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LAMPIRAN

Lampiran 1. Identifikasi Jenis Flora dan Fauna

a. Jenis Flora

Tabel 1. Identifikasi Jenis Mangrove

No	Famili	Genus	Spesies	Nama Lokal
1	Rhizophoraceae	Bruguiera	*Bruguiera gymnorhiza*	
2		Soneratia	*Soneratia alba*	Lolaro
3			*Soneratia ovata*	Lolaro
4		Avicenia	*Avicennia alba*	Lolaro
5		Rhizophora	*Rhizopora apiculata*	Mangi-mangi
6			*Rhizopora Mucronata*	Mangi-mangi
7			*Rhizopora Stylosa*	Mangi-mangi
8		Xylocarpus	*Xylocarpus Granatum*	

Tabel 2. Identifikasi Jenis Lamun

No	**Famili**	**Genus**	**Spesies**
1	Hydrocharitaceae	*Halophila*	*Halophila ovalis*
2		*Enhalus*	*Enhalus acoroides*
3		*Thalasia*	*Thalasia hemprichii*

b. Jenis Fauna

Tabel 3. Identifikasi Jenis Burung

No	Famili	Spesies	Nama Lokal	Nama Asing
1	Sulidae	*Sula lencogastes*	Elang Laut	*Sea-eagle*
2		*Egretta garzetta*	Kuntul Kecil	*Little Egrat*
3		*Butorides striata*	Kokokan Laut	*green-backed heron*
4	Sternidae	*Chlidonias leucopterus*	Dara laut Sayap Putih	*White-Winged Tern*
5		*Sterna hirundo*	Dara Laut	*Commn Tern*
6	Laridae	*Gygis Alba*	Dara laut Putih	*White Tern*

Tabel 4. Identifikasi Jenis Reptil

No	Famili	Spesies	Nama Lokal	Nama Asing
1	Varanidae	*Varanus salvadori*	Biawak	*Lizard*
2	Scincidae	*Mabouya sp.*	Kadal	*Common Sun Skink*
3	Scincidae	*Tiliqua Sp*	Kadal	*Irian Jaya blue tongue skink*
4	Gekkonidae	*Gecko-gecko*	Tokek	*Gecko*
5	Pythonidae	*Liasis sp*	Sanca air	*Liasis papuanus*

Tabel 5. Identifikasi Jenis Makrozoobenthos

No	Family	Genus	Spesies
1	Eunicidae	Marphysa	*Marphysa sp*
			Marphysa sangwinea
2	Oligochaetadae	Oligochaeta	*Oligochaeta sp*
3	Psammobiidae	Asaphis	*Asaphis deflorata*
4	Conidae	Conus	*Conus catus*
5	Semelidae	Scrobicularia	*Scrobicularia planata*
		Solen	*Solen sp*
6	Cerithiidae	Clypeomorus	*Clypeomorus monoliferus*
7	Naticidae	Sinum	*Sinum perspective*
8	Mactrinae	Mactra	*Mactra violacea*
9	Turridae	Lophiotoma	*Lophiotoma indica*
10	Terebridae	Duplicaria	*Duplicaria dupata*
11	Muricidae	Morula	*Morula margariticola*
		Chicoreus	*Chicoreus capucinus*
		Schylla	*Schylla sp*
			Benur udang
			Papuina labium
12	Potamididae	Cerithidae	*Cerithidae cingulata*
		Terebralia	*Terebralia molustis*
		Terebralia	*Terebralia palustris*
		Teleskopium	*Teleskopium telescopium*
13	Thiaridae	Thiara	*Thiara scabra*
14	Isognomonidae	Isognomon	*Isognomon perna*
15	Neritidae	Nerita	*Nerita planospira*
		Anadara	*Anadara antiquata*
16	Ellobidae	Cassidula	*Cassidula aurisfelis*
17	Tittorinidae	Littorina	*Littorina scabra*

Tabel 6. Identifikasi Jenis Ikan

Ordo	Famili	Species
Perciformes	Pomacentridae	*Abudefduf vaigiensis (Quoy & Gaimard, 1825)*
		Chromis analis (Valenciennes)
	Acanthuridae	*Acanthurus auranticavus Randall, 1956*
	Ambassidae	*Ambassis vachellii Richardson, 1846*
	Gobiidae	*Amblygobius bynoensis (Richardson, 1844)*
		Sphaeramia orbicularis (Cuvier, 1828)
	Apogonidae	*Cheilodipterus isostigmus, Schultz, 1940*
		Apogon ceramensis Bleeker, 1852
	Labridae	*Choerodon anchorago (Bloch, 1791)*
		Choerodon schoenleinii (Valenciennes, Blackspot, 1839)
		Cirrhilabrus solorensis Bleeker, 1853
		Halichoeres scapularis (Bennett, 1832)
		Halichoeres nigrescens (Bloch&Schneider, 1801)
	Carangidae	*Caranx papuensis Alleyne & MacLeay, 1877*
		Caranx sexfasciatus Quoy & Gaimard, 1825
		Scomberoides lysan (Forsskål, 1775)
	Gerrenidae	*Gerres erythrourus (Bloch, 1791)*
		Gerres filamentosus Cuvier, 1829
		Gerres oyena (Forsskål, 1775)
	Kyphosidae	*Kyphosus bigibbus Lacepède, 1801*
		Kyphosus cinerascens (Forsskål, 1775)
	Mullidae	*Mulloidichtys flavolineatus (Lacepède, 1801)*
	Ephippidae	*Platax boersii Bleeker, 1853*
		Platax orbicularis, Forsskål, 1775
		Chaetodipterus faber (Broussonet, 1782)
	Siganidae	*Siganus canaliculatus (Park, 1797)*
		Siganus fuscescens (Houttuyn, 1782)
		Siganus margaritiferus (Valenciennes, 1835)
		Siganus spinus (Linnaeus, 1758)
	Lutjanidae	*Lutjanus carponotatus (Richardson, 1842)*
		Lutjanus erythropterus Bloch, 1790
		Lutjanus fulvus (Forster, 1801)
		Lutjanus gutatus
	Terapontidae	*Pelates quadrilineatus, Bloch, 1790*
	Nemipteridae	*Scolopsis lineata Quoy & Gaimard, 1824*
	Trichiuridae	*Trichurus lepturus Linnaeus, 1758*
Tetraodontiformes	Tetraodontidae	*Arothron hispidus (Linnaeus, 1758)*
		Arothron reticularis (Bloch & Schneider, 1801)
	Balistidae	*Pseudobalistes fuscus (Bioch & schneider,*

