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LAMPIRAN

Lampiran 1. Stasiun Pengambilan Sampel Makroinvertebrata

Stasiun 1

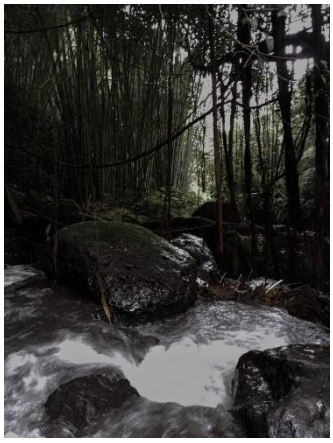
Letak Geografis: 5°15'07.82"S 119°55'45.94"E
Ketinggian: 1513 Mdpl
Deskripsi Singkat : Stasiun 1 merupakan stasiun yang terletak di Desa Kanreapia Kecamatan Tombolo Pao dengan tipe pemanfaatan daerah aliran sungai berupa pemukiman dan ladang.

Stasiun 2

Letak Geografis: 5°13'24.24"S 119°56'14.81"E
Ketinggian: 1260 Mdpl
Deskripsi Singkat : Stasiun 2 merupakan stasiun yang terletak di Desa Tonasa Kecamatan Tombolo Pao dengan tipe pemanfaatan daerah aliran sungai berupa ladang pertanian palawija.

Stasiun 3





Letak Geografis: 5°12'15.99"S 119°56'15.28"E
Ketinggian: 1004 Mdpl
Deskripsi Singkat : Stasiun 3 merupakan stasiun yang terletak di Kelurahan Tamaona Kecamatan Tombolo Pao dengan tipe pemanfaatan daerah aliran sungai berupa lahan pertanian kering (kebun)

Stasiun 4



Letak Geografis: 5°10'44.35"S 119°57'04.71"E
Ketinggian: 793 Mdpl
Deskripsi Singkat : Stasiun 4 merupakan stasiun yang terletak di Desa Pao Kecamatan Tombolo Pao dengan tipe pemanfaatan daerah aliran sungai berupa area persawahan dan kawasan wisata adat

Stasiun 5

Letak Geografis: 5°11'18.85"S 119°58'29.47"E
Ketinggian: 670 Mdpl
Deskripsi Singkat : Stasiun 1 merupakan stasiun yang terletak di Kelurahan Tamaona Kecamatan Tombolo Pao dengan tipe pemanfaatan daerah aliran sungai berupa lahan pertanian kering (kebun)

Lampiran 2. Dokumentasi Pelaksanaan Penelitian

Pengambilan Sampel Makroinvertebrata



Pengambilan Sampel Air Untuk Uji Faktor Kimia


Pengukuran Faktor Fisik Sungai Tangka



Identifikasi Makroinvertebrata (Lapangan dan Laboratorium)



Uji Kimia (Amonia, Nitrat dan Fosfat) di Laboratorium



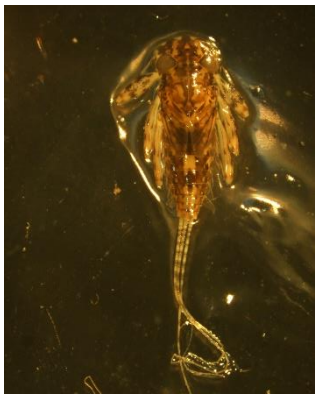
Tim Susur Sungai, Sungai Tangka

Lampiran 3. Makroinvertebrata yang ditemukan di Sungai Tangka

Polycentopodidae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Trichoptera **Family**: Polycentropodidae ***Functional Feeding Group*****:** Collector **Lokasi ditemukan**: Stasiun 2 **Skor FBI: 3** **Skor BMWP – ASPT:** 7
Agriidae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Odonata **Family**: Agriidae ***Functional Feeding Group*****:** Predator **Lokasi ditemukan**: Stasiun 4; Stasiun 5 **Skor FBI:** 5 **Skor BMWP – ASPT:** 8
Lymnaeidae	
	**Filum** : Mollusca **Kelas**: Gastropoda **Ordo**: Limnophila **Family**: Lymnaeidae ***Functional Feeding Group*****:** Scrapers **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 6 Toleran **Skor BMWP – ASPT:** 3

Glossiphonidae	
	**Filum** : Annelida **Kelas**: Clitellata **Ordo**: Rhynchobdellida **Family**: Glossiphonidea ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 1 **Skor FBI:** 8 (Sangat Toleran) **Skor BMWP – ASPT:** 3
Veliidae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Hemiptera **Family**: Veliidae ***Functional Feeding Group*****:** Sensitif **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 5 (Sensitif) **Skor BMWP – ASPT:** 5
Goeridae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Trichoptera **Family**: Goeridae ***Functional Feeding Group*****:** *Scraper* **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 3 (Sangat Sensitif) **Skor BMWP – ASPT:** 10

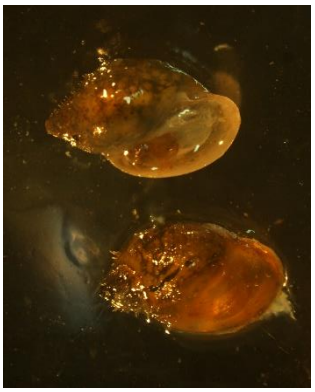
Gerridae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Hemiptera **Family**: Gerridae ***Functional Feeding Group*****:** Predator **Lokasi ditemukan**: Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI: 6** (Toleran) **Skor BMWP – ASPT:** 3
Calopterygidae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Odonata **Family**: Calopterygidae ***Functional Feeding Group*****:** Predator **Lokasi ditemukan**: Stasiun 2; Stasiun 3; Stasiun 5 **Skor FBI:** 5 (Sensitif) **Skor BMWP – ASPT:** 8
Philopotamidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Trichoptera **Family**: Philopotamidae ***Functional Feeding Group*****:** **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI: 3** **Skor BMWP – ASPT:** 8

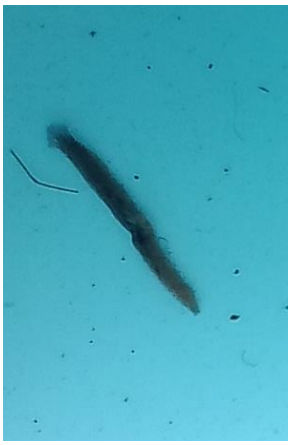
Heptagenidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Ephemeroptera **Family**: Heptagenidae ***Functional Feeding Group*****:** *Scraper* **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 4 (Sangat Sensitif) **Skor BMWP – ASPT:** 10
Erpobdellidae	
	**Filum** : Annelida **Kelas**: Clitellata **Ordo**: Arhynchobdellida **Family**: Erpobdellidae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 8 (Sangat Toleran) **Skor BMWP – ASPT:** 3
Leptophlebiidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Ephemeroptera **Family**: Leptophlebiidae ***Functional Feeding Group*****:** *Collector* **Lokasi ditemukan**: Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI: 3** **Skor BMWP – ASPT:** 10

Baetidae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Ephemeroptera **Family**: Baetidae ***Functional Feeding Group*****:** *Collector* **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI: 5** (Sensitif) **Skor BMWP – ASPT:** 4
Corixidae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Hemiptera **Family**: Corixidae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 5 (Sensitif) **Skor BMWP – ASPT: 3**
Perlidae	
	**Filum:** Arthropoda **Kelas**: Insecta **Ordo**: Plecoptera **Family**: Perlidae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 5 **Skor FBI:** 1 (Sangat Sensitif) **Skor BMWP – ASPT:** 10

