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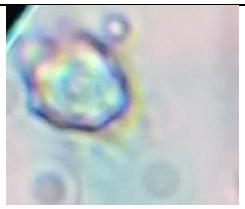
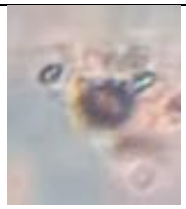
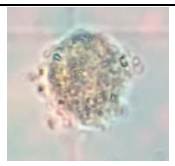
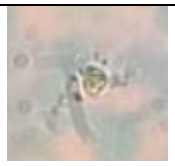
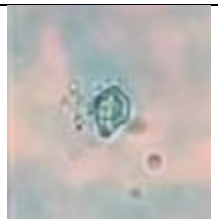
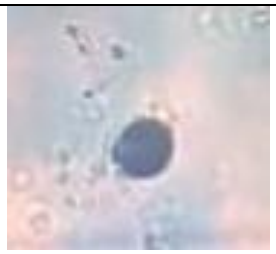
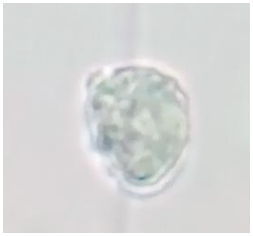
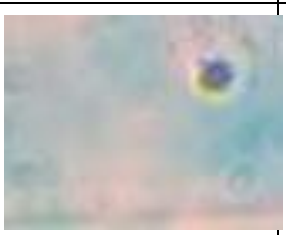
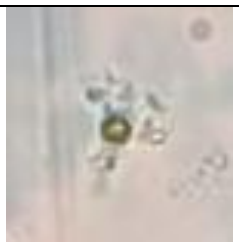
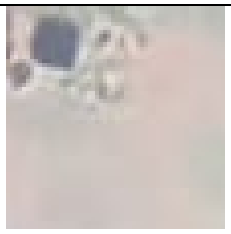
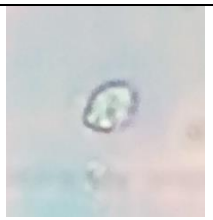
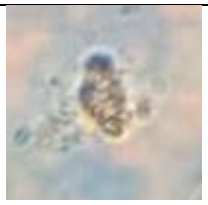
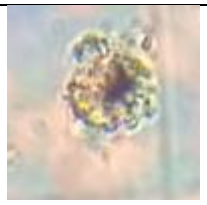
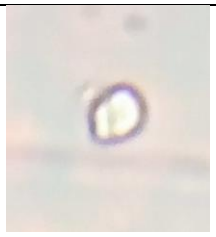
LAMPIRAN

Lampiran 1. Kista dinoflagellata dari Muara Sungai Jeneberang dan Pelabuhan Paotere

			
Alexandrium kutnerae	*Alexandrium taylori*	*Archaeperidinium* sp.	*Gonyaulax scrippsae*
			
Gonyaulax spinifera	*Gonyaulax verior*	*Gymnodinium cf. nolleri*	*Gymnodinium instriatum*
			
Gyrodinium sp.	*Kryptoperidinium foliaceum*	*Pentapharsodinium tyrrhenicum*	*Polykrikos kofoidii*
			
Polykrikos schwartzii	*Protoperidinium avellana*	*Protoperidinium cf. americanum*	*Protoperidinium cf. excentricum*
			
Protoperidinium claudicans	*Protoperidinium conicoides*	*Protoperidinium denticulatum*	*Protoperidinium leonis*

			
Protoperidinium obtusum	*Protoperidinium pentagonum*	*Protoperidinium punctulatum*	*Protoperidinium subinerme*
			
Pyrophacus steinii	*Scrippsiella cf. rotunda*	*Scrippsiella crystallina*	*Scrippsiella lachrymosa*
			
Scrippsiella trifida	*Scrippsiella trochoidea*	*Selenopemphix nephroides*	*Selenopemphix quanta*
			
Tectatodinium pelitum	*Warnowia cf. rosea*	*Zygabikodinium lenticulatum*	

Lampiran 2. Tekstur sedimen dari Muara Sungai Jeneberang dan Pelabuhan Paotere

Lokasi	Stasiun	Sedimen
Jeneberang	1	Pasir sedang
	2	Pasir sedang
	3	Pasir sedang
	4	Pasir sedang
Paotere	1	Pasir sedang
	2	Pasir sedang
	3	Pasir sedang
	4	Pasir sedang

