

Annex K

Soft Shore Ecology

Annex K1

Monitoring Schedule for Soft Shore Ecology

Tung Chung New Town Extension (East)
Soft Shore Ecological Monitoring Schedule (September 2023)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Sep	2-Sep
3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep
10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep
		Soft Shore Monitoring at Tung Chung Bay	Soft Shore Monitoring at Tung Chung Bay			
17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep
24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep
	Soft Shore Monitoring at Tai Ho Bay	Soft Shore Monitoring at Tung Chung Bay	Soft Shore Monitoring at Tung Chung Bay			

Annex K2

Monitoring Results for Soft Shore Ecology

Table K2.1 Results for Horseshoe Crabs during Qualitative Walk-through Surveys in September 2023

Sighting #	Species	Prosomal Width (cm)	Total Length (cm)
Monitoring Date: 13 September 2023			
Monitoring Station: TCB1			
1	<i>Tachypleus tridentatus</i>	3.0	5.7
	Mean	3.0	5.7
Monitoring Date: 25 September 2023			
Monitoring Station: THW			
1	Unidentified	0.6	0.8
2	<i>Tachypleus tridentatus</i>	0.8	1.1
3	Unidentified (a)	0.6	0.8
4	<i>Tachypleus tridentatus</i>	0.8	1.1
5	Unidentified (a)	0.6	0.6
6	<i>Tachypleus tridentatus</i>	0.9	1.2
7	<i>Tachypleus tridentatus</i>	0.9	1.2
8	Unidentified (a)	0.6	0.7
9	<i>Tachypleus tridentatus</i>	0.9	1.2
10	Unidentified (a)	0.6	0.8
11	<i>Tachypleus tridentatus</i>	1.1	1.3
12	Unidentified (a)	0.7	0.8
13	<i>Tachypleus tridentatus</i>	0.9	1.2
14	Unidentified (a)	0.6	0.7
15	<i>Tachypleus tridentatus</i>	1.2	2.0
16	<i>Tachypleus tridentatus</i>	0.9	1.2
17	<i>Tachypleus tridentatus</i>	0.8	1.2
18	<i>Tachypleus tridentatus</i>	0.8	1.0
19	Unidentified (a)	0.5	0.7
20	<i>Tachypleus tridentatus</i>	2.0	3.4
21	<i>Tachypleus tridentatus</i>	1.8	3.4
22	Unidentified (a)	0.6	0.7
23	<i>Tachypleus tridentatus</i>	0.9	1.3
24	<i>Tachypleus tridentatus</i>	1.2	2.0
25	<i>Tachypleus tridentatus</i>	0.9	1.2
26	<i>Tachypleus tridentatus</i>	0.9	1.3
27	<i>Tachypleus tridentatus</i>	1.1	1.9
28	<i>Tachypleus tridentatus</i>	1.8	2.7
29	<i>Tachypleus tridentatus</i>	0.8	1.1
30	Unidentified (a)	0.6	0.7
31	<i>Tachypleus tridentatus</i>	1.9	3.5
32	<i>Tachypleus tridentatus</i>	0.8	1.2
33	Unidentified (a)	0.6	0.6
34	<i>Tachypleus tridentatus</i>	0.8	1.1
35	Unidentified (a)	0.6	0.6
36	Unidentified (a)	0.6	0.6
37	<i>Tachypleus tridentatus</i>	1.8	3.3
38	Unidentified (a)	0.6	0.6
39	<i>Tachypleus tridentatus</i>	0.8	1.1
40	<i>Tachypleus tridentatus</i>	0.8	1.1
41	<i>Tachypleus tridentatus</i>	0.9	1.2
42	Unidentified (a)	0.5	0.5
43	Unidentified (a)	0.6	0.7
44	<i>Tachypleus tridentatus</i>	0.8	1.1
45	<i>Tachypleus tridentatus</i>	0.8	1.1
46	<i>Tachypleus tridentatus</i>	1.8	3.2
47	<i>Tachypleus tridentatus</i>	1.3	2.3
48	Unidentified (a)	0.6	0.7
49	<i>Tachypleus tridentatus</i>	2.6	5.2
50	Unidentified (a)	0.7	0.7

