

Appendix 4.3 Intertidal Field Survey Results

1. Intertidal Field Survey Methodology

Intertidal surveys were conducted at representative intertidal habitats within the Study Area. The intertidal surveys consisted qualitative spot checks (i.e. walk-through surveys) and quantitative transect surveys. The intertidal surveys were conducted for once in wet season of 2015 to supplement the previous findings in the one-round intertidal survey conducted in May 2014 at the Project Profile stage for this Project, with an adjustment of sandy shore survey location from Hung Shing Yeh beach to the less disturbed shore at Tai Wan To. Intertidal surveys were then conducted at the same locations for twice in dry season of 2015. Local tide tables were used to assess tidal height at the site and times of surveys.

For quantitative transect surveys, at each of the four pre-determined survey sites as indicated in **Figure 4.3** (i.e. artificial seawall along the coast of the Lamma Power Station Extension (site A), sandy shore at Tai Wan To (site B), and rocky shores of Lo So Shing (site C) and Ha Mei Tsui (site D), two sampling locations were selected at each site. Three 50-m horizontal belt transects along the shoreline were surveyed at each site and at three shore heights: 2 m (high-shore), 1.5 m (mid-shore) and 1 m (low-shore) above Chart Datum. On each transect, five quadrats (50 cm x 50 cm) were placed randomly to assess the abundance and diversity of flora and fauna. All organisms found within the quadrat were identified and recorded to the lowest possible taxonomic level (at least Genus level) to allow density per quadrat to be calculated.

Sessile species such as algae (encrusting, foliose and filamentous), barnacles and oysters in each quadrat were also identified to the lowest possible taxonomic level (at least Genus level) and estimated as percentage cover on the rock surface using a double-strung, 50 cm x 50 cm quadrat. In addition, for soft shore habitat, all epifauna and infauna found in the top 50 cm x 50 cm x 5 cm layer (length x width x depth) of the substrate were identified to the lowest possible taxonomic level (at least Genus level) and the number of individual encountered were recorded.

During and after quantitative sampling, other intertidal species observed along the transect were also recorded by walk-through survey to establish a more complete list of species at each survey site.

2. Baseline Conditions of Intertidal Habitats

2.1 Overview of Intertidal Habitats within the Study Area

Intertidal surveys were conducted at four locations covering three habitats (i.e. artificial seawall along the coast of the Lamma Power Station Extension (site A), sandy shore at Tai Wan To (site B), and rocky shores of Lo So Shing (site C) and Ha Mei Tsui (site D)). **Plates 1 to 4** show the habitat of the four survey locations:



Plate 1 Lamma Power Station Extension artificial shore (Site A)

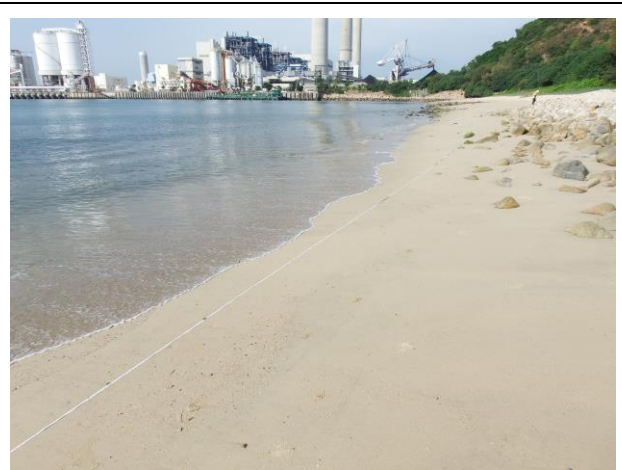


Plate 2 Tai Wan To sandy shore (Site B)



Plate 3 Lo So Shing rocky shore (Site C)



Plate 4 Ha Mei Tsui rocky shore (Site D)

2.2 Artificial Shores

Artificial shore surveys were conducted twice in both wet and dry season at Lamma Power Station Extension. The wet season surveys were conducted on 28 May 2014 (in Project Profile stage) and 25 September 2015 while dry season surveys were conducted on 2 November 2015 and 14 January 2016. The artificial shore was mostly sloping seawalls composed of armour rocks.

Species recorded were all common with no species of conservation interest recorded. A total of 27 species were recorded during qualitative walk-through and quantitative quadrat surveys (see **Table 1**). During quadrat survey, 23 species were recorded in wet season while 21 species were recorded in dry season. In wet season, species recorded with relatively high density or percentage coverage included *Ligia exotica*, *Patelloida pygmaea*, *Patelloida saccharin*, *Siphonaria japonica* and *Hildenbrandia rubra*. The density/percentage coverage (per 50 x 50 cm quadrat) of species recorded during quantitative survey in wet season are presented in **Table 2**. In dry season, species recorded with relatively high density or percentage coverage included *Echinolittorina radiata*, *Monodonta labio*, *Patelloida saccharina*, *Liolophura japonica* and *Hildenbrandia rubra* (see **Table 3**). No species of conservation interest was recorded during the surveys.

