

在香港推行可持續 的掘蜆活動

PRACTISING SUSTAINABLE CLAM DIGGING IN HONG KONG



研究機構
Studied by



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香港掘蜆活動的歷史 History of clam digging in Hong Kong



香港作為一個沿海城市，長久以來一直依賴海洋資源維持生計。過去，掘蜆在香港鄉村的傳統活動之一。村民除了務農或捕魚外，亦會在附近的泥灘採集蜆隻作為額外的食物來源，通常選擇在農曆初一及十五前後潮位最低的時間進行。一些來自大嶼山的村民，例如水口村居民，懂得透過觀察泥面上的呼吸孔來辨認蜆隻的位置。此舉能讓他們無需大範圍翻動泥土即可採集蜆隻，從而減少對環境的干擾。他們主要採集體型較大的蜆隻作為食物，並保留較小的個體繼續生長，體現了一種較為可持續的採蜆模式。此外，當地居民更發展出獨特的採蜆工具，如翅口鏟和翅口耙，用於採集更多蜆隻。不過部分工具可能會對環境造成影響。

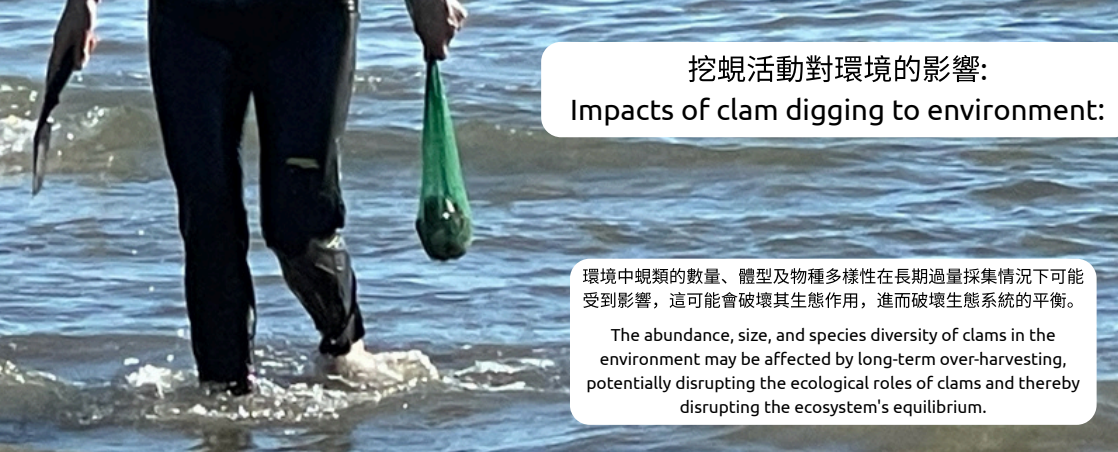
Hong Kong, as a coastal city, has a long history of using marine resources for livelihood. In the past, clam digging was a traditional practice in some villages of Hong Kong. Villagers harvested clams from nearby mudflats as an additional food source, in addition to farming or fishing, usually on the 1st and 15th days of the lunar calendar, when the tidal height was lowest. Some villagers from Lantau Island, such as those in Shui Hau, developed a unique technique to identify clams under the mud by spotting their breathing holes. This allowed them to harvest clams without having to dig up all the mud, thereby minimizing environmental disturbance. They mainly targeted larger clams for food while leaving the smaller ones to grow, showing a sustainable approach to clam digging. Moreover, local people developed tools such as the ci hau lim (sickle) and the ci hau pa (rake) to collect more clams, but some of these tools may impact the environment.

