Name	**Multivariate indices**
DPSIR classe	Impact
ECASA subgroups	Benthos (macrofauna)
ECASA code	MULTIVAR
Proposed by participant	1 - SAMS
Definition, computation,	The fraction of the variance of a particular species in the canonical correspondence analysis is calculated, and the cumulative percent variance (cumulative fit per species as a fraction of variance of species) is tabulated. The species can then be ordered, and the top contributors assessed.
Data required	Species/abundance per station data are required, with supporting environmental data. The computer program CANOCO is also required.
Summary, scientific meaning, implementation	Too detailed to include here. See reference below for full explanation:
Range of validity	Correlations exist in the literature between organic enrichment and the dominance of benthic communities by certain species. The contribution of these species to the variance of the data can be assessed and used as indicators.
Species concerned (fishes/molluscs)	All
Related type of aquaculture	All
Relevant environments for this indicator	MOST soft-bottom environments where quantitative sampling is easiest, although where quantitative sampling of hard substrate biota is possible, the principle is still sound.
Geographic scale	local
Direct relevance to objectives	– **A** - Well established
Clarity in design.	– **A** - Well established
Realistic collection or development costs	– **B** - Main limitation is the cost of macrobenthic surveys and subsequent identification to species level, and the purchase of the computer software.
High quality and reliability	– **A** – Although the actual species may vary geographically, the top contributing species will be well known locally
Appropriate spatial and temporal scale	– **A** – Well tested along spatial and temporal gradients
Obvious significance	-- B --
advantages	
disadvantages	
references	Braak, C.J.F. & Smilauer, P., 1998. CANOCO Reference Manual And User Guide To CANOCO For Windows. Software for Canonocal Community Ordination (version 4). Centre for Biometry, Wageningen, 351 pp. Fieler, R., Greenacre, M.J. and Pearson, T.H. 1994. Evaluation and development of statistical methods. Main Report. Report to Philips Petroleum Contract No. 03-005-012. Akvaplan-Niva As, Tromsø, Norway, 71 pp.

references	Greenacre, M.J., 1984. Theory and Applications of Correspondence Analysis, London, 364 pp. Jongman, R.H.G., ter Braak, C.J.F. and van Togeren, O.F.R., 1987. Data analysis in community and landscape ecology. Pudoc, Wageningen, 299 pp.
State of validation recommendations	Not an accepted or widely published method (as yet).