

capscale(formula = spe.nor ~ PSU + T + pH + DO, data = par.sta, distance = "bray")

Partitioning of squared Bray distance:

	Inertia	Proportion
Total	6.114	1
Constrained	1.676	0.274
Unconstrained	4.439	0.726

Eigenvalues, and their contribution to the squared Bray distance

	Importance of components:																			
	CAP1	CAP2	CAP3	CAP4	MDS1	MDS2	MDS3	MDS4	MDS5	MDS6	MDS7	MDS8	MDS9	MDS10	MDS11	MDS12	MDS13	MDS14	MDS15	MDS16
Eigenvalue	0.8517	0.33865	0.27055	0.2146	0.7203	0.46618	0.45898	0.40014	0.3342	0.29736	0.28167	0.24195	0.21731	0.19913	0.18835	0.16396	0.1486	0.13883	0.12528	0.0563
Proportion Explained	0.1393	0.05539	0.04425	0.0351	0.1178	0.07625	0.07507	0.06545	0.05466	0.04864	0.04607	0.03957	0.03554	0.03257	0.03081	0.02682	0.0243	0.02271	0.02049	0.009208
Cumulative Proportion	0.1393	0.19469	0.23894	0.274	0.3919	0.4681	0.54317	0.60862	0.66328	0.71191	0.75798	0.79756	0.8331	0.86567	0.89647	0.92329	0.9476	0.9703	0.99079	1

Accumulated constrained eigenvalues

	Importance of components:			
	CAP1	CAP2	CAP3	CAP4
Eigenvalue	0.8517	0.3386	0.2706	0.2146
Proportion Explained	0.5083	0.2021	0.1615	0.1281
Cumulative Proportion	0.5083	0.7104	0.8719	1

Scaling 2 for species and site scores

* Species are scaled proportional to eigenvalues

* Sites are unscaled: weighted dispersion equal on all dimensions

* General scaling constant of scores: 3.325366

Species scores

	CAP1	CAP2	CAP3	CAP4	MDS1	MDS2
Aciculites	0.088991	-0.0738536	1.63E-02	0.0022967	-0.009072	-0.0478976
Acroloxus_egirdirensis	-0.046303	0.0050603	-4.06E-02	-0.0196484	-0.02934	0.02481
Acroloxus_lacustris	-0.056802	0.0092672	-4.87E-02	-0.0026289	-0.091551	0.0102486
Ampullaceana_balthica	-0.0216111	0.006572	-2.30E-02	0.0240737	-0.030188	0.1085211
Ancylus_fluviatilis	0.0892475	0.077595	-1.91E-02	0.0625064	0.020391	0.0194684
Aplidium_conicum	-0.046303	0.0050603	-4.06E-02	-0.0196484	-0.02934	0.02481
Arbacia_lixula	-0.1579055	-0.033051	4.83E-02	0.0307216	-0.08498	0.1337693
Armiger_crista	-0.0745014	-0.0087835	-7.60E-03	-0.0130614	-0.030521	0.0302523
Ascidella_aspersa	0.1500326	-0.0124206	-1.36E-02	0.0506668	0.065558	-0.0020043
Aspidiophorus	0.066883	0.0192112	-2.86E-02	0.0644537	0.062631	-0.0606037
Aspidiophorus.1	0.0453666	0.0249986	-6.32E-02	0.0392906	0.012791	-0.0085149
Assiminea	0.0163314	0.0213739	-3.29E-03	0.0059467	-0.027763	-0.0216644
Botrylloides_leachii	-0.3717473	-0.0183279	-9.88E-02	0.0692995	0.335195	-0.1911001
Bulinus	0.0225263	0.0337035	-1.58E-02	0.0094509	-0.001947	-0.0024976
Bulinus.1	-0.0158985	-0.0035462	4.18E-02	-0.0211067	-0.020036	-0.0664071
Bulinus_truncatus	-0.0080324	-0.0319085	-2.87E-02	-0.0221943	-0.007775	0.0396109
Bythinella	0.3600378	-0.0871062	-1.01E-02	0.0448378	0.23674	0.0803925
Bythinella_austriaca	0.0512829	0.0458039	-5.94E-03	0.0231646	0.006139	-0.0099787
Bythinella_charpentieri	0.1034335	0.0188004	5.46E-02	-0.0019197	0.049561	0.0238746
Bythinella_dunkeri	0.1154249	0.052921	1.39E-02	-0.0558468	0.077412	0.0824263
Bythinella_molcsany	0.0616296	0.0748278	9.77E-03	0.0138098	0.046779	0.0556141
Bythinella_schmidtii	-0.0134653	-0.0051846	4.24E-02	-0.0142515	-0.049043	-0.0159384
Bythinella_turca	0.0578649	0.0061909	-2.03E-03	0.0665379	0.017181	0.0122413
Carcinonemertes	0.0128167	0.0679534	-3.78E-02	0.0065991	0.004232	0.0536363
Chaetonotus	-0.0392269	0.0078215	-4.07E-02	0.0023185	-0.055256	0.0294557
Chaetonotus.1	-0.0793467	-0.0100522	-1.19E-02	-0.0034364	-0.027219	0.040929
Chaetonotus.2	0.0577752	0.0681537	1.39E-02	0.0169748	0.081485	0.0639337
Chaetonotus.3	-0.0118769	0.0079902	-2.50E-02	0.0187843	-0.025371	0.0063553
Chaetonotus.4	0.0556269	0.0832262	2.39E-02	0.0132237	0.038694	0.0498872
Chaetonotus.5	-0.0158985	-0.0035462	4.18E-02	-0.0211067	-0.020036	-0.0664071