時至今日，掘蜆已逐漸轉變為一項受歡迎的休閒活動，尤其在夏季更為普遍。然而，訪客數量的增加亦引起對環境影響的關注。世界自然基金會（WWF）指出，缺乏規管的休閒式掘蜆活動不僅可能導致過度採集，亦會造成棲息地干擾的問題，尤其是在具有高度生態價值、同時亦是馬蹄蟹重要棲息地的水口。無規管的掘蜆活動正對大嶼山的生態系統構成威脅。蜆隻在生態系統中扮演重要角色，若此類無規管活動持續，可能帶來負面的生態影響。

Nowadays, clam digging has transformed into a popular leisure activity, especially in the summertime. However, the growing number of visitors has raised concerns about environmental impacts. WWF-Hong Kong (WWF) has suggested that unregulated recreational clam digging will not only lead to overharvesting but also cause habitat disturbance, especially in Shui Hau, which has high ecological value and is an important site for horseshoe crabs. Unregulated clam digging activities threaten the ecosystem on Lantau Island. Since clams play an important role in the ecosystem, the continuation of unregulated clam digging activities could have negative ecological consequences.



在東涌採集蜆隻/蠔隻的人士 visitors picking clams/oysters in Tung Chung



挖蜆活動對環境的影響: Impacts of clam digging to environment:

環境中蜆類的數量、體型及物種多樣性在長期過量採集情況下可能受到影響，這可能會破壞其生態作用，進而破壞生態系統的平衡。

The abundance, size, and species diversity of clams in the environment may be affected by long-term over-harvesting, potentially disrupting the ecological roles of clams and thereby disrupting the ecosystem's equilibrium.

Photo by WWF - Hong Kong



我們發現部分人士使用改良式耙作為更有效尋找蜆類的工具。然而，該工具會翻動更大範圍的泥土，及以較硬的不鏽鋼製成，所以與傳統工具相比可能對環境造成更大的破壞。

We discovered the use of a reformed rake, a more effective tool for finding clams. However, that tool digs up mud over a much larger area and is made of a harder stainless steel; therefore, it is more destructive than the traditional one.



水口的生態敏感地區，例如紅樹林及河流區域，環境十分脆弱，一旦受到干擾，往往需要長時間才能恢復。此外，該地亦是馬蹄蟹的重要棲息地，挖蜆活動可能對其棲息環境造成干擾。

The ecologically sensitive areas in Shui Hau, such as mangroves and riverine areas, are fragile and take a long time to recover once disturbed. It is also an important site for horseshoe crabs; clam-digging activities may disturb their habitat.

蜆隻對生態系統的重要性:

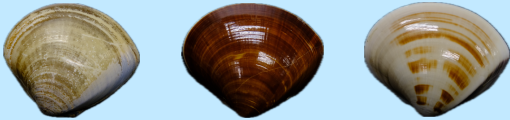
Ecological Importance of clams:

水質淨化:

蜆隻作為濾食性生物，利用鰓部過濾浮游生物及有機顆粒。此過程可移除過剩養分、預防有害藻類的形成，有助維持穩定的溶氧水平。

Water Purification:

As filter feeders, clams use their gills to strain plankton and organic particles. This process removes excess nutrients, prevents harmful algal blooms, and helps maintain stable oxygen levels.



食物網支持:

蜆隻在食物網中扮演重要的能量傳遞角色，將來自浮游生物的養分轉移至更高營養階層的捕食者，如魚類、鳥類及其他無脊椎動物。

Food Web Support:

Clams act as a critical energy link, transferring nutrients from plankton to higher-level predators like fish, birds, and invertebrates.

生物指標:

由於蜆隻對鹽度、溶氧及污染變化十分敏感，其健康狀況與族群密度可反映整體環境品質。

Bioindicators:

As clams are sensitive to changes in salinity, oxygen, and pollution, their health and population densities reflect the overall state of the environment.

進食野生蜆隻可能帶來的危害:

Possible Risks of Consuming Wild Clams:

污染物累積:

蜆類能在其組織中累積重金屬及微塑膠。一項2023年的本地研究發現，在熱門採蜆地點中採集的可食用蜆隻樣本中，超過50%檢測到微塑膠。

Pollutants Accumulation:

Clams can store heavy metals and microplastics in their tissues. A 2023 local study found microplastics in over 50% of edible clam samples from popular digging sites.

