DAFTAR PUSTAKA

Adrianto, L., Kusumastanto, T., & Yulianda, F. 2012. Kajian Model Kesesuaian Pemanfaatan Sumberdaya Pulau-pulau Kecil Berbasis Kerentanan dan Daya Dukung di Kecamatan Liukang Tupabbiring, Kabupaten Pangkajene Kepulauan, Provinsi Sulawesi Selatan. Scientific Repository. Institut Pertanian Bogor, Bogor.

Ahmad. 2013. Studi Sebaran dan Keanekaragaman Ikan Target pada Kondisi dan Topografi Terumbu Karang di Pulau Samatellu Lompo Kabupaten Pangkep. Skripsi. Jurusan Ilmu Kelautan, Fakultas Ilmu Kelautan dan Perikanan. Universitas Hasanuddin, Makassar.

Alimuddin, K. 2016. Keanekaragaman Makrozoobentos Epifauna pada Perairan Pulau Lae-lae Makassar. Disertasi. Fakultas Sains dan Teknologi, Program Studi Biologi. Universitas Islam Negeri Alauddin, Makassar.

Aprisal, J. S. 2021. Tinjauan Hukum terhadap Tindak Pidana Penangkapan Ikan secara Destruktif di Kepulauan Spermonde Kabupaten Pangkajene dan Kepulauan (Studi Kasus Putusan No.82/Pid.Sus/2020/PN.Pkj). Disertasi. Sekolah Pasca Sarjana, Universitas Hasanuddin, Makassar.

Arifin, T., Amri, S. N., & Arlyza, I. S. 2014. Karakteristik Parameter Nutrien dan Ekosistem Terumbu Karang di Wilayah Pesisir Selat Makassar. Potensi Sumber Daya Kelautan dan Perikanan WPPNRI 713, 23. Pusat Penelitian Oseanografi, Jakarta.

Ariyanti, L. A. S., Novitasari, H., Insafitri, I., & Nugraha, W. A. 2022. Penutupan, rugositas terumbu karang dan kelimpahan ikan karang di perairan utara Bangkalan. Jurnal Kelautan Tropis, 25(2), 202-212.

Asrul, A. 2021. Kepadatan dan Keanekaragaman Nudibranchia di Kepulauan Spermonde, Sulawesi Selatan. Skripsi. Fakultas Ilmu Kelautan dan Perikanan, Universitas Hasanuddin, Makassar.

Bahri, M. 2021. Studi Keterkaitan antara Rugositas dengan Kelimpahan, Kelompok Fungsional dan Indeks Ekologi Ikan Terumbu Karang di Pulau Panambungan Kepulauan Spermonde. Skripsi. Fakultas Ilmu Kelautan dan Perikanan, Universitas Hasanuddin, Makassar.

Beck, R. C. 1998. Motivation Theories and Principles. Prentice-Hall Inc., New Jersey.

Badan Pusat Statistik (BPS). 2022. Statistik Indonesia 2022. Badan Pusat Statistik Indonesia, Jakarta. 0126-2912

Brown, B. E., & Scoffin, T. B. 1986. Human Induced Damage to Coral Reef. Diponegoro University Semarang and National Institute Oceanology, Semarang.

Candraningrat, Oktaviani, & Suhandiah, S. 2018. Analysis of the success factors for MSME succession Surabaya: a Principal Component Analysis. Journal of Economics, Business, and Accountancy Ventura, 10, 207-217.

Destructive Fishing Watch (DFW). 2003. Profile of Destructive Fishing in Spermonde Islands 2003. dfw.or.id (diakses pada tanggal 24 Januari 2024).

Elma, E., Gullström, M., Yahya, S. A., Jouffray, J. B., East, H. K., & Nyström, M. 2023. Post-bleaching alterations in coral reef communities. Marine Pollution Bulletin, 186, 114479.

English, S., Wilkinson, C., & Baker, V. 1997. Survey Manual for Tropical Marine Resources (2nd ed.). Australian Institute of Marine Science, Townsville, Queensland.

Faizal, A. 2013. Dinamika Spasio-Temporal Pengaruh Eutrofikasi Sedimentasi terhadap Degradasi Terumbu Karang. Disertasi. Program Pascasarjana, Universitas Hasanuddin, Makassar.

Friedlander, A. M., & Parrish, J. D. 1998. Temporal dynamics of fish communities on an exposed shoreline in Hawaii. Environmental Biology of Fishes, 253, 1-18. doi: 10.1023/A:1007412628789.

Giyanto, N., Abrar, M., Hadi, T. A., Budiyanto, A., Purwanto, T., Rahman, A. F., & Setiapermana, D. 2017. Status Terumbu Karang Indonesia 2017. Coremap-CTI Lembaga Ilmu Pengetahuan Indonesia, Jakarta.

Giyanto, N., Nontji, A., Manuputty, A. W., Iskandar, B., Iswahyudi, A., & Purwanto, T. 2014. Panduan Monitoring Kesehatan Terumbu Karang. Coremap-CTI Lembaga Ilmu Pengetahuan Indonesia, Jakarta. ISBN 978-979-3378-84-8.

Gratwicke, B., & Speight, M. R. 2005. The relationship between fish species richness, abundance and habitat complexity in a range of shallow tropical marine habitats. Journal of Fish Biology, 3, 650-667.

Hidayat, E. 2022. Dampak Kegiatan Transplantasi Karang terhadap Struktur Komunitas Ikan Terumbu Karang Target di Perairan Pulau Badi, Kepulauan Spermonde. Skripsi. Fakultas Ilmu Kelautan dan Perikanan, Universitas Hasanuddin, Makassar.

Hill, J., & Wilkinson, C. 2004. Methods for Ecological Monitoring of Coral Reefs. Australian Institute of Marine Science, Townsville.

Hughes, T. P. 2010. Coral Reef Ecology. Princeton University Press, New Jersey, United States of America.

Husband, E. 2019. Coral Colony-Scale Rugosity Metrics and Applications for Assessing Temporal Trends in the Structural Complexity of Coral Reefs. Thesis for the degree of Masters. The Amory Office and Geography PGSs, University of Exeter, UK.

Ichtiakhiri, T. H. 2015. Evaluasi Pengelolaan Limbah B3 Kaitannya dengan Keluhan Kesehatan Pekerja di PT. Inka (Persero) Kota Madiun. Skripsi. Fakultas Kesehatan Masyarakat, Universitas Airlangga, Surabaya.

Ihsan, N., & Patandean, A. J. 2016. Pemetaan kondisi terumbu karang di Pulau Lae-lae Kecil dengan menggunakan Citra Spot 4. Jurnal Sains dan Pendidikan Fisika, 12(1), 96-101.

Indrawasih, R. 2012. Gejala perubahan iklim, dampak dan strategi adaptasinya pada wilayah dan komunitas nelayan di Kecamatan Bluto, Kabupaten Sumenep. Jurnal Masyarakat dan Budaya, 14(3), 439-466.

Jalil, A. R. 2013. Distribusi kecepatan arus pasang surut pada muson peralihan barat-timur terkait hasil tangkapan ikan pelagis kecil di perairan Spermonde. Jurnal Ilmu-Ilmu Perairan, 7(3), 1-3. ISSN 2089-7790.