51	Unidentified ^(a)	0.7	0.8
52	Unidentified ^(a)	0.7	0.8
53	<i>Tachypleus tridentatus</i>	0.8	1.2
	Mean (Range)	0.9 (0.5 - 2.6)	1.4 (0.5 - 5.2)

Monitoring Date: 26 September 2023

Monitoring Station: TCB3

1	Unidentified ^(a)	0.5	0.6
2	Unidentified ^(a)	0.6	0.6
3	Unidentified ^(a)	0.6	0.6
4	Unidentified ^(a)	0.6	0.7
5	Unidentified ^(a)	0.7	0.8
6	<i>Tachypleus tridentatus</i>	1.4	2.6
7	Unidentified ^(a)	0.6	0.8
8	Unidentified ^(a)	0.6	0.7
9	<i>Tachypleus tridentatus</i>	0.9	1.0
	Mean (Range)	0.7 (0.5 - 1.4)	0.9 (0.6 - 2.6)

Monitoring Date: 27 September 2023

Monitoring Station: TCB2

1	Unidentified ^(a)	0.6	0.7
2	Unidentified ^(a)	0.6	0.6
3	Unidentified ^(a)	0.6	0.7
4	<i>Tachypleus tridentatus</i>	0.8	1.1
5	Unidentified ^(a)	0.6	0.7
	Mean	0.6 (0.6 - 0.8)	0.8 (0.6 - 1.1)

Note:

- a) 31 horseshoe crab individuals, twenty (20) at THW, seven (7) at TCB3 and four (4) at TCB2 were recorded with prosomal width of 0.5-0.7 cm and total length of 0.5-0.8 cm. These individuals were considered to be too small for species identification by the naked eye and were recorded as unidentified species.

Table K2.2 Results for Seagrass during Qualitative Walk-through Surveys in September 2023

Sighting #	Species	Area (m²)	Area Coverage (%)	Seagrass Area (m²)
Monitoring Date: 26 September 2023				
Monitoring Station: TCB3				
1	<i>Halophila ovalis</i>	187.5	80%	150.0
2	<i>Halophila ovalis</i>	130.0	85%	110.5
3	<i>Halophila ovalis</i>	15.0	50%	7.5

Table K2.3 Results for Other Intertidal Soft Shore Communities during Qualitative Walk-through Surveys in September 2023

Monitoring Station	Shore Height *	No. of Species
TCB1	H	32
	M	27
	L	30
	Overall	45
TCB2	H	25
	M	20
	L	16
	Overall	31
TCB3	H	33
	M	36
	L	33
	Overall	50
THW	H	26
	M	32
	L	19
	Overall	40

* H: +2mCD; M: +1.5mCD; L: +1mCD

Table K2.4 Results for Other Intertidal Soft Shore Communities during Quantitative Transect Surveys in September 2023