貝類中毒:

蜆隻攝食有毒藻類後可能累積毒素，食用後可引致疾病，例如麻痹性貝類中毒（PSP）或腹瀉性貝類中毒（DSP）。

Shellfish Poisoning:

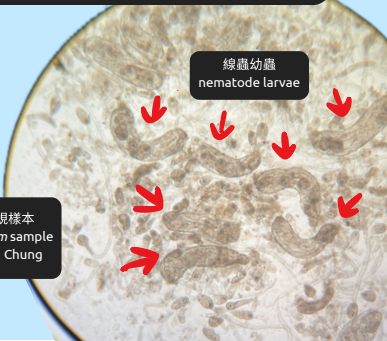
Consumption of toxic algae can lead to the accumulation of toxins in clams, resulting in illnesses such as Paralytic Shellfish Poisoning (PSP) or Diarrhetic Shellfish Poisoning (DSP).

生物污染:

野生蜆隻可能帶有寄生生物，例如線蟲幼蟲，而這些通常只能在顯微鏡下被檢測出來。

Biological Contamination:

Wild clams may harbor parasites, such as nematode larvae, which are only detectable under a microscope.



在東涌收集到的沙蜆樣本
from a *R. philippinarum* sample
collected from Tung Chung

大嶼山常見蜆類: Common clam species on Lantau island:

① *Meretrix* sp., ② *A. flexuosa* & ③ *R. philippinarum*:

是公眾主要採集的3個品種
are the 3 main species to be
collected by public

① *Meretrix* sp.

(including *Meretrix lamarckii*, *Meretrix lyrata*,
Meretrix meretrix and *Meretrix petechialis*)
(aka 文蛤/沙白 Asiatic Hard Clam)

分布在 Found in: ② 二澳 Yi O ③ 東涌 Tung Wan
④ 水口 Shui Hau ⑤ 貝澳 Pui O
平均大小 Average Size: 55mm

特徵: 以上四種文蛤屬物種外觀相似, 殼表光滑、有光澤, 殼形呈橢三角形, 僅從外殼表面較難區分
Features: All four *Meretrix* species shares similar features. Smooth, glossy, oval-triangular shape shell. Difficult to distinguish by looking at the surface.

顏色: 顏色由深棕至白色不等, 部分個體具有花紋
Colour: Dark brown to white in colour, some with patterns



④ 東涌 Tung Chung

我們在大嶼山6個沙灘進行了
蜆隻資源評估, 包括了:
We have conducted stock
assessment of clams at 6 beaches
on Lantau Island, including:

④ 東涌 Tung Chung, ⑤ 水口 Shui Hau & ⑥ 貝澳 Pui O:
是大嶼山的熱門掘蜆地點
are the popular clam digging spots in Lantau

② 沙螺灣 Sha Lo Wan, ③ 二澳 Yi O & ③ 東灣 Tung Wan:
是受人為干擾較少的對照掘蜆地點
are the control sites that have less human disturbance



② *Anomalocardia flexuosa* (=*Cryptonema producta*)

(aka 簾蛤/三角蜆 False Cockle)

分布在 Found in: ④ 水口 Shui Hau
平均大小 Average Size: 28mm

特徵: 殼表粗糙, 殼形呈次三角形, 帶輕微的葉狀突起
Features: Rough, subtriangular shape with a slight lobe

顏色: 白色, 帶深灰色放射狀條紋
Colour: White with dark grey radial streaks

③ *Ruditapes philippinarum*

(aka 沙蜆 Manila Clam)

分布在 Found in: ④ 東涌 Tung Chung
⑤ 沙螺灣 Sha Lo Wan
平均大小 Average Size: 24mm

特徵: 殼表粗糙, 殼形呈長橢圓卵形
Features: Rough, oblong ovate shape shell

顏色: 棕色, 帶深棕色花紋
Colour: Brown colour with dark brown patterns



⑥ 貝澳 Pui O

⑤ 水口 Shui Hau

④ *Anomalodiscus squamosus*

(鱗杓拿蛤)