Jompa, J. 1996. Monitoring and Assesment of Coral Reef in Spermonde Archipelago, South Sulawesi, Indonesia. Thesis. Master of Science (Biology). McMaster University, Canada.

Jompa, J., Moka, W., & Yanuarita, D. 2005. Kondisi Ekosistem Perairan Kepulauan Spermonde: Keterkaitannya dengan Pemanfaatan Sumberdaya Laut di Kepulauan Spermonde. Divisi Kelautan Pusat Kegiatan Penelitian, Universitas Hasanuddin, Makassar.

Kaharuddin, M. I. A. 2022. Keterkaitan antara Kondisi Tutupan Dasar dan Rugositas Terumbu Karang dengan Struktur Komunitas Ikan Karang di Pulau Barrangcaddi Kota Makassar. Skripsi. Fakultas Ilmu Kelautan dan Perikanan, Universitas Hasanuddin, Makassar.

Kementrian Kelautan dan Perikanan (KKP). 2006. Direktorat Konservasi dan Keanekaragaman Hayati Laut. https://kkp.go.id (diakses pada tanggal 24 Januari 2024)

Kementrian Kelautan dan Perikanan (KKP). 2019. Jumlah Pulau Indonesia. https://kkp.go.id (diakses pada tanggal 2 Februari 2023).

Kementrian Kelautan dan Perikanan (KKP). 2023. Direktori Pulau-pulau Kecil Indonesia. https://kkp.go.id (diakses pada tanggal 26 Februari 2023)

Kench, P. S., & Mann, T. 2017. Reef island evolution and dynamics: Insights from the Indian and Pacific Oceans and Perspectives for the Spermonde Archipelago. Frontiers in Marine Science, 4, 145.

Krautter, M. 1998. Ecology of siliceous sponges: Application to the environmental interpretation of the upper Jurassic sponge facies (Oxfordian) from Spain. Cuadernos de Geologia Iberica, 24, 223-239.

Kuffner, I. B., Andersson, A. J., Jokiel, P. L., Ku'ulei, S. R., & Mackanzie, F. T. 2008. Decreased abundance of crustoce coralline algae due to ocean acidification. Nature Geoscience, 1(2), 114-117.

Kuffner, A., Brock, J., Grober-Dunsmore, R., Bonito, V. E., Hickey, T. D., & Wright, C. 2007. Relationship between reef fish communities and remotely sensed rugosity measurements in Biscayne National Park, Florida, USA. Environmental Biology of Fishes, 7, 71-82. doi: 10.1007/s10641-006-9123-7.

Laopo, A., Fahrudin, A., Bengen, D. G., & Damar, A. 2009. Pengaruh aktivitas wisata bahari terhadap kualitas perairan laut di kawasan wisata gugus Pulau Togean. Ilmu Kelautan: Indonesian Journal of Marine Sciences, 14(4), 215-221.

Lestari, F. 2017. Tingkat kerusakan laut di Indonesia dan tanggung jawab negara terhadap kerusakan ekosistem laut dikaitkan dengan Peraturan Pemerintah Republik Indonesia Nomor 19 Tahun 1999 tentang Pengendalian Pencemaran dan/atau Perusakan Laut dan Konvensi Hukum Laut 1982. Gema Keadilan, 4(1), 73-85.

Magno, M., & Villanoy, C. 2006. Quantifying the complexity of Philippine coastline for estimating entrainment potential. Proceedings of the 10th International Coral Reef Symposium, Okinawa, Japan, 1471-1476.

McCook, L. J. 1999. Macroalgae, nutrients and phase shifts on coral reefs: Scientific issues and management consequences for the Great Barrier Reef. Coral Reefs, 18, 357-367.

McCook, L. J., Jompa, J., & Diaz-Pulido, G. 2000. Competition between corals and algae on coral reefs: A review of evidence and mechanisms. Coral Reefs, 19, 400-417.

Muniaha, H., Nur, A. I., & Rahmadani. 2016. Studi kelimpahan ikan karang berdasarkan kondisi terumbu karang di Desa Tanjung Tiram Kabupaten Konawe Selatan. Jurnal Manajemen Sumberdaya Perairan, 2(1), 9-19.

Nasir, M. 2013. Perlindungan hak masyarakat nelayan di Pulau Kapoposang Kabupaten Pangkajene Kepulauan. Jurnal Justitia, 1(01), 101-106.

Nurjirana, & Burhanuddin, A. I. 2017. Kelimpahan dan keragaman jenis ikan famili Chaetodontidae berdasarkan kondisi tutupan *live coral* di Kepulauan Spermonde Sulawesi Selatan. Jurnal Spermonde, 2(3), 34-42.

Nurdin, M., Litaay, M., Priosambodo, D., & Moka, W. 2019. Kondisi karang di Pulau Baranglompo dan Bone Batang berdasarkan tabel kesehatan karang. Jurnal Ilmu Alam dan Lingkungan, 10(1), 15-28.

Patty, I. S., & Akbar, N. 2018. Kondisi suhu, salinitas, pH dan oksigen terlarut di perairan terumbu karang Ternate, Tidore dan sekitarnya. Jurnal Ilmu Kelautan Kepulauan Universitas Khairun, 1(2), 1-10.

Papu, A. 2011. Kondisi Tutupan Karang Pulau Kapoposang Kabupaten Pangkajene Kepulauan, Provinsi Sulawesi Selatan. Skripsi. Program Studi Biologi, Fakultas Matematika dan Ilmu Pengetahuan Alam. Universitas Sam Ratulangi, Manado.

Parenden, D., Jompa, J., & Rani, C. 2021. Condition of hard corals and quality of the turbid waters in Spermonde Islands (Case studies in Kayangan Island, Samalona Island and Kodingareng Island). IOP Conf. Ser.: Earth Environ. Sci., 921, 012060.

Perez-Escobar, O. A., Cass, S., & Dodsworth, S. 2018. Digest: Drivers of coral diversification in a major marine biodiversity hotspot. Evolution, 72(2), 406-408.

Rafly, N. M., Karang, I. W. G. A., & Widiastuti, W. 2020. Hubungan rugositas terumbu karang terhadap struktur komunitas ikan corallivor dan herbivor di perairan Pemuteran, Bali. Journal of Marine Research and Technology, 3(1), 6-11.

Ramli, H. 2003. Analisis Kebijakan Pengelolaan Sumberdaya Terumbu Karang di Kawasan Pulau Geleang dan Pulau Burung Kepulauan Karimunjawa, Jawa Tengah. Disertasi. Program Pascasarjana, Universitas Diponegoro, Semarang.

Rauf, A., & Yusuf, M. 2004. Studi distribusi dan kondisi terumbu karang dengan menggunakan teknologi penginderaan jauh di Kepulauan Spermonde, Sulawesi Selatan. Ilmu Kelautan: Indonesian Journal of Marine Sciences, 9(2), 74-81.

Risk, M. J. 1972. Fish diversity on a coral reef in the Virgin Islands. Atoll Research Bulletin, 153, 1-6.