Lampiran 3. Kualitas air dan nutrien dari Muara Sungai Jeneberang dan Pelabuhan Paotere

Stasiun	Suhu (^oC)	DO (mg/l)	Salinitas (PSU)	Turbiditas	pH	C Organik (%)	C Anorganik (%)	N Total	C:N
Jeneberang									
1	32,08 ±0,08	6,13± 0,04	31,42±0,21	2,43±0,01	7,29± 0,02	0,24±0,06	25,35±6,38	0,04± 0,00	6,64± 1,36
2	31,01 ±0,21	5,76± 0,49	29,21±2,09	2,27±0,14	7,34± 0,06	0,31±0,12	21,22±2,59	0,03± 0,01	10,69 ±1,36
3	31,00 ±0,05	4,31± 0,06	31,39±1,27	2,42±0,09	7,30± 0,01	0,24±0,11	12,33±5,63	0,01± 0,00	32,77 ±19,36
4	30,65 ±0,02	5,06± 0,55	32,95±0,05	2,53±0,00	7,43± 0,03	0,09±0,01	26,72±6,63	0,01± 0,00	12,05 ±2,20
Paotere									
1	31,57 ±0,12	5,40± 0,16	29,45±1,79	2,27±0,11	7,34± 0,01	0,44±0,17	11,57±11,57	0,04± 0,01	12,28 ±2,63
2	31,06 ±0,10	5,85± 0,07	32,97±0,08	2,53±0,01	7,38± 0,01	0,27±0,06	15,58±11,42	0,03± 0,00	9,58± 3,00
3	30,99 ±0,09	6,17± 0,07	32,88±0,06	2,52±0,00	7,43± 0,02	0,36±0,10	7,38±6,53	0,03± 0,00	11,34 ±3,58
4	30,62 ±0,06	6,30± 0,01	33,02±0,04	2,53±0,00	7,38± 0,02	0,31±0,09	12,32±9,58	0,03± 0,01	11,40 ±2,38

Lampiran 4. Frekuensi keberadaan spesies kista dinoflagellata dari Muara Sungai Jeneberang dan Pelabuhan Paotere

Family	Genus	Spesies	Jeneberang				Paotere			
			1	2	3	4	1	2	3	4
Gonyaulacaceae	*Gonyaulax*	*Gonyaulax scrippsae*	-	-	-	-	-	-	√	√
		Gonyaulax spinifera	-	-	-	-	√	√	-	-
		Gonyaulax verior	√	√	√	√	√	√	√	-
Gymnodiniaceae	*Gymnodinium*	*Gymnodinium cf. nolleri*	-	-	-	-	-	-	√	-
		Gymnodinium instriatum	√	√	√	√	√	√	-	-
Kolkwitziellaceae	*Gyrodinium*	*Gyrodinium* sp.	√	-	-	-	-	√	√	-
	Zygabikodinium	*Zygabikodinium lenticulatum*	-	-	-	-	-	-	√	√
Ostreopsidaceae	*Alexandrium*	*Alexandrium kutnerae*	-	-	-	-	-	√	-	-
		Alexandrium taylori	-	-	-	-	√	√	-	-
Peridiniaceae	*Kryptoperidinium*	*Kryptoperidinium foliaceum*	√	√	√	√	√	√	-	-
	Pentapharsodinium	*Pentapharsodinium tyrrhenicum*	-	√	-	√	-	√	-	-
	Scrippsiella	*Scrippsiella crystallina*	√	√	√	√	√	√	√	√
		Scrippsiella lachrymosa	√	√	√	√	√	-	√	-
		Scrippsiella trochoidea	√	-	-	-	-	√	√	-
		Scrippsiella trifida	√	-	-	-	√	√	-	-
		Scrippsiella cf. rotunda	-	-	-	-	-	-	√	-
Peridiniida incertae sedis	*Archaeperidinium*	*Archaeperidinium* sp.	-	-	-	-	√	√	-	-
	Selenopemphix	*Selenopemphix nephroides*	-	-	-	-	-	-	√	√
		Selenopemphix quanta	-	√	-	-	-	-	-	√
	Tectatodinium	*Tectatodinium pelitum*	-	√	-	-	-	-	-	-
Polykrikaceae	*Polykrikos*	*Polykrikos kofoidii*	√	√	√	√	-	√	√	-
		Polykrikos schwartzii	√	√	√	√	√	√	√	√
Protoperidiniaceae	*Protoperidinium*	*Protoperidinium avellana*	-	√	-	-	-	-	√	√
		Protoperidinium cf. americanum	√	√	√	√	√	√	√	-
		Protoperidinium cf. excentricum	√	-	-	-	-	-	√	-
		Protoperidinium claudicans	√	-	-	-	-	√	-	-
		Protoperidinium conicoides	√	√	√	√	√	√	-	-
		Protoperidinium denticulatum	√	-	-	-	-	√	√	√
		Protoperidinium leonis	√	-	-	-	-	√	-	-
		Protoperidinium obtusum	-	-	√	-	-	-	-	√
		Protoperidinium pentagonum	√	√	√	√	-	-	√	√
		Protoperidinium punctulatum	√	-	-	-	-	-	-	√
		Protoperidinium subinerme	√	√	√	√	√	√	-	-
Pyrophacaceae	*Pyrophacus*	*Pyrophacus steinii*	-	-	-	√	-	-	√	-
Warnowiaceae	*Warnowia*	*Warnowia rosea*	-	-	-	√	-	-	-	√

