SUPPLEMENTARY MATERIAL FOR:

Diet variation in a critically-endangered marine predator revealed with stable isotope analysis

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**Electronic Supplementary Material 1: Standards and normalisation methods for stable isotope analysis**

At Isotrace NZ Ltd, raw isotope ratios were normalised by three-point calibration to the international scales using two IAEA (International Atomic Energy Agency) reference materials and a laboratory standard, assayed with the unknown samples. The standards used were USGS-40 and USGS-41 and the given delta values of these standards are as follows:

|  |  |  |
| --- | --- | --- |
|  | ∂15N | ∂13C |
| USGS-40 | -4.52 | -26.24 |
| USGS-41 | 47.57 | 37.76 |
| EDTA-OAS | -0.73 | -38.52 |

The laboratory standard, EDTA-OAS (Elemental Microanalysis Ltd, UK) has multi-year and multi-laboratory calibration records against IAEA reference materials. EDTA-OAS was also used as a drift control material by assaying a pair of aliquots after every twelve samples of a batch. Instrumental drift corrections (when applied) are calculated from regression of the EDTA-OAS against time.

Precision was assessed from the root-mean square difference between sequential duplicates\* of every 10th sample; accuracy was assessed by random inclusion of three true control materials chosen to mimic the nature of the sample materials. The typical precision for analysis of control materials was ± 0.2 ‰ for ∂15N and ± 0.1 ‰ for ∂13C.

At NIWA, raw ∂15N values were two point normalised following Paul et al. (2007) using isotopic data from the daily analysis of National Institute of Standards and Technology (NIST) 8573 USGS40 L-glutamic acid and NIST 8545 IAEA-N2 ammonium sulphate. Raw ∂13C values were two point normalised using isotopic data from the daily analysis of NIST 8573 USG40 L-glutamic acid and NIST 8542 IAEA-CH-6 Sucrose. For the NIWA laboratory, standards were always accurate to better than 0.1 ‰ for ∂15N and ∂13C and precision was ± 0.1 ‰ for ∂15N and ± 0.2 ‰ for ∂13C.

\*“Uncertainty of measurement, precision and limits of detection in chemical and microbiological testing laboratories.” Technical Guide AS TG5, International Accreditation New Zealand. [www.ianz.govt.nz](http://www.ianz.govt.nz)

Paul, D., Skrzypek, G. and Fórizs, I., 2007. Normalization of measured stable isotopic compositions to isotope reference scales - a review. *Rapid Communications in Mass Spectrometry* **21**, 3006-3014 (doi: <https://10.1002/rcm.3185>).

