

Figure 2.1. Locations of sampling zones. The study site was divided into three sampling zones (TC1, TC2, TC3) in Tung Chung Bay and one zone in San Tau (ST) (map generated from Google Map).

TC1



TC2



TC3



ST



Figure 2.2. Photographic record of the environment in every sampling zone.

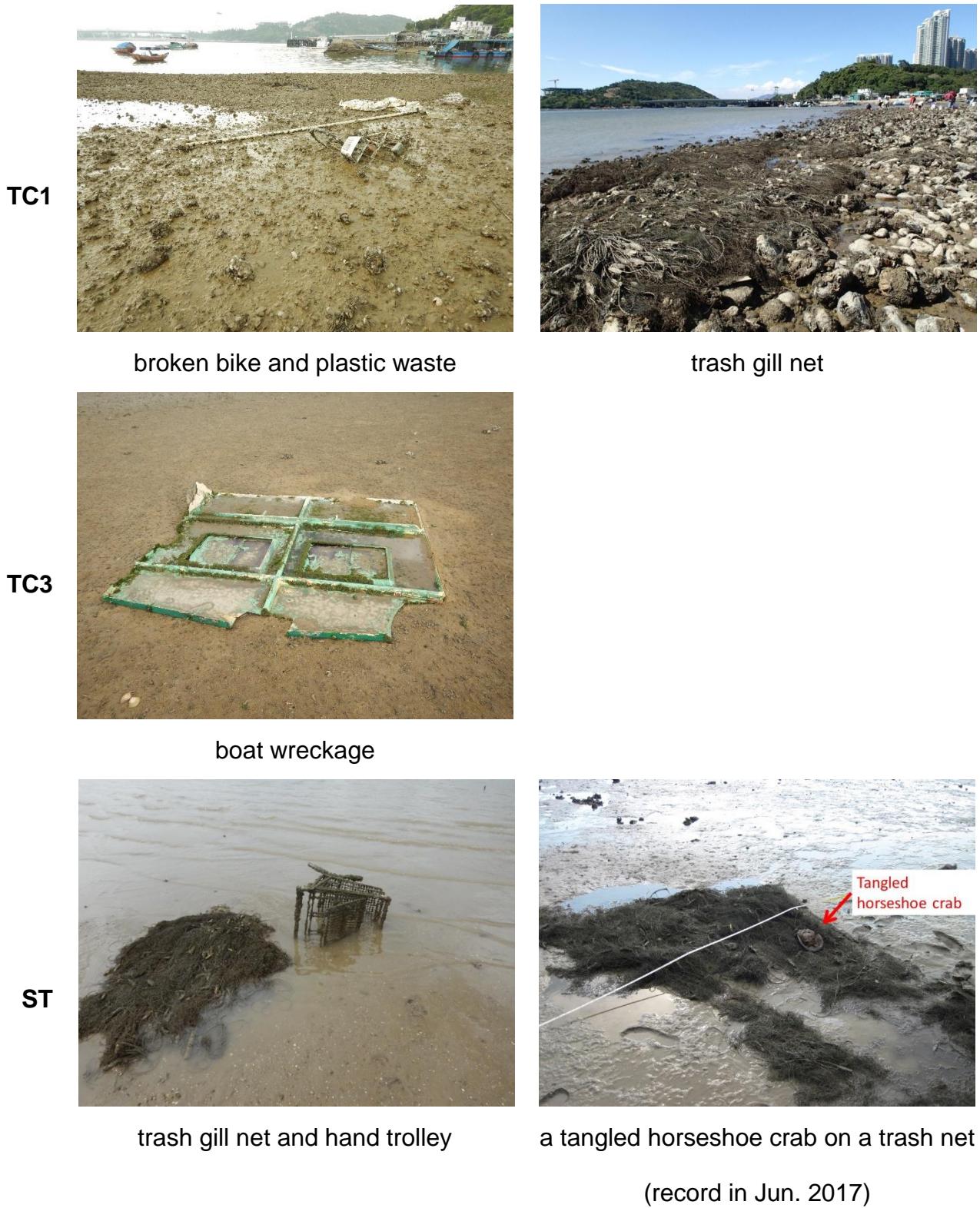


Figure 2.3. Examples of photographic record of the big trashes found on the mudflat.

TC1 *Carcinoscorpius rotundicauda*



TC1 *Tachypleus tridentatus*



Figure 3.1. Examples of photographic records of horseshoe crab (Dec. 2018)

TC3 *Carcinoscorpius rotundicauda*

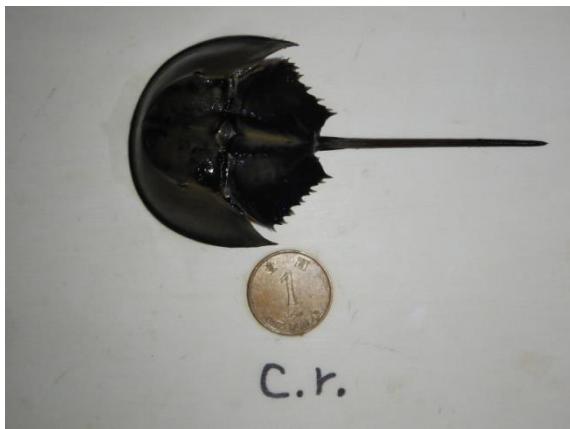


TC3 *Tachypleus tridentatus*



Figure 3.1 (Cont'd). Examples of photographic records of horseshoe crab (Dec. 2018)

ST *Carcinoscorpius rotundicauda*



ST *Tachypleus tridentatus*

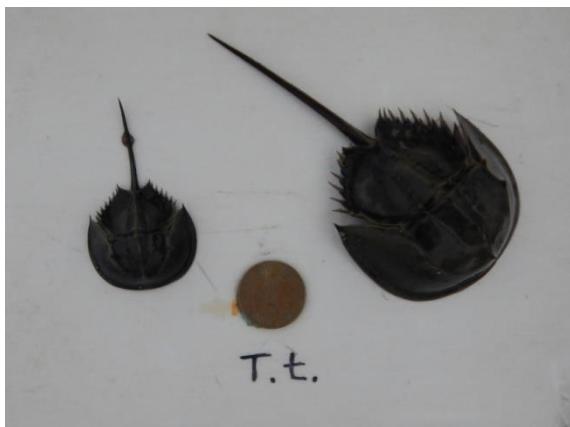


Figure 3.1 (Cont'd). Examples of photographic records of horseshoe crab (Dec. 2018)

Table 3.1. Summary of horseshoe crab survey in every sampling zone

	TC1	TC2	TC3	ST
Search duration (hr)	2	2	3	3
<i>Carcinoscorpius rotundicauda</i>				
no. of individuals	4	0	10	1
mean prosomal width (mm)	38.39	\	36.34	61.20
max. prosomal width (mm)	58.44	\	71.23	\
min. prosomal width (mm)	23.24	\	19.25	\
Search record (ind. hr ⁻¹ person ⁻¹)	1.0	0.0	1.7	0.2
<i>Tachypleus tridentatus</i>				
no. of individuals	3	0	7	3
mean prosomal width (mm)	47.06	\	34.90	49.13
max. prosomal width (mm)	56.43	\	38.73	66.72
min. prosomal width (mm)	37.37	\	26.30	39.95
Search record (ind. hr ⁻¹ person ⁻¹)	0.8	0.0	1.2	0.5

Mar. 2015 - ST



Jun. 2017 – TC2



Female



Male

Jun. 2017 - TC3



Figure 3.2. Photographic records of mating pair of *Carcinoscorpius rotundicauda*

Dec. 2017 - TC3



Jun. 2018 - TC3



Female



Male

Figure 3.2 (Cont'd). Photographic records of mating pair of *Carcinoscorpius rotundicauda*

Carcinoscorpius rotundicauda

Jun. 2017



Dec. 2017



Dec. 2018



Tachypleus tridentatus

Sep. 2017

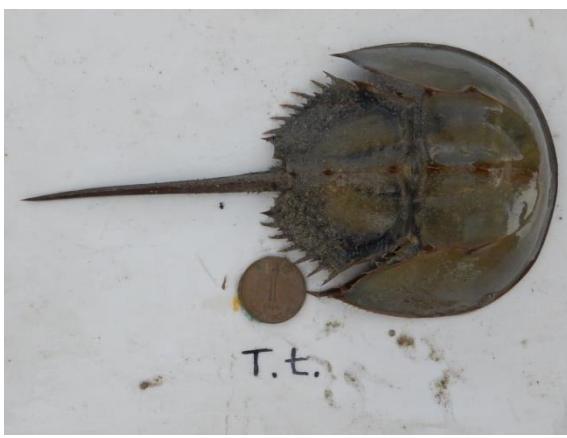


Figure 3.3. Photographic records of large individuals (>100 mm) of horseshoe crabs whose records were excluded from data analysis

TC1



TC2



Figure 3.4. Photographic records of newly hatched individuals of horseshoe crab (Sep. 2018)

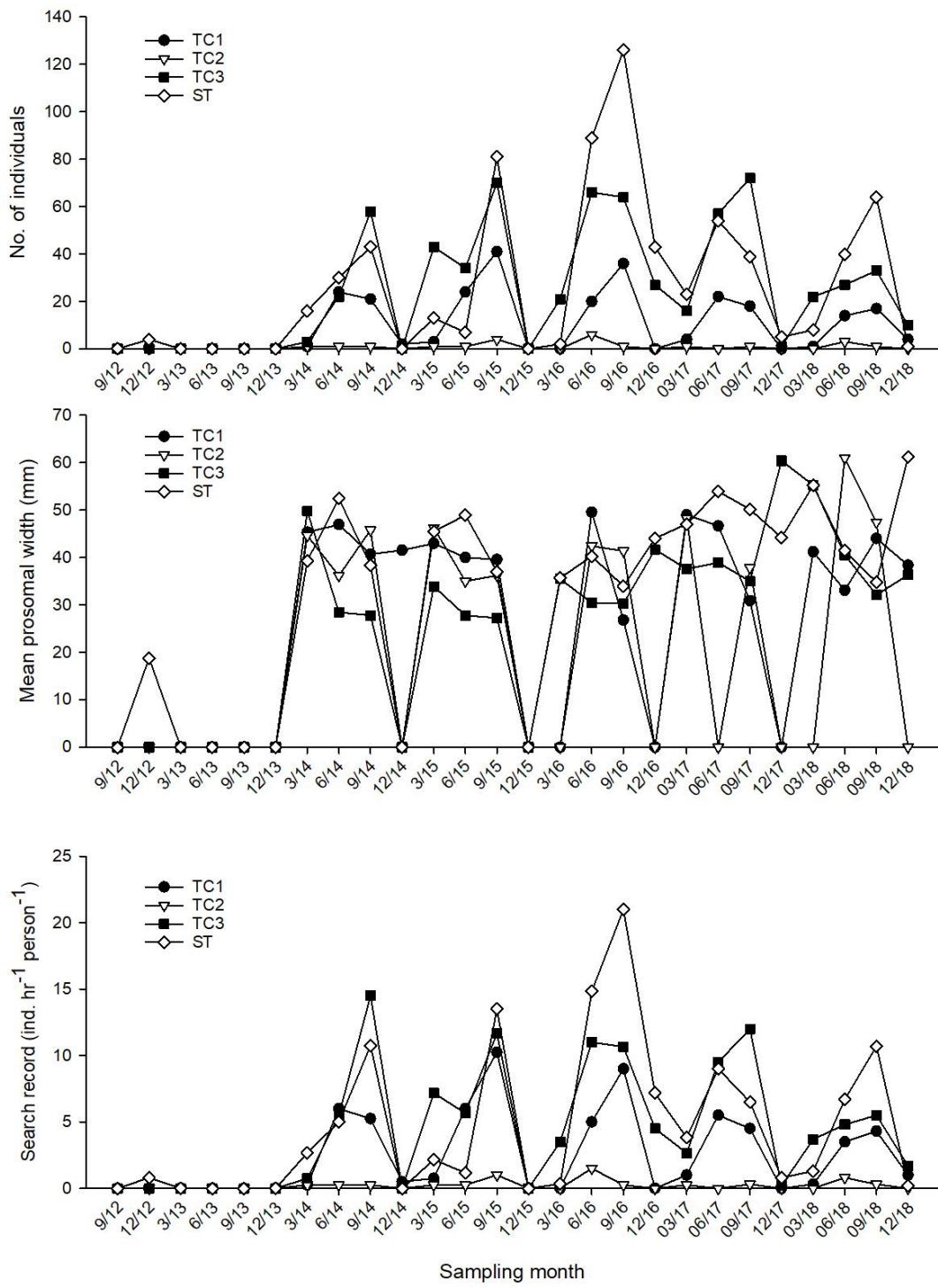


Figure 3.5. Changes of number of individuals, mean prosomal width and search record of horseshoe crab *Carcinoscorpius rotundicauda* in every sampling zone along the sampling months

