

MEEF2021011A

Project Title:	Save Our Shells: Repurposing Shells to Reduce Landfill Waste and Restore Marine Habitats
Name of Project Leader:	Anniqa Law
Name of Applicant Organisation:	The Nature Conservancy Hong Kong Foundation Limited

Executive Summary

Leaning on expertise gained from TNC's successful oyster recycling and reef restoration projects around the world, TNC has been working to bring back once-abundant shellfish reefs to Hong Kong and the Greater Bay Area. Our strategy provides a practical solution for the food and beverage (F&B) industry and local oyster aquaculture farmers to reduce waste by recycling discarded shells. This approach addresses the adverse environmental effects of discarded shells left in piles on the shoreline and diverts food waste from landfills. The shells collected are repurposed to become the foundations for living shellfish reefs which bring a range of benefits, including increased biodiversity, improved local water quality and more stable shorelines. The project also engages the wider HK public with the recycling process, shares conservation messages and creates abundant opportunities for hands-on volunteer engagement.

After demonstrating that shellfish reefs can be restored in various parts of Hong Kong, our goal is now to restore these habitats at scale. With higher volumes of recycled shells available to be repurposed as reef-building substrates, this project played an important role in the scaling up of reef restoration efforts in Tolo Harbour and North Lantau and has established an effective model to provide shells for future restoration projects.

In August 2020, we began to partner with the F&B industry, seafood wholesalers and local aquaculture communities in Deep Bay to recycle their discarded shells. Last year during the 1st phase of **Save Our Shells: Repurposing Shells to Reduce Landfill Waste and Restore Marine Habitats** (MEEF2021011), we collected 17.9 tons of shells from our partners and deployed nearly 10 tons of processed shells and aquaculture debris at pilot reef restoration sites on the seawall of the Airport 3RS and Yung Shue O in June 2021 & June 2022 respectively. This year, in the second phase of the project (MEEF2021011A) from July 2022 to June 2023, we collected a further 45.8 tons of discarded shells from 14 F&B industry outlets and 8 oyster farmers. We also engaged 550 volunteers at Pak Nai to clear and collect shell debris produced by the local oyster aquaculture industry that would otherwise degrade the nursing grounds for endangered Horseshoe crab species (Kwan et al., 2017). During this period, we also completed the reef restoration project at Hong Kong International Airport 3RS and conducted monitoring of the structural stability of the reef at Yung Shue O. The positive outcomes of both projects have provided encouragement and momentum for expanding our restoration efforts. In May 2023, we launched our initial denitrification research at Yung Shue O restored reef, and this scientific investigation will continue in the coming year.

The "Save Our Shells" shell recycling program provides an excellent opportunity to educate local communities and the public on the importance of estuarine ecosystems and the need to reduce landfill waste. This year, we launched the 'Rewilding our Ocean' marketing campaign to further educate the public on shell recycling and oyster reef restoration initiatives. Additionally, we collaborated with a proactive hospitality group that has willingly assumed greater responsibility for the transportation costs of the shell recycling project. We are committed to working closely with industry leaders to find effective ways to communicate their sustainability achievements to the public. We are pleased to note

that we are receiving frequent inquiries from potential restaurant partners who are eager to learn more and participate in further scaling up of the shell recycling initiative.

As the borders gradually reopen following the COVID-19 pandemic, we have been able to resume travel and engagement meetings with stakeholders in mainland China. In particular, we have focused on collaborating with stakeholders in Shenzhen, where we have been working closely with TNC China on oyster reef restoration strategies for the Greater Bay Area.

Looking ahead, with the continued support from MEEF during the 3rd phase of this project, TNC will continue to monitor the growth of the oyster reef we built in Yung Shue O and carry out scientific research to understand the ecosystem services it provides. The knowledge and insights gained from this research will inform and facilitate future restoration efforts and the scaling up of projects in the Greater Bay Area (GBA). We are committed to sharing our experiences and findings with stakeholders in the GBA region. By doing so, we aim to foster collaboration, disseminate best practices and encourage the implementation of similar projects throughout the area.

Project Description

As Hong Kong’s first shell recycling program, our “Save Our Shells” initiative has an important role to play in bringing back Hong Kong’s lost shellfish reefs by creating a pipeline of shell waste that can be repurposed into new reef substrate used in restoration projects. TNC HK aims to recycle discarded shellfish shells from the local aquaculture and food industry—shells that are typically destined for landfill or discarded like trash along the shoreline—and repurpose them into the substrate for new, living reefs in Hong Kong waters. These reefs will provide a boon of benefits, serving as a habitat for juvenile fish and other marine life and as natural filter feeders that improve local water quality and stabilise shorelines. We will also increase public awareness about the importance of shellfish reefs and estuarine ecology by engaging volunteers and organising activities for them to help collect and prepare shells for reef deployment. As the second phase of the recycling project, we will continue to work with multiple partners such as the oyster farming community, the Deep Bay local community, the F&B industry, The Agriculture Fisheries and Conservation Department of the HKSAR and others to advance the shellfish shell recycling program through the following objectives:

