

Annex B
Photographs

Impact of visitors on
High Ecological Value (intertidal) Habitats
A special report on Tung Chung Bay

Hong Kong
Biodiversity Strategy and Action Plan
Marine Impacts Assessment Focus Group
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Introduction

This Annex contains photographic evidence supporting some of the main findings and recommendations of the Marine Impacts Assessment Focus Group.

This photographs focus on natural watercourses, mangroves, and intertidal mudflats, which were identified by SUSDev21 as High Ecological Value Habitats in coastal areas in Hong Kong, although the issues identified are widely relevant and applicable. The photographs document activities and issues in the following areas:

- (a) Streams at Tung Chung,
- (b) Mangroves at Tung Chung,
- (c) Intertidal mudflat at Tung Chung,
- (d) Subtidal mudflat at Tung Chung.

These photographs were taken between 2009 and 2013 during visits to the intertidal mudflats at Tung Chung Bay and aims to show the extent and impact of human activities that occur on the high ecological value habitats in the area when the tide goes out. Many mudflats in Hong Kong are subject to similar types and levels of exploitation and whilst some activities are more destructive than others, the cumulative impact of these activities on any one location is considerable.

It is important to note, if properly managed and regulated, the activities in Tung Chung Bay could exist in harmony with the environment and with each other.

Background

The intertidal area at Tung Chung Bay is situated next to a major and mixed population centre and like many mudflats in Hong Kong, is connected to good transport routes and is easily accessible.

Tung Chung is now undergoing an expansion, with development in the east adding a new population of 117,000 people, in addition to increased development of commercial offices, all of which will lead to more visitors to the mudflat, increasing the already unacceptable levels of exploitation documented in this report even further.

Priority action

The added pressures on the environment of increasing the population in Tung Chung have not and will not be considered in the Tung Chung expansion project. The Tung Chung New Town Extension Study Team believes this is the responsibility of AFCD.

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STREAMS at TUNG CHUNG



A monofilament fishing net stretched across the entire Tung Chung stream on 6 May 2011.



Stream across centre of intertidal mudflat, leading to mangrove stands on 23 September 2010.



Mating pair of adult *C. rotundicauda* in stream bed on 3 July 2012



Juvenile *C. rotundicauda* foraging in stream bed on 3 July 2012



Mating pair of adult *C. rotundicauda* on 23 September 2010



Mating pair of adult *C. rotundicauda* on 23 May 2013



Fishing for shrimps in stream bed on 23 May 2013



Fishing for shrimps in stream bed on 23 May 2013



Shrimps caught in streambed on 23 May 2013



Electric fishing along stream banks on 23 September 2010



Electric fishing along stream banks on 23 September 2010



Clam digging in the stream on the mudflat on 23 September 2010.

MANGROVES at TUNG CHUNG



Collecting mangrove clams and gastropods as the tide is receding on 6 May 2011.



Collecting mangrove clams and gastropods as the tide has receded on 23 September 2010



Collecting mangrove clams and gastropods as the tide has receded on 23 September 2010



Mangrove clams (*Geloina erosa*) collected by women above on 23 September 2010



Gastropods collected by women above on 23 September 2010.



Gastropod collected by women above on 23 September 2010

INTERTIDAL MUDFLAT at TUNG CHUNG



Juvenile *T. tridentatus* foraging on the intertidal mudflat on 23 September 2010



The juvenile *T. tridentatus* in the previous photograph on 23 September 2010



Cyclist crossing the juvenile horseshoe crab foraging area on 19 September 2010.



Pushing a bike across the juvenile horseshoe crab foraging area on 23 May 2013



Cyclist crossing the juvenile horseshoe crab foraging area on 6 May 2011.



Cycle tracks on the juvenile horseshoe crab foraging area on 6 May 2011.



Cycle tracks and footprints on the juvenile horseshoe crab foraging area on 3 July 2012



Cycle tracks and footprints on the juvenile horseshoe crab foraging area on 23 May 2013.



Cycle tracks and footprints on the juvenile horseshoe crab foraging area on 23 May 2013



Clam digging on the juvenile horseshoe crab foraging area on 3 July 2012.



Clam digging on the juvenile horseshoe crab foraging area on 23 May 2013.



Clam digging on the juvenile horseshoe crab foraging area on 23 September 2010



Clam digging excavation on the juvenile horseshoe crab foraging area on 23 September 2010.