Chaetonotus.6	-0.0147209	0.021673	3.59E-02	0.0184529	-0.177279	-0.0401089
Chaetonotus.7	0.0172465	0.0616494	-4.21E-02	0.0394714	-0.059898	0.0843591
Chaetonotus.8	-0.0398291	0.0048548	-2.39E-02	-0.0041554	-0.059009	0.0295987
Chaetonotus.9	0.1243771	-0.2374373	-1.15E-01	-0.1547364	0.010389	-0.0297941
Chaetonotus.10	0.0599983	-0.0702016	-3.53E-03	0.0392006	0.03204	0.0188929
Chaetonotus.11	0.0163314	0.0213739	-3.29E-03	0.0059467	-0.027763	-0.0216644
Chaetonotus.12	0.0599983	-0.0702016	-3.53E-03	0.0392006	0.03204	0.0188929
Chaetonotus.13	0.0330715	0.0320739	3.33E-02	-0.0231714	0.008389	-0.0358987
Chamaedrillus_sphagnetorum	-0.0525021	-0.1215162	6.92E-02	0.0569063	0.03228	0.0278172
Dendrobaena_octaedra	0.0894717	-0.1254052	5.05E-03	0.0639229	-0.146036	-0.094541
Dina_latestriata	0.0681152	-0.0236783	6.85E-03	-0.0201108	-0.015804	0.0472746
Dina_lineata	0.1685897	-0.0212922	-1.89E-02	-0.0019105	0.101438	0.0153943
Distomus_variolosus	-0.4010611	0.0399655	-2.21E-01	0.030189	0.238706	-0.3061639
Doto_coronata	-0.046303	0.0050603	-4.06E-02	-0.0196484	-0.02934	0.02481
Doto_koenneckeri	0.0330715	0.0320739	3.33E-02	-0.0231714	0.008389	-0.0358987
Epizoanthus	-0.0159536	0.0636539	2.82E-02	-0.1546865	0.029629	0.1507212
Euglesa_casertana	-0.2569311	0.1417217	-1.79E-01	-0.0388454	0.435366	-0.3265779
Eupaludestrina_aponensis	-0.046303	0.0050603	-4.06E-02	-0.0196484	-0.02934	0.02481
Eusirus	0.0497397	0.0249483	-4.47E-03	0.0443624	-0.017843	-0.0145969
Galba_truncatula	0.0124152	-0.0073111	1.54E-02	-0.0004478	-0.122914	0.0339293
Gammarus_fossarum	0.1136149	-0.2297487	-6.06E-03	-0.2082209	-0.044627	-0.1311785
Gammarus_pulex	-0.0909926	-0.0360143	9.08E-02	0.0057028	0.055734	0.044138
Gyraulius	0.1938437	0.1756027	6.55E-02	0.0383238	0.037688	0.1396342
Gyraulius.1	0.0290722	-0.0043001	-2.49E-02	0.0533791	0.010468	0.1417022
Gyraulius.2	-0.035705	0.0229433	-3.19E-02	0.0120842	-0.12263	0.0039832
Gyraulius.3	-0.0401984	-0.002263	1.89E-02	-0.0255954	-0.065983	-0.0016144
Gyraulius.4	0.0089075	0.0243487	-8.97E-03	0.0179813	-0.071753	-0.0319609
Gyraulius.5	-0.0920432	-0.0466141	8.13E-02	0.0388977	0.044627	0.0363017
Gyraulius.6	0.0225263	0.0337035	-1.58E-02	0.0094509	-0.001947	-0.0024976
Gyraulius.7	-0.046303	0.0050603	-4.06E-02	-0.0196484	-0.02934	0.02481
Gyraulius.8	0.1080457	-0.2588113	-1.11E-01	-0.1606831	0.038152	-0.0081297
Gyraulius_rossmaessleri	-0.043437	0.0212496	-1.56E-03	-0.0279531	-0.106146	-0.0127929
Halichondria	-0.0266238	-0.0046913	-1.74E-02	0.0356	-0.039671	-0.0004085