分布在 Found in: ④ 東涌 Tung Chung
⑤ 沙螺灣 Sha Lo Wan ⑥ 水口 Shui Hau
平均大小 Average Size: 22mm



⑤ *Macridiscus aequilatera*

(等邊淺蛤)

分布在 Found in: ④ 東灣 Tung Wan
平均大小 Average Size: 46mm



⑥ *Geloina expansa*

(歪紅樹蜆)

分布在 Found in:
⑤ 沙螺灣 Sha Lo Wan ⑥ 二澳 Yi O
平均大小 Average Size: 43mm



⑦ *Cyclina sinensis*

(青蛤)

分布在 Found in:
④ 東涌 Tung Chung ⑤ 沙螺灣 Sha Lo Wan
⑥ 二澳 Yi O ⑥ 水口 Shui Hau
平均大小 Average Size: 45mm



⑧ *Marcia hiantina*

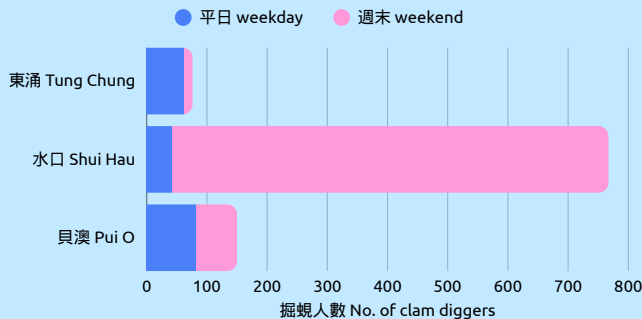
(裂紋格特蛤)

分布在 Found in:
⑤ 沙螺灣 Sha Lo Wan ⑥ 水口 Shui Hau
平均大小 Average Size: 33mm

我們的發現 Our findings:

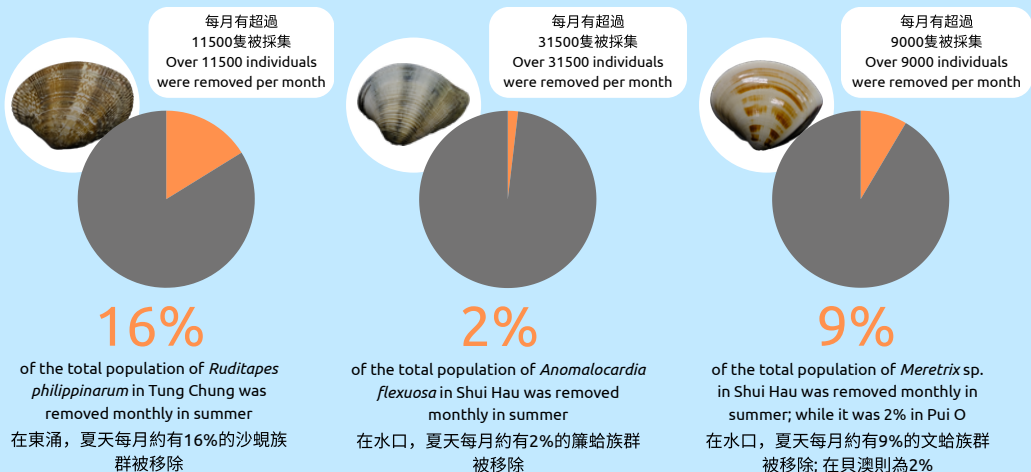
為了探討掘蜆活動對環境的影響，香港城市大學和香港中文大學的團隊進行了多項研究。並在2022年夏天旺季及冬天非旺季期間，分別於週末及平日進行普查。在低潮時段記錄掘蜆人士的數量，以及他們所採集的蜆隻數量與物種。

To assess the environmental impact of clam-digging activities, teams from City University of Hong Kong and the Chinese University of Hong Kong have conducted various studies. Censuses were conducted on both weekends and weekdays during summer peak season and winter non-peak season in 2022. The number of clam diggers and the number and species of clams collected by diggers were recorded during low tide.