- To scale Hong Kong’s shell recycling program
- To collect, process and reuse 30 tonnes of shell waste for shellfish reef restoration
- To increase public awareness on the importance of oysters and shellfish reefs
- To improve habitat and nursing grounds for endangered horseshoe crab species in Deep Bay

Progress summary:

Phase 2 Activity	Date	Time	Venue	Content	Anticipated no. of participants	Progress remarks
Collection with restaurants	Jul 2022 – June 2023	N/A	N/A	- Discussions with partners to fine-tune collection logistics for different restaurants and learn from their experiences in food waste collection	10 restaurants	Achieved TNC successfully recruited 14 restaurants to participate in the project
Collection with oyster farmers	Jan, Feb 2023	N/A	Lau Fau Shan, Ha Pak Nai, Tsim Bei Tsui	- Collection and transportation of shells to the recycling site	8	Achieved During COVID, mainland workers cannot cross the border to work for the HK oyster farmers. Since 2023, the borders reopened, this allowed the oyster farmers to resume their normal operations. TNC has successfully worked with one oyster farming association to arrange and test shell collection logistics.

Volunteer activities	Monthly	N/A	Ha Pak Nai	- Collect shell debris, sort, and bag the weathered shells into mesh bags	Estimated to organize 20 trips for 400 people in total in 2 years (200 volunteers in 1 year)	Achieved -10 events were organized for aquaculture debris removal on the Pak Nai mudflat, during which 255 volunteers joined. -Nine events were organised during which 237 volunteers helped to sort the recycled shells and make oyster reef units from the recycled shell and aquaculture debris for use in future restoration projects. -Another four abandoned oyster farm reconfiguration and beach clean-up events were arranged for 81 volunteers from partners to restore the coastline in Pak Nai and Lei Yue Mun. -Five talks were delivered for a total of 75 people on the shell recycling and reef restoration projects last year. -A total of 648 people were engaged through these educational activities and volunteer field trips.
Monitoring of Oyster artificial reef building	August 2022, May, 2023	N/A	Tolo Harbour	- Structural monitoring of restored reef	N/A	Done After the deployment of the oyster reef in June 2022, we undertook 3 monitoring activities on 30 August, 22 November 2022 and 3 May 2023.
Local communities and partner engagement	On-going	N/A	N/A	- Site visits, meetings, and workshops with partners	N/A	On track Continuous communication with partners to support and organize outreach events such as talks and field trips with partners.
TNC website update and social media	On-going	N/A	N/A	- Soft marketing on TNC channels	N/A	On track TNC and our partners have been sharing news and social media posts about the project. The TNC website has been updated to include the latest updates.
Success Story sharing with restaurants, Oyster Campaign at the Maritime Museum	Jul to Sep 2022	N/A	N/A	- Oyster exhibit at Hong Kong Maritime Museum	N/A	Delayed and re-strategized The exhibit was delayed due to challenges with the availability of the exhibit venue – Hong Kong Maritime Museum. In Dec 2022, we launched a marketing campaign “Rewilding our Ocean” as a way to continue to raise public awareness about reef restoration. The exhibition component has been postponed and will take place in mid-Oct 2023.

Evaluation of project effectiveness in achieving the proposed objectives:

1. Continue to work with 10 F&B companies for shell collection and consumer outreach
 - a. During the project, we have established partnerships with 14 partners. Between 1 July 2022 to 30 June 2023, we collected 38.6 tons of shells. The summary of the collection operations for each partners can be found in Appendix 1.
 - b. As the project and TNC brand gained more visibility we received more inquiries from potential partners seeking to contribute shells to this project. With limited resources, the high cost of transportation presented a barrier to enrolling new partners. To overcome this hurdle, we have initiated discussions with partners to develop charging

packages. These packages offer an opportunity for our partners to provide financial support specifically aimed at covering the logistics cost of shell recycling. This financial support will help offset the expenses associated with the collection, transportation and processing of shells, allowing us to expand the program's reach and impact. As government intends to enforce the food waste levy soon we believe this program aligns with waste reduction goals of the F&B industry and we have developed some corporate packages that enable partners to participate at different engagement levels. We hope this can support more partners to take on extended producer responsibility and improve cost-effectiveness and sustainability of our project. We have had discussions with Cordis Hotel, Peninsula Hotel and potential partner Rosewood Hotel about this package. In the coming year we will continue to discuss with F&B partners to enhance our understanding of their needs and the ways in which we can enhance this initiative.

- c. We have been working with the existing partners to develop promotional items that can be displayed at their premises, so that their customers can learn where the oyster shells they consumed go. In April 2023, we have provided tent cards and posters to partner restaurants. All branches of Oyster Stations have displayed the tent card, stickers and posters provided by TNC. To engage more of the public about the use of recycled shells in reef restoration we also gave a talk during an Oyster Station event on 23 May 2023.