Ordo	Famili	Species
		1801)
Syngnathiformes	Diodontidae	*Pseudobalistes flavimarginatus (Rüppell, 1829)*
		Diodon holocanthus Linnaeus, 1758
	Ostraciidae	*Lactoria diaphana (Bloch & Schneider, 1801)*
	Centriscidae	*Aeoliscus strigatus (Günther, 1861)*
	Fistulariidae	*Fistularia commersonii Rüppell, 1838*
Atheriniformes	Atherinidae	*Atherinomorus lacunosus (Forster, 1801)*
		Hypoatherina barnesi Schultz, 1953
Mugiliformes	Mugilidae	*Mugil belanak Bleeker, 1857*
Beloniformes	Hemirhamphidae	*Hemirhamphus far (Forsskål, 1775)*
Clupeiformes	Engraulidae	*Encrasicholina heteroloba (Rüppell, 1837)*

Tabel 7. Identifikasi Jenis Fitoplankton

No	Famili	Kelas	Spesies
1	Mastogloiadae	Diatome	*Mastogloia elliptica*
2	Micrateriasadae	Desmidiacea	*Micraterias lux josh*
3	Nitzschiadae	Diatome	*Nitzschia curvula*
4	Nitzschiadae	Diatome	*Nitzschia lorenziana*
5	Pinnulariadae	Diatome	*Pinnularia tabellaria*
6	Pleurotaeniumdae	Diatome	*Pleurotaenium kayi. Rab*
7	Naviculadae	Diatome	*Navicula platysoma*
8	Plyrosygmadae	Diatome	*Plyrosygma delicatum*
9			*Metacylis meresehkowskii*
10			*Leptoeylindrus*
11	Synedrae	Diatome	*Nitzschia vermicularis*
12			*Synedra ulna*
13			*Colpes sp*
14			*Corethon oriphilum*
15			*Netrium digitus ehrbg*
16			*Sapphirina auronitens clauss*
17			*Trichodiscus sp*
18	Euntintinusae	Bacillariaceae	*Eutintinus lusus undae*
19	Synedrae	Diatome	*S. spiralis*
20	Gronbladiaea	Desmidiacea	*Gronbladia inflata*
21			*Eummulites sp*
22			*Diatyocha sp*
23			*Stauroneis acutum*
24			*Gonatozygon monotenium*
25			*Pleurosygma angulata*
26			*Asterionella gracillina*
27			*Tolypothrix sp*
28			*Hyalotheca undulata gronbl*

Tabel 8. Identifikasi Jenis Zooplankton

No	Famili	Kelas	Spesies
1	Acartiadae	Copepode	*Acartia omorii*
2	Lemmadiadae	Meroplankton	*Lemmadia lenticularis*
3	Oithanadae	Copepode	*Oithana davisa*
4	Acartiadae	Copepode	Acartia clausii
5	Euchaetadae	Entomostraca	*Euchaeta concinna*
6	Synopiadae	Entomostraca	*Synopia ultramarina*
7			*Tigriopus japonicus*
8			*Diaptomus vulgaris (nauplius)*
9	Allogrimadae	Rhizopoda	*Labidocera acuta*
10			*Allogromia sp*
11			*Diatyocha sp*
12			*Oikopleura dioca*
13			*Epithema argus*
14			*Keratella aculeata*
15			*Euclanis dilatata*

Lampiran 2. Analisis Data Flora dan Fauna

a. Flora

Tabel 1. Kepadatan (Di) Jenis Mangrove

No	Spesies	Tobati	Enggros	Nafri	Abepantai	Dermaga
1	*Bruguiera gymnorhiza*	0	0	2000	0	0
2	*Soneratia alba*	400	400	1000	0	0
3	*Soneratia ovata*	400	400	1100	0	0
4	*Avicennia alba*	300	300	1200	0	0
5	*Rhizopora apiculata*	1500	1500	2200	900	0
6	*Rhizopora Mucronata*	1000	1000	3200	1100	2200
7	*Rhizopora Stylosa*	1500	1500	2100	1500	0

b. Fauna

Tabel 2 Kepadatan Jenis Reptil

Spesies	Tobati	Enggros	Nafri	Abepantai	Dermaga
Varanus salvadori	0,20	0,33	0,20	0,00	0,00
Mabouya sp.	0,20	0,33	0,20	0,67	0,67
Tiliqua Sp	0,20	0,33	0,20	0,00	0,00
Gecko-gecko	0,20	0,00	0,20	0,33	0,00
Liasis sp	0,20	0,00	0,20	0,00	0,33

Tabel 3 Indeks Keanekaragaman Reptil

Indeks	Tobati	Enggros	Nafri	Abepantai	Dermaga
H' (reptil)	1,61	1,10	1,61	0,27	0,64

