

DAFTAR PUSTAKA

- Adrim M, Hutomo M, Suharti S R. 1991. Chaetodontid fish community Structure and Its Relation to Reef Degradation at the Seribu Islans Reefs, Indonesia. Proceedings of the Regional Symposium on Living Resources in Coastal Areas. Phillipine.
- 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.
- Allen, G. R. & M. Adrim 2003. Review article; Coral reef fishes of Indonesia. *Zoological Studies*. 42 (1); 1-72.
- Allen, G.R., R. Steene, P. Humann, and N. Deloach .2003. Reef Fish Identification, Tropical Pacific. New World Publications, Inc. El Cajon CA. 480 pp.
- Arham, 2010. Sebaran dan Keragaman Ikan Karang di Pulau Barranglompo: Kaitannya dengan Kondisi dan Kompleksitas Habitat. Skripsi. Jurusan Ilmu Kelautan, Fakultas Ilmu Kelautan dan Perikanan, Makassar.
- Arqam, L. Anadi, L.O.A.R Nadia. 2019. Struktur komunitas ikan karang pada lokasi rehabilitasi karang moduk bioreeftef di perairan desa tanjung tiram, kabupaten konawe selatan. *Jurnal manajemen sumberdaya perairan* 4(3):214-221
- Bahar A. 2015. Pedoman Survei Laut. Buku Pedoman; Fakultas Ilmu Kelautan dan Perikanan, Universitas Hasanuddin Makassar. Penerbit Masagena Press.
- Bakus, G.J. 1990. Quantitative Analysis of Marine Biological Communities. *Field Biology and Environment*. John Wiley & Sons. Inc. Hoboken, New Jersey.
- Barus, B.S, T.Partono, D.Soedarma. 2018. Keterkaitan sedimentasi dengan persenutupan terumbu karang di Perairan Teluk Lampung. *Jurnal Ilmu dan Teknologi Kelautan Tropis*. 10(1):49-57.
- Beck, R.C. 1998. Motivation Theories and Principles. Prentice-Hall Inc. New Jersey.
- Burhanuddin, A. I. 2008. Ikhtiologi: Ikan dan Aspek Kehidupannya. Yayasan Citra Emulsi, Makassar.
- Choat, J.H. and D.R. Bellwood. 1991. Reef Fishes: Their History and Evolution. Dalam: P.F. Sale (Ed.). *The Ecology of Fishes on Coral Reefs*. Academic Press Inc. California, 754 p.
- Edrus, I.N, S.R. Suharti, F.D.Hukom, A.A.A.Husain, S.Oktaviyani, K.Wibowo, W.Kurniawan. 2017. Modul Pelatihan Penilaian Biodiversitas Ikan Terumbu Karang B. Jakarta : Pusat Oseanografi - LIPI
- English, S., C. Wilkinson and V. Baker.1997. Survey Manual for Tropical Marine Resources. Australian Institute of Marine Science, Townsville. Australia.