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Table 1: List of species recorded at Lamma Power Station Extension artificial shore

Intertidal Habitat Type: Artificial Seawall			
Category	Scientific Name	Relative Abundance (Wet Season)	Relative Abundance (Dry Season)
Bivalve	<i>Saccostrea cucullata</i>	+	
Crustacean	<i>Capitulum mitella</i>	++	++
	<i>Eriphia sebana</i>		+
	<i>Grapsus albolineatus</i>		+
	<i>Ligia exotica</i>	++	+
	<i>Tetraclita squamosa</i>	++	++
	Unidentified juvenile crab	+	
Gastropod	<i>Cellana grata</i>		+
	<i>Cellana toreuma</i>	+	++
	<i>Chlorostoma argyrostoma</i>	+	
	<i>Echinolittorina pascua</i>	++	++
	<i>Echinolittorina radiata</i>	++	++
	<i>Littoraria articulate</i>		+
	<i>Monodonta labio</i>	+	++
	<i>Nerita albicilla</i>	+	
	<i>Nipponacmea concinna</i>	++	++
	<i>Patelloida pygmaea</i>	++	++
	<i>Patelloida saccharina</i>	++	++
	<i>Reishia clavigera</i>	++	++
	<i>Siphonaria japonica</i>	++	++
	Lichen, Cyanobacteria and Algae	<i>Chroococcus</i> sp.	+
<i>Corallina</i> spp.		+	+
<i>Hildenbrandia occidentalis</i>		+	
<i>Hildenbrandia rubra</i>		+++	+++
<i>Kyrtuthrix maculans</i>		+	
<i>Ulva</i> spp.		+	+
Polyplacophora	<i>Liolophura japonica</i>	+	+
Total No. of Species: 27			

Table 2: Species recorded at Lamma Power Station Extension artificial shore during quantitative survey in wet season

Intertidal Habitat Type: Artificial Seawall	Season: Wet	Abundance / Percentage Cover (per quadrat)					
		Transect 1			Transect 2		
Category	Scientific Name	High	Mid	Low	High	Mid	Low
Bivalve	<i>Saccostrea cucullata</i>		1.0%				
Crustacean	<i>Capitulum mitella</i>		7.1%	2.6%		1.6%	0.1%
	<i>Ligia exotica</i>		1.4	8.1	0.4	6.2	0.5
	<i>Tetraclita squamosa</i>		11.0%	15.2%		2.7%	3.1%
	Unidentified juvenile crab			0.1			
Gastropod	<i>Cellana toreuma</i>		0.7			0.5	
	<i>Chlorostoma argyrostoma</i>					0.5	0.1
	<i>Echinolittorina radiata</i>	2.8	0.3		2.3		0.3
	<i>Echinolittorina pascua</i>	3.6	0.3		1.6	0.4	
	<i>Monodonta labio</i>			0.1			
	<i>Nerita albicilla</i>			0.2			
	<i>Nipponacmea concinna</i>		1.6	0.5		0.4	3.5
	<i>Patelloida pygmaea</i>		0.7	7.9		2.5	6.6
	<i>Patelloida saccharina</i>		6.0	5.5		4.2	2.5

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Intertidal Habitat Type: Artificial Seawall	Season: Wet	Abundance / Percentage Cover (per quadrat)					
		Transect 1			Transect 2		
Category	Scientific Name	High	Mid	Low	High	Mid	Low
	<i>Reishia clavigera</i>		0.3	0.5		0.8	1.1
	<i>Siphonaria japonica</i>		2.0	3.2		0.3	5.1
Lichen, Cyanobacteria and Algae	<i>Chroococcus sp.</i>		6.0%			9.0%	
	<i>Corallina spp.</i>			13.7%			8.3%
	<i>Hildenbrandia occidentalis</i>			3.0%			3.0%
	<i>Hildenbrandia rubra</i>		25.5%	8.0%		25.0%	25.0%
	<i>Kyrtuthrix maculans</i>		9.0%			12.0%	
	<i>Ulva spp.</i>			6.0%			
Polyplacophora	<i>Liolophura japonica</i>		1.0	3.1		0.3	1.6
Total No. of Species: 23							

Table 3: Species recorded at Lamma Power Station Extension artificial shore during quantitative survey in dry season

