

## Raw research data

**Table 1. Condition of mangrove existence**

### a. Density of mangrove individuals

No	Types of mangroves	Density of mangrove trees (trees)								
		Station 1 (A)			Station 2 (B)			Station 3 (C)		
		Tr.1	Tr.2	Tr.3	Tr.1	Tr.2	Tr.3	Tr.1	Tr. 2	Tr.3
1	<i>Rhizophora mucronata</i>	2	1	3	2	2	0	3	1	1
2	<i>Avicennia marina</i>	0	0	0	0	1	0	0	0	1
	Amount	6			4			5		

Information :

Sta.1 (A) = Station 1, muddy

Sta.2 (B) = Station 2, sandy

Sta.3 (C) = Station 3, sandy-muddy

Tr = Transect

### b. Absolute density and relative density

No	Types of mangroves	Density (stems/ha)	Relative density
1	<i>Rhizophora mucronata</i>	4500	0.642857143
2	<i>Avicennia marina</i>	2500	0.357142857
	Amount	7000	1

### c. Absolute frequency and relative frequency

No	Types of mangroves	Absolute frequency	Relative frequency
1	<i>Rhizophora mucronata</i>	1	0.5
2	<i>Avicennia marina</i>	1	0.5
	Amount	2	1.0

### d. Diameter size of mangrove trees at the research location

Tree	Observation station					
	Sta.1 Muddy (A)		Sta.2 Sandy (B)		Sta.3 : Sandy-muddy (C)	
	Stand (year)	Diameter (cm)	Stand (year)	Diameter (cm)	Stand (year)	Diameter (cm)
1	10	8.30	10	8.50	10	7.00
2	10	8.50	10	10.00	10	7.00
3	10	10.40	10	10.00	10	8.00
4	10	9.50	10	5.00	0	0.00
5	10	8.00	10	8.00	0	0.00
Average	10	8.94	10	8.30	10	7.33

**Table 2. Results of individual acquisition found at each station at the research location (Individual)**

No	Sub class	Family	Species	Observation Station												Total average
				Muddy (A)				Sandy (B)				Sandy-muddy (C)				
				A1	A2	A3	Average	B1	B2	B3	Average	C1	C2	C3	Average	
1	Pulmonary	Ellobiidae	<i>C. aurisfelis</i>	50	53	46	49.6	15	8	9	10.6	30	33	29	30.6	30.2
2			<i>C. nucleus</i>	55	45	59	53.0	25	17	8	16.6	28	27	23	26.0	31.8
3	Prosobranchia	Littorinidae	<i>L. articulated</i>	8	4	6	6.0	0	1	0	0.3	5	3	0	2.6	2.9
4			<i>N. violacca</i>	26	30	33	29.0	14	16	10	13.3	10	18	25	21.0	21.1
5		Potamidae	<i>C. obtusa</i>	2	0	0	0.6	0	0	1	0.3	3	2	0	1.6	0.8
6			<i>T. telescopium</i>	7	12	9	9.3	2	5	0	2.3	5	3	6	4.6	5.4
7			<i>T. palustris</i>	30	26	39	31.6	15	17	14	15.3	25	33	29	29.0	25.3
	<b>Amount</b>			<b>178</b>	<b>171</b>	<b>192</b>	<b>192.0</b>	<b>72</b>	<b>64</b>	<b>42</b>	<b>59.0</b>	<b>116</b>	<b>119</b>	<b>112</b>	<b>115.0</b>	<b>118.0</b>

**Table 3. . T a b e l A b o u n d G a s t r o o d a ( I n d / m <sup>2</sup> ) i n d i v i d u W h i c h f o u n d o n e v e r y t r a n s e c d i l o c a t i o n s t u d y**