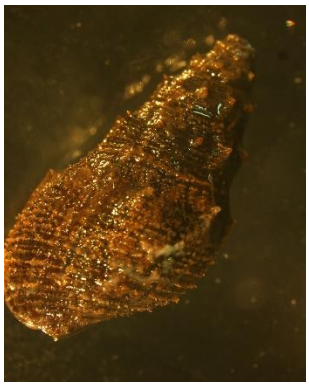
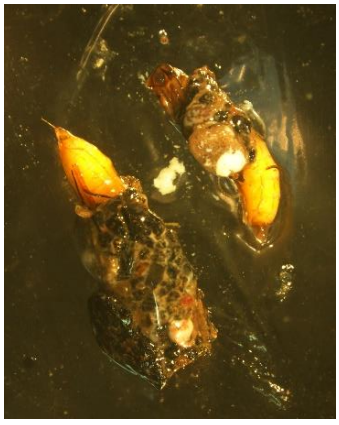
Chlorocyphidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Odonata **Family**: Chlorocyphidae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 5 **Skor FBI:** 5 (Sensitif) **Skor BMWP – ASPT:** 6
Tubificidae	
	**Filum**: Annelida **Kelas**: Oligochaeta **Ordo**: Tubificida **Family**: Tubificidae ***Functional Feeding Group*****:** *Collector* **Lokasi ditemukan**: Stasiun 1 **Skor FBI:** 10 (Sangat Toleran) **Skor BMWP – ASPT:** 1
Naucoridae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Hemiptera **Family**: Naucoridae ***Functional Feeding Group*****:** Predator **Lokasi ditemukan**: Stasiun 5 **Skor FBI: 4 (Sensitif)** **Skor BMWP – ASPT: 3**

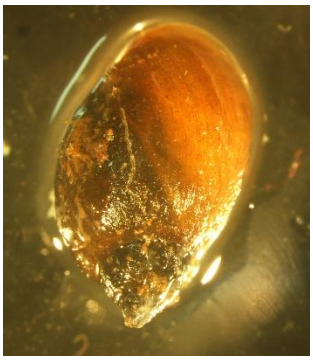
Chloroperlidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Plecoptera **Family**: Chloroperlidae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 4; Stasiun 5 **Skor FBI:** 1 (Sangat Sensitif) **Skor BMWP – ASPT:** 10
Saldidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Hemiptera **Family**: Saldidae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 5 **Skor FBI:** 5 (Sensitif) **Skor BMWP – ASPT:** 7
Prosopistomatidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Ephemeroptera **Family**: Prosopistomatidae ***Functional Feeding Group*****:** *Scraper* **Lokasi ditemukan**: Stasiun 4 **Skor FBI:** 4 (Sangat Senisitif) **Skor BMWP – ASPT:** 10

Corydalidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Megaloptera **Family**: Corydalidae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 4 **Skor FBI:** 4 (Sensitif) **Skor BMWP – ASPT:** 4
Hebridae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Hemiptera **Family**: Hebridae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 3 **Skor FBI:** 5 (Sensitif) **Skor BMWP – ASPT:** 2
Physidae	
	**Filum**: Mollusca **Kelas**: Gastropoda **Ordo**: Limnophila **Family**: Physidae ***Functional Feeding Group*****:** *Collector* **Lokasi ditemukan**: Stasiun 1 **Skor FBI: 8** (Sangat Toleran) **Skor BMWP – ASPT:** 3

Planariidae	
	**Filum** : Platyhelminthes **Kelas**: Rhabditophora **Ordo**: Tricladida **Family**: Planariidae ***Functional Feeding Group*****:** *Predator, Collector*. **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 4 (Sensitif) **Skor BMWP – ASPT:** 5
Atyidae	
	**Filum**: Arthropoda **Kelas**: Malacostraca **Ordo**: Decapoda **Family**: Atyidae ***Functional Feeding Group*****:** *Collector* **Lokasi ditemukan**: Stasiun 5 **Skor FBI:** 6 (Toleran) **Skor BMWP – ASPT:** 5
Limnephilidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Trichoptera **Family**: Limnephilidae ***Functional Feeding Group*****:** *Shrader; Scraper; Collector* **Lokasi ditemukan**: Stasiun 4; Stasiun 5 **Skor FBI:** 3 (Sangat Sensitif) **Skor BMWP – ASPT:** 7

Lampyridae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Coleoptera **Family**: Lampyridae ***Functional Feeding Group*****:** *Scraper* **Lokasi ditemukan**: Stasiun 5 **Skor FBI:** 4 (Sensitif) **Skor BMWP – ASPT:** 5
Pyralidae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Lepidoptera **Family**: Pyralidae ***Functional Feeding Group*****:** *Shreeder* **Lokasi ditemukan**: Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI: 5 (**Sensitif) **Skor BMWP – ASPT:** 5
Chironomidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Diptera **Family**: Chironomidae ***Functional Feeding Group*****:** *Collector, Scraper, Predator* **Lokasi ditemukan**: Stasiun 1; Stasiun 5 **Skor FBI:** 6 (Sangat Toleran) **Skor BMWP – ASPT:** 1

Gyrinidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Coleoptera **Family**: Gyrinidae ***Functional Feeding Group*****:** *Scraper* **Lokasi ditemukan**: Stasiun 1; Stasiun 4 **Skor FBI:** 4 (Sensitif) **Skor BMWP – ASPT:** 5
Thiaridae	
	**Filum** : Mollusca **Kelas**: Gastropoda **Ordo**: Sorbeoconcha **Family**: Thiaridae ***Functional Feeding Group*****:** *Scraper* **Lokasi ditemukan**: Stasiun 4; Stasiun 5 **Skor FBI:** 3 (Toleran) **Skor BMWP – ASPT:** 5
Glossosomatidae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Trichoptera **Family**: Glossosomatidae ***Functional Feeding Group*****:** *Scraper* **Lokasi ditemukan**: Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI: 0 (Sangat Sensitif)** **Skor BMWP – ASPT: 8**

Aeshnidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Odonta **Family**: Aeshnidae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 3 (Sangat Sensitif) **Skor BMWP – ASPT:** 8
Viviparidae	
	**Filum**: Mollusca **Kelas**: Gastropoda **Ordo**: Mesogastropoda **Family**: Viviparidae ***Functional Feeding Group*****:** *Scraper* **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 4; Stasiun 5 **Skor FBI:** 6 (Toleran) **Skor BMWP – ASPT:** 6
Coenagrionidae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Odonata **Family**: Coenagrionidae ***Functional Feeding Group*****:** *Scraper* **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 7 (Toleran) **Skor BMWP – ASPT:6**

Tabanidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Diptera **Family**: Tabanidae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 5 **Skor FBI:** 5 (Sensitif) **Skor BMWP – ASPT:** 4
Rhaycophilidae	
	**Filum**: Arthropoda **Kelas**: Insecra **Ordo**: Trichoptea **Family**: Rhaycophilidae ***Functional Feeding Group*****:** *Scraper* **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 1 (Sangat Sensitif) **Skor BMWP – ASPT:** 7
Gomphidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Odonata **Family**: Gomphidae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 3 (Sangat Sensitif) **Skor BMWP – ASPT:** 8

Tricorythidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Ephemeroptera **Family**: Tricorythidae ***Functional Feeding Group*:** **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 3 (Sensitif) **Skor BMWP – ASPT:** 7
Cordulegasteridae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Odonata **Family**: Cordulegasteridae ***Functional Feeding Group*:** *Predator* **Lokasi ditemukan**: Stasiun 1; Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 3 (Sangat Sensitif) **Skor BMWP – ASPT:** 8
Dytiscidae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Coleoptera **Family**: Dytiscidae ***Functional Feeding Group*:** *Predator* **Lokasi ditemukan**: Stasiun 3; Stasiun 4; Stasiun 5 **Skor FBI:** 5 (Sensitif) **Skor BMWP – ASPT:** 3

Lepidostormatidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Trichoptera **Family**: Lepidostormatidae ***Functional Feeding Group*****:** *Shredder* **Lokasi ditemukan**: Stasiun 5 **Skor FBI:** 1 (Sangat Sensitif) **Skor BMWP – ASPT:** 10
Tipulidae	
	**Filum** : Arthropoda **Kelas**: Insecta **Ordo**: Diptera **Family**: Tipulidae ***Functional Feeding Group*****:** *Shredder* **Lokasi ditemukan**: Stasiun 3; Stasiun 5 **Skor FBI: 4** **Skor BMWP – ASPT:**
Psephenidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Coleoptera **Family**: Psephenidae ***Functional Feeding Group*****:** *Scraper* **Lokasi ditemukan**: Stasiun 4 **Skor FBI:** 4 (Sensitif) **Skor BMWP – ASPT:** 5

Nemouridae	
	**Filum**: Arthropoda **Kelas**: Insecra **Ordo**: Plecoptera **Family**: Nemouridae ***Functional Feeding Group*****:** *Predator* **Lokasi ditemukan**: Stasiun 1; Stasiun 3; Stasiun 4 **Skor FBI:** 2 (Sangat Sensitif) **Skor BMWP – ASPT:** 7
Hydropsychidae	
	**Filum**: Arthropoda **Kelas**: Insecta **Ordo**: Trichoptera **Family**: Hydropsychidae ***Functional Feeding Group*****:** *Collector* **Lokasi ditemukan**: Stasiun 1; Stasiun 2; Stasiun 3 **Skor FBI:** 5 (Sensitif) **Skor BMWP – ASPT:** 5

Lampiran 4. Komposisi Makroinvertebrata yang ditemukan di Setiap Stasiun Sungai Tangka

Tabel Komposisi Makroinvertebrata pada Stasiun 1 Sungai Tangka

No.	Family	Ordo	EPT	Class	Phylum	Group Biotic Index -Analysis of Individual Data	Functional Feeding Group (FFG)	Jumlah Individu
1	Lymnaeidae	Limnophila	-	Gastropoda	Mollusca	Tolerant	Collector	93
2	Baetidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Collector	361
3	Philopotamidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Predator	54
4	Hydropsychidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Sensitive	Collector	3
5	Planariidae	Tricladida	-	Rhabditophora	Platyhelminthes	Sensitive	Predator, Collector	104
6	Goeridae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	97
7	Rhaycophilidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	15
8	Viviparidae	Mesogastropoda	-	Gastropoda	Mollusca	Tolerant	Scraper	84
9	Cordulegasteridae	Odonata	-	Insecta	Arthropoda	Very Sensitive	Predator	6
10	Chironomidae	Diptera	-	Insecta	Arthropoda	Very Tolerant	Collector, Scraper, Predator	23
11	Tubificidae	Tubificida	-	Oligochaeta	Annelida	Very Tolerant	Collector	5
12	Physidae	Limnophila	-	Gastropoda	Mollusca	Very Tolerant	Collector	21
13	Erpobdellidae	Arhynchobdellida	-	Clitellata	Annelida	Very Tolerant	Predator	97
14	Tricorythidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Collector	40
15	Nemouridae	Plecoptera	Plecoptera	Insecta	Arthropoda	Very Sensitive	Predator	19
16	Coenagrionidae	Odonata	-	Insecta	Arthropoda	Tolerant	Scraper	2
17	Veliidae	Hemiptera	-	Insecta	Arthropoda	Sensitive	Predator	1
18	Gyrinidae	Coleoptera	-	Insecta	Arthropoda	Sensitive	Scraper	1
19	Heptagenidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Scraper	22

Tabel Komposisi Makroinvertebrata pada Stasiun 2 Sungai Tangka

No.	Family	Ordo	EPT	Class	Phylum	Group Biotic Index -Analysisi of Individual Data	Functional Feeding Group (FFG)	Jumlah Individu
1	Glossomatidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	300
2	Baetidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Collector	244
3	Planariidae	Tricladida	-	Rhabditophora	Platyhelminthes	Sensitive	Predator, Collector	157
4	Tricorythidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Collector	77
5	Coenagrionidae	Odonata	-	Insecta	Arthropoda	Tolerant	Scraper	1
6	Goeridae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	87
7	Rhaycophilidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	2
8	Gerridae	Hemiptera	-	Insecta	Arthropoda	Tolerant	Predator	24
9	Lymnaeidae	Limnophila	-	Gastropoda	Mollusca	Tolerant	Collector	22
10	Erpobdellidae	Arhynchobdellida	-	Clitellata	Annelida	Very Tolerant	Predator	29
11	Leptophlebiidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Very Sensitive	Collector	75
12	Heptagenidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Scraper	29
13	Hydropsychidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Sensitive	Collector	39
14	Philopotamidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Predator	75
15	Viviparidae	Mesogastropoda	-	Gastropoda	Mollusca	Tolerant	Scraper	27
16	Calopterygidae	Odonata	-	Insecta	Arthropoda	Sensitive	Predator	25
17	Veliidae	Hemiptera	-	Insecta	Arthropoda	Sensitive	Predator	6
18	Polycentropodidae	Trichoptera	-	Insecta	Arthropoda	Sensitive	Collector	5
19	Gomphidae	Odonata	-	Insecta	Arthropoda	Very Sensitive	Predator	1

Tabel Komposisi Makroinvertebrata pada Stasiun 3 Sungai Tangka

No.	Family	Ordo	EPT	Class	Phylum	Group Biotic Index -Analysisi of Individual Data	Functional Feeding Group (FFG)	Jumlah Individu
1	Planariidae	Tricladida	-	Rhabditophora	Platyhelminthes	Sensitive	Predator, Collector	377
2	Baetidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Collector	133
3	Tricorythidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Collector	106
4	Gerridae	Hemiptera	-	Insecta	Arthropoda	Tolerant	Predator	45
5	Hydropsychidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Sensitive	Collector	12
6	Lampyridae	Coeloptera	-	Insecta	Arthropoda	Sensitive	Scraper	2
7	Philopotamidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Predator	81
8	Leptophlebiidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Very Sensitive	Collector	34
9	Heptagenidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Scraper	44
10	Coenagrionidae	Odonata	-	Insecta	Arthropoda	Tolerant	Scraper	4
11	Calopterygidae	Odonata	-	Insecta	Arthropoda	Sensitive	Predator	3
12	Cordulegasteridae	Odonata	-	Insecta	Arthropoda	Very Sensitive	Predator	8
13	Corixidae	Hemiptera	-	Insecta	Arthropoda	Sensitive	Predator	24
14	Glossomatidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	21
15	Aeshnidae	Odonata	-	Insecta	Arthropoda	Very Sensitive	Predator	1
16	Dytiscidae	Coeloptera	-	Insecta	Arthropoda	Sensitive	Predator	5
17	Chloroperlidae	Plecoptera	Plecoptera	Insecta	Arthropoda	Very Sensitive	Predator	3
18	Goeridae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	89
19	Tipulidae	Diptera	-	Insecta	Arthropoda	Sensitive	Shredder	4
20	Gomphidae	Odonata	-	Insecta	Arthropoda	Very Sensitive	Predator	1
21	Veliidae	Hemiptera	-	Insecta	Arthropoda	Sensitive	Predator	41
22	Nemouridae	Plecoptera	Plecoptera	Insecta	Arthropoda	Very Sensitive	Shredder	3
23	Rhaycophilidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	23
24	Erpobdellidae	Arhynchobdellida	-	Clitellata	Annelida	Very Tolerant	Predator	3
25	Pyralidae	Lepidoptera	-	Insecta	Arthropoda	Sensitive	Shredder	2
26	Hebridae	Hemiptera	-	Insecta	Arthropoda	Sensitive	Predator	5
27	Lymnaeidae	Limnophila	-	Gastropoda	Mollusca	Tolerant	Collector	6