Intertidal Habitat Type: Artificial Seawall	Season: Dry	Abundance / Percentage Cover (per quadrat)					
		Transect 1			Transect 2		
Category	Scientific Name	High	Mid	Low	High	Mid	Low
Crustacean	<i>Capitulum mitella</i>		12.0%	2.0%		12.0%	6.0%
	<i>Eriphia sebana</i>					0.1	
	<i>Grapsus albolineatus</i>						0.1
	<i>Ligia exotica</i>	0.1				0.2	
	<i>Tetraclita squamosa</i>		1.9%	18.0%		1.5%	0.2%
Gastropod	<i>Cellana grata</i>					0.1	0.2
	<i>Cellana toreuma</i>	0.6	0.1	0.1		0.4	1.9
	<i>Echinolittorina radiata</i>	5.0			3.6		
	<i>Echinolittorina pascua</i>	1.2			0.8		
	<i>Littoraria articulata</i>		0.2				
	<i>Monodonta labio</i>		1.2	0.6		3.0	2.1
	<i>Nipponacmea concinna</i>		1.1	1.5		0.1	1.2
	<i>Patelloida pygmaea</i>		0.2	1.5		0.1	1.8
	<i>Patelloida saccharina</i>		4.6	3.1		1.9	8.6
	<i>Reishia clavigera</i>		0.2	1.7		0.1	1.0
	<i>Siphonaria japonica</i>		0.1	0.2		0.5	0.2
Lichen, Cyanobacteria and Algae	<i>Chroococcus sp.</i>		2.5%	2.0%		8.0%	
	<i>Corallina spp.</i>			8.1%		2.0%	1.0%
	<i>Hildenbrandia rubra</i>		33.0%	13.0%		25.0%	48.0%
	<i>Ulva spp.</i>		1.0%	3.0%			
Polyplacophora	<i>Liolophura japonica</i>		0.9	1.4		1.3	1.0
Total No. of Species: 21							

2.3 Rocky Shores

Surveys at rocky shore habitats were conducted at the following locations:

- Lo So Shing rocky shore (site C)
- Ha Mei Tsui rocky shore (site D)

Rocky shore survey was conducted at Lo So Shing on 29 May 2014 (in Project Profile stage) and 27 August 2015 while dry season surveys were conducted on 3 November 2015 and 13 January 2016. The rocky shore was mostly natural and composed of rocks and boulders with different sizes. Species recorded are all common species. No species of conservation interest was recorded. A total of 53 species were recorded during qualitative walk-through and quantitative quadrat survey (see **Table 4**). During quantitative quadrat survey, 47 species were recorded in wet season while 39 species were recorded in dry season. In wet season, species recorded with relatively high density or percentage coverage included *Ligia exotica*, *Cellana toreuma*, *Echinolittorina radiata*, *Monodonta labio*, *Hildenbrandia rubra* and *Neoralgsia expansa* (see **Table 5**). In dry season, species recorded with relatively high density or percentage coverage included *Echinolittorina radiata*, *Monodonta labio*, *Chroococcus sp.*, *Hildenbrandia rubra* and *Neoralgsia expansa* (see **Table 6**). No species of conservation interest was recorded during the surveys.

Table 4: List of species recorded at Lo So Shing rocky shore

Intertidal Habitat Type: Rocky Shore			
Category	Scientific Name	Relative Abundance (Wet)	Relative Abundance (Dry)
Bivalve	<i>Barbatia virescens</i>	+	+
	<i>Perna viridis</i>	+	+
	<i>Saccostrea cucullata</i>	++	++
	<i>Septifer virgatus</i>	+	+
Cnidarian	<i>Anthopleura japonica</i>	+	
	<i>Diadumene lineata</i>	++	+
Crustacean	<i>Amphibalanus amphitrite</i>	+	
	<i>Capitulum mitella</i>	+	++
	<i>Clibanarius virescens</i>	++	+
	<i>Epixanthus frontalis</i>	+	
	<i>Eriphia sebana</i>		+
	<i>Gaetice depressus</i>	+	+
	<i>Grapsus albolineatus</i>	+	+
	<i>Hemigrapsus penicillatus</i>	+	
	<i>Hemigrapsus sanguineus</i>	+	+
	<i>Ligia exotica</i>	+++	++
	<i>Metopograpsus frontalis</i>		+
	<i>Metopograpsus quadridentatus</i>	+	
	<i>Pagurus dubius</i>		+
	<i>Petrolisthes japonica</i>	+	+
	<i>Tetraclita japonica</i>	+	
	<i>Tetraclita squamosa</i>	+	+
	<i>Unidentified juvenile crab</i>	+	+
Echinoderm	<i>Helicidaris crassispira</i>	+	
	<i>Polycheira rufescens</i>	+	+
Fish	<i>Bathygobius fuscus</i>	+	
Gastropod	<i>Cellana grata</i>	+	+
	<i>Cellana toreuma</i>	+++	++
	<i>Echinolittorina pascua</i>	++	++