No	Sub class	Family	Species	Observation Station												Total average
				Muddy (A)				Sandy (B)				Sandy-muddy (C)				
				A1	A2	A3	Average	B1	B2	B3	Average	C1	C2	C3	Average	
1	Pulmonary	Ellobiidae	<i>C. aurisfelis</i>	2.00	2.12	1.84	4.73	0.60	0.32	0.36	0.42	1.20	1.32	1.16	1.22	2.12
2			<i>C. nucleus</i>	2.20	1.84	2.36	2.12	1.00	0.68	0.32	2.00	1.12	1.08	0.92	1.04	1.72
3	Prosobranchia	Littorinidae	<i>L. articulated</i>	0.32	0.16	0.24	0.24	0.00	0.04	0.00	0.01	0.20	0.12	0.00	0.10	0.11
4			<i>N. violacca</i>	1.04	1.20	1.32	1.18	0.56	0.64	0.40	0.53	0.80	0.72	1.00	0.84	0.85
5		Potamidae	<i>C. obtusa</i>	0.08	0.00	0.00	0.02	0.00	0.00	0.04	0.01	0.12	0.08	0.00	0.06	0.03
6			<i>T. telescopium</i>	0.28	0.48	0.36	0.37	0.08	0.20	0.00	0.09	0.20	0.12	0.24	0.18	0.11
7			<i>T. palustris</i>	1.20	1.04	1.56	1.26	0.60	0.68	0.65	0.61	1.00	1.32	1.16	1.16	1.01
	<b>Amount</b>			<b>7.12</b>	<b>6.80</b>	<b>7.68</b>	<b>7.20</b>	<b>2.84</b>	<b>2.56</b>	<b>1.68</b>	<b>2.36</b>	<b>4.64</b>	<b>4.76</b>	<b>4.48</b>	<b>4.62</b>	<b>4.72</b>

**Table 4. Results Index Diversity (H') on every station****a.1 Muddy (A1)**

No	Species	this	this/N	In this/N	H'
1	<i>C. aurisfelis</i>	50	0.280898876	- 1.2697605450	- 0.3566743100
2	<i>C. nucleus</i>	55	0.308988764	- 1.174450365	- 0.362891967
3	<i>L. articulated</i>	8	0.044943820	- 3.102342009	- 0.139431102
4	<i>N. violacca</i>	26	0.146067416	- 1.923687012	- 0.280987991
5	<i>C. obtusa</i>	2	0.011235955	- 4.4886363700	- 0.050434117
6	<i>T.telescopium</i>	7	0.039325843	- 3.235873401	- 0.127253448
7	<i>T. palustris</i>	30	0.168539326	- 1.780586169	- 0.300098792
	<i>Total</i>	178			1.617771726

**a.2 Muddy (A2)**

No	Species	this	this/N	In this/N	H'
1	<i>C. aurisfelis</i>	53	0.311764706	- 1.165506523	- 0.363363799
2	<i>C. nucleus</i>	45	0.264705882	- 1.329135947	- 0.351830104
3	<i>L. articulated</i>	4	0.023529412	-3.749504076	- 0.088223625
4	<i>N. violacca</i>	30	0.176470588	-1.734601055	- 0.306106069
5	<i>C. obtusa</i>	0	0	0	0
6	<i>T.telescopium</i>	12	0.070588235	-2.650891787	- 0.187121773
7	<i>T. palustris</i>	26	0.152941176	-1.877701899	- 0.287177937
	<i>Total</i>	170			1.583823307

**a.3 Muddy (A3)**

No	Species	this	this/N	In this/N	H'
1	<i>C. aurisfelis</i>	46	0.239583333	-1.428853976	- 0.342329598
2	<i>C. nucleus</i>	59	0.307291667	-1.179957928	- 0.362591238
3	<i>L. articulated</i>	6	0.031250000	-3.465735903	- 0.108304247
4	<i>N. violacca</i>	33	0.171875000	-1.760987811	- 0.30266978
5	<i>C. obtusa</i>	0	0	0	0
6	<i>T.telescopium</i>	9	0.046875000	-3.060270795	- 0.143450194
7	<i>T. palustris</i>	39	0.203125000	-1.593933726	- 0.323767788
	<i>Total</i>	192			1.583112845

**b.1 Sandy (B1)**

No	Species	this	this/N	In this/N	H'
1	<i>C. aurisfelis</i>	15	0.211267606	- 1.554629676	- 0.328442889
2	<i>C. nucleus</i>	25	0.352112676	- 1.043804052	- 0.367536638
3	<i>L. articulated</i>	0	0	0	0
4	<i>N. violacca</i>	14	0.197183099	- 1.623622547	- 0.320150925
5	<i>C. obtusa</i>	0	0	0	0
6	<i>T.telescopium</i>	2	0.028169014	- 3.569532696	- 0.100550217
7	<i>T. palustris</i>	15	0.211267606	- 1.554629676	- 0.328442889
	<i>Total</i>	71			1.445123558