Tabel Komposisi Makroinvertebrata pada Stasiun 4 Sungai Tangka

No.	Family	Ordo	EPT	Class	Phylum	Group Biotic Index -Analysis of Individual Data	Fuctional Feeding Group (FFG)	Jumlah Individu
1	Gerridae	Hemiptera	-	Insecta	Arthropoda	Tolerant	Predator	126
2	Coenagrionidae	Odonata	-	Insecta	Arthropoda	Tolerant	Scraper	30
3	Baetidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Collector	154
4	Veliidae	Hemiptera	-	Insecta	Arthropoda	Sensitive	Predator	20
5	Heptagenidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Scraper	72
6	Gomphidae	Odonata	-	Insecta	Arthropoda	Very Sensitive	Predator	5
7	Aeshnidae	Odonata	-	Insecta	Arthropoda	Very Sensitive	Predator	74
8	Leptophlebiidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Very Sensitive	Collector	70
9	Philopotamidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Predator	130
10	Planariidae	Tricladida	-	Rhabditophora	Platyhelminthes	Sensitive	Predator, Collector	49
11	Pyralidae	Lepidoptera	-	Insecta	Arthropoda	Sensitive	Shredder	25
12	Rhaycophilidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	29
13	Gyrinidae - Larva	Coleoptera	-	Insecta	Arthropoda	Sensitive	Scraper	1
14	Psephenidae	Coleoptera	-	Insecta	Arthropoda	Sensitive	Scraper	2
15	Erpobdellidae	Arhynchobdellida	-	Clitellata	Annelida	Very Tolerant	Predator	6
16	Dytiscidae	Coeloptera	-	Insecta	Arthropoda	Sensitive	Predator	1
17	Lymnaeidae	Limnophila	-	Gastropoda	Mollusca	Tolerant	Collector	1
18	Chloroperlidae	Plecoptera	Plecoptera	Insecta	Arthropoda	Very Sensitive	Predator	5
19	Prosopistomatidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Very Sensitive	Scraper	3
20	Glossomatidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	37
21	Nemouridae	Plecoptera	Plecoptera	Insecta	Arthropoda	Very Sensitive	Predator	3
22	Lampyridae	Coeloptera	-	Insecta	Arthropoda	Sensitive	Scraper	13
23	Corixidae	Hemiptera	-	Insecta	Arthropoda	Sensitive	Predator	5
24	Viviparidae	Mesogastropoda	-	Gastropoda	Mollusca	Tolerant	Scraper	2
25	Tricorythidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Collector	29
26	Thiaridae	Sorbeoconcha	-	Gastropoda	Mollusca	Tolerant	Scraper	33

No.	Family	Ordo	EPT	Class	Phylum	Group Biotic Index -Analysis of Individual Data	Fuctional Feeding Group (FFG)	Jumlah Individu
27	Limnephilidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Shredder, Scraper, Collector	1
28	Agriidae	Odonata	-	Insecta	Arthropoda	Sensitive	Predator	1
29	Corydalidae	Megaloptera	-	Insecta	Arthropoda	Sensitive	Predator	1
30	Cordulegasteridae	Odonata	-	Insecta	Arthropoda	Very Sensitive	Predator	10
31	Goeridae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	61

Tabel Komposisi Makroinvertebrata pada Stasiun 5 Sungai Tangka

No.	Family	Ordo	EPT	Class	Phylum	Group Biotic Index -Analysisi of Individual Data	Functional Feeding Group (FFG)	Jumlah Individu
1	Lymnaeidae	Limnophila	-	Gastropoda	Mollusca	Tolerant	Collector	1
2	Veliidae	Hemiptera	-	Insecta	Arthropoda	Sensitive	Predator	200
3	Gerridae	Hemiptera	-	Insecta	Arthropoda	Tolerant	Predator	129
4	Calopterygidae	Odonata	-	Insecta	Arthropoda	Sensitive	Predator	8
5	Coenagrionidae	Odonata	-	Insecta	Arthropoda	Tolerant	Scraper	69
6	Aeshnidae	Odonata	-	Insecta	Arthropoda	Very Sensitive	Predator	13
7	Atyidae	Decapoda	-	Malacostraca	Arthropoda	Tolerant	Collector	1
8	Viviparidae	Mesogastropoda	-	Gastropoda	Mollusca	Tolerant	Scraper	3
9	Planariidae	Tricladida	-	Rhabditophora	Platyhelminthes	Sensitive	Predator, Collector	48
10	Leptophlebiidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Very Sensitive	Collector	165
11	Glossomatidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	6
12	Tabanidae	Diptera	-	Insecta	Arthropoda	Sensitive	Predator	2
13	Philopotamidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Predator	102
14	Limnephilidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Shredder, Scraper, Collector	26

No.	Family	Ordo	EPT	Class	Phylum	Group Biotic Index -Analysisi of Individual Data	Functional Feeding Group (FFG)	Jumlah Individu
15	Thiaridae	Sorbeoconcha	-	Gastropoda	Mollusca	Tolerant	Scraper	5
16	Heptagenidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Scraper	12
17	Rhaycophilidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	17
18	Agriidae	Odonata	-	Insecta	Arthropoda	Sensitive	Predator	14
19	Goeridae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Scraper	79
20	Baetidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Collector	69
21	Corixidae	Hemiptera	-	Insecta	Arthropoda	Sensitive	Predator	24
22	Gomphidae	Odonata	-	Insecta	Arthropoda	Very Sensitive	Predator	1
23	Chlorocyphidae	Odonata	-	Insecta	Arthropoda	Sensitive	Predator	2
24	Erpobdellidae	Arhynchobdellida	-	Clitellata	Annelida	Very Tolerant	Predator	15
25	Tricorythidae	Ephemeroptera	Ephemeroptera	Insecta	Arthropoda	Sensitive	Collector	37
26	Chloroperlidae	Plecoptera	Plecoptera	Insecta	Arthropoda	Very Sensitive	Predator	4
27	Lampyridae Larva	Coeloptera	-	Insecta	Arthropoda	Sensitive	Scraper	1
28	Naucoridae	Hemiptera	-	Insecta	Arthropoda	Sensitive	Predator	2
29	Glossiphonidae	Rhynchobdellida	-	Clitellata	Annelida	Very Tolerant	Predator	2
30	Cordulegasteridae	Odonata	-	Insecta	Arthropoda	Very Sensitive	Predator	2
31	Pyralidae	Lepidoptera	-	Insecta	Arthropoda	Sensitive	Shredder	1
32	Perlidae	Plecoptera	Plecoptera	Insecta	Arthropoda	Very Sensitive	Predator	3
33	Lampyridae	Coeloptera	-	Insecta	Arthropoda	Sensitive	Scraper	2
34	Dytiscidae	Coeloptera	-	Insecta	Arthropoda	Sensitive	Predator	1
35	Saldidae	Hemiptera	-	Insecta	Arthropoda	Sensitive	Predator	3
36	Chironomidae	Diptera	-	Insecta	Arthropoda	Very Tolerant	Collector, Scraper, Predator	4
37	Lepidostormatidae	Trichoptera	Trichoptera	Insecta	Arthropoda	Very Sensitive	Shredder	12
38	Tipulidae	Diptera	-	Insecta	Arthropoda	Sensitive	Shredder	1

