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LAMPIRAN

Lampiran 1. Output Diverse Kista Dinoflagellata di Muara Sungai Teko, Muara Sungai Tangka dan Muara Sungai Panyula menggunakan Aplikasi PRIMER V.5.

Muara Sungai Teko Bulukumba

	S	N	d	J'	H'	Dominansi
I.1	7	42	1.605278	1	0.845098	0.142857
I.2	7	85	1.350545	0.917708	0.775553	0.2
1.3	7	56	1.490553	0.97957	0.827832	0.15625
MEAN		61	1.482125	0.965759	0.816161	0.166369
SE		12.66228	0.073656	0.024739	0.020907	0.017254
II.1	7	112	1.271591	0.97957	0.827832	0.15625
II.2	5	98	0.872416	0.916516	0.640618	0.265306
II.3	3	56	0.496851	0.946395	0.451545	0.375
MEAN		88.66667	0.880286	0.947494	0.639998	0.265519
SE		16.82591	0.223683	0.01821	0.108625	0.063148
III.1	8	116	1.472571	0.938434	0.84749	0.160077
III.2	6	63	1.206816	0.975504	0.759089	0.183673
III.3	7	106	1.286604	0.877838	0.74186	0.230153
MEAN		95	1.321997	0.930592	0.782813	0.191301
SE		16.25833	0.078732	0.028465	0.032719	0.020586
IV.1	9	77	1.841703	0.976615	0.931927	0.123967
IV.2	6	81	1.137799	0.935945	0.728307	0.209877
IV.3	8	78	1.606717	0.978866	0.884004	0.137081
MEAN		78.66667	1.52874	0.963808	0.848079	0.156975
SE		1.20185	0.206906	0.013947	0.061464	0.02672

Muara Sungai Tangka Sinjai

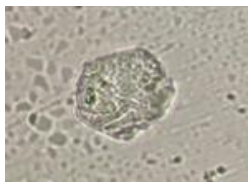
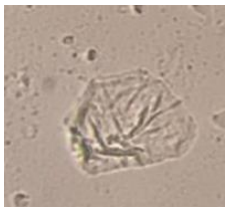
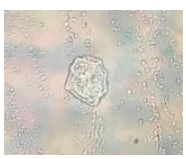
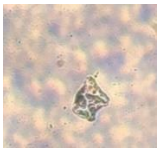
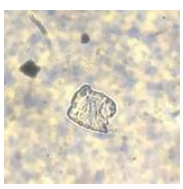
	S	N	d	J'	H'	Dominansi
I.1	5	96	0.876357331	0.9697239	0.677807918	0.222222222
I.2	7	143	1.20898405	0.97217539	0.821583517	0.159665509
1.3	5	153	0.7951594	0.946265187	0.661410982	0.234567901
MEAN		130.6666667	0.960166927	0.962721493	0.720267473	0.205485211
SE		17.5720738	0.126597454	0.00825853	0.050878681	0.023185396
II.1	7	128	1.236595749	0.979569765	0.827832488	0.15625
II.2	9	210	1.496135986	0.975754697	0.93110661	0.12244898
II.3	9	161	1.574367916	0.983256234	0.938264896	0.121021566
MEAN		166.3333333	1.435699884	0.979526898	0.899067998	0.133240182
SE		23.82109243	0.102081505	0.002165613	0.035677648	0.011512286
III.1	8	192	1.331432461	0.972765278	0.878494582	0.138888889
III.2	8	171	1.36142708	0.972773739	0.878502223	0.140727061
III.3	6	102	1.081087436	1	0.77815125	0.166666667
MEAN		155	1.257982325	0.981846339	0.845049352	0.148760872
SE		27.18455444	0.088870263	0.009076831	0.033449051	0.008968609
IV.1	9	159	1.578250383	0.986409672	0.941274041	0.119022191

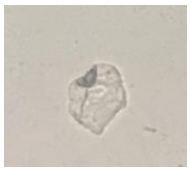
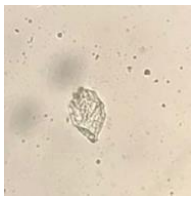
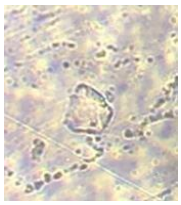
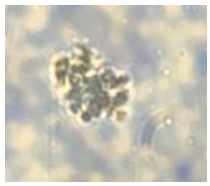
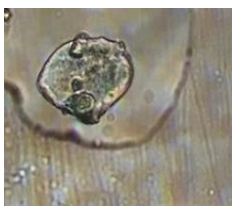
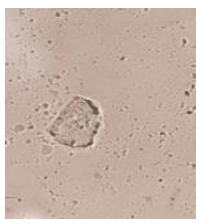
IV.2	7	112	1.271590852	1	0.84509804	0.142857143
IV.3	8	120	1.462143514	1	0.903089987	0.125
MEAN		130.3333333	1.43732825	0.995469891	0.896487356	0.128959778
SE		14.51818783	0.089390277	0.004530109	0.027959207	0.007159751

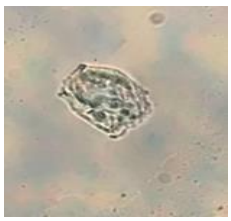
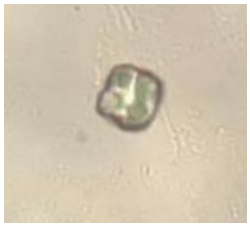
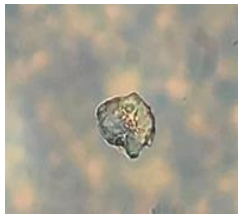
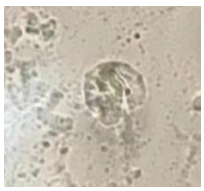
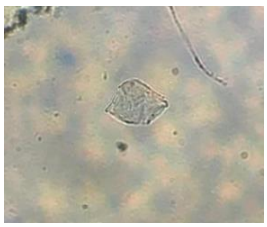
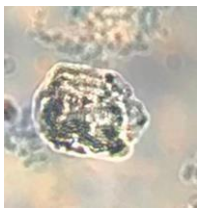
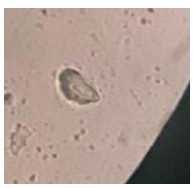
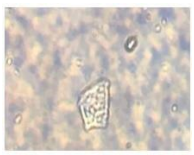
Muara Sungai Panyula Bone

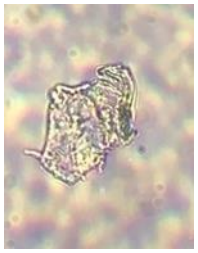
	S	N	d	J'	H'	dominasi
I.1	6	84	1.12846	1	0.778151	0.166667
I.2	6	135	1.019311	0.935945	0.728307	0.209877
I.3	9	121	1.66813	0.976615	0.931927	0.123967
MEAN		113.3333	1.271967	0.970853	0.812795	0.166837
SE		15.2133	0.200572	0.018714	0.061279	0.0248
II.1	5	60	0.976957	1	0.69897	0.2
II.2	7	112	1.271591	0.97957	0.827832	0.15625
II.3	6	78	1.147655	1	0.778151	0.166667
MEAN		83.33333	1.132068	0.99319	0.768318	0.174306
SE		15.24613	0.08541	0.00681	0.037523	0.013194
III.1	5	84	0.902768	0.969724	0.677808	0.222222
III.2	8	130	1.4381	0.973976	0.879588	0.14
III.3	7	117	1.259929	0.970836	0.820451	0.160494
MEAN		110.3333	1.200266	0.971512	0.792616	0.174239
SE		13.69104	0.15739	0.001273	0.059889	0.02471
	12	126	2.274475	0.982337	1.060119	9.18E-02
	5	54	1.002762	0.969724	0.677808	0.222222
	6	65	1.197781	0.924623	0.719496	0.223669
MEAN		81.66667	1.491672	0.958895	0.819141	0.179243
SE		22.39296	0.395429	0.017518	0.121089	0.043705