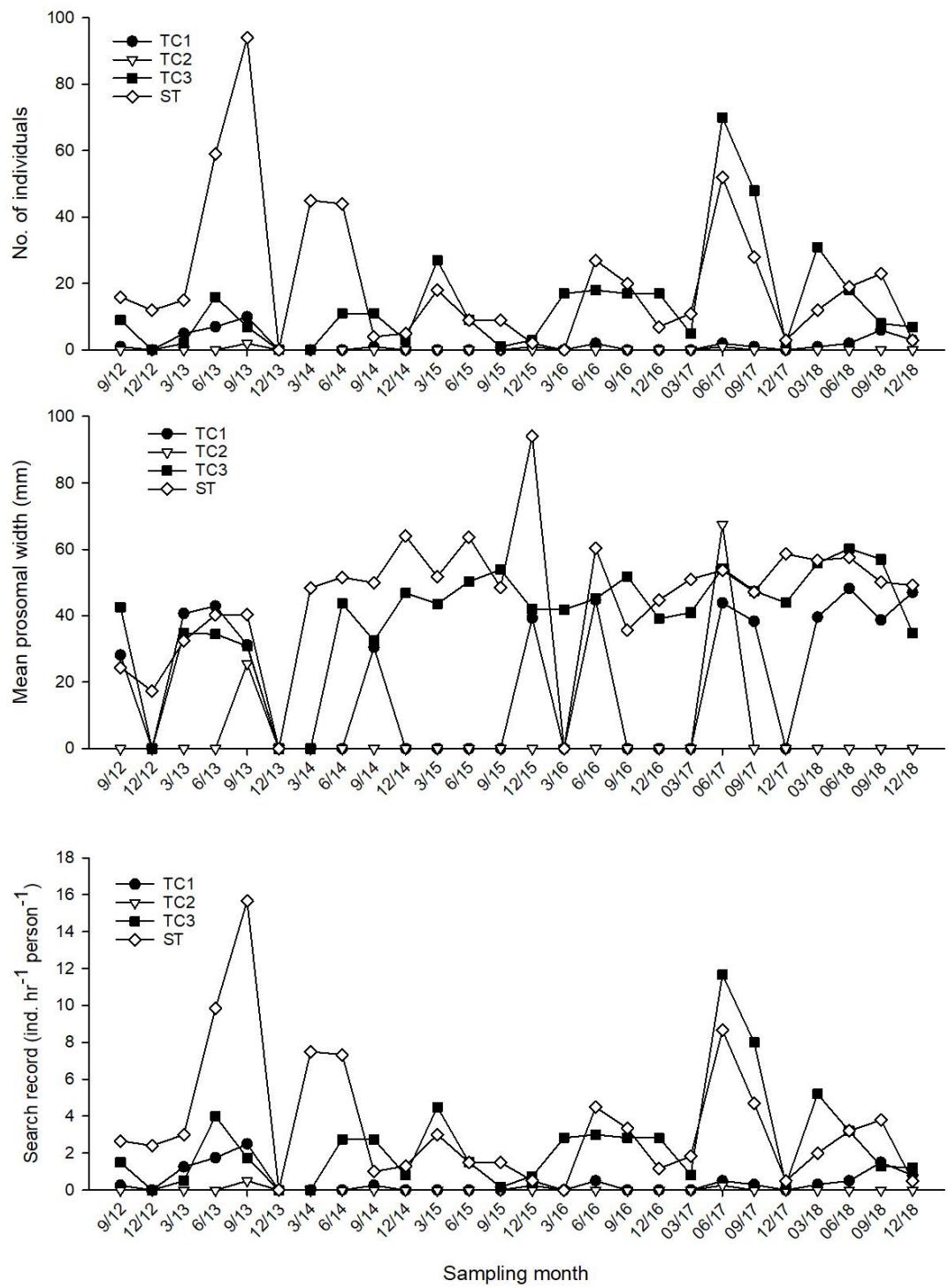


Figure 3.6. Changes of number of individuals, mean prosomal width and search record of horseshoe crab *Tachypleus tridentatus* in every sampling zone along the sampling months

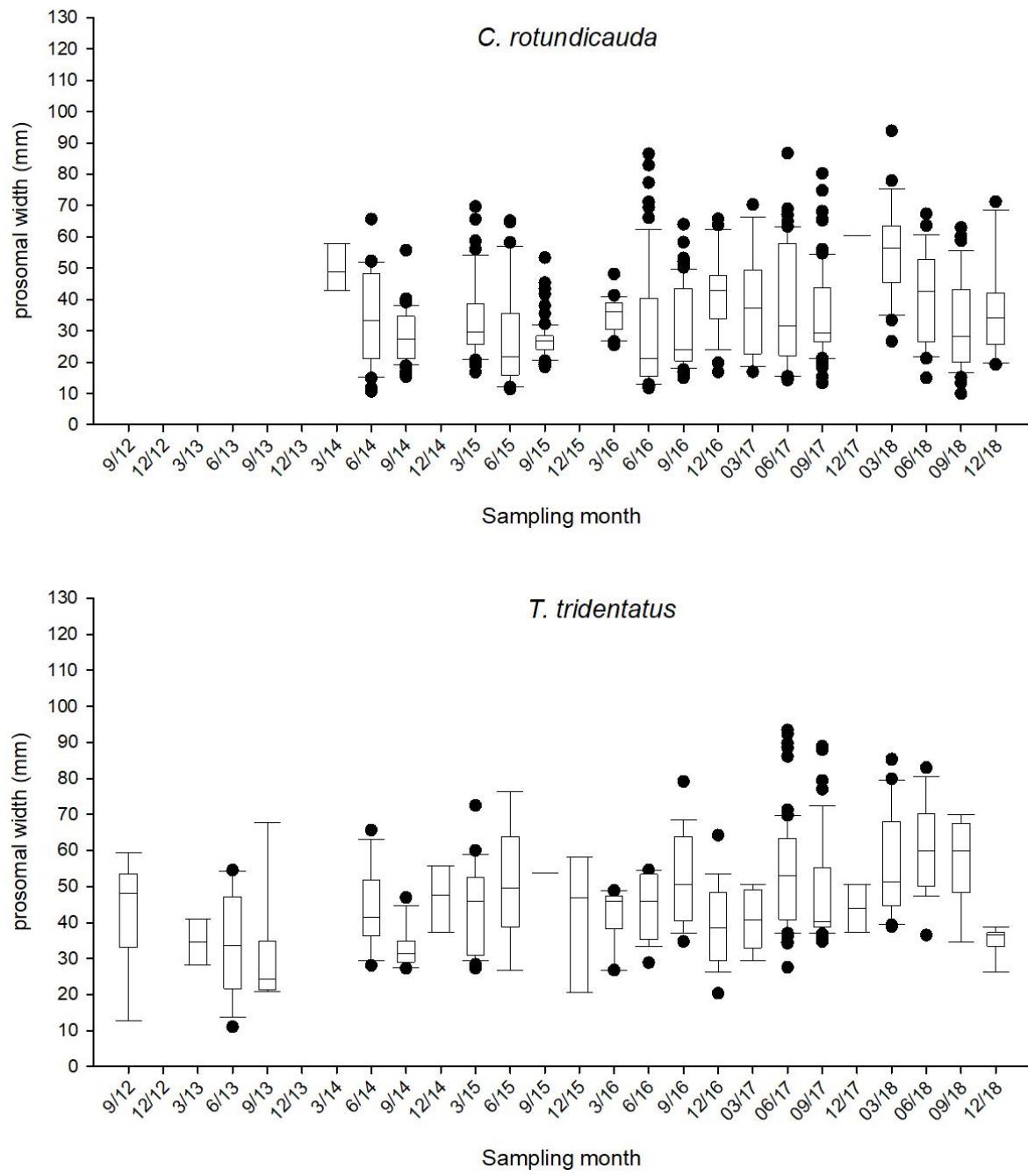


Figure 3.7. Box plot of prosomal width of horseshoe crab in the sampling zone TC3 along the sampling months. (The box represents 50% of the sample (upper to lower quartile) with a middle line showing the median value. The upper whisker and lower whisker showed the 25% of sample above upper quartile and below the lower quartile respectively)

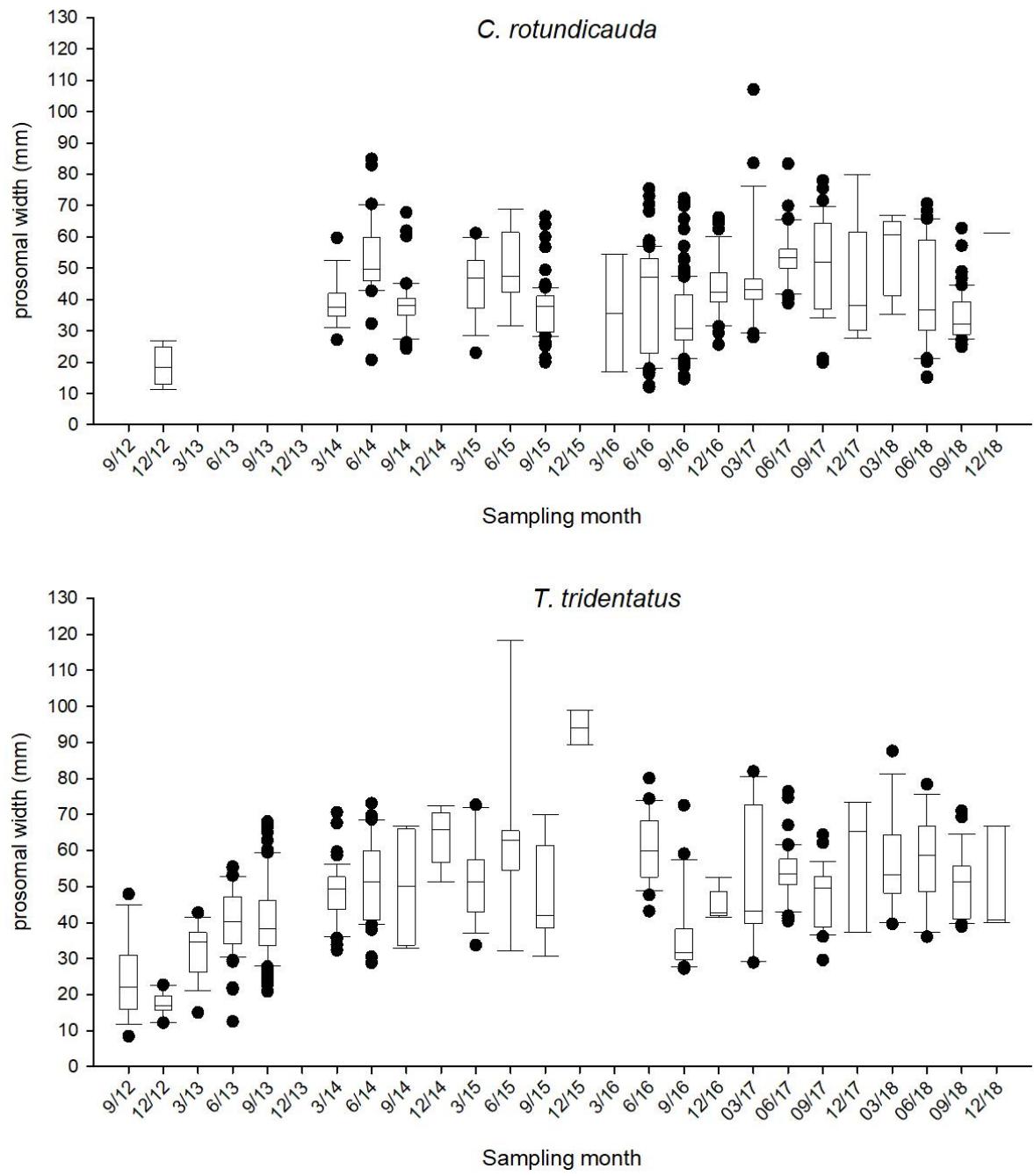


Figure 3.8. Box plot of prosomal width of horseshoe crab in the sampling zone ST along the sampling months. (The box represents 50% of the sample (upper to lower quartile) with a middle line showing the median value. The upper whisker and lower whisker showed the 25% of sample above upper quartile and below the lower quartile respectively.)