## b.2 Sandy (B2)

No	Species	this	this/N	ln this/N	H'
1	<i>C. aurisfelis</i>	8	0.125000	- 2.079441542	- 0.259930193
2	<i>C. nucleus</i>	17	0.265625	- 1.325669739	- 0.352131025
3	<i>L. articulated</i>	1	0.015625	- 4.158883083	- 0.064982548
4	<i>N. violacca</i>	16	0.250000	- 1.386294361	- 0.346573590
5	<i>C. obtusa</i>	0	0	0	0
6	<i>T.telescopium</i>	5	0.078125	- 2.549445171	- 0.199175404
7	<i>T. palustris</i>	17	0.265625	- 1.325669739	- 0.352131025
	<i>Total</i>	64			1.574923784

## b.3 Sandy (B3)

No	Species	this	this/N	ln this/N	H'
1	<i>C. aurisfelis</i>	9	0.214285714	- 1.540445041	- 0.330095366
2	<i>C. nucleus</i>	8	0.190476190	- 1.658228077	- 0.315852967
3	<i>L. articulated</i>	0	0	0	0
4	<i>N. violacca</i>	10	0.238095238	- 1.435084525	- 0.341686792
5	<i>C. obtusa</i>	1	0.023809524	3.737669618	- 0.088992134
6	<i>T.telescopium</i>	0	0	0	0
7	<i>T. palustris</i>	14	0.333333333	- 1.098612289	- 0.366204096
	<i>Total</i>	42			1.442831355

## c.1 Sandy-Muddy (C1)

No	Species	this	this/N	ln this/N	H'
1	<i>C. aurisfelis</i>	30	0.258620690	- 1.352392809	- 0.349756761
2	<i>C. nucleus</i>	28	0.241379310	- 1.421385681	- 0.343093095
3	<i>L. articulated</i>	5	0.043103448	- 3.144152279	- 0.135523805
4	<i>N. violacca</i>	20	0.172413793	- 1.757857918	- 0.303078951
5	<i>C. obtusa</i>	3	0.025862069	- 3.654977902	- 0.094525291
6	<i>T.telescopium</i>	5	0.043103448	- 3.144152279	- 0.135523805
7	<i>T. palustris</i>	25	0.215517241	- 1.534714366	- 0.330757407
	<i>Total</i>	116			1.692259115

## c.2 Sandy-Muddy (C2)

No	Species	this	this/N	ln this/N	H'
1	<i>C. aurisfelis</i>	33	0.277310924	- 1.282615932	- 0.355683410
2	<i>C. nucleus</i>	27	0.226890756	- 1.483286627	- 0.336544025
3	<i>L. articulated</i>	3	0.025210084	- 3.680511204	- 0.092785997
4	<i>N. violacca</i>	18	0.151260504	- 1.888751735	- 0.285693540
5	<i>C. obtusa</i>	2	0.016806723	- 4.085976313	- 0.068671871
6	<i>T.telescopium</i>	3	0.025210084	- 3.680511204	- 0.092785997
7	<i>T. palustris</i>	33	0.277310924	- 1.282615932	- 0.355683410
	<i>Total</i>	119			1.587848248

### C.3 Sandy- Muddy (C3)

No	Species	this	this/N	ln this/N	H'
1	<i>C. aurisfelis</i>	29	0.258928571	-1.351203041	-0.349865073
2	<i>C. nucleus</i>	23	0.205357143	-1.583004655	-0.325081313
3	<i>L. articulated</i>	0	0	0	0
4	<i>N. violacca</i>	25	0.223214286	-1.499623046	-0.334737287
5	<i>C. obtusa</i>	0	0	0	0
6	<i>T.telescopium</i>	6	0.053571429	-2.926739402	-0.156789611
7	<i>T. palustris</i>	29	0.258928571	-1.351203041	-0.349865073
	<i>Total</i>	112			1.516338358

Description: For all species diversity, whether on mud, sand or muddy sand substrates, it is included in the medium to low species diversity.