Lampiran 2. Spesies kista dinoflagellata di tiga Muara Sungai Teluk Bone

Alexandrium Affine 	*Alexandrium minutum* 	*Alexandrium peruvianum* 	*Alexandrium pseudogonyaulax* 
Alexandrium 	*Alexandrium tamarense* 	*Cochlodinium polykrikoides* 	*Gymnodinium instriatum* 
Brigantedinium asymmetricum 	*Brigantedinium simplex* 	*Brigantedinium irregulare* 	*Brigantedinium* 
Dubridinium caperatum 	*Dubridinium* 	*Echinidinium granulatum* 	*Kryptoperidinium* 
Kryptoperidinium foliaceum 	*Lejeunacysta oliva* 	*Pentapharsodinium* 	*Pentapharsodinium tyrrhenicum* 

Peridinium aquadridentatum 	*Quinquecuspis concreta* 	*Scrippsiella bentorii* 	*Scrippsiella crystallina* 
Scrippsiella lachrymosa 	*Scrippsiella rotunda* 	*Scrippsiella* 	*Scrippsiella trifida* 
Scrippsiella trochoidea 	*Trinovantedinium applanatum* 	*Polykrikos schwartzii* 	*Polykrikos kofoidii* 
Diplopelta symetrica 	*Diplopsalis lebourae* 	*Diplopsalis lenticula* 	*Diplopsalis* 

Islandinium minutum 	*Preperidinium meunieri* 	*Protoperidinium oblongum* 	*Protoperidinium divergens* 
Protoperidinium excentricum 	*Protoperidinium latissimum* 	*Protoperidinium leonis* 	*Protoperidinium pallidum* 
Protoperidinium pentagonum 	*Protoperidinium punculatum* 	*Protoperidinium* 	*Protoperidinium subinerm* 
Selenopemphix nephroides 	*Selenopemphix* 	*Gonyaulax digitalis* 	*Gonyaulax verior* 

Gonyaulax sp 	*Spiniferites mirabilis* 	*Spiniferites bentorii* 	*Spiniferites elongatus* 

Lampiran 3. Dokumentasi Kegiatan Penelitian

(a) Pengambilan sampel sedimen di tiga Muara Sungai Teluk Bone (Muara Sungai Teko Bulukumba , Muara Sungai Panyula Bone dan Muara Sungai Tangka Sinjai)



(b) Proses penimbangan sedimen dan pemisahan kista dari sedimen (sonikasi)



(c) Proses Penyaringan kista dan pengendapan kista dan pengamatan kista di mikroskop



Lampiran 4. Output uji ANOSIM dan SIMPER dengan menggunakan aplikasi PRIMER V.5

1. Output uji ANOSIM dan SIMPER Muara Sungai Panyula Bone

Factor Groups									
Sample	Stasiun								
I.1	Stasiun 1								
I.2	Stasiun 1								
I.3	Stasiun 1								
II.1	Stasiun 2								
II.2	Stasiun 2								
II.3	Stasiun 2								
III.1	Stasiun 3								
III.2	Stasiun 3								
III.3	Stasiun 3								
IV.1	Stasiun 4								
IV.2	Stasiun 4								
IV.3	Stasiun 4								
Global Test									
Sample statistic (Global R): 0.401									
Significance level of sample statistic: 1.1%									
Number of permutations: 999 (Random sample from 15400)									
Number of permuted statistics greater than or equal to Global R: 10									
Pairwise Tests									
				R Statistic	Significance Level %	Possible Permutations	Actual Permutations	Number >= Observed	
Groups									
Stasiun 1,	Stasiun 2			0.519	10.	10	10	1	
Stasiun 1,	Stasiun 3			0.593	10.	10	10	1	
Stasiun 1,	Stasiun 4			0.481	20.	10	10	2	
Stasiun 2,	Stasiun 3			0.222	20.	10	10	2	
Stasiun 2,	Stasiun 4			0.315	30.	10	10	3	
Stasiun 3,	Stasiun 4			0.315	30.	10	10	3	

Hasil Simper Muara Sungai Panyula Bone

23	*Group Stasiun 1*					
24						
25	Average similarity: 17.15					
26						
27	Species	Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%
28	Peridinium aquadridentatum	13.33	10.70	5.11	62.43	62.43
29	trinovantedinium pallidifulvum	8.33	3.58	0.58	20.86	83.29
30	alexandrium tamarense	8.67	2.86	0.58	16.71	100.00
31						
32	*Group Stasiun 2*					
33						
34	Average similarity: 25.28					
35						
36	Species	Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%
37	protoperidinium sp	8.33	5.80	0.58	22.93	22.93
38	gonyaulax digitalis	8.33	5.80	0.58	22.93	45.87
39	protoperidinium pentagonum	13.67	4.56	0.58	18.04	63.91
40	protoperidinium subinerm	9.00	4.56	0.58	18.04	81.96
41	alexandrium sp	9.00	4.56	0.58	18.04	100.00
42						
43	*Group Stasiun 3*					
44						
45	Average similarity: 15.43					
46						
47	Species	Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%
48	Alexandrium affine	13.33	4.36	0.58	28.27	28.27
49	brigantedinium sp	9.00	4.05	0.58	26.25	54.52
50	protoperidinium pentagonum	13.00	3.51	0.58	22.74	77.26
51	spiniferites mirabilis	8.67	3.51	0.58	22.74	100.00

	A	B	C	D	E	F	G	H	I	J	K	L
51	spiniferites mirabilis			8.67	3.51	0.58	22.74	100.00				
52												
53	*Group Stasiun 4*											
54												
55	Average similarity: 27.36											
56												
57	Species			Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%				
58	polykrikos schwartzii			11.67	10.61	4.10	38.77	38.77				
59	alexandrium sp			11.33	5.04	0.58	18.43	57.20				
60	echinidinum granulatum			6.00	3.33	0.58	12.18	69.38				
61	protoperidinium sp			5.67	2.79	0.58	10.21	79.59				
62	pentapharsodinium tyrrhenicum			8.67	2.79	0.58	10.21	89.79				
63	brigantedinium sp			5.67	2.79	0.58	10.21	100.00				
64												
65	*Groups Stasiun 1 & Stasiun 2*											
66												
67	Average dissimilarity = 89.19											
68												
69				Group Stasiun 1	Group Stasiun 2							
70	Species			Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%			
71	alexandrium sp			15.00	9.00	8.71	1.19	9.76	9.76			
72	Peridinium aquadridentatum			13.33	0.00	6.96	4.44	7.80	17.56			
73	protoperidinium pentagonum			3.67	13.67	6.01	1.20	6.74	24.31			
74	trinovantedinium pallidifulvum			8.33	0.00	4.65	1.22	5.21	29.52			
75	gonyaulax digitalis			0.00	8.33	4.64	1.30	5.20	34.72			
76	pentapharsodinium tyrrhenicum			10.00	0.00	4.62	0.66	5.18	39.91			
77	alexandrium tamarense			8.67	0.00	4.13	1.29	4.63	44.53			
78	protoperidinium subinerm			3.67	9.00	3.92	1.20	4.40	48.93			
79	protoperidinium sp			4.67	8.33	3.84	1.20	4.31	53.24			