在2022年夏天旺季週末期間，
在天氣良好及大低潮的時候，
估計水口每日有超過720名掘蜆人士

Estimated more than 720 clam diggers
daily in Shui Hau during peak summer
weekends, in good weather and at low
tide in 2022



我們發現以上3個品種的自然死亡及人為移除速度均比其繁殖及生長速度高，反映出現時的採集模式是不可持續的。
We found that the rates of natural death and manual removal are higher than those of natural reproduction and growth for all 3 species above, indicating that the clam-digging mode is currently unsustainable.

什麼是可持續的採蜆模式？ What is sustainable clam digging?

族群數量不應低於能透過自然繁殖與成長進行補充的水平，使族群能夠自然恢復與更新，從而維持穩定及健康的族群規模。
The population size should not be smaller than the level needed for replacement through natural reproduction and growth, so that the population can regenerate naturally and maintain a stable or healthy size.

-FAO (Food and Agriculture Organization of the United Nations)

以可長期維持的速度採集蜆類，在不耗竭資源或破壞其所依賴的生態系統的前提下進行採集活動。

Collecting clams at a rate that can be maintained over the long term without depleting the resource or damaging the ecosystem that supports it.

-FAO (Food and Agriculture Organization of the United Nations)

掘蜆活動不應對生態系統功能及生物多樣性造成顯著影響。

Ecological functions and biodiversity should not be significantly affected by clam digging activities.

-Smithsonian Ocean

香港現時的掘蜆相關措施:

Clam digging regulations currently in Hong Kong:



Photo by WWF - Hong Kong

WWF與水口當地的士多合作，向租借挖蜆工具的遊客派發蜆類保育尺。該尺根據科學調查的結果訂立建議捕撈最小尺寸，鼓勵遊客保留體型較小的蜆隻，讓其繼續生長及繁殖。

A clam gauge produced by WWF is given to visitors who rent the clam digging tools from the local store in Shui Hau. It suggests a minimum capture size based on scientific surveys, so visitors can leave the small clams to grow and reproduce.

在香港，任何在海岸公園和海岸保護區中採集海洋生物及資源的活動都是被禁止的。此外，還有一些環保組織在積極參與其他地區的保育和推廣工作。

In Hong Kong, the collection of marine life and resources is strictly prohibited within marine parks and marine reserve areas. There are also some environmental organizations actively involved in conservation and promotion efforts in other regions.

WWF提出了一套自願性行為守則，推廣在水口進行負責任及可持續的掘蜆方式，以減少對棲息地的破壞，例如避免使用具破壞性的工具，以及在完成掘蜆後回填挖掘的坑洞。

WWF has suggested a voluntary code of conduct to promote responsible and sustainable clam digging in Shui Hau, minimizing habitat damage, e.g., by avoiding the use of destructive tools and refilling holes after clam digging.

了解更多:
To learn more:



蜆類保育尺
Clam gauge



掘蜆行為守則
code of conduct of
clam digging

建議捕撈的
最小尺寸:

Suggested
minimum size
for capture:

5cm



Meretrix sp.

3cm



A. flexuosa

3cm



R. philippinarum

其他地方的掘蜆相關措施 Regulations in other places:

日本（鹿島灘地區） Japan (Kashima-nada Areas)

- 休閒掘蜆活動只限於指定沿岸區域進行
- 每人每日採集上限為1公斤，並設有物種及尺寸限制
- 嚴格禁止使用網具類工具
- Recreational clam digging is restricted to designated coastal areas
- Daily harvest limit maximum of 1 kg per person per day, with species and size limits
- Usage of netted tools is strictly prohibited

美國（紐約州） United States (New York State)

- 只允許於指定區域採集蜆隻
- 每人每日最多可採集100隻硬殼蜆，且鉸合部厚度須至少達1英吋
- 只允許使用手工工具，例如耙或夾具
- Only designated areas are allowed for the harvest of clams.
- Only 100 hard clams with at least 1-inch thick hinge are only allowed to be picked up daily.
- Only hand tools such as rakes and tongs are allowed.