Category : <1 = Low

1-3 = Currently

> 3 = Height

**Table 5. Enumeration of Gastropod data at the research location.**

**a. Muddy Station – Transect A1**

No	Family	Species	Muddy Station – A1			
			Total Ind.	Density (A) ind/m <sup>2</sup>	Diversity (H')	Domination (C)
1	Ellobiidae	<i>C. aurisfelis</i>	50	2.00	- 0.356	0.079
2		<i>C. nucleus</i>	55	2.20	- 0.362	0.095
3	Littorinidae	<i>L. articulated</i>	8	0.32	- 0.139	0.002
4		<i>N. violacca</i>	26	1.04	- 0.280	0.021
5	Potamidae	<i>C. obtusa</i>	2	0.08	- 0.050	0.000
6	Ellobiidae	<i>T.telescopium</i>	7	0.28	- 0.127	0.002
7		<i>T. palustris</i>	30	1.20	- 0.300	0.028
	Total		178	7.12	1,617	0.228
	Category				Currently	There is no domination

**b. Muddy Station – Transect A2**

No	Family	Species	Muddy Station – A2			
			Total Ind.	Density (A) ind/m <sup>2</sup>	Diversity (H')	Domination (C)
1	Ellobiidae	<i>C. aurisfelis</i>	53	2.12	- 0.363	0.097
2		<i>C. nucleus</i>	45	1.84	- 0.351	0.070
3	Littorinidae	<i>L. articulated</i>	4	0.16	- 0.088	0.001
4		<i>N. violacca</i>	30	1.20	- 0.306	0.031
5	Potamidae	<i>C. obtusa</i>	0	0	0	0.000
6	Ellobiidae	<i>T.telescopium</i>	12	0.48	- 0.187	0.005
7		<i>T. palustris</i>	26	1.04	- 0.287	0.023
	Total		170	6.80	1,583	0.227
	Category				Currently	There is no domination

**c. Muddy Station – Transect A3**

No	Family	Species	Muddy Station – A3			
			Total Ind.	Density (A) ind/m <sup>2</sup>	Diversity (H')	Domination (C)
1	Ellobiidae	<i>C. aurisfelis</i>	46	1.48	- 0.342	0.057
2		<i>C. nucleus</i>	59	2.36	- 0.362	0.094
3	Littorinidae	<i>L. articulated</i>	6	0.24	- 0.108	0.001
4		<i>N. violacca</i>	33	1.32	- 0.302	0.030
5	Potamidae	<i>C. obtusa</i>	0	0	0	0.000
6	Ellobiidae	<i>T.telescopium</i>	9	0.36	- 0.143	0.002
7		<i>T. palustris</i>	39	1.56	- 0.323	0.041
	Total		192	7.68	1,583	0.226
	Category				Currently	There is no domination

**d . Sandy Station – Transect B1**

No	Family	Species	Sandy Station – B1			
			Total Ind.	Density (A) ind/m <sup>2</sup>	Diversity (H')	Domination (C)
1	Ellobiidae	<i>C. aurisfelis</i>	15	0.60	- 0.328	0.045
2		<i>C. nucleus</i>	25	1.00	- 0.367	0.124
3	Littorinidae	<i>L. articulated</i>	0	0	0	0
4		<i>N. violacca</i>	14	0.56	- 0.320	0.039
5	Potamidae	<i>C. obtusa</i>	0	0	0	0
6	Ellobiidae	<i>T.telescopium</i>	2	0.08	- 0.100	0.001
7		<i>T. palustris</i>	15	0.60	- 0.328	0.045
	<i>Total</i>		72	2.84	1,445	0.253
	Category				Currently	There is no domination

**e. Sandy Station – Transect B2**

No	Family	Species	Sandy Station – B2			
			Total Ind.	Density (A) ind/m <sup>2</sup>	Diversity (H')	Domination (C)
1	Ellobiidae	<i>C. aurisfelis</i>	8	0.32	- 0.259	0.016
2		<i>C. nucleus</i>	17	0.68	- 0.352	0.071
3	Littorinidae	<i>L. articulated</i>	1	0.04	- 0.064	0
4		<i>N. violacca</i>	16	0.64	- 0.346	0.063
5	Potamidae	<i>C. obtusa</i>	0	0	0	0
6	Ellobiidae	<i>T.telescopium</i>	5	0.20	- 0.199	0.006
7		<i>T. palustris</i>	17	0.68	- 0.352	0.071
	<i>Total</i>		64	2.56	1,574	0.226
	Category				Currently	There is no domination

**f. Sandy Station – Transect B3**

No	Family	Species	Sandy Station – B3			
			Total Ind.	Density (A) ind/m <sup>2</sup>	Diversity (H')	Domination (C)
1	Ellobiidae	<i>C. aurisfelis</i>	9	0.36	- 0.330	0.046
2		<i>C. nucleus</i>	8	0.32	- 0.315	0.036
3	Littorinidae	<i>L. articulated</i>	0	0	0	0
4		<i>N. violacca</i>	10	0.40	- 0.341	0.057
5	Potamidae	<i>C. obtusa</i>	1	0.04	- 0.088	0.001
6	Ellobiidae	<i>T.telescopium</i>	0	0	0	0
7		<i>T. palustris</i>	14	0.65	- 0.366	0.111
	<i>Total</i>		42	1.68	1,442	0.251
	Category				Currently	There is no domination

### g . Sandy-Muddy Station – Transect C1

No	Family	Species	Sandy-muddy Station – C1			
			Total Ind.	Density (A) ind/m <sup>2</sup>	Diversity (H')	Domination (C)
1	Ellobiidae	<i>C. aurisfelis</i>	30	1.20	- 0.034	0.067
2		<i>C. nucleus</i>	28	1.12	- 0.034	0.058
3	Littorinidae	<i>L. articulated</i>	5	0.20	- 0.135	0.002
4		<i>N. violacca</i>	20	0.80	- 0.303	0.030
5	Potamidae	<i>C. obtusa</i>	3	0.12	- 0.094	0.001
6	Ellobiidae	<i>T.telescopium</i>	5	0.20	- 0.135	0.002
7		<i>T. palustris</i>	25	1.00	- 0.330	0.046
	<i>Total</i>		116	4.64	1,692	0.206
	Category				Currently	There is no domination

### h. Sandy-Muddy Station – Transect C2

No	Family	Species	Sandy-muddy Station – C2			
			Total Ind.	Density (A) ind/m <sup>2</sup>	Diversity (H')	Domination (C)
1	Ellobiidae	<i>C. aurisfelis</i>	33	1.32	- 0.355	0.007
2		<i>C. nucleus</i>	27	1.08	- 0.336	0.051
3	Littorinidae	<i>L. articulated</i>	3	0.12	- 0.092	0.001
4		<i>N. violacca</i>	18	0.72	- 0.285	0.023
5	Potamidae	<i>C. obtusa</i>	2	0.08	- 0.068	0
6	Ellobiidae	<i>T.telescopium</i>	3	0.12	- 0.092	0.001
7		<i>T. palustris</i>	33	1.32	- 0.355	0.077
	<i>Total</i>		119	4.76	1,587	0.230
	Category				Currently	There is no domination

### i. Sandy-Muddy Station – Transect C3

No	Family	Species	Sandy-Muddy Station – C3			
			Total Ind.	Density (A) ind/m <sup>2</sup>	Diversity (H')	Domination (C)
1	Ellobiidae	<i>C. aurisfelis</i>	29	1.16	- 0.349	0.067
2		<i>C. nucleus</i>	23	0.92	- 0.325	0.042
3	Littorinidae	<i>L. articulated</i>	0	0	0	0
4		<i>N. violacca</i>	25	1.00	- 0.344	0.050
5	Potamidae	<i>C. obtusa</i>	0	0	0	0
6	Ellobiidae	<i>T.telescopium</i>	6	0.24	- 0.156	0.003
7		<i>T. palustris</i>	29	1.16	- 0.349	0.067
	<i>Total</i>		112	4.48	1,516	0.299
	Category				Currently	There is no domination

#### Description :

Diversity                    <1 = Low  
                                      1-3 = Currently  
                                      >3 = Tall

Dominance                 <0.5 = No Dominate  
                                      >0.5 = Dominate



**Table 5. Presence of mangrove crabs *Scylla* spp.**

**a. Abundance of mangrove crabs *Scylla* spp. (tail)**

trap	Number of mangrove crabs (ind./bubu)		
	Station 1 (A) Muddy	Station 2 (B) Sandy	Station 3 (C) Sandy-muddy
B1	2.00	1.00	0.00
B2	1.00	1.00	0.00
B3	0.00	0.00	2.00
Average	1.00	0.66	0.66

**b. Number of male and female mangrove crabs *Scylla* spp. ( tail)**

Observation station	Gender		
	Male (tail/bubu)	Female (tail/bubu)	Amount
1, Muddy (A)	2	1	3
2, Sandy (B)	2	0	2
3, Sandy-muddy (C)	1	1	2
Amount	5	2	

**c. Carapace length and weight of mangrove crabs ( *Scylla* spp.)**

Station	Carapace length, cm (Individual weight, grams)		
	1, Muddy (A)	0	0
2, Sandy (B)	8.5 and 7.3 (117.9 and 63.0)	0	0
3, Sandy-muddy (C)	0	6.5 and 7.5 (76.8 and 50.5)	0