

COUNTRY AND MARINE PARKS BOARD

Consultancy Study on Review of Fisheries Management Measures in Marine Parks – Management Options and Stakeholder Engagement

1. Background

1.1 At present, there are five marine parks and one marine reserve in Hong Kong, comprising a total water area of 3,400 hectares (ha). Together with the three proposed new marine parks in the pipeline, the total area of marine parks/marine reserve will become ~8,500 ha, which is about 5% of the water area of Hong Kong. The locations of existing and proposed marine parks and marine reserve are shown in **Figure 1**.

1.2 In the recent public consultation on proposed marine parks, fishermen organisations expressed grave concerns on the existing fisheries management measures for marine parks. They were worried that the designation of more marine parks would have adverse impacts on the sustainable development of the fisheries industry. They also considered that the existing marine park fishing permit system (which is issued based on eligible homeports) would polarise the fishermen community. They expressed that they would object to any further marine park proposals if these issues could not be addressed beforehand. On the other hand, green groups continued to urge for the designation of more marine parks to protect important marine habitats/species.

1.3 In response, the Agriculture, Fisheries and Conservation Department (“AFCD”) commissioned a consultancy study (“the Study”) in March 2017 to review the fisheries management measures in marine parks with a view to identifying enhancement measures which would promote sustainable fisheries development without compromising the conservation objectives of marine parks. A holistic fisheries management strategy for marine parks would be proposed under the Study. The Study, which is now on-going, comprises the following tasks:

- (a) Assess the potential impacts of fisheries operations on the habitats and species targeted for protection in existing and proposed marine parks, taking into account the different conservation objectives of the marine parks;
- (b) Conduct a review on international experience of fisheries management in marine protected areas;

- (c) Draw up different fisheries management options with reference to the findings of (a) and (b) above, and assess their effects on the level of fisheries resources in Hong Kong waters and the target habitats/species using ecosystem modelling; and
- (d) Evaluate and recommend a holistic management strategy for marine parks in consultation with stakeholders.

2. Potential impacts of fishing operations on marine habitats and species targeted for protection in marine parks

2.1 Fishing operations, if allowed, may potentially cause impacts to the habitats and species, such as marine mammals and coral communities, targeted for protection in marine protected areas. The use of non-selective fishing gear and the abandonment of fishing nets/traps also have the potential to cause by-catch/net-related injuries to marine mammals. Nevertheless, fishing operations within and in the vicinity of marine parks are generally not considered as the major threat to marine mammals in Hong Kong.

2.2 Fishing gear used in the vicinity of coral reefs is known to cause direct and indirect impacts to the reef system. Gill nets, monofilaments and cage traps may damage the corals through net entanglement or cage dragging. In addition, the removal of coral associated fish species through fishing may have indirect impact to the coral reef ecosystems. Furthermore, anchoring associated with fishing operations may damage coral communities. Such potential impacts also apply to the situation in Hong Kong.

3. Evaluation of fisheries management options

3.1 The Study has reviewed the fisheries management measures adopted in a number of overseas marine protected areas and found that the general measures for the regulation of fishing activities in marine protected areas include spatial management (e.g. no-take zones, total fishing ban), temporal management (e.g. closed season), gear or catch control, and co-management with local communities and the fisheries sector.

3.2 With reference to the above, the Study has drawn up a list of seven fisheries management options in marine parks (**Table 1**), representing scenarios along a spectrum of fishing intensity from allowing all local fishing vessels registered under the Fisheries Protection Ordinance (Cap. 171) to fish to implementing fishing ban in all existing and proposed marine parks. An ecosystem modelling is used to assess and compare the level of fisheries resources in Hong Kong waters under the different

options. The interaction between marine habitats, target species for protection and fisheries resources under different scenarios is also investigated.

3.3 Ecosystem modelling is widely used throughout the world and has been applied previously in Hong Kong to evaluate effects of fishing on the marine ecosystem and explore fisheries management options. The ecosystem modelling tools developed by the University of British Columbia, after being updated with available local biodiversity (marine mammals and coral communities), fisheries resources and fishing operation data, is used to estimate the level of fisheries resources in Hong Kong waters after the different fisheries management options are implemented in marine parks for 5 and 20 years. The effect of trawl ban has also been considered in the model.

3.4 The modelling results on the effect of different management options on the level of fisheries resources in Hong Kong waters are shown in **Figure 2**. Key findings are highlighted as follows –

- (a) Option 5 (fishing ban in all existing and proposed marine parks) would result in the highest percentage increase in the level of fisheries resources (in terms of biomass) in Hong Kong waters, followed by Option 4A and 4B (fishing ban in four existing marine parks (i.e. Hoi Ha Wan Marine Park, Yan Chau Tong Marine Park and Tung Ping Chau Marine Park in the eastern waters and Sha Chau and Lung Kwu Chau Marine Park in the western waters) and allowing all registered fishing vessels to fish in the remaining existing and proposed marine parks), and then Option 3 (existing arrangement with fishing control by homeport system) and Option 2A and 2B (fishing control by homeport system in four existing marine parks and allowing all registered fishing vessels to fish in the remaining existing and proposed marine parks), with Option 1 (allowing all registered fishing vessels to fish in all existing and proposed marine parks) the lowest;
- (b) There is not much difference between Option 2 (A and B) and 3 in terms of the effect on the level of fisheries resources in Hong Kong waters. It means that whether allowing all registered fishing vessels to fish in The Brothers Marine Park and the proposed marine parks in the western waters, or allowing those fishing vessels from eligible homeports only to fish in these marine parks, would have little difference in the effect on the level of fisheries resources in Hong Kong waters;
- (c) On the other hand, the positive effect on the level of fisheries resources in Hong Kong waters is much more prominent with the implementation of fishing ban in the four existing (Option 4A and 4B) and all (Option 5) marine parks; and

- (d) As compared between Option 2A and 2B as well as Option 4A and 4B, there is no significant effect of additional fishing control through temporal closure and gear control in marine parks on the level of fisheries resources in Hong Kong waters.

3.5 The modelling also predicts that marine mammal biomass generally would increase under all fisheries management options (**Figure 3**). However, there is no observable difference amongst different fisheries management options, indicating that the fisheries resources are not a limiting factor to the marine mammals in Hong Kong.

4. Stakeholder engagement

4.1 Two rounds of stakeholder engagement were conducted in July 2017 and March 2018 respectively to solicit views from relevant stakeholders (including fisherman representatives and organisations, recreational fishers, green groups, academics and members of the Marine Parks Committee).

4.2 The stakeholders consulted generally concurred that fishing operations within and in the vicinity of marine parks were not the major threat to marine mammals in Hong Kong, and different fisheries management measures could be implemented for different marine parks in Hong Kong. They also opined that fisheries management measures should be enhanced to balance the need of habitat/species conservation and the sustainable development of the fisheries industry. Moreover, they urged AFCD to allocate sufficient resources for the implementation of fisheries management measures in marine parks as well as stepping up enforcement and patrol effort to curb illegal fishing activities.

4.3 Besides the above general remarks, the following specific views and suggestions were given during the engagement sessions:

- (a) Fishing ban could be implemented in marine parks with coral communities to