2. Collections from oyster farmers

- a. TNC has been talking to the oyster farmers to understand the COVID situation and manpower problems – mainland workers cannot come to Hong Kong and thus the normal operation of oyster farms was suspended. TNC did still arrange collection from two oyster farmers in July 2022 with local oyster farm workers at higher cost and with a different logistics arrangement than planned.
- b. In 2023, the borders reopened, and mainland workers could return. At this time the mainland workers hired by the oyster farmers were predominantly focused on resuming the core operations of the oyster farm. Despite this, we were still able to work with one of the oyster farming associations to scale up shell collection in May and June 2023.
- c. In collaboration with Deep Bay Oyster Cultivation Association and other oyster farmers, a total of 5.8 tons of shells were collected from oyster farms under this project and total of eight oyster farmers and local community members from Deep Bay were engaged in the collection.

3. Organise approximately 20 events to engage at least 400 volunteers in two years to help in the clean-up, collection, processing and transportation of collected shells.

- a. 10 events were organized to remove aquaculture debris from the Pak Nai mudflat and were joined by 255 volunteers. 237 volunteers from nine events helped sort the recycled shells and make oyster reef units from the recycled shells and aquaculture debris for future restoration projects. Another four abandoned oyster farm reconfiguration and beach clean-up events were arranged for 81 volunteers from partners to restore the coastline at Pak Nai and Lei Yue Mun. Five talks were delivered for a total of 75 people on the shell recycling and reef restoration projects last year. A total of 648 people were engaged through all these educational volunteer field trips and activities. For more information about the activities, please see Appendix 3.
- b. The aquaculture debris clean-up initiative was presented at the International Conference on Conservation and Sustainable Development of Coastal Wetland on 21 April, and Pak Nai Science Symposium on 22 April. Both events created platforms to

share the program and discuss the conservation impact with scientists, NGOs and Pak Nai local community members who had attended the meetings.

- c. We have collaborated with HKU – Faculty of Architecture for the Timebank the Game event to exhibit a lion sculpture made of recycled shell from our project at Central Market in Oct during the 2022 Hong Kong Biennale of Urbanism\Architecture 2022. As part of the same campaign, 10 participants joined a sharing on 1 Oct and 19 participants joined a field trip at Pak Nai on 2 Oct.
Recap video: <https://fb.watch/jCwTVimOMt/>
- d. We were approached by Lei Yue Mun Community - Christian Family Service Centre for a joint clean-up event on 17 Sep 2022 at Lai Yue Mun beach, a beach which has a lot of shells littered on its shores. 28 participants joined the event where they learned about the role of shells in conservation, the importance of oyster reefs and collected 87.4 kg of shells from the beach. This event proved to be a successful way to engage the local community in Lei Yue Mun and the organiser has already approached to TNC to arrange another similar event in September 2023.
- e. A reef ball unit workshop was hosted in collaboration with The Hong Kong Award for Young People (AYP). About 30 secondary students were brought to Pak Nai mudflat to learn about the oyster reefs and TNC's work to protect them. The students then designed and produced prototypes of reef units for TNC's restoration project. 10 pcs of prototypes were produced and presented at MakerBay. TNC has selected 2 designs for mass production during our upcoming activities. We have also organised a teacher workshop to demonstrate reef ball unit making, as a training for teachers who are interested in hosting similar workshops with their students. A total of eight reef ball unit workshops were organised with 215 participants including corporate partners, secondary school teachers and students. For photos of the events, please refer to Appendix 3.

4. Scientific research and monitoring of the reef

- a. In collaboration with the fish farmer Mr. Alex Lam Tsz Lung, a partner of TNC since 2019 on building biofilter under fish farm at Yung Shue O since 2019, TNC had successfully built a pilot oyster reef under his fish farm in Yung Shue O in June 2022. On 30 August, 22 November and 3 May 2023, TNC carried out underwater monitoring on the restored reef – biofilter at Yung Shue O Fishing Cultivation Zone. The divers measured the dimension of the reef substrates deployed and took photographs of the random quadrats (0.5m x 0.5m) on the reef.
- b. During the monitoring, the divers also collected some samples of oyster shells from the reef that showed natural recruitment on the shells, indicating that the substrates we deployed had successfully recruited oyster larvae. We also found the entire reef structure was stable, even after a typhoon in December 2022. For the detailed data from the reef monitoring, please refer to files in folder labelled Appendix 4.
- c. In May 2023, in collaboration with TNC Global Marine Science Team and University of Maryland Prof Jeff Cornwell, we launched an initial investigation into the potential of oyster reefs to denitrify water in Hong Kong (out of this project scope); the restored reef at Yung Shue O is one of the selected sites for this denitrification research. For more information, please refer to Appendix 5. In August we will have another investigation trial and capacity building workshop with the local researchers from HKU SWIMS lab on this research. During the August investigation, we will go to Yung Shue O restored reef for denitrification sampling and regular monitoring. We plan to develop a more detailed workplan for this denitrification research by early 2024.

