VI. KESIMPULAN DAN SARAN

A. Kesimpulan

1. Nisbah kelamin ikan kakatua (*Scarus rivulatus* Valenciennes, 1840) di Perairan Kepulauan Spermonde selama periode penelitian tidak seimbang dengan nilai perbandingan sebesar 1 : 2,4 antara jantan dan betina.
2. Kematangan gonad ikan kakatua (*Scarus rivulatus* Valenciennes, 1840) berdasarkan waktu sampling maupun kelas panjang menunjukkan sifat seksual sebagai hermafrodit protogini dan aktifitas reproduksinya masih tergolong aman.
3. Nilai indeks kematangan gonad (IKG) ikan kakatua (*Scarus rivulatus* Valenciennes, 1840) menunjukkan bahwa ikan mengalokasikan energi hasil metabolisme ke proses perkembangan gonad yakni sebesar 0,53% pada ikan jantan dan 2,11% pada ikan betina dari berat kosong ikan.
4. Ukuran pertama kali matang gonad (UPMG) ikan kakatua (*Scarus rivulatus* Valenciennes, 1840) jantan pada ukuran 24,2 cm sedangkan betina pada ukuran 17,5 cm.

B. Saran

1. Dalam rangka pencegahan kemungkinan terjadinya dampak negatif akibat rasio nisbah kelamin yang tidak seimbang, maka diperlukan aturan atau regulasi dalam pemanfaatan sumberdaya hasil tangkapan ikan kakatua *Scarus rivulatus* Valenciennes, 1840. Agar kelestarian ikan kakatua di Perairan Kepulauan Spermonde tetap terjaga dan mempunyai fungsi/peran dari segi ekologi maupun ekonomi.
2. Kajian lebih lanjut perlu dilakukan untuk membuktikan dugaan hermaphroditisme pada spesies *Scarus rivulatus* Valenciennes, 1840.

DAFTAR PUSTAKA

Abubakar, S., Subur, R., & Tahir, I. (2019). Pendugaan Ukuran Pertama Kali Matang Gonad Ikan Kembung (*Rastrelliger* sp) di Perairan Desa Sidangoli Dehe Kecamatan Jailolo Selatan Kabupaten Halmahera Barat. *Jurnal Biologi Tropis*, *19*(1), 42–51.

Adrim, M. (2008). Aspek Biologi Ikan Kakatua (Suku Scaridae). *Oseana*, *XXXIII*(1), 41–50.

Aguilar-Perera, A. (2006). Disappearance of a Nassau Grouper Spawning Aggregation off The Southern Mexican Caribbean Coast. *Marine Ecology Progress Series*, *327*, 289–296.

Aguilar-Perera, A., & Aguilar-Dávila, W. (1996). A Spawning Aggregation of Nassau Grouper *Epinephelus striatus* (Pisces: Serranidae) in the Mexican Caribbean. *Environmental Biology of Fishes*, *45*(4), 351–361.

Alamsyah, R. (2019). Rasio Kelamin dan Tingkat Kematangan Gonad Ikan Cakalang yang Tertangkap di Perairan Teluk Bone. *Agrominansia*, *3*(2), 176–184. https://doi.org/10.34003/271891

Allen, G. R., & Mark, V. (2012). Reef Fishes of the East Indies: volumes I-III, Tropical Reef Research. *Perth, Australia*, *II*.

Allen, G. R., & Adrim, M. (2003). Review: Article Coral Reef Fishes of Indonesia. *Zoological Studies*, *42*(1), 1–72.

Aswady, T., Asriyana, & Halili. (2019). Rasio Kelamin dan Ukuran Pertama Kali Matang Gonad Ikan Kakatua (*Scarus rivulatus* Valenciennes , 1840) di Perairan Desa Tanjung Tiram , Kecamatan Moramo Utara Kabupaten Konawe Selatan. *Jurnal Manajemen Sumber Daya Perairan*, *4*(2), 183–190.

Bailly, N. (2009). *Scarus rivulatus* Valenciennes, 1840. *Accessed through: World Register of Marine Species*. http://www.marinespecies.org/

Barba, J. (2010). Demografi Parottfish, Usia, Ukuran, dan Variabel Reproduksi. *James Cook University. Australia.*

Beets, J., & Friedlander, A. (1999). Evaluation of a Conservation Strategy: a Spawning Aggregation Closure for Red Hind, *Epinephelus guttatus* in the US Virgin Islands. *Environmental Biology of Fishes*, *55*(1–2), 91–98.