Monitoring Station	Shore Height *	Top Three Dominant Species	Density (ind. / m ²)
TCB1	H	1 <i>Cerithidea diadjariensis</i>	175.2
		2 <i>Batillaria zonalis</i>	44.8
		3 <i>Batillaria multiformis</i>	38.4
	M	1 <i>Batillaria zonalis</i>	190.4
		2 <i>Cerithidea diadjariensis</i>	124.0
		3 <i>Batillaria multiformis</i>	108.8
	L	1 <i>Batillaria zonalis</i>	14.4
		2 <i>Monodonta labio</i>	10.4
		3 <i>Sipunculus sp.</i>	5.6
TCB2	H	1 <i>Cerithidea diadjariensis</i>	105.6
		2 <i>Cerithidea cingulata</i>	27.2
		3 <i>Batillaria zonalis</i>	14.4
	M	1 <i>Cerithidea diadjariensis</i>	88.0
		2 <i>Cerithidea cingulata</i>	27.2
		3 <i>Cerithidea rhizophorarum</i>	14.4
	L	1 <i>Cerithidea diadjariensis</i>	23.2
		2 <i>Cerithidea cingulata</i>	13.6
		3 <i>Batillaria zonalis</i>	4.0
TCB3	H	1 <i>Batillaria zonalis</i>	922.4
		2 <i>Batillaria multiformis</i>	687.2
		3 <i>Cerithidea cingulata</i>	79.2
	M	1 <i>Cerithidea diadjariensis</i>	127.2
		2 <i>Batillaria zonalis</i>	86.4
		3 <i>Cerithidea cingulata</i>	77.6
	L	1 <i>Batillaria zonalis</i>	51.2
		2 <i>Cerithidea diadjariensis</i>	32.0
		3 <i>Cerithidea cingulata</i>	25.6
THW	H	1 <i>Geloina erosa</i>	34.4
		2 <i>Cerithidea diadjariensis</i>	9.6
		3 <i>Cerithidea rhizophorarum</i>	5.6
	M	1 <i>Cerithidea diadjariensis</i>	252.0
		2 <i>Batillaria zonalis</i>	80.0
		3 <i>Cerithidea cingulata</i>	49.6
	L	1 <i>Cerithidea diadjariensis</i>	108.8
		2 <i>Batillaria zonalis</i>	74.4
		3 <i>Cerithidea cingulata</i>	16.0