Table S1. Overview of prey data used for trophic level calculation and Bayesian mixing models.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Species | Common Name | *n* | Year | | | | ∂15N ± s.d (‰) | ∂13C ± s.d (‰) | Trophic Level | Source Membership |
| 2012 | 2014 | 2015 | 2021 |
| *Aldrichetta forsteri* | Yellow-eyed mullet | 14 | - | - | 14 | - | 12.6 ± 0.3 | -18.7 ± 1.2 | 4.17 | Pelagic-Tier 1 |
| *Arripis trutta* | Kahawai (adult) | 7 | - | - | - | 7 | 14.7 ± 0.6 | -18.3 ± 0.4 | 5.43 | Shelf-Benthopelagic-Tier2 |
| *Arripis trutta* | Kahawai (juvenile) | 6 | 6 | - | - | - | 14.6 ± 0.3 | -17.2 ± 0.5 | 5.35 | Inshore-Benthopelagic-Tier 2 |
| *Chelidonichthys kumu* | Gurnard | 21 | 10 | - | - | 11 | 14.4 ± 0.4 | -17.3 ± 0.5 | 5.22 | Inshore-Benthopelagic-Tier 2 |
| *Chironemus marmoratus* | Kelp fish | 2 | - | - | - | 2 | 14.6 ± 0.2 | -17.6 ± 0.1 | 5.36 | Inshore-Benthopelagic-Tier 2 |
| *Nemadactylus macropterus* | Tarakihi | 11 | - | - | - | 11 | 14.3 ± 0.3 | -18.3 ± 0.5 | 5.17 | Shelf-Benthopelagic-Tier 2 |
| *Pagrus auratus* | Snapper | 16 | - | 1 | 9 | 6 | 15.4 ± 1.2 | -17.5 ± 0.7 | 5.81 | Inshore-Demersal-Tier 3 |
| *Parapercis colias* | Blue cod | 10 | - | 6 | 4 | - | 13.7 ± 0.2 | -18.2 ± 0.3 | 4.80 | Shelf-Benthopelagic-Tier 1 |
| *Pelotretis flavilatus* | Lemon sole | 4 | - | - | - | 4 | 14.0 ± 0.4 | -18.0 ± 0.4 | 4.96 | Shelf-Benthopelagic-Tier 1 |
| *Peltorhamphus novaezeelandiae* | New Zealand sole | 13 | 11 | - | - | 2 | 14.0 ± 0.4 | -17.3 ± 0.4 | 4.99 | Inshore-Benthopelagic-Tier 2 |
| *Perna canaliculus* | Green lipped mussel (baseline) | 10 | - | 10 | - | - | 9.0 ± 0.2 | -17.5 ± 0.7 | 2.00 | N/A |
| *Pseudocaranx dentex* | Trevally | 6 | - | - | - | 6 | 14.8 ± 0.5 | -17.4 ± 0.4 | 5.47 | Inshore-Benthopelagic-Tier 2 |
| *Pseudolabrus miles* | Scarlett wrasse | 12 |  |  | 10 | 2 | 14.1 ± 0.3 | -17.8 ± 0.4 | 5.03 | Shelf-Benthopelagic-Tier 1 |
| *Rhombosolea plebeia* | Sand flounder | 12 | 12 | - | - | - | 14.1 ± 0.3 | -17.3 ± 0.5 | 5.02 | Inshore-Benthopelagic-Tier 2 |
| *Scorpis lineolata* | Silver sweep | 14 | - | - | 10 | 4 | 13.1 ± 0.4 | -19.2 ± 0.5 | 4.47 | Pelagic-Tier 1 |
| *Sprattus muelleri* | Sprat | 13 | - | - | - | 13 | 13.6 ± 0.7 | -18.1 ± 0.5 | 4.74 | Shelf-Benthopelagic-Tier 1 |
| *Trachurus* spp. | Jack mackerel | 5 | 5 | - | - | - | 13.8 ± 0.7 | -18.0 ± 0.4 | 4.87 | Shelf-Benthopelagic-Tier 1 |
| Total | | **176** | **44** | **17** | **47** | **68** |  |  |  |  |

**Table S2**.Kruskal-Wallis test results comparing ∂13C and ∂15N values of Māui dolphin skin samples by year of sample collection. Results shown below were used to pool together sampling years which were not significantly different. Significant differences are indicated by asterisks.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year comparison** | **∂13C** | | | **∂15N** | | |
| ***χ2*** | ***df*** | ***p*-value** | ***χ2*** | ***df*** | ***p*-value** |
| 1993-2008 | 7.06 | 5 | 0.22 | 2.21 | 5 | 0.82 |
| 2010 and 2011 | 0.47 | 1 | 0.49 | 0.41 | 1 | 0.52 |
| 2015 and 2016 | 0.17 | 1 | 0.68 | 0.44 | 1 | 0.51 |
| 2020 and 2021 | 6.22 | 1 | 0.01\* | 0.02 | 1 | 0.91 |

**Table S3.** Post Hoc Dunn's multiple pairwise comparisons test comparing ∂15N values of 101 Māui dolphin skin samples by year of sample collection. Within each cell is the Dunn's pairwise z-test statistic (above) and the associated p-value (below), with significant differences indicated by asterisks.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **∂13C** | **Pre-2008** | **2010-2011** | **2015-16** | **2020** |
| **Pre-2008** | - | - | - | - |
| **2010-11** | -3.074910  (0.0011)\* | - | - | - |
| **2015-16** | -1.993600  (0.0231)\* | -1.476150  (0.0700) | - | - |
| **2020** | -4.007931  (0.0000)\* | 1.640550  (0.0504) | 2.818111  (0.0024)\* | - |
| **2021** | -6.243151  (0.0000)\* | 4.397845  (0.0000)\* | 5.629040  (0.0000)\* | 2.269202  (0.0116)\* |

**Table S4.** Post Hoc Dunn's multiple pairwise comparisons test comparing ∂15N values of 103 Māui dolphin skin samples by year of sample collection. Within each cell is the Dunn's pairwise z-test statistic (above) and the associated p-value (below), with significant differences indicated by asterisks.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **∂15N** | **Pre-2008** | **2010-11** | **2015-16** | **2020** |
| **Pre-2008** | - | - | - | - |
| **2010-11** | -2.394433  (0.0083)\* | - | - | - |
| **2015-16** | -1.976434  (0.0241)\* | -0.570631  (0.2841) | - | - |
| **2020** | -2.808742  (0.0025)\* | 0.888819  (0.1870) | 1.344026  (0.0895) | - |
| **2021** | -3.423855  (0.0003)\* | 1.605606  (0.0542) | 2.081545  (0.0187)\* | 0.572088  (0.2836) |