Bellwood, D. R., & Choat, J. H. (1990). A Functional Analysis of Grazing in Parrotfishes (family Scaridae): The Ecological Implications. *Environmental Biology of Fishes*, *28*(1–4), 189–214. https://doi.org/10.1007/BF00751035

Bonaldo, R. M., Krajewski, J. P., Sazima, C., & Sazima, I. (2006). Foraging Activity and Resource Use by Three Parrotfish Species at Fernando de Noronha Archipelago, Tropical West Atlantic. *Marine Biology*, *149*(3), 423–433. https://doi.org/10.1007/s00227-005-0233-9

Chapman, D. D., Pikitch, E. K., Babcock, E., & Shivji, M. S. (2005). Marine Reserve Design and Evaluation Using Automated Acoustic Telemetry: A Case-Study Involving Coral Reef-Associated Sharks In The Mesoamerican Caribbean.

Marine Technology Society Journal, *39*(1), 42–55.

Chen, L. S. (2002). Post-settlement Diet Shift of *Chlorurus sordidus* and *Scarus schlegeli* (Pisces: Scaridae). *Zoological Studies*, *41*(1), 47–58.

Choat, J. H., Axe, L. M., & Lou, D. C. (1996). Growth and Longevity in Fishes of The Family Scaridae. *Marine Ecology Progress Series*, *145*, 33–41.

Choat, J. H., & Robertson, D. R. (1975). Protogynous Hermaphroditism in Fishes of The Family Scaridae. In *Intersexuality in The animal Kingdom* (pp. 263–283). Springer.

Craig, J. F., Halls, A. S., Barr, J. J. F., & Bean, C. W. (2004). The Bangladesh Floodplain Fisheries. *Fisheries Research*, *66*(2–3), 271–286. https://doi.org/10.1016/S0165-7836(03)00196-6

Dahlan, M. A., Andy Omar, S. Bin, Tresnati, J., Umar, M. T., & Nur, M. (2015). Nisbah Kelamin dan Ukuran Pertama Kali Matang Gonad Ikan Layang Deles (*Decapterus macrosoma* Bleeker, 1841) di Perairan Teluk Bone, Sulawesi Selatan. *Jurnal Administrasi dan Kebijakan Kesehatan Indonesia*, *25*(1). https://doi.org/10.35911/torani.v25i1.260

Damora, A., & Ernawati, T. (2017). Beberapa Aspek Biologi Ikan Beloso (*Saurida micropectoralis*) di Perairan Utara Jawa Tengah. *Bawal Widya Riset Perikanan Tangkap*, *3*(6), 363–367.

De Mitcheson, Y. S., & Colin, P. L. (2011). Reef Fish Spawning Aggregations: Biology, Research and Management (Vol. 35). *Springer Science & Business Media*.

Dianne, J. B. (2020). *Scarus rivulatus* in Fishes of Australia. *Accessed 04 Sep 2020*. http://136.154.202.208/home/species/931

Effendie, M. I. (1979). Metode Biologi Perikanan. *Yayasan Dewi Sri*. Bogor.

Effendie, M. I. (1997). Biologi Perikanan. *Yayasan Pustaka Nusatama*. Yogyakarta.

Effendie, M. I. (2002). Biologi Perikanan. *Yayasan Pustaka Nusatama*. Yogyakarta.

Farmer, N. A., Ault, J. S., Smith, S. G., & Franklin, E. C. (2013). Methods for Assessment of Short-term Coral Reef Fish Movements within an Acoustic Array. *Movement Ecology*, *1*(1), 7.

Green, A. L., & Bellwood, D. R. (2009). Monitoring Functional Groups of Herbivorous Reef Fishes as Indicators of Coral Reef Resilience A Practical Guide for Coral Reef Managers in The Asia Pacific Region. In *Science* (Issue 7). http://cmsdata.iucn.org/downloads/resilience_herbivorous_monitoring.pdf

Johnson, J. E. (1971). Maturity and Fecundity of Threadfin Shad *Dorosoma petenense* (Günther) in Central Arizona Reservoirs. *Transactions of the American Fisheries Society*, *100*(1), 74–85.

Kantun, W., Mallawa, A., & Tuwo, A. (2018). Reproductive Pattern of Yellowfin Tuna *Thunnus albacares* in Deep and Shallow Sea FAD in Makassar Strait. *AACL Bioflux*, *11*(3), 884–893.