Clam digging excavation on the juvenile horseshoe crab foraging area on 6 May 2011.



Clam digging excavations on the juvenile horseshoe crab foraging area on 6 May 2011.



Clam digging excavations on the juvenile horseshoe crab foraging area on 3 July 2012



Mangrove trampled by clam diggers in the juvenile horseshoe crab foraging area on 3 July 2012.



Footprints on the juvenile horseshoe crab foraging area on 6 May 2011

SUBTIDAL MUDFLAT at TUNG CHUNG



Clam digger heading to the subtidal juvenile horseshoe crab foraging area on 23 May 2013.



Clam digger heading to the subtidal juvenile horseshoe crab foraging area on 23 May 2013.



Clam diggers heading to the subtidal juvenile horseshoe crab foraging area on 23 May 2013.



Clam diggers on the subtidal juvenile horseshoe crab foraging area on 23 May 2013.

SOLUTIONS

The intertidal area at Tung Chung Bay is situated next to a major and mixed population centre and like many mudflats in Hong Kong, is connected to good transport routes and is easily accessible. Most areas of the mudflat are heavily exploited and whilst some activities are more destructive than others, the cumulative impact of these activities is considerable.

However, if properly managed and regulated, many of these activities could exist in harmony.

Certain areas of the mudflat are ecologically highly sensitive and if left undisturbed would be incredibly rich in biodiversity. In addition to juvenile horseshoe crabs, the surface of the mudflat can be covered in thousands of fiddler crabs and hundreds of mudskippers, whilst other areas are rich in clams.

The simplest solution is to designate different areas for different activities and protect the ecologically most sensitive areas of the intertidal area, perhaps by constructing a board walk to both protect and promote the environment. At the same time, other areas could be designated for clam digging.

The area could then be promoted as an ecotourism destination (come and see Hong Kong's living fossil), as well as an education resource. Properly managed, ecotourism can contribute more dollars to local communities than exploitation dollars.

Section 4 of the Fisheries Protection Ordinance Regulations (Cap 171) allows for protections to be put in place and board walks are universally accepted as a way to protect ecologically sensitive areas. See details below.

It is also important to note, in all current and future land development plans, an overarching concern should be on the balance between land development and habitat protection. In all cases, due consideration should be given to ecologically sensitive habitats, especially on the issue of designation of protected areas/zones. Such considerations should not be limited to mudflats. They should be made in respect of all habitats. This is a CBD "mainstreaming" issue.

Fisheries Protection Ordinance Regulations (Cap 171).

Section 4 - Regulations

The Chief Executive in Council may by regulation provide for-

- (a) the prohibition or restriction of the use of explosives for the purpose of fishing;
 - (b) the prohibition or restriction of the use of toxic substances for the purpose of fishing;
 - (c) the prohibition or restriction of the taking of any variety of fish, or fish of any size, from the waters of Hong Kong;
 - (d) the prohibition or restriction of the use of any specified kinds of net or of nets having a mesh of any specified size for the purpose of fishing;
 - (e) the conservation of oysters and oyster beds;
 - (f) the prohibition or restriction of the collection, removal or destruction of any variety of fish spawn or turtle eggs;
 - (g) the protection of spawning areas;
 - (ga) the prohibition or restriction of the use of any apparatus of a class or description specified under paragraph (gb), for the purpose of fishing;
 - (gb) the specification by the Director (Director of Agriculture, Fisheries and Conservation), by notice published in the Gazette, of the class or description of apparatus for the purposes of paragraph (ga);
 - (h) generally, the protection or regulation of fishing.
- (2) Regulations made under this Ordinance may provide that contravention of any provision of the regulations constitutes an offence and may prescribe penalties therefor not exceeding \$200000 and imprisonment for 6 months

Section 4A - Orders

The Secretary (Secretary for Food and Health) may, by order published in the Gazette—

- (a) designate any area of the waters of Hong Kong to be a fisheries protection area to promote the conservation and management of marine and fisheries resources.

Boardwalk protecting stromatolites in Shark Bay, Australia.



Boardwalk over stromatolites in Shark Bay, Western Australia.



Notice explaining rationale of protecting stromatolites in Shark Bay, Western Australia.



The stromatolites in Shark Bay, Western Australia.