* H: +2mCD; M: +1.5mCD; L: +1mCD

Group	Species	TCB1			TCB2			TCB3			THW		
		H (Qual)	M (Qual)	L (Qual)	H (Qual)	M (Qual)	L (Qual)	H (Qual)	M (Qual)	L (Qual)	H (Qual)	M (Qual)	L (Qual)
Barnacle	<i>Balanus amphitrite</i>	+	+	++	+	+	+	+	+	+		+	+
Barnacle	<i>Chthamalus malayensis</i>	++						+				++	+
Barnacle	<i>Microeuraphia withersi</i>	+						+				++	
Bivalve	<i>Anomalocardia squamosa</i>			+	+				+	+			
Bivalve	<i>Arcuatula senhousia</i>		+	+						+			
Bivalve	<i>Barbatia virescens</i>		+	+				+	+	+			
Bivalve	<i>Coecella chinensis</i>								+				
Bivalve	<i>Cyclina sinensis</i>	+		+		+		+				++	
Bivalve	<i>Dosinia japonica</i>		+				+	+					+
Bivalve	<i>Ervilia sp.</i>								+	+		+	++
Bivalve	<i>Geloina erosa</i>				+				+		+++	+++	++
Bivalve	<i>Hiatula diphos</i>		+					+				+	
Bivalve	<i>Saccostrea cucullata</i>	++	++	+++	+	+	++	+	++	+++	+	++	++
Chiton	<i>Acanthopleura japonica</i>								+				
Crab	<i>Hemigrapsus penicillatus</i>	++		+	+	+	+	+	++	+	++	+	+
Crab	<i>Hemigrapsus sanguineus</i>							+		+			
Crab	<i>Macrophthalmus sp.</i>							+					
Crab	<i>Metapograpus frontalis</i>		+	++	++	+++	++		+	+	++	++	+
Crab	<i>Metapograpus quadridentatus</i>	+	+	+++	++	+++	+++			++	++	++	+
Crab	<i>Parasesarma pictum</i>				++	+++							
Crab	<i>Perisesarma bidens</i>	+			+			+++	++	+	++		
Crab	<i>Philyra pisum</i>										+		
Crab	<i>Portunus pelagicus</i>		+										
Crab	<i>Uca arcuata</i>	+				+		+				++	
Crab	<i>Uca borealis</i>	+++	++	+		++	+	++	++	+	++	+	
Crab	<i>Uca lactea</i>	+++	+++	+		++	+	+++	+++	+	++	++	+
Crab	<i>Uca splendida</i>	++						++	+		+++		
Fish	<i>Periophthalmus modestus</i>	++	+	+	+++	++	+	+	++	+	+++	++	++
Gastropod	<i>Batillaria multiformis</i>	++	+++	+	+	+	+	+++	+++	+	+	++	+
Gastropod	<i>Batillaria zonalis</i>	+++	+++	+	++	+	+	+++	+++	+++	+	+++	+
Gastropod	<i>Cellana grata</i>			+					++	+			
Gastropod	<i>Cellana toreuma</i>	+	+						++	+			
Gastropod	<i>Cerithidea cingulata</i>	++	+++	+	++	++	+	+++	+++	+	+	+++	+
Gastropod	<i>Cerithidea diadjariensis</i>	+++	+++	+	+++	+++	++	+++	+++	+++	++	+++	++
Gastropod	<i>Cerithidea rhizophorarum</i>	++	++		+	++		+			++	++	
Gastropod	<i>Clithon spp.</i>			+	+			++	+		+	+	
Gastropod	<i>Echinolittorina radiata</i>	+						+	+				
Gastropod	<i>Echinolittorina vidua</i>	+	+	+	+			++	+	+			
Gastropod	<i>Littoraria arduiniana</i>	+											
Gastropod	<i>Littoraria articulata</i>	+	++	++	+			++	++	+		+	
Gastropod	<i>Littoraria melanostoma</i>	++			+			+++			++	+	
Gastropod	<i>Lunella coronata</i>	+	+	++					+	++			+
Gastropod	<i>Monodonta labio</i>	++	+++	++	+	+	+	+	++	++	+	+	
Gastropod	<i>Nassarius festivus</i>	+	++	+				+++	+	+	+	+	++
Gastropod	<i>Nerita albicilla</i>				+				+	+		+	
Gastropod	<i>Nerita chamaeleon</i>								+	+	+		
Gastropod	<i>Nerita polita</i>	+				+		++	+	++	+	+	
Gastropod	<i>Patelloida pygmaea</i>			+					+				
Gastropod	<i>Planaxis sulcatus</i>			+						+			
Gastropod	<i>Terebralia palustris</i>										+++	++	
Gastropod	<i>Terebralia sulcata</i>										+++	++	
Gastropod	<i>Thais clavigera</i>	++			+			+	+		+		
Hermit Crab	<i>Clibanarius sp.</i>	+	+	++	+	+		+	+	+	+	+	+
Hermit Crab	<i>Diogenes sp.</i>	+	+	++	+		+	+	+	+	+	+	+
Hermit Crab	<i>Pagurus sp.</i>		+	+									
Horseshoe Crab	<i>Tachypleus tridentatus</i>		+			+		+			+	+++	+
Horseshoe Crab	<i>Unidentified sp.</i>				+	+		+	+		++	++	+
Seagrass	<i>Halophila ovalis</i>							++	+++	+			
Seaslug	<i>Onchidium sp.</i>										+		
Worm	<i>Oligochaete sp.</i>	+	+	+	++	++	+			+		+	
Worm	<i>Sipunculus sp.</i>			+					++	+			