Lampiran 5. Output divers kista dinoflagellata di Muara Sungai Jeneberang dan Pelabuhan Paotere menggunakan aplikasi PRIMER v.5

	Total Individu (S)	Kelimpahan (N)	Keseragaman (J')	Keanekaragaman (H')	Dominansi (1-lamda)
K.JB.I.1.1	11	185	0.9484	0.9876	0.8907
K.JB.I.2.1	14	340	0.9235	1.0584	0.9018
K.JB.I.3.1	11	316	0.9215	0.9596	0.8788
MEAN	**12**	**281**	**0.9311**	**1.0019**	**0.8904**
SE	**1.0000**	**48.1675**	**0.0087**	**0.0294**	**0.0066**
K.JB.II.1.1	12	174	0.8780	0.9475	0.8759
K.JB.II.2.1	11	118	0.7873	0.8199	0.8137
K.JB.II.3.1	9	524	0.9497	0.9062	0.8663
MEAN	**11**	**272**	**0.8717**	**0.8912**	**0.8520**
SE	**0.8819**	**127.1430**	**0.0470**	**0.0376**	**0.0193**
K.JB.III.1.1	9	146	0.8274	0.7895	0.8127
K.JB.III.2.1	11	208	0.8801	0.9165	0.8607
K.JB.III.3.1	12	205	0.8306	0.8964	0.8519
MEAN	**11**	**186**	**0.8460**	**0.8675**	**0.8418**
SE	**0.8819**	**20.1341**	**0.0171**	**0.0394**	**0.0148**
K.JB.IV.1.1	12	103	0.8460	0.9130	0.8444
K.JB.IV.2.1	10	227	0.8635	0.8635	0.8444
K.JB.IV.3.1	12	245	0.9098	0.9818	0.8843
MEAN	**11**	**191**	**0.8731**	**0.9194**	**0.8577**
SE	**0.6667**	**44.7033**	**0.0190**	**0.0343**	**0.0133**
K.PP.I.1.1	10	90	0.9585	0.9585	0.8902
K.PP.I.2.1	11	96	0.9505	0.9898	0.8932
K.PP.I.3.1	9	121	0.9393	0.8963	0.8638
MEAN	**10**	**103**	**0.9494**	**0.9482**	**0.8824**
SE	**0.5774**	**9.4927**	**0.0056**	**0.0275**	**0.0093**
K.PP.II.1.1	13	121	0.9372	1.0440	0.9056
K.PP.II.2.1	7	86	0.9343	0.7895	0.8329
K.PP.II.3.1	7	86	0.9449	0.7985	0.8358
MEAN	**9**	**98**	**0.9388**	**0.8774**	**0.8581**
SE	**2.0000**	**11.7226**	**0.0032**	**0.0834**	**0.0238**
K.PP.III.1.1	11	228	0.9397	0.9786	0.8813
K.PP.III.2.1	11	198	0.9669	1.0069	0.8987
K.PP.III.3.1	12	278	0.9699	1.0467	0.9080
MEAN	**11**	**235**	**0.9588**	**1.0107**	**0.8960**
SE	**0.3333**	**23.4207**	**0.0096**	**0.0198**	**0.0078**
K.PP.IV.1.1	8	76	0.9558	0.8632	0.8613
K.PP.IV.2.1	7	66	0.8331	0.7041	0.7583
K.PP.IV.3.1	9	82	0.9398	0.8968	0.8729
MEAN	**8**	**75**	**0.9096**	**0.8213**	**0.8308**
SE	**0.5774**	**4.8432**	**0.0385**	**0.0594**	**0.0364**