Tabel 4 Kepadatan Jenis Burung

Spesies	Tobati	Enggros	Nafri	Abepantai	DTY
Sula lencogastes	0,26	0,26	0,22	0,12	0,1
Egretta garzetta	0,84	0,9	0,9	0,44	0,32
Butorides striata	0,74	0,78	0,82	0,46	0,32
Chlidonias leucopterus	0,8	0,84	0,86	0,5	0,3
Sterna hirundo	0,84	0,86	1,02	0,46	0,34
Gygis Alba	0,78	0,82	0,92	0,48	0,3

Tabel 5 Indeks Keanekaragaman jenis Burung

Indeks	Tobati	Enggros	Nafri	Abepantai	Dermaga
H' (Burung)	1,15	1,24	1,39	0,51	0,29

Tabel 6 Kelimpahan Relatif ikan

Species	Tobati	Enggros	Nafri	Abe Pantai	Dermaga
Abudefduf vaigiensis (Quoy & Gaimard, 1825)	0,88	1,65	1,08	0,93	0,00
Chromis analis (Valenciennes)	0,88	0,83	0,00	0,00	0,00
Acanthurus auranticavus Randall, 1956	8,85	8,26	5,38	4,67	0,00
Ambassis vachellii Richardson, 1846	1,77	1,65	1,08	0,93	2,44
Amblygobius bynoensis (Richardson, 1844)	0,88	0,83	1,08	0,93	0,00
Sphaeramia orbicularis (Cuvier, 1828)	1,77	2,48	1,08	0,93	2,44
Cheilodipterus isostigmus, Schultz, 1940	0,88	1,65	1,08	0,93	2,44
Apogon ceramensis Bleeker, 1852	0,88	0,83	0,00	0,93	2,44
Choerodon anchorago (Bloch, 1791)	0,88	0,83	1,08	0,93	0,00
Choerodon schoenleinii (Valenciennes, Blackspot, 1839)	0,88	0,83	1,08	0,00	0,00
Cirrhilabrus solorensis Bleeker, 1853	0,88	0,83	0,00	0,00	0,00
Halichoeres scapularis (Bennett, 1832)	0,88	0,83	0,00	0,00	0,00
Halichoeres nigrescens (Bloch&Schneider, 1801)	0,00	0,00	0,00	0,93	0,00
Caranx papuensis Alleyne & MacLeay, 1877	2,65	4,13	2,15	1,87	0,00
Caranx sexfasciatus Quoy & Gaimard, 1825	2,65	3,31	2,15	0,93	0,00
Scomberoides lysan (Forsskål, 1775)	0,00	0,83	0,00	0,00	0,00
Gerres erythrourus (Bloch, 1791)	1,77	2,48	5,38	6,54	2,44
Gerres filamentosus Cuvier, 1829	0,88	1,65	2,15	3,74	4,88
Gerres oyena (Forsskål, 1775)	0,88	0,83	1,08	0,00	0,00
Kyphosus bigibbus Lacepède, 1801	1,77	0,83	1,08	2,80	0,00
Kyphosus cinerascens (Forsskål, 1775)	1,77	1,65	3,23	3,74	0,00
Mulloidichtys flavolineatus (Lacepède, 1801)	1,77	0,83	1,08	0,93	0,00
Platax boersii Bleeker, 1853	0,88	0,00	1,08	0,93	0,00
Platax orbicularis, Forsskål, 1775	0,00	0,83	1,08	0,93	0,00
Chaetodipterus faber (Broussonet, 1782)	1,77	0,00	0,00	0,00	0,00
Siganus canaliculatus (Park, 1797)	2,65	2,48	3,23	1,87	0,00
Siganus fuscescens (Houttuyn, 1782)	2,65	2,48	5,38	0,93	0,00
Siganus margaritiferus (Valenciennes, 1835)	1,77	0,83	1,08	1,87	0,00
Siganus spinus (Linnaeus, 1758)	0,88	0,83	0,00	0,00	0,00
Lutjanus carponotatus (Richardson, 1842)	1,77	4,13	3,23	3,74	12,20
Lutjanus erythropterus Bloch, 1790	0,88	0,00	0,00	0,93	0,00
Lutjanus fulvus (Forster, 1801)	0,88	0,00	0,00	0,93	0,00
Lutjanus gutatus	1,77	4,13	1,08	0,93	0,00
Pelates quadrilineatus, Bloch, 1790	0,00	0,83	0,00	0,00	0,00

Species	Tobati	Enggros	Nafri	Abe Pantai	Dermaga
Scolopsis lineata Quoy & Gaimard, 1824	4,42	2,48	4,30	0,93	0,00
Trichurus lepturus Linnaeus, 1758	0,88	0,83	3,23	0,93	0,00
Arothron hispidus (Linnaeus, 1758)	0,88	0,83	1,08	0,93	2,44
Arothron reticularis (Bloch & Schneider, 1801)	0,88	0,83	1,08	0,00	2,44
Pseudobalistes fuscus (Bioch & schneider, 1801)	1,77	0,83	1,08	0,93	0,00
Pseudobalistes flavimarginatus (Rüppell, 1829)	0,88	0,83	1,08	0,93	0,00
Diodon holocanthus Linnaeus, 1758	1,77	0,83	0,00	0,93	0,00
Lactoria diaphana (Bloch & Schneider, 1801)	0,88	0,83	1,08	0,93	0,00
Aeoliscus strigatus (Günther, 1861)	1,77	0,83	1,08	0,93	0,00
Fistularia commersonii Rüppell, 1838	2,65	2,48	1,08	3,74	7,32
Atherinomorus lacunosus (Forster, 1801)	2,65	2,48	1,08	1,87	2,44
Hypoatherina barnesi Schultz, 1953	1,77	1,65	3,23	3,74	4,88
Mugil belanak Bleeker, 1857	13,27	14,05	13,98	15,89	24,39
Hemirhamphus far (Forsskål, 1775)	9,73	9,92	12,90	14,02	24,39
Encrasicholina heteroloba (Rüppell, 1837)	5,31	5,79	6,45	7,48	2,44