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Category	Scientific Name	Relative Abundance (Wet)	Relative Abundance (Dry)
	<i>Echinolittorina radiata</i>	+++	+++
	<i>Littoraria articulata</i>	++	+
	<i>Lunella coronata</i>	+	+
	<i>Monodonta labio</i>	+++	+++
	<i>Monodonta neritoides</i>	+	
	<i>Nerita albicilla</i>	+	+
	<i>Nerita chamaeleon</i>	+	+
	<i>Nipponacmea concinna</i>	++	++
	<i>Patelloida pygmaea</i>	++	++
	<i>Patelloida saccharina</i>	++	+
	<i>Planaxis sulcatus</i>	++	++
	<i>Reishia clavigera</i>	++	+
	<i>Reishia luteostoma</i>	++	++
	<i>Siphonaria japonica</i>	+	+
	Lichen, Cyanobacteria and Algae	<i>Chroococcus</i> sp.	++
<i>Corallina</i> spp.		+	++
<i>Hapalospongidion gelatinosum</i>		++	
<i>Hildenbrandia occidentalis</i>		+	
<i>Hildenbrandia rubra</i>		+++	+++
<i>Neoralsia expansa</i>		+++	+++
<i>Ulva</i> spp.		+	
Polyplacophora	<i>Liolophura japonica</i>	++	+
Worm	<i>Harmothoe imbricata</i>	+	
	<i>Hydroides</i> spp.		+
Total No. of Species: 53			

Table 5: Species recorded at Lo So Shing rocky shore during quantitative survey in wet season

Intertidal Habitat Type: Rocky Shore	Season: Wet	Abundance / Percentage Cover (per quadrat)					
		Transect 1			Transect 2		
		High	Mid	Low	High	Mid	Low
Category	Scientific Name						
Bivalve	<i>Barbatia virescens</i>					0.2%	0.5%
	<i>Perna viridis</i>			0.1%			0.1%
	<i>Saccostrea cucullata</i>					11.0%	
	<i>Septifer virgatus</i>		0.1%			0.1%	
Cnidarian	<i>Anthopleura japonica</i>		0.4	0.3			0.3
	<i>Diadumene lineata</i>		0.7	0.2		0.5	1.3
Crustacean	<i>Amphibalanus amphitrite</i>						0.1%
	<i>Capitulum mitella</i>	0.2%	0.1%		0.2%	0.2%	
	<i>Clibanarius virescens</i>		0.6			0.1	1.4
	<i>Epixanthus frontalis</i>			0.1			0.5
	<i>Gaetice depressus</i>		0.2	0.1			0.1
	<i>Hemigrapsus penicillatus</i>					0.1	
	<i>Hemigrapsus sanguineus</i>			0.4			0.1
	<i>Ligia exotica</i>	0.2	1.3	11.0		2.7	5.3
	<i>Metopograpsus quadridentatus</i>					0.1	
	<i>Petrolisthes japonica</i>						0.2
	<i>Tetraclita japonica</i>					0.5%	
	<i>Tetraclita squamosa</i>		0.1%		0.1%	1.0%	