- Friedlander, A. M. and J. D. Parrish. 1998. Temporal Dynamics of Fish Communities on an exposed Shoreline in Hawaii. *Environmental Biology of Fishes*. 253 : 1-18.
- Giyanto, M.Abrar, T.A.Hadi, A.Budiyanto, M.Hafizt, A.Salatalohy, dan M.Y.Iswari .2017. Status Terumbu Karang Indonesia 2017. Jakarta : Pusat Oseanografi - LIPI
- Gratwicke, B, and MR Speight, 2005. The Relationship between Fish Species richness, abundance and habitat complexity in a range of shallow tropical marine habitat. *Journal of Fish Biology*, (3): 650-667.
- Grimsditch GD and Salm RV. 2006. Coral Reef Resilience and Resistance to Bleaching. IUCN, Gland, Switzerland. 52 p.
- Heemosth A. 2014. Unit 11: Reef Zonation. Khaled Bin Sultan Living Ocean Foundation.
- Hill J, Wilkinson C. 2004. Methods for Ecological Monitoring of Coral Reefs. Townsville : Australian Institute of Marine Science.
- Husain, A. A. A., 2000. Keanekaragaman ikan karang di Taman Laut Nasional Takabonerate, Sulawesi Selatan. *Torani*, 10(2): 61–68.
- Husain, A. A. A., 2001. Potensi Ikan Karang di Kepulauan Sembilan dan Sinjai Utara Kabupaten Sinjai. *Torani*, 11(2): 61-66.
- Husband E. 2019. Coral colony-Scale Rugosity Metrics and Applications for Assessing Temporal Trends In The Structural Complexity of Coral Reef. *Unyversity of Exeter*.
- Ilham, 2007. Keterkaitan Kondisi dan Rugositas Terumbu Karang dengan Kelimpahan dan Keragaman Ikan Karang di Pulau Badi Kabupaten Pangkep Pangkep. Skripsi. Jurusan Ilmu Kelautan, Universitas Hasanuddin.
- Ipa N. 2013. Keagaman dan Kelimpaha Ikan Pada Terumbu Karang di Pulau Sarappo Lompo Kaupaten Pangkep. Skripsi. Jurusan Ilmu Kelautan. Fakultas Ilmu Kelautan dan Perikanan, Universitas Hasanuddin.
- Kuffner, A., J. Brock., R. Grober-Dunsmore ., V.E. Bonito, T.D. Hickey, and . C. Wright . 2007. Relationship between Reef Fish Communities and Remotely sensed rugosity Measurements in Biscayne National Park, Florida, USA. *Environmental Biology of Fishes*, 78 : 71-82.
- Kuiter, R.H. 1992. Tropical Reef-Fishes of the Western Pasific, Indonesia and Adjacent Water. Gramedia, Jakarta.
- Lara, E.N. and E.A. Gonzalez. 1998. The relationship between reef fish community structure and environmental variables in the southern Mexican Caribbean. *J. Fish. Biol.*, 53(sA): 209-221.
- Luckhurst, B. and K. Luckhurst. 1978. Analysis of the influence of substrate variables on coral reef communities. *Marine Biology*, 49(4): 317-323.
- Magno, M. and C. Villanoy. 2006. Quantifying the Complexity of Philippine Coastline for Estimating Entrainment Potential. *Proceedings 10th International Coral Reef Symposium*. 1471-1476pp.
- Muniah H, Nur Al, 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

- Nontji, A. 2007. Laut Nusantara. Djambatan, Jakarta.
- Nurjirana dan A. I. Burhanuddin. 2017. Kelimpahan dan Keragaman jenis ikan famili Chaetodontidae berdasarkan kondisi tutupan karang hidup di Kepulauan Spermonde Sulawesi Selatan. *Spermonde* 2(3):34-42.
- Nybakken, J. W., 1992. Biologi Laut : Suatu Pendekatan Ekologis. PT. Gramedia, Jakarta.
- Nybakken, J.W. 1988. Biologi Laut : Suatu Pendekatan Ekologis. PT. Gramedia, Jakarta.
- Odum, E. P. 1994. Dasar-dasar Ekologi. (Edisi ketiga). Gajah Mada University Press. 697 hlm .
- Patty I.S dan N.Akbar. 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. Manado : Universitas Sam Ratulangi.
- Rafly, N.M, I.W.G.A. Karang, Widiastuti. 2020. Hubungan rugositas terumbu karang terhadap struktur komunitas ikan corallivor dan Herbivor di Perairan Pemuteran, Bali. *Jurnal of Marine Reseach and Technology. Universitas Undayana* 1(3):6-11.
- Rani, C, A.Haris, I.Yasir, dan A.Faizal 2019. Sebaran dan kelimpahan ikan karang di Perairan Pulau Liukangloe, Kabupaen Bulukumba. Makassar : Universitas Hasanuddin.
- Reese. 1981. Predation on coral by fishes of the family Chaetodontidae: implementation for conservation and management of coral reef ecosystem. *Bull. Mar. Sci.:* 31 : 594-604.
- Risamasu, F.J.L. 2008. Inovasi teknologi penangkapan ikan karang dengan bubu dasar berumpon. tesis. Sekola Pascasarjana, Institut Pertanian Bogor.
- Risk, M.J. (1972). Fish diversity on a coral reef in the Virgin Islands. *Atoll Research Bulletin* 153, 1-6.
- Roberts, C.M. and R.F.Ormond. 1987. Habitat complexity and coral reef diversity and abundance on Red Sea fringing reefs. *Mar.Ecol.Prog.Ser.*,41(11):1-8
- Rodriguez IB. 2006. Relationships between reef fish communities, water and habitat quality on coral reefs [thesis]. Puerto rico : Marine Science University of Puerto Rico
- Santoso, A.D, dan Kardono. 2008. Teknologi Konservasi dan Rehabilitasi Terumbu Karang. *Jurnal Teknologi Lingkungan. Vol.9.*
- Setiapermana, D., 1996. Potensi Wisata Bahari Pulau Mapor. P30-LIPI, Jakarta.
- Setiawan, Prabowo. 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.