Map

Description automatically generated

Figure S1. Scatterplot showing how mean ∂13C and ∂15N values for each species were grouped into five prey sources with hierarchical cluster analysis (Ward’s minimum variance method). Note the x and y axes have been standardised to make variables comparable. See Table S1 for species scientific names.

Chart

Description automatically generated

Figure S2. Dendrogram showing how mean ∂13C and ∂15N values for each species were grouped into five prey sources with hierarchical cluster analysis (Ward’s minimum variance method). Yellow-eyed mullet has been abbreviated to YEM.

**Table S5:** Complete dataset of Māui dolphin skin samples included in bulk stable isotope analysis

**Indiv. ID**: The unique identifier for every Māui dolphin as determined by genotyping;

**Sex**: Genetically determined sex; ‘Preg’ = pregnant;

**Live or dead**: Status of Māui dolphin at time of sample collection;

**Date**: The date the sample was collected, in the format dd-mmm-yy;

**Sample Code**: The field sample code;

**∂15N:** Unadjusted stable isotope ratio of 15N determined by Isotrace NZ Ltd;

**∂13C:** Unadjusted stable isotope ratio of 13C determined by Isotrace NZ Ltd;

**C:N Ratio**: Ratio of raw 13C to 15N, determined by Isotrace NZ Ltd and used to assess successful lipid extraction;

**Latitude and Longitude**: GPS-determined location of sample collection.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Indiv ID** | **Sex** | **Live or Dead** | **Date**  **dd-mmm-yy** | **Sample Code** | **∂15N** | **∂13C** | **C:N Ratio** | **Latitude** | **Longitude** |
| Unknown 1 | F (preg) | D | 26-Aug-93 | CheNI01 | 16.41 | -15.30 | 3.1 | N/A | N/A |
| 9 | M | L | 30-Jan-01 | NI37 | 16.09 | -15.07 | 3.0 | N/A | N/A |
| 19 | M | L | 02-Feb-01 | NI54 | 16.78 | -14.91 | 3.0 | N/A | N/A |
| 17 | M | L | 16-Feb-01 | NI47 | 17.91 | -13.59 | 2.9 | -36.8848 | 174.4376 |
| 27 | M | D | 21-Feb-02 | NI61 | 16.82 | -15.37 | 3.1 | -37.0443 | 174.5772 |
| 19 | M | L | 01-Jan-03 | NI72 | 18.95 | -12.73 | 2.8 | N/A | N/A |
| 19 | M | L | 22-Mar-03 | NI80 | 16.85 | -15.15 | 3.0 | N/A | N/A |
| 40 | M | L | 03-Apr-03 | NI84 | 16.24 | -15.30 | 3.0 | N/A | N/A |
| 17 | M | D | 04-Jun-03 | NI92 | 16.68 | -15.34 | 3.2 | -36.8848 | 174.4376 |
| 50 | M | D | 13-Nov-06 | Chem06NZ02 | 18.26 | -15.02 | 3.2 | -37.3905 | 174.70817 |
| 51 | F | D | 03-Dec-06 | Chem06NZ04 | 16.96 | -15.13 | 3.2 | -37.28423 | 174.65421 |
| 52 | F | D | 03-Dec-06 | Chem06NZ05 | 18.88 | -14.44 | 3.2 | N/A | N/A |
| 54 | F | D | 10-Nov-07 | Chem07NZ01 | 16.36 | -15.94 | 3.1 | -37.823 | 174.8193 |