Rizuandi, R., Kurniawan, D., & Febrianto, T. 2022. Identifikasi Jenis dan Prevalensi Penyakit Karang pada Terumbu Karang di Perairan Desa Pengudang Kabupaten Bintan. LPPM. Universitas Maritim Raja Ali Haji, Tanjungpinang.

Sahroni, S., Adi, W., & Umroh, U. 2019. Kajian makroalga pada terumbu karang di perairan Turun Aban. Aquatic Science, 1(1), 14-19.

Sakaria, F. S. 2022. Identifikasi tipe *dead coral* untuk menentukan penyebab kerusakan terumbu karang di perairan Malili Teluk Bone. Maspari Journal: Marine Science Research, 14(2), 91-98.

Samawi, M. F., Azis, H. Y., Anshari, A. I., Jaya, I., & Malik, A. 2020. Dinamika kondisi oseanografi di perairan Spermonde pada musim timur. Prosiding Simposium Nasional Kelautan dan Perikanan, Makassar, 7, 3-5.

Santoso, A. D., & Kardono. 2008. Teknologi konservasi dan rehabilitasi terumbu karang. Jurnal Teknologi Lingkungan, 9, 4-6.

Software Open Source (SAS). 2023. SAS PLANET. https://www.sas.com/en_us/home.html.

Setiawan, P. 2020. Keterkaitan antara Tutupan Habitat, Rugositas dan Struktur Komunitas Ikan Terumbu Karang *Drop Off* di Taman Wisata Perairan Pulau Kapoposang. Skripsi. Program Studi Ilmu Kelautan, Jurusan Ilmu Kelautan, Fakultas Ilmu Kelautan dan Perikanan. Universitas Hasanuddin, Makassar.

Setter, R. O., Franklin, E. C., & Mora, C. 2022. Co-occurring anthropogenic stressors reduce the time frame of environmental viability for the world's coral reefs. PLoS Biology, 20(10), e3001821.

Storlazzi, C. D., & Brown, E. K. 2003. Observations of benthic habitat and reef fish populations using dual-frequency identification sonar (DIDSON) on the Mariana Archipelago. Coral Reefs, 22(1), 27-38.

Suriamihardja, D. A. 2012. Coral reef islands of Spermonde: Morphodynamics and prospect. Proceedings of the Sixth International Conference on Asian and Pacific Coasts 2011, Hong Kong, 162-174.

Syahrul, M. 2022. Keterkaitan Kondisi Terumbu Karang dengan Sebaran dan Keanekaragaman Fauna Megabentos di Perairan Pulau Barranglompo Kota Makassar. Skripsi. Program Studi Ilmu Kelautan, Jurusan Ilmu Kelautan, Fakultas Ilmu Kelautan dan Perikanan. Universitas Hasanuddin, Makassar.

Tatipata, K. B., & Mashoreng, S. 2019. Dampak kondisi karang terhadap struktur komunitas megabentos yang berasosiasi dengan terumbu karang Kepulauan Spermonde. Jurnal Torani JF Mar. Sci., 3(1), 37-50.

Teichberg, M., Wild, C., Bednarz, V. N., Kegler, H. F., Lukman, M., Gärdes, A. A., & Ferse, S. C. 2018. Spatio-temporal patterns in coral reef communities of the Spermonde Archipelago, 2012-2014, I: Comprehensive reef monitoring of water and benthic indicators reflect changes in reef health. Frontiers in Marine Science, 5, 1-18. https://doi.org/10.3389/fmars.2018.00033.

Veron, J. E. N. 2000. Corals of the World. Australian Institute of Marine Science and CRR Qld. Pty. Ltd., Queensland.

Widjaja, S., & Kadarusman. 2019. Sumber Daya Non Hayati Maritim Indonesia. Penerbit IPB Press, Bogor.

Yusuf, S., Selamat, B., Amri, K., Rappe, R. A., Supriadi, Burhanuddin, A. I., & Anggreni, F. 2015. Kondisi Terumbu Karang dan Ekosistem Terkait di Liukang Tuppabiring Kabupaten Pangkep. Universitas Hasanuddin dan LIPI. Coremap CTI, Makassar.

Yusuf, S., Beger, M., Tassakka, A. C. M. A. R., Brauwer, D. M., Pricella, A., Rahmi, R., & Jompa, J. 2021. Cross shelf gradients of scleractinian corals in the Spermonde Islands, South Sulawesi, Indonesia. Biodiversitas Journal of Biological Diversity, 22(3), 4-5.

Zurba, N. 2019. Pengenalan Terumbu Karang. Unimal Press, Banda Aceh.

LAMPIRAN

Lampiran 1. Persentase rata-rata tutupan habitat terumbu karang (%) di setiap pulau pada 2 kedalaman (ket.: LL = Lae-lae, SA = Samalona, BL = Baranglompo, BO = Bonetambung, BA = Badi, LU = Lumu-lumu, KS = Karang Kassi, KP = Kapoposang).

Kedalaman *shallow*

SiteID	Live Coral	Dead Coral	OT	Algae	Abiotic	Rubble	Object	Total
LL	0,98	0,00	1,56	75,18	20,07	0,96	1,27	100,00
SA	12,47	0,47	16,53	25,63	9,90	33,40	1,60	100,00
BL	57,42	1,11	5,40	18,71	3,36	11,36	2,64	100,00
BO	38,51	6,09	11,49	12,71	12,04	15,51	3,64	100,00
BA	49,49	3,98	3,64	4,87	3,96	31,93	2,13	100,00
LU	54,31	1,73	11,09	5,78	0,44	25,09	1,56	100,00
KS	65,53	13,73	6,44	3,38	0,04	8,40	2,47	100,00
KP	44,49	1,24	17,24	3,73	0,02	30,49	2,78	100,00

Kedalaman *deep*

SiteID	Live Coral	Dead Coral	OT	Algae	Abiotic	Rubble	Object	Total
LL	-	-	-	-	-	-	-	-
SA	16,16	0,80	27,11	17,00	1,89	35,09	1,96	100,00
BL	15,62	0,33	6,42	10,49	36,33	28,82	1,98	100,00
BO	10,43	2,83	4,80	6,17	28,60	43,93	2,13	100,00
BA	42,87	9,62	7,22	8,47	7,84	21,36	2,62	100,00
LU	45,69	21,13	16,51	7,16	0,13	7,82	1,56	100,00
KS	49,93	12,62	5,89	9,22	5,78	13,91	2,64	100,00
KP	31,18	10,71	6,89	8,87	2,60	36,60	3,16	100,00

Rata-rata 2 kedalaman

Site ID	Live Coral	Dead Coral	OT	Algae	Abiotic	Rubble	Object	Total
LL	0,98	0,00	1,56	75,18	20,07	0,96	1,27	100,00
SA	14,31	0,63	21,82	21,32	5,90	34,25	1,78	100,00
BL	36,52	0,72	5,91	14,60	19,84	20,09	2,31	100,00
BO	24,47	4,46	8,14	9,44	20,32	29,72	2,89	100,00
BA	46,18	6,80	5,43	6,67	5,90	26,65	2,38	100,00
LU	50,00	11,43	13,80	6,47	0,29	16,46	1,56	100,00
KS	57,73	13,18	6,17	6,30	2,91	11,16	2,56	100,00
KP	37,83	5,98	12,07	6,30	1,31	33,55	2,97	100,00

Lampiran 2. Hasil analisis ragam tutupan habitat antar pulau (kedalaman *shallow*).