- Sugianti, Y. dan Mujiyanto. 2013. Biodiversitas ikan karang di perairan Taman Nasional Karimunjawa, Jepara. BAWAL, 5(1):23-31
- Terangi. 2004. Panduan Dasar Untuk Pengenalan Ikan Karang Secara Visual Indonesia, Jakarta.
- Titaheluw S. 2011. Keterkaitan antara terumbu karang dengan ikan Chaetodontidae : implikasi untuk pengelolaan [tesis]. Institut Pertanian Bogor. Bogor.
- Veron, J.E.N. 2000. Corals of the World. Australian Institute of Marine Science and CRR Qld Pty Ltd. Queensland.
- Yusuf, S., B.Selamat, K.Amri, R.A.Rappe, Supriadi, A.I.Burhanuddin, F.Anggreni 2015. Kondisi Terumbu Karang dan Ekosistem Terkait di Liukang Tuppabiring Kabupaten Pangkep. Universitas Hasanuddin & LIPI. Coremap CTI.
- Yusuf, S., M.Beger, A.C.M.A.R.Tassakka, M.D.Brauer, A.Pricella, Rahmi, W.Umar, G.V.Limmon, A.M.Moore, J.Jompa 2011. Cross shield gradients of scleractinian coral in the Spermonde islands. Makassar : Universitas Hasanuddin.

LAMPIRAN

Lampiran 1. Kelipahan Ikan Terumbu Karang di Pulau Panambungan

Kategori	Famili	Spesies	Jumlah Individu	Total
Target	Achanturidae	Stenochaetus striatus	2	25
	Haemulidae	Plectorhinchus chaetodonoides	1	
	Lutjanidae	Lutjanus carponotatus	2	
		Lutjanus decussatus	4	
	Serranidae	Labrarchinus melanotaenia	1	
		Chepalopolis argus	1	
Siganidae	Siganus virgatus	14		
Indikator	Chaetodontidae	Chaetodon adiergastos	2	10
		Chaetodon auriga	1	
		Chaetodon octofasciatus	6	
		Chaetodon vagabundus	1	
Mayor	Labridae	Halichoeres prosopoion	2	270
		labrus lunaris	2	
	Nemiptheridae	Scolopsis bilineata	10	
		Abudefduf vaigiensis	18	
		Amblyglyphidodon batunai	7	
		Chromis viridis	15	
		Dischistodus chryzopoecilus	19	
	Pomacentridae	Neoglyphidodon melas	77	
		Neopomacentrus cyanomos	3	
		Pomacentrus moluccensis	40	
		stegastes nigricans	17	
		Clorurus bleekeri	4	
		Chlorurus bowersi	2	
		Scaridae	Chlorurus sordidus	
	scarus chlegeli		4	
scarus frenatus	2			
Total			305	

Lampiran 2. Kelimpahan ikan karang stasiun 1.

Kategori	Famili	Nama Spesies	Jumlah Jenis	Total
Mayor	Pomacentridae	<i>Abudefduf vaigiensis</i>	2	
Mayor	Pomacentridae	<i>Pomacentrus moluccensis</i>	9	
Mayor	Pomacentridae	<i>Neopomacentrus cyanomos</i>	3	38
Mayor	Pomacentridae	<i>Chromis viridis</i>	15	
Mayor	Pomacentridae	<i>Neoglyphidodon melas</i>	5	
Mayor	Scaridae	<i>Clorurus bleekeri</i>	4	
Target	Siganidae	<i>Siganus virgatus</i>	2	
Target	Haemulidae	<i>Plectorhinchus chaetodonoides</i>	1	4
Target	Serranidae	<i>Labrarchinus melanotaenia</i>	1	
Total Individu			42	

Lampiran 3. Kelimpahan ikan terumbu karang stasiun 2.