Group	Species	TCB1																	
		H1	H2	H3	H4	H5	Density (ind. / m ² or % cover)	M1	M2	M3	M4	M5	Density (ind. / m ² or % cover)	L1	L2	L3	L4	L5	Density (ind. / m ² or % cover)
Barnacle	<i>Balanus amphitrite</i>						0%						0%		5%		5%		8%
Bivalve	<i>Anomalocardia squamosa</i>						0						0		1	1			1.6
Bivalve	<i>Arcuatula senhousia</i>						0	2					1.6			1			0.8
Bivalve	<i>Coecella chinensis</i>						0						0						0
Bivalve	<i>Cyclina sinensis</i>					1	0.8						0		1			1	1.6
Bivalve	<i>Dosinia japonica</i>						0			1			0.8						0
Bivalve	<i>Ervilia sp.</i>						0						0						0
Bivalve	<i>Geloina erosa</i>						0						0						0
Bivalve	<i>Hiatula diphos</i>						0			1			0.2						0
Bivalve	<i>Saccostrea cucullata</i>		5%			20%	5%	10%	45%	10%	<5%	<5%	13%	30%	10%	40%	25%		21%
Chiton	<i>Acanthopleura japonica</i>						0						0						0
Crab	<i>Hemigrapsus penicillatus</i>	1	1	1			2.4						0			1			0.8
Crab	<i>Hemigrapsus sanguineus</i>						0						0						0
Crab	<i>Metapograpus frontalis</i>						0						0				1		0.8
Crab	<i>Metapograpus quadridematus</i>						0						0	1		1	2		3.2
Crab	<i>Parasesarma pictum</i>						0						0						0
Crab	<i>Perisesarma bidens</i>						0						0						0
Crab	<i>Uca borealis</i>						0						0						0
Crab	<i>Uca lactea</i>						0						0						0
Gastropod	<i>Batillaria multiformis</i>	14	28			6	38.4	6			82	48	108.8				2		1.6
Gastropod	<i>Batillaria zonalis</i>	4	6	14	28	4	44.8	46	16	22	142	12	190.4	12	2			4	14.4
Gastropod	<i>Cellana grata</i>						0						0						0
Gastropod	<i>Cellana toreuma</i>					2	1.6						0						0
Gastropod	<i>Cerithidea cingulata</i>	4	8	12	16		32.0	36		2	4	28	56.0						0
Gastropod	<i>Cerithidea diadjarimensis</i>	61	44	62	32	20	175.2	28	18	17	48	44	124						0
Gastropod	<i>Cerithidea rhizophorarum</i>	12	6		4		17.6	8		2			8						0
Gastropod	<i>Clithon spp.</i>						0						0						0
Gastropod	<i>Echinolittorina vidua</i>					9	7.2						0						0
Gastropod	<i>Littoraria articulata</i>					2	1.6						0						0
Gastropod	<i>Lunella coronata</i>		1				0.8	2			2	1	4						0
Gastropod	<i>Monodonta labio</i>		9			10	15.2	17	6	6	8	2	31.2		5	2	6		10.4
Gastropod	<i>Nassarius festivus</i>						0	4				12	12.8	2					1.6
Gastropod	<i>Nerita albicilla</i>						0						0						0
Gastropod	<i>Nerita chamealeon</i>						0						0						0
Gastropod	<i>Nerita polita</i>						0						0						0
Gastropod	<i>Patelloida pygmaea</i>						0						0		1				0.8
Gastropod	<i>Terebralia sulcata</i>						0						0						0
Gastropod	<i>Thais clavigera</i>	2		3			4						0						0
Hermit Crab	<i>Clibanarius sp.</i>			1			0.8	1					0.8						0
Hermit Crab	<i>Diogenes sp.</i>						0						0						0
Horseshoe Crab	<i>Tachypleus tridentatus</i>						0						0						0
Seaslug	<i>Onchidium sp.</i>						0						0						0
Worm	<i>Oligochaete sp.</i>				3		2.4			2			1.6	5					4.0
Worm	<i>Sipunculus sp.</i>						0						0	7					5.6

