

# Summary of the PERMANOVA analysis

A summary of the essential steps associated with performing this PERMANOVA analysis of the holdfast data according to the 3-factor hierarchical experimental design is given in the table below:

| Step                              | To implement in PRIMER:                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Select <b>variable subset</b>  | <i>From the original data sheet:</i> click <b>Select &gt; Variables...</b> > (\$\bullet\$Indicator levels > Indicator name: <b>Phylum</b> ), click <b>Levels...</b> > (Selection > Include: <b>Mollusca</b> ), click <b>OK</b> .                                                                                                                                                                                                                                                          |
| 2. Jaccard <b>resemblance</b>     | <i>From the subset-selected data sheet:</i> click <b>Analyse &gt; Resemblance</b> > (Measure \$\bullet\$Other > <b>S7 Jaccard</b> ) & (Analyse between \$\bullet\$Samples), click <b>OK</b> .                                                                                                                                                                                                                                                                                             |
| 3. Specify the <b>design</b>      | <ul style="list-style-type: none"><li>• <i>From the resemblance matrix:</i> click <b>PERMANOVA+ &gt; Create PERMANOVA design...</b></li><li>• <i>Fill in the appropriate details of the design in the design file, including types of factors and any nested structures.</i></li></ul>                                                                                                                                                                                                    |
| 4. Run <b>PERMANOVA</b>           | <i>From the resemblance matrix:</i> click <b>PERMANOVA+ &gt; PERMANOVA...</b> > (Design Worksheet: <b>Design1</b> ) & (default settings for the rest), click <b>OK</b> .                                                                                                                                                                                                                                                                                                                  |
| 5. Ordination of <b>centroids</b> | <ul style="list-style-type: none"><li>• <i>From the resemblance matrix:</i> click <b>PERMANOVA+ &gt; Distance Among Centroids...</b> &gt; (Grouping factor: <b>Area</b>), click <b>OK</b>.</li><li>• <i>From the resulting resemblance matrix among area centroids:</i> click <b>Analyse &gt; MDS &gt; Non-metric MDS...</b>, take all the defaults and click <b>OK</b>.</li><li>• <i>To specify labels and symbols:</i> click <b>Graph &gt; Sample Labels &amp; Symbols...</b></li></ul> |

Revision #3

Created 4 March 2025 22:01:33 by Abby Miller

Updated 12 February 2026 02:50:27 by Marti