Lampiran 5. Tabel Perhitungan Indeks Keanekaragaman (H'), Indeks Dominansi (C) dan Indeks Keseragaman (E)

Tabel Perhitungan Indeks Keanekaragaman (H'), Indeks Dominansi (C) dan Indeks Keseragaman (E) pada Stasiun 1 Sungai Tangka

No	Family	ni	S	Ln.S	Pi=ni/N	Ln.Pi	Pi*Pi	Pi*Ln.Pi	H'	E	C
1	Lymnaeidae	93	19	2,944	0,089	-2,422	0,008	-0,215	2,205	0,749	0,165
2	Baetidae	361			0,344	-1,066	0,119	-0,367			
3	Philopotamidae	54			0,052	-2,966	0,003	-0,153			
4	Hydropsychidae	3			0,003	-5,856	0,000	-0,017			
5	Planariidae	104			0,099	-2,310	0,010	-0,229			
6	Goeridae	97			0,093	-2,380	0,009	-0,220			
7	Rhaycophilidae	15			0,014	-4,247	0,000	-0,061			
8	Viviparidae	84			0,080	-2,524	0,006	-0,202			
9	Cordulegasteridae	6			0,006	-5,163	0,000	-0,030			
10	Chironomidae	23			0,022	-3,819	0,000	-0,084			
11	Tubificidae	5			0,005	-5,345	0,000	-0,026			
12	Physidae	21			0,020	-3,910	0,000	-0,078			
13	Erpobdellidae	97			0,093	-2,380	0,009	-0,220			
14	Tricorythidae	40			0,038	-3,266	0,001	-0,125			
15	Nemouridae	19			0,018	-4,010	0,000	-0,073			
16	Coenagrionidae	2			0,002	-6,261	0,000	-0,012			
17	Veliidae	1			0,001	-6,955	0,000	-0,007			
18	Gyrinidae	1			0,001	-6,955	0,000	-0,007			
19	Heptagenidae	22			0,021	-3,864	0,000	-0,081			
	Jumlah Total	1048			1,000	-75,698	0,166	-2,205			

Tabel Perhitungan Indeks Keanekaragaman (H’), Indeks Dominansi (C) dan Indeks Keseragaman (E) pada Stasiun 2 Sungai Tangka

No	Family	ni	S	Ln.S	Pi=ni/N	Ln.Pi	Pi*Pi	Pi*Ln.Pi	H'	E	C
1	Glossomatidae	300	19	2,944	0,245	-1,407	0,060	-0,345	2,303	0,782	0,136
2	Baetidae	244			0,199	-1,614	0,040	-0,321			
3	Planariidae	157			0,128	-2,054	0,016	-0,263			
4	Tricorythidae	77			0,063	-2,767	0,004	-0,174			
5	Coenagrionidae	1			0,001	-7,111	0,000	-0,006			
6	Goeridae	87			0,071	-2,645	0,005	-0,188			
7	Rhaycophilidae	2			0,002	-6,418	0,000	-0,010			
8	Gerridae	24			0,020	-3,933	0,000	-0,077			
9	Lymnaeidae	22			0,018	-4,020	0,000	-0,072			
10	Erpobdellidae	29			0,024	-3,743	0,001	-0,089			
11	Leptophlebiidae	75			0,061	-2,793	0,004	-0,171			
12	Heptagenidae	29			0,024	-3,743	0,001	-0,089			
13	Hydropsychidae	39			0,032	-3,447	0,001	-0,110			
14	Philopotamidae	75			0,061	-2,793	0,004	-0,171			
15	Viviparidae	27			0,022	-3,815	0,000	-0,084			
16	Calopterygidae	25			0,020	-3,892	0,000	-0,079			
17	Veliidae	6			0,005	-5,319	0,000	-0,026			
18	Polycentropodidae	5			0,004	-5,501	0,000	-0,022			
19	Gomphidae	1			0,001	-7,111	0,000	-0,006			
	Jumlah Total	1225			1,000	-74,125	0,136	-2,303			

Tabel Perhitungan Indeks Keanekaragaman (H’), Indeks Dominansi (C) dan Indeks Keseragaman (E) pada Stasiun 3 Sungai Tangka

No	Family	ni	S	Ln.S	Pi=ni/N	Ln.Pi	Pi*Pi	Pi*Ln.Pi	H'	E	C
1	Planariidae	377			0,349	-1,052	0,122	-0,367			
2	Baetidae	133			0,123	-2,094	0,015	-0,258			
3	Tricorythidae	106			0,098	-2,321	0,010	-0,228			
4	Gerridae	45			0,042	-3,178	0,002	-0,132			
5	Hydropsychidae	12			0,011	-4,500	0,000	-0,050			
6	Lampyridae	2			0,002	-6,292	0,000	-0,012			
7	Philopotamidae	81			0,075	-2,590	0,006	-0,194			
8	Leptophlebiidae	34			0,031	-3,458	0,001	-0,109			
9	Heptagenidae	44			0,041	-3,201	0,002	-0,130			
10	Coenagrionidae	4			0,004	-5,598	0,000	-0,021			
11	Calopterygidae	3			0,003	-5,886	0,000	-0,016			
12	Cordulegasteridae	8	27	3,296	0,007	-4,905	0,000	-0,036	2,300	0,698	0,166
13	Corixidae	24			0,022	-3,807	0,000	-0,085			
14	Glossomatidae	21			0,019	-3,940	0,000	-0,077			
15	Aeshnidae	1			0,001	-6,985	0,000	-0,006			
16	Dytiscidae	5			0,005	-5,375	0,000	-0,025			
17	Chloroperlidae	3			0,003	-5,886	0,000	-0,016			
18	Goeridae	89			0,082	-2,496	0,007	-0,206			
19	Tipulidae	4			0,004	-5,598	0,000	-0,021			
20	Gomphidae	1			0,001	-6,985	0,000	-0,006			
21	Veliidae	41			0,038	-3,271	0,001	-0,124			
22	Nemouridae	3			0,003	-5,886	0,000	-0,016			
23	Rhaycophilidae	23			0,021	-3,849	0,000	-0,082			

No	Family	ni	S	Ln.S	Pi=ni/N	Ln.Pi	Pi*Pi	Pi*Ln.Pi	H'	E	C
24	Erpobdellidae	3			0,003	-5,886	0,000	-0,016			
25	Pyralidae	2			0,002	-6,292	0,000	-0,012			
26	Hebridae	5			0,005	-5,375	0,000	-0,025			
27	Lymnaeidae	6			0,006	-5,193	0,000	-0,029			
	Jumlah Total	1080			1,000	-121,90	0,167	-2,300			

Tabel Perhitungan Indeks Keanekaragaman (H’), Indeks Dominansi (C) dan Indeks Keseragaman (E) pada Stasiun 4 Sungai Tangka