TC3 single patch of *Halophila ovalis*



TC3 - ST extensive patch of *Halophila ovalis*



ST medium, horizontal patch of *Zostera japonica*



Figure 3.9. Examples of photographic records of seagrass beds (record in Jun. 2017)

Table 3.2. Summary of seagrass beds survey

Sampling zone	ST <i>Halophila ovalis</i>
Number of patches	2
Total area (m²)	404
Average area (m²)	202

ST Horizontal patches of *Halophila ovalis*



Figure 3.10. Photographic record of seagrass beds in present survey.

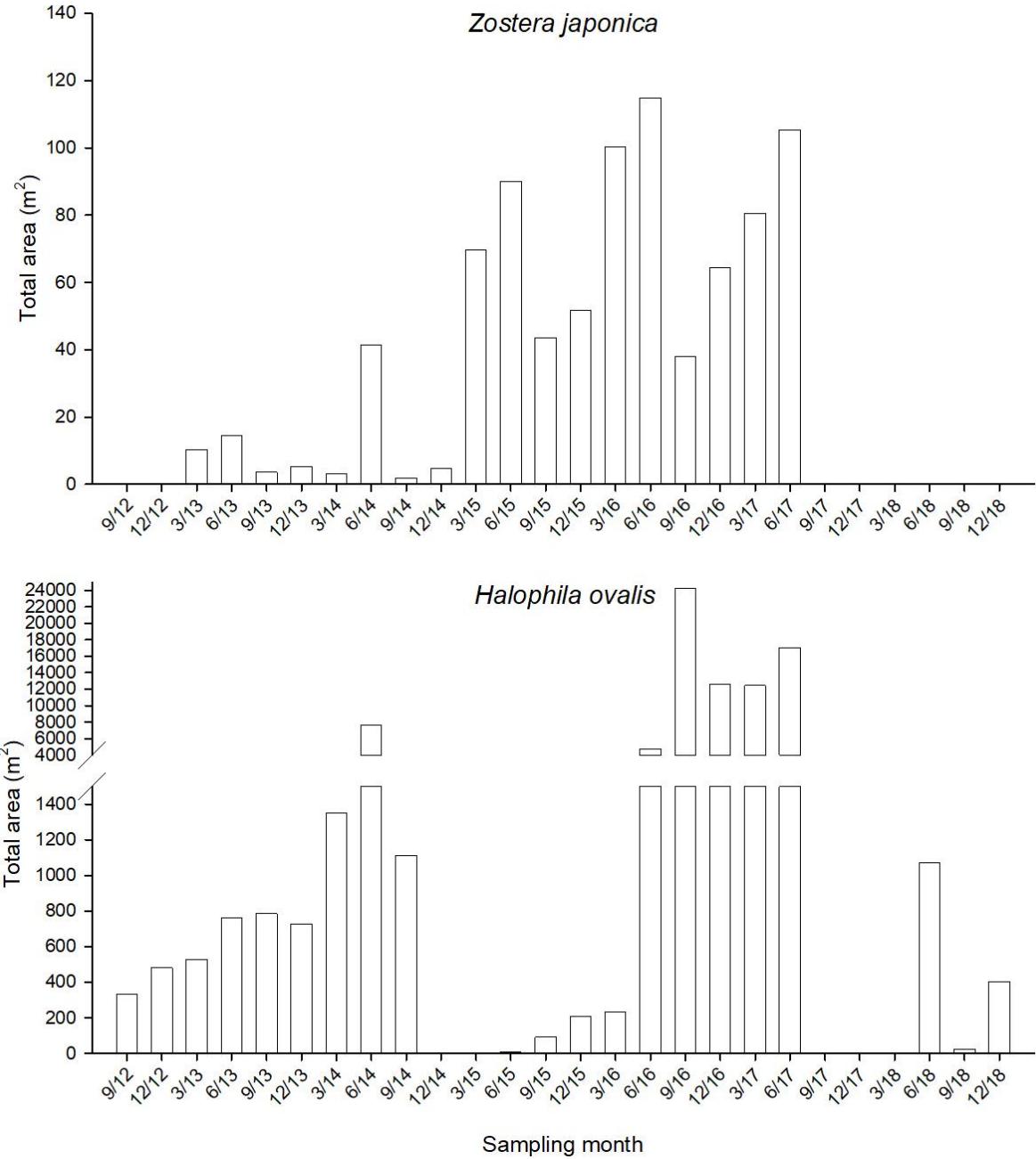


Figure 3.11. Temporal changes of estimated total area of seagrass beds in ST

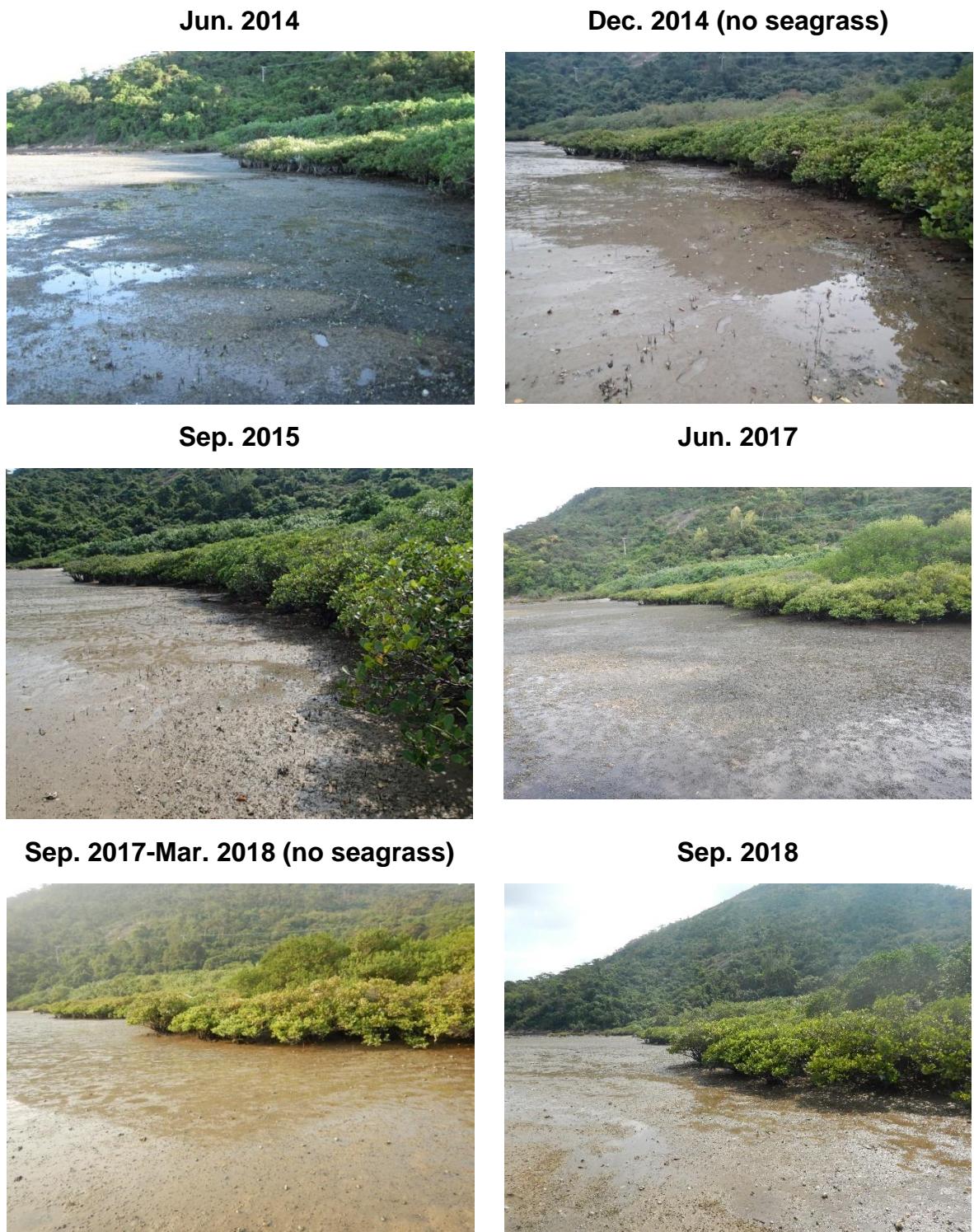


Figure 3.12. Comparison of pictures taken in different sampling months shows the successive disappearance and recolonization of seagrass beds. The picture of present survey (Dec. 2018) was lacking due to night-dawn survey time.

Table 3.3. *Relative distribution (%) of types of substratum along the horizontal transect at every tidal level and in every sampling zone.*

Sampling zone	Tidal level	Percentage		
		Gravels and Boulders	Sands	Soft mud
TC1	H	80	10	10
	M	90	10	
	L	40	20	40
TC2	H	20	60	20
	M	40		60
	L		20	80
TC3	H		70	30
	M		40	60
	L	90		10
ST	H	100		
	M	50	50	
	L	20	80	

H: 2.0 m above C.D.; M: 1.5 m above C.D.; L: 1.0 m above C.D.