- d. To increase the conservation impact, TNC has been working on a regional strategy for oyster reef restoration. TNC China and TNC Hong Kong have been communicating closely about strategies to scale oyster reef restoration in the Greater Bay Area, with the aim of enhancing the coastal resilience of the cities at GBA. As the borders reopened in early 2023, we were able to travel to mainland to share success stories from our oyster reef restoration work with stakeholders in China. On 9 May, TNC China had organised a mini symposium on oyster reefs in Shenzhen. We presented our shell recycling and oyster reef restoration to 20 representatives from NGOs, Universities and government. We delivered a public talk at a shopping mall in Bao An, where TNC China had put up education panels. From both engagement activities, we received positive comments from the stakeholders in Shenzhen who expressed that they were inspired by our case studies in Hong Kong.
5. Build visibility of the program to the general public through online and offline media exposure and publicity such as stories, promotional videos, and project updates
 - a. The project has received significant media attention and was mentioned in several media interviews. For media clippings and event photos, please refer to Appendix 6.
 - b. The 'Rewilding Our Ocean' campaign was launched in December 2022. A video capturing the reef building process for the reef at Yung Shue O was screened on outdoor advertising spaces during this campaign. The campaign promoted TNC's work online and on outdoor media channels between November 2022 and January 2023. This campaign can play an important role in raising public awareness, building support and raising funds for our conservation work. Please refer to the Appendix 7 for the summary of the campaign.
Campaign video: <https://www.youtube.com/watch?v=KvBB5my3TU8&feature=youtu.be>
 - c. TNC has been having ongoing discussions with Hong Kong Maritime Museum to plan an exhibit on oysters in Hong Kong that will increase public awareness about the ecosystem benefits of oysters and TNC's oyster reef program. Due to the availability of the newly renovated exhibition space at Maritime Museum, we have had to postpone the exhibition until mid-October 2023.

Summary and Way Forward

1. We have experienced a significant increase in inquiries from the F&B sector expressing interest in participating in our shell recycling project. With the timeline for the enforcement of waste levy now clear, the hospitality sector is actively seeking collaboration with us to reduce waste and promote sustainability. It is encouraging to see more and more restaurant partners willing to contribute towards covering the logistics cost of shell recycling. We see this an opportunity to further refine the funding strategy for the shell recycling program and accelerate the development of a circular economy of shells.
2. When TNC shared the potential impacts of dumping shells in the water with the oyster farmers, we found that they were concerned and more interested to engage with the shell recycling initiative as an alternative way to manage their discarded shells. We are now working closely with one of the oyster farming associations to scale up our shell collections from farmers. This requires extra resources (e.g., facilities and temporary storage space for a larger quantities of shells). We hope to work out a scaling-up plan to the ensure smooth operations of our shell recycling collections from oyster farmers.
3. The project has proven to have strong outreach potential and we have been working to raise public awareness via different channels, including leveraging the resources and networks of participating partners. We hope to increase the visibility of our project through the upcoming

exhibition at Hong Kong Maritime Museum, and potentially larger scale marketing campaign with a partner.

4. As the shellfish restoration momentum continues to grow in Hong Kong, another oyster reef restoration practitioner has approached us regarding the supply of recycled shells. We see huge potential to expand the project to respond to the increasing demand from restoration projects in the future.
5. TNC has a strategy to enhance the coastal resilience of GBA and oyster reef restoration is one of the key elements. In August 2023 TNC Hong Kong and our scientific partners HKU SWIMS Dr Bayden Russel and University of Maryland Prof Jeff Cornwell will present at another conference in Shenzhen. We will continue to share the case studies from Hong Kong with stakeholders in the region and contribute to TNC's GBA strategy for oyster reef restoration.

Appendices

Appendix 1: Shell Collection statistics

Collection statistics are not disclosed due to confidentiality reasons.

Appendix 2: Record of volunteer events

Record of volunteer events are not disclosed due to confidentiality reasons.

Appendix 3: Additional information e.g. event photos, etc

Appendix 4: Data of restored reef at Yung Shue O & photos

Data are not disclosed due to confidentiality reasons.

Appendix 5: Summary of denitrification research

Summary of research are not disclosed due to confidentiality reasons.

Appendix 6: Media report

Appendix 7: Rewilding the Ocean Campaign summary

Campaign summary are not disclosed due to confidentiality reasons.

Financial Statement and Audited Report:

Financial statement and audited report are not disclosed due to confidentiality reasons.

List of all project assets:

N/A. All purchased items are consumables, we did not acquire assets under MEEF funding.

Declaration

I hereby irrevocably declare to the MEEF Management Committee and the Steering Committee of the relevant Funds including the Top-up Fund, that all the dataset and information included in the completion report has been properly referenced, and necessary authorisation has been obtained in respect of information owned by third parties.

I hereby irrevocably declare, warrant and undertake to the MEEF Management Committee and the Steering Committee of the relevant Funds including the Top-up Fund, that I myself, and the Organisation:-

1. do not deal with, and are not in any way associated with, any country or organisation or activity which is or may potentially be relevant to, or targeted by, sanctions administered by the United Nations Security Council, the European Union, Her Majesty's Treasury-United Kingdom, the United States Department of the Treasury's Office of Foreign Assets Control, or the Hong Kong Monetary Authority, or any sanctions law applicable;

2. have not used any money obtained from the Marine Ecology Enhancement Fund or the related Top-up Fund (and any derived surplus), in any unlawful manner, whether involving bribery, money-laundering, terrorism or infringement of any international or local law; and

3. have used the funds received (and any derived surplus) solely for the studies or projects which further the MEEF Objectives and have not distributed any portion of such funds (including any derived surplus) to members of the Recipient Organisation or the public.