No	Family	ni	S	Ln.S	Pi=ni/N	Ln.Pi	Pi*Pi	Pi*Ln.Pi	H'	E	C
1	Gerridae	126	31	3,434	0,126	-2,070	0,016	-0,261	2,732	0,796	0,084
2	Coenagrionidae	30			0,030	-3,506	0,001	-0,105			
3	Baetidae	154			0,154	-1,870	0,024	-0,288			
4	Veliidae	20			0,020	-3,911	0,000	-0,078			
5	Heptagenidae	72			0,072	-2,630	0,005	-0,190			
6	Gomphidae	5			0,005	-5,297	0,000	-0,027			
7	Aeshnidae	74			0,074	-2,603	0,005	-0,193			
8	Leptophlebiidae	70			0,070	-2,658	0,005	-0,186			
9	Philopotamidae	130			0,130	-2,039	0,017	-0,265			
10	Planariidae	49			0,049	-3,015	0,002	-0,148			
11	Pyralidae	25			0,025	-3,688	0,001	-0,092			
12	Rhaycophilidae	29			0,029	-3,539	0,001	-0,103			
13	Gyrinidae - Larva	1			0,001	-6,907	0,000	-0,007			
14	Psephenidae	2			0,002	-6,214	0,000	-0,012			
15	Erpobdellidae	6			0,006	-5,115	0,000	-0,031			
16	Dytiscidae	1			0,001	-6,907	0,000	-0,007			

No	Family	ni	S	Ln.S	Pi=ni/N	Ln.Pi	Pi*Pi	Pi*Ln.Pi	H'	E	C
17	Lymnaeidae	1			0,001	-6,907	0,000	-0,007			
18	Chloroperlidae	5			0,005	-5,297	0,000	-0,027			
19	Prosopistomatidae	3			0,003	-5,808	0,000	-0,017			
20	Glossomatidae	37			0,037	-3,296	0,001	-0,122			
21	Nemouridae	3			0,003	-5,808	0,000	-0,017			
22	Lampyridae	13			0,013	-4,342	0,000	-0,056			
23	Corixidae	5			0,005	-5,297	0,000	-0,027			
24	Viviparidae	2			0,002	-6,214	0,000	-0,012			
25	Tricorythidae	29			0,029	-3,539	0,001	-0,103			
26	Thiaridae	33			0,033	-3,410	0,001	-0,113			
27	Limnephilidae	1			0,001	-6,907	0,000	-0,007			
28	Agriidae	1			0,001	-6,907	0,000	-0,007			
29	Corydalidae	1			0,001	-6,907	0,000	-0,007			
30	Cordulegasteridae	10			0,010	-4,604	0,000	-0,046			
31	Goeridae	61			0,061	-2,796	0,004	-0,171			
	Jumlah Total	999			1,000	-140,01	0,085	-2,732			

Tabel Perhitungan Indeks Keanekaragaman (H’), Indeks Dominansi (C) dan Indeks Keseragaman (E) pada Stasiun 5 Sungai Tangka

No	Family	ni	S	Ln.S	Pi=ni/N	Ln.Pi	Pi*Pi	Pi*Ln.Pi	H'	E	C
1	Lymnaeidae	1			0,001	-6,990	0,000	-0,006			
2	Veliidae	200			0,184	-1,692	0,034	-0,312			
3	Gerridae	129			0,119	-2,130	0,014	-0,253			
4	Calopterygidae	8			0,007	-4,911	0,000	-0,036			
5	Coenagrionidae	69			0,064	-2,756	0,004	-0,175			
6	Aeshnidae	13			0,012	-4,425	0,000	-0,053			
7	Atyidae	1			0,001	-6,990	0,000	-0,006			
8	Viviparidae	3	38	3,638	0,003	-5,892	0,000	-0,016	2,667	0,733	0,098
9	Planariidae	48			0,044	-3,119	0,002	-0,138			
10	Leptophlebiidae	165			0,152	-1,884	0,023	-0,286			
11	Glossomatidae	6			0,006	-5,198	0,000	-0,029			
12	Tabanidae	2			0,002	-6,297	0,000	-0,012			
13	Philopotamidae	102			0,094	-2,365	0,009	-0,222			
14	Limnephilidae	26			0,024	-3,732	0,001	-0,089			
15	Thiaridae	5			0,005	-5,381	0,000	-0,025			

No	Family	ni	S	Ln.S	Pi=ni/N	Ln.Pi	Pi*Pi	Pi*Ln.Pi	H'	E	C
16	Heptagenidae	12			0,011	-4,505	0,000	-0,050			
17	Rhaycophilidae	17			0,016	-4,157	0,000	-0,065			
18	Agriidae	14			0,013	-4,351	0,000	-0,056			
19	Goeridae	79			0,073	-2,621	0,005	-0,191			
20	Baetidae	69			0,064	-2,756	0,004	-0,175			
21	Corixidae	24			0,022	-3,812	0,000	-0,084			
22	Gomphidae	1			0,001	-6,990	0,000	-0,006			
23	Chlorocyphidae	2			0,002	-6,297	0,000	-0,012			
24	Erpobdellidae	15			0,014	-4,282	0,000	-0,059			
25	Tricorythidae	37			0,034	-3,379	0,001	-0,115			
26	Chloroperlidae	4			0,004	-5,604	0,000	-0,021			
27	Lampyridae Larva	1			0,001	-6,990	0,000	-0,006			
28	Naucoridae	2			0,002	-6,297	0,000	-0,012			
29	Glossiphonidae	2			0,002	-6,297	0,000	-0,012			
30	Cordulegasteridae	2			0,002	-6,297	0,000	-0,012			
31	Pyralidae	1			0,001	-6,990	0,000	-0,006			

No	Family	ni	S	Ln.S	Pi=ni/N	Ln.Pi	Pi*Pi	Pi*Ln.Pi	H'	E	C
32	Perlidae	3			0,003	-5,892	0,000	-0,016			
33	Lampyridae	2			0,002	-6,297	0,000	-0,012			
34	Dytiscidae	1			0,001	-6,990	0,000	-0,006			
35	Saldidae	3			0,003	-5,892	0,000	-0,016			
36	Chironomidae	4			0,004	-5,604	0,000	-0,021			
37	Lepidostormatidae	12			0,011	-4,505	0,000	-0,050			
38	Tipulidae	1			0,001	-6,990	0,000	-0,006			
	Jumlah Total	1086			1,000	-187,5	0,099	-2,668			

Lampiran 5. Tabel Perhitungan *Family Biotic Indexs* (FBI) pada tiap Stasiun di Sungai Tangka

Tabel Perhitungan *Family Biotic Indexs* (FBI) di Stasiun 1 Sungai Tangka

No.	Family	Tipe Toleransi	Jumlah Individu (JI)	Indeks Toleransi (IT)	JI X IT
1	Lymnaeidae	Tolerant	93	7	651
2	Baetidae	Sensitive	361	5	1805
3	Philopotamidae	Very Sensitive	54	3	162
4	Hydropsychidae	Sensitive	3	5	15
5	Planariidae	Sensitive	104	4	416
6	Goeridae	Very Sensitive	97	3	291
7	Rhaycophilidae	Very Sensitive	15	1	15
8	Viviparidae	Tolerant	84	6	504
9	Cordulegasteridae	Very Sensitive	6	3	18
10	Chironomidae	Very Tolerant	23	8	184
11	Tubificidae	Very Tolerant	5	10	50
12	Physidae	Very Tolerant	21	8	168
13	Erpobdellidae	Very Tolerant	97	8	776
14	Tricorythidae	Sensitive	40	4	160
15	Nemouridae	Very Sensitive	19	2	38
16	Coenagrionidae	Tolerant	2	7	14
17	Veliidae	Sensitive	1	5	5
18	Gyrinidae	Sensitive	1	4	4
19	Heptagenidae	Sensitive	22	4	88
	Total		n = 1048		T= 4966
	FBI = T/ n		**4,738549618**		