Kaunda-Arara, B., & Rose, G. A. (2004). Homing and Site Fidelity in The Greasy

Grouper *Epinephelus tauvina* (Serranidae) within a Marine Protected Area in Coastal Kenya. *Marine Ecology Progress Series*, *277*, 245–251.

King, M. (1995). Fisheries Biology, Assessment and Management. *Fishing News Books, Blackwell Science Pty Ltd.*

Lagler, K. F., Bardach, J. E., Miller, R. R., & Passino, D. R. M. (1977). Ichthyology. John Willey and Sons. *Inc. New York*, *505*.

Lestari, D. P., Bambang, A. N., & Kurohman, F. (2014). Analisis Faktor-Faktor yang Mempengaruhi Harga Ikan Kakatua (*Scarus* sp) di Pulau Panggang, Kepulauan Seribu, DKI Jakarta. *Journal of Fisheries Resources Utilization Management and Technology*, *3*, 54–61.

LKKPN. (2019). Keanekaragaman Jenis Ikan Taman Wisata Perairan Pulau Pieh dan Laut Sekitarnya. *Direktorat Jenderal Pengelolaan Ruang Laut*.

Lou, D. C. (1992). Age Specific Patterns of Growth and Reproduction in Tropical Herbivorous Fishes. *James Cook University. Australia.*

Mann, D., Locascio, J., Schärer, M., Nemeth, M., & Appeldoorn, R. (2010). Sound Production by Red Hind *Epinephelus guttatus* in Spatially Segregated Spawning Aggregations. *Aquatic Biology*, *10*(2), 149–154.

Mccauley, D. J., Young, H. S., Guevara, R., Williams, G. J., Power, E. A., Dunbar, R. B., Bird, D. W., Durham, W. H., & Micheli, F. (2014). Positive and Negative Effects of a Threatened Parrotfish on Reef Ecosystems. *Conservation Biology*, *28*(5), 1312–1321. https://doi.org/10.1111/cobi.12314

Mustakim, M. (2008). Kajian Kebiasaan Makanan dan Kaitannya dengan Aspek Reproduksi Ikan Betok (*Anabas testudineus* Bloch) pada Habitat yang Berbeda di Lingkungan Danau Melintang, Kutai Kartanegara, Kalimantan Timur. *Institut Pertanian Bogor.*

Nasution, S. H., Oktaviani, D., & Dharmadi, H. D. I. (2008). Komunitas Ikan dan Faktor Kondisi Beberapa Ikan Putihan di Sungai Muara Kaman dan Danau Semayang. *Limnotek, Perairan Darat Tropis Di Indonesia*, *15*(1), 10–21.

Nikolsky, G. V. (1980). Theory of Fish Population Dynamics (p. 317). *Bishan Singh Mahendrapal Singh, Dehradun and Otto Koelts Science Publishers, Koeltz.*

Omar, S. B. A. (2013). Buku Ajar Biologi Perikanan (p. 168). *Universitas Hasanuddin. Kota Makassar.*

Omar, S. B. A., Nur, M., Tresnati, J., Umar, M. T., Dahlan, M. A., & Kune, S. (2015). Nisbah Kelamin dan Ukuran Pertama Kali Matang Gonad Ikan Endemik Pirik (*Lagusia micracanthus* Bleeker, 1860) di Sungai Pattunuang, Kabupaten Maros dan di Sungai Panrego, Kabupaten Bone, Sulawesi Selatan. *Seminar Nasional Tahunan XII Hasil Penelitian Perikanan Dan Kelautan. Semnaskan_UGM Budidaya Perikanan (BP - 13)*, *73*.

Parenti, P., & Randall, J. E. (2000). An Annotated Checklist of The Species of The Labroid Fish. *Ichthyological Bulletin*, 1–239.

Plass-Johnson, J. G., Ferse, S. C., Wild, C., & Teichberg, M. (2014). Observation of Macroalgal Browsing in Juvenile Observation of Macroalgal Browsing in

Juvenile Humphead Parrotfish, *Bolbometopon muricatum* in The Spermonde Archipelago, Indonesia. *Bull Mar Sci*, *90*(3), 763–764. https://doi.org/10.5343/http

Poepoe, K., Bartram, P., & Friedlander, A. (2003). Penggunaan Tradisional Hawaii Pengetahuan dalam Manajemen Kontemporer Sumberdaya Laut. *Pusat Penelitian Pengetahuan Perikanan. University of British Columbia. Vancouver*. 328–339.