Heleobia	-0.0134653	-0.0051846	4.24E-02	-0.0142515	-0.049043	-0.0159384
Hippeutis	-0.010499	0.004207	-8.03E-03	0.0170195	-0.062211	-0.0145614
Hippeutis.1	-0.0134653	-0.0051846	4.24E-02	-0.0142515	-0.049043	-0.0159384
Hydrobiidae	0.0882785	-0.1360447	-3.05E-02	0.0398756	-0.025488	-0.0179886
Hydrobiidae.1	0.0163314	0.0213739	-3.29E-03	0.0059467	-0.027763	-0.0216644
Hydrobiidae.2	-0.0293639	-0.0087308	8.41E-02	-0.0353582	-0.069079	-0.0823455
Hydrobiidae.3	0.0163314	0.0213739	-3.29E-03	0.0059467	-0.027763	-0.0216644
Hydrobiidae.4	-0.007088	0.0012767	4.88E-03	0.0097381	-0.038262	0.0120554
Ichthydium	-0.1114255	-0.0237408	8.84E-02	-0.0243644	0.028346	0.0685177
Idiopoma	0.3437896	0.002571	-5.63E-04	-0.0105446	0.134516	0.0588571
Idiopoma.1	-0.0587802	0.0088546	-5.39E-02	-0.0057494	-0.046769	0.0874647
Lanistes	0.1304998	-0.1181313	-5.23E-02	0.0978324	-0.044027	-0.0854377
Lepidodermella	-0.0108686	0.0269837	-4.42E-03	0.0102465	-0.086544	-0.008429
Lepidodermella.1	-0.0920432	-0.0466141	8.13E-02	0.0388977	0.044627	0.0363017
Littorina_obtusata	-0.0213737	0.0015401	5.15E-02	-0.0188575	-0.051238	-0.0541612
Malmiana_brunnea	-0.007088	0.0012767	4.88E-03	0.0097381	-0.038262	0.0120554
Marthasterias_glacialis	0.0113922	-0.0098533	-3.72E-02	-0.0696443	-0.079344	0.017061
Mekongia	0.1214154	-0.1948211	-7.24E-02	-0.0404098	-0.023727	-0.0614008
Metapenaeus	0.0599983	-0.0702016	-3.53E-03	0.0392006	0.03204	0.0188929
Microspio_granulata	0.0599983	-0.0702016	-3.53E-03	0.0392006	0.03204	0.0188929
Naididae	-0.0911548	-0.0436408	8.20E-02	0.0384394	0.044784	0.0393824
Naididae.1	-0.046303	0.0050603	-4.06E-02	-0.0196484	-0.02934	0.02481
Nais	0.1787459	0.0322994	2.17E-02	-0.0107202	0.115826	-0.005209
Nais.1	-0.0158985	-0.0035462	4.18E-02	-0.0211067	-0.020036	-0.0664071
Octopodidae	0.0225263	0.0337035	-1.58E-02	0.0094509	-0.001947	-0.0024976
Olavius	-0.010499	0.004207	-8.03E-03	0.0170195	-0.062211	-0.0145614
Olavius.1	-0.010499	0.004207	-8.03E-03	0.0170195	-0.062211	-0.0145614
Orchestia_mediterranea	-0.0920432	-0.0466141	8.13E-02	0.0388977	0.044627	0.0363017
Palaemon	0.063202	0.0787793	3.54E-02	0.0026287	-0.024094	-0.0141259
Parazoanthidae	0.0453666	0.0249986	-6.32E-02	0.0392906	0.012791	-0.0085149
Parazoanthus_axinellae	0.0453666	0.0249986	-6.32E-02	0.0392906	0.012791	-0.0085149
Parhyale_aquilina	-0.010499	0.004207	-8.03E-03	0.0170195	-0.062211	-0.0145614
Peregriana_labiata	0.1044284	0.063813	-3.30E-02	0.09791	0.020599	-0.0473958