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Intertidal Habitat Type: Rocky Shore	Season: Wet	Abundance / Percentage Cover (per quadrat)						
		Transect 1			Transect 2			
Category	Scientific Name	High	Mid	Low	High	Mid	Low	
	Unidentified juvenile crab					0.1		
Echinoderm	<i>Polycheira rufescens</i>			0.1			0.1	
Fish	<i>Bathygobius fuscus</i>						0.3	
Gastropod	<i>Cellana grata</i>		0.1	0.1				
	<i>Cellana toreuma</i>		2.2	3.9	0.1	4.3	1.5	
	<i>Echinolittorina radiata</i>	7.3	0.3		11.4	0.2		
	<i>Echinolittorina pascua</i>				8.7			
	<i>Littoraria articulata</i>				0.6	10.6		
	<i>Lunella coronata</i>		0.5	0.1		0.7	0.6	
	<i>Monodonta labio</i>		18.0	12.6		7.3	9.8	
	<i>Monodonta neritoides</i>						0.1	
	<i>Nerita albicilla</i>		0.5	1.0		0.1	0.3	
	<i>Nerita chamaeleon</i>		0.1					
	<i>Nipponacmea concinna</i>		0.7	1.1	0.1	1.2	1.6	
	<i>Patelloida pygmaea</i>		0.2	1.3		4.7	3.4	
	<i>Patelloida saccharina</i>				0.1	0.2	6.0	0.6
	<i>Planaxis sulcatus</i>					4.8	3.5	
	Lichen, Cyanobacteria and Algae	<i>Reishia clavigera</i>		1.1	0.3		0.4	1.9
<i>Reishia luteostoma</i>			0.1	1.7		1.1	0.4	
<i>Siphonaria japonica</i>				0.2		0.3		
<i>Chroococcus</i> sp.						11.0%		
<i>Corallina</i> spp.				5.4%		1.7%	10.2%	
<i>Hapalospongidion gelatinosum</i>			1.0%	2.0%			4.0%	
<i>Hildenbrandia occidentalis</i>						8.0%		
Polyplacophora	<i>Hildenbrandia rubra</i>		41.0%	24.0%		17.0%	14.0%	
	<i>Neoralfsia expansa</i>		4.5%	25.0%			13.0%	
	<i>Ulva</i> spp.						0.1%	
Worm	<i>Liolophura japonica</i>		4.1	0.1		1.2	0.1	
	<i>Harmothoe imbricata</i>			0.1				
Total No. of Species: 47								

Table 6: Species recorded at Lo So Shing rocky shore during quantitative survey in dry season

Intertidal Habitat Type: Rocky Shore	Season: Dry	Abundance / Percentage Cover (per quadrat)					
		Transect 1			Transect 2		
Category	Scientific Name	High	Mid	Low	High	Mid	Low
Bivalve	<i>Barbatia virescens</i>	0.1%	0.1%	0.7%			0.1%
	<i>Perna viridis</i>						0.1%
	<i>Saccostrea cucullata</i>		1.3%	0.1%		0.2%	1.0%
	<i>Septifer virgatus</i>		0.1%	0.2%			
Cnidarian	<i>Diadumene lineata</i>		0.3				0.4
Crustacean	<i>Capitulum mitella</i>	0.1%	3.9%	0.2%		2.7%	0.1%
	<i>Clibanarius virescens</i>						0.1
	<i>Eriphia sebana</i>						0.1
	<i>Gaetice depressus</i>					0.1	0.1
	<i>Hemigrapsus sanguineus</i>			0.1			
	<i>Ligia exotica</i>		1.0	0.5	0.2	7.9	0.2
	<i>Metopograpsus frontalis</i>		0.1			0.2	

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		Transect 1			Transect 2		
Category	Scientific Name	High	Mid	Low	High	Mid	Low
	<i>Pagurus dubius</i>						0.3
	<i>Petrolisthes japonica</i>		0.1	0.1		0.1	
	<i>Tetraclita squamosa</i>			0.1%			0.1%
	Unidentified juvenile crab			0.2		0.2	0.6
Echinoderm	<i>Polycheira rufescens</i>					0.1	
Gastropod	<i>Cellana grata</i>					0.2	
	<i>Cellana toreuma</i>		4.3	7.6		0.4	4.6
	<i>Echinolittorina radiata</i>	13.9	0.5		10.2	0.1	
	<i>Echinolittorina pascua</i>	21.6			4.0		
	<i>Littoraria articulata</i>	0.1	2.8				
	<i>Lunella coronata</i>			1.4		0.2	0.2
	<i>Monodonta labio</i>		6.6	7.4		14.6	8.0
	<i>Nerita albicilla</i>		0.5				
	<i>Nerita chamaeleon</i>	0.1		0.3			
	<i>Nipponacmea concinna</i>		2.0	4.7		1.3	4.1
	<i>Patelloida pygmaea</i>		3.6	3.6		0.3	
	<i>Patelloida saccharina</i>		1.0	0.5			0.2
	<i>Planaxis sulcatus</i>	0.1	26.9	18.3			
	<i>Reishia clavigera</i>		0.1	1.4			0.4
	<i>Reishia luteostoma</i>		1.1	0.6		0.1	1.4
<i>Siphonaria japonica</i>		0.2	0.1		0.1		
Lichen, Cyanobacteria and Algae	<i>Chroococcus</i> sp.		27.5%	18.0%		30.5%	6.0%
	<i>Corallina</i> spp.		0.3%	4.1%			2.8%
	<i>Hildenbrandia rubra</i>		28.0%	9.0%		36.0%	21.1%
	<i>Neoralfsia expansa</i>		4.5%	6.2%		12.0%	30.5%
Polyplacophora	<i>Liolophura japonica</i>		1.8	2.1			0.6
Worm	<i>Hydroides</i> spp.					0.3	0.6
Total No. of Species: 39							