Prince, J. (2017). No Length Based Assessment of the Spawning Potential of Reef Fish from iQoliqoli Cokovata in Macuata: A Case Study in FijiTitle. *WWF-Pacific, Suva, Fiji*.

Pulungan, C. P. (2015). Nisbah Kelamin dan Nilai Kemontokan Ikan Tabingal (*Puntioplites bulu* Blkr) dari Sungai Siak, Riau. *Jurnal Perikanan Dan Kelautan-UNRI*, *20*(1), 11–16.

Purdom, C. E. (1992). Genetics and Fish Breeding (Vol. 8). *Springer Science & Business Media.*

Rachmad, B., Suharti, R., Irayana, D. A., & Zulkifli, D. (2018). Distribusi Spasial Ikan Famili Scaridae di Perairan Taman Nasional Bunaken, Sulawesi Utara. *Jurnal Kelautan Dan Perikanan Terapan*, *1*(2), 69–76.

Rahaningmas, J. M., & Mansyur, A. (2018). Pengaruh Perbedaan Jenis Umpan Terhadap Hasil Tangkapan Ikan Kakatua (Famili: Scaridae) Menggunakan Pancing Ulur. *Jurnal Sumberdaya Akuatik Indopasifik*, *2*(1), 25–34.

Randall, J. E. (1963). The Spawning and Early Development of The Atlantic Parrotfish, *Sparisoma rubripinne*, with Notes on Other Scarid and Labrid Fishes. *Zoologica*, *48*, 49–60.

Randall, J. E., & Choat, J. H. (1980). Two New Parrotfishes of The Genus *Scarus* From The Central and South Pacific with Further Examples of Sexual Dichromatism. *Zoological Journal of the Linnean Society*, *70*(4), 383–419.

Rhodes, K. L., & Tupper, M. H. (2008). The Vulnerability of Reproductively Active Squaretail Coralgrouper (*Plectropomus areolatus*) to fishing. *Fishery Bulletin*, *106*(2), 194–204.

Samoilys, M. A. (1997). Movement in a Large Predatory Fish: Coral Trout, *Plectropomus leopardus* (Pisces: Serranidae), on Heron Reef, Australia. *Coral Reefs*, *16*(3), 151–158.

Saputra, S. W., Soedarsono, P., & Sulistyawati, G. A. (2009). Beberapa Aspek Biologi Ikan Kuniran (*Upeneus* spp) di Perairan Demak. *Jurnal Saintek Perikanan*, *5*(1), 1–6.

Scarponi, P., Coro, G., & Pagano, P. (2018). Computer Generated Distribution Maps for *Scarus rivulatus* (Rivulated parrotfish) with Modelled Year 2050 Native Range Map Based on IPCC RCP8.5 Emissions Scenario (A Collection of Aquamaps Native Layers in NetCDF format). *www.aquamaps.org, Version 10/2019 Preliminary Version*, *Data in brief 17 (2018)*, 292–296.

Schärer, M. T., Nemeth, M. I., Rowell, T. J., & Appeldoorn, R. S. (2014). Sounds Associated with The Reproductive Behavior of The Black Grouper

(*Mycteroperca bonaci*). *Marine Biology*, *161*(1), 141–147.

Shao, Y. T., Lu, C. C., Liu, L. L., & Lee, T. (2003). The Sex Reversal Pattern of Scarus ghobban and *Scarus rivulatus* (Family Scaridae, Teleost). *AGRIS International Information System for The Agricultural Science and Technology*.

Slamet, B., Suwirya, K., Supii, A. I., & Setyadi, I. (2010). Beberapa Aspek Biologi Reproduksi Ikan Kerapu Raja Sunu (*Plectropoma laevis*). *Prosiding Forum Inovasi Teknologi Akuakultur*, 351–357.

