indicating % cover of seabed. % cover determined from area of ~ 1–2 m2. Increments = 5 %; 1 = not recorded. |
| FineGrainedSediment | Percent | Appears: X < Sand. Typically non-cohesive.  Quantitative field indicating % cover of seabed.  % cover determined from area of ~ 1–2 m2. Increments = 5 %; 1 = not recorded. |
| SubstratumType | Letter code | Substratum classification based on percent cover of surficial sediment percent coverage per record. |
| EpifaunaCover | Letter code | Biological classification based on composition, density and height of epifauna per record. |
| ScorpaenidaeFish | Letter code | The identification of Scorpaenidae fish to the lowest taxonomic level with confidence. |
| OtherVertebrates | Letter code | The identification of other fishes and skates to the lowest taxonomic lever with confidence. |
| Invertebrates | Letter code | The identification of invertebrates (of interest) to the lowest taxonomic lever with confidence. |
| Event | Letter code |  |
| DVD\_ID | [Dive\_ID]-D#/#-C# | The DVD location ID of the standard-definition (SD) video. Where the D#/# = disk number out of all the disk for that dive; and C# = chapter number. Note: this information is the same for the sets of videos from both the forward-facing and downward-facing cameras. Du Preez and Tunnicliffe 2011 used the forward-facing video. |
| DVD\_time | hh:mm:ss | Time elapsed from the start of the SD video chapter. |
| HD\_ID | [DIVE\_ID]r#s#-###### | The file location of the high-definition (HD) video. Where the r#s# = sequential grouping IDs and the last 6 number/letters = randomly assigned file name/code. |
| HD\_time | hh:mm:ss | Cumulative time elapsed from the start of the first HD video file. |
| ClassComment | Text | Logger’s comments/data entry that is not  applicable or possible in other fields. Common keywords and phrases used for consistency in database to ensure accurate queries. |
| VideoComment | Text | Freehand comments input by the logger. |

Table 2: ROV navigation attributes (from the ROPOS Integrated Real-time Logging System; IRLS)

|  |  |  |
| --- | --- | --- |
| Field | Format | Description |
| Log\_ID | Number | Unique sequential record ID. Relatable to the annotated data. |
| Dive\_ID | R#### | ROV ROPOS dive number. |
| Date | yyyy-mm-dd | Date recorded by the ROV (in GPS time). |
| Time | hh:mm:ss AM/PM | Time recorded by the ROV (in GPS time). |
| Latitude | Number | The latitude of the ROV (in decimal degrees). |
| Longitude | Number | The longitude of the ROV (in decimal degrees). |
| Depth | Number | Depth of the ROV from the surface (in meters). |
| Altimeter | Number | Height above the seafloor (in meters). Accurate <25 m. |
| Heading | Number (≤360) | The direction which the ROV is moving measured as the horizontal angle between a ground line and true north (in degrees). |
| Pitch | Number | Angle of the ROV (in degrees). |

Attribute definitions for Survey Mode (from Table 1: video annotation)

|  |  |  |
| --- | --- | --- |
| Code | Entry | Description |
| GAG | Gauge check | Video camera used to check ROV gauges |
| INA | Inactive | Stationary but not sampling or in investigation mode. Non-direct sampling (e.g., waiting for ship to move into position). |
| IVM | Investigation (mobile) | In-depth exploration of an area/subject. This is non-transect mode but the ROV is still mobile. Directed sampling. |
| IVS | Investigation (stationary) | In-depth exploration of an area/subject. This is non-transect mode and the ROV is relatively stationary (e.g. examining an organism, bedform, etc). Directed sampling. |
| NOT | Not viewed | Have not yet viewed video (not priority survey mode conducted). |
| OFF | Off bottom | ROV is off bottom/in water column and substrate is not visible (e.g., pull off due to current, ships motion). Non-directed sampling. |
| SAM | Sampling | Taking/removing a physical sample from the environment. ROV is typically stationary. Directed sampling. |
| TEC | Technical issue | There is an issue with the equipment that prevented video recording or transecting. |
| TRN | Transect | Transecting (e.g. moving video survey of area). Viewing area (approx. range: 1 to 10 m2) can be approximated using the View entry. Directed sampling. |
| TST | Transiting | Moving between sampling sites. Not in survey mode. Non-directed sampling. Substrate is usually visible. |
| X | Not recorded | The video was not recording but the dive log continued. |