Rocky shore survey at Ha Mei Tsui was conducted in wet season on 30 May 2014 (in Project Profile stage) and 11 September 2015 while dry season surveys were conducted on 3 November 2015 and 13 January 2016. The rocky shore was natural and composed of rocks with various sizes. All species recorded are common without conservation interest. A total of 49 species were recorded during qualitative walk-through and quantitative quadrat survey (see **Table 7**). During quantitative quadrat survey, 47 species were recorded in wet season while 34 species were recorded in dry season. In wet season, species recorded in relatively high density or percentage coverage included *Saccostrea cucullata*, *Echinolittorina radiata*, *Echinolittorina pascua*, *Planaxis sulcatus*, *Reishia clavigera*, *Chroococcus* sp. and *Corallina* spp. (see **Table 8**). In dry season, species recorded in relatively high density or percentage coverage included *Echinolittorina radiata*, *Echinolittorina pascua*, *Monodonta labio*, *Planaxis sulcatus*, *Reishia clavigera* and *Hildenbrandia rubra* (see **Table 9**). No species of conservation interest was recorded during the surveys.

Table 7: List of species recorded at Ha Mei Tsui rocky shore

Intertidal Habitat Type: Rocky Shore	Category	Scientific Name	Relative Abundance (Wet Season)	Relative Abundance (Dry Season)
Bivalve		<i>Barbatia virescens</i>	+	+
		<i>Neotrapezium sublaevigatum</i>	+	
		<i>Perna viridis</i>	+	

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Intertidal Habitat Type: Rocky Shore			
Category	Scientific Name	Relative Abundance (Wet Season)	Relative Abundance (Dry Season)
	<i>Saccostrea cucullata</i>	++	++
	<i>Septifer virgatus</i>	+	+
Cnidarian	<i>Diadumene lineata</i>	+	+
Crustacean	<i>Amphibalanus amphitrite</i>	+	
	<i>Capitulum mitella</i>	+	++
	<i>Clibanarius</i> spp.	+	+
	<i>Clibanarius virescens</i>	+	
	<i>Gaetice depressus</i>	+	+
	<i>Hemigrapsus sanguineus</i>	+	
	<i>Ligia exotica</i>	++	+
	<i>Metopograpsus frontalis</i>	+	
	<i>Metopograpsus latifrons</i>		+
	<i>Metopograpsus quadridentatus</i>	+	
	<i>Pagurus dubius</i>	+	
	<i>Tetraclita japonica</i>	+	+
	<i>Tetraclita squamosa</i>	+	
	Unidentified juvenile crab	++	+
Echinoderm	<i>Helicoidaris crassispira</i>	+	
	<i>Polycheira rufescens</i>	+	
Gastropod	<i>Cellana grata</i>	+	+
	<i>Cellana toreuma</i>	++	++
	<i>Echinolittorina pascua</i>	+++	++
	<i>Echinolittorina radiata</i>	++	++
	<i>Littoraria articulata</i>	++	+
	<i>Lunella coronata</i>	++	++
	<i>Mauritia arabica</i>	+	
	<i>Monodonta labio</i>	++	++
	<i>Nerita albicilla</i>	+	+
	<i>Nerita balteata</i>		+
	<i>Nerita chamaeleon</i>	++	++
	<i>Nipponacmea concinna</i>	++	++
	<i>Patelloida pygmaea</i>	++	++
	<i>Patelloida saccharina</i>	++	+
	<i>Planaxis sulcatus</i>	++	++
	<i>Reishia clavigera</i>	++	++
<i>Siphonaria japonica</i>	+	+	
Lichen, Cyanobacteria and Algae	<i>Chroococcus</i> sp.	++	+
	<i>Corallina</i> spp.	++	++
	<i>Enteromorpha</i> spp.	+	
	<i>Hildenbrandia occidentalis</i>	+	++
	<i>Hildenbrandia rubra</i>	++	+++
	<i>Neoralfsia expansa</i>	+	++
	<i>Sargassum</i> sp.	+	
	<i>Ulva</i> spp.	+	+
Polyplacophora	<i>Liolophura japonica</i>	++	+
Worm	<i>Thylacodes adamsii</i>	+	
Total No. of Species: 49			

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Table 8: Species recorded at Ha Mei Tsui rocky shore during quantitative survey in wet season