1) Kategori karang hidup (*live coral*)

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Life coral is the same across categories of site id.	Independent-Samples Kruskal-Wallis Test	.013	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

2) Kategori karang mati (*dead coral*)

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Dead coral is the same across categories of site id.	Independent-Samples Kruskal-Wallis Test	.006	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

3) Kategori fauna lainnya (*others*)

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Others is the same across categories of site id.	Independent-Samples Kruskal-Wallis Test	.020	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

4) Kategori alga (*algae*)

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Algae is the same across categories of site id.	Independent-Samples Kruskal-Wallis Test	.008	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Lampiran 2. Lanjutan

5) Kategori abiotik (*abiotic*)

Ranks

	site id	N	Mean Rank
Abiotic	LL	3	21.00
	SA	2	17.50
	BL	3	14.00
	BO	3	17.67
	BA	3	12.67
	LU	3	5.33
	KS	3	5.00
	KP	3	4.67
	Total	23	

Test Statistics[a,b]

	Abiotic
Chi-Square	18.910
df	7
Asymp. Sig.	.008

a. Kruskal Wallis Test

b. Grouping Variable: site id

6) Kategori *rubble*

Ranks

	site id	N	Mean Rank
Rubble	LL	3	2.00
	SA	2	18.50
	BL	3	9.33
	BO	3	12.33
	BA	3	18.00
	LU	3	13.67
	KS	3	6.00
	KP	3	18.33
	Total	23	

Test Statistics[a,b]

	Rubble
Chi-Square	16.322
df	7
Asymp. Sig.	.022

a. Kruskal Wallis Test

b. Grouping Variable: site id

Lampiran 3. Hasil analisis ragam tutupan habitat antar pulau (kedalaman *deep*).

1) Analisis anova kategori *live coral*.

ANOVA					
Live coral					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4893.633	6	815.606	9.870	.000233
Within Groups	1156.892	14	82.635		
Total	6050.526	20			

Deskripsi

Descriptives								
Live coral								
			Std.		95% Confidence Interval for Mean			
	N	Mean	Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
SA	3	16.15533	9.393535	5.423360	-7.17950	39.49017	7.200	25.933
BL	3	15.62233	11.228944	6.483034	-12.27191	43.51658	7.667	28.467
BO	3	9.44467	7.953106	4.591728	-10.31194	29.20128	2.667	18.200
BA	3	42.86667	6.204300	3.582054	27.45433	58.27900	36.800	49.200
LU	3	45.68867	4.435549	2.560866	34.67015	56.70718	41.333	50.200
KS	3	49.93333	9.624034	5.556438	26.02591	73.84076	41.600	60.467
KP	3	31.17767	12.250599	7.072887	.74549	61.60984	18.067	42.333
Total	21	30.12695	17.393283	3.795525	22.20963	38.04428	2.667	60.467

Post hoc

Live coral			
Tukey HSD[a]			
site		Subset for alpha = 0,05	
id	N	1	2
BO	3	9.44467	
BL	3	15.62233	
SA	3	16.15533	
KP	3	31.17767	31.17767
BA	3		42.86667
LU	3		45.68867
KS	3		49.93333
Sig.		.116	.221

Lampiran 3. Lanjutan.

2) Analisis anova kategori *dead coral.*

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Dead coral is the same across categories of site id.	Independent-Samples Kruskal-Wallis Test	.009	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

3) Analisis anova kategori fauna lainnya.

ANOVA					
Others					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1094.179	6	182.363	36.542	.000907
Within Groups	69.868	14	4.991		
Total	1164.047	20			

Deskripsi

Descriptives								
Others								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
SA	3	29.06667	2.543820	1.468675	22.74747	35.38587	27.467	32.000
BL	3	8.40000	1.072702	.619325	5.73526	11.06474	7.400	9.533
BO	3	8.37767	3.082399	1.779624	.72056	16.03477	5.133	11.267
BA	3	9.84433	2.219301	1.281314	4.33128	15.35738	7.400	11.733
LU	3	18.06667	1.634510	.943685	14.00632	22.12701	16.400	19.667
KS	3	8.53333	1.091156	.629979	5.82275	11.24392	7.600	9.733
KP	3	10.04433	3.003928	1.734319	2.58216	17.50650	7.133	13.133
Total	21	13.19043	7.629047	1.664794	9.71773	16.66313	5.133	32.000

Post hoc

Others				
Tukey HSD[a]				
		Subset for alpha = 0,05		
site id	N	1	2	3
BO	3	8.37767		
BL	3	8.40000		
KS	3	8.53333		
BA	3	9.84433		
KP	3	10.04433		
LU	3		18.06667	
SA	3			29.06667
Sig.		.964	1.000	1.000

Lampiran 3. Lanjutan.

4) Hasil analisis ragam kategori alga

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Algae is the same across categories of site id.	Independent-Samples Kruskal-Wallis Test	.808	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

5) Analisis anova kategori *abiotic*.

Ranks

	site id	N	Mean Rank
Abiotic	SA	3	6.67
	BL	3	16.00
	BO	3	14.00
	BA	3	10.00
	LU	3	2.33
	KS	3	8.00
	Total	18	

Test Statistics[a,b]

	Abiotic
Chi-Square	13.121
df	5
Asymp. Sig.	.022

a. Kruskal Wallis Test

b. Grouping Variable: site id

6) Kategori *rubble*

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3054.920	6	509.153	11.365	.000108
Within Groups	627.182	14	44.799		
Total	3682.102	20			

Rubble

Tukey HSD[a]

		Subset for alpha = 0.05			
site id	N	1	2	3	4
LU	3	7.82233			
KS	3	13.91100	13.91100		
BA	3	21.35567	21.35567	21.35567	
BL	3		28.82233	28.82233	28.82233
SA	3			35.08900	35.08900
KP	3			36.60000	36.60000
BO	3				43.93333
Sig.		.239	.161	.146	.152

Lampiran 4. Data rugositas 2 kedalaman

Depth	LL	SA	BL	BO	BA	LU	KS	KP
Shallow T1	0,121	0,071	0,442	0,442	0,402	0,388	0,500	0,402
Shallow T2	0,116	0,062	0,451	0,442	0,451	0,259	0,393	0,339
Shallow T3	0,138	0,241	0,487	0,446	0,536	0,393	0,487	0,438
Deep T1	-	0,156	0,304	0,196	0,379	0,388	0,375	0,406
Deep T2	-	0,179	0,272	0,152	0,393	0,402	0,509	0,223
Deep T3	-	0,196	0,192	0,299	0,353	0,384	0,348	0,277
Mean								
Shallow	0,125	0,125	0,460	0,443	0,463	0,347	0,460	0,393
Deep	-	0,177	0,256	0,216	0,375	0,391	0,411	0,302
SD								
Shallow	0,012	0,101	0,024	0,003	0,068	0,076	0,058	0,050
Deep	0,000	0,020	0,058	0,076	0,020	0,009	0,086	0,094

Lampiran 5. Hasil analisis ragam antar pulau di masing-masing zona berbeda.