Phallusia_ingeria	0.0163314	0.0213739	-3.29E-03	0.0059467	-0.027763	-0.0216644
Phreodrilidae	-0.1177275	-0.0438072	5.87E-02	0.0279988	0.028352	0.0500638
Phreodrilidae.1	-0.046303	0.0050603	-4.06E-02	-0.0196484	-0.02934	0.02481
Phreodrilidae.2	-0.010499	0.004207	-8.03E-03	0.0170195	-0.062211	-0.0145614
Phreodrilidae.3	-0.0158985	-0.0035462	4.18E-02	-0.0211067	-0.020036	-0.0664071
Phreodrilidae.4	0.0056575	0.0570819	5.12E-02	-0.1787602	0.059817	0.0422001
Phreodrilidae.5	-0.007088	0.0012767	4.88E-03	0.0097381	-0.038262	0.0120554
Physa_fontinalis	0.0004329	0.0178277	3.85E-02	-0.01516	-0.047799	-0.0880715
Pisania_striata	-0.0158985	-0.0035462	4.18E-02	-0.0211067	-0.020036	-0.0664071
Pisidium	-0.0920432	-0.0466141	8.13E-02	0.0388977	0.044627	0.0363017
Pisidium.1	0.0056575	0.0570819	5.12E-02	-0.1787602	0.059817	0.0422001
Planorbidae	0.0022034	-0.0455661	-5.43E-02	0.0154307	-0.119322	-0.0403862
Pseudamnicola	-0.0751547	-0.0268315	8.11E-02	0.0468219	0.064742	0.0556809
Pseudamnicola_lucensis	-0.0364518	-0.0074541	8.90E-02	-0.02562	-0.107341	-0.0702902
Pseudodistoma_cyrnusenense	-0.046303	0.0050603	-4.06E-02	-0.0196484	-0.02934	0.02481
Pycnoclavella	-0.046303	0.0050603	-4.06E-02	-0.0196484	-0.02934	0.02481
Pycnoclavella_communis	0.0714813	0.0814154	2.19E-02	0.0073476	0.082149	0.090887
Pycnoclavella_nana	0.1249174	0.0294288	6.56E-02	0.0101929	0.142591	0.0517343
Pyura_squamulosa	0.0307468	0.0885003	1.22E-01	0.0257252	0.217365	0.1730526
Radicipes_stonei	0.0095187	0.0991779	6.59E-02	-0.0604899	-0.006303	0.1023919
Radix	-0.1069566	-0.021153	1.02E-01	0.0429797	-0.002654	0.0969958
Radix.1	-0.0386342	0.0054014	-1.06E-02	0.0080808	-0.107952	-0.0031149
Radix.2	-0.010499	0.004207	-8.03E-03	0.0170195	-0.062211	-0.0145614
Radix.3	-0.0009364	0.0300588	-1.04E-01	0.0196422	-0.016549	0.016295
Radix.4	-0.010499	0.004207	-8.03E-03	0.0170195	-0.062211	-0.0145614
Radix.5	-0.046303	0.0050603	-4.06E-02	-0.0196484	-0.02934	0.02481
Radix.6	0.0163314	0.0213739	-3.29E-03	0.0059467	-0.027763	-0.0216644
Radix_auricularia	0.0178192	0.0541698	2.35E-02	0.0207955	0.019295	0.1291208
Semibalanus_balanoides	-0.4844617	0.0489933	-3.12E-01	0.0526575	0.503278	-0.3938714
Sepiida	0.1096491	0.0850757	1.47E-03	0.0745259	0.101847	-0.0313454
Sepiidae	-0.0549014	0.0032951	-7.68E-05	-0.0092161	-0.12543	-0.0108212
Squilla_mantis	-0.295663	0.0038557	-5.37E-02	0.0614608	0.258998	-0.171775
Stagnicola	0.0211792	0.0417057	-9.03E-03	0.0141573	-0.047464	-0.0198406