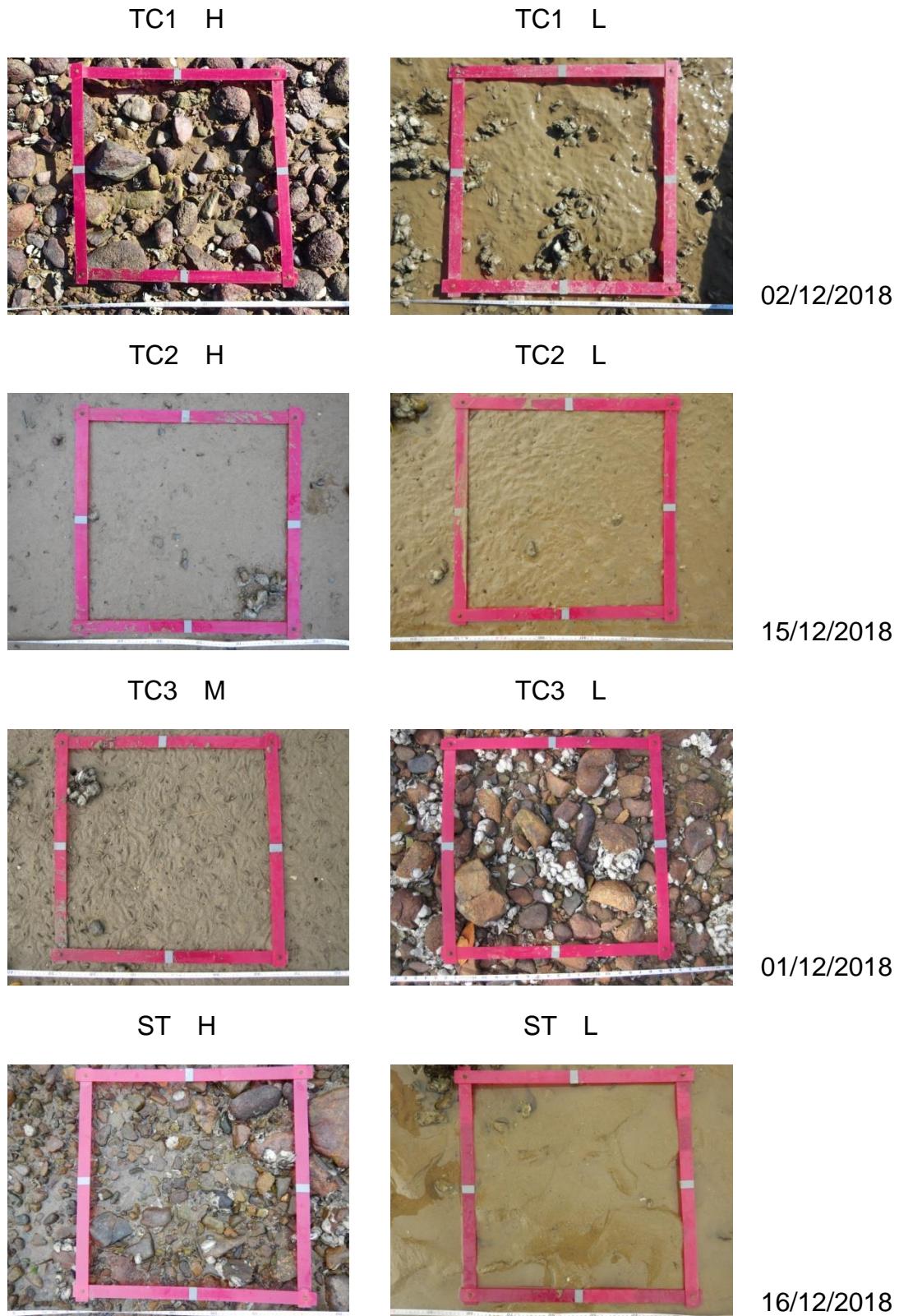


Figure 3.13. Examples of photographic records of quadrat for intertidal soft shore community survey (H: 2.0 m above C.D.; M: 1.5 m above C.D.; L: 1.0 m above C.D.)

Table 3.4. Total abundance, density and number of taxon of every phylum

Phylum	Total Abundance	%	Density (ind. m ⁻²)	Number of taxon
<i>Dec. 2018</i>				
Mollusca	14217	98.5	474	33
Arthropoda	114	0.8	4	10
Annelida	70	0.5	2	9
Sipuncula	13	0.1	0	1
Nemertea	11	0.1	0	1
Cnidaria	2	0.0	0	1
Chordata	2	0.0	0	2
Total	14429			

0.0 %: Total abundance of the phylum is less than 0.1% of relative abundance.

0 ind. m⁻²: Density of the phylum is less than 1 ind. m⁻².

Table 3.5. The number of individuals, relative abundance (percentage) and density of each phylum in every sampling zone

Phylum	TC1	%	Density (ind. m ⁻²)	TC2	%	Density (ind. m ⁻²)	TC3	%	Density (ind. m ⁻²)	ST	%	Density (ind. m ⁻²)
Annelida	12	0.3	2	20	0.9	3	36	0.8	5	2	0.1	0
Arthropoda	30	0.6	4	16	0.7	2	49	1.1	7	19	0.6	3
Chordata				1	0.0	0				1	0.0	0
Cnidaria	1	0.0	0							1	0.0	0
Mollusca	4690	99.0	625	2152	98.0	287	4337	97.9	578	3038	99.1	405
Nemertea	1	0.0	0	3	0.1	0	3	0.1	0	4	0.1	1
Sipuncula	4	0.1	1	3	0.1	0	6	0.1	1			
Sub-total	4738			2195			4431			3065		

0.0 %: Total abundance of the phylum is less than 0.1% of relative abundance of the sampling zone.

0 ind. m⁻²: Density of the phylum is less than 1 ind. m⁻² of the sampling zone.

Table 3.6. The abundant species (relative abundance >10%) in every sampling zone

Sampling zone TC1	Group	Species	Mean density (ind. m ⁻²)	Relative abundance (%)	Cumulative relative abundance (%)
High	G	<i>Batillaria multiformis</i>	514	68	68
	G	<i>Pirenella incisa</i>	98	13	81
Mid	G	<i>Monodonta labio</i>	184	33	33
	G	<i>Batillaria multiformis</i>	156	28	61
	Bi	<i>Saccostrea cucullata</i>	86	16	77
Low	Bi	<i>Saccostrea cucullata</i>	207	35	35
	G	<i>Pirenella incisa</i>	103	17	53
	G	<i>Batillaria zonalis</i>	75	13	65
	G	<i>Lunella coronata</i>	61	10	76

Bi = Bivalve, G = Gastropod

Table 3.6 (Cont'd). The abundant species (relative abundance >10%) in every sampling zone

Sampling zone TC2	Group	Species	Mean density (ind. m ⁻²)	Relative abundance (%)	Cumulative relative abundance (%)
High	G	<i>Pirenella incisa</i>	100	28	28
	Bi	<i>Saccostrea cucullata</i>	68	19	47
	G	<i>Pirenella asiatica</i>	63	17	64
	G	<i>Batillaria zonalis</i>	45	13	77
	G	<i>Batillaria multiformis</i>	40	11	88
Mid	Bi	<i>Saccostrea cucullata</i>	124	36	36
	G	<i>Pirenella incisa</i>	63	18	54
	G	<i>Batillaria zonalis</i>	49	14	68
Low	G	<i>Batillaria zonalis</i>	70	41	41
	Bi	<i>Saccostrea cucullata</i>	31	18	59
	G	<i>Pirenella asiatica</i>	19	11	69

Bi = Bivalve, G = Gastropod

Table 3.6 (Cont'd). The abundant species (relative abundance >10%) in every sampling zone

Sampling zone TC3	Group	Species	Mean density (ind. m ⁻²)	Relative abundance (%)	Cumulative relative abundance (%)
High	G	<i>Pirenella incisa</i>	365	64	64
	G	<i>Batillaria multiformis</i>	80	14	78
	G	<i>Pirenella asiatica</i>	67	12	90
Mid	G	<i>Pirenella incisa</i>	233	47	47
	G	<i>Pirenella asiatica</i>	126	25	72
	G	<i>Batillaria multiformis</i>	82	16	88
Low	Bi	<i>Saccostrea cucullata</i>	266	38	38
	G	<i>Monodonta labio</i>	220	31	69
	G	<i>Lunella coronata</i>	77	11	80

Bi = Bivalve, G = Gastropod

Table 3.6 (Cont'd). The abundant species (relative abundance >10%) in every sampling zone

Sampling zone ST	Group	Species	Mean density (ind. m ⁻²)	Relative abundance (%)	Cumulative relative abundance (%)
High	G	<i>Batillaria multiformis</i>	123	26	26
	G	<i>Monodonta labio</i>	97	20	46
	G	<i>Lunella coronata</i>	52	11	57
	G	<i>Clypeomorus bifasciata</i>	50	10	67
Mid	Bi	<i>Saccostrea cucullata</i>	143	28	28
	G	<i>Pirenella incisa</i>	82	16	44
	G	<i>Monodonta labio</i>	77	15	58
	G	<i>Lunella coronata</i>	76	15	73
	G	<i>Pirenella asiatica</i>	74	14	87
Low	Bi	<i>Saccostrea cucullata</i>	52	22	22
	G	<i>Pirenella incisa</i>	44	19	41
	G	<i>Monodonta labio</i>	36	16	57
	G	<i>Lunella coronata</i>	25	11	68

Bi = Bivalve, G = Gastropod

Table 3.7. Mean values of species number, density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) at every tidal level and in every sampling zone

Sampling zone	Tidal level	Mean species number (spp. 0.25 m ⁻²)	Mean species number across tidal levels	Mean density (ind. m ⁻²)	Mean density across tidal levels	Mean H'	Mean H' across tidal levels	Mean J	Mean J across tidal levels
TC1	H	5		751		0.9		0.6	
	M	8	8	555	632	1.5	1.3	0.7	0.7
	L	10		589		1.6		0.7	
TC2	H	6		360		1.4		0.8	
	M	7	6	345	293	1.3	1.3	0.7	0.7
	L	6		173		1.1		0.7	
TC3	H	6		570		1.0		0.6	
	M	6	7	501	591	1.1	1.2	0.6	0.6
	L	10		701		1.5		0.7	
ST	H	9		477		1.8		0.8	
	M	10	9	518	409	1.7	1.6	0.8	0.8
	L	7		231		1.3		0.7	

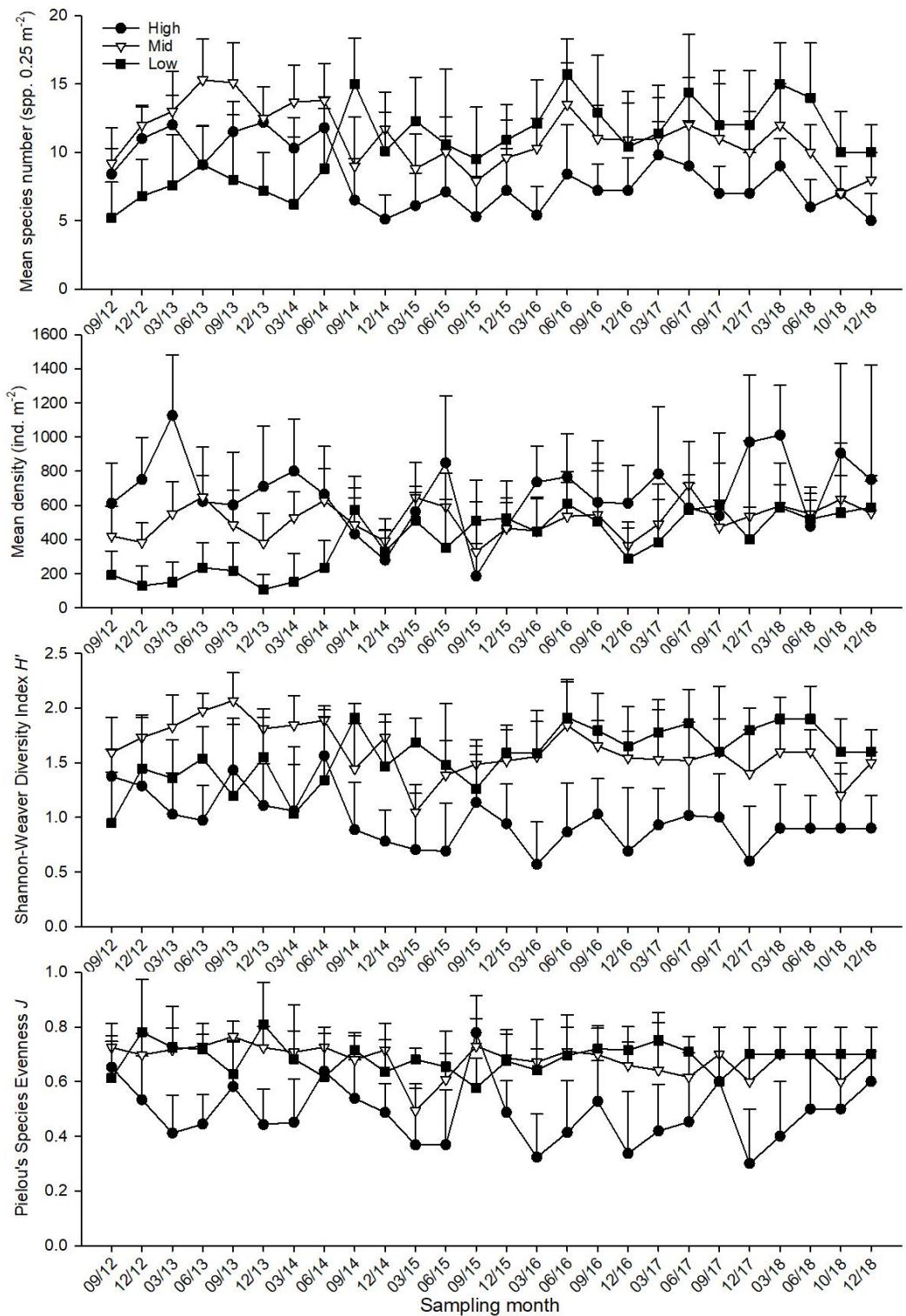


Figure 3.14. Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD) at every tidal level in sampling zone TC1