Signed by authorised representative as the duly authorised representative

For and on behalf of the Applicant Organisation

Name of authorised representative:

Anniqa Law

Date: 29 August, 2023

Official Chop:



Any opinions, findings, conclusions or recommendations expressed in this report do not necessarily reflect the views of the Marine Ecology Enhancement Fund or the Trustee.

Appendix 3

Additional information e.g.
event photos, etc

MEEF2021011A

Event photos

Timebank the Game

UABB2022

27.08 → 26.10.2022

TIME BANK THE GAME
- BANK TIME TO SCULPT
A SUSTAINABLE PLANET
時間知行

EXHIBIT
參展作品



集籽種城 SEEDS OF RESILIENCE RE(DIS)COVERING THE CITY



uabbhk • Follow
中環街市 Central Market



uabbhk A 6 weeks alternative reality game. 100 players would be transformed into cells, using time coin to shuttle through actions between reality and virtuality, building trust, learning from each other and co-creating. Every act for the environment will be valued as time coin connected into a blockchain of kindness. How many players would be able to evolve and reclaim humanity, would we see endless possibilities of collective actions for sustainable development? Let's find out.

「時間知行」是一個六星期的另類真實體驗，一百個真人將會化身成一個細胞，進行一場實驗遊戲。玩家能夠利用時間硬幣穿梭虛擬及現實世界，在過程中共同學習，共創價值，共同蛻變。每



34 likes

AUGUST 17, 2022



Add a comment...

Post

Timebank the Game



TimeBank the Game 時間知行

7 October 2022 · 🌐

回顧遊戲第三週！本周遊戲主題是SDG14 水下生物，重點在於海洋生態的可持續發展。TimeBank THE GAME 聯同 TNC HK 大自然保護協會，帶領玩家前往白泥修復蠔礁，同時也邀請了海洋生物學家 Dr. Jay J. Minuti，帶大家來一場「海洋生物尋寶之旅」。

位於元朗的白泥以迷人的日落景色聞名，在戀人眼中是一個浪漫的約會景點，在攝影發燒友眼中是取景勝地，但是在海洋生物學家中，白泥同時是香港的海洋生物多樣性熱點。

大自然保護協會研究和分析白泥的荒廢蠔田之後，發現泥灘是多樣生物的棲息地，無論是海草床、紅樹林，抑或野草之中，都深藏各式各樣的海洋生物。其中一種在白泥發現的重要海洋生物，就是馬蹄蟹，也是一眾玩家最想找到的 jackpot。

馬蹄蟹比恐龍更早在地球上出現，生存至今已 4.75 億年，被譽為活化石。馬蹄蟹雖然有個蟹字，但是牠們其實是蜘蛛及蠍子的近親。在香港曾經可以找到很多馬蹄蟹，但是由於過度捕撈，以及城市發展和海洋污染破了它們的棲息地，導致馬蹄蟹大量消失，數量不斷下降。

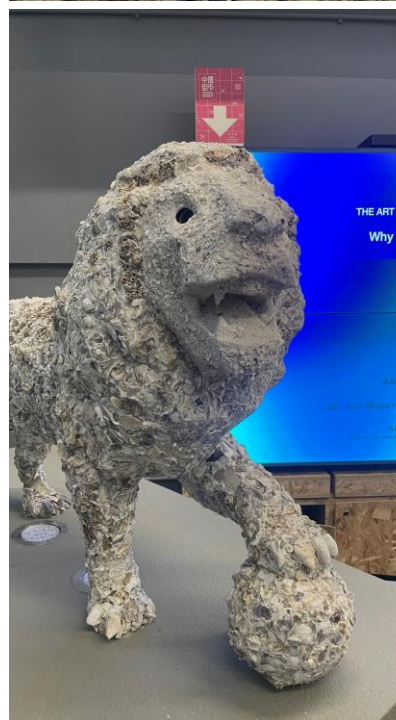
這片蠔田和泥灘雖然已經有各種海洋生物棲息，但是因為蠔民留下太多蠔樁，仍然需要人手逐支拔除，重新修復成蠔礁，才能令整體環境更適合各種海洋生物繁殖。拔除蠔樁的過程，需要先用鏟鬆動泥土，挖到見到樁腳，再徒手拔出。活動當日，TimeBank THE GAME 的玩家與一眾義工合作，好不容易才清除了一列蠔樁，還要組成人鏈，才能將蠔樁運送到理想的擺放處。

為何我們需要大費周章，拆掉蠔樁後又要重建成蠔礁？玩家candy表示大開眼界，平日只是在街市買生蠔，從不知道大海中的蠔隻是如何誕生，如何依附在更堅硬的石頭或木柱上生存和繁殖，更不知道原來蠔隻是海洋的天然濾水器。一隻蠔每小時最多可以過濾四至五公升水，濾水量足以在一天內注滿一個浴缸。只要海水有蠔，附近的污染物就會減少，有利其他海洋生物棲息。