80	scrippsiella lachrymosa			7.33		0.00	3.63	0.66	4.07	57.31	
81	kryptoperidinium foliaceum			7.33		0.00	3.63	0.66	4.07	61.37	
82	scrippsiella sp			4.67		0.00	2.83	0.66	3.18	64.55	
83	trinovantedinium applanatum			4.67		0.00	2.83	0.66	3.18	67.73	
84	cochlodinium polykrikoides			4.67		0.00	2.83	0.66	3.18	70.91	
85	alexandrium minutum			0.00		4.00	2.35	0.66	2.63	73.54	
86	brigantedinium asymmetricum			0.00		4.00	2.35	0.66	2.63	76.17	
87	Diplopsalis lenticula			0.00		4.00	2.35	0.66	2.63	78.80	
88	Quinquecuspis concreta			5.00		0.00	2.31	0.66	2.59	81.39	
89	dubridinium sp			5.00		0.00	2.31	0.66	2.59	83.98	
90	lejeunacysta oliva			0.00		4.33	2.30	0.66	2.57	86.55	
91	polykrikos schwartzii			0.00		4.67	2.09	0.66	2.34	88.90	
92	zygabikodinium lenticulatum			0.00		4.67	2.09	0.66	2.34	91.24	
93											
94	*Groups Stasiun 1 & Stasiun 3*										
95											
96	Average dissimilarity = 94.50										
97											
98					Group Stasiun 1		Group Stasiun 3				
99	Species				Av.Abund		Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
100	alexandrium sp				15.00		0.00	6.15	0.66	6.51	6.51
101	Peridinium aquadridentatum				13.33		0.00	6.07	4.88	6.43	12.94
102	Alexandrium affine				0.00		13.33	5.99	1.24	6.33	19.27
103	alexandrium tamarense				8.67		8.67	5.10	1.32	5.39	24.67
104	protoperidinium pentagonum				3.67		13.00	5.09	1.20	5.38	30.05
105	pentapharsodinium tyrrhenicum				10.00		4.33	4.86	0.92	5.14	35.19
106	polykrikos schwartzii				0.00		9.33	4.79	0.66	5.07	40.25
107	brigantedinium sp				0.00		9.00	4.19	1.27	4.43	44.69
108	trinovantedinium pallidifulvum				8.33		0.00	4.02	1.24	4.26	48.95

109	spiniferites bentorii			0.00		8.67	3.80	0.66	4.02	52.96	
110	spiniferites mirabilis			0.00		8.67	3.69	1.31	3.91	56.87	
111	scrippsiella lachrymosa			7.33		0.00	3.19	0.66	3.38	60.25	
112	kryptoperidinium foliaceum			7.33		0.00	3.19	0.66	3.38	63.63	
113	protoperidinium sp			4.67		0.00	2.43	0.66	2.57	66.20	
114	scrippsiella sp			4.67		0.00	2.43	0.66	2.57	68.77	
115	trinovantedinium applanatum			4.67		0.00	2.43	0.66	2.57	71.34	
116	cochlodinium polykrikoides			4.67		0.00	2.43	0.66	2.57	73.90	
117	votadinium spinosum			0.00		4.67	2.40	0.66	2.53	76.44	
118	gymnodinium instriatum			0.00		4.67	2.40	0.66	2.53	78.97	
119	Quinquecuspis concreta			5.00		0.00	2.05	0.66	2.17	81.14	
120	dubridinium sp			5.00		0.00	2.05	0.66	2.17	83.31	
121	dubridinium caperatum			0.00		4.33	1.90	0.66	2.01	85.32	
122	kryptoperidinium sp			0.00		4.33	1.90	0.66	2.01	87.33	
123	protoperidinium latissimum			0.00		4.33	1.80	0.66	1.90	89.23	
124	protoperidinium pallidum			0.00		4.33	1.80	0.66	1.90	91.13	
125											
126	*Groups Stasiun 2 & Stasiun 3*										
127											
128	Average dissimilarity = 86.24										
129											
130					Group Stasiun 2		Group Stasiun 3				
131	Species				Av.Abund		Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
132	protoperidinium pentagonum				13.67		13.00	6.33	1.18	7.34	7.34
133	polykrikos schwartzii				4.67		9.33	6.20	0.82	7.19	14.52
134	Alexandrium affine				4.67		13.33	6.18	1.15	7.17	21.69
135	protoperidinium sp				8.33		0.00	4.71	1.31	5.46	27.15
136	gonyaulax digitalis				8.33		0.00	4.71	1.31	5.46	32.61
137	protoperidinium subinerm				9.00		0.00	4.44	1.31	5.15	37.76

138	alexandrium sp			9.00		0.00	4.44	1.31	5.15	42.91		
139	spiniferites bentorii			0.00		8.67	4.38	0.66	5.07	47.99		
140	alexandrium tamarense			0.00		8.67	4.38	0.66	5.07	53.06		
141	spiniferites mirabilis			0.00		8.67	4.24	1.31	4.92	57.97		
142	brigantedinium sp			4.67		9.00	4.22	1.04	4.89	62.87		
143	votadinium spinosum			0.00		4.67	2.83	0.66	3.29	66.15		
144	gymnodinium instriatum			0.00		4.67	2.83	0.66	3.29	69.44		
145	alexandrium minutum			4.00		0.00	2.38	0.66	2.76	72.20		
146	brigantedinium asymmetricum			4.00		0.00	2.38	0.66	2.76	74.96		
147	Diplopsalis lenticula			4.00		0.00	2.38	0.66	2.76	77.72		
148	lejeunacysta oliva			4.33		0.00	2.33	0.66	2.70	80.42		
149	dubridinium caperatum			0.00		4.33	2.19	0.66	2.54	82.96		
150	kryptoperidinium sp			0.00		4.33	2.19	0.66	2.54	85.49		
151	pentapharsodinium tyrrhenicum			0.00		4.33	2.19	0.66	2.54	88.03		
152	zygabikodinium lenticulatum			4.67		0.00	2.12	0.66	2.45	90.48		
153												
154	*Groups Stasiun 1 & Stasiun 4*											
155												
156	Average dissimilarity = 85.88											
157												
158					Group Stasiun 1		Group Stasiun 4					
159	Species				Av.Abund		Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%	
160	alexandrium sp				15.00		11.33	9.80	1.34	11.41	11.41	
161	polykrikos schwartzii				0.00		11.67	6.43	1.81	7.49	18.90	
162	pentapharsodinium tyrrhenicum				10.00		8.67	6.33	1.25	7.37	26.27	
163	Peridinium aquadridentatum				13.33		3.00	5.85	1.76	6.81	33.09	
164	trinovantedinium pallidifulvum				8.33		0.00	4.76	1.20	5.55	38.63	
165	alexandrium tamarense				8.67		3.00	3.83	1.33	4.46	43.09	
166	scrippsiella lachrymosa				7.33		0.00	3.70	0.66	4.31	47.40	

