

## **Hong Kong Reef Check 2020** **Results Summary**

### **(I) Background**

There has been a growing attention and support from the public on Hong Kong Reef Check since the Agriculture, Fisheries and Conservation Department (AFCD) took up the coordinating role in 2000. In 2020, a total of 107 dive teams, involving over 800 volunteer divers took part in the event and this represents a 20-fold increase in divers as compared with that in 1997 (only 40 divers).

### **(II) Objectives**

The Hong Kong Reef Check is part of the global programme to promote sustainable management of coral reefs. Reef Check in Hong Kong serves 2 major functions: (a) to raise public awareness on the ecological importance of corals and the need for coral conservation and (b) to provide updated information on local corals for conservation and management.

For further details of Reef Check, please visit the below website:  
[http://www.afcd.gov.hk/english/conservation/con\\_mar/con\\_mar\\_cor/con\\_mar\\_cor\\_hkrc/con\\_mar\\_cor\\_hkrc.html](http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_cor/con_mar_cor_hkrc/con_mar_cor_hkrc.html).

### **(III) Reef Check 2020**

Same as past few years, we organised a technical seminar for team members on standard survey methods and data collection prior to the Reef Check surveys. We also invited marine ecologists to share knowledge and experience on taxonomic identification of coral and other indicator species. This helps to improve the quality and accuracy of the field data and enhance understanding of team members on marine ecology and the need of marine conservation. This year, the opening cum technical seminar was hosted virtually on Facebook Live so that participants could join despite maintaining social distancing during the epidemic.

### **(IV) Reef Check sites**

The water areas covered in Reef Check 2020 are extensive and many of them are of ecological importance. The 5-month exercise from June to October covered the best coral growing sites known in the eastern part of Hong Kong waters extending from Tung Ping Chau in the north to Ninepin Groups in the south. A total of 33 sites were successfully surveyed, the locations of which are given in Figures 1 and 2. Out of the 33 survey sites, nine of them are within Marine Parks.

## (V) Major findings

### (a) Coral coverage

- A variation in coral coverage (ranging from 13.8% to 83.8%) was recorded among 33 survey sites. The percentage of coral coverage for each survey site is shown in Table 1.
- Out of the 33 sites surveyed, 19 of them recorded high coral coverage (i.e. >50%). These sites included A Ma Wan of Tung Ping Chau, Lai Chi Wo, Au Yue Tsui of Yan Chau Tong, Wu Pai, West and South of Crescent Island, Coral Beach, Pier and Gruff Head of Hoi Ha Wan, Pak Lap Tsai, Pak A, Tai She Wan, Tai Mong Tsai, Town Island, East, North and South of Sharp Island, Bluff Island and East Dam.
- Sharp Island East was the site with the highest coral coverage (83.8%).
- 6 out of 9 survey sites within Marine Parks (i.e. Hoi Ha Wan, Yan Chau Tong and Tung Ping Chau Marine Parks) recorded high coral coverage (i.e. >50%).
- Out of the 33 sites surveyed, corals at 7 sites were identified up to genus level by the team scientists. This reflects the increased interest of team members on coral identification and the success of the technical training we offered.

### (b) Species diversity

- 17 out of the total 20 assigned indicator species were recorded in the survey. Most of the survey sites record high species diversity.
- A correlation was observed between coral coverage and species diversity, indicating sites with high coral coverage tend to support more fauna groups in close association with corals.
- Out of the 20 assigned indicator species, wrasses, butterfly fish, snappers, sea urchins, sea cucumbers and cowries are species commonly found in the survey sites.
- Most of the groupers, wrasses, sweetlips, and snappers were found in survey sites at Port Shelter and North-eastern waters including Tung Ping Chau Marine Park.

### (c) Change in Coral Coverage and Indicator Species

- Change of coral cover and indicator species were examined and compared. This helps to assess the coral condition and fauna diversity of a coral reef ecosystem over time.

- The growth and condition of corals at the 33 sites are stable with some sites showing slight variation. The change of coral cover in 2019 and 2020 is shown in Figures 1 and 2.
- Long-term change of indicator species was examined. Results from past survey indicated that they are very stable and the species diversity remains on the high side.

(d) Other Observations

- No signs of destructive fishing practices were observed at all sites. However, we have recorded abandoned nets at 2 sites. The impacts were minor.
- Coral bleaching was observed at 3 sites. The impacts were minor and localised.