Group	Species	TCB2																	
		H1	H2	H3	H4	H5	Density (ind. / m ² or % cover)	M1	M2	M3	M4	M5	Density (ind. / m ² or % cover)	L1	L2	L3	L4	L5	Density (ind. / m ² or % cover)
Barnacle	<i>Balanus amphitrite</i>			<5%			<5%				<5%	<5%	0%		5%				1%
Bivalve	<i>Anomalocardia squamosa</i>						0						0						0
Bivalve	<i>Arcuatula senhousia</i>						0						0						0
Bivalve	<i>Coecella chinensis</i>						0						0						0
Bivalve	<i>Cyclina sinensis</i>						0		1				0.8						0
Bivalve	<i>Dosinia japonica</i>						0						0		1		1		1.6
Bivalve	<i>Ervilia sp.</i>						0						0						0
Bivalve	<i>Geloina erosa</i>	1					0.8						0						0
Bivalve	<i>Hiatula diphos</i>						0						0						0
Bivalve	<i>Saccostrea cucullata</i>	5%	<5%			<5%	1%	5%					1%	15%	10%	15%	5%		9%
Chiton	<i>Acanthopleura japonica</i>						0						0						0
Crab	<i>Hemigrapsus penicillatus</i>						0			1			0.8						0
Crab	<i>Hemigrapsus sanguineus</i>						0						0						0
Crab	<i>Metapograpus frontalis</i>						0	1					0.8		1				0.8
Crab	<i>Metapograpus quadridematus</i>						0	1					0.8	3	1				3.2
Crab	<i>Parasesarma pictum</i>		2			1	2.4	3	2				4.0						0
Crab	<i>Perisesarma bidens</i>						0						0						0
Crab	<i>Uca borealis</i>						0						0						0
Crab	<i>Uca lactea</i>						0						0						0
Gastropod	<i>Batillaria multiformis</i>						0						0						0
Gastropod	<i>Batillaria zonalis</i>	6		4	8		14.4						0	2	3				4.0
Gastropod	<i>Cellana grata</i>						0						0						0
Gastropod	<i>Cellana toreuma</i>						0						0						0
Gastropod	<i>Cerithidea cingulata</i>			34			27.2		20	2	4	8	27.2		6	5	2	4	13.6
Gastropod	<i>Cerithidea diadjarimensis</i>	90		42			105.6	2	46	20	20	22	88		9	8	4	8	23.2
Gastropod	<i>Cerithidea rhizophorarum</i>			3			2.4		12		6		14.4						0
Gastropod	<i>Clithon spp.</i>						0						0						0
Gastropod	<i>Echinolittorina vidua</i>						0						0						0
Gastropod	<i>Littoraria articulata</i>						0						0						0
Gastropod	<i>Lunella coronata</i>						0						0						0
Gastropod	<i>Monodonta labio</i>						0						0						0
Gastropod	<i>Nassarius festivus</i>						0						0						0
Gastropod	<i>Nerita albicilla</i>						0						0						0
Gastropod	<i>Nerita chamealeon</i>						0						0						0
Gastropod	<i>Nerita polita</i>						0						0						0
Gastropod	<i>Patelloida pygmaea</i>						0						0						0
Gastropod	<i>Terebralia sulcata</i>						0						0						0
Gastropod	<i>Thais clavigera</i>						0						0						0
Hermit Crab	<i>Clibanarius sp.</i>						0						0						0
Hermit Crab	<i>Diogenes sp.</i>						0						0		1				0.8
Horseshoe Crab	<i>Tachypleus tridentatus</i>						0						0						0
Seaslug	<i>Onchidium sp.</i>						0						0						0
Worm	<i>Oligochaete sp.</i>		4			2	4.8	8					6.4					1	0.8
Worm	<i>Sipunculus sp.</i>						0						0						0