| 55 | F | L | 04-Feb-10 | ChemNI10-01 | 16.37 | -16.00 | 3.1 | -37.1782 | 174.588017 |
| 59 | M | L | 06-Feb-10 | ChemNI10-06 | 15.94 | -16.44 | 3.1 | -37.196056 | 174.592778 |
| 60 | F | L | 06-Feb-10 | ChemNI10-09 | 16.79 | -15.66 | 3.0 | -37.274417 | 174.642028 |
| 61 | M | L | 06-Feb-10 | ChemNI10-10 | 16.86 | -15.43 | 3.0 | -37.273444 | 174.640972 |
| 22 | F | L | 07-Feb-10 | ChemNI10-14 | 15.33 | -16.46 | 3.1 | -37.228167 | 174.615667 |
| 57 | F | L | 07-Feb-10 | ChemNI10-12 | 16.41 | -16.53 | 3.2 | -37.165217 | 174.584783 |
| 64 | M | L | 07-Feb-10 | ChemNI10-16 | 15.95 | -16.39 | 3.2 | -37.20755 | 174.60445 |
| 66 | M | L | 08-Feb-10 | ChemNI10-20 | 16.38 | -16.06 | 3.1 | -36.737783 | 174.362467 |
| 67 | F | L | 09-Feb-10 | ChemNI10-21 | 16.65 | -15.96 | 3.0 | -36.652667 | 174.301667 |
| 69 | F | L | 11-Feb-10 | ChemNI10-26 | 16.72 | -15.34 | 3.0 | -37.3625 | 174.683667 |
| 70 | M | L | 11-Feb-10 | ChemNI10-27 | 15.75 | -16.23 | 3.2 | -37.3625 | 174.6875 |
| 71 | M | L | 16-Feb-10 | ChemNI10-28 | 15.35 | -16.99 | 3.1 | -37.591833 | 174.759 |
| 72 | M | L | 16-Feb-10 | ChemNI10-32 | 16.05 | -16.96 | 3.2 | -37.537467 | 174.746933 |
| 32 | M | L | 23-Feb-10 | ChemNI10-36 | 17.64 | -14.13 | 2.8 | -37.593967 | 174.766117 |
| 58 | F | L | 14-Feb-11 | ChemNI11-04 | 16.65 | -16.05 | 3.0 | -37.1307 | 174.5662 |
| 62 | F | L | 14-Feb-11 | ChemNI11-05 | 16.62 | -15.86 | 3.0 | -37.129067 | 174.564583 |
| 63 | F | L | 14-Feb-11 | ChemNI11-02 | 16.20 | -16.07 | 3.1 | -37.17615 | 174.584817 |
| 76 | F | L | 14-Feb-11 | ChemNI11-01 | 16.29 | -16.25 | 3.1 | -37.177683 | 174.583917 |
| 65 | F | L | 15-Feb-11 | ChemNI11-06 | 16.28 | -15.97 | 3.1 | -37.1382 | 174.5657 |
| 77 | M | L | 17-Feb-11 | ChemNI11-09 | 15.82 | -16.18 | 3.1 | -37.582433 | 174.76605 |
| 74 | M | L | 18-Feb-11 | ChemNI11-10 | 15.29 | -16.56 | 3.1 | -37.470867 | 174.713583 |
| 78 | F | L | 18-Feb-11 | ChemNI11-14 | 16.24 | -16.56 | 3.1 | -37.21655 | 174.607467 |
| 80 | F | L | 20-Feb-11 | ChemNI11-20 | 16.43 | -15.82 | 3.0 | -36.582167 | 174.246 |
| 9 | M | L | 21-Feb-11 | ChemNI11-26 | 16.09 | -16.80 | 3.1 | -37.255833 | 174.62835 |
| 81 | M | L | 21-Feb-11 | ChemNI11-21 | 16.23 | -16.66 | 3.1 | -37.098167 | 174.546333 |
| 84 | F | L | 21-Feb-11 | ChemNI11-25 | 15.53 | -16.73 | 3.0 | -37.25805 | 174.632483 |
| 86 | M | L | 28-Feb-11 | ChemNI11-30 | 16.00 | -15.97 | 3.0 | -37.444567 | 174.700633 |
| 71 | M | L | 09-Mar-11 | ChemNI11-35 | 16.40 | -16.34 | 3.0 | -37.459467 | 174.708267 |
| 87 | M | L | 09-Mar-11 | ChemNI11-33 | 15.74 | -16.46 | 3.0 | -37.541583 | 174.746117 |
| 67 | F | L | 10-Mar-11 | ChemNI11-36 | 17.17 | -16.04 | 3.0 | -36.5838 | 174.2371 |