其中一個玩家 CAREBEAR 讀大學的時候曾參與一個馬蹄蟹的研究，因此也曾訪大自然保護協會。她認為當日研究播下的種子，今日已經略有所成，感嘆每一個人的每一小步，其實都有助人類逐步邁向可持續發展。

NGO 在現實世界為環境創了許多價值，但是要「展示成果」有時並不容易。TimeBank THE GAME 創造了一個虛擬的平行宇宙，玩家只要付出時間，參與 NGO 在現實世界舉辦的環境修復行動，在虛擬世界就會鑄造成相應的 Time Coin，衍生逆轉氣候變化的時間值。

#TimeBankTHEGAME #TimeCoin #SDG #SustainableDevelopmentGoals #可持續發展目標 #創作實驗 #時間知行



<https://www.facebook.com/hongkongtimebank>

Reef Ball Unit Making



Reef Ball Unit Making - UBS



Collaboration with Lei Yue Mun community

基督教家庭服務中心 鯉魚門社區服務處
Christian Family Service Centre Lei Yue Mun NLCDP
地址：九龍鯉魚門安里西村99號 電話：2346 3680

風災支援
特訓隊 第5期

鯉魚門石灘清潔日



鯉魚門燈塔石灘

內容：清潔石灘及環保回收短講
日期：2022年9月17日(星期六)
時間：上午10:00-中午12:00
集合地點：鯉魚門社區服務處(安里西村99號)
對象：鯉魚門寮屋區居民
名額：20個
年齡：不限(6歲以下兒童須有成年人陪伴)
*請自備防曬用品及飲料

如欲報名請親臨本中心
(安里西村99號) 特別鳴謝 The Nature Conservancy 大自然保護協會

查詢 請致電 2346 3680

張貼日期：2022年9月2日



Clean up activities



Shell sorting activities



Reef monitoring



Reef monitoring



Public Outreach – tent card, poster promotion & public talk at Oyster Station;



<https://www.facebook.com/119202734768475/posts/pfbid0WYSvrT7JnkSEkcqGFW8se7qwub1wS7zrConnPpBxKQPbBb1VGzrcyfF9Dn9emxk3l/?mibextid=Nif5oz>

Public Outreach – Kokohill event on 30 Apr (Earth Month Celebration)



<https://www.stheadline.com/property-new/3226503/%E6%9C%83%E5%BE%B7%E8%B1%90KOKO%E7%B3%BB%E5%88%97%E6%96%B0%E7%9B%A4%E5%A4%A5%E5%A4%A7%E8%87%AA%E7%84%B6%E4%BF%9D%E8%AD%B7%E5%8D%94%E6%9C%83-%E8%88%89%E8%BE%A6%E5%9C%B0%E7%90%83%E6%9C%88%E9%87%8E%E9%A4%90%E6%B4%B%E5%8B%95>



Engagement with stakeholders in Greater Bay Area



Meeting with SZ stakeholders on 9 May



Public talk on 17 Jun



重现牡蛎礁 展览系列 活动

REVIVE OYSTER REEF

活动二 《我们在香港修复牡蛎》——限时导览讲解



嘉宾: 罗颂翘

大自然保护协会 (TNC) 香港保育项目经理

罗颂翘毕业于香港中文大学的工商管理系; 从事青少年及社区教育相关的保育工作有10年, 现于大自然保护协会 (TNC) 担任保育项目经理一职, 以其丰富的户外考察的经验, 带领公众认识及亲身体验TNC的保育项目, 从而提高公众对保育的意识, 启发地方社区、企业、青年团体、义工等公众参与TNC的保育工作。加入TNC之前, 罗颂翘亦曾于世界自然基金会及香港海洋公园保育基金管理不同保育项目, 与各持分者如保育团体、地方社区、教育者、政府人员等紧密合作。

时间: 6月17日上午15:30-16:30

地点: 宝安区滨海文化公园庆典广场旁

人数: 20人, 先到先得

报名链接:



指导单位: 深圳市宝安区城市管理和综合执法局、深圳山海连城自然教育联盟
主办单位: 大自然保护协会 (TNC)
支持单位: 深圳桃花源生态保护基金会、大鹏半岛海洋图书馆
战略合作: 深圳大学生命与海洋科学学院、深圳市城市规划设计研究院股份有限公司、深圳市红树林生态研究中心有限公司、蓝爱大鹏

Exploration on Alternative Use of Shells

To support students project - Terry HO, student of Postgraduate Diploma of Landscape Architecture at The University of Hong Kong to make shell bricks

TAL-L
Taxon | Archive | Lab - Library

MATERIALS
COLLECTION



Material Category

- Animal / Animal based
- Carbon based
- Cement based
- Ceramic
- Composite
- Glass
- Metal
- Mineral / Mineral based
- Naturals (others)
- Plant / Plant based
- Plastiglomerate
- Polymer
- Soil / Soil based (organic/mineral)
- Wood / Wood based

Material Track

ABOUT NEWS CLASSIFICATION TUTORIALS LOGIN

OYSTER DEBRIS BRICK (SAND MIX)

Material categories:	Identification number:
Cement based	23-7182-328-d
Mineral / Mineral based	
Sample produced by:	Sample date:
HO Chi Chung Terry	20 Mar 2023 (Received)
Sample condition:	Other iterations:
Intact	23-7182-328-a
	23-7182-328-b
	23-7182-328-d

Process-driven material

Oyster shells and debris for this material test series were collected from 'The Nature Conservancy' (TNC) under its oyster recycling project. The oyster shells are placed in a mould and filled with a mix of cement/sand/oyster debris. After curing, the brick is sliced into a series of thin slabs using a water jet. The 15mm thick slabs are richly textured, revealing oyster aggregates of different sizes as well as a riffled surface from the water jet cutting.