Stelletta	0.0453666	0.0249986	-6.32E-02	0.0392906	0.012791	-0.0085149
Stramonita_haemastoma	-0.0134653	-0.0051846	4.24E-02	-0.0142515	-0.049043	-0.0159384
Styela_canopus	0.1080457	-0.2588113	-1.11E-01	-0.1606831	0.038152	-0.0081297
Styela_plicata	-0.0233224	-0.0005714	3.61E-02	-0.0090721	-0.064025	-0.0767035
Stylodrilus	0.0163314	0.0213739	-3.29E-03	0.0059467	-0.027763	-0.0216644
Stylodrilus_heringianus	0.0790347	0.0956566	6.88E-02	-0.0311634	0.161243	0.1175058
Stylodrilus_lemanii	-0.007088	0.0012767	4.88E-03	0.0097381	-0.038262	0.0120554
Stylodrilus_mariae	-0.0134653	-0.0051846	4.24E-02	-0.0142515	-0.049043	-0.0159384
Stylodrilus_parvus	0.0599983	-0.0702016	-3.53E-03	0.0392006	0.03204	0.0188929
Taia	0.041508	0.0908631	7.51E-02	-0.1924864	0.059364	-0.0314145
Tanyastix_stagnalis	-0.0390662	-0.0743229	5.12E-02	0.0206103	-0.060432	0.1241522
Theodoxus	0.0163314	0.0213739	-3.29E-03	0.0059467	-0.027763	-0.0216644
Theodoxus_fluviatilis	-0.1822266	-0.0400396	7.59E-02	0.0249095	-0.096891	0.0899579
Theodoxus_meridionalis	-0.0639362	0.0031192	5.45E-03	-0.0107756	-0.145885	-0.0006103
Theodoxus_prevostianus	0.0330715	0.0320739	3.33E-02	-0.0231714	0.008389	-0.0358987
Trichodrilus_strandi	0.0338287	0.0056543	3.44E-03	0.0567875	-0.026113	0.0207113
Trichogammarus_trichiatus	-0.0134653	-0.0051846	4.24E-02	-0.0142515	-0.049043	-0.0159384
Triculinae	-0.0158985	-0.0035462	4.18E-02	-0.0211067	-0.020036	-0.0664071
Valvata	0.0527213	0.0740911	3.44E-02	-0.0110643	-0.058457	-0.0608164
Valvata_tricarinata	0.0115991	0.0974185	9.49E-03	-0.0300137	-0.106964	0.0568706
Ventrosia_ventrosa	-0.010499	0.004207	-8.03E-03	0.0170195	-0.062211	-0.0145614

Site scores (weighted sums of species scores)