(e) Coral Watch

- The health condition of corals was assessed using specially designed Coral Health Monitoring Chart. The colour intensity of corals reflects the amount of the symbiotic algae (zooxanthellae) inside the corals, which in turn indicates the health status of the corals. The deeper the colour, the healthier is the corals.
- The Coral Health Monitoring Chart has four sample colours and 6 degrees of darkness (Code 1 to 6) for each sample colour representing different stage of coral health condition. Code 1 is the lightest and Code 6 has the darkest colour.
- Corals at 21 sites were assessed using Coral Watch tool in Reef Check 2020. The average health index is 4.31 (ranging from 3.15 to 5.45). The results are similar to last year (3.96). The average health index is well above the general average value (3), indicating corals were in healthy and stable condition.

**(VI) Measures taken by AFCD on coral conservation**

Coral reefs are highly productive systems, which support a high diversity of marine life. AFCD has put in place a series of measures and programmes to protect and conserve the coral communities in Hong Kong. Key areas include:

(a) Designation of marine protected areas

We have designated six Marine Parks and one Marine Reserve for the conservation of marine environment and protection of corals. A plan is underway to designate more marine parks to better conserve the seascape feature and ecological resources.

(b) Education and publicity

We have organised a range of educational and publicity activities including public lectures, seminars and exhibitions to enhance public understanding of the importance of protecting the marine environment and coral communities. Ghostnet Cleanup Workshop and Coral Restoration Workshop were organised to educate divers and allow them to participate in protecting the marine environment and coral communities.

(c) Monitoring and studies

We actively monitor the status of coral communities of Hong Kong through annual “Reef Check”. Results of the Reef Check are publicised to raise public awareness of the current status of our marine environment and to seek their cooperation in protecting our precious marine resources.

In addition to Reef Check, we also undertake comprehensive coral studies to provide information for effective and appropriate management. This year, we have implemented an online coral bleaching reporting system, which allows divers to submit their bleaching sightings.

(d) Reduce coral damage caused by boating and recreational activities

To protect coral communities from anchor damage, mooring and marker buoys have been installed in Marine Parks where recreation pressure is high.

Also, specially-designed marker buoys were installed at Bluff Island, Port Island and Sharp Island west since 2002 and South Ninepin Island, Shelter Island and Sharp Island East since 2015 for better protection of coral from anchor damages. Long-term monitoring results at Sharp Island and Bluff Island indicate that there has been an overall increase in live coral cover in the marker area and damaged corals had shown signs of recovery.

Leaflets and posters on “No-anchoring area” at Bluff Island, Port Island, Sharp Island West, Sharp Island East, South Ninepin and Shelter Island and stickers on “Codes for visiting coral areas” have been published and distributed to the boaters and divers through various channels.

(e) Scientific database

Currently a total of 84 hard coral species, from 28 genera of 12 families have been found in Hong Kong waters. A total of 67 species of octocorals (29 species of soft corals and 38 species of gorgonians) and 6 species of black corals were also recorded in Hong Kong waters.

A “Field Guide to Hard Corals of Hong Kong”, “Field Guide to Common Corals of Hong Kong”, “Field Guide to Common Reef Fishes of Hong Kong”, “Field Guide to Indicator Fishes of Hong Kong Reef Check”, “Field Guide to Indicator Fishes of Hong Kong Reef Check II” and “Field Guide to Indicator Invertebrates of Hong Kong Reef Check” were published to document the diversity and unique features of our local coral communities and reef-associated marine life.

We have completed a consultancy study of coral bleaching and bioerosion in Hong Kong. The study provided updated and scientific data and recommended appropriate management measures and long-term monitoring.

Marine Conservation (East) Division  
Country and Marine Parks Branch  
Agriculture, Fisheries and Conservation Department

5<sup>th</sup> December 2020

Table 1: Hard coral coverage at 33 sites

Site	Coral Cover (%)
1. A Ma Wan, Tung Ping Chau	56.9
2. A Ye Wan, Tung Ping Chau	41.6
3. Wong Ye Kok, Tung Ping Chau	39.9
4. Kai Kung Tau, Kat O	22.5
5. Tau Tun, Kat O	29.0
6. Lai Chi Wo, Yau Chau Tong	51.3
7. Au Yue Tsui, Yau Chau Tong	59.4
8. Ngau Shi Wu Wan	30.3
9. Wu Pai, Crescent Island	52.1
10. Crescent Island West	51.7
11. Crescent Island South	58.1
12. Tung Wan, Double Island	27.1
13. Wong Chuk Kok Hoi	15.6
14. Port Island	13.8
15. Moon Island, Hoi Ha Wan	25.4
16. Coral Beach, Hoi Ha Wan	66.2
17. Pier, Hoi Ha Wan	63.5
18. Gruff Head, Hoi Ha Wan	54.9
19. Long Ke Wan	35.0
20. Siu Long Ke	43.1
21. Pak Lap Tsai	55.0
22. Pak A	62.9
23. Tai She Wan	61.9
24. Tai Mong Tsai	70.7
25. Town Island	50.9
26. Sharp Island East	83.8
27. Sharp Island North	76.4
28. Sharp Island South	50.3
29. Pak Ma Tsui	36.3
30. Shelter Island	38.1
31. Bluff Island	72.5
32. East Dam	55.6
33. Ninepin	23.1