Tabel Perhitungan *Family Biotic Indexs* (FBI) di Stasiun 2 Sungai Tangka

No.	Family	Tipe Toleransi	Jumlah Individu (JI)	Indeks Toleransi (IT)	JI X IT
1	Glossomatidae	Very Sensitive	300	0	0
2	Baetidae	Sensitive	244	5	1220
3	Planariidae	Sensitive	157	4	628
4	Tricorythidae	Sensitive	77	3	231
5	Coenagrionidae	Tolerant	1	7	7
6	Goeridae	Very Sensitive	87	3	261
7	Rhaycophilidae	Very Sensitive	2	1	2
8	Gerridae	Tolerant	24	6	144
9	Lymnaeidae	Tolerant	22	6	132
10	Erpobdellidae	Very Tolerant	29	8	232
11	Leptophlebiidae	Very Sensitive	75	3	225
12	Heptagenidae	Sensitive	29	4	116
13	Hydropsychidae	Sensitive	39	5	195
14	Philopotamidae	Very Sensitive	75	3	225
15	Viviparidae	Tolerant	27	6	162
16	Calopterygidae	Sensitive	25	5	125
17	Veliidae	Sensitive	6	5	30

No.	Family	Tipe Toleransi	Jumlah Individu (JI)	Indeks Toleransi (IT)	JI X IT
18	Polycentropodidae	Sensitive	5	5	25
19	Gomphidae	Very Sensitive	1	3	3
			n=1225		T=3963
	FBI = T/ n		**3,235102041**		

Tabel Perhitungan *Family Biotic Indexs* (FBI) di Stasiun 3 Sungai Tangka

No.	Family	Tipe Toleransi	Jumlah Individu (JI)	Indeks Toleransi (IT)	JI X IT
1	Planariidae	Sensitive	377	4	1508
2	Baetidae	Sensitive	133	5	665
3	Tricorythidae	Sensitive	106	4	424
4	Gerridae	Tolerant	45	6	270
5	Hydropsychidae	Sensitive	12	5	60
6	Lampyridae	Sensitive	2	4	8
7	Philopotamidae	Very Sensitive	81	3	243
8	Leptophlebiidae	Very Sensitive	34	3	102
9	Heptagenidae	Sensitive	44	4	176
10	Coenagrionidae	Tolerant	4	7	28
11	Calopterygidae	Sensitive	3	5	15
12	Cordulegasteridae	Very Sensitive	8	3	24
13	Corixidae	Sensitive	24	5	120
14	Glossomatidae	Very Sensitive	21	0	0
15	Aeshnidae	Very Sensitive	1	3	3
16	Dytiscidae	Sensitive	5	5	25
17	Chloroperlidae	Very Sensitive	3	1	3
18	Goeridae	Very Sensitive	89	3	267
19	Tipulidae	Sensitive	4	4	16
20	Gomphidae	Very Sensitive	1	3	3
21	Veliidae	Sensitive	41	5	205
22	Nemouridae	Very Sensitive	3	2	6
23	Rhaycophilidae	Very Sensitive	23	1	23
24	Erpobdellidae	Very Tolerant	3	8	24
25	Pyralidae	Sensitive	2	1	2
26	Hebridae	Sensitive	5	5	25
27	Lymnaeidae	Tolerant	6	6	36
			n=1080	105	T=4281
	FBI = T/ n		**3,963888889**		

Tabel Perhitungan *Family Biotic Indexs* (FBI) di Stasiun 4 Sungai Tangka

No.	Family	Tipe Toleransi	Jumlah Individu (JI)	Indeks Toleransi (IT)	JI X IT
1	Gerridae	Tolerant	126	6	756
2	Coenagrionidae	Tolerant	30	7	210
3	Baetidae	Sensitive	154	5	770
4	Veliidae	Sensitive	20	5	100

No.	Family	Tipe Toleransi	Jumlah Individu (JI)	Indeks Toleransi (IT)	JI X IT
5	Heptagenidae	Sensitive	72	4	288
6	Gomphidae	Very Sensitive	5	3	15
7	Aeshnidae	Very Sensitive	74	3	222
8	Leptophlebiidae	Very Sensitive	70	3	210
9	Philopotamidae	Very Sensitive	130	3	390
10	Planariidae	Sensitive	49	4	196
11	Pyralidae	Sensitive	25	5	125
12	Rhaycophilidae	Very Sensitive	29	1	29
13	Gyrinidae - Larva	Sensitive	1	4	4
14	Psephenidae	Sensitive	2	4	8
15	Erpobdellidae	Very Tolerant	6	8	48
16	Dytiscidae	Sensitive	1	5	5
17	Lymnaeidae	Tolerant	1	7	7
18	Chloroperlidae	Very Sensitive	5	1	5
19	Prosopistomatidae	Very Sensitive	3	4	12
20	Glossomatidae	Very Sensitive	37	0	0
21	Nemouridae	Very Sensitive	3	2	6
22	Lampyridae	Sensitive	13	4	52
23	Corixidae	Sensitive	5	5	25
24	Viviparidae	Tolerant	2	6	12
25	Tricorythidae	Sensitive	29	4	116
26	Thiaridae	Tolerant	33	3	99
27	Limnephilidae	Very Sensitive	1	3	3
28	Agriidae	Sensitive	1	5	5
29	Corydalidae	Sensitive	1	4	4
30	Cordulegasteridae	Very Sensitive	10	3	30
31	Goeridae	Very Sensitive	61	3	183
			n=999	124	T=3935
	FBI = T/ n		**3,938938939**		

Tabel Perhitungan *Family Biotic Indexs* (FBI) di Stasiun 5 Sungai Tangka

No.	Family	Tipe Toleransi	Jumlah Individu (JI)	Indeks Toleransi (IT)	JI X IT
1	Lymnaeidae	Tolerant	1	6	6
2	Veliidae	Sensitive	200	5	1000
3	Gerridae	Tolerant	129	6	774
4	Calopterygidae	Sensitive	8	5	40
5	Coenagrionidae	Tolerant	69	7	483
6	Aeshnidae	Very Sensitive	13	3	39
7	Atyidae	Tolerant	1	6	6
8	Viviparidae	Tolerant	3	6	18
9	Planariidae	Sensitive	48	4	192
10	Leptophlebiidae	Very Sensitive	165	3	495
11	Glossomatidae	Very Sensitive	6	0	0
12	Tabanidae	Sensitive	2	5	10
13	Philopotamidae	Very Sensitive	102	3	306

No.	Family	Tipe Toleransi	Jumlah Individu (JI)	Indeks Toleransi (IT)	JI X IT
14	Limnephilidae	Very Sensitive	26	3	78
15	Thiaridae	Tolerant	5	7	35
16	Heptagenidae	Sensitive	12	4	48
17	Rhaycophilidae	Very Sensitive	17	1	17
18	Agriidae	Sensitive	14	5	70
19	Goeridae	Very Sensitive	79	3	237
20	Baetidae	Sensitive	69	5	345
21	Corixidae	Sensitive	24	5	120
22	Gomphidae	Very Sensitive	1	3	3
23	Chlorocyphidae	Sensitive	2	5	10
24	Erpobdellidae	Very Tolerant	15	8	120
25	Tricorythidae	Sensitive	37	3	111
26	Chloroperlidae	Very Sensitive	4	1	4
27	Lampyridae Larva	Sensitive	1	4	4
28	Naucoridae	Sensitive	2	4	8
29	Glossiphonidae	Very Tolerant	2	8	16
30	Cordulegasteridae	Very Sensitive	2	3	6
31	Pyralidae	Sensitive	1	5	5
32	Perlidae	Very Sensitive	3	1	3
33	Lampyridae	Sensitive	2	4	8
34	Dytiscidae	Sensitive	1	5	5
35	Saldidae	Sensitive	3	5	15
36	Chironomidae	Very Tolerant	4	6	24
37	Lepidostormatidae	Very Sensitive	12	1	12
38	Tipulidae	Sensitive	1	4	4
			n=1086	162	T=4677
	FBI = T/ n		**4,306629834**		