167	kryptoperidinium foliaceum			7.33		0.00	3.70	0.66	4.31	51.71		
168	protoperidinium sp			4.67		5.67	3.55	1.19	4.13	55.84		
169	peridinium meunieri			3.67		6.00	3.39	0.96	3.95	59.79		
170	echinidinum granulatum			0.00		6.00	3.09	1.24	3.60	63.39		
171	scrippsiella sp			4.67		0.00	2.91	0.65	3.39	66.78		
172	trinovantedinium applanatum			4.67		0.00	2.91	0.65	3.39	70.17		
173	cochlodinium polykrikoides			4.67		0.00	2.91	0.65	3.39	73.56		
174	brigantedinium sp			0.00		5.67	2.78	1.29	3.24	76.80		
175	Quinquecuspis concreta			5.00		0.00	2.35	0.66	2.74	79.54		
176	dubridinium sp			5.00		0.00	2.35	0.66	2.74	82.28		
177	protoperidinium pentagonum			3.67		0.00	1.85	0.66	2.15	84.44		
178	protoperidinium subinerm			3.67		0.00	1.85	0.66	2.15	86.59		
179	diplopsalis lebourae			3.67		0.00	1.85	0.66	2.15	88.75		
180	Alexandrium affine			0.00		3.00	1.83	0.66	2.13	90.87		
181												
182	*Groups Stasiun 2 & Stasiun 4*											
183												
184	Average dissimilarity = 80.94											
185												
186					Group Stasiun 2		Group Stasiun 4					
187	Species				Av.Abund		Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%	
188	protoperidinium pentagonum				13.67		0.00	7.75	1.17	9.58	9.58	
189	alexandrium sp				9.00		11.33	6.76	1.20	8.35	17.92	
190	polykrikos schwartzii				4.67		11.67	6.51	1.33	8.04	25.96	
191	gonyaulax digitalis				8.33		0.00	5.77	1.27	7.12	33.09	
192	protoperidinium subinerm				9.00		0.00	5.28	1.27	6.53	39.61	
193	pentapharsodinium tyrrhenicum				0.00		8.67	4.73	1.22	5.85	45.46	
194	protoperidinium sp				8.33		5.67	4.33	1.21	5.35	50.81	
195	brigantedinium sp				4.67		5.67	3.91	1.37	4.83	55.63	

brigantedinium sp				4.67		5.67	3.91	1.37	4.83	55.63	
echinidinum granulatum				0.00		6.00	3.69	1.22	4.55	60.19	
Alexandrium affine				4.67		3.00	3.50	0.97	4.33	64.51	
alexandrium minutum				4.00		3.00	3.33	0.80	4.11	68.62	
brigantedinium asymmetricum				4.00		0.00	2.95	0.65	3.65	72.27	
Diplopsalis lenticula				4.00		0.00	2.95	0.65	3.65	75.92	
peridinium meunieri				0.00		6.00	2.90	0.66	3.58	79.50	
lejeunacysta oliva				4.33		0.00	2.81	0.65	3.47	82.97	
zygabikodinium lenticulatum				4.67		0.00	2.47	0.66	3.05	86.02	
alexandrium tamarense				0.00		3.00	2.24	0.66	2.76	88.79	
trinovantedinium sp				0.00		2.67	1.83	0.66	2.27	91.05	
Groups Stasiun 3 & Stasiun 4											
Average dissimilarity = 84.42											
				Group Stasiun 3		Group Stasiun 4					
Species				Av.Abund		Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%	
polykrikos schwartzii				9.33		11.67	7.30	2.04	8.65	8.65	
alexandrium sp				0.00		11.33	6.67	1.04	7.90	16.55	
protoperidinium pentagonum				13.00		0.00	6.41	1.15	7.60	24.15	
Alexandrium affine				13.33		3.00	6.41	1.39	7.59	31.74	
alexandrium tamarense				8.67		3.00	5.15	0.93	6.10	37.84	
spiniferites bentorii				8.67		3.00	4.92	0.81	5.83	43.67	
spiniferites mirabilis				8.67		0.00	4.32	1.29	5.12	48.79	
pentapharsodinium tyrrhenicum				4.33		8.67	4.16	1.30	4.93	53.72	
brigantedinium sp				9.00		5.67	3.98	1.31	4.72	58.44	
echinidinum granulatum				0.00		6.00	3.13	1.25	3.71	62.15	
yotadinium spinosum				4.67		0.00	2.91	0.65	3.45	65.59	

gymnodinium instriatum				4.67		0.00	2.91	0.65	3.45	69.04	
protoperidinium sp				0.00		5.67	2.82	1.30	3.34	72.38	
peridinium meunieri				0.00		6.00	2.56	0.66	3.03	75.41	
dubridinium caperatum				4.33		0.00	2.23	0.66	2.64	78.06	
kryptoperidinium sp				4.33		0.00	2.23	0.66	2.64	80.70	
protoperidinium latissimum				4.33		0.00	2.09	0.66	2.48	83.18	
protoperidinium pallidum				4.33		0.00	2.09	0.66	2.48	85.65	
selenopemphix nephroides				4.33		0.00	2.09	0.66	2.48	88.13	
alexandrium peruvianum				4.33		0.00	2.09	0.66	2.48	90.60	

2. Output uji ANOSIM dan SIMPER Muara Sungai Tangka Sinjai

One-way Analysis

Factor Values

Factor : Stasiun
Stasiun 1
Stasiun 2
Stasiun 3
Stasiun 4

Factor Groups

Sample	Stasiun
I.1	Stasiun 1
I.2	Stasiun 1
I.3	Stasiun 1
II.1	Stasiun 2
II.2	Stasiun 2
II.3	Stasiun 2
III.1	Stasiun 3
III.2	Stasiun 3
III.3	Stasiun 3
IV.1	Stasiun 4
IV.2	Stasiun 4
IV.3	Stasiun 4

Global Test

Sample statistic (Global R): 0.
Significance level of sample
Number of permutations: 999
Number of permuted stats

Pairwise Tests

Groups
Stasiun 1,
Stasiun 1
Stasiun
Stasi
Sta
S

Hasil Simper Muara Sungai Tangka Sinjai

	A	B	C	D	E	F	G
3	Group Stasiun 1						
4							
5	Average similarity: 36.42						
6							
7	Species		Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%
8	scrippsiella sp		27.33	16.63	2.09	45.68	45.68
9	alexandrium tamarense		21.67	12.58	12.82	34.53	80.21
0	protoperidinium sp		16.67	3.60	0.58	9.90	90.10
1							
2	Group Stasiun 2						
3							
4	Average similarity: 33.69						
5							
6	Species		Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%
7	alexandrium affine		26.00	12.48	2.64	37.05	37.05
8	scrippsiella sp		20.67	9.72	7.82	28.85	65.90
9	protoperidinium sp		10.33	2.96	0.58	8.78	74.69
0	dubridinium sp		10.33	2.96	0.58	8.78	83.47
1	protoperidinium pentagonum		15.33	2.88	0.58	8.53	92.00
2							
3	Group Stasiun 3						
4							
5	Average similarity: 19.53						
6							
7	Species		Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%
8	scrippsiella sp		22.33	5.88	0.58	30.09	30.09
9	trinovantedinium applanatum		11.33	4.15	0.58	21.25	51.34
0	Scrippsiella lachrymosa		11.00	3.63	0.58	18.57	69.91
1	protoperidinium sp		11.00	2.94	0.58	15.04	84.96