<https://tall-materials.org/materials-collection/oyster-debris-brick-crushed-oyster/oyster-debris-brick-sand-mix/>

Appendix 6

Media Report

07/19/2022	Earth.org	Oyster Farms Boost Biodiversity, Confirm Potential for Reef Restoration: Study
08/30/2022	HK01	Near 30 environmental groups, scholars and companies form the Marine Conservation Coalition, urging the government to designate 30% of Hong Kong waters as protected areas
08/31/2022	Oriental Daily News	Marine Conservation Coalition is established, urging the government to designate 30% of Hong Kong waters as marine protected areas
5/9/2022	Fortune Insight	Leading start-up event StartmeupHK Festival discusses how to leverage technology development to solve crisis in humankind
09/27/2022	China Daily Hong Kong Edition	Oysters help clear the waters in Hong Kong
2/11/2022	CNN Call to Earth	Restoring Hong Kong's oyster reefs
11/16/2022	TVB News A Walk with a View 2	Pak Nai
21-25 Nov 2022	CR2 Knowing is Fun	TNC
11/24/2022	ZonaUtara.com	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Zamag	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Yam News	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Yahopet	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Yahoo! Stocks Taiwan	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Yahoo! HK News	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Yahoo! Finance	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	World-Generation	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	WorkSmart Asia	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	WhatsOn	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Weekender	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	ValueBuddies	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	TraNews	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Top 10 Lifestyles	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	The Saigon Times	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	The Mirror	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	The Malaysia Voice	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	The Indian Sun	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	The Hub News	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	technow	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress

11/24/2022	SME Magazine	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Sina HK	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Sina HK	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Sangri Times	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	PR Newswire Asia	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	PR Newswire Asia	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	PR Newswire Asia	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Plaspak Asia	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Piston.my	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Pana Journal	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Pacific Daily News	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	One News Page Global Edition	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	MyStarJob	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Motoring-Malaysia	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	MotorBugs	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Money Hang	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Magazine More	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Lang1234.com	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Kaki DIY	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	International Solar Energy Society [ISES]	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Industrial Guide Asia	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	HiNet	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Haps Magazine Korea	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Goodinfo	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Finanzen.net	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	ET Net	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	ET Net	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Eddy Chua	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Defence Review Asia	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress

11/24/2022	CXO Exposure	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Content Platform	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Construction & Property	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	China Briefing	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	BusinessFocus	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Business Diary Philippines	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Bravo Filipino	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Bo News	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Best Lifestyle Site	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	BenAutobahn	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	autocari.com	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	AUTO INTERNATIONAL	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	AsiaOne.com	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Asia Tiger	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	ASEAN Briefing	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	Anews Media	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	ACROFAN	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/24/2022	88iv	Rewilding Our Ocean: The Nature Conservancy's pilot Shellfish Habitat Restoration Project in Tolo Harbour shows progress
11/25/2022	Sing Tao Daily	人工蠔礁試點 有魚棲息初現進展
11/29/2022	CR1 Share my song	Anniga Law
10/12/2022	I-Cable News	Tourists stepping on mudflats would jeopardise endangered species. The green group advocates the planning of conservation areas and entry restrictions during the breeding season
10/12/2022	Oriental Daily News	Tourists stepping on mudflats would jeopardise endangered species. Efforts made by conservation groups and the public were limited. Green group advocates the planning of protection area.
10/12/2022	Oriental Daily News	Tourists stepping on mudflats would jeopardise endangered species.
10/12/2022	Oriental Daily News	Tourists stepping on mudflats would jeopardise endangered species. The green group advocates the planning of protection areas.
10/12/2022	Sing Tao Daily	Green groups advocate zoning Pak Nai as a "Marine Protection Area"
10/12/2022	Sing Tao Daily	Green groups advocate zoning Pak Nai as a "Marine Protection Area"
10/12/2022	Sing Tao Daily USA	Green groups advocate zoning Pak Nai as a "Marine Protection Area"
10/12/2022	Sing Tao Daily Canada	Green groups advocate zoning Pak Nai as a "Marine Protection Area"