Kategori	Famili	Nama Spesies	Jumlah Jenis	Total
Mayor	Pomacentridae	<i>Abudefduf vaigiensis</i>	4	
Mayor	Pomacentridae	<i>Pomacentrus moluccensis</i>	11	
Mayor	Pomacentridae	<i>Neoglyphidodon melas</i>	20	
Mayor	Pomacentridae	<i>Dischistodus chrysopoecilus</i>	7	81
Mayor	Labridae	<i>Labrus lunaris</i>	2	
Mayor	Labridae	<i>Halichoeres prosopion</i>	2	
Mayor	Scaridae	<i>Chlorurus sordidus</i>	35	
Indikator	Chaetodontidae	<i>Chaetodon octofasciatus</i>	2	2
Target	Siganidae	<i>Siganus virgatus</i>	4	5
Target	Serranidae	<i>Chepalopholis argus</i>	1	
Total Individu			88	

Lampiran 4. Kelimpahan ikan terumbu karang stasiun 3.

Kategori	Famili	Nama Spesies	Jumlah Jenis	Total
Mayor	Pomacentridae	<i>Abudefduf vaigiensis</i>	2	
Mayor	Pomacentridae	<i>Pomacentrus moluccensis</i>	4	
Mayor	Pomacentridae	<i>Neoglyphidodon melas</i>	25	
Mayor	Pomacentridae	<i>Dischistodus chryzopoecilus</i>	12	57
Mayor	Pomacentridae	<i>Amblyglyphidodon batunai</i>	7	
Mayor	Nemiptheridae	<i>Scolopsis bilineata</i>	4	
Mayor	Scaridae	<i>Chlorurus sordidus</i>	1	
Mayor	Scaridae	<i>Chlorurus bowersi</i>	2	
Target	Achanturidae	<i>Stenochaetus striatus</i>	2	4
Target	Lutjanidae	<i>Lutjanus carponotatus</i>	2	
Total Individu				61

Lampiran 5. Kelimpahan ikan terumbu karang stasiun 4.

Kategori	Famili	Nama Spesies	Jumlah Jenis	Total
Mayor	Pomacentridae	<i>Abudefduf vaigiensis</i>	1	
Mayor	Pomacentridae	<i>Pomacentrus moluccensis</i>	4	
Mayor	Pomacentridae	<i>Neoglyphidodon melas</i>	16	
Mayor	Scaridae	<i>Scarus frenatus</i>	2	40
Mayor	Scaridae	<i>Scarus chlegeli</i>	4	
Mayor	Scaridae	<i>Chlorurus sordidus</i>	8	
Mayor	Nemiptheridae	<i>Scolopsis bilineata</i>	5	
Indikator	Chaetodontidae	<i>Chaetodon auriga</i>	1	4
Indikator	Chaetodontidae	<i>Chaetodon octofasciatus</i>	3	
Target	Siganidae	<i>Siganus virgatus</i>	6	10
Target	Lutjanidae	<i>Lutjanus decussatus</i>	4	
Total Individu				54

Lampiran 6. Kelimpahan ikan terumbu karang stasiun 5.

Kategori	Famili	Nama Spesies	Jumlah Jenis	Total
Mayor	Pomacentridae	<i>Abudefduf Vaigiensis</i>	9	
Mayor	Pomacentridae	<i>Pomacentrus Moluccensis</i>	12	
Mayor	Pomacentridae	<i>Stegastes Nigricans</i>	17	51
Mayor	Pomacentridae	<i>Neoglyphidodon Melas</i>	11	
Mayor	Nemiptheridae	<i>Scolopsis Bilineata</i>	1	
Mayor	Scaridae	<i>Chlorurus Sordidus</i>	4	
Indikator	Chaetodontidae	<i>Chaetodon Adiergastos</i>	2	
Indikator	Chaetodontidae	<i>Chaetodon Octofasciatus</i>	1	4
Indikator	Chaetodontidae	<i>Chaetodon Vagabundus</i>	1	
Target	Siganidae	<i>Siganus Virgatus</i>	2	2
Total ndividu				57

