Marine Parks Visitors Code

The unique geographical position and coastal features contribute a high diversity of intertidal fauna and flora on Tung Ping Chau. To protect such an important habitat and its inhabitants. Agriculture, Fisheries and Conservation Department has designated Tung Ping Chau as a Marine Park on 16 November 2001. Visitors are required to follow the Marine Parks and Marine Reserves Regulation in order to preserve our natural environment and the ecosystems.

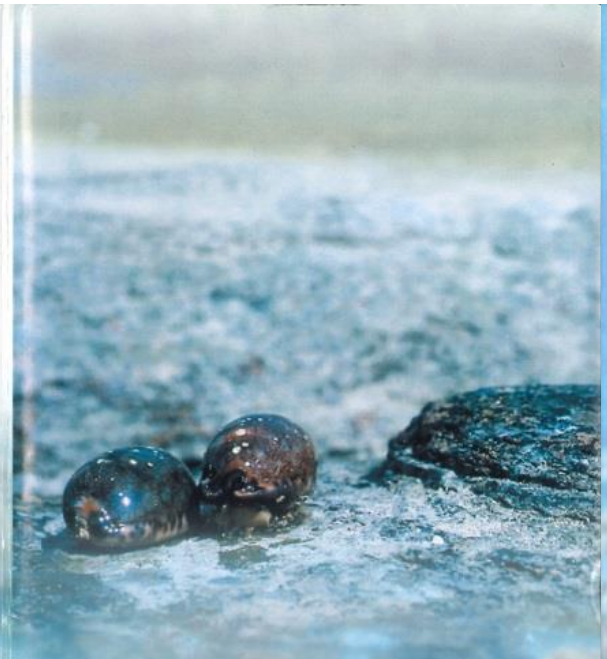
Marine Parks Visitors' Code simply contains the most important rules in the Marine Parks and Marine Reserves Regulation to guide visitors about the dos and don'ts in Marine Parks, which includes:

- Do not dig-up the sand and rubbles
- Do not overturn stones and boulders
- Do not hunt or disturb any marine wild life
- Do not stand on the corals
- Do not collect any live or dead specimens (it is suggested to take photos or video as records)
- Do not litter
- Do not pollute water bodies
- Respect our marine environment
- Avoid diving in the coral area before you can master your buoyancy properly
- Do not anchor outside the anchoring areas
- Listen and follow the advice of Marine Parks Warden

So, if you visit the rocky shores in Marine Parks next time, please remember not to collect any marine lives. Of course, do not take away any specimen, no matter live or dead. JUST use your eyes and your cameras to capture their way of life and give a helping hand to conserve our environment. We all hope that our next generation has the same opportunities to enjoy such wonderful environment in the future.

Information provided by Dr. Y.M. Mak

For enquiry, please call 1823
Marine Parks Division, Agriculture, Fisheries & Conservation Department, May 2005



Tung Ping Chau Marine Park

Intertidal Rocky Shore Life

漁農自然護理署
Agriculture, Fisheries and Conservation Department

Imagine that you were living on an intertidal rocky shore, what sort of harshness you would be facing everyday? The tide, of course! You would be exposed when the tide was out and immersed when it was in. Then the strong wave, it would be trying to wash you down shore. And the heat, you would easily get dried-up and got an extra-tanned body! Actually, these are just the major physical stresses encountered by all those tough creatures dwelling on the intertidal rocky shore area. Nature is fascinating as these creatures have all evolved in different manners to counteract these stresses and become specialized to inhabit their particular intertidal areas.

This pamphlet will guide you exploring the characteristics of these common intertidal rocky shore creatures that can be found in the Tung Ping Chau Marine Park and many other rocky shores in Hong Kong. Special tips and interesting remarks of each group will be stated, e.g., how these animals and plants live in this harsh environment and what they feed on etc.

Now, let's get started!

Lichens/Algae

Lichens 地衣

In the dry high shore region, you will find this symbiotic relationship of algae and fungi. They can only be found in clean environment. Therefore, lichen is a good indicator for areas with low air pollution.

Algae 海藻

Common species: Encrusting algae 表覆海藻：*Kyrtuthrix maculans* 褶絲藻，*Ralfsia expansa*膨大褐殼藻；Erect algae直立海藻：*Enteromorpha* spp. 髮藻，*Sargassum hemiphyllum* 馬尾藻

Encrusting and erect algae are commonly found in rocky shore areas. Encrusting algae can be found all year round while erect algae possess a highly seasonal pattern. There are also microalgae which are invisible by our naked eyes, but these algae provide the main food source for most intertidal gastropods.

Molluscs

Periwinkles 濱螺

Common species: *Echinolittorina trochoides*塔結節濱螺, *Echinolittorina radiata* 粒結節濱螺 & *Echinolittorina vidua*變化結節濱螺and *Peasiella roepstorffiana*羅豆濱螺

All are very tiny and common. Specialized for the high shore environment, periwinkles can withstand prolonged period of desiccation by tightly closed operculum. Mucus is secreted to stick them onto the rock surface. When the tide is in, they will start feeding on the microalgae off the shore and reproduce by releasing planktonic egg capsules during mating season.

