BEST rationale

The main rationale for the **Analyse>BEST** procedure in PRIMER is to find the best match between the multivariate among-sample patterns of an assemblage and that from environmental variables associated with those samples. The extent to which these two patterns match reflects the degree to which the chosen environmental data ‘explains’ the biotic pattern. This leads naturally to the idea of searching over subsets of the abiotic variables for a combination which optimises that match, namely the *best* explanatory variables – see Chapter 11 of CiMC for details of the method. The concept is a more general one (see also Chapter 14), and BEST can equally be used to find: subsets of taxa which best match a fixed environmental data set (e.g. vulnerable and opportunist species characterising a known impact gradient); subsets of biota which best match a different biotic matrix (e.g. key coral species which may be structuring a reef fish community) or even the same biotic matrix (e.g. a small subset of species, perhaps chosen from a set of easily-identified taxa, which generates the same multivariate sample pattern as would the full assemblage). Parallel applications for different data types can also be envisaged, for example: a subset of tissue contaminant levels that best ‘explain’ a suite of biomarkers, or conversely, a subset of biomarkers that best identify a body burden contaminant gradient; a subset of geomorphological variables that best characterises an existing classification of rivers or coasts; a small set of morphometric or genetic/molecular measures that is as effective as a larger set in discriminating two putative species, and so on.

Revision #2
Created 3 October 2024 01:07:54 by Arden
Updated 12 February 2025 01:04:38 by Abby Miller