10/12/2022	Headline Daily	Green groups advocate zoning Pak Nai as a "Marine Protection Area"
10/12/2022	Bastille Post	Green groups advocate zoning Pak Nai as a "Marine Protection Area"
10/12/2022	South China Morning Post	Calls grow to protect critical seagrass beds
10/12/2022	South China Morning Post	Call to mark 800 hectares in northwest Hong Kong as marine reserve to protect last stronghold of vulnerable seagrass species
12/30/2022	Mongabay	Restoring Hong Kong's oyster reefs, one abandoned oyster farm at a time
12/12/2022	The Biologist	Restoration Dramas
15 Feb 2023	蔥頻道 透視 ESG	https://www.youtube.com/watch?v=bXLxZefWb4o
14 May 2023	SingTao	See below
8 Jun 2023	RTHK Radio 5 綠色 Fighting	https://www.rthk.hk/radio/radio5/programme/green_fighting
23 Jun 2023	TVB Jade 流行都市 Big City Shop	https://programme.tvb.com/tc/bigcityshop_118508/%E6%B5%81%E8%A1%8C%E9%83%BD%E5%B8%82



羅頌翹所享用的「地球月野餐套餐」，所有容器與餐具均為可應用，有助減少地球負擔。



復出4年已經40歲的馮永雯，歲月完全沒有在她身上留下任何痕迹，舉手投足就是超模風範。

撰文 | 黃佩麗 攝影 | 朱偉彥

大自然保護協會趁4月是「世界地球月」，提倡大眾「留一天與自然連接」，與大自然建立難忘的聯繫，在4月15日至5月14日期間，協會與城市綠化區域附近的餐廳合作，推出「地球月野餐套餐」，讓市民在享受大自然之餘，亦能培養減少浪費的生活習慣，減低地球環境的負擔，一起創造一個綠色宜居城市。

半途出家搞保育 愈做愈有Feel

羅頌翹從生活做起 保護大自然



設立世界地球日，就是要提醒大家謹記保護環境。

大自然保護協會推行收集廢殼計畫，將廢殼循環再用，變成高質素土壤添加劑或肥料。

循環再用的廢殼會被放進海中，能重建珊瑚，作為蠔苗生長所依附的基底。

港人愛吃海鮮，羅頌翹希望能促進可持續漁業。



大自然保護協會(The Nature Conservancy, TNC)保育項目經理羅頌翹，日前就到觀塘海濱公園享用「地球月野餐套餐」，套餐內含TNC特別為慶祝地球月而精心設計的野餐墊、2人份小食與飲品，而套餐內所有容器與餐具均為可重用，希望培養大眾減少浪費的生活習慣，減低地球環境的負擔。羅頌翹表示香港雖是石屎森林，但勝在地方夠細，如果大眾想享受大自然風光，最快半小時車程就能去到郊外地區。「香港有百分之四十是郊野公園，有很多綠化地帶，海岸線也長。即使不是郊外，其實都可以隨時隨地享受大自然，好似今日來到觀塘海濱公園，見到海感受到海風，天陰、陽光、下雨都是自然的一部分，所以TNC想用野餐的形象，讓大家休息一下，離開室內感受一下大自然，同一時間了解人需要休息時，大自然也需要休息。」

讀商轉軟教保育

羅頌翹畢業於香港中文大學工商學系，畢業後卻未有從商，反而從事青少年及社區教育相關的保育工作，至今已逾十年。她自嘲其對於生物科的認識只到中五程度，「我是很典型的香港學

生，覺得在香港讀商才有發圍，但我好早已經知道自己不喜歡商科，所以畢業後用了一些時間搵工，我以前鍾意搞活動和帶團，第一份工是在一個環團工作，負責做一個學校計畫，帶學生出去睇生態，算是搞活動的職位，好感恩他們請了我這個無生物科背景的人，入到去才發現個世界好大。原來大自然很有力量，我們身邊有很多不同的動物居住，於是我邊學邊做，因為要教學生，所以我要好快去學，學完很有成就感，學生的反應又好，成為我想學習更多的推動力。做了六、七年後，發現做保育只是在教育層面上是不足夠的，是要真的在政策上的改變，要有實際的項目去改變生態環境才行，於是我就由教保轉去做保育，做一些實際的項目，好像是修復蠔礁，我就真的要整個蠔礁出來。」

促進可持續漁業

從事保育工作從來都是一件花時間的事，羅頌翹慶幸愈來愈多有心人的參與保育工作，在蠔礁修復的項目上，也有新一代的漁民和蠔民願意嘗

試以新的方式經營養殖業，「香港人很喜歡食海鮮，更需要靠養殖業支持，尤其疫情的時候，很多進口的東西都要停止入口，本地出產的漁農產品都支持香港不少的蛋白質，大家亦開始了解香港有這個需要，政府也想推動香港的養殖業。而且新一代更明白甚麼是可持續漁業，好像我們一個拍檔，他對養魚好有想法，希望香港人食到健康的魚，飼養方法都是基於自然，不會用化學飼料，預防疾病多過醫病，我們很開心有一批新人肯去試新方式，而我們其中一個合作試驗就是在漁排底處蠔礁，養魚區會有水質問題，但可以利用蠔礁做一個生物過濾網，利用蠔幫手去食水中過多的營養，得以控制水質，魚又可以住得開心點。希望將來有更多這類的合作，香港人也要多多支持本地的漁農產品。」



原本讀商科的羅頌翹從事保育工作後，更有成功感和滿足感。