Steel, R. G. H., & Torrie, J. H. (1989). Prinsip dan Prosedur Statistika: Suatu Pendekatan Biometrik (Diterjemahkan oleh Bambang Sumantri) Edisi Kedua. *PT. Gramedia Pustaka. Jakarta.*

Streelman, J. T., Alfaro, M., Westneat, M. W., Bellwood, D. R., & Karl, S. A. (2002). Evolutionary History of The Parrotfishes: Biogeography, Ecomorphology, and Comparative Diversity. *Evolution*, *56*(5), 961–971. https://doi.org/10.1111/j.0014-3820.2002.tb01408.x

Sudjana. (1992). Metoda Statistika Edisi Kelima. *Tarsito Publisher. Bandung.*

Tika, I. H. P. (2020). Biologi Reproduksi Ikan Gigi Anjing *Choerodon anchorago* Bloch, 1791 di Perairan Kepulauan Spermonde. *Universitas Hasanuddin. Kota Makassar.*

Tresnati, J. (2001). Kajian Aspek Biologi Ikan Sebelah Langkau *Psettodes erumei* di Perairan Kepulauan Spermonde Sulawesi Selatan. *Disertasi. Program Pascasarjana Universitas Hasanuddin. Makassar*, *109*.

Tresnati, J., Yasir, I., Aprianto, R., Yanti, A., Rahmani, P. Y., & Tuwo, A. (2019). Long-Term Monitoring of Parrotfish Species Composition in the Catch of Fishermen from the Spermonde Islands, South Sulawesi, Indonesia. *IOP Conference Series: Earth and Environmental Science*, *370*(1). https://doi.org/10.1088/1755-1315/370/1/012015

Tresnati, J., Yasir, I., Yanti, A., Aprianto, R., Rahmani, P. Y., & Tuwo, A. (2019). Maturity Stages of The Redbreasted Wrasse *Cheilinus fasciatus*. https://doi.org/10.1088/1755-1315/370/1/012016

Tuwo, A., & Conand, C. (1992). Reproductive Biology of The Holothurian *Holothuria forskali* (Echinodermata). *Journal of the Marine Biological Association of the United Kingdom*, *72*(4), 745–758.

Utomo, S. P. R., Ain, C., & Supriharyono. (2013). Keanekaragaman Jenis Ikan Karang di Daerah Rataan dan Tubir pada Ekosistem Terumbu Karang di Legon Boyo, Taman Nasional Karimunjawa, Jepara. *Management of Aquatic Resources Journal*, *2*(4), 81–90. https://ejournal3.undip.ac.id

Wahyuono, H., Budihardjo, S., & Wudianto, R. (1983). Pengamatan Parameter Biologi Beberapa Jenis Ikan Demersal di Perairan Selat Malaka Sumatera Utara. *Laporan Penelitian Laut. Jakarta*.

Warner, R. R. (1988). Traditionality of Mating-site Preferences in a Coral Reef Fish. *Nature*, *335*(6192), 719–721.

Yanti, A., Yasir, I., Rahmani, P. Y., Aprianto, R., Tuwo, A., & Tresnati, J. (2019).

Macroscopic Characteristics of The Gonad Maturity Stages of Dusky Parrotfish *Scarus niger*. *IOP Conference Series: Earth and Environmental Science*, *370*(1). https://doi.org/10.1088/1755-1315/370/1/012051

Yanti, A., Tresnati, J., Yasir, I., Rahmani, P. Y., & Aprianto, R. (2020). Size At The Maturity of Sea Cucumber *Holothuria scabra.* Is It An Overfishing Sign in Wallacea Region? *IOP Conference Series: Earth and Environmental Science*. https://doi.org/10.1088/1755-1315/473/1/012056

Yanti, Asri. (2020). Biologi Reproduksi Ikan Kakatua Sirip Kuning *Scarus flavipectoralis* Schultz, 1958 di Perairan Kepulauan Spermonde*. Skripsi*. *Universitas Hasanuddin. Kota Makassar.*

Yasir, I., Tresnati, J., Yanti, A., Rahmani, P. Y., Aprianto, R., & Tuwo, A. (2019). Species Diversity of Wrasses Caught by Fishermen in The Spermonde Islands, South Sulawesi, Indonesia. *IOP Conference Series: Earth and Environmental Science*, *370*(1). https://doi.org/10.1088/1755-1315/370/1/012014

Yuniar, Is. (2017). Biologi Reproduksi Ikan. *Hang Tuah University Press. Surabaya.*

Zeller, D. C. (1998). Spawning Aggregations: Patterns of Movement of The Coral Trout *Plectropomus leopardus* (Serranidae) as Determined by Ultrasonic Telemetry. *Marine Ecology Progress Series*, *162*, 253–263.