1) Pairwise comparison antar pulau kedalaman *shallow*

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
samalona-Lae-lae	1.000	5.763	.174	.862	1.000
samalona-Lumu-lumu	-5.833	5.763	-1.012	.311	1.000
samalona-Kapoposang	-8.500	5.763	-1.475	.140	1.000
samalona-Bonetambung	-13.667	5.763	-2.371	.018	.496
samalona-Karang Kassi	-15.333	5.763	-2.660	.008	.219
samalona-Badi	-15.667	5.763	-2.718	.007	.184
samalona-Barang lompo	-16.000	5.763	-2.776	.006	.154
Lae-lae-Lumu-lumu	-4.833	5.763	-.839	.402	1.000
Lae-lae-Kapoposang	-7.500	5.763	-1.301	.193	1.000
Lae-lae-Bonetambung	-12.667	5.763	-2.198	.028	.783
Lae-lae-Karang Kassi	-14.333	5.763	-2.487	.013	.361
Lae-lae-Badi	-14.667	5.763	-2.545	.011	.306
Lae-lae-Barang lompo	-15.000	5.763	-2.603	.009	.259
Lumu-lumu-Kapoposang	-2.667	5.763	-.463	.644	1.000
Lumu-lumu-Bonetambung	7.833	5.763	1.359	.174	1.000
Lumu-lumu-Karang Kassi	-9.500	5.763	-1.648	.099	1.000
Lumu-lumu-Badi	9.833	5.763	1.706	.088	1.000
Lumu-lumu-Barang lompo	10.167	5.763	1.764	.078	1.000
Kapoposang-Bonetambung	5.167	5.763	.896	.370	1.000
Kapoposang-Karang Kassi	6.833	5.763	1.186	.236	1.000
Kapoposang-Badi	7.167	5.763	1.243	.214	1.000
Kapoposang-Barang lompo	7.500	5.763	1.301	.193	1.000
Bonetambung-Karang Kassi	-1.667	5.763	-.289	.772	1.000
Bonetambung-Badi	-2.000	5.763	-.347	.729	1.000
Bonetambung-Barang lompo	2.333	5.763	.405	.686	1.000
Karang Kassi-Badi	.333	5.763	.058	.954	1.000
Karang Kassi-Barang lompo	.667	5.763	.116	.908	1.000
Badi-Barang lompo	.333	5.763	.058	.954	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Lampiran 5. Lanjutan
Kruskal Wallis antar pulau kedalaman *shallow*

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Rugositas shallow is the same across categories of Pulau.	Independent-Samples Kruskal-Wallis Test	.010	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .0:

2) Hasil anova antar pulau kedalaman *deep*

Deskripsi pulau *deep*.

Descriptives								
trans								
					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
samalona	3	.8497	.01456	.00841	.8136	.8859	.84	.86
baranglompo	3	.7973	.03724	.02150	.7048	.8899	.77	.84
bonetambung	3	.8246	.05018	.02897	.6999	.9493	.77	.87
badi	3	.7274	.01087	.00628	.7004	.7544	.72	.74
lumulumu	3	.7187	.00479	.00276	.7068	.7306	.71	.72
Karang Kassi	3	.7106	.04206	.02429	.6061	.8151	.66	.74
kapoposang	3	.7706	.05431	.03136	.6357	.9055	.71	.82
Total	21	.7713	.06004	.01310	.7440	.7986	.66	.87

Levene test antar pulau kedalaman *deep*.

Test of Homogeneity of Variances			
trans			
Levene Statistic	df1	df2	Sig.
2.801	6	14	.053

Hasil anova antar pulau kedalaman *deep*.

ANOVA					
trans					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.054	6	.009	7.037	.001
Within Groups	.018	14	.001		
Total	.072	20			

Lampiran 5. Lanjutan

Post hoc test antar pulau kedalaman *deep*

trans				
Tukey HSD[a]				
		Subset for alpha = 0,05		
Pulau	N	1	2	3
Karang Kassi	3	.7106		
lumulumu	3	.7187		
badi	3	.7274	.7274	
kapoposang	3	.7706	.7706	.7706
baranglompo	3	.7973	.7973	.7973
bonetambung	3		.8246	.8246
samalona	3			.8497
Sig.		.109	.059	.167
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 3.000.				

Lampiran 6. Hasil analisis ragam rugositas terumbu karang.

1) Deskriptif hasil analisis *two-way* Anova

Descriptive Statistics

Dependent Variable: Rugositas terumbu karang

Kedalaman berbeda	Zona Kepulauan Spermonde	Mean	Std. Deviation	N
Shallow	Zona 1	.12483	.064198	6
	Zona 2	.42825	.066862	12
	Zona 3	.42650	.060948	6
	Total	.35196	.147597	24
Deep	Zona 1	.17700	.020075	3
	Zona 2	.30950	.088936	12
	Zona 3	.35633	.100263	6
	Total	.30395	.100811	21
Total	Zona 1	.14222	.057939	9
	Zona 2	.36888	.097978	24
	Zona 3	.39142	.087182	12
	Total	.32956	.128817	45

Post hoc test

Tests of Between-Subjects Effects

Dependent Variable: Rugositas terumbu karang

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.504[a]	5	.101	17.351	.000
Intercept	3.321	1	3.321	572.037	.000
Kedalaman	.019	1	.019	3.221	.080
Zona	.337	2	.168	29.007	.000
Kedalaman * Zona	.044	2	.022	3.780	.032
Error	.226	39	.006		
Total	5.617	45			
Corrected Total	.730	44			

a. R Squared = .690 (Adjusted R Squared = .650)

Lampiran 6. Lanjutan.

Post hoc test

Multiple Comparisons						
Dependent Variable: Rugositas terumbu karang						
Tukey HSD						
(I) Zona Kepulauan Spermonde	(J) Zona Kepulauan Spermonde	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Zona 1	Zona 2	-.22665*	.029783	.000	-.29921	-.15409
	Zona 3	-.24919*	.033600	.000	-.33105	-.16734
Zona 2	Zona 1	.22665*	.029783	.000	.15409	.29921
	Zona 3	-.02254	.026940	.683	-.08817	.04309
Zona 3	Zona 1	.24919*	.033600	.000	.16734	.33105
	Zona 2	.02254	.026940	.683	-.04309	.08817
Based on observed means.						
The error term is Mean Square(Error) = .006.						
*. The mean difference is significant at the .05 level.						

Post hoc test (zona)

Rugositas terumbu karang			
Tukey HSD[a,b,c]			
		Subset	
Zona Kepulauan Spermonde	N	1	2
Zona 1	9	.14222	
Zona 2	24		.36888
Zona 3	12		.39142
Sig.		1.000	.738
Means for groups in homogeneous subsets are displayed.			
Based on observed means.			
The error term is Mean Square(Error) = .006.			
a. Uses Harmonic Mean Sample Size = 12.706.			
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.			
c. Alpha = .05.			