	A	B	C	D	E	F	G	H	I
51	protoperidinium sp		11.00	2.94	0.58	15.04	84.96		
52	scrippsiella trochoidea		11.00	2.94	0.58	15.04	100.00		
53									
54	Group Stasiun 4								
55									
56	Average similarity: 12.20								
57									
58	Species		Av.Abund	Av.Sim	Sim/SD	Contrib%	Cum.%		
59	protoperidinium sp		10.33	4.31	0.58	35.32	35.32		
60	alexandrium tamarense		10.33	4.31	0.58	35.32	70.63		
61	dubridinium sp		10.33	3.58	0.58	29.37	100.00		
62									
63	Groups Stasiun 1 & Stasiun 2								
64									
65	Average dissimilarity = 69.51								
66									
67			Group Stasiun 1	Group Stasiun 2					
68	Species		Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%	
69	alexandrium affine		0.00	26.00	8.96	2.84	12.89	12.89	
70	alexandrium sp		22.33	5.33	6.63	1.05	9.54	22.43	
71	alexandrium tamarense		21.67	11.00	6.22	1.97	8.95	31.38	
72	Scrippsiella lachrymosa		10.33	10.33	4.58	1.35	6.60	37.98	
73	protoperidinium sp		16.67	10.33	4.45	1.20	6.40	44.38	
74	protoperidinium pentagonum		5.67	15.33	4.42	1.20	6.35	50.73	
75	dubridinium sp		0.00	10.33	3.56	1.26	5.12	55.85	
76	scrippsiella sp		27.33	20.67	3.47	1.15	4.99	60.84	
77	scrippsiella rotunda		0.00	10.00	2.95	0.66	4.25	65.09	
78	scrippsiella trochoidea		0.00	10.00	2.95	0.66	4.25	69.34	
79	kryptoperidinium foliaceum		5.33	5.33	2.53	0.83	3.63	72.97	

79	kryptoperidinium foliaceum	5.33	5.33	2.53	0.83	3.63	72.97	
80	Spiniferites elongatus	0.00	5.33	2.08	0.66	3.00	75.96	
81	islandinium minutum	0.00	5.33	2.08	0.66	3.00	78.96	
82	protoperidinium divergens	5.33	0.00	2.07	0.66	2.97	81.93	
83	Alexandrium minutum	5.33	0.00	2.07	0.66	2.97	84.91	
84	Polykrikos kofoidii	0.00	5.33	1.84	0.66	2.65	87.56	
85	protoperidinium subinerm	0.00	5.33	1.84	0.66	2.65	90.21	
86								
87	Groups Stasiun 1 & Stasiun 3							
88								
89	Average dissimilarity = 74.18							
90								
91		Group Stasiun 1	Group Stasiun 3					
92	Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%	
93	alexandrium sp	22.33	5.67	7.03	1.01	9.48	9.48	
94	alexandrium tamarense	21.67	5.33	6.03	1.43	8.13	17.61	
95	scrippsiella sp	27.33	22.33	5.43	0.92	7.32	24.93	
96	Scrippsiella lachrymosa	10.33	11.00	5.06	1.50	6.82	31.75	
97	protoperidinium sp	16.67	11.00	4.73	1.11	6.38	38.12	
98	trinovantedinium applanatum	0.00	11.33	4.36	1.28	5.87	44.00	
99	protoperidinium subinerm	0.00	11.33	3.78	0.66	5.10	49.10	
00	scrippsiella trochoidea	0.00	11.00	3.56	1.31	4.79	53.89	
01	scrippsiella crystallina	0.00	10.67	3.33	0.66	4.48	58.38	
02	alexandrium pseudogonyaulax	0.00	10.67	3.33	0.66	4.48	62.86	
03	islandinium minutum	0.00	10.67	3.33	0.66	4.48	67.34	
04	protoperidinium pentagonum	5.67	5.67	2.86	0.81	3.85	71.19	
05	protoperidinium punculatum	0.00	5.67	2.47	0.66	3.32	74.52	
06	gonyaulax verior	0.00	5.67	2.47	0.66	3.32	77.84	
07	pentapharsodinium tyrrhenicu	0.00	5.67	2.47	0.66	3.32	81.17	

107	pentapharsodinium tyrrhenicu	0.00	5.67	2.47	0.66	3.32	81.17	
108	protoperidinium divergens	5.33	0.00	2.18	0.65	2.94	84.11	
109	Alexandrium minutum	5.33	0.00	2.18	0.65	2.94	87.05	
110	kryptoperidinium foliaceum	5.33	0.00	2.18	0.65	2.94	89.99	
111	spiniferites bentorii	0.00	5.67	1.89	0.66	2.55	92.54	
112								
113	Groups Stasiun 2 & Stasiun 3							
114								
115	Average dissimilarity = 75.14							
116								
117		Group Stasiun 2	Group Stasiun 3					
118	Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%	
119	alexandrium affine	26.00	0.00	8.33	2.74	11.09	11.09	
120	scrippsiella sp	20.67	22.33	5.12	1.83	6.81	17.91	
121	scrippsiella trochoidea	10.00	11.00	4.09	1.39	5.45	23.35	
122	protoperidinium pentagonum	15.33	5.67	4.07	1.25	5.42	28.77	
123	protoperidinium subinerm	5.33	11.33	4.04	0.93	5.37	34.14	
124	alexandrium tamarense	11.00	5.33	4.03	0.86	5.37	39.51	
125	trinovantedinium applanatum	0.00	11.33	3.84	1.28	5.11	44.62	
126	islandinium minutum	5.33	10.67	3.81	1.00	5.08	49.70	
127	dubridinium sp	10.33	0.00	3.31	1.25	4.40	54.10	
128	scrippsiella crystallina	0.00	10.67	3.00	0.66	4.00	58.10	
129	alexandrium pseudogonyaulax	0.00	10.67	3.00	0.66	4.00	62.10	
130	scrippsiella rotunda	10.00	0.00	2.77	0.66	3.69	65.79	
131	protoperidinium sp	10.33	11.00	2.50	0.90	3.33	69.12	
132	Scrippsiella lachrymosa	10.33	11.00	2.49	0.89	3.32	72.43	
133	alexandrium sp	5.33	5.67	2.43	0.84	3.23	75.67	
134	protoperidinium punculatum	0.00	5.67	2.14	0.66	2.85	78.52	
135	gonyaulax verior	0.00	5.67	2.14	0.66	2.85	81.38	