Tabel 7. Indeks Keanekaragaman Ikan

Indeks	Tobati	Enggros	Nafri	Abepantai	Dermaga
H'	4,93	4,82	4,63	4,53	1,30

Tabel 8. Sebaran dan Kelimpahan Jenis Makrozoobenthos

Family	**Genus**	**Spesies**	**Stasiun**				
			Tobati	**Enggros**	**Nafri**	**Abe Pantai**	**Dermaga**
Eunicidae	Marphysa	*Marphysa sp*	2,78	1,59	3,13	3,85	0,00
		Marphysa sangwinea	0,93	1,59	1,56	3,85	0,00
Oligochaetadae	Oligochaeta	*Oligochaeta sp*	4,63	4,76	3,13	3,85	4,76
Psammobiidae	Asaphis	*Asaphis deflorata*	0,93	1,59	1,56	0,00	4,76
Conidae	Conus	*Conus catus*	4,63	3,17	3,13	3,85	4,76
Semelidae	Scrobicularia	*Scrobicularia planata*	5,56	1,59	3,13	3,85	0,00
	Solen	*Solen sp*	0,93	0,00	0,00	0,00	0,00
Cerithiidae	Clypeomorus	*Clypeomorus monoliferus*	0,93	1,59	3,13	3,85	4,76
Naticidae	Sinum	*Sinum perspective*	3,70	1,59	3,13	3,85	4,76
Mactrinae	Mactra	*Mactra violacea*	1,85	1,59	3,13	3,85	0,00
Turridae	Lophiotoma	*Lophiotoma indica*	0,93	1,59	3,13	3,85	4,76
Terebridae	Duplicaria	*Duplicaria dupata*	21,30	1,59	3,13	3,85	4,76

Family	Genus	Spesies	Stasiun				
			Tobati	Enggros	Nafri	Abe Pantai	Dermaga
Muricidae	Morula	*Morula margariticola*	0,93	1,59	3,13	3,85	4,76
	Chicoreus	*Chicoreus capucinus*	0,93	1,59	3,13	3,85	4,76
	Schylla	*Schylla sp*	0,93	1,59	3,13	3,85	4,76
		Benur udang	1,85	1,59	3,13	3,85	4,76
		Papuina labium	0,93	1,59	3,13	3,85	4,76
Potamididae	Cerithidae	*Cerithidae cingulata*	4,63	14,29	7,81	7,69	4,76
	Terebralia	*Terebralia molustis*	3,70	9,52	4,69	3,85	4,76
	Terebralia	*Terebralia palustris*	4,63	1,59	3,13	3,85	0,00
	Teleskopium	*Teleskopium telescopium*	4,63	11,11	7,81	3,85	4,76
Thiaridae	Thiara	*Thiara scabra*	5,56	7,94	6,25	3,85	4,76
Isognomonidae	Isognomon	*Isognomon perna*	1,85	4,76	6,25	3,85	4,76
Neritidae	Nerita	*Nerita planospira*	3,70	6,35	4,69	3,85	4,76
	Anadara	*Anadara antiquata*	4,63	7,94	6,25	3,85	4,76
Ellobidae	Cassidula	*Cassidula aurisfelis*	5,56	1,59	3,13	3,85	4,76
Tittorinidae	Littorina	*Littorina scabra*	6,48	4,76	3,13	3,85	4,76

Tabel 5 Indeks Keanekaragaman Makrozoobenthos

Indeks	Tobati	Enggros	Nafri	Abepantai	Dermaga
H' (makrozoobentos)	2,92	2,92	3,20	3,20	3,04

Lampiran 3. Data Sosial Ekonomi dan Sikap Penerimaan Masyarakat

Tabel 1 Tingkat pendidikan Responden

Tingkat Pendidikan	Tobati		Enggros		Nafri		Masy. Umum	
	Jumlah	%	Jumlah	%	Jumlah	%	Jumlah	%
SD	5	16,7	12	40,0	10	33,3	0	0,0
SMP	6	20,0	7	23,3	11	36,7	5	16,7
SMA	12	40,0	7	23,3	8	26,7	15	50,0
S1	7	23,3	4	13,3	1	3,3	10	33,3

Tabel 2 Usia Responden

Usia Responden	Tobati		Enggros		Nafri		Masy. Umum	
	Jumlah	%	Jumlah	%	Jumlah	%	Jumlah	%
18-35	12	40,0	15	50,0	10	33,3	15	50,0
36-50	10	33,3	5	16,7	12	40,0	15	50,0
51-65	8	26,7	10	33,3	8	26,7	0	0,0

Tabel 4 Pekerjaan Responden

Pekerjaan	Tobati		Enggros		Nafri		Masy. Umum	
	Jumlah	%	Jumlah	%	Jumlah	%	Jumlah	%
Nelayan	20	66,7	27	90,0	2	6,7	0	0,0
Petani	0	0,0	0	0,0	10	33,3	0	0,0
PNS	7	23,3	2	6,7	9	30,0	16	53,3
Swasta	2	6,7	1	3,3	7	23,3	10	33,3
Polri/TNI	1	3,3	0	0,0	2	6,7	4	13,3