| 57 | F | L | 12-Feb-15 | Chem15NZ07 | 19.20 | -13.13 | 2.8 | -37.09694 | 174.54085 |
| 65 | F | L | 12-Feb-15 | Chem15NZ05 | 15.69 | -16.99 | 3.1 | -37.09629 | 174.53978 |
| 90 | M | L | 13-Feb-15 | Chem15NZ10 | 16.19 | -16.00 | 3.0 | -37.2198 | 174.60982 |
| 95 | F | L | 14-Feb-15 | Chem15NZ17 | 15.30 | -16.58 | 3.0 | -37.14496 | 174.56761 |
| 60 | F | L | 17-Feb-15 | Chem15NZ36 | 18.35 | -14.26 | 2.8 | -37.1874 | 174.5887 |
| 62 | F | L | 17-Feb-15 | Chem15NZ24 | 15.79 | -16.38 | 3.0 | -37.12299 | 174.56125 |
| 63 | F | L | 17-Feb-15 | Chem15NZ27 | 15.72 | -16.11 | 3.0 | -37.12299 | 174.56125 |
| 64 | M | L | 17-Feb-15 | Chem15NZ26 | 15.85 | -16.30 | 3.0 | -37.12299 | 174.56125 |
| 74 | M | L | 17-Feb-15 | Chem15NZ34 | 15.46 | -16.89 | 3.0 | -37.18737 | 174.58871 |
| 77 | M | L | 17-Feb-15 | Chem15NZ35 | 16.08 | -16.48 | 3.0 | -37.18737 | 174.58871 |
| 100 | F | L | 17-Feb-15 | Chem15NZ25 | 16.63 | -16.74 | 3.1 | -37.12299 | 174.56125 |
| 61 | M | L | 27-Feb-15 | Chem15NZ43 | 18.43 | -13.86 | 2.8 | -37.21597 | 174.60443 |
| 86 | M | L | 27-Feb-15 | Chem15NZ41 | 17.94 | -13.42 | 2.8 | -37.18157 | 174.58987 |
| 104 | F | L | 27-Feb-15 | Chem15NZ39 | 17.44 | -15.13 | 2.9 | -37.18157 | 174.58987 |
| 101 | F | L | 11-Feb-16 | Chem16NZ02 | 16.17 | -16.14 | 3.1 | -37.11540 | 174.55277 |
| 78 | F | L | 12-Feb-16 | Chem16NZ04 | 16.12 | -15.92 | 3.1 | -37.17673 | 174.58388 |
| 102 | F | L | 12-Feb-16 | Chem16NZ08 | 18.57 | -14.06 | 2.8 | -37.17920 | 174.58277 |
| 110 | F | L | 12-Feb-16 | Chem16NZ07 | 15.82 | -16.26 | 3.1 | -37.17995 | 174.58860 |
| 91 | F | L | 13-Feb-16 | Chem16NZ10 | 18.47 | -14.19 | 2.8 | -37.19012 | 174.59083 |
| 107 | M | L | 14-Feb-16 | Chem16NZ17 | 15.65 | -16.60 | 3.2 | -37.16655 | 174.58230 |
| 111 | M | L | 14-Feb-16 | Chem16NZ13 | 17.77 | -14.49 | 2.9 | -37.16727 | 174.57667 |
| 69 | F | L | 15-Feb-16 | Chem16NZ24 | 16.66 | -15.43 | 3.0 | -37.15175 | 174.57302 |
| 94 | F | L | 24-Feb-16 | Chem16NZ34 | 16.05 | -16.29 | 3.0 | -37.59573 | 174.76562 |
| 103 | F | L | 24-Feb-16 | Chem16NZ32 | 15.83 | -16.28 | 3.1 | -37.41277 | 174.68930 |
| 84 | F | L | 27-Feb-16 | Chem16NZ38 | 18.12 | -13.73 | 2.8 | -37.1436 | 174.5729 |
| 55 | F | L | 03-Mar-16 | Chem16NZ39 | 16.05 | -17.01 | 3.1 | -37.13853 | 174.54922 |
| 76 | F | L | 03-Mar-16 | Chem16NZ40 | 16.12 | -16.82 | 3.3 | -37.15620 | 174.57860 |
| 3 | M | L | 05-Mar-16 | Chem16NZ42 | 16.24 | -15.60 | 3.0 | -37.09238 | 174.53830 |
| 9 | M | L | 05-Mar-16 | Chem16NZ43 | 15.98 | -16.34 | 3.0 | -37.14847 | 174.57460 |
| 115 | M | L | 05-Mar-16 | Chem16NZ47 | 18.69 | -13.77 | 2.8 | -37.12338 | 174.56175 |