Group	Species	TCB3																	
		H1	H2	H3	H4	H5	Density (ind. / m ² or % cover)	M1	M2	M3	M4	M5	Density (ind. / m ² or % cover)	L1	L2	L3	L4	L5	Density (ind. / m ² or % cover)
Barnacle	<i>Balanus amphitrite</i>				<5%	<5%	<5%			5%			1%						0%
Bivalve	<i>Anomalocardia squamosa</i>						0				1		0.8						0
Bivalve	<i>Arcuatula senhousia</i>						0						0						0
Bivalve	<i>Coecella chinensis</i>						0				1		0.8						0
Bivalve	<i>Cyclina sinensis</i>	1				3	3.2						0						0
Bivalve	<i>Dosinia japonica</i>				1		0.8						0						0
Bivalve	<i>Ervilia sp.</i>						0	1					0.8					1	0.8
Bivalve	<i>Geloina erosa</i>						0			1			0.8						0
Bivalve	<i>Hiatula diphos</i>						0						0						0
Bivalve	<i>Saccostrea cucullata</i>						0%	10%	<5%	15%	5%	<5%	6%	20%	10%	10%	30%	10%	16%
Chiton	<i>Acanthopleura japonica</i>						0					1	0.8						0
Crab	<i>Hemigrapsus penicillatus</i>						0			1			0.8	1					0.8
Crab	<i>Hemigrapsus sanguineus</i>						0						0			1			0.8
Crab	<i>Metapograpsus frontalis</i>						0	1					0.8						0
Crab	<i>Metapograpsus quadridematus</i>						0						0				1		0.8
Crab	<i>Parasesarma pictum</i>						0						0						0
Crab	<i>Perisesarma bidens</i>						0			1			0.8						0
Crab	<i>Uca borealis</i>						0						0						0
Crab	<i>Uca lactea</i>						0						0						0
Gastropod	<i>Batillaria multiformis</i>	65	286	64	232	212	687.2	8		28	19	14	55.2						0
Gastropod	<i>Batillaria zonalis</i>	446	322	87	142	156	922.4	30		24	30	24	86.4	18	22	10	4	10	51.2
Gastropod	<i>Cellana grata</i>						0					2	1.6						0
Gastropod	<i>Cellana toreuma</i>						0					3	2.4						0
Gastropod	<i>Cerithidea cingulata</i>	24	31		26	18	79.2	4		18	65	10	77.6	26	6				25.6
Gastropod	<i>Cerithidea diadjarimensis</i>	20	20	6	16	36	78.4	24		84	34	17	127.2	29	6	2		3	32.0
Gastropod	<i>Cerithidea rhizophorarum</i>						0						0						0
Gastropod	<i>Clithon spp.</i>				1	5	4.8						0						0
Gastropod	<i>Echinolittorina vidua</i>						0						0						0
Gastropod	<i>Littoraria articulata</i>		1				0.8	2					1.6						0
Gastropod	<i>Lunella coronata</i>						0						0	2	2		3		5.6
Gastropod	<i>Monodonta labio</i>						0	4	6				8	3					2.4
Gastropod	<i>Nassarius festivus</i>	21	16		19	14	56.0						0						0
Gastropod	<i>Nerita albicilla</i>						0		1				0.8						0
Gastropod	<i>Nerita chamaeleon</i>						0						0				1		0.8
Gastropod	<i>Nerita polita</i>				1		0.8		1				0.8						0
Gastropod	<i>Patelloida pygmaea</i>						0					1	0.8						0
Gastropod	<i>Terebralia sulcata</i>						0						0						0
Gastropod	<i>Thais clavigera</i>						0						0						0
Hermit Crab	<i>Clibanarius sp.</i>						0						0						0
Hermit Crab	<i>Diogenes sp.</i>						0	1					0.8						0
Horseshoe Crab	<i>Tachypleus tridentatus</i>				1		0.8						0						0
Seaslug	<i>Onchidium sp.</i>						0						0						0
Worm	<i>Oligochaete sp.</i>						0						0					1	0.8
Worm	<i>Sipunculus sp.</i>						0	1	3	2			4.8	1	1		2		3.2