英國（普爾港） United Kingdom (Poole Harbour)

- 蜆隻只允許以徒手採集
- 指定區域於季節性限制期間（11月至3月）限制採集時間
- 同時設有可採集蜆隻的尺寸限制
- Only hand picking is allowed for clams and other bivalves.
- Seasonal restrictions (Nov. to Mar.) within designated area limit the time for clams collecting
- The size of clams allowing to be collected is also restricted.



我們的建議： Our Suggestions:

為減少人類活動對環境造成的影響，WWF已為水口的掘蜆活動提出一套自願性行為守則。其中一項重要建議是使用蜆類保育尺，只採集已達成熟階段的個體，以支持族群的可持續發展。此做法可以在保護生態系統的同時，亦能讓公眾以可持續方式享受掘蜆活動。

To reduce the environmental impacts of human activities, WWF has proposed a self-regulatory code of conduct for clam digging at Shui Hau. One key recommendation is the use of a clam gauge so that only mature individuals are collected, thereby supporting population sustainability. This approach provides a valuable reference for balancing ecosystem conservation with sustainable public enjoyment of clam digging.

掘蜆可以是一項寓教於樂的活動，讓人們親近大自然並了解生物多樣性，而無需將蜆隻從它們的棲息地帶走。如想作品嚐，應提倡僅少量採集，避免過度捕撈和浪費。

Clam digging can be an educational activity that allows people to get close to nature and understand its diversity without removing clams from their habitat. For personal tasting, only small amounts of clams should be considered to collect to prevent overharvesting and the subsequent waste of clams.

在其他掘蜆地點（如貝澳和東涌）也應推廣保留小型蜆隻的意識，以便幼蜆能夠存活、生長和繁殖，確保族群的長期穩定。

The awareness of leaving the small-sized clams should also be promoted at other clam digging locations, such as Pui O and Tung Chung, to allow juveniles to survive, grow, and reproduce, and ensure long-term population stability.

對年輕一代進行生態教育可以提高他們的環境素養，使他們掌握生態系統和永續發展的知識。並加強於當地的宣傳，例如透過展板或海報，讓大眾能了解保護生態系統的重要性。

Ecology education for younger generations enhances environmental literacy, equipping them with knowledge about ecosystems and sustainability. We could also improve local promotion, e.g., by panels and posters, to let the public understand the significance of protecting our ecosystems.

應在所有地點禁止使用破壞性較高的工具，例如不鏽鋼耙。僅允許徒手採集或使用簡單、低影響的工具，以減少對潮間帶棲息地的物理破壞，並維持環境完整性。

The use of highly destructive tools, such as stainless-steel rakes, should be prohibited across all sites. Only hand collection or simple, low-impact tools should be permitted to minimize physical damage to intertidal habitats and maintain site integrity.

透過持續的監察，如發現蜆隻族群數量有持續下降的趨勢，可以考慮增加新規例保護蜆隻族群的持續性

Through continuous monitoring, if a sustained downward trend in clam population is observed, new regulations could be considered to set up to protect the sustainability of the clam population.

在水口生態敏感區域應考慮設立限制區，僅允許用於教育和保育用途。此外，在夏季採蜆高峰期時，應考慮關閉部分海灘區域，以減少人類活動對環境造成的干擾，並保護其他生物的棲息地。

Ecologically sensitive areas in Shui Hau should be considered for restriction zones that allow educational and conservation purposes only. Additionally, during the summer peak season, the seasonal closure of part of the beach area should be considered to minimize environmental disturbance and protect the habitat of other organisms caused by human activities.

應考慮設立公眾掘蜆尺寸和數量的限制，以讓尺寸較細的蜆隻生長並使蜆隻族群得以恢復。

The limitation in size and number of clams collected by the public should be considered to set up to allow small clams to grow and recover the clam population.

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