Lampiran 6. Lanjutan

2) Hasil analisis *t-test* antara kedalaman di masing-masing pulau.

(a). Deskripsi rugositas antara kedalaman di Pulau Salmalona.

Group Statistics

	Kedalaman berbeda	N	Mean	Std. Deviation	Std. Error Mean
rugositas samalona	*Shallow*	3	.12467	.100848	.058225
	Deep	3	.17700	.020075	.011590

t-test rugositas antara kedalaman di Pulau Salmalona

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
rugositas samalona	Equal variances assumed	9.640	.036	-.882	4	.428	-.052333	.059367	-.217163	.112496
	Equal variances not assumed			-.882	2.158	.465	-.052333	.059367	-.290634	.185967

(b). Deskripsi rugositas antara kedalaman di Pulau Baranglompo

Group Statistics

	Kedalaman berbeda	N	Mean	Std. Deviation	Std. Error Mean
rugositas Barranglompo	*Shallow*	3	.46000	.023812	.013748
	Deep	3	.25600	.057689	.033307

Lampiran 6. Lanjutan

t-test rugositas antara kedalaman di Pulau Baranglompo

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
rugositas Barranglompo	Equal variances assumed	2.691	.176	5.662	4	.005	.204000	.036032	.103958	.304042
	Equal variances not assumed			5.662	2.662	.015	.204000	.036032	.080643	.327357

(c). Deskripsi rugositas antara kedalaman di Pulau Bonetambung.

Group Statistics					
	Kedalaman berbeda	N	Mean	Std. Deviation	Std. Error Mean
rugositas bonetambung	*Shallow*	3	.44333	.002309	.001333
	Deep	3	.21567	.075448	.043560

t-test rugositas antara kedalaman di Pulau Bonetambung

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
rugositas bonetambung	Equal variances assumed	8.160	.046	5.224	4	.006	.227667	.043580	.106669	.348664
	Equal variances not assumed			5.224	2.004	.035	.227667	.043580	.040492	.414841

(d). Deskripsi rugositas antara kedalaman di Pulau Badi

Group Statistics					
	Kedalaman berbeda	N	Mean	Std. Deviation	Std. Error Mean
rugositas badi	*Shallow*	3	.46300	.067801	.039145
	Deep	3	.37500	.020298	.011719

Lampiran 6. Lanjutan

(e). *t-test* rugositas antara kedalaman di Pulau Badi

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
rugositas badi	Equal variances assumed	3.059	.155	2.154	4	.098	.088000	.040862	-.025450	.201450
	Equal variances not assumed			2.154	2.356	.145	.088000	.040862	-.064674	.240674

(f). Deskripsi rugositas antara kedalaman di Pulau Lumu-lumu

Group Statistics

	Kedalaman berbeda	N	Mean	Std. Deviation	Std. Error Mean
rugositas Lumu lumu	*Shallow*	3	.34667	.075963	.043857
	Deep	3	.39133	.009452	.005457

t-test rugositas antara kedalaman di Pulau Lumu-lumu

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
rugositas Lumu lumu	Equal variances assumed	11.974	.026	-1.011	4	.369	-.044667	.044195	-.167372	.078039
	Equal variances not assumed			-1.011	2.062	.416	-.044667	.044195	-.229456	.140122

(g). Deskripsi rugositas antara kedalaman di Karang Kassi.

Group Statistics

	Kedalaman berbeda	N	Mean	Std. Deviation	Std. Error Mean
rugositas Karang Kassi	*Shallow*	3	.46000	.058387	.033710
	Deep	3	.41067	.086223	.049781

Lampiran 6. Lanjutan

t-test rugositas antara kedalaman di Karang Kassi

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
rugositas Karang Kassi	Equal variances assumed	.932	.389	.821	4	.458	.049333	.060120	-.117587	.216254
	Equal variances not assumed			.821	3.516	.464	.049333	.060120	-.127063	.225729

(h). Deskripsi rugositas antara kedalaman di Pulau Kapoposang

Group Statistics					
	Kedalaman berbeda	N	Mean	Std. Deviation	Std. Error Mean
rugositas Kapoposang	*Shallow*	3	.39300	.050110	.028931
	Deep	3	.30200	.094027	.054286

t-test rugositas antara kedalaman di Pulau Kapoposang

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
rugositas Kapoposang	Equal variances assumed	1.517	.286	1.479	4	.213	.091000	.061514	-.079791	.261791
	Equal variances not assumed			1.479	3.051	.234	.091000	.061514	-.102918	.284918

Lampiran 6. Lanjutan

3) Hasil analisis *t-student* antar kedalaman di berbagai zona

(a). Deskripsi rugositas terumbu karang di Zona 1

Group Statistics					
	kedalaman berbeda	N	Mean	Std. Deviation	Std. Error Mean
Rugositas terumbu karang Zona 1	*shallow*	6	.12500	.064075	.026158
	deep	3	.17708	.020131	.011622

Hasil analisis *t-student* rugositas terumbu karang di kedalaman berbeda Zona 1

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Rugositas terumbu karang Zona 1	Equal variances assumed	1.251	.300	-1.334	7	.224	-.052083	.039040	-.144399	.040233
	Equal variances not assumed			-1.820	6.533	.115	-.052083	.028624	-.120763	.016596

(b). Deskripsi rugositas terumbu karang di Zona 2

Group Statistics					
	kedalaman berbeda Zona 2	N	Mean	Std. Deviation	Std. Error Mean
Rugositas terumbu karang Zona 2	*shallow*	12	.42820	.066801	.019284
	deep	12	.30952	.088926	.025671

Hasil analisis *t-student* rugositas terumbu karang di kedalaman berbeda Zona 2

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Rugositas terumbu karang Zona 2	Equal variances assumed	2.309	.143	3.696	22	.001	.118676	.032107	.052090	.185261
	Equal variances not assumed			3.696	20.416	.001	.118676	.032107	.051789	.185562

(c). Deskripsi rugositas terumbu karang di Zona 3

Group Statistics					
	kedalaman berbeda Zona 3	N	Mean	Std. Deviation	Std. Error Mean
Rugositas terumbu karang Zona 3	*shallow*	6	.42634	.060803	.024823
	deep	6	.35640	.100240	.040923

Lampiran 6. Lanjutan

Hasil analisis *t-student* rugositas terumbu karang di kedalaman berbeda Zona 3

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Rugositas terumbu karang Zona 3	Equal variances assumed	.867	.374	1.461	10	.175	.069940	.047863	-.036704	.176585
	Equal variances not assumed			1.461	8.241	.181	.069940	.047863	-.039872	.179753