Tabel 5 Tingkat Penghasilan

Penghasilan	Tobati		Enggros		Nafri		Masyarakat Umum	
	Jumlah	%	Jumlah	%	Jumlah	%	Jumlah	%
500.000-1.500.000	23	76,7	14	46,7	15	50,0	8	26,7
1.600.000-2.000.000	5	16,7	10	33,3	7	23,3	7	23,3
>2.000.000	2	6,7	6	20,0	8	26,7	15	50,0

Tabel 6 Sikap penerimaan masyarakat

No	Tanggapan	Tobati				Enggros				Nafri				Masyarakat Umum			
		Responden		Paham	Tidak	Responden		Paham	Tidak	Responden		Paham	Tidak	Responden		Paham	Tidak
Sikap Penerimaan Masyarakat																	
1	Pemahaman ekowisata	14	16	46,67	53,33	15	15	50,00	50,00	13	17	43,33	56,67	15	15	50,00	50,00
2	Persetujuan atas rencana pengembangan	15	15	50,00	50,00	20	10	66,67	33,33	18	12	60,00	40,00	19	11	63,33	36,67
3	Minat terlibat	17	13	56,67	43,33	19	11	63,33	36,67	15	15	50,00	50,00	14	16	46,67	53,33
4	Harapan atas realisasi program	16	14	53,33	46,67	19	11	63,33	36,67	16	14	53,33	46,67	16	14	53,33	46,67
Budaya																	
1	Pemahaman nilai-nilai tradisi	22	8	73,33	26,67	21	9	70,00	30,00	22	8	73,33	26,67	14	16	46,67	53,33
2	Keterlibatan dalam acara ritual	20	10	66,67	33,33	24	6	80,00	20,00	18	12	60,00	40,00	14	16	46,67	53,33
3	Keterlibatan dalam atraksi seni dan budaya	25	5	83,33	16,67	23	7	76,67	23,33s	23	7	76,67	23,33	15	15	50,00	50,00
4	Keterlibatan dalam kegiatan perlombaan	15	15	50,00	50,00	23	7	76,67	23,33	15	15	50,00	50,00	15	15	50,00	50,00
5	Minat dan kebutuhan aktualisasi diri dalam pentas seni & budaya	20	10	66,67	33,33	16	14	53,33	46,67	17	13	56,67	43,33	13	17	43,33	56,67
6	Harapan atas pengakuan adat istiadat dan pelestariannya	23	7	76,67	23,33	17	13	56,67	43,33	19	11	63,33	36,67	12	18	40,00	60,00
Pendidikan																	
1	Pemahaman atas pentingnya pendidikan	30	0	100,00	0,00	30	0	100,00	0,00	30	0	100,00	0,00	30	0	100,00	0,00
2	Dukungan sarana pendidikan	20	10	66,67	33,33	20	10	66,67	33,33	22	8	73,33	26,67	25	5	83,33	16,67
3	Dukungan latar belakang pendidikan	18	12	60,00	40,00	20	10	66,67	33,33	17	13	56,67	43,33	25	5	83,33	16,67
4	Keterampilan yang dimiliki	15	15	50,00	50,00	14	16	46,67	53,33	15	15	50,00	50,00	20	10	66,67	33,33

No	Tanggapan	Tobati				Enggros				Nafri				Masyarakat Umum			
		Responden		Paham	Tidak	Responden		Paham	Tidak	Responden		Paham	Tidak	Responden		Paham	Tidak
Keamanan																	
1	Pemahaman atas pentingnya keamanan lingkungan	29	1	96,67	3,33	25	5	83,33	16,67	25	5	83,33	16,67	28	2	93,33	6,67
2	Pengalaman atas rasa aman di lingkungan sekitar	28	2	93,33	6,67	26	4	86,67	13,33	28	2	93,33	6,67	15	15	50,00	50,00
3	Ancaman lingkungan	25	5	83,33	16,67	25	5	83,33	16,67	27	3	90,00	10,00	15	15	50,00	50,00
4	Gangguan dan abrasi lingkungan	18	12	60,00	40,00	20	10	66,67	33,33	20	10	66,67	33,33	15	15	50,00	50,00
5	Konflik Perebutan Sumberdaya	15	15	50,00	50,00	13	17	43,33	56,67	14	16	46,67	53,33	15	15	50,00	50,00
6	Harapan atas peningkatan perlindungan keamanan	25	5	83,33	16,67	28	2	93,33	6,67	25	5	83,33	16,67	28	2	93,33	6,67
7	Ketersediaan/kebutuhan fasilitas pengamanan lingkungan	14	16	46,67	53,33	15	15	50,00	50,00	13	17	43,33	56,67	15	15	50,00	50,00
Lapangan Pekerjaan																	
1	Kepuasan atas kondisi pekerjaan saat ini	15	15	50,00	50,00	15	15	50,00	50,00	15	15	50,00	50,00	15	15	50,00	50,00
2	Keterampilan/keahlian yang dimiliki	14	16	46,67	53,33	13	17	43,33	56,67	15	15	50,00	50,00	14	16	46,67	53,33
3	Pengalaman	17	13	56,67	43,33	16	14	53,33	46,67	17	13	56,67	43,33	13	17	43,33	56,67
4	Kebutuhan/minat terhadap pekerjaan	18	12	60,00	40,00	17	13	56,67	43,33	15	15	50,00	50,00	20	10	66,67	33,33
5	Harapan atas peningkatan pekerjaan	20	10	66,67	33,33	19	11	63,33	36,67	20	10	66,67	33,33	22	8	73,33	26,67