LAMPIRAN

Lampiran 1. Nisbah kelamin ikan kakatua (*Scarus rivulatus* Valenciennes, 1840) berdasarkan waktu sampling.

Jenis Kelamin	Juli		Agustus		September		Oktober	
	N	%	N	%	N	%	N	%
Jantan	0	0	9	100	0	0	0	0
Betina	2	100	0	0	0	0	0	0
Jumlah	2	100	9	100	0	0	0	0
Jenis Kelamin	November		Desember		Januari		Februari	
	N	%	N	%	N	%	N	%
Jantan	19	41,30	3	42,86	6	9,84	8	14,04
Betina	27	58,70	4	57,14	55	90,16	49	85,96
Jumlah	46	100	7	100	61	100	57	100
Jenis Kelamin	Maret		April		Mei		Juni	
	N	%	N	%	N	%	N	%
Jantan	1	100	4	100	4	66,67	4	57,14
Betina	0	0	0	0	2	33,33	3	42,86
Jumlah	1	100	4	100	6	100	7	100

Lampiran 2. Hasil uji *chi-square* untuk nisbah kelamin berdasarkan waktu sampling.

No.	O_i	C_i	O_i-C_i	$(O_i-C_i)^2$	{[(O_i-C_i)2]/C_i}	db=n-1	Nilai Tabel
1	0	50	50	7,07	0,1414		
2	100	50	50	7,07	0,1414		
3	0	50	50	7,07	0,1414		
4	0	50	50	7,07	0,1414		
5	41,30	50	8,70	2,95	0,0509		
6	42,86	50	7,14	2,67	0,0534		
7	9,84	50	40,16	6,34	0,1268		
8	14,04	50	35,96	6,00	0,1200		
9	100	50	50	7,07	0,1414		
10	100	50	50	7,07	0,1414		
11	66,67	50	16,67	4,08	0,0816		
12	57,14	50	7,14	2,67	0,0534		
				chi-square		11	19,6751

Lampiran 3. Nisbah kelamin ikan kakatua (*Scarus rivulatus* Valenciennes, 1840) berdasarkan TKG.

Jenis Kelamin	TKG I		TKG II		TKG III		TKG IV		TKG V	
	N	%	N	%	N	%	N	%	N	%
Jantan	1	100	20	22,47	13	61,90	25	28,74	0	0
Betina	0	0	69	77,53	8	38,10	62	71,26	2	100
Jumlah	1	100	89	100	21	100	87	100	2	100

Lampiran 4. Hasil uji *chi-square* untuk nisbah kelamin berdasarkan tingkat kematangan gonad.

No.	O_i	C_i	O_i-C_i	$(O_i-C_i)^2$	{[$(O_i-C_i)2$]/C_i}	db=n-1	Nilai Tabel
1	100	50	50	7,07	0,1414		
2	22,47	50	27,53	5,25	0,1050		
3	61,90	50	11,90	3,45	0,0690		
4	28,74	50	21,26	4,61	0,0922		
5	0	50	50	7,07	0,1414		
				chi-square		4	9,4877

Lampiran 5. Nisbah kelamin ikan kakatua (*Scarus rivulatus* Valenciennes, 1840) berdasarkan kelas panjang.

Jenis Kelamin	9,5 – 12,3		12,4 – 15,2		15,3 – 18,1		18,2 – 21,0	
	N	%	N	%	N	%	N	%
Jantan	0	0	0	0	1	2,86	3	4,05
Betina	5	100	16	100	34	97,14	71	95,95
Jumlah	5	100	16	100	35	100	74	100
Jenis Kelamin	21,1 – 23,9		24,0 – 26,8		26,9 – 29,7		29,8 – 32,6	
	N	%	N	%	N	%	N	%
Jantan	8	40	27	90	15	100	4	100
Betina	12	60	3	10	0	0	0	0
Jumlah	20	100	30	100	15	100	4	100

Lampiran 6. Hasil uji statistik berpasangan untuk nisbah kelamin berdasarkan kelas panjang.

No.	O_i	C_i	O_i-C_i	$(O_i-C_i)^2$	{[$(O_i-C_i)2$]/C_i}	db=n-1	Nilai Tabel
1	0	50	50	7,07	0,1414		
2	0	50	50	7,07	0,1414		
3	2,86	50	47,14	6,87	0,1374		
4	4,05	50	45,95	6,78	0,1356		
5	40	50	10	3,16	0,0632		
6	90	50	40	6,32	0,1264		
7	100	50	50	7,07	0,1414		
8	100	50	50	7,07	0,1414		
				chi-square		7	14,0671

Lampiran 7. Tingkat kematangan gonad ikan kakatua (*Scarus rivulatus* Valenciennes, 1840) pada ikan jantan dan betina berdasarkan waktu sampling.