Lampiran 6. Tabel Perhitungan *Average Score Per Taxon* pada tiap Stasiun di Sungai Tangka

Tabel Perhitungan *Average Score Per Taxon* (ASPT) pada stasiun 1

No.	Family	Indeks BWMP
1	Lymnaeidae	3
2	Baetidae	4
3	Philopotamidae	8
4	Hydropsychidae	5
5	Planariidae	5
6	Goeridae	10
7	Rhaycophilidae	7
8	Viviparidae	6
9	Cordulegasteridae	8
10	Chironomidae	1
11	Tubificidae	1
12	Physidae	3
13	Erpobdellidae	3
14	Tricorythidae	7
15	Nemouridae	7
16	Coenagrionidae	6
17	Veliidae	5
18	Gyrinidae	5
19	Heptagenidae	10
	BWMP	104
	ASPT (BWMP/n)	**5,473684211**

Tabel Perhitungan *Average Score Per Taxon* (ASPT) pada stasiun 2

No.	Family	Indeks BWMP
1	Glossomatidae	8
2	Baetidae	4
3	Planariidae	5
4	Tricorythidae	7
5	Coenagrionidae	6
6	Goeridae	10
7	Rhaycophilidae	7
8	Gerridae	3
9	Lymnaeidae	3
10	Erpobdellidae	3
11	Leptophlebiidae	10
12	Heptagenidae	10
13	Hydropsychidae	5
14	Philopotamidae	8
15	Viviparidae	6
16	Calopterygidae	8
17	Veliidae	5
18	Polycentropodidae	7
19	Gomphidae	8
	BWMP	123
	ASPT (BWMP / n)	**6,473684211**

Tabel Perhitungan *Average Score Per Taxon* (ASPT) pada stasiun 3

No.	Family	Indeks BWMP
1	Planariidae	5
2	Baetidae	4
3	Tricorythidae	7
4	Gerridae	3
5	Hydropsychidae	5
6	Lampyridae	5
7	Philopotamidae	8
8	Leptophlebiidae	10
9	Heptagenidae	10
10	Coenagrionidae	6
11	Calopterygidae	8
12	Cordulegasteridae	8
13	Corixidae	3
14	Glossomatidae	8
15	Aeshnidae	8
16	Dytiscidae	3
17	Chloroperlidae	10
18	Goeridae	10
19	Tipulidae	5
20	Gomphidae	8
21	Veliidae	5
22	Nemouridae	7
23	Rhaycophilidae	7
24	Erpobdellidae	3
25	Pyralidae	5
26	Hebridae	2
27	Lymnaeidae	3
	BWMP	166
	ASPT (BWMP/n)	**6,148148148**

Tabel Perhitungan *Average Score Per Taxon* (ASPT) pada stasiun 4

No.	Family	Indeks BWMP
1	Gerridae	3
2	Coenagrionidae	6
3	Baetidae	4
4	Veliidae	5
5	Heptagenidae	10
6	Gomphidae	8
7	Aeshnidae	8
8	Leptophlebiidae	10
9	Philopotamidae	8
10	Planariidae	5
11	Pyralidae	5
12	Rhaycophilidae	7
13	Gyrinidae - Larva	5
14	Psephenidae	5
15	Erpobdellidae	3
16	Dytiscidae	3

No.	Family	Indeks BWMP
17	Lymnaeidae	3
18	Chloroperlidae	10
19	Prosopistomatidae	10
20	Glossomatidae	8
21	Nemouridae	7
22	Lampyridae	5
23	Corixidae	3
24	Viviparidae	6
25	Tricorythidae	7
26	Thiaridae	5
27	Limnephilidae	7
28	Agriidae	8
29	Corydalidae	4
30	Cordulegasteridae	8
31	Goeridae	10
	BWMP	196
	ASPT (BWMP/n)	**6,322580645**

Tabel Perhitungan *Average Score Per Taxon* (ASPT) pada stasiun 4

No.	Family	Indeks BWMP
1	Lymnaeidae	3
2	Veliidae	5
3	Gerridae	3
4	Calopterygidae	8
5	Coenagrionidae	6
6	Aeshnidae	8
7	Atyidae	5
8	Viviparidae	6
9	Planariidae	5
10	Leptophlebiidae	10
11	Glossomatidae	8
12	Tabanidae	4
13	Philopotamidae	8
14	Limnephilidae	7
15	Thiaridae	5
16	Heptagenidae	10
17	Rhaycophilidae	7
18	Agriidae	8
19	Goeridae	10
20	Baetidae	4
21	Corixidae	3
22	Gomphidae	8
23	Chlorocyphidae	6
24	Erpobdellidae	3
25	Tricorythidae	7
26	Chloroperlidae	10
27	Lampyridae Larva	5
28	Naucoridae	3
29	Glossiphonidae	3

No.	Family	Indeks BWMP
30	Cordulegasteridae	8
31	Pyralidae	5
32	Perlidae	10
33	Lampyridae	5
34	Dytiscidae	3
35	Saldidae	7
36	Chironomidae	1
37	Lepidostormatidae	10
38	Tipulidae	5
	BWMP	232
	ASPT (BWMP / n)	**6,105263158**

RIWAYAT HIDUP

Nama lengkap penulis adalah Nurman, kelahiran 02 Desember 1996 di Cenre, Kecamatan Sinjai Barat, Kabupaten Sinjai namun dibesarkan di Cengkong, Desa Tabbinjai Kecamatan Tombolopao Kabupaten Gowa. Alamat domisili di Perumahan Grand Sulawesi Bontomarannu, Kabupaten Gowa, Sulawesi Selatan. Penulis beragama Islam dan merupakan anak pertama dari tiga bersaudara dari pasangan Bapak Marang Nyompa dan Ibu Nurhayati Mammi dengan dua orang adik kandung yaitu Nurulwahda Marang dan Nurhidayat Marang.

Penulis mengawali karir pendidikan pada jenjang sekolah dasar pada tahun 2002-2008 di SD Inpres Cengkong, jenjang sekolah lanjut tingkat pertama pada tahun 2008-2011 di SMP Negeri 4 Tombolopao, jenjang sekolah lanjut tingkat atas pada tahun 2011-2014 di SMA Negeri 1 Sinjai Barat dan melanjutkan pendidikan ke tingkat strata satu pada tahun 2014-2018 dan meraih gelar Sarjana Sains (S.Si.) pada Jurusan Biologi Fakultas Sains dan Teknologi Universitas Islam Negeri Alauddin Makassar. Penulis melanjutkan pendidikan pada jenjang magister untuk gelar Magister Sains (M.Si.) pada Program Studi Magister Biologi Fakuktas Matematika dan Ilmu Pengetahuan Alam Universitas Hasanuddin.

Email penulis:
marangnurman@gmail.com / nurman.marang@uin-alauddin.ac.id