Lampiran 4. Keanekaragam Fauna di Taman Wisata Teluk Youtefa

a. Rajungan (*Portunus Pelagicus*)

b. Benur kepiting dan udang

c. Kepiting bakau (*Scyla* sp.)

d. Kepiting bakau (*Scyla* sp.)

e. kerong-kerong (*Terapon jarbua*)

f. Geres punctatus

g. Upeneus mullocensin

h. Chanos chanos

i. Dermogenys

j. Epinephelus coioides

k. Siganus canaliculatus

l. LeiognatIhur ecuulus

a. Nerita planospira

b. Clypeomorus monoliferus

c. Thiara scabra

d. Nerita costata

e. Cerithidae cingulata

f. Teleskopium telescopium

g. Cassidulata aurisfelis

h. Littorina scabra

i. Canus catus

j. Clypeomorus monoliferus

k. Sinum perspective

l.Lophiotoma indica

m. *Duplicaria dupata*

n. *Morula margariticola*

o. *Papuina labium*

p. *Asaphis detlorata*

q. *Solen* sp.

r. *Scrobicularia planate*

s. *Mactra violacea*

t. *Isognomon perna*

u. *Anadara antiquata*

Lampiran 5. Kondisi Flora

Mangrove di Kp. Nafri (Hutan Perempuan)

Mangrove di Kp. Nafri (Hutan Perempuan)

Pengukuran Mangrove

Mangrove di Kp. Nafri (Hutan Perempuan)

Mangrove di Abe Pantai

Pengukuran Mangrove

Mangrove Abe Pantai

Pengukuran Mangrove

Lampiran 6 Sarana dan Prasarana

Menara Pengawas

Dermaga di kp. Tobati

Dermaga Teluk Youtefa

Venue Dayung PON XX di Teluk Youtefa

Kantor LMA namun dalam kondisi rusak

Para-para (Pondok) yang disewakan dengan harga Rp 150.000 – Rp 200.000

Penyediaan tempat sampah di sepanjang area wisata

Lokasi camping di Pulau Metudebi (kisaran harga sewa tenda Rp 75.000 – 200.000)

Lampiran 7. Publikasi Ilmiah

Water quality study and pollution index based on Physics-chemical parameters in the Youtefa Bay tourism area, Jayapura

Annita Sari[1], Ambo Tuwo[2], Chair Rani[2], and Amran Saru[2]

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Abstract. Good water quality is extremely important to support the life of the organism. The determination of water quality status was needed as a reference to monitor water pollution. This study aimed to assess the status of water quality and determine the pollution index based on physical-chemical parameters in the Youtefa bay tourism area. Sampling was carried out in august 2019 across six research stations; then, the result was compared with water quality standard based on KEPMEN-LH No. 51 the Year 2004 For marine biotas. The results showed that the parameter according to the quality standard is physics parameters; pH, Salinity, DO, and BOD_5, while those that have exceeded the quality standards are total ammonia, nitrate, surfactant (detergent), phosphate and dissolved metal. The pollution index indicates the Youtefa Bay waters were in light to medium categories.

1. Introduction

The city of Jayapura has a fairly rapid growth dynamics, characterized by the development of residential centers, offices, trade centers, and population growth. In 2018 the population of Jayapura City was 297,775 people with a growth rate of 4.10% per year with an average population density of 374 / km2 [1].

Youtefa Bay and its surroundings have several functions and use, namely as a catching and aquaculture area, fishermen and tourist transportation routes, fishing boat docks, and waste disposal sites for anthropogenic activities that can affect the carrying capacity of river ecosystems and the Youtefa Bay ecosystem. Community, Fishermen, and Government as actors in the management of Youtefa Bay itself. The problems in Youtefa Bay that have occurred so far have been due to increasing population, low levels of income and education, poverty, and social behavior with various activities that are increasingly increasing, such as fishing, bay transportation and settlements. These activities have an impact on increasing sediment, the turbidity of river and seawater, increase in waste production, increase in nutrients, so that fish catches are low, vegetation is disturbed, the decline in aesthetic value and tourism, as well as disease transmission and reduced business premises.

Problems with the preservation of coastal and marine ecosystems in the case of Youtefa Bay include the destruction of ecosystems such as sedimentation, increased pollutants, increased domestic waste entering the bay due to poor land management. According to [2], various types of waste and

Identification and composition of fish types in the Youtefa bay tourism area

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Abstract. This study aims to identify and determine the composition of fish species. Sampling was carried out from July 2019 to January 2020 in Youtefa Bay. Fish sampling was conducted by using gill nets. Fishes were caught once in each month during the research period. The result showed of 562 individuals in 53 species of 26 families. Hypothermia barnesi (14,77%); Mugil sp. (12,46%); Acanthurus auranticavus (6,23%); Hemirhamphus far (6,05%); Lutjanus carponotatus (4,09%) and Gerres erythrourus (3,92%). The number and type of fish caught are influenced by seagrass and mangrove ecosystems. The number of fish in each site was affected by the substrate, brightness, and the percentage of seagrass bed coverage; the higher percentage of brightness and seagrass coverage, the higher number of fish found.

1. Introduction

Youtefa Bay is included in the category of semi-closed bays so that the tidal process affects fluctuations in the physical-chemical variables of the waters. This bay has a seagrass area which is composed by four seagrass species, namely: *Thalassia hemprichii, Enhalus acoroides, Halophila ovalis*, and *H. minor* which are spread out Youtefa

Youtefa Bay has a high potential for fisheries resources, but there is still very little data on this. The development of residential, industrial, construction of the Youtefa bridge and ring road results in environmental degradation, which indirectly damages the development of habitat for aquatic organisms such as fish. Communities around the Youtefa bay area catch fish with methods and tools that are still simple, the catch is usually for personal consumption and if a lot of catches will be sold.