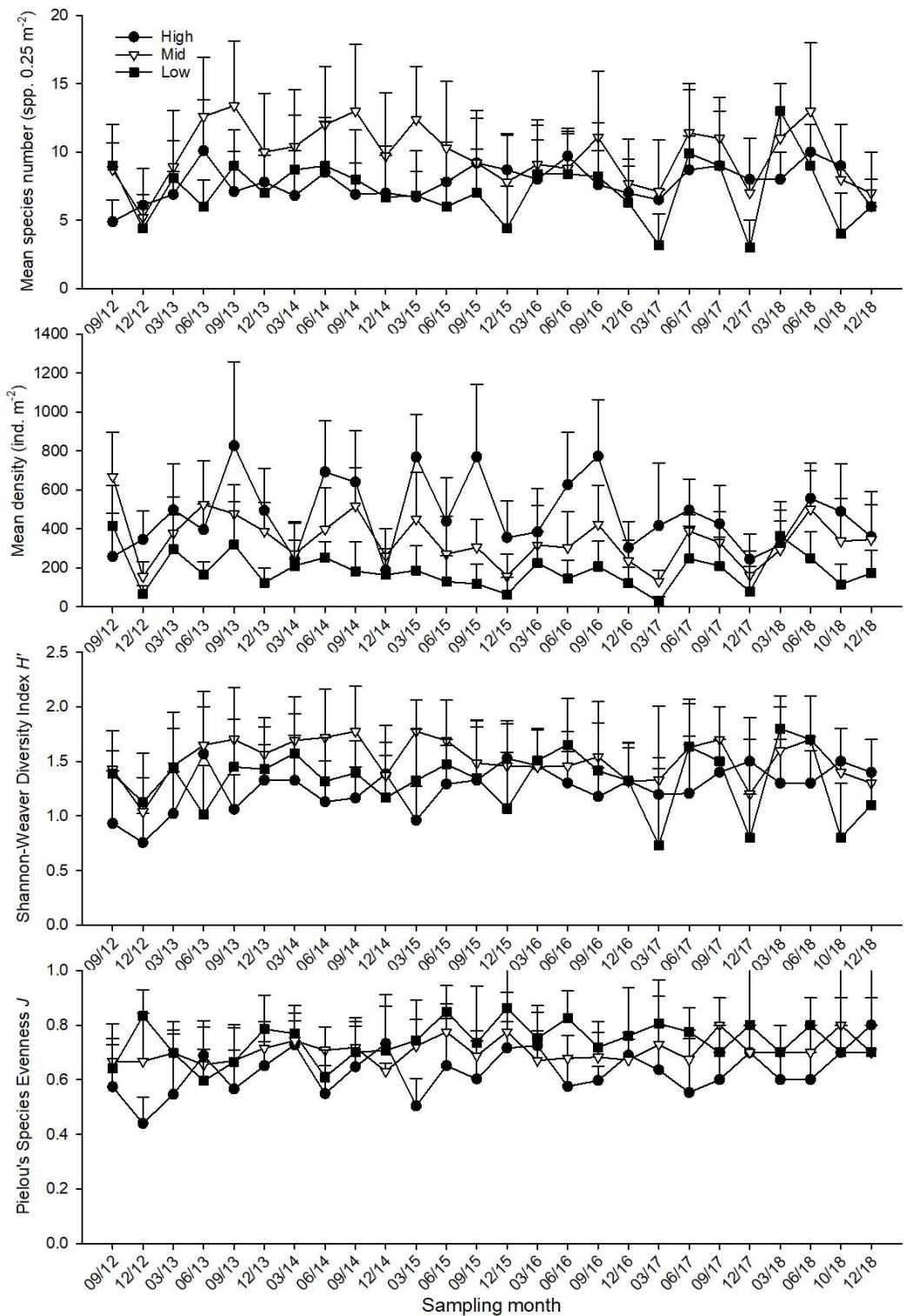


Figure 3.15. Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD) at every tidal level in sampling zone TC2

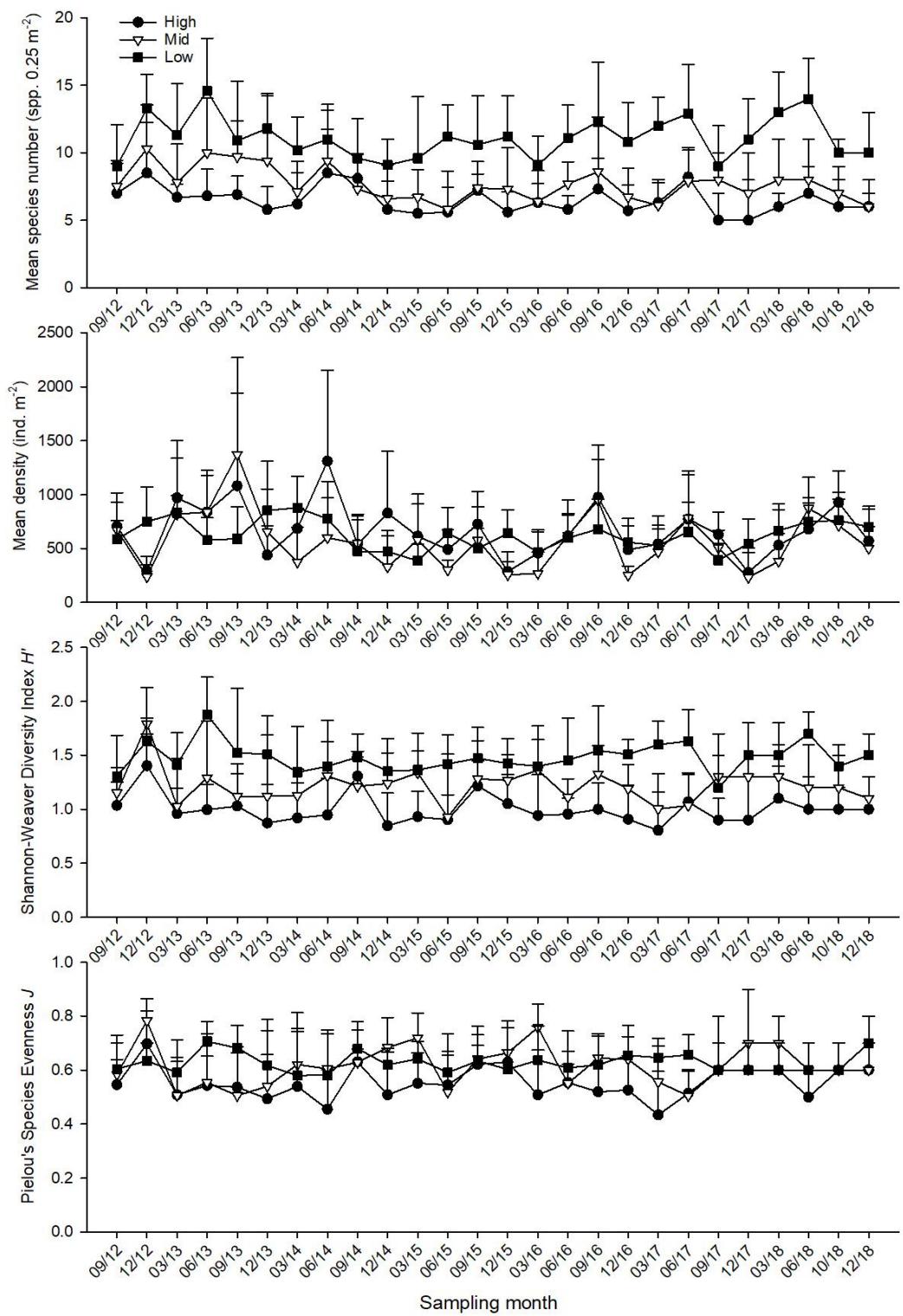


Figure 3.16. Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD) at every tidal level in sampling zone TC3