Topshells 鐘螺

Common species: *Monodonta labio*單齒螺 & *Planaxis sulcatus*平軸螺

Very common in the mid-low shore region. Sometimes, flatworms may be found living inside the shells of *M. labio*. Also, topshells possess a pearly interior, and their shells can be used to manufacture buttons.

Nerites 蜑螺

Common species: *Nerita albicila* 漁舟蜑螺& *Nerite polita*錦蜑螺

These rounded and thick-shelled snails are all grazers. During the mating season, dome-shaped egg capsules can be found in crevices or rockpools at the low shore zone.

Chiton 石鱉

Common species: *Acanthopleura japonica*日本花棘石鱉

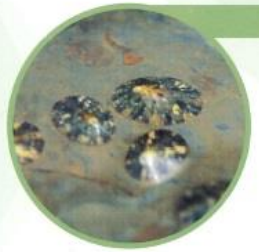
This is a very primitive snail. Instead of a spiral shell, it possesses 8 movable plates! Besides, chitons do not have tentacles with eye spots like their more modern brothers.

Cowrie 寶貝

Common species: *Cypraea arabica* 阿文綬貝

Look, they have very shiny shells! These low shore snails will cover up their shell with their body tissue, leaving the shiny surface unscratched! Cowries were used as money in the old times.

Limpets 蟛



Common species: *Cellana grata*門嫁蟛、*Cellana toreuma*嫁蟛 & *Siphonaria laciniosa*松菊花螺

They possess a strong foot to withstand dislodging from the strong wave. The animals can stick tightly to the rock surface and their flattened-shape help them withstand battering by the waves. True limpets (*Cellana*) have gills on the left side of the mantle cavity while false limpets (*Siphonaria*) are more advanced with modified lungs.

Dove shell 核螺

Common species: *Pyrene scripta* 核螺

Dove shells are small, variable in shape, with heavy smooth shells. Aperture is very narrow with teeth on both the columella and outer lip. Their shells have also been collected for making necklace.

Dogwhelks 荔枝螺

Common species: *Thais clavigera*疣荔枝螺, *Thais luteostoma*黃口荔枝螺, *Morula musiva* 鑲珠核果螺, *Cronia margariticola*珠田核果螺

They all feed on flesh! With their specialized radula/ teeth, they can drill through the shells of their prey and suck the digested food up! Sessile barnacles and mussels are their favorite food items. Their egg masses are like tiny vases sticking together in some damp crevices. Interestingly, these snails are used to make purple dye in ancient Egypt.

Mudwhelk 灘棲螺

Common species: *Batillaria sordida* 錐形灘棲螺

Batillaria can also be found in sheltered muddy areas. Sexes are separate and they produce gelatinous egg strings which will hatch into swimming veliger larvae. They are cooked and consumed in Taiwan as common snacks!

Turban & Lunella snails 月螺和蠑螺

Common species: *Lunella coronata* 朝鮮花冠小月螺& *Turbo chrysostomus*金口蠑螺

Shells are generally heavy, globose with special calcified and thickened operculum, known as cat's eye. Their opercula can also be used as Chinese medicine.

Common species: *Saccostrea cuculata*僧帽牡蠣

Rock oysters are sessile bivalves, cemented on exposed areas by their left valve. They are filter feeders and develop black hollow spines at the edge to avoid predation. They are fried with eggs and cooked as congee in a Chiu-Chou style, but don't harvest them!

Rock oyster 石蠔

Sea hare 海兔/海牛

Common species: *Aplysia* spp. 海兔

They have a large visceral hump, discrete neck, and a head with tentacles. When disturbed, a purp ish dye will be released to deter enemies.

Worm shell 蛇螺

*Common species: Serpulorbis imbricatus*覆瓦小蛇螺

They are filter feeder by extruding mucous threads from the pedal gland to trap planktonic food. Lacking a protective operculum, they will withdraw their body into their shell (tube) rapidly when disturbed.

Crustacean

Barnacles 藤壺

Common species: Acorn barnacles (*Tetraclita japonica*) 日本笠藤壺Stalk barnacles (*Capitulum mitella*)龜足

Both acorn and stalk barnacles are close relatives of crabs! They have a sessile adult form and able to swim around when young. They filter feed by means of their legs. Most barnacles are hermaphroditic and they possess the largest penis proportionally in the animal kingdom!

Hermit crab 寄居蟹

These special crabs need to change their hermits (empty shells) when they are growing up. Hermit crabs can be easily separated from normal snails as they travel in much faster speed. Also, sometimes you may find hermit crabs fighting for shells on the shore!

Common species: *Ligia exotica* 海蟑螂

These highly active animal possesses seven pair of segmented legs and two long antennae both at the front and rear ends. They are omnivorous, eat whatever they encounter.

Sea slater 海蟑螂

Predatory crab 食肉蟹

Common species: *Eriphia smithii* 司氏酋婦蟹

These strong aggressive crabs normally hide in crevices during daytime and hunt when it's dark. They use their strong chela to crunch mussels or barnacles.