Lampiran 7. Data PCA

1) Input data PCA

Site	HC	SC	SP	*Sand*	DC	OT	*Rubble*	CCA	HA	MA	TA	Rugositas
LLs	0,98	1,36	0,07	20,07	0,00	0,13	0,956	0,09	0,13	8,29	66,67	0,13
LLd	-	-	-	-	-	-	-	-	-	-	-	-
Sas	12,47	1,43	13,00	9,90	0,47	2,10	33,40	1,60	0,00	0,40	23,63	0,13
Sad	16,16	0,78	20,56	1,89	0,80	5,78	35,09	0,31	0,40	8,67	7,62	0,18
BLs	57,42	1,69	3,00	3,36	1,11	0,71	11,36	0,82	0,00	0,33	17,56	0,46
BLd	15,62	1,29	4,36	36,33	0,33	0,78	28,82	0,07	0,04	0,20	10,18	0,26
Bos	38,51	2,36	8,62	12,04	6,09	0,51	15,51	1,87	0,00	0,00	10,84	0,44
Bod	9,44	0,11	5,38	28,60	2,96	0,47	43,93	0,69	0,00	0,00	6,00	0,22
Bas	49,49	0,96	2,58	3,96	3,98	0,11	31,93	0,38	0,00	1,44	3,04	0,46
Bad	42,87	0,44	5,44	7,84	9,62	1,33	21,36	0,84	0,00	0,02	7,60	0,38
Lus	54,31	0,16	9,60	0,44	1,73	1,33	25,09	1,22	0,00	0,00	4,56	0,35
Lud	45,69	0,18	11,73	0,13	21,13	4,60	7,82	5,27	0,00	0,07	1,82	0,39
KSs	65,53	0,64	5,38	0,04	13,73	0,42	8,40	2,11	0,00	0,00	1,27	0,46
KSd	49,93	2,02	3,27	5,78	12,62	0,60	13,91	1,84	0,00	0,07	7,31	0,41
KPs	44,49	0,51	16,33	0,02	1,24	0,40	30,49	1,04	0,71	0,31	1,67	0,39
KPd	31,18	0,76	5,62	2,60	10,71	0,51	3,16	7,56	0,27	0,07	0,98	0,30

2) Output data PCA

```
                Dim.1         Dim.2          Dim.3         Dim.4         Dim.5
HC        21.447674964   0.1156757    2.364234849    0.7892939    5.46362198
SC         0.003080831  11.9981673    0.003121518   24.5897902   31.64234903
SP         0.606663636  28.5101710    0.002510522    2.8169702    5.54098628
Sand       7.370788493   8.9687858    9.722698389    7.7505539    4.25067989
DC        10.486166092   0.2932429    9.869900586    6.6797156    7.73105092
OT         1.376620328  17.9636764   11.670165400    1.2639512   21.60187647
Rubble     1.205243312   7.9631632   32.854167415    3.2629967    0.08081821
Others     8.301126443   0.2462027   14.883158638   14.5200442    8.95932418
HA         1.078449381  12.8583500    2.668591937   23.7783750   10.73444027
MA        13.689748594   0.5537530    8.914116510    8.7885159    0.47380378
TA        12.077076817  10.2205588    6.931838757    3.7276457    2.51146601
Rugositas 22.357361111   0.3082531    0.115495478    2.0321475    1.00958298
```

Lampiran 8. Analisis regresi sedehana

1) Rugositas dan HC

Ringkasan output analisis regresi statistik rugositas dan HC

SUMMARY OUTPUT RUGOSITY & HC	
Regression Statistics	
Multiple R	0,785286
R Square	0,616675
Adjusted R Square	0,607548
Standard Error	0,080955
Observations	44

Hasil anova antara rugositas dan HC

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,44282	0,44282	67,56752	2,76E-10
Residual	42	0,275257	0,006554		
Total	43	0,718076			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,155825	0,02457	6,342007	1,28E-07	0,10624	0,205409	0,10624	0,205409
HC	0,004851	0,00059	8,219946	2,76E-10	0,00366	0,006042	0,00366	0,006042

2) Rugositas dan *dead coral*

Ringkasan output analisis regresi statistik Rugositas dan DC

Regression Statistics	
Multiple R	0,38387
R Square	0,147356
Adjusted R Square	0,127055
Standard Error	0,120738
Observations	44

Hasil anova antara rugositas dan DC

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,105813	0,105813	7,258539	0,0101
Residual	42	0,612264	0,014578		
Total	43	0,718076			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,288507	0,024112	11,96508	4,08E-15	0,239846	0,337168	0,239846	0,337168
DC	0,007234	0,002685	2,694168	0,0101	0,001815	0,012654	0,001815	0,012654

Lampiran 8. Lanjutan

3) Rugositas dan TA

Ringkasan output analisis regresi statistik Rugositas dan TA

Regression Statistics	
Multiple R	0,502606
R Square	0,252613
Adjusted R Square	0,234818
Standard Error	0,11304
Observations	44

Hasil anova antara rugositas dan TA

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0,181395	0,181395	14,19578	0,000507
Residual	42	0,536681	0,012778		
Total	43	0,718076			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	0,373763	0,020458	18,26939	1,34E-21	0,332476	0,41505	0,332476	0,41505
TA	-0,00384	0,001019	-3,76773	0,000507	-0,0059	-0,00178	-0,0059	-0,00178

4) Rugositas dan MA

Ringkasan output analisis regresi statistik Rugositas dan MA

Regression Statistics	
Multiple R	0,411938
R Square	0,169693
Adjusted R Square	0,149924
Standard Error	0,119146
Observations	44

Hasil anova antara rugositas dan MA

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0,121852	0,121852	8,583695	0,005463
Residual	42	0,596224	0,014196		
Total	43	0,718076			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	0,34938	0,019013	18,37559	1,08E-21	0,31101	0,387751	0,31101	0,387751
MA	-0,01358	0,004634	-2,92979	0,005463	-0,02293	-0,00422	-0,02293	-0,00422

Lampiran 8. Lanjutan

5) Rugositas dan *Sand*

Ringkasan output analisis regresi statistik Rugositas dan *Sand*

Regression Statistics	
Multiple R	0,408963
R Square	0,167251
Adjusted R Square	0,147424
Standard Error	0,119321
Observations	44

Hasil anova antara rugositas dan *Sand*

ANOVA						
	df	SS	MS	F		Significance F
Regression	1	0,120099	0,120099	8,435374		0,005845
Residual	42	0,597977	0,014238			
Total	43	0,718076				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	0,368283	0,022076	16,68231	3,88E-20	0,323731	0,412834	0,323731	0,412834
Sand	-0,0042	0,001447	-2,90437	0,005845	-0,00712	-0,00128	-0,00712	-0,00128

6) Rugositas dan *Rubble*

Ringkasan output analisis regresi statistik Rugositas dan *Rubble*

Regression Statistics	
Multiple R	0,137943
R Square	0,019028
Adjusted R Square	-0,00433
Standard Error	0,129506
Observations	44

Hasil anova antara rugositas dan *rubble*

ANOVA								
	df	SS	MS	F	Significance F			
Regression	1	0,013664	0,013664	0,814694	0,371884			
Residual	42	0,704413	0,016772					
Total	43	0,718076						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	0,3804459	0,0358801	10,603255	1,897E-13	0,3080369	0,4528548	0,3080369	0,4528548
Rubble	-0,002301	0,0014161	-1,6248524	0,111676	-0,0051589	0,0005569	-0,0051589	0,0005569

Lampiran 9. Kategori *life form* pada masing-masing lokasi dan zona di 2 kedalaman