Group	Species	THW															Density (ind. / m ² or % cover)			
		H1	H2	H3	H4	H5	Density (ind. / m ² or % cover)	M1	M2	M3	M4	M5	Density (ind. / m ² or % cover)	L1	L2	L3		L4	L5	Density (ind. / m ² or % cover)
Barnacle	<i>Balanus amphitrite</i>						0%		<5%					<5%			5%		20%	5%
Bivalve	<i>Anomalocardia squamosa</i>						0							0						0
Bivalve	<i>Arcuatula senhousia</i>						0							0						0
Bivalve	<i>Coecella chinensis</i>						0							0						0
Bivalve	<i>Cyclina sinensis</i>						0			4		1	4.0						0	
Bivalve	<i>Dosinia japonica</i>						0						0					1	0.8	
Bivalve	<i>Ervilia sp.</i>						0	1					0.8			3	3	1	5.6	
Bivalve	<i>Geloina erosa</i>	6	19	9	4	5	34.4	2	12	6	3	5	22.4	3				2	4	
Bivalve	<i>Hiatula diphos</i>						0						0						0	
Bivalve	<i>Saccostrea cucullata</i>		5%	5%			2%	15%		10%	5%		6%	5%					1%	
Chiton	<i>Acanthopleura japonica</i>						0						0						0	
Crab	<i>Hemigrapsus penicillatus</i>			1			0.8						0						0	
Crab	<i>Hemigrapsus sanguineus</i>						0						0						0	
Crab	<i>Metapograpus frontalis</i>		1		2		2.4			1			0.8						0	
Crab	<i>Metapograpus quadridemtatus</i>			2		1	2.4						0						0	
Crab	<i>Parasesarma pictum</i>						0						0						0	
Crab	<i>Perisesarma bidens</i>			1		1	1.6						0						0	
Crab	<i>Uca borealis</i>			1			0.8						0						0	
Crab	<i>Uca lactea</i>		1			1	1.6			1			0.8		1				0.8	
Gastropod	<i>Batillaria multiformis</i>						0						0						0	
Gastropod	<i>Batillaria zonalis</i>						0	6	34	8	30	22	80.0	20	19	10	38	6	74.4	
Gastropod	<i>Cellana grata</i>						0						0						0	
Gastropod	<i>Cellana toreuma</i>						0						0						0	
Gastropod	<i>Cerithidea cingulata</i>						0	10	2	2	22	26	49.6			16		4	16.0	
Gastropod	<i>Cerithidea diadjarimensis</i>	10		2			9.6	22	54	24	91	124	252.0	11		66	35	24	108.8	
Gastropod	<i>Cerithidea rhizophorarum</i>	4				3	5.6	4					3.2						0	
Gastropod	<i>Clithon spp.</i>						0						0						0	
Gastropod	<i>Echinolittorina vidua</i>						0						0						0	
Gastropod	<i>Littoraria articulata</i>						0						0						0	
Gastropod	<i>Lunella coronata</i>						0						0						0	
Gastropod	<i>Monodonta labio</i>						0						0						0	
Gastropod	<i>Nassarius festivus</i>						0					4	3.2				2		1.6	
Gastropod	<i>Nerita albicilla</i>						0						0						0	
Gastropod	<i>Nerita chamealeon</i>						0						0						0	
Gastropod	<i>Nerita polita</i>						0						0						0	
Gastropod	<i>Patelloida pygmaea</i>						0						0						0	
Gastropod	<i>Terebralia sulcata</i>	4					3.2	2				2	3.2						0	
Gastropod	<i>Thais clavigera</i>						0						0						0	
Hermit Crab	<i>Clibanarius sp.</i>						0						0						0	
Hermit Crab	<i>Diogenes sp.</i>						0						0						0	
Horseshoe Crab	<i>Tachypleus tridentatus</i>						0						0						0	
Seaslug	<i>Onchidium sp.</i>	1					0.8						0						0	
Worm	<i>Oligochaete sp.</i>						0	1		1			1.6						0	
Worm	<i>Sipunculus sp.</i>						0						0						0	

Annex K3

Event and Action Plan for Soft Shore Ecology

Annex K3 Event and Action Plan for Soft Shore Ecological Monitoring

Event	Action			
	ET	IEC	ER	Contractor
Density or the distribution pattern of horseshoe crab, seagrass and intertidal soft shore communities recorded in the impact or post-construction monitoring are significantly lower than or different from those recorded in the baseline monitoring.	<ol style="list-style-type: none"> 1. Review historical data to ensure differences are as a result of natural variation or previously observed seasonal differences; 2. Identify source(s) of impact; 3. Inform the IEC, ER and Contractor; 4. Check monitoring data; 5. Discuss additional monitoring and any other measures, with the IEC, ER and Contractor. 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review proposals for additional monitoring and any other measures submitted by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make agreement on the measures to be implemented. 	<ol style="list-style-type: none"> 1. Inform the ER and in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER; 3. Implement the agreed measures; 4. Resubmit proposals of remedial actions if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.