Common species: *Grapsus albolineatus*白紋方蟹& *Plagusia depressa*瘤突斜紋蟹

Rocky shore herbivorous crabs are all flattened with long legs and tiny chisel-like chela. *Grapsus albolineatus* are very alert and dash into the water once approached while *Plagusia depressa* are normally found on lower shore and less active. Crab moults with hollow eye-stalks are commonly found on shore!

Herbivorous crabs 食素蟹

Others

Common species: Green sea urchin (*Salmacis sphaeroides*)雜色角孔海膽; Black sea urchin (*Anthrocidaris crassipina*)紫海膽; Sea cucumber (*Holothuria spilonota*)黑海參

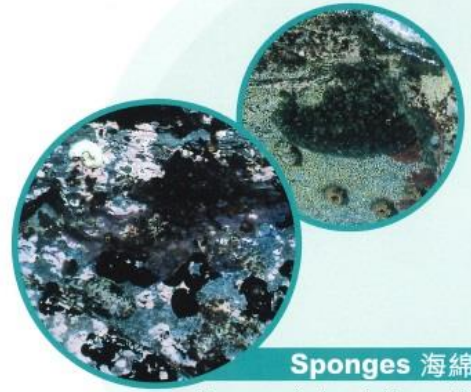
Anthocidaris graze mainly on encrusting algae and they suffer from heavy collection by fishermen for their gonads, which are Japanese gourmets. The green urchin, *Salmacis*, like to collect debris, e.g., algal fragments, small stones and shells to decorate their upper surface for camouflage. Sea cucumber, upon disturbance, puts out intensively sticky, corrosive, white collagenous filaments from the anus.

Urchins & sea cucumber 海膽和海參

Common species: *Spheractis cheungae*洞球海葵 & *Zoanthus* spp. 花群體海葵

Solitary and colonial anemones can be found at the low shore and the rock pools respectively. Both of them capture food particles using their tentacles which covered with stinging cells.

Anemones 海葵



They are simple primitive multicellular animals. Sponges filter food particles through pores on their bodies. Their bodies are supported by calcareous spicules as skeleton. Different species possess different coloration.

Sponges 海綿

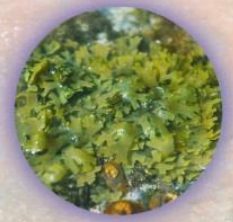
Common species: Gobies (*Bathygobius fuscus*) 蝦虎魚& Rockfish (*Sebastiscus marmoratus*) 石九公

They are common opportunistic fish found in rock pools. Gobies' ventral fins modify into a sucker. They are pale greyish colour, match perfectly with the sandy environment. Rockfish youth sometimes can also be discovered in rock pools.

Fishes 魚


High-shore
Lichen 地衣
Echinolittorina trochoides
塔結節濱螺
1cm
Echinolittorina radiata
粒結節濱螺
1cm
Ligia exotica
海蟑螂
2.5cm
Mid-shore
Kyrtuthrix maculans
褶絲藻
Monodonta labio
單齒螺
1.5cm
Nerita albicila
漁舟蜑螺
2cm
Thais clavigera
疣荔枝螺
3cm
Tetraclita japonica
日本笠藤壺
3cm
Echinolittorina vidua
變化結節濱螺
1cm
Ralfsia expansa
膨大褐殼藻
Planaxis sulcatus
平軸螺
2cm
Nerita polita
錦蜑螺
2cm
Morula musiva
鑲珠核果螺
2cm
Peasiella roepstorffiana
羅豆濱螺
0.5cm
Capitulum mitella
龜足
2cm
Enteromorpha spp.
髮藻
Cypraea arabica
阿文綬貝
5cm
Saccostrea cuculata
僧帽牡蠣
Batillaria sordida
錐形灘棲螺
3cm
Salmacis sphaeroides
雜色角孔海膽
6cm
Holothuria spilonota
黑海參
20cm

Low-shore



Dictyota spp.
網地藻

Cellana toreuma
嫁蝛

Thais luteostoma
黃口荔枝螺

Spheractis cheungae
洞球海葵

Grapsus albolineatus
白紋方蟹

Plagusia depressa
瘤突斜紋蟹

Hermit crab
寄居蟹

Cellana grata
門嫁蝛

Eriphia smithii
司氏酋婦蟹

Sargassum hemiphyllum
馬尾藻

Lunella coronata
朝鮮花冠小月螺

Acanthopleura japonica
日本花棘石鱉

Siphonaria laciniosa
松菊花螺

Turbo chrysostomus
金口螺螺

Zoanthus spp.
花群體海葵

Rockpool

Cronia margariticola
珠田核果螺

Aplysia spp.
海兔 / 海牛

Anthrocidaris crassipina
紫海膽

Pyrene scripta
核螺

Serpulorbis imbricatus
覆瓦小蛇螺

Sponges
海綿

Bathygobius fuscus
蝦虎魚

Sebastiscus marmoratus
石九公

Meat-eater
Plant-eater
Mix-eater
Filter-feeder
By photo-synthesis

Easy to find ?
Can't Miss
Common
Rare

13cm
Common size

Lichens/Algae
Molluscs
Crustacean
Others

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