This study aims to explain the identification and composition of fish species in the waters of the Youtefa bay. The data and information obtained about the composition of fish species in the waters of the Youtefa bay are useful for the development of science and as a material for consideration for policymakers (stakeholders) related to the management of fish resources.

2. Material and Methods

2.1. Methods Of Data Collecting

This research was conducted in Agustus 2019-February 2020 in the Youtefa bay, Jayapura. Sampling was conducted in 5 stations, namely:

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MECHANICAL OF MANGROVE ECO-EDUTOURISM MODEL DEVELOPMENT: INDONESIAN CASE

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ABSTRACT

The high activity around Youtefa Bay has an impact on the rate of sedimentation, turbidity of river and seawater, increased industrial waste and changes in the function of mangrove land into a ring road or settlement, which causes forest function degradation, which results in several mangrove areas being reduced and even damaged, based on This requires an effort to develop mangrove ecotourism by implementing environmental education-based tourism as a way to preserve coastal ecosystems. This study aims to determine the socio-economic and cultural conditions; and formulate the stipulation of strategic directions for developing mangrove ecotourism. The research method uses descriptive-analytic through quantitative and qualitative approaches with SWOT analysis to provide information about the potential and strategies of sustainable mangrove forest management. The results showed that Youtefa Bay Nature Park is a coastal area that has mangrove forests with the mangrove species Rhizophora apiculata, Rhizophora stylosa, and Bruguiera sp. with environmental quality suitable for the growth and adaptation characteristics of mangroves. Based on the SWOT analysis results, it was found that there are five priority strategies for the development of mangrove ecotourism in Youtefa Bay, including a). coordination between the community, relevant agencies and stakeholders in planning, socializing, implementing and monitoring the concept of developing mangrove ecotourism; b). Re-arrangement of space for ecotourism activities, improvement of facilities and infrastructure (improvement of infrastructure, clean water networks, construction of public toilets, waste management and disposal systems), and supporting units needed by tourists; c). It is conducting socialization to the community regarding the management and training of productive and effective mangrove ecotourism marketing management; d). Analyzing the impact of tourism activities on the condition of the aquatic environment and the growth of mangroves with periodic monitoring, and e). explore the potential of natural tourism by fostering tourism in the community and completing the provision of tourism facilities and infrastructure.

Keywords: Ecotourism, Mangrove, SWOT, Youtefa Bay

INTRODUCTION

Youtefa Bay Nature Park is located in South Jayapura District and Abepura District, Jayapura, Papua Province. Geographically, Youtefa Bay tourist park is located between 02o34'32"-02o38'25" South Latitude and 140o41'11"- 140o44'25" East Longitude. The air temperature in the Youtefa Bay tourist park ranges from 25oC-31oC, with air humidity ranging from 80%-84.5%. Rainfall is influenced by the area's topography, in the western part of the Cyclops Mountains, in the eastern part of the Pacific Ocean. The range of rainfall throughout the year is 1,500-2,500 mm. Youtefa Bay has a wet tropical climate caused by the influence of tidal winds and southeast monsoons and rain that falls throughout the year (BPS, 2019).

Youtefa Bay is one of the tourist attractions in Jayapura City, with beautiful natural scenery. Besides beach tourism, one of the tourism objects is the mangrove forest area in Tobati, Enggros and Nafri villages. The mangrove forest area in the Youtefa Bay Nature Tourism Park is significant for Papuan women because it is a place for social and cultural interaction for women (Mama = a unique nickname for women) when looking for shells (bia = local language), snails, shrimp and wood-burn.

The condition of the mangrove forest in the Youtefa Bay area is currently experiencing a decline. Data from the Forest Area Stabilization Center (BPKH) Region X Papua in (Hamuna et al. 2018) explains that there has been a change in the area of mangrove forest cover in the Youtefa Bay area from 1967 to 2008, where the mangrove area in 1967 was 511.24 Ha and in 2008 only 241.24 Ha. Changes in the area of mangrove areas still occur due to the impact of high development activities in the coastal area of Jayapura City. The use of Youtefa Bay and its surroundings is increasing by the community, fishers, and the government for anthropogenic activities that can affect the carrying capacity of the river ecosystem and the Youtefa Bay ecosystem (Janviter, 2012). The construction of a ring road causes the degradation of mangrove forests, changing the function of mangrove forests into residential land (Tebay, 2004; Kubelabobir, TM; Akerina, 2015; Rafiq & Mukhtar, 2020; Ngabito et al., 2021) and making rowing venues for XX PON activities in 2019-2020. The reduced area of mangrove forests can indirectly lead to a decrease in the function of mangroves and threaten organisms and the community, especially "mama" who use the place to look for food and

Lampiran 8. Sertifikat Seminar Internasional

CERTIFICATE

This is to certify that

Annita Sari

has participated as

ORAL PRESENTER

in The 1st International Conference on Biology

" Biodiversity, Local Wisdom, and Sustainable Development in The Digital Era"

19th -20th October 2019
Jayapura, Indonesia

held by
Biology Department
Faculty of Mathematics and Natural Sciences,
Cenderawasih University

Dean

Dr. Dirk Y. P. Runtuboi, M. Kes.

Chairperson of the Committee

Dr. Lisye Irlana Zebua, M. Si.