	CAP1	CAP2	CAP3	CAP4	MDS1	MDS2
AF1	-1.41116	0.15002	-1.329321	-0.49276	-0.88756	0.91307
AF2	-1.50893	0.21237	-1.712815	0.41238	1.54589	-1.47187
AF3	-1.45642	-1.17636	1.622148	1.36377	0.73593	0.72831
A1	-0.48611	0.06352	1.271793	-0.87543	-1.12352	-0.44421
A2	-0.43675	-0.31723	0.801306	-1.45018	-0.38381	-1.54762
A3	0.05601	0.61328	0.5274	-1.91161	0.51186	0.43932
B1	-0.61119	0.23464	-0.37807	0.15629	-1.49899	-0.42685
B2	-0.3536	0.2806	0.774154	-0.52467	-0.34319	1.5009
B3	-0.52465	0.42856	0.380795	0.17461	-0.96911	0.37147
C1	0.39185	1.01137	0.004466	0.69889	-0.03398	-0.05303
C2	0.37163	1.03415	0.086468	-0.0338	0.4676	0.54805
C3	0.0984	1.09268	-0.272877	-0.03474	-0.73024	-0.69325
D1	0.56215	0.38723	0.361538	-0.35439	0.10243	-0.53326
D2	0.8156	0.44679	0.180976	0.50158	0.71938	0.44733
D3	0.51328	0.2245	0.497998	0.55784	0.8086	0.71689
E1	0.59045	-0.52522	-0.732142	0.05198	0.12559	-0.10171
E2	0.71292	-0.26712	-0.659166	0.58558	0.44977	-0.52947
E3	0.68181	0.40437	-0.386211	1.15007	0.14578	0.12636
F1	0.7021	-1.93003	-0.92557	-1.48919	0.22983	-0.05958
F2	0.56007	-1.34525	-0.098347	0.74678	-0.18933	-0.15828
F3	0.73253	-1.02287	-0.014521	0.767	0.31706	0.22745

Site constraints (linear combinations of constraining variables)

	CAP1	CAP2	CAP3	CAP4	MDS1	MDS2
AF1	-1.50419	0.197	-1.492366	-0.82474	-0.88756	0.91307
AF2	-1.59805	0.19368	-1.163141	0.22443	1.54589	-1.47187
AF3	-1.63003	-0.9893	1.626807	0.89008	0.73593	0.72831
A1	-0.33127	-0.15286	1.178344	-0.45302	-1.12352	-0.44421
A2	-0.32706	-0.08743	0.971361	-0.56103	-0.38381	-1.54762
A3	0.05199	0.62863	0.531458	-2.12254	0.51186	0.43932
B1	-0.27167	0.13046	-0.235031	0.56904	-1.49899	-0.42685
B2	-0.26384	0.09615	-0.316845	0.37975	-0.34319	1.5009
B3	-0.19279	0.04162	0.150065	0.34224	-0.96911	0.37147
C1	0.42218	0.75699	-0.335472	0.22887	-0.03398	-0.05303
C2	0.42159	0.59182	-0.003322	0.25559	0.4676	0.54805
C3	0.4613	0.72352	-0.105178	0.21704	-0.73024	-0.69325
D1	0.43364	0.50401	0.493986	-0.39258	0.10243	-0.53326
D2	0.39348	0.5661	0.385725	-0.07547	0.71938	0.44733
D3	0.42563	0.61735	0.418873	-0.21685	0.8086	0.71689
E1	0.47832	0.31587	-0.753882	0.53527	0.12559	-0.10171
E2	0.5158	0.17755	-0.249047	0.64226	0.44977	-0.52947
E3	0.52725	0.0676	-0.020932	0.78337	0.14578	0.12636
F1	0.69898	-2.00653	-0.814983	-1.34315	0.22983	-0.05958
F2	0.65114	-1.47819	-0.224063	0.38318	-0.18933	-0.15828
F3	0.6376	-0.89405	-0.042356	0.53827	0.31706	0.22745

Biplot scores for constraining variables

	CAP1	CAP2	CAP3	CAP4	MDS1	MDS2
PSU	-0.928	0.317	0.1526	-0.12286	0	0
T	0.9207	0.3342	0.1757	-0.09841	0	0
pH	0.5523	0.6522	0.2907	0.4302	0	0
DO	-0.2369	-0.6346	0.7269	-0.1135	0	0