Attribute definitions for View (from Table 1: video annotation)

|  |  |
| --- | --- |
| Code | Description |
| 0 | No video |
| 1 | High resolution. Lower limit of object discrimination: < 3 cm dia. Field of view: <1 m2. |
| 2 | Average resolution. Lower limit of object discrimination: > 3–5 cm dia. Field of view: ~1-2 m2. |
| 3 | Low resolution. Lower limit of object discrimination: > 10–15 cm dia. Field of view: ≥10 m2. |

Attribute definitions for Seascape (from Table 1: video annotation)

|  |  |  |
| --- | --- | --- |
| Code | Entry | Description |
| X | Not recorded | Not at a transect. |
| BAS | Basin | Deepest seascape: generally flat and uniform. |
| MOR | Moraine | Sinuous feature with gradual slopes composed of large-scale mounds of coarse sediment. |
| BNK | Bank | Shallowest and most heterogeneous with seafloor orientation ranging from flat plateaus to ~300 m cliffs. |

Attribute definitions for Slope (from Table 1: video annotation)

|  |  |  |
| --- | --- | --- |
| Code | Entry | Description |
| X | Not recorded | The video was not recording but the dive log continued or seafloor not visible. |
| FLT | Flat | No slope visible at a meter scale or more. |
| RIP | Ripple | Undulations of non-cohesive sediment. |
| SLO | Slope | Average slope of >15 degrees. |
| CLF | Cliff | A steep high face, usually formed of bedrock. |

Attribute definitions for Substratum Type (from Table 1: video annotation)

|  |  |  |
| --- | --- | --- |
| Code | Entry | Description |
| X | Not recorded | The video was not recording but the dive log continued or seafloor not visible. |
| SND | Sand | Fine and unconsolidated; sediment composed of ≥90% sand. |
| AGG | Aggregates | Mainly aggregates (pebble and cobble); sediment composed of <90% sand, 5% boulder and no bedrock. |
| BOL | Boulder/bedrock | Hard substratum prevalent; >5% boulder and/or bedrock present. |

Attribute definitions for Epifauna Cover (from Table 1: video annotation)

|  |  |  |
| --- | --- | --- |
| Code | Entry | Description |
| X | Not recorded | The video was not recording but the dive log continued or seafloor not visible. |
| EA | Epifauna absent | Bare substratum (Fig. 2D) or small epifaunal organisms attached with short erect sponges; <3 ind. m–2. |
| SSG | Short sponge garden | Dense short erect sponge cover; ≥3 ind. m–2. Community of Demospongia and/or Hexactinellida. |
| TSG | Tall sponge garden | Tall erect sponge; ≥1 ind. m–2. Community of Demospongia and/or Hexactinellida. |
| CS | Coral stand | Tall *Primnoa pacifica*; ≥1 ind. 2 m–2. |

Taxonomy list for Scorpaenidae Fish (from Table 1: video annotation)

|  |  |  |
| --- | --- | --- |
| Code | Common name | Scientific name |
| SST | Shortspine thornyhead | *Sebastolobus alascanus* |
| SCF | Sharpchin rockfish | *Sebastes zacentrus* |
| ROS | Rosethorn rockfish | *Sebastes helvomaculatus* |
| RRF | Rougheye rockfish | *Sebastes aleutianus* |
| RED | Redbanded rockfish | *Sebastes babcocki* |
| SIL | Silvergray rockfish | *Sebastes brevispinis* |
| STR | Shortraker | *Sebastes borealis* |
| RSR | Redstripe rockfish | *Sebastes proriger* |
| BAC | Bacaccio | *Sebastes paucispinis* |
| YEL | Yelloweye rockfish | *Sebastes ruberrimus* |
| URF | Unidentified rockfish | *Sebastes* spp. |
| USC | Unidentified scorpaenid fish | Scorpaenidae |