Figure 1 Reef Check site location & hard coral coverage comparison (2019 vs 2020)

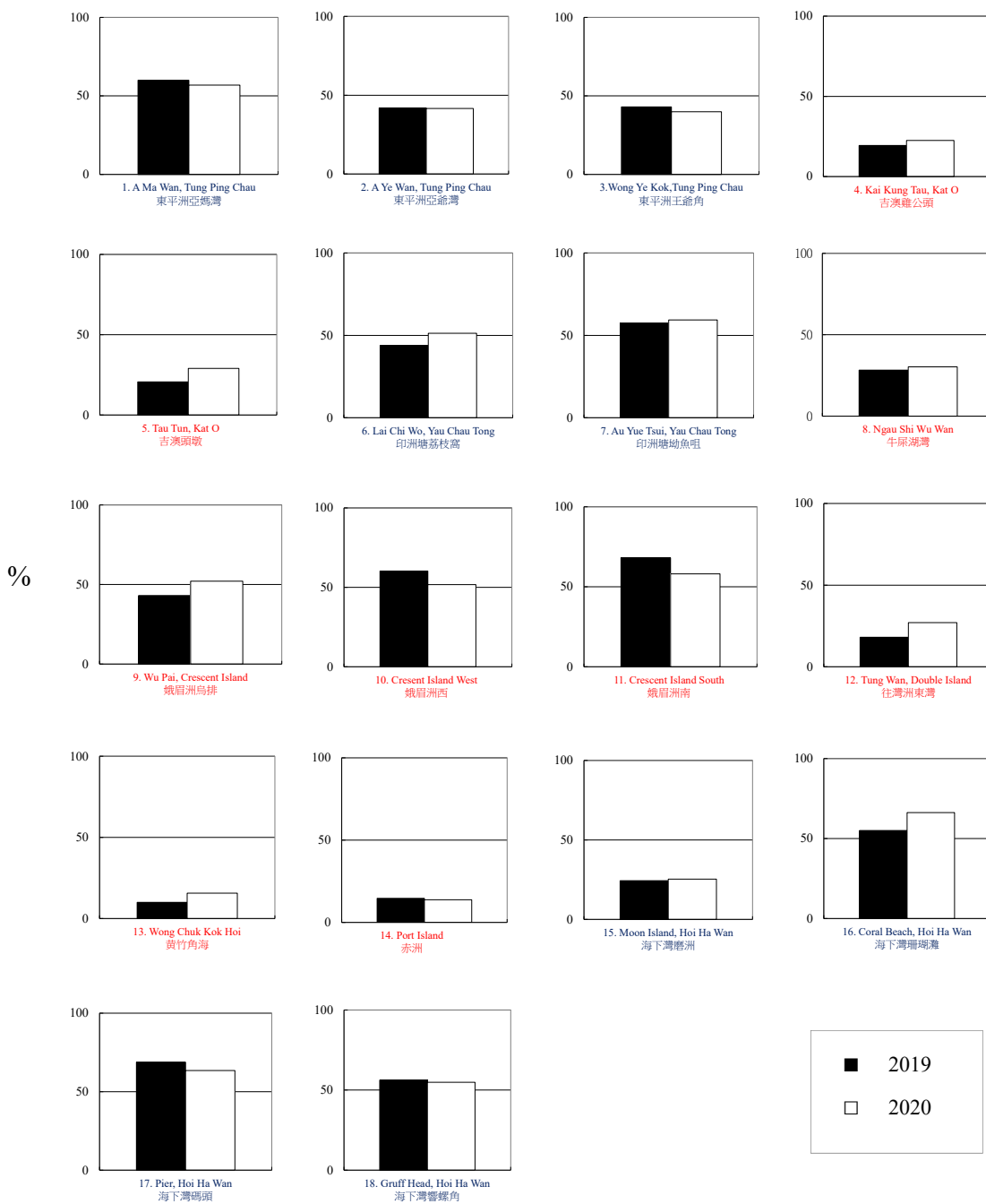


Figure 2 Reef Check site location & hard coral coverage comparison (2019 vs 2020)