1) *Life form* kedalaman *shallow*

Site.N	ACB	ACD	ACE	ACS	ACT	CB	CE	CF	CM	CMR	CS	HL	ML	SC	SP	*Sand*	DC	DCA	Rock	OT	*Rubble*	SHAD	TAPE	WAND	CCA	Halimeda	MA	TA
LLs	0,111	0,067	0,000	0,000	0,511	0,044	0,000	0,000	0,111	0,089	0,044	0,000	0,000	1,356	0,067	20,067	0,000	0,000	0,800	0,133	0,156	0,000	1,022	0,244	0,089	0,133	8,289	66,667
SAs	0,533	0,000	0,000	0,000	0,100	1,400	1,000	0,000	8,833	0,533	0,067	0,000	0,000	1,433	13,000	9,900	0,033	0,433	0,267	2,100	33,133	0,133	1,333	0,133	1,600	0,000	0,400	23,633
BLs	6,400	0,022	0,000	0,022	2,067	5,200	3,511	0,600	26,022	4,311	6,956	0,000	2,311	1,689	3,000	3,356	0,000	1,111	0,533	0,711	10,822	0,200	1,822	0,622	0,822	0,000	0,333	17,556
BOs	2,911	0,022	0,022	0,333	0,511	6,089	2,044	0,422	22,622	2,111	0,689	0,000	0,733	2,356	8,622	12,044	0,067	6,022	1,178	0,511	14,333	0,422	2,844	0,378	1,867	0,000	0,000	10,844
BAs	8,222	0,400	0,000	3,933	3,067	4,156	2,956	3,200	20,867	1,444	1,244	0,000	0,000	0,956	2,578	3,956	0,022	3,956	5,267	0,111	26,667	0,000	1,889	0,244	0,378	0,000	1,444	3,044
LUs	29,156	0,378	0,000	0,000	2,889	11,511	0,156	3,844	3,000	3,267	0,000	0,000	0,111	0,156	9,600	0,444	0,778	0,956	0,244	1,333	24,844	0,444	0,889	0,222	1,222	0,000	0,000	4,556
KSs	14,533	1,200	0,156	0,089	14,733	9,244	3,311	13,911	4,867	1,022	2,267	0,000	0,200	0,644	5,378	0,044	0,244	13,489	1,156	0,422	7,244	0,244	1,956	0,267	2,111	0,000	0,000	1,267
KPs	7,444	0,267	0,000	0,000	4,333	12,267	0,733	0,511	6,489	8,511	3,933	0,000	0,000	0,511	16,333	0,022	0,378	0,867	0,800	0,400	29,689	0,533	1,911	0,333	1,044	0,711	0,311	1,667

2) *Life form* kedalaman *deep*

Site.N	ACB	ACD	ACE	ACS	ACT	CB	CE	CF	CM	CMR	CS	HL	ML	SC	SP	Sand	DC	DCA	Rock	OT	Rubble	SHAD	TAPE	WAND	CCA	Halimeda	MA	TA
LLd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAd	0,044	0,022	0,022	0,422	0,089	0,378	1,244	1,422	5,222	7,022	0,244	0,022	0,000	0,778	20,556	1,889	0,022	0,778	0,733	5,778	34,356	0,067	1,200	0,689	0,311	0,400	8,667	7,622
BLd	0,378	0,022	0,067	0,022	0,578	0,489	1,200	0,044	11,178	1,311	0,333	0,000	0,000	1,289	4,356	36,333	0,067	0,267	1,578	0,778	27,244	0,244	1,356	0,378	0,067	0,044	0,200	10,178
BOd	0,444	0,000	0,000	0,000	0,000	1,511	0,956	0,067	4,289	1,311	0,289	0,022	0,556	0,111	5,378	28,600	0,000	2,956	2,600	0,467	41,333	0,067	2,178	0,178	0,689	0,000	0,000	6,000
BAd	4,822	0,022	0,000	0,000	0,222	3,867	7,156	2,622	16,711	5,844	1,200	0,000	0,400	0,444	5,444	7,844	0,022	9,600	0,156	1,333	21,200	0,156	2,111	0,356	0,844	0,000	0,022	7,600
LUd	2,400	0,000	0,000	0,000	0,044	7,733	6,289	2,378	4,689	21,111	0,244	0,000	0,800	0,178	11,733	0,133	0,111	21,022	1,400	4,600	6,422	0,178	1,156	0,222	5,267	0,000	0,067	1,822
KSd	9,489	0,000	0,000	0,000	0,044	7,444	3,933	16,178	6,711	4,778	0,467	0,000	0,889	2,022	3,267	5,778	0,156	12,467	0,733	0,600	13,178	0,467	1,822	0,356	1,844	0,000	0,067	7,311
KPd	2,200	0,000	0,000	0,000	0,244	9,800	7,400	2,356	2,400	6,067	0,689	0,000	0,022	0,756	5,622	2,600	0,156	10,556	1,733	0,511	34,867	0,133	2,844	0,178	7,556	0,267	0,067	0,978

3) *Life form* zona

Depth	Zone	ACB	ACD	ACE	ACS	ACT	CB	CE	CF	CM	CMR	CS	HL	ML	SC	SP	Sand	DC	DCA	Rock	OT	Rubble	SHAD	TAPE	WAND	CCA	Halimeda	MA	TA	LC
deep	Inner	0,044	0,022	0,022	0,422	0,089	0,378	1,244	1,422	5,222	7,022	0,244	0,022	0,000	0,778	20,556	1,889	0,022	0,778	0,733	5,778	34,356	0,067	1,200	0,689	0,311	0,400	8,667	7,622	16,156
deep	Middle	2,011	0,011	0,017	0,006	0,211	3,400	3,900	1,278	9,217	7,394	0,517	0,006	0,439	0,506	6,728	18,228	0,050	8,461	1,433	1,794	24,050	0,161	1,700	0,283	1,717	0,011	0,072	6,400	28,406
deep	Outter	5,844	0,000	0,000	0,000	0,144	8,622	5,667	9,267	4,556	5,422	0,578	0,000	0,456	1,389	4,444	4,189	0,156	11,511	1,233	0,556	24,022	0,300	2,333	0,267	4,700	0,133	0,067	4,144	40,556
shallow	Inner	0,280	0,040	0,000	0,000	0,347	0,587	0,400	0,000	3,600	0,267	0,053	0,000	0,000	1,387	5,240	16,000	0,013	0,173	0,587	0,920	13,347	0,053	1,147	0,200	0,693	0,080	5,133	49,453	5,573
shallow	Middle	11,672	0,206	0,006	1,072	2,133	6,739	2,167	2,017	18,128	2,783	2,222	0,000	0,789	1,289	5,950	4,950	0,217	3,011	1,806	0,667	19,167	0,267	1,861	0,367	1,072	0,000	0,444	9,000	49,933
shallow	Outter	10,989	0,733	0,078	0,044	9,533	10,756	2,022	7,211	5,678	4,767	3,100	0,000	0,100	0,578	10,856	0,033	0,311	7,178	0,978	0,411	18,467	0,389	1,933	0,300	1,578	0,356	0,156	1,467	55,011