Taxonomy list for Other Vertebrates (from Table 1: video annotation)

|  |  |  |
| --- | --- | --- |
| Code | Common name | Scientific name |
| SNF | Snailfish | *Careproctus sp.* |
| TOM | Pacific tomcod | *Microgadus proximus* |
| WAL | Walleye pollock | *Theragra chalcogramma* |
| BEP | Bigeye poacher | *Bathyagonus pentacanthus* |
| BFS | Blackfin sculpin | *Malacocottus kincaidi* |
| ELP | Unidentified eelpout | Zoarcidae |
| HAK | Pacific hake | *Merluccius productus* |
| SAF | Sablefish | *Anoplopoma fimbria* |
| HAG | Pacific hagfish | *Eptatretus stoutii* |
| FSH | Unidentifiable fish | Actinopterygii |
| DOV | Dover sole | *Microstomus pacificus* |
| DSS | Deap sea sole | *Embassicthyes bathybius* |
| HAL | Pacific Halibut | *Hippoglossus stenolepis* |
| REX | Rex sole | *Glyptocephalus zachirus* |
| FTF | Unidentified flatfish | Pleuronectiformes |
| BIG | Big skate | *Raja binoculata* |
| BLK | Black skate | *Bathyraja trachura* |
| LON | Longnose skate | *Raja rhina* |
| RAT | Spotted Ratfish | *Hydrolagus colliei* |
| SAN | Sandpaper skate | *Bathyraja kincaidi* |
| SDP | Bering skate | *Bathyraja interrupta* |
| SKA | Unidentifiable skate | Rajiformes |
| EGG | Skate egg | Rajiformes |
| UNK | Unknown benthic fauna |  |

Taxonomy list for Invertebrates (from Table 1: video annotation)

|  |  |  |
| --- | --- | --- |
| Code | Common name | Scientific name (with desciption) |
| FER | Glass sponge | *Ferrea occa occa* |
| DPS | Dead red tree coral (small) | *Primnoa pacifica* (dead &/or drift, <30 cm) |
| DPM | Dead red tree coral (medium) | *Primnoa pacifica* (dead &/or drift, 30-100 cm) |
| DPL | Dead red tree coral (large) | *Primnoa pacifica* (dead &/or drift, >100 cm) |
| PRS | Red tree coral (small) | *Primnoa pacifica* (alive, <30cm) |
| PRM | Red tree coral (medium) | *Primnoa pacifica* (alive, 30-100 cm) |
| PRL | Red tree coral (large) | *Primnoa pacifica* (alive, >100 cm) |
| SWI | Sea fan | *Swiftia pacifica* |
| BUB | Bubblegum coral | *Paragorgia* sp. 1 |
| PAR | Bubblegum coral | *Paragorgia* sp. 2 |
| SQD | Opalescent squid | *Loligo opalescens* |
| OCT | Pacific red octopus | *Octopus rubescens* |
| OCS | Smoothskin octopus | *Benthoctopus leioderma* |
| OCL | Large octopus | Octopoda sp. |
| OCU | Unidentifiable octopus | Octopoda |
| BOX | Box crab | *Lopholithodes foraminatus* |
| KNG | Golden king crab | *Lithodes aequispinus* |

Attribute definitions for Events (from Table 1: video annotation)

|  |  |  |
| --- | --- | --- |
| Code | Entry | Description |
| WOD | Woody debris | Organic, terrestrial |
| KLP | Kelp | Organic, drift kelp (Brown algae, Phaeophyta) |
| PIL | Pile of dead sponges | A massive accumulation of dead sponges |
| OTB | Overturned boulder | Up-side-down or disturbed boulder; evidence of bottom-contact fishing. |
| BDS | Boulder scar | A drag-scar in the sediment trailing to a large boulder (boulder may or may not also be overturned). |
| SCA | Trawling scar/furrow | A long drag-scar in the sediment. |
| GER | Fishing gear | Lost or discarded fishing gear (e.g., trawling net). |
| ROP | Fishing line | Lost or discarded fishing line. |
| PLA | Plastic bag | Inorganic pollution. |
| CAN | Tin can | Inorganic pollution. |