Lampiran 6. Output MDS, ANOSIM dan SIMPER kista dinoflagellata di Muara Sungai Jeneberang menggunakan aplikasi PRIMER v.5

ANOSIM

Analysis of Similarities

Similarity Matrix

File: Sheet1
Data type: Similarities
Sample selection: All

One-way Analysis

Factor Values

Factor: STASIUN
Stasiun 1
Stasiun 2
Stasiun 3
Stasiun 4

Global Test

Sample statistic (Global R): 0.245
Significance level of sample statistic: 0.1%
Number of permutations: 999 (Random sample from a large number)
Number of permuted statistics greater than or equal to Global R: 0

Pairwise Tests

Groups	R Statistic	Significance Level %	Possible Permutations	Actual Permutations	Number >= Observed
Stasiun 1, Stasiun 2	0.16	2.9	24310	999	28
Stasiun 1, Stasiun 3	0.471	0.1	24310	999	0
Stasiun 1, Stasiun 4	0.417	0.1	24310	999	0

Stasiun 2, Stasiun 3	0.157	1.9	24310	999	18
Stasiun 2, Stasiun 4	0.231	0.2	24310	999	1
Stasiun 3, Stasiun 4	0.13	7.3	24310	999	72

SIMPER

Similarity Percentages - species contributions

Worksheet

File: F:\Penelitian\Data\JENEBERANG.xls
Sample selection: All
Variable selection: All

Parameters

Standardise data: No
Transform: Log(X+1)
Cut off for low contributions: 90.00%
Factor name: STASIUN

Factor groups
Stasiun 1
Stasiun 2
Stasiun 3
Stasiun 4

Groups Stasiun 1 & Stasiun 2

Average dissimilarity = 54.96

	Group Stasiun 1	Group Stasiun 2				
Species	Av.Abund	Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Protoperidinium subinerm	48.44	12.78	5.54	1.54	10.08	10.08
Protoperidinium conicoides	10.56	35.22	4.95	1.22	9.00	19.08
Protoperidinium cf. americanum	13.67	21.44	4.65	1.07	8.46	27.54

Groups Stasiun 1 & Stasiun 3

Average dissimilarity = 53.81

Species	Group Stasiun 1 Av.Abund	Group Stasiun 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Protoperidinium conicoides	10.56	36.78	6.31	1.96	11.73	11.73
Protoperidinium subinerm	48.44	4.89	5.31	2.26	9.87	21.60
Kryptoperidinium foliaceum	36.44	4.89	5.02	1.60	9.33	30.93

Groups Stasiun 2 & Stasiun 3

Average dissimilarity = 44.04

Species	Group Stasiun 2 Av.Abund	Group Stasiun 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polykrikos kofoidii	7.78	18.89	4.59	1.33	10.43	10.43
Gymnodinium instriatum	26.89	7.11	4.55	1.29	10.34	20.77
Protoperidinium cf. americanum	21.44	15.78	4.45	1.05	10.11	30.88

Groups Stasiun 1 & Stasiun 4

Average dissimilarity = 51.82

Species	Group Stasiun 1 Av.Abund	Group Stasiun 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Protoperidinium conicoides	10.56	41.67	6.26	1.96	12.08	12.08
Kryptoperidinium foliaceum	36.44	3.56	5.15	1.57	9.93	22.01
Gymnodinium instriatum	23.67	5.78	4.13	1.10	7.96	29.97

Groups Stasiun 2 & Stasiun 4

Average dissimilarity = 45.81

Species	Group Stasiun 2 Av.Abund	Group Stasiun 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Gymnodinium instriatum	26.89	5.78	4.68	1.36	10.22	10.22

Protoperidinium cf. americanum	21.44	7.89	4.22	1.11	9.21	19.43
Polykrikos schwatzii	25.78	18.22	4.14	1.55	9.04	28.47

Groups Stasiun 3 & Stasiun 4

Average dissimilarity = 33.13

Species	Group Stasiun 3 Av.Abund	Group Stasiun 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Scipsiella crystallina	0.67	10.00	4.18	2.06	12.62	12.62
Protoperidinium cf. americanum	15.78	7.89	3.65	1.10	11.01	23.63
Polykrikos kofoidii	18.89	12.33	3.43	1.26	10.36	33.99