Sponsored by:

In Collaboration With

CERTIFICATE

Presented to

Annita Sari

as a Presenter

at the 3rd International Symposium on Marine and Fisheries,
Faculty of Marine Science and Fisheries , Universitas Hasanuddin
"Strengthening Innovations for Aquatic Resource Management"
conducted virtually due to the covid 19 pandemic

Makassar, 6th June 2020

Dr. Ir. St. Aisjah Farhum, M.Si.
Dean

Dr. Mahatma Lanuru, ST., M.Sc.
Head of Organizing Committee

Lampiran 9. Daftar Riwayat Hidup

DAFTAR RIWAYAT HIDUP

Nama	:	Annita Sari
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Anak	:	Andi Kireina Azzahra Nasatekay
Pekerjaan	:	Dosen
Jabatan Fungsional	:	Lektor/IIId
PT asal	:	Universitas Yapis Papua
Alamat PT	:	Jl. Sam Ratulangi No 11 Dok V Atas Jayapura

RIWAYAT PENDIDIKAN

No	Nama Perguruan Tinggi	Tahun	Pembimbing/Promotor
1.	S1 Perikanan, Fakultas Pertanian Universitas Gadjah Mada	2003-2008	1. Dr. Ir. Namastra Probosunu 2. Dr. Ir. Djumanto, M.Sc
2.	S2 Pengelolaan Lingkungan Hidup konsentrasi Pengelolaan Laut Dangkal dan Pesisir, Universitas Hasanuddin	2009-2011	1. Prof. Dr. Ambo Tuwo, DEA. 2. Prof. Dr. Ir. Chair Rani, M.Si.

SKRIPSI, TESIS DAN DISERTASI

No	Judul Penelitian	Lokasi	Tahun	Keterangan
1.	Karakteristik Pantai Tempat Bertelur Penyu Sisik (*Eretmochelys imbricata*) di Kepulauan Seribu	Kepulauan Seribu	2008	Skripsi
2.	Analisis Struktur Komunitas Makrozoobenthos (Bivalvia) Pada Ekosistem Mangrove yang Berbeda di Kabupaten Sinjai	Kabupaten Sinjai	2011	Tesis
3.	Pengembangan Model Pengelolaan Wisata Mangrove Terpadu di Kawasan Taman Wisata Teluk Youtefa	Teluk Youtefa Jayapura	2020	Disertasi

PUBLIKASI KARYA ILMIAH SELAMA STUDI

No	Judul	Tahun	Penerbit
1	Water quality study and pollution index based on Physics-chemical parameters in the Youtefa Bay tourism area, Jayapura	2021	IOP Conference Series: Earth and Environmental Science / IOP Publishing https://iopscience.iop.org/article/10.1088/1755-1315/564/1/012030/pdf
2	Identification and composition of fish types in the Youtefa bay tourism area	2021	https://iopscience.iop.org/article/10.1088/1755-1315/564/1/012023/pdf
3	Mechanichal 0f Mangrove Eco-Edutourism Model Development Strategy :Indoensian Case	2022	*International Journal of Mechanical Engineering – Kalahari Journal*

RIWAYAT PENELITIAN

No	Tahun Jabatan	Judul Penelitian	Skema Sumber Dana
1	2008	Karakteristik Pantai Tempat Bertelur Penyu Sisik (*Eretmochelys imbricata*) di Kepulauan Seribu	Mandiri
2	2009 Anggota Pengusul	Model Kelembagaan Masyarakat Nelayan Pulau Kosong dan Kayu Pulau Kota Jayapura	Dikti
3	2011	Analisis Struktur Komunitas Makrozoobenthos (Bivalvia) Pada Ekosistem Mangrove yang Berbeda di Kabupaten Sinjai	Institusi
4	2013 Anggota Pengusul	Model Pendidikan Kewirausahaan Berbasis Masyarakat Pesisir sebagai Upaya Mengurangi Ketergantungan Terhadap Rentenir	PPT/Produk Terapan DIKTI
5	2013 Anggota Pengusul	Sistem Adaptasi Mitigasi Bencana Berbasis Masyarakat Di Wilayah Pesisir Kota Jayapura	PPT/Produk Terapan DIKTI
6	2014-2015 Ketua Pengusul	Sedimentasi Muara Sungai Anafre dan Dampaknya Terhadap Perairan Teluk Yos Sudarso Di Kota Jayapura	PKPT DIKTI
7	2015 Anggota Pengusul	Strategi Pengelolaan Potensi Sumberdaya Perikanan Berbasis Sistem Informasi Geografis (GIS) di Wilayah Pesisir Kota Jayapura	PPT/Produk Terapan DIKTI
8	2016 Anggota Pengusul	Model Penanganan Konflik Daerah Perbatasan (Study Kasus di Wilayah Perbatasan Skow Wutung, Distrik Muara Tami Kota Jayapura Provinsi Papua.	PPT/Produk Terapan DIKTI

9	2017 Anggota	Identifikasi Faktor Peningkatan Akses Keuangan Pada Sektor Perikanan dan Pengaruhnya Dalam Perekonomian;Studi Kasus Provinsi Papua	Penelitian Terapan DIKTI
10	2017 Ketua Pengusul	Strategi Pengembangan Ecoedu Tourism Mangrove Berbasis Masyarakat Di Kawasan Teluk Youtefa Kota Jayapura	PSN Institusi DIKTI
11	2018 Anggota	Strategi Pemberdayaan Masyarakat Di Wilayah Perbatasan Indonesia-Papua New	PT DIKTI

Daftar riwayat hidup ini saya buat dengan sebenar-benarnya dan penuh rasa tanggung jawab.

Makassar, 04 Agustus 2022

Yang membuat

Annita Sari, S.Pi., M.Si.