	A	B	C	D	E	F	G
136	pentapharsodinium tyrrhenicu	0.00	5.67	2.14	0.66	2.85	84.23
137	Spiniferites elongatus	5.33	0.00	1.92	0.66	2.56	86.79
138	Polykrikos kofoidii	5.33	0.00	1.72	0.66	2.28	89.07
139	kryptoperidinium foliaceum	5.33	0.00	1.72	0.66	2.28	91.36
140							
141	Groups Stasiun 1 & Stasiun 4						
142							
143	Average dissimilarity = 78.67						
144							
145		Group Stasiun 1	Group Stasiun 4				
146	Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
147	scrippsiella sp	27.33	5.33	8.88	1.71	11.28	11.28
148	alexandrium sp	22.33	5.33	7.48	1.04	9.51	20.79
149	protoperidinium sp	16.67	10.33	5.00	1.27	6.35	27.14
150	brigantedinium spp	5.33	10.33	4.38	0.94	5.57	32.71
151	alexandrium tamarense	21.67	10.33	4.07	1.08	5.17	37.88
152	dubridinium sp	0.00	10.33	3.87	1.31	4.92	42.80
153	Scrippsiella lachrymosa	10.33	0.00	3.80	0.66	4.83	47.63
154	protoperidinium divergens	5.33	0.00	2.37	0.66	3.02	50.65
155	Alexandrium minutum	5.33	0.00	2.37	0.66	3.02	53.67
156	kryptoperidinium foliaceum	5.33	0.00	2.37	0.66	3.02	56.69
157	Protoperidinium pallidum	0.00	5.33	2.22	0.66	2.83	59.51
158	protoperidinium subinerm	0.00	5.33	2.22	0.66	2.83	62.34
159	kryptoperidinium sp	0.00	5.33	2.22	0.66	2.83	65.16
160	pentapharsodinium sp	0.00	5.33	2.22	0.66	2.83	67.99
161	protoperidinium excentricum	0.00	5.00	2.02	0.66	2.56	70.55
162	selenopemphix nephroides	0.00	5.00	2.02	0.66	2.56	73.11
163	selenopemphix sp	0.00	5.00	2.02	0.66	2.56	75.68
164	Spiniferites elongatus	0.00	5.00	2.02	0.66	2.56	78.24

	A	B	C	D	E	F	G
165	diplopsalis sp	0.00	5.00	2.02	0.66	2.56	80.80
166	protoperidinium pentagonum	5.67	0.00	2.01	0.66	2.55	83.35
167	gymnodinium instriatum	5.33	0.00	1.96	0.66	2.49	85.85
168	prooperidinium oblongum	0.00	5.33	1.86	0.66	2.36	88.21
169	protoperidinium punculatum	0.00	5.33	1.86	0.66	2.36	90.57
170							
171	Groups Stasiun 2 & Stasiun 4						
172							
173	Average dissimilarity = 80.70						
174							
175		Group Stasiun 2	Group Stasiun 4				
176	Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
177	alexandrium affine	26.00	0.00	8.94	2.90	11.08	11.08
178	scrippsiella sp	20.67	5.33	5.21	1.53	6.45	17.53
179	alexandrium tamarense	11.00	10.33	5.02	1.53	6.22	23.75
180	protoperidinium pentagonum	15.33	0.00	4.79	1.23	5.93	29.69
181	Scrippsiella lachrymosa	10.33	0.00	3.31	1.30	4.11	33.79
182	brigantedinium spp	0.00	10.33	3.21	0.66	3.98	37.77
183	scrippsiella rotunda	10.00	0.00	2.95	0.66	3.65	41.42
184	scrippsiella trochoidea	10.00	0.00	2.95	0.66	3.65	45.08
185	alexandrium sp	5.33	5.33	2.54	0.84	3.15	48.22
186	Spiniferites elongatus	5.33	5.00	2.50	0.86	3.10	51.33
187	dubridinium sp	10.33	10.33	2.48	0.87	3.08	54.40
188	protoperidinium subinerm	5.33	5.33	2.48	0.83	3.07	57.48
189	protoperidinium sp	10.33	10.33	2.39	0.88	2.97	60.44
190	islandinium minutum	5.33	0.00	2.08	0.66	2.57	63.02
191	Protoperidinium pallidum	0.00	5.33	1.94	0.66	2.41	65.43
192	kryptoperidinium sp	0.00	5.33	1.94	0.66	2.41	67.83
193	pentapharsodinium sp	0.00	5.33	1.94	0.66	2.41	70.24

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	A	B	C	D	E	F	G
194	Polykrikos kofoidii	5.33	0.00	1.84	0.66	2.28	72.52
195	kryptoperidinium foliaceum	5.33	0.00	1.84	0.66	2.28	74.80
196	polkrikos schwartzii	5.33	0.00	1.84	0.66	2.28	77.08
197	protoperidinium excentricum	0.00	5.00	1.77	0.66	2.19	79.28
198	selenopemphix nephroides	0.00	5.00	1.77	0.66	2.19	81.47
199	selenopemphix sp	0.00	5.00	1.77	0.66	2.19	83.66
200	diplopsalis sp	0.00	5.00	1.77	0.66	2.19	85.86
201	prooperidinium oblongum	0.00	5.33	1.66	0.66	2.05	87.91
202	protoperidinium punculatum	0.00	5.33	1.66	0.66	2.05	89.96
203	scrippsiella crystallina	0.00	5.33	1.66	0.66	2.05	92.01
204							
205	Groups Stasiun 3 & Stasiun 4						
206							
207	Average dissimilarity = 82.69						
208							
209		Group Stasiun 3	Group Stasiun 4				
210	Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
211	scrippsiella sp	22.33	5.33	6.85	1.43	8.28	8.28
212	protoperidinium subinerm	11.33	5.33	4.57	0.96	5.52	13.80
213	Scrippsiella lachrymosa	11.00	0.00	4.12	1.25	4.98	18.78
214	scrippsiella crystallina	10.67	5.33	4.04	0.93	4.88	23.66
215	alexandrium pseudogonyaulax	10.67	5.33	4.04	0.93	4.88	28.54
216	trinovantedinium applanatum	11.33	5.33	3.63	1.06	4.39	32.94
217	dubridinium sp	0.00	10.33	3.58	1.29	4.33	37.27
218	scrippsiella trochoidea	11.00	0.00	3.55	1.32	4.29	41.56
219	brigantedinium spp	0.00	10.33	3.34	0.66	4.04	45.61
220	alexandrium tamarense	5.33	10.33	3.32	1.04	4.02	49.63
221	islandinium minutum	10.67	0.00	3.32	0.66	4.02	53.65
222	protoperidinium punculatum	5.67	5.33	2.82	0.82	3.41	57.06

	A	B	C	D	E	F	G	H
223	protoperidinium sp	11.00	10.33	2.81	0.90	3.40	60.46	
224	alexandrium sp	5.67	5.33	2.68	0.85	3.24	63.69	
225	protoperidinium pentagonum	5.67	0.00	2.46	0.66	2.97	66.67	
226	gonyaulax verior	5.67	0.00	2.46	0.66	2.97	69.64	
227	pentapharsodinium tyrrhenicu	5.67	0.00	2.46	0.66	2.97	72.61	
228	Protoperidinium pallidum	0.00	5.33	2.04	0.65	2.47	75.08	
229	kryptoperidinium sp	0.00	5.33	2.04	0.65	2.47	77.55	
230	pentapharsodinium sp	0.00	5.33	2.04	0.65	2.47	80.02	
231	spiniferites bentorii	5.67	0.00	1.89	0.66	2.28	82.31	
232	akashiwo sanguinea	5.67	0.00	1.89	0.66	2.28	84.59	
233	protoperidinium excentricum	0.00	5.00	1.86	0.66	2.25	86.84	
234	selenopemphix nephroides	0.00	5.00	1.86	0.66	2.25	89.08	
235	selenopemphix sp	0.00	5.00	1.86	0.66	2.25	91.33	