Intertidal Habitat Type: Rocky Shore	Season: Wet	Abundance / Percentage Cover (per quadrat)					
		Transect 1			Transect 2		
Category	Scientific Name	High	Mid	Low	High	Mid	Low
Bivalve	<i>Barbatia virescens</i>		0.5%	0.6%		0.8%	0.2%
	<i>Neotrapezium sublaevigatum</i>			0.1%		0.1%	0.1%
	<i>Perna viridis</i>			0.2%		0.1%	0.3%
	<i>Saccostrea cucullata</i>		17.5%	26.0%		13.1%	23.5%
	<i>Septifer virgatus</i>			1.8%		0.2%	0.2%
Cnidarian	<i>Diadumene lineata</i>		0.7	0.6			0.7
Crustacean	<i>Amphibalanus amphitrite</i>			0.1%		0.1%	
	<i>Capitulum mitella</i>	0.1%	2.1%		1.0%	0.2%	
	<i>Clibanarius</i> spp.			3.9			
	<i>Clibanarius virescens</i>						0.1
	<i>Gaetice depressus</i>		0.3	0.3			
	<i>Hemigrapsus sanguineus</i>			0.1			0.1
	<i>Ligia exotica</i>	0.2	5.8	1.6		5.4	1.5
	<i>Metopograpsus frontalis</i>		0.5			0.5	
	<i>Metopograpsus quadridentatus</i>						0.1
	<i>Pagurus dubius</i>			6.8			
	<i>Tetraclita japonica</i>		0.1%	0.7%		1.0%	0.1%
	<i>Tetraclita squamosa</i>			0.1%		0.5%	
	Unidentified juvenile crab			1.6	4.9		1.2
Echinoderm	<i>Heliocidaris crassispina</i>						0.1
	<i>Holothuria spilonota</i>					0.1	
Gastropod	<i>Polycheira rufescens</i>					0.7	0.7
	<i>Cellana grata</i>		0.1				
	<i>Cellana toreuma</i>		3.0	1.0		2.4	0.7
	<i>Echinolittorina radiata</i>	8.4			5.5		
	<i>Echinolittorina pascua</i>	20.4			14.1		
	<i>Littoraria articulata</i>	0.3	4.9			2.6	
	<i>Lunella coronata</i>		0.1	7.6		1.3	6.0
	<i>Mauritia arabica</i>						0.1
	<i>Monodonta labio</i>		6.1	7.0		5.1	1.9
	<i>Nerita albicilla</i>			0.1			
	<i>Nerita chamaeleon</i>	0.1	0.3	0.4		0.5	
	<i>Nipponacmea concinna</i>		3.3	3.4		3.9	1.9
	<i>Patelloida pygmaea</i>		1.8	0.3		8.1	2.5
	<i>Patelloida saccharina</i>		0.6			4.2	2.3
	<i>Planaxis sulcatus</i>		11.7	2.5		4.8	0.2
	<i>Reishia clavigera</i>		3.3	12.7		3.1	11.3
<i>Siphonaria japonica</i>			0.2	0.3		0.4	
Lichen, Cyanobacteria and Algae	<i>Chroococcus</i> sp.		18.5%			30.1%	
	<i>Corallina</i> spp.			20.6%		0.5%	30.0%
	<i>Enteromorpha</i> spp.						1.0%
	<i>Hildenbrandia occidentalis</i>		2.0%				
	<i>Hildenbrandia rubra</i>		11.5%	11.5%		3.0%	10.0%
	<i>Sargassum</i> sp.						0.2%
	<i>Ulva</i> spp.		0.1%				
Polyplacophora	<i>Lioloophura japonica</i>		1.5	8.4		2.7	2.2
Worm	<i>Thylacodes adamsii</i>						0.6

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Intertidal Habitat Type: Rocky Shore	Season: Wet	Abundance / Percentage Cover (per quadrat)					
		Transect 1			Transect 2		
Category	Scientific Name	High	Mid	Low	High	Mid	Low
Total No. of Species: 47							

Table 9: Species recorded at Ha Mei Tsui rocky shore during quantitative survey in dry season