Lampiran 7. Output ANOSIM dan SIMPER kista dinoflagellata di Pelabuhan Paotere menggunakan aplikasi PRIMER v.5

ANOSIM

Analysis of Similarities

Similarity Matrix

File: Sheet1
Data type: Similarities
Sample selection: All

One-way Analysis

Factor Values

Factor: STASIUN
Stasiun 1
Stasiun 2
Stasiun 3
Stasiun 4

Global Test

Sample statistic (Global R): 0.41
Significance level of sample statistic: 0.1%
Number of permutations: 999 (Random sample from a large number)
Number of permuted statistics greater than or equal to Global R: 0

Pairwise Tests

Groups	R Statistic	Significance Level %	Possible Permutations	Actual Permutations	Number >= Observed
Stasiun 1, Stasiun 2	0.148	4.3	24310	999	42
Stasiun 1, Stasiun 3	0.653	0.1	24310	999	0
Stasiun 1, Stasiun 4	0.624	0.1	24310	999	0

Stasiun 2, Stasiun 3	0.334	0.4	24310	999	3
Stasiun 2, Stasiun 4	0.39	0.1	24310	999	0
Stasiun 3, Stasiun 4	0.348	0.1	24310	999	0

SIMPER

Similarity Percentages - species contributions

Worksheet

File: F:\Penelitian\Data\PAOTERE.xls
Sample selection: All
Variable selection: All

Parameters

Standardise data: No
Transform: Log(X+1)
Cut off for low contributions: 90.00%
Factor name: STASIUN

Factor groups
Stasiun 1
Stasiun 2
Stasiun 3
Stasiun 4

Groups Stasiun 1 & Stasiun 2

Average dissimilarity = 76.68

Species	Group Stasiun 1 Av.Abund	Group Stasiun 2 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polykrikos schwatzii	16.67	5.56	7.07	1.38	9.22	9.22
Scipsiella crystallina	18.56	18.22	5.93	1.01	7.73	16.95
Polykrikos kofoidii	9.44	6.00	5.51	1.09	7.19	24.13

Groups Stasiun 1 & Stasiun 3

Average dissimilarity = 86.02

Species	Group Stasiun 1 Av.Abund	Group Stasiun 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polykrikos schwatzii	16.67	17.89	6.21	1.63	7.21	7.21
Protoperidinium avellana	0.00	25.22	5.75	1.07	6.69	13.90
Scripssiella cf. rotunda	0.00	21.44	4.88	0.86	5.67	19.57

Groups Stasiun 2 & Stasiun 3

Average dissimilarity = 87.50

Species	Group Stasiun 2 Av.Abund	Group Stasiun 3 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Protoperidinium avellana	0.00	25.22	6.27	1.05	7.17	7.17
Gyrodinium sp	7.22	23.67	5.50	1.03	6.29	13.46
Scipsiella crystallina	18.22	18.67	5.48	1.04	6.26	19.73

Groups Stasiun 1 & Stasiun 4

Average dissimilarity = 87.64

Species	Group Stasiun 1 Av.Abund	Group Stasiun 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Polykrikos schwatzii	16.67	3.78	6.78	1.36	7.74	7.74
Scipsiella crystallina	18.56	14.78	6.50	1.08	7.41	15.16
Polykrikos kofoidii	9.44	0.00	5.61	1.07	6.40	21.56

Groups Stasiun 2 & Stasiun 4

Average dissimilarity = 89.90

Species	Group Stasiun 2 Av.Abund	Group Stasiun 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Scipsiella crystallina	18.22	14.78	7.51	1.05	8.35	8.35

Protoperidinium denticulatum	1.56	8.22	5.81	0.87	6.46	14.81
Polykrikos schwatzii	5.56	3.78	4.69	0.85	5.22	20.03

Groups Stasiun 3 & Stasiun 4

Average dissimilarity = 82.40

Species	Group Stasiun 3 Av.Abund	Group Stasiun 4 Av.Abund	Av.Diss	Diss/SD	Contrib%	Cum.%
Protoperidinium avellana	25.22	5.56	6.29	1.24	7.63	7.63
Scipsiella crystallina	18.67	14.78	5.83	1.08	7.08	14.70
Scripssiella cf. rotunda	21.44	0.00	5.67	0.86	6.88	21.59

Lampiran 8. Dokumentasi