3. Output uji ANOSIM dan SIMPER Muara Sungai Teko Bulukumba

One-way Analysis								
Fact or Val ues								
Fact or : St asi un								
St asi un 1								
St asi un 2								
St asi un 3								
St asi un 4								
Fact or Gr oups								
Sampl e St asi un								
I . 1 St asi un 1								
I . 2 St asi un 1								
I . 3 St asi un 1								
I I . 1 St asi un 2								
I I . 2 St asi un 2								
I I . 3 St asi un 2								
I I I . 1 St asi un 3								
I I I . 2 St asi un 3								
I I I . 3 St asi un 3								
I V. 1 St asi un 4								
I V. 2 St asi un 4								
I V. 3 St asi un 4								
Gl obal Test								
Sampl e st at i st i c (Gl obal R) : 0. 012								
Si gni f i cance l evel of sampl e st at i st i c: 46. 6%								
Number of per mut at i ons: 999 (Random sampl e f r om 15400)								
Number of per mut ed st at i st i cs gr eat er t han or equal t o Gl obal R: 465								
Pai r wi se Test s								

Gr oups	R St at i st i c	Si gni f i cance Level %	Possi bl e Per mut at i ons	Act ual Per mut at i ons	Number >= Obser ved
St asi un 1, St asi un 2	- 0. 13	60.	10	10	6
St asi un 1, St asi un 3	0. 37	10.	10	10	1
St asi un 1, St asi un 4	0. 037	30.	10	10	3
St asi un 2, St asi un 3	- 0. 185	90.	10	10	9
St asi un 2, St asi un 4	0. 037	60.	10	10	6
St asi un 3, St asi un 4	0. 148	40.	10	10	4

Hasil Simper Muara Sungai Teko Bulukumba

17						
18		Factor groups				
19		Stasiun 1				
20		Stasiun 2				
21		Stasiun 3				
22		Stasiun 4				
23						
24		Group Stasiun 1				
25						
26		Average similarity: 12.92				
27						
28		Species	Av.Abund	Av.Sim	Sim/SD	Contrib% Cum.%
29		alexandrium sp	5.00	3.31	0.58	25.62 25.62
30		alexandrium tamarense	7.33	3.31	0.58	25.62 51.24
31		scrippsiella sp	4.67	3.15	0.58	24.38 75.62
32		Dubridinium spp	4.67	3.15	0.58	24.38 100.00
33						
34		Group Stasiun 2				
35						
36		Average similarity: 4.44				
37						
38		Species	Av.Abund	Av.Sim	Sim/SD	Contrib% Cum.%
39		protoperidinium sp	14.00	4.44	0.58	100.00 100.00
40						
41		Group Stasiun 3				
42						
43		Average similarity: 24.27				

45		Species	Av.Abund	Av.Sim	Sim/SD	Contrib% Cum.%
46		protoperidinium sp	11.33	9.60	7.22	39.58 39.58
47		scrippsiella sp	15.00	8.91	5.92	36.71 76.29
48		polykrikos schwartzii	6.00	3.35	0.58	13.81 90.10
49						
50		Group Stasiun 4				
51						
52		Average similarity: 43.98				
53						
54		Species	Av.Abund	Av.Sim	Sim/SD	Contrib% Cum.%
55		protoperidinium sp	18.67	18.22	30.96	41.42 41.42
56		alexandrium sp	10.33	9.74	7.09	22.14 63.56
57		scrippsiella lachrymosa	11.00	9.32	14.33	21.19 84.75
58		quinquecuspis concreta	5.67	3.35	0.58	7.63 92.37
59						
60		Groups Stasiun 1 & Stasiun 2				
61						
62		Average dissimilarity = 88.24				
63						
64			Group Stasiun 1	Group Stasiun 2		
65		Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD Contrib% Cum.%
66		scrippsiella sp	4.67	14.00	10.15	0.94 11.50 11.50
67		protoperidinium sp	10.00	14.00	9.44	1.17 10.70 22.20
68		brigantedinium spp	0.00	9.33	8.16	0.66 9.25 31.45
69		alexandrium tamarense	7.33	0.00	4.60	1.16 5.21 36.66
70		gymnodinium instriatum	2.00	4.67	4.31	0.89 4.88 41.54
71		alexandrium sp	5.00	4.67	4.13	1.43 4.68 46.22
72		Alexandrium affine	0.00	4.67	4.08	0.66 4.62 50.84
73		islandinium minutum	2.33	4.67	3.46	0.97 3.92 54.77

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74	scrippsiella lachrymosa	2.00	4.67	3.45	1.00	3.91	58.68	
75	penthapharsodinium sp	4.67	0.00	3.32	0.65	3.77	62.44	
76	Dubridinium spp	4.67	0.00	3.16	1.27	3.58	66.02	
77	scrippsiella trifida	0.00	4.67	2.97	0.66	3.37	69.39	
78	scrippsiella trochoidea	0.00	4.67	2.97	0.66	3.37	72.76	
79	spiniferites elongatus	0.00	4.67	2.97	0.66	3.37	76.12	
80	quinquecuspis concreta	0.00	4.67	2.73	0.66	3.09	79.21	
81	gonyaulax sp	0.00	4.67	2.73	0.66	3.09	82.30	
82	kryptoperidinium foliaceum	0.00	4.67	2.73	0.66	3.09	85.39	
83	pyrophacus steinii	2.33	0.00	1.66	0.65	1.88	87.28	
84	selenopemphix nephroides	2.33	0.00	1.66	0.65	1.88	89.16	
85	polykrikos schwartzii	2.33	0.00	1.66	0.65	1.88	91.04	
86								
87	Groups Stasiun 1 & Stasiun 3							
88								
89	Average dissimilarity = 83.91							
90								
91		Group Stasiun 1	Group Stasiun 3					
92	Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%	
93	protoperidinium sp	10.00	11.33	8.86	3.16	10.56	10.56	
94	brigantedinium spp	0.00	14.33	8.68	0.66	10.34	20.90	
95	scrippsiella sp	4.67	15.00	6.39	1.08	7.62	28.52	
96	alexandrium minutum	0.00	8.67	4.95	0.66	5.89	34.41	
97	Alexandrium affine	0.00	6.00	4.94	0.66	5.88	40.29	
98	scrippsiella lachrymosa	2.00	8.33	4.61	1.29	5.49	45.79	
99	alexandrium tamarense	7.33	0.00	4.41	1.17	5.26	51.05	
100	alexandrium sp	5.00	5.00	4.23	1.38	5.04	56.09	
101	polykrikos schwartzii	2.33	6.00	3.55	1.18	4.24	60.33	
102	penthapharsodinium sp	4.67	0.00	3.17	0.65	3.78	64.11	