Intertidal Habitat Type: Rocky Shore	Season: Dry	Abundance / Percentage Cover (per quadrat)					
		Transect 1			Transect 2		
Category	Scientific Name	High	Mid	Low	High	Mid	Low
Bivalve	<i>Barbatia virescens</i>		0.4%	0.2%			0.1%
	<i>Saccostrea cucullata</i>		5.9%	13.4%	0.1%	1.0%	0.2%
	<i>Septifer virgatus</i>		0.1%	0.1%			0.8%
Cnidarian	<i>Diadumene lineata</i>		0.6	0.4			1.3
Crustacean	<i>Capitulum mitella</i>		2.5%	0.5%		5.5%	4.0%
	<i>Clibanarius</i> spp.						0.4
	<i>Gaetice depressus</i>		0.3			0.1	0.1
	<i>Ligia exotica</i>		0.1		0.4	0.4	
	<i>Metopograpsus latifrons</i>		0.4			0.1	
	<i>Tetraclita squamosa</i>		3.1%	0.6%		0.1%	1.2%
	Unidentified juvenile crab		0.1			0.1	
	Gastropod	<i>Cellana grata</i>		0.6		0.1	0.1
<i>Cellana toreuma</i>			2.4	0.6		0.1	0.7
<i>Echinolittorina radiata</i>		7.0			6.1	0.8	
<i>Echinolittorina pascua</i>		11.7			10.6	0.4	
<i>Littoraria articulata</i>		0.1					
<i>Lunella coronata</i>				2.1			0.3
<i>Monodonta labio</i>			5.3	3.3		4.5	4.3
<i>Nerita albicilla</i>							0.1
<i>Nerita chamaeleon</i>			0.1	1.3		0.1	
<i>Nerita balteata</i>			0.3				
<i>Nipponacmea concinna</i>			5.0	2.0	0.1	0.6	1.3
<i>Patelloida pygmaea</i>			3.9	2.4		1.1	0.3
<i>Patelloida saccharina</i>			0.2	0.2			
<i>Planaxis sulcatus</i>			6.9	2.0		1.1	3.3
<i>Reishia clavigera</i>			4.0	8.5		0.7	0.9
<i>Siphonaria japonica</i>		0.7	0.3		0.1		
Lichen, Cyanobacteria and Algae	<i>Chroococcus</i> sp.		3.0%			7.0%	
	<i>Corallina</i> spp.		3.0%	4.0%			
	<i>Hildenbrandia occidentalis</i>			10.5%			4.0%
	<i>Hildenbrandia rubra</i>		26.0%	29.0%	8.0%	35.0%	37.0%
	<i>Neoralfsia expansa</i>			4.0%		6.0%	7.4%
	<i>Ulva</i> spp.						0.1%
Polyplacophora	<i>Liolophura japonica</i>		1.1	1.0		0.3	1.2
Total No. of Species: 34							

2.4 Sandy Shores

Sandy shore survey was conducted on 28 May 2014 (in Project Profile stage) at Hung Shing Yeh sandy beach and no intertidal species was recorded. The survey result is consistent with the approved EIA report

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in 2003 stating that the recreational beaches in Hong Kong are generally devoid of life. As such, an adjustment was made to change the sandy shore survey location to the less disturbed sandy shore at Tai Wan To where it is near the Project Area.

Sandy shore survey was conducted at Tai Wan To on 10 September 2015 during the wet season, while dry season surveys were conducted on 2 November 2015 and 18 January 2016. Species abundance in this sandy shore is very low. Only two species, which are bivalve *Donax* spp. and crustacean *Ocypode ceratophthalmus* were recorded in wet season (see **Table 10**). In dry season, only three species *Donax* spp., *Ocypode ceratophthalmus* and *Spirorbis* spp. were recorded. Overall, both the diversity and abundance of species at Tai Wan To sandy shore are low. No species of conservation interest was recorded.

Table 10: List of species recorded at Tai Wan To sandy shore

Intertidal Habitat Type: Sandy Shore		Relative Abundance (Wet Season)	Relative Abundance (Dry Season)
Category	Scientific Name		
Bivalve	<i>Donax</i> spp.	+	++
Crustacean	<i>Ocypode ceratophthalmus</i>	+	+
Worm	<i>Spirorbis</i> spp.		+
Total number of species: 3			

Table 11: Species recorded at Tai Wan To sandy shore during quantitative survey in wet season

Intertidal Habitat Type: Sandy Shore	Season: Wet	Abundance / Percentage Cover (per quadrat)					
		Transect 1			Transect 2		
Category	Scientific Name	High	Mid	Low	High	Mid	Low
Bivalve	<i>Donax</i> spp.	0.2					
Crustacean	<i>Ocypode ceratophthalmus</i>	0.4			0.4		
Total No. of Species: 2							

Table 12: Species recorded at Tai Wan To sandy shore during quantitative survey in dry season

Intertidal Habitat Type: Sandy Shore	Season: Dry	Abundance / Percentage Cover (per quadrat)					
		Transect 1			Transect 2		
Category	Scientific Name	High	Mid	Low	High	Mid	Low
Bivalve	<i>Donax</i> spp.			0.2		2	0.8
Crustacean	<i>Ocypode ceratophthalmus</i>	0.2					
Worm	<i>Spirorbis</i> spp.			0.6			
Total No. of Species: 3							