

# (Groundfish of European shelf waters)

Assemblage data from 93 groundfish species, those that could be reliably sampled and identified in beam-trawl surveys by research vessels from several countries surrounding NW European shelf waters, were analysed by Rogers SI, Clarke KR, Reynolds JD 1999, *J Anim Ecol* 68: 769-782. The data matrix, C:\Examples v7\Europe groundfish\Groundfish density(.pri) is of 277 locations (ICES quarter-rectangles) sampled in the third quarter of the year over the period 1990-96, with the values being mean catch rates corrected to number of fish per 8m beam trawl per hour. The sites are divided *a priori* into 9 coastal areas (1 to 9 in factor **area**: 1=Bristol Channel, 2=Western Irish Sea, ..., 9=E Central North Sea, see the **Edit>Properties** box). Also available is a PRIMER format variable information file, the *aggregation* sheet, **Groundfish taxonomy(.agg)**, met briefly at the end of Section 2. Open both into a new workspace and on **Groundfish density** **Analyse>Resemblance** > (Analyse between•Samples)&(Measure•Other: **Gamma+**>**Taxonomy**>(Type•Taxonomy)>**Details** >(Variable info. worksheet (taxonomic): **Groundfish taxonomy**)), accepting all defaults on this last dialog box – though you might like to take User specified>**Weights** to note how the step lengths between levels are set to be equal, resulting in path lengths between species of 0, 20, 40, 60, 80, 100, as earlier described. Alternatives might be to flatten the tree at the top, by setting the final step (Class) to 0, or to give more weight to the fine-level taxonomy, with decreasing entries 5, 4, 3, 2, 1.

Analyse  
Resemblance

Groundfish density  
*Groundfish NW European shelf*  
*Abundance*

	S79	S80	S81	S82	S83
Torpedo nobiliana	0	0	0	0	0
Squalus acanthias	0	0	0	2	0
Scyliorhinus canicula	3.666	1.333	2.166	24.62	0
Scyliorhinus stellaris	0	0	0	0	0
Mustelus mustelus	1	0	1.333	1.333	0
Mustelus asterias	0	2	0	0	0

Variables - Species

Groundfish taxonomy  
*Taxonomy for NW European shelf groundfish*  
*Taxa*

	Genus	Family	Order	Class
Torpedo nobiliana	Torpedo	Torpedinidae	TORPEDINIFORMES	CHONDRICHTHYES
Squalus acanthias	Squalus	Squalidae	SQUALIFORMES	CHONDRICHTHYES
Scyliorhinus canicula	Scyliorhinus	Scyliorhinidae	CARCHARINIFORMES	CHONDRICHTHYES
Scyliorhinus stellaris	Scyliorhinus	Scyliorhinidae	CARCHARINIFORMES	CHONDRICHTHYES
Mustelus mustelus	Mustelus	Triakidae	CARCHARINIFORMES	CHONDRICHTHYES
Mustelus asterias	Mustelus	Triakidae	CARCHARINIFORMES	CHONDRICHTHYES
Galeorhinus galeus	Galeorhinus	Triakidae	CARCHARINIFORMES	CHONDRICHTHYES
Anguilla anguilla	Anguilla	Anguillidae	ANGUILLIFORMES	OSTEICHTHYES

Resemblance

Measure

☐ Bray-Curtis similarity

☐ Euclidean distance

☐ Index of association

☒ Other

☐ Similarity ☐ Distance/dis

☐ Quantitative ☐ P/A

☐ Correlation ☒ Taxonomic

(exc0-0 = excluding joint abs)

Gamma+

Taxonomy...

OK Cancel

Analyse between

☒ Samples

Variable Relationship

Type

☒ Taxonomy

☐ Resemblance

Details...

Taxonomy (Data)

Variable info. worksheet (taxonomic)

Groundfish taxonomy

Current level of sample data:

Species

Use links

From level:

Species

To level:

Class

Weights

☒ User specified

Weights...

☐ Taxon richness

Weights

Edit

Level	Branch length
Species	1
Genus	1
Family	1
Order	1
Class	1

OK Cancel

Samples

	S1	S2	S3	S4	S5	S6	S7
S1							
S2	4.1026						
S3	11.515	13.529					
S4	7.3684	12.308	11.515				
S5	6.6667	6.4865	9.6774	8.8889			
S6	7.4286	7.2222	6	7.4286	3.0303		
S7	9.2683	8.0952	13.333	8.2927	10.769	9.4737	
S8	11.765	13.714	8.2759	8.2353	7.5	7.0968	10.27

Revision #4

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