103	Dubridinium spp	4.67	0.00	3.02	1.28	3.59	67.70	
104	protoperidinium leonis	0.00	3.00	2.47	0.66	2.94	70.64	
105	scrippsiella trochoidea	0.00	3.00	2.47	0.66	2.94	73.58	
106	scrippsiella crystallina	0.00	3.00	1.71	0.66	2.04	75.62	
107	selenopemphix sp	0.00	3.00	1.71	0.66	2.04	77.66	
108	diplopsalis lebourae	0.00	3.00	1.71	0.66	2.04	79.70	
109	scrippsiella rotunda	0.00	2.67	1.61	0.66	1.92	81.63	
110	Diplopsalis sp	0.00	2.67	1.61	0.66	1.92	83.55	
111	pyrophacus steinii	2.33	0.00	1.59	0.65	1.89	85.44	
112	selenopemphix nephroides	2.33	0.00	1.59	0.65	1.89	87.33	
113	islandinium minutum	2.33	0.00	1.59	0.65	1.89	89.22	
114	protoperidinium divergens	2.67	0.00	1.51	0.66	1.80	91.02	
115								
116	Groups Stasiun 2 & Stasiun 3							
117								
118	Average dissimilarity = 76.32							
119								
120		Group Stasiun 2	Group Stasiun 3					
121	Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%	
122	scrippsiella sp	14.00	15.00	10.40	1.68	13.62	13.62	
123	brigantedinium spp	9.33	14.33	9.99	0.97	13.08	26.71	
124	protoperidinium sp	14.00	11.33	5.98	1.74	7.83	34.54	
125	Alexandrium affine	4.67	6.00	4.62	0.95	6.06	40.60	
126	scrippsiella lachrymosa	4.67	8.33	4.31	1.18	5.64	46.24	
127	alexandrium minutum	0.00	8.67	4.30	0.66	5.63	51.87	
128	polykrikos schwartzii	0.00	6.00	3.52	1.24	4.61	56.48	
129	alexandrium sp	4.67	5.00	3.47	0.85	4.54	61.02	
130	scrippsiella trochoidea	4.67	3.00	3.25	0.98	4.25	65.28	
131	gymnodinium instriatum	4.67	0.00	3.17	0.65	4.16	69.43	

scrippsiella trifida	4.67	0.00	2.46	0.66	3.22	72.65	
spiniferites elongatus	4.67	0.00	2.46	0.66	3.22	75.87	
quinquecuspis concreta	4.67	0.00	2.28	0.66	2.99	78.86	
gonyaulax sp	4.67	0.00	2.28	0.66	2.99	81.85	
islandinium minutum	4.67	0.00	2.28	0.66	2.99	84.85	
kryptoperidinium foliaceum	4.67	0.00	2.28	0.66	2.99	87.84	
protoperidinium leonis	0.00	3.00	2.03	0.65	2.66	90.51	

Groups Stasiun 1 & Stasiun 4

Average dissimilarity = 73.96

	Group Stasiun 1	Group Stasiun 4				
Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
protoperidinium sp	10.00	18.67	12.06	2.05	16.30	16.30
scrippsiella lachrymosa	2.00	11.00	6.30	1.52	8.52	24.82
alexandrium tamarense	7.33	2.33	4.38	1.20	5.92	30.74
alexandrium sp	5.00	10.33	4.29	1.04	5.81	36.55
quinquecuspis concreta	0.00	5.67	4.09	1.30	5.54	42.08
penthapharsodinium sp	4.67	0.00	3.47	0.67	4.69	46.77
Alexandrium affine	0.00	4.67	3.44	0.66	4.65	51.42
Dubridinium spp	4.67	0.00	3.29	1.33	4.44	55.86
scrippsiella sp	4.67	5.67	3.03	1.15	4.09	59.95
gonyaulax verior	2.00	2.67	2.50	0.95	3.37	63.33
protoperidinium divergens	2.67	2.33	2.39	0.88	3.23	66.56
brigantedinium irregulare	0.00	3.00	2.15	0.66	2.90	69.46
cochlodinium polykrikoides	0.00	2.67	1.95	0.66	2.64	72.09
gonyaulax sp	0.00	2.67	1.95	0.66	2.64	74.73
pyrophacus steinii	2.33	0.00	1.73	0.67	2.34	77.07

selenopemphix nephroides	2.33	0.00	1.73	0.67	2.34	79.42
islandinium minutum	2.33	0.00	1.73	0.67	2.34	81.76
polykrikos schwartzii	2.33	0.00	1.73	0.67	2.34	84.10
protoperidinium subinerm	0.00	2.33	1.72	0.66	2.32	86.43
spiniferites mirabilis	0.00	2.33	1.72	0.66	2.32	88.75
brigantedinium spp	0.00	2.33	1.72	0.66	2.32	91.07

Groups Stasiun 2 & Stasiun 4

Average dissimilarity = 72.80

	Group Stasiun 2	Group Stasiun 4				
Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
scrippsiella sp	14.00	5.67	9.24	1.03	12.69	12.69
brigantedinium spp	9.33	2.33	7.20	0.79	9.89	22.59
protoperidinium sp	14.00	18.67	7.11	1.12	9.77	32.36
scrippsiella lachrymosa	4.67	11.00	5.77	1.61	7.92	40.28
alexandrium sp	4.67	10.33	5.27	1.65	7.23	47.52
Alexandrium affine	4.67	4.67	4.01	0.83	5.51	53.02
quinquecuspis concreta	4.67	5.67	3.92	1.45	5.38	58.41
gymnodinium instriatum	4.67	0.00	3.47	0.67	4.76	63.17
gonyaulax sp	4.67	2.67	3.15	0.97	4.32	67.49
scrippsiella trifida	4.67	0.00	2.64	0.67	3.63	71.12
scrippsiella trochoidea	4.67	0.00	2.64	0.67	3.63	74.75
spiniferites elongatus	4.67	0.00	2.64	0.67	3.63	78.38
islandinium minutum	4.67	0.00	2.45	0.67	3.36	81.74
kryptoperidinium foliaceum	4.67	0.00	2.45	0.67	3.36	85.11
brigantedinium irregulare	0.00	3.00	1.81	0.66	2.48	87.59
cochlodinium polykrikoides	0.00	2.67	1.64	0.65	2.25	89.84

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189	cochlodinium polykrikoides	0.00	2.67	1.64	0.65	2.25	89.84
190	gonyaulax verior	0.00	2.67	1.64	0.65	2.25	92.08
191							
192	Groups Stasiun 3 & Stasiun 4						
193							
194	Average dissimilarity = 67.56						
195							
196		Group Stasiun 3	Group Stasiun 4				
197	Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
198	brigantedinium spp	14.33	2.33	8.30	0.79	12.28	12.28
199	scrippsiella sp	15.00	5.67	5.17	0.96	7.65	19.93
200	alexandrium sp	5.00	10.33	5.04	1.69	7.47	27.39
201	Alexandrium affine	6.00	4.67	4.78	0.89	7.08	34.47
202	protoperidinium sp	11.33	18.67	4.74	1.22	7.02	41.49
203	alexandrium minutum	8.67	0.00	4.45	0.67	6.59	48.08
204	scrippsiella lachrymosa	8.33	11.00	4.38	1.14	6.48	54.56
205	polykrikos schwartzii	6.00	0.00	3.66	1.29	5.42	59.97
206	quinquecuspis concreta	0.00	5.67	3.31	1.29	4.90	64.87
207	protoperidinium leonis	3.00	0.00	2.12	0.67	3.13	68.00
208	scrippsiella trochoidea	3.00	0.00	2.12	0.67	3.13	71.14
209	brigantedinium irregulare	0.00	3.00	1.74	0.66	2.57	73.71
210	cochlodinium polykrikoides	0.00	2.67	1.57	0.66	2.33	76.04
211	gonyaulax sp	0.00	2.67	1.57	0.66	2.33	78.36
212	gonyaulax verior	0.00	2.67	1.57	0.66	2.33	80.69
213	scrippsiella crystallina	3.00	0.00	1.54	0.67	2.28	82.97
214	selenopemphix sp	3.00	0.00	1.54	0.67	2.28	85.25
215	diplopsalis lebourae	3.00	0.00	1.54	0.67	2.28	87.53
216	scrippsiella rotunda	2.67	0.00	1.44	0.67	2.14	89.67
217	Diplopsalis sp	2.67	0.00	1.44	0.67	2.14	91.81