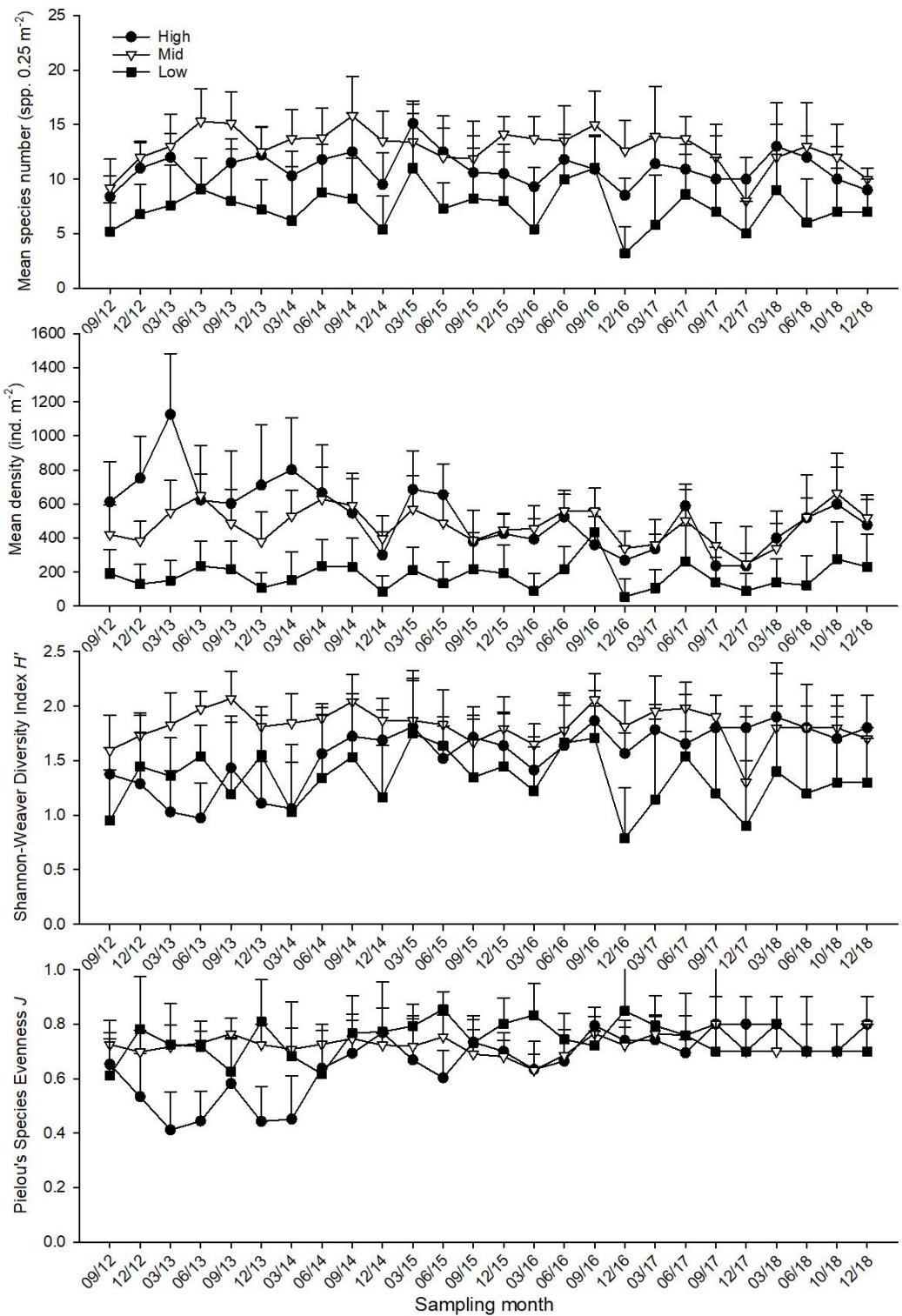
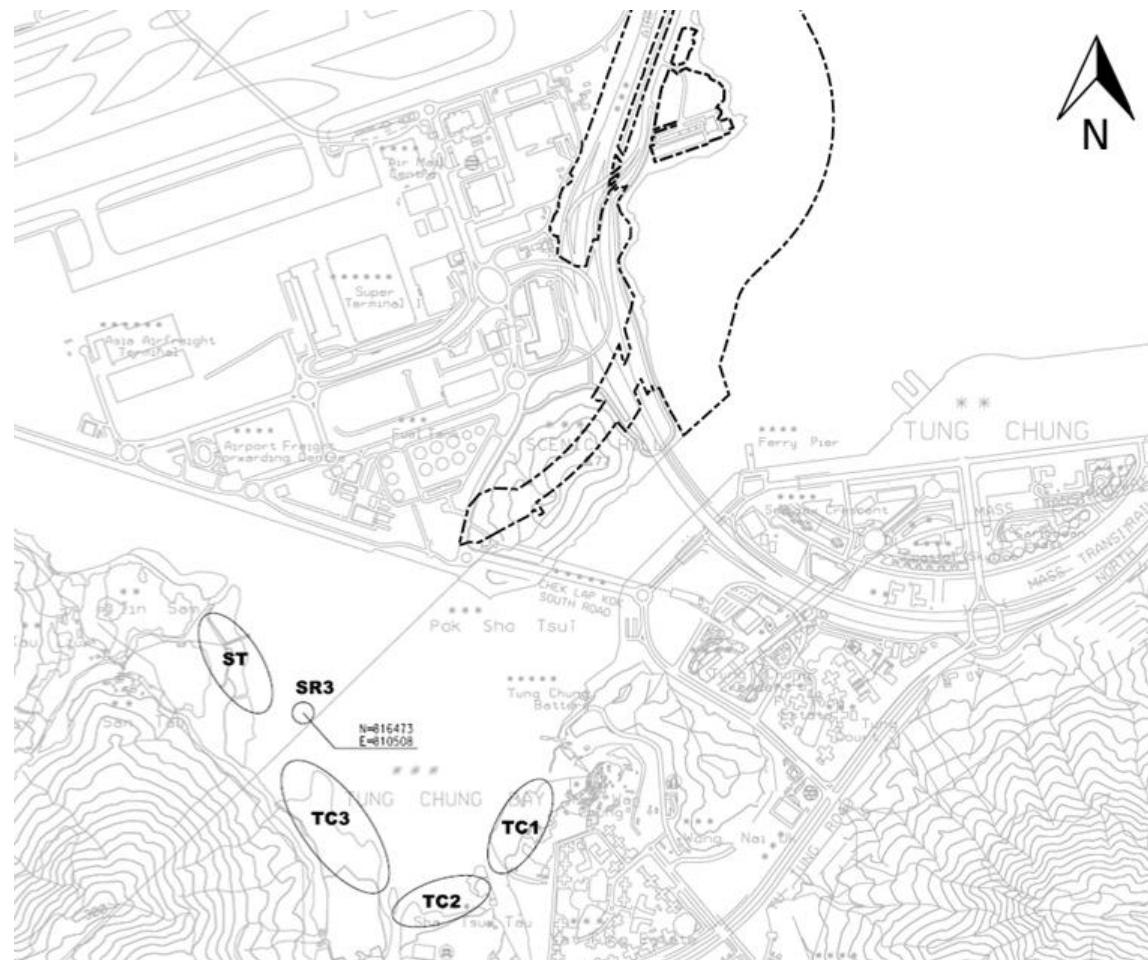


Figure 3.17. Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD) at every tidal level in sampling zone ST

Annex I. Location of sampling zones (map from ATKINS China Ltd.)



Annex II. Record of horseshoe crab survey in every sampling zone.

No.	Sub.	GPS coordinate	Record of prosomal width (mm)	
<u>Sampling site TC1 (Search hour = 2 hrs)</u>			<i>Carcinoscorpius rotundicauda</i>	<i>Tachypleus tridentatus</i>
1	M	22° 17.017' N 113° 55.986' E	23.24	47.37
2	M	22° 17.037' N 113° 55.971' E		37.37 56.43
3	M	22° 17.083' N 113° 56.047' E	24.67	
4	M	22° 17.088' N 113° 56.060' E	58.44	
5	S	22° 17.047' N 113° 56.028' E	47.19	
		No. of ind.	4	3
<u>Sampling site TC2 (Search hour = 2 hrs)</u>			<i>Carcinoscorpius rotundicauda</i>	<i>Tachypleus tridentatus</i>
No Recrod				
		No. of ind.	0	0

Ind. #: number of Individuals (individuals in a group are shown at the same row)

Underlined: size of mating pair or large individual (excluded from data analysis)

Sub.: Substratum type; G = Gravel and Boulders, M = Soft mud, S = Sand

Annex II (Cont'd). Record of horseshoe crab survey in every sampling zone.

No.	Sub.	GPS coordinate				Record of prosomal width (mm)		
<u>Sampling site TC3</u> (Search hour = 3 hrs)								
1	S	22° 16.950' N	113° 55.719' E	19.25	33.01	32.20		
2	S	22° 16.997' N	113° 55.645' E				36.55	
3	S	22° 17.004' N	113° 55.656' E	35.78			26.30	33.48
4	M	22° 16.963' N	113° 55.670' E	25.71	35.23			34.73
5	S	22° 16.968' N	113° 55.653' E					
6	M	22° 17.084' N	113° 55.643' E	44.29				
7	S	22° 17.063' N	113° 55.648' E	41.34	71.23			
8	S	22° 17.019' N	113° 55.638' E	25.31			37.23	37.27
							38.73	

Annex II (Cont'd). Record of horseshoe crab survey in every sampling zone.

No.	Sub.	GPS coordinate	Record of prosomal width (mm)
<u>Sampling site ST</u>	(Search hour = 3 hrs)		
1	S	22° 17.178' N 113° 55.470' E	<i>Carcinoscorpius rotundicauda</i> 61.20
2	S	22° 17.386' N 113° 55.459' E	<i>Tachypleus tridentatus</i> 39.95 66.72
3	S	22° 17.391' N 113° 55.478' E	40.71
No. of ind.		1	3

Ind. #: number of Individuals (individuals in a group are shown at the same row)

Underlined: size of mating pair or large individual (excluded from data analysis)

Sub.: Substratum type; G = Gravel and Boulders, M = Soft mud, S = Sand

Annex III. Record of seagrass beds survey in every sampling zone

Estimated area (m ²)	Estimated coverage (%)	GPS coordinate	Remark
TC1 & TC2 (search hour = 2 hrs) & TC3 (search hour = 3 hrs)			
No record			
ST <i>Halophila ovalis</i> (search hour = 3 hrs)			
140.0	5-20	horizontal line	22° 17.218' N 113° 55.475' E -- A horizontal strand of seagrass bed nearby the seaward side of mangrove area
			22° 17.207' N 113° 55.474' E at tidal level 2.0 m above C.D.
264.0	50-85	horizontal line	22° 17.207' N 113° 55.474' E -- A horizontal strand of seagrass bed nearby the seaward side of mangrove area
			22° 17.192' N 113° 55.472' E at tidal level 2.0 m above C.D.

Annex IV. Taxonomic resolution of every recorded species of intertidal soft shore community survey

Kingdom	Phylum	Class	Order	Family	Species
Animalia	Annelida	Polychaeta	Eunicida	Onuphidae	Onuphidae spp.
Animalia	Annelida	Polychaeta	Phyllodocida	Nereididae	Nereididae spp.
Animalia	Annelida	Polychaeta	Sabellida	Oweniidae	Oweniidae spp.
Animalia	Annelida	Polychaeta	Sabellida	Sabellidae	Sabellidae spp.
Animalia	Annelida	Polychaeta	Terebellida	Ampharetidae	Ampharetidae spp.
Animalia	Annelida	Polychaeta	Terebellida	Pectinariidae	Pectinariidae spp.
Animalia	Annelida	Polychaeta	Terebellida	Terebellidae	Terebellidae spp.
Animalia	Annelida	Polychaeta		Maldanidae	Maldanidae spp.
Animalia	Annelida	Polychaeta		Orbiniidae	Orbiniidae spp.
Animalia	Arthropoda	Malacostraca	Decapoda	Diogenidae	<i>Clibanarius</i> sp.
Animalia	Arthropoda	Malacostraca	Decapoda	Grapsidae	<i>Metopograpsus latifrons</i>
Animalia	Arthropoda	Malacostraca	Decapoda	Ocypodidae	<i>Macrophthalmus erato</i>
Animalia	Arthropoda	Malacostraca	Decapoda	Ocypodidae	<i>Uca borealis</i>
Animalia	Arthropoda	Malacostraca	Decapoda	Ocypodidae	<i>Uca lactea</i>
Animalia	Arthropoda	Malacostraca	Decapoda	Ocypodidae	<i>Uca</i> sp.
Animalia	Arthropoda	Malacostraca	Decapoda	Paguridae	<i>Pagurus dubius</i>
Animalia	Arthropoda	Malacostraca	Decapoda	Sesarmidae	<i>Nanosesarma minutum</i>
Animalia	Arthropoda	Malacostraca	Decapoda	Varunidae	<i>Hemigrapsus penicillatus</i>
Animalia	Arthropoda	Maxillopoda	Sessilia	Balanidae	<i>Balanus amphitrite</i>
Animalia	Chordata	Actinopterygii	Perciformes	Blenniidae	<i>Omobranchus fasciolatoceps</i>
Animalia	Chordata	Actinopterygii	Perciformes	Gobiidae	<i>Periophthalmus cantonensis</i>
Animalia	Cnidaria	Anthozoa	Actiniaria	Diadumenidae	<i>Diadumene lineata</i>
Animalia	Mollusca	Bivalvia	Arcoida	Arcidae	<i>Barbatia virescens</i>
Animalia	Mollusca	Bivalvia	Euheterodonta	Hiatellidae	<i>Hiatella arctica</i>
Animalia	Mollusca	Bivalvia	Mytiloida	Mytilidae	<i>Xenostrobus atratus</i>
Animalia	Mollusca	Bivalvia	Ostreoida	Ostreidae	<i>Saccostrea cucullata</i>
Animalia	Mollusca	Bivalvia	Veneroida	Corbiculidae	<i>Geloina erosa</i>
Animalia	Mollusca	Bivalvia	Veneroida	Tellinidae	<i>Tellina</i> sp.
Animalia	Mollusca	Bivalvia	Veneroida	Veneridae	<i>Anomalocardia squamosa</i>
Animalia	Mollusca	Bivalvia	Veneroida	Veneridae	<i>Circe</i> sp.
Animalia	Mollusca	Bivalvia	Veneroida	Veneridae	<i>Marcia japonica</i>
Animalia	Mollusca	Bivalvia	Veneroida	Veneridae	<i>Ruditapes philippinarum</i>
Animalia	Mollusca	Gastropoda	Caenogastropoda	Batillariidae	<i>Batillaria multiformis</i>

Annex IV (Cont'd). Taxonomic resolution of every recorded species of intertidal soft shore community survey