Lampiran 7. Analisis Data Regresi Linear Hubungan Rugositas dengan Kelimpahan,
Kelompok Fungsional dan Indeks Ekologi Ikan Karang

Keimpahan Ikan Karang

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Rugositas ^b		Enter

a. Dependent Variable: Kelimpahan

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.334 ^a	.111	-.185	18.37665

a. Predictors: (Constant), Rugositas

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	126.896	1	126.896	.376	.583 ^b
	Residual	1013.104	3	337.701		
	Total	1140.000	4			

a. Dependent Variable: Kelimpahan

b. Predictors: (Constant), Rugositas

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	106.329	74.402		1.429	.248
	Rugositas	-30.504	49.762	-.334	-.613	.583

a. Dependent Variable: Kelimpahan

Kelompok Fungsional

Ikan Target

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Rugositas ^b	.	Enter

a. Dependent Variable: Target

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.528 ^a	.279	.038	2.94179

a. Predictors: (Constant), Rugositas

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.038	1	10.038	1.160	.360 ^b
	Residual	25.962	3	8.654		
	Total	36.000	4			

a. Dependent Variable: Target

b. Predictors: (Constant), Rugositas

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	17.749	11.910		1.490	.233
	Rugositas	-8.579	7.966	-.528	-1.077	.360

a. Dependent Variable: Target

Ikan Indikator

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Rugositas ^b		Enter

a. Dependent Variable: Indikator

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.945 ^a	.893	.858	.75498

a. Predictors: (Constant), Rugositas

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.290	1	14.290	25.071	.015 ^b
	Residual	1.710	3	.570		
	Total	16.000	4			

a. Dependent Variable: Indikator

b. Predictors: (Constant), Rugositas

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	17.211	3.057		5.631	.011
	Rugositas	-10.236	2.044	-.945	-5.007	.015

a. Dependent Variable: Indikator

Ikan Mayor

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Rugositas ^b		Enter

a. Dependent Variable: Mayor

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.125 ^a	.016	-.312	19.75997

a. Predictors: (Constant), Rugositas

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.631	1	18.631	.048	.841 ^b
	Residual	1171.369	3	390.456		
	Total	1190.000	4			

a. Dependent Variable: Mayor

b. Predictors: (Constant), Rugositas

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	71.369	80.002		.892	.438
	Rugositas	-11.688	53.508	-.125	-.218	.841

a. Dependent Variable: Mayor

Indeks Ekologi
Keanekaragaman

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Rugositas ^b	.	Enter

a. Dependent Variable: Keanekaragaman

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.648 ^a	.420	.226	.12525

a. Predictors: (Constant), Rugositas

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.034	1	.034	2.169	.237 ^b
	Residual	.047	3	.016		
	Total	.081	4			

a. Dependent Variable: Keanekaragaman

b. Predictors: (Constant), Rugositas

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.618	.507		5.164	.014
	Rugositas	-.499	.339	-.648	-1.473	.237

a. Dependent Variable: Keanekaragaman

Keseragaman

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Rugositas ^b		Enter

a. Dependent Variable: Keseragaman

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.382 ^a	.146	-.138	.04966

a. Predictors: (Constant), Rugositas

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.001	1	.001	.514	.525 ^b
	Residual	.007	3	.002		
	Total	.009	4			

a. Dependent Variable: Keseragaman

b. Predictors: (Constant), Rugositas

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.960	.201		4.773	.017
	Rugositas	-.096	.134	-.382	-.717	.525

a. Dependent Variable: Keseragaman

Dominasi

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Rugositas ^b		Enter

a. Dependent Variable: Dominasi

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.629 ^a	.396	.194	.03133

a. Predictors: (Constant), Rugositas

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	1	.002	1.963	.256 ^b
	Residual	.003	3	.001		
	Total	.005	4			

a. Dependent Variable: Dominasi

b. Predictors: (Constant), Rugositas

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.027	.127		.215	.843
	Rugositas	.119	.085	.629	1.401	.256

a. Dependent Variable: Dominasi