TKG	Juli				Agustus				September			
	Jantan		Betina		Jantan		Betina		Jantan		Betina	
	N	%	N	%	N	%	N	%	N	%	N	%
I	0	0	0	0	0	0	0	0	0	0	0	0
II	0	0	0	0	0	0	0	0	0	0	0	0
III	0	0	0	0	0	0	0	0	0	0	0	0
IV	0	0	2	100	0	0	0	0	0	0	0	0
V	0	0	0	0	0	0	0	0	0	0	0	0

TKG	Oktober				November				Desember			
	Jantan		Betina		Jantan		Betina		Jantan		Betina	
	N	%	N	%	N	%	N	%	N	%	N	%
I	0	0	0	0	0	0	0	0	0	0	0	0
II	4	44,44	0	0	9	47,37	10	37,04	1	33,33	0	0
III	2	22,22	0	0	6	31,58	5	18,52	0	0	0	0
IV	3	33,33	0	0	4	21,05	10	37,04	2	66,67	4	100
V	0	0	0	0	0	0	2	7,41	0	0	0	0

TKG	Januari				Februari				Maret			
	Jantan		Betina		Jantan		Betina		Jantan		Betina	
	N	%	N	%	N	%	N	%	N	%	N	%
I	0	0	0	0	0	0	1	2,04	0	0	0	0
II	3	50	49	89,09	3	37,50	10	20,41	0	0	0	0
III	0	0	2	3,64	0	0	1	2,04	0	0	0	0
IV	3	50	4	7,27	5	62,50	37	75,51	1	100	0	0
V	0	0	0	0	0	0	0	0	0	0	0	0

TKG	April				Mei				Juni			
	Jantan		Betina		Jantan		Betina		Jantan		Betina	
	N	%	N	%	N	%	N	%	N	%	N	%
I	0	0	0	0	0	0	0	0	0	0	0	0
II	0	0	0	0	0	0	0	0	0	0	0	0
III	3	75	0	0	2	50	0	0	0	0	0	0
IV	1	25	0	0	2	50	2	100	4	100	3	100
V	0	0	0	0	0	0	0	0	0	0	0	0

Lampiran 8. Tingkat kematangan gonad ikan kakatua (*Scarus rivulatus* Valenciennes, 1840) pada ikan jantan dan betina berdasarkan kelas panjang.

TKG	9,5 – 12,3		12,4 – 15,2		15,3 – 18,1		18,2 – 21,0	
	Jantan	Betina	Jantan	Betina	Jantan	Betina	Jantan	Betina
I	0	0	0	0	0	0	0	1,49
II	0	100	0	81,25	0	50	28,57	41,79
III	0	0	0	0	0	11,76	71,43	0
IV	0	0	0	18,75	100	38,24	0	56,72
V	0	0	0	0	0	0	0	0

TKG	21,1 – 23,9		24,0 – 26,8		26,9 – 29,7		29,8 – 32,6	
	Jantan	Betina	Jantan	Betina	Jantan	Betina	Jantan	Betina
I	0	0	0	0	0	0	0	0
II	25	41,67	37,04	0	33,33	0	50	0
III	25	0	25,93	0	20	0	0	0
IV	50	50	37,04	66,67	46,67	0	50	0
V	0	8,33	0	33,33	0	0	0	0

Lampiran 9. Hasil uji statistik berpasangan untuk indeks kematangan gonad berdasarkan waktu sampling.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Jantan	58.6667	12	73.41208	21.19224
	Betina	20.7500	12	40.27660	11.62685

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Jantan & Betina	12	.508	.092

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Jantan - Betina	37.91667	63.29937	18.27295	-2.30184	78.13517	2.075	11	.062

Lampiran 10. Hasil uji statistik berpasangan untuk indeks kematangan gonad berdasarkan tingkat kematangan gonad.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Jantan	136.8000	5	224.67688	100.47855
	Betina	489.8000	5	906.30332	405.31116

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Jantan & Betina	5	.979	.004

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Jantan - Betina	-353.00000	687.76013	307.57568	-1206.96700	500.96700	-1.148	4	.315