Kingdom	Phylum	Class	Order	Family	Species
Animalia	Mollusca	Gastropoda	Caenogastropoda	Batillariidae	<i>Batillaria zonalis</i>
Animalia	Mollusca	Gastropoda	Caenogastropoda	Cerithiidae	<i>Clypeomorus bifasciata</i>
Animalia	Mollusca	Gastropoda	Caenogastropoda	Potamididae	<i>Cerithidea moerchii</i>
Animalia	Mollusca	Gastropoda	Caenogastropoda	Potamididae	<i>Pirenella asiatica</i>
Animalia	Mollusca	Gastropoda	Caenogastropoda	Potamididae	<i>Pirenella incisa</i>
Animalia	Mollusca	Gastropoda	Cycloneritimorpha	Neritidae	<i>Clithon faba</i>
Animalia	Mollusca	Gastropoda	Cycloneritimorpha	Neritidae	<i>Clithon oualaniensis</i>
Animalia	Mollusca	Gastropoda	Cycloneritimorpha	Neritidae	<i>Nerita polita</i>
Animalia	Mollusca	Gastropoda	Littorinimorpha	Littorinidae	<i>Littoraria melanostoma</i>
Animalia	Mollusca	Gastropoda	Littorinimorpha	Littorinidae	<i>Littoraria articulata</i>
Animalia	Mollusca	Gastropoda	Littorinimorpha	Rissoinidae	<i>Rissoina plicatula</i>
Animalia	Mollusca	Gastropoda	Neogastropoda	Muricidae	<i>Thais luteostoma</i>
Animalia	Mollusca	Gastropoda	Neogastropoda	Nassariidae	<i>Nassarius festivus</i>
Animalia	Mollusca	Gastropoda	Neogastropoda	Nassariidae	<i>Nassarius hepaticus</i>
Animalia	Mollusca	Gastropoda		Lottiidae	<i>Nipponacmea concinna</i>
Animalia	Mollusca	Gastropoda		Lottiidae	<i>Patelloida pygmaea</i>
Animalia	Mollusca	Gastropoda		Nacellidae	<i>Cellana grata</i>
Animalia	Mollusca	Gastropoda		Nacellidae	<i>Cellana toreuma</i>
Animalia	Mollusca	Gastropoda		Trochidae	<i>Euchelus scaber</i>
Animalia	Mollusca	Gastropoda		Trochidae	<i>Monodonta labio</i>
Animalia	Mollusca	Gastropoda		Turbinidae	<i>Lunella coronata</i>
Animalia	Mollusca	Polyplacophora	Chitonida	Ischnochitonidae	<i>Lepidozona</i> sp.
Animalia	Nemertea				<i>Nemertea</i> spp.
Animalia	Sipuncula	Sipunculidea	Golfingiida	Sipunculidae	<i>Sipunculus nudus</i>

Annex V. List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 1 High tidal level (2.0 m above C.D.)

Gp	Taxon	1	2	3	4	5	6	7	8	9	10	sub-total		
		Q	C	Q	C	Q	C	Q	C	Q	C			
Bi	<i>Barbatia virescens</i>							1				1		
Bi	<i>Saccostrea cucullata</i>	1		2				16	5		4	1	29	
Bi	<i>Xenostrobus atratus</i>								2				2	
C	<i>Hemigrapsus penicillatus</i>										1		1	
C	<i>Nanosesarma minutum</i>									1			1	
G	<i>Batillaria multiformis</i>			84		67		548		279	143	124	39	1284
G	<i>Cerithidea moerchii</i>					3						7		10
G	<i>Clithon faba</i>							8			4			12
G	<i>Clithon ovalaniensis</i>	13		19				4				5		41
G	<i>Lepidozona</i> sp.							1						1
G	<i>Littoraria articulata</i>							3		4				7
G	<i>Lunella coronata</i>			3							5			8
G	<i>Monodonta labio</i>			13				25	21	23	4			86
G	<i>Nassarius hepaticus</i>				9									9
G	<i>Nipponacmea concinna</i>							3	2		1			6
G	<i>Pirenella asiatica</i>	32		56		24	12				4			128
G	<i>Pirenella incisa</i>	29		85		49	21	13		28	4	16		245

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 1 High tidal level (2.0 m above C.D.)

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 1 Mid tidal level (1.5 m above C.D.)

Gp	Taxon	1		2		3		4		5		6		7		8		9		10		sub-total
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	
Bi	<i>Geloina erosa</i>																				1	2
Bi	<i>Hiatella arctica</i>							2		1												3
Bi	<i>Saccostrea cucullata</i>	8		29		36		19		17		32		25		8		17		25		216
Bi	<i>Xenostrobus atratus</i>				3				1		1		5		7		1		3			21
C	<i>Hemigrapsus penicillatus</i>																					3
C	<i>Nanosesarma minutum</i>															5	1					6
C	<i>Uca lactea</i>					1															2	3
Cn	<i>Diadumene lineata</i>																			1		1
G	<i>Batillaria multiformis</i>	16		13		45		11		48		51		52		16		24		113		389
G	<i>Batillaria zonalis</i>	9	1																			10
G	<i>Cellana grata</i>																			2		2
G	<i>Cerithidea moerchii</i>									5										3		8
G	<i>Clithon faba</i>																			4		4
G	<i>Clithon oualaniensis</i>																5	5	5	13		23
G	<i>Littoraria articulata</i>					7								5						4		16
G	<i>Lunella coronata</i>		4		17															8		29
G	<i>Monodonta labio</i>		39		72		43		8		119		35		51		79		15		461	
G	<i>Nerita polita</i>						5			1		1										5
G	<i>Nipponacmea concinna</i>			1																3		6

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 1 Mid tidal level (1.5 m above C.D.)

Gp	Taxon	1	2	3	4	5	6	7	8	9	10						sub-total
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C
G	<i>Pirenella asiatica</i>	39	2					13				9		7			70
G	<i>Pirenella incisa</i>	32	2			4		31			5		3		24		101
Hc	<i>Pagurus dubius</i>												5				5
P	Maldanidae spp.			4													4
															Total	1388	

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 1 Low tidal level (1.0 m above C.D.)

Gp	Taxon	1		2		3		4		5		6		7		8		9		10		sub-total	
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C		
Ba	<i>Balanus amphitrite</i>																			1		1	
Bi	<i>Anomalocardia squamosa</i>															1							1
Bi	<i>Barbatia virescens</i>			23		1		2		11		1											40
Bi	<i>Hiatella arctica</i>	4				1										2		5		2	7	3	24
Bi	<i>Saccostrea cucullata</i>	52		78		70		12		109		12		24		53		71		36			517
Bi	<i>Xenostrobus atratus</i>			4		2									2		1		1				10
C	<i>Nanosesarma minutum</i>																			1		5	6
G	<i>Batillaria multiformis</i>					4		4		1		3		15						3			30
G	<i>Batillaria zonalis</i>	16		12	4	37	8	57	7	4			4		15	1	8		12		3		188
G	<i>Cellana grata</i>																			1			1
G	<i>Cellana toreuma</i>			1				1				1											3
G	<i>Cerithidea moerchii</i>									2													2
G	<i>Clithon faba</i>					5																	5
G	<i>Clithon oualaniensis</i>													16									16
G	<i>Clypeomorus bifasciata</i>												9						5		1		15
G	<i>Euchelus scaber</i>									9										8			17
G	<i>Lunella coronata</i>	3		3		5			20		17		11		8		48		37				152
G	<i>Monodonta labio</i>	9			1			19									23						52
G	<i>Nassarius festivus</i>																			1			1

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 1 Low tidal level (1.0 m above C.D.)

Gp	Taxon																sub-total
		1 Q	2 C	3 Q	4 C	5 Q	6 C	7 Q	8 C	9 Q	10 C	Q	C	Q	C	Q	
G	<i>Nerita polita</i>							8									8
G	<i>Nipponacmea concinna</i>	1						1				2		1		4	9
G	<i>Patelloidea pygmaea</i>	1												2			3
G	<i>Pirenella asiatica</i>	9		23	3	3	5	37	8	13							101
G	<i>Pirenella incisa</i>	15		40	4	52	5	27	15	29	39	29	2				257
Hc	<i>Clibanarius</i> sp.		4														4
Ne	<i>Nemertea</i> spp.						1										1
P	Maldanidae spp.		2							3							5
Sp	<i>Sipunculus nudus</i>						1			3							4
															Total	1473	

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 2 High tidal level (2.0 m above C.D.)

Gp	Taxon	1	2	3	4	5	6	7	8	9	10						sub-total	
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	
Ba	<i>Balanus amphitrite</i>	1		1						2				2		2	6	
Bi	<i>Saccostrea cucullata</i>	7		42		11		27		2		5		31		10	5	29
Bi	<i>Xenostrobus atratus</i>											2				2	4	
C	<i>Hemigrapsus penicillatus</i>											1					1	
C	<i>Nanosesarma minutum</i>														1		1	
G	<i>Batillaria multiformis</i>	12			11			16	2	2	15		21	2	13	2	4	
G	<i>Batillaria zonalis</i>							13		17		24	2	23	2	27	5	
G	<i>Cellana toreuma</i>					1											1	
G	<i>Cerithidea moerchii</i>	4															4	
G	<i>Littoraria melanostoma</i>	3															3	
G	<i>Lunella coronata</i>		5					8				3				15	31	
G	<i>Monodonta labio</i>	25		20								5					50	
G	<i>Nassarius hepaticus</i>														1		1	
G	<i>Nerita polita</i>									4							4	
G	<i>Nipponacmea concinna</i>		3														3	
G	<i>Pirenella asiatica</i>				9		75	4		5		16		24	6	17	1	157
G	<i>Pirenella incisa</i>	5		7		24		35	124	9	7	11	1	8	1	17	2	251
Ne	<i>Nemertea</i> spp.	1															1	
																Total	901	

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 2 Mid tidal level (1.5 m above C.D.)

Gp	Taxon																					
		1 Q	1 C	2 Q	2 C	3 Q	3 C	4 Q	4 C	5 Q	5 C	6 Q	6 C	7 Q	7 C	8 Q	8 C	9 Q	9 C	10 Q	10 C	sub-total
Ba	<i>Balanus amphitrite</i>											2		1							3	
Bi	<i>Barbatia virescens</i>													1		7					8	
Bi	<i>Geloina erosa</i>					1															1	
Bi	<i>Saccostrea cucullata</i>	2		36				54		39		41		26		92		19		1	310	
Bi	<i>Xenostrobus atratus</i>											2		1		4		2			9	
C	<i>Metopograpsus latifrons</i>											1				1					2	
F	<i>Omobranchus fasciolatoceps</i>															1					1	
G	<i>Batillaria multiformis</i>			29								3						4			36	
G	<i>Batillaria zonalis</i>	3				5				8		20		24	1	9		13		35	5	123
G	<i>Cellana grata</i>									1											1	
G	<i>Clithon ovalaniensis</i>							4				3									7	
G	<i>Clypeomorus bifasciata</i>																	1			1	
G	<i>Euchelus scaber</i>									5											5	
G	<i>Lunella coronata</i>							5				9		12		20					46	
G	<i>Monodonta labio</i>	16		16						8		12				9					61	
G	<i>Nassarius hepaticus</i>																	3			3	
G	<i>Nipponacmea concinna</i>		1					1		5											7	
G	<i>Patelloida pygmaea</i>		1							4											5	
G	<i>Pirenella asiatica</i>							4		3		2	5	2	4		32	2	12	2	68	

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 2 Mid tidal level (1.5 m above C.D.)

		1	2	3	4	5	6	7	8	9	10						
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	sub-total			
G	<i>Pirenella incisa</i>			11		19		9	2	27	2	19	25	3	37	3	157
Ne	Nemertea spp.			2													2
P	Maldanidae spp.				3											1	4
P	Oweniidae spp.															1	1
Sp	<i>Sipunculus nudus</i>			1													1
															Total	862	

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 2 Low tidal level (1.0 m above C.D.)