| 78 | F | L | 11-Feb-20 | Chem20NZ01 | 16.02 | -16.47 | 3.1 | -37.2012 | 174.6039 |
| 102 | F | L | 12-Feb-20 | Chem20NZ06 | 15.92 | -16.81 | 3.1 | -37.1604 | 174.57730 |
| 91 | F | L | 13-Feb-20 | Chem20NZ39 | 16.25 | -16.76 | 3.0 | -36.5379 | 174.2025 |
| 100 | F | L | 13-Feb-20 | Chem20NZ11 | 17.25 | -15.81 | 3.0 | -36.5379 | 174.2025 |
| 66 | M | L | 14-Feb-20 | Chem20NZ17 | 17.24 | -15.61 | 3.0 | -36.5267 | 174.1940 |
| 69 | F | L | 17-Feb-20 | Chem20NZ32 | 15.86 | -17.53 | 3.1 | -37.2480 | 174.6263 |
| 101 | F | L | 17-Feb-20 | Chem20NZ22 | 15.49 | -16.97 | 3.1 | -37.2243 | 174.9392 |
| 103 | F | L | 17-Feb-20 | Chem20NZ33 | 17.00 | -15.96 | 2.9 | -37.2488 | 174.6267 |
| 104 | F | L | 17-Feb-20 | Chem20NZ31 | 15.50 | -17.48 | 3.0 | -37.2458 | 174.6255 |
| 115 | M | L | 17-Feb-20 | Chem20NZ24 | 16.27 | -16.64 | 3.1 | -37.1370 | 174.5632 |
| 3 | M | L | 21-Feb-20 | Chem20NZ41 | 15.51 | -17.04 | 3.1 | -37.3991 | 174.7018 |
| 107 | M | L | 21-Feb-20 | Chem20NZ40 | 16.52 | -15.74 | 2.9 | -37.4062 | 174.6986 |
| 94 | F | L | 27-Feb-20 | Chem20NZ46 | 15.84 | -16.98 | 3.0 | -37.4155 | 174.6955 |
| 95 | F | L | 27-Feb-20 | Chem20NZ50 | 15.05 | -17.76 | 3.1 | -37.4068 | 174.6980 |
| 129 | M | L | 13-Feb-21 | Chem21NZ01 | 15.93 | -17.43 | 3.0 | -37.11389 | 174.55183 |
| 77 | M | L | 14-Feb-21 | Chem21NZ13 | 16.09 | -17.30 | 3.0 | -37.16378 | 174.58189 |
| 91 | F | L | 14-Feb-21 | Chem21NZ11 | 15.85 | -17.45 | 3.1 | -37.15192 | 174.57506 |
| 98 | F | L | 14-Feb-21 | Chem21NZ05 | 16.17 | -17.06 | 3.0 | -37.14587 | 174.5639 |
| 106 | M | L | 14-Feb-21 | Chem21NZ10 | 15.79 | -17.31 | 3.0 | -37.19041 | 174.59486 |
| 133 | F | L | 14-Feb-21 | Chem21NZ04 | 16.32 | -17.32 | 3.0 | -37.14924 | 174.56798 |
| 104 | F | L | 20-Feb-21 | Chem21NZ19 | 16.16 | -17.23 | 3.1 | -37.19834 | 174.59862 |
| 135 | M | L | 20-Feb-21 | Chem21NZ21 | 15.88 | -17.32 | 3.1 | -37.13409 | 174.56316 |
| 64 | M | L | 22-Feb-21 | Chem21NZ24 | 15.98 | -17.36 | 3.1 | -37.18555 | 174.58804 |
| 101 | F | L | 22-Feb-21 | Chem21NZ23 | 15.98 | -17.07 | 3.1 | -37.18478 | 174.58699 |
| 44 | M | L | 27-Feb-21 | Chem21NZ29 | 16.01 | -17.01 | 3.0 | -36.5272 | 174.18703 |
| 66 | M | L | 27-Feb-21 | Chem21NZ28 | 16.26 | -16.84 | 3.1 | -36.538042 | 174.198166 |
| 94 | F | L | 28-Feb-21 | Chem21NZ31 | 16.01 | -17.17 | 3.1 | -37.37444 | 174.69438 |
| 32 | M | L | 13-Mar-21 | Chem21NZ32 | 15.63 | -17.31 | 3.1 | -37.59925 | 174.75858 |
| 102 | F | L | 15-Mar-21 | Chem21NZ34 | 16.11 | -17.17 | 3.1 | -37.41452 | 174.69543 |
| 134 | F | L | 15-Mar-21 | Chem21NZ33 | 15.72 | -17.34 | 3.0 | -37.41197 | 174.69478 |