Supplementary Information 1

Information & Results of initial Principle Components Analysis

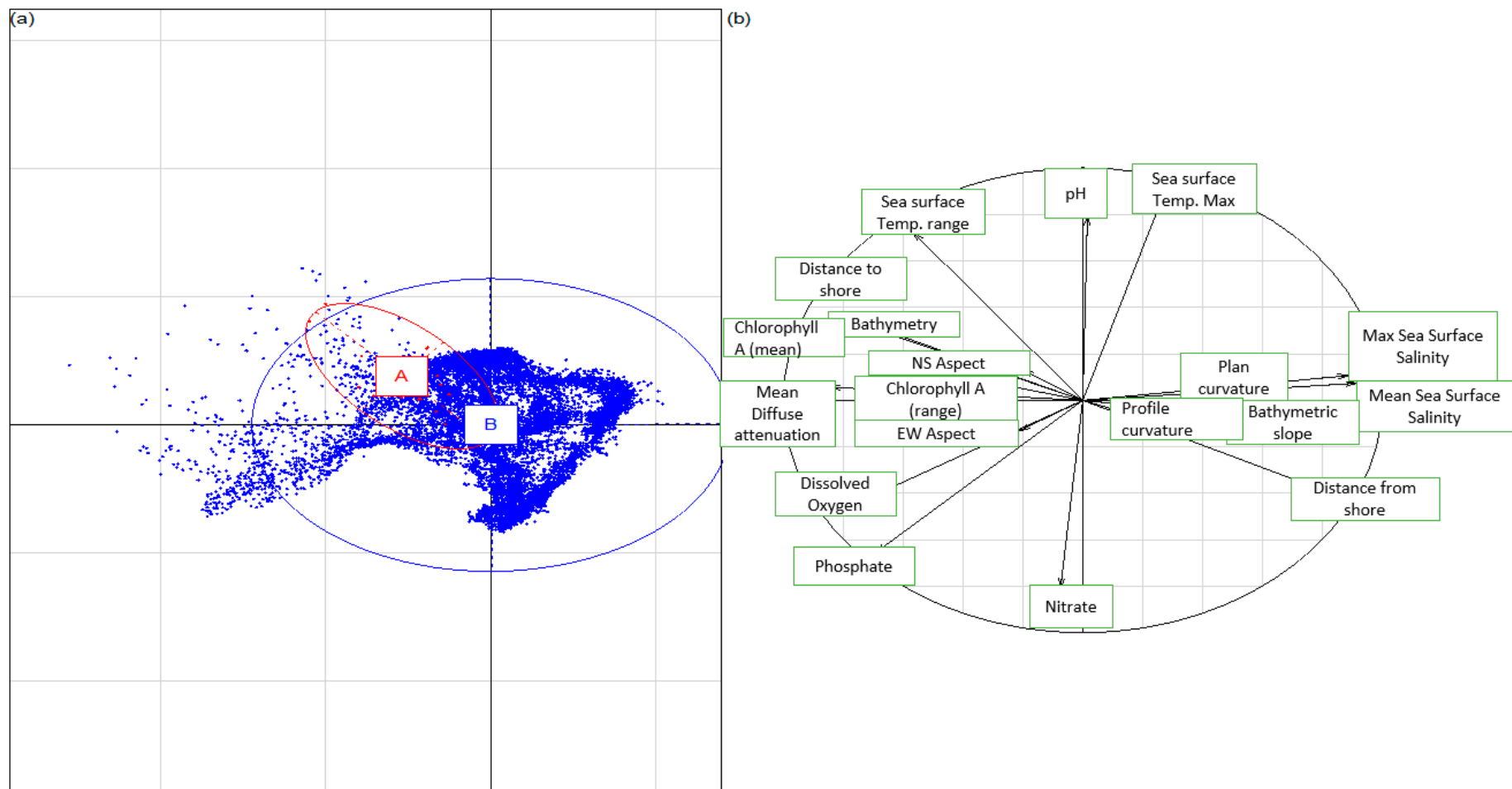| dataset_code		layer_name
71	Bio-ORACLE	BO_chlomean
73	Bio-ORACLE	BO_chlorange
78	Bio-ORACLE	BO_damean
80	Bio-ORACLE	BO_dissox
81	Bio-ORACLE	BO_nitrate
84	Bio-ORACLE	BO_ph
85	Bio-ORACLE	BO_phosphate
86	Bio-ORACLE	BO_salinity
88	Bio-ORACLE	BO_sstmax
91	Bio-ORACLE	BO_sstrange
95	MARSPEC	MS_bathy_5m
96	MARSPEC	MS_biogeo01_aspect_EW_5m
97	MARSPEC	MS_biogeo02_aspect_NS_5m
98	MARSPEC	MS_biogeo03_plan_curvature_5m
99	MARSPEC	MS_biogeo04_profile_curvature_5m
100	MARSPEC	MS_biogeo05_dist_shore_5m
101	MARSPEC	MS_biogeo06_bathy_slope_5m
103	MARSPEC	MS_biogeo08_sss_mean_5m
105	MARSPEC	MS_biogeo10_sss_max_5m
108	MARSPEC	MS_biogeo13_sst_mean_5m
71		Chlorophyll A (mean)
73		Chlorophyll A (range)
78		Diffuse attenuation coefficient at 490 nm (mean)
80		Dissolved oxygen
81		Nitrate
84		pH
85		Phosphate
86		Salinity
88		Sea surface temperature (maximum)
91		Sea surface temperature (range)
95		Bathymetry
96		East/West aspect
97		North/South Aspect
98		Plan curvature
99		Profile curvature
100		Distance to shore
101		Bathymetric slope
103		Sea surface salinity (annual mean)
105		Sea surface salinity (monthly maximum)
108		Sea surface temperature (annual mean)

Figure SI1 – Results of the principle components analysis for all variables with a) illustrating the distribution of *Asparagopsis* variables in environmental space and b) correlation circle of the selected environmental variables as a function of the same first two axes.