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 2 Low tidal level (1.0 m above C.D.)

Gp	Taxon	1	2	3	4	5	6	7	8	9	10						sub-total
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C
P	Ampharetidae spp.			1												1	2
P	Maldanidae spp.			1		1		3			1		3		1	1	11
P	Onuphidae spp.					1											1
P	Oweniidae spp.															1	1
Sp	<i>Sipunculus nudus</i>	1											1				2
																Total	432

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 3 High tidal level (2.0 m above C.D.)

Gp	Taxon	1		2		3		4		5		6		7		8		9		10		sub-total
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	
Ba	<i>Balanus amphitrite</i>															1						1
Bi	<i>Circe</i> sp.																	1		1		2
Bi	<i>Geloina erosa</i>																		2			2
Bi	<i>Saccostrea cucullata</i>			15				4						4								23
Bi	<i>Xenostrobus atratus</i>				4																	4
C	<i>Macrophthalmus erato</i>															1						1
C	<i>Uca borealis</i>					5																5
C	<i>Uca lactea</i>													3		7		6		4		20
G	<i>Batillaria multiformis</i>	12		21		17	4	29	5	59			12		9		4		24	1		201
G	<i>Batillaria zonalis</i>	5				7	1											17		13		43
G	<i>Cerithidea moerchii</i>																		4	1		5
G	<i>Clithon faba</i>						5						4									9
G	<i>Clithon oualaniensis</i>										4											4
G	<i>Lunella coronata</i>			4								3										7
G	<i>Nassarius festivus</i>										5											5
G	<i>Pirenella asiatica</i>	11	2	31	4			47	6	48	1	5					13					168
G	<i>Pirenella incisa</i>	76	4	64	2	4		76	5	187	1	135	2	43		83		99	4	123	4	912
Ne	<i>Nemertea</i> spp.													2								2

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 3 High tidal level (2.0 m above C.D.)

Gp	Taxon	1	2	3	4	5	6	7	8	9	10					sub-total
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	
P	Ampharetidae spp.							2					1			3
P	Maldanidae spp.							1		1				1		3
P	Nereididae spp.	1			1											2
P	Pectinariidae spp.										1					1
P	Sabellidae spp.												1			1
P	Terebellidae spp.										1					1
															Total	1425

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 3 Mid tidal level (1.5 m above C.D.)

Gp	Taxon	1		2		3		4		5		6		7		8		9		10		sub-total
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	
Bi	<i>Barbatia virescens</i>					1																1
Bi	<i>Circe</i> sp.																					2
Bi	<i>Marcia japonica</i>									1												1
Bi	<i>Saccostrea cucullata</i>	4								2										22		28
Bi	<i>Xenostrobus atratus</i>																			1		1
C	<i>Hemigrapsus penicillatus</i>																		4		4	
C	<i>Nanosesarma minutum</i>																		1		1	
C	<i>Uca lactea</i>																			4		4
C	<i>Uca</i> sp.									1											1	
G	<i>Batillaria multiformis</i>	8	1	7	5			1	5	1	8	2	4		3		3	1	113		43	205
G	<i>Batillaria zonalis</i>	17	2	4				1	4			1	4	3				16				52
G	<i>Lunella coronata</i>	5																				5
G	<i>Monodonta labio</i>																		17		17	
G	<i>Nipponacmea concinna</i>																		5		5	
G	<i>Pirenella asiatica</i>	83	1	57	3	36		49	2	45	2				8	1	13	1	7		8	316
G	<i>Pirenella incisa</i>	24		79	2	137	4	63	2	71	2	39	1	53	2	51	4	36		13		583
Ne	<i>Nemertea</i> spp.													1								1
P	Ampharetidae spp.		1			1						1										3

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 3 Mid tidal level (1.5 m above C.D.)

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 3 Low tidal level (1.0 m above C.D.)

Gp	Taxon	1		2		3		4		5		6		7		8		9		10		sub-total
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	
Ba	<i>Balanus amphitrite</i>											7										7
Bi	<i>Barbatia virescens</i>	37		6		6		19		10		3		3				10		7		101
Bi	<i>Hiatella arctica</i>	1						1				3		2				3		4		14
Bi	<i>Saccostrea cucullata</i>	79		99		37		50		88		61		70		39		87		56		666
Bi	<i>Xenostrobus atratus</i>	5		6		8		8		4		1		5				4		5		46
C	<i>Hemigrapsus penicillatus</i>											1										1
C	<i>Nanosesarma minutum</i>											1		1				2				4
G	<i>Batillaria multiformis</i>	3		5														5				13
G	<i>Cellana grata</i>											1		2		8		5		1		17
G	<i>Cellana toreuma</i>												3				1		1			5
G	<i>Clithon ovalaniensis</i>											5										5
G	<i>Euchelus scaber</i>											4										4
G	<i>Lepidozona</i> sp.																	1				1
G	<i>Littoraria melanostoma</i>					3																3
G	<i>Lunella coronata</i>	12		12		20				28		9		33		32		27		19		192
G	<i>Monodonta labio</i>	51		51		47		49		59			48		143		60		41			549
G	<i>Nerita polita</i>					9			5		3		7				4		3			31
G	<i>Nipponacmea concinna</i>	6				2		2		7		1		8		6		8		5		45
G	<i>Patelloidea pygmaea</i>								3			1						4				8

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone TC 3 Low tidal level (1.0 m above C.D.)

		1	2	3	4	5	6	7	8	9	10								
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	sub-total
G	<i>Pirenella asiatica</i>	16						3											19
G	<i>Pirenella incisa</i>	9						4											13
G	<i>Thais luteostoma</i>			4															4
Sp	<i>Sipunculus nudus</i>			2				2									1		5
																		Total	1753

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone ST High tidal level (2.0 m above C.D.)

Gp	Taxon	High tidal level (2.0 m above C.D.)										Low tidal level (0.0 m above C.D.)				sub-total
		1 Q	2 C	3 Q	4 C	5 Q	6 C	7 Q	8 C	9 Q	10 C	11 Q	12 C	13 Q	14 C	
Bi	<i>Barbatia virescens</i>					1										1
Bi	<i>Saccostrea cucullata</i>	12	14	12	11	22	7	11	5	6	14					114
Bi	<i>Xenostrobus atratus</i>											1				1
C	<i>Metopograpsus latifrons</i>			2	2											4
C	<i>Nanosesarma minutum</i>		2	2												4
F	<i>Periophthalmus cantonensis</i>					1										1
G	<i>Batillaria multiformis</i>	35	31	11	4	43	15	60	55	21	32					307
G	<i>Cellana grata</i>					1	3	1	1		1					7
G	<i>Cellana toreuma</i>	1										4	3			1
G	<i>Cerithidea moerchii</i>											4				7
G	<i>Clithon ovalaniensis</i>						16					4		25		45
G	<i>Clypeomorus bifasciata</i>	28	13	5			17	7	25	16	13					124
G	<i>Euchelus scaber</i>						5									5
G	<i>Lepidozona</i> sp.						1									1
G	<i>Littoraria articulata</i>			5	8											13
G	<i>Lunella coronata</i>		8	5	29		3	21	32	17	15					130
G	<i>Monodonta labio</i>	4	3	40	77	13	21	28	33	20	3					242
G	<i>Nerita polita</i>			11		4										15
G	<i>Nipponacmea concinna</i>					1	2	2								5

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone ST High tidal level (2.0 m above C.D.)

Gp	Taxon	1	2	3	4	5	6	7	8	9	10						sub-total
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C
G	<i>Patelloidea pygmaea</i>									2						2	4
G	<i>Pirenella asiatica</i>	9		4		4		11		11		43		17		12	111
G	<i>Pirenella incisa</i>			13				4		4		16		3		9	49
Ne	Nemertea spp.	2															2
																Total	1193

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone ST Mid tidal level (1.5 m above C.D.)

Gp	Taxon	1		2		3		4		5		6		7		8		9		10		sub-total
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	
Bi	<i>Barbatia virescens</i>					1				4		1		4		2		3		10		25
Bi	<i>Hiatella arctica</i>					1				1		1				2						5
Bi	<i>Saccostrea cucullata</i>	21		23		29		12		43		63		49		29		34		54		357
Bi	<i>Xenostrobus atratus</i>	2		3		1						3						4		1		14
C	<i>Metopograpsus latifrons</i>	1															1			1		3
C	<i>Nanosesarma minutum</i>	1									1				1				3		3	6
Cn	<i>Diadumene lineata</i>																	1				1
G	<i>Batillaria multiformis</i>	4		4				4	3									5				20
G	<i>Batillaria zonalis</i>					4		8	1													13
G	<i>Cellana grata</i>					1						2		1		2						6
G	<i>Cellana toreuma</i>	1										1										2
G	<i>Clithon oualaniensis</i>	5		5											3							13
G	<i>Clypeomorus bifasciata</i>	4		3		8						5				4			4			28
G	<i>Lunella coronata</i>	11		23		31		7		13		8		40		15		25		17		190
G	<i>Monodonta labio</i>			3		19						8		31		47		37		48		193
G	<i>Nassarius festivus</i>							3														3
G	<i>Nipponacmea concinna</i>			2				2		1		3		2				1				11
G	<i>Patelloidea pygmaea</i>													2		3		4		4		13
G	<i>Pirenella asiatica</i>			12		33		21	13	8		55		21		9		4		8		184

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone ST		Mid tidal level (1.5 m above C.D.)													
Gp	Taxon	1 Q	2 C	3 Q	4 C	5 Q	6 C	7 Q	8 C	9 Q	10 C			sub-total	
G	<i>Pirenella incisa</i>	21	25	49	29	5	40	19	5	8	5			206	
Ne	Nemertea spp.	1												1	
															Total 1294

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone ST Low tidal level (1.0 m above C.D.)

Gp	Taxon	1		2		3		4		5		6		7		8		9		10		sub-total		
		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C			
Bi	<i>Barbatia virescens</i>																	1		2		1	4	
Bi	<i>Hiatella arctica</i>				1														1		1		3	
Bi	<i>Ruditapes philippinarum</i>	1																					1	
Bi	<i>Saccostrea cucullata</i>	24		23							19								18		24		21	129
Bi	<i>Xenostrobus atratus</i>	1																				2		3
C	<i>Hemigrapsus penicillatus</i>																		1					1
C	<i>Metopograpsus latifrons</i>	1																						1
G	<i>Batillaria multiformis</i>			7	1		2		2		4							5	1					22
G	<i>Batillaria zonalis</i>	3		4	2	9	2	4	1	13							1	11	1					51
G	<i>Cellana grata</i>											1						4		1				6
G	<i>Cerithidea moerchii</i>			3																				3
G	<i>Clypeomorus bifasciata</i>	9			1						1								4					15
G	<i>Euchelus scaber</i>																		3					3
G	<i>Lepidozona</i> sp.	1																						1
G	<i>Lunella coronata</i>	4					3											17		29		9		62
G	<i>Monodonta labio</i>																	12		75		4		91
G	<i>Nassarius festivus</i>			4	1																			5
G	<i>Nipponacmea concinna</i>	1		3																				4
G	<i>Patelloida pygmaea</i>																	7		1			8	

Annex V (Cont'd). List of recorded fauna of intertidal soft shore community survey in every sampling zone

Dec 2018 Sampling zone ST		Low tidal level (1.0 m above C.D.)																	
Gp	Taxon	1 Q	2 C	3 Q	4 C	5 Q	6 C	7 Q	8 C	9 Q	10 C	Q	C	sub-total					
G	<i>Pirenella asiatica</i>	12		17	5	3				5	1	5	4		52				
G	<i>Pirenella incisa</i>	9		60	8	1		3	2	20	2	4	1		110				
Ne	Nemertea spp.	1													1				
P	Nereididae spp.			1											1				
P	Orbiniidae spp.									1					1				
														Total	578				

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, OI: Oligochaete,
P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan