Supplementary data 2. Results of the two-way PERMANOVA (Permutational multivariate analysis of variance) analysis and p-values of pairwise comparisons on the diet composition of a dominant prey item (fishes) of *Dissostichus mawsoni* caught in the subarea 88.3 of Southern Ocean, considering the factors research blocks and fishing seasons.

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| --- | --- | --- | --- | --- | --- |
| **(A) Two-way PERMANOVA** |  |  |  |  |  |
| **Source** | **df** | **MS** | **Pseudo-F** | **COV** | **P (perm)** |
| Research block | 5 | 10196.0 | 9.071 | 22.277 | **0.001** |
| Fishing season | 4 | 2163.1 | 1.924 | 7.213 | 0.062 |
| Research block ⅹ Fishing season | 9 | 2290.0 | 2.037 | 12.138 | **0.005** |
| **(B) Pairwise comparisons** |  |  |  |  |  |
| **Research block** | **Fishing season** | | | | |
| **2016** | **2017** | **2018** | **2019** | **2020** |
| 1 v. 2 |  |  |  | **0.001** |  |
| 1 v. 3 | 0.381 |  |  | 0.148 |  |
| 1 v. 4 | **0.046** |  |  | **0.001** |  |
| 1 v. 5 | 0.097 |  |  | 0.096 |  |
| 2 v. 3 |  | 0.137 |  | **0.001** |  |
| 2 v. 4 |  | 0.316 |  | **0.001** |  |
| 2 v. 5 |  | 0.284 |  | **0.005** |  |
| 3 v. 4 | **0.013** | **0.028** | 0.173 | **0.019** | **0.001** |
| 3 v. 5 | **0.006** | **0.005** | **0.017** | 0.570 |  |
| 3 v. 6 |  |  |  |  | 0.076 |
| 4 v. 5 | 0.347 | 0.578 | 0.090 | 0.524 |  |
| 4 v. 6 |  |  |  |  | **0.002** |
| **Fishing season** | **Research block** | | | | |
| **88.3\_1** | **88.3\_2** | **88.3\_3** | **88.3\_4** | **88.3\_5** |
| 2016 v. 2017 |  |  | 0.112 | 0.631 | 0.730 |
| 2016 v. 2018 |  |  | 0.080 | 0.708 | 0.481 |
| 2016 v. 2019 | 0.242 |  | 0.482 | **0.003** | 0.099 |
| 2016 v. 2020 |  |  | 0.324 | 0.197 |  |
| 2017 v. 2018 |  |  | 0.351 | 0.613 |  |
| 2017 v. 2019 |  | 0.110 | **0.032** | **0.006** | 0.145 |
| 2017 v. 2020 |  |  | 0.357 | 0.284 |  |
| 2018 v. 2019 |  |  | 0.264 | **0.002** | **0.015** |
| 2018 v. 2020 |  |  | 0.852 | **0.006** |  |
| 2019 v. 2020 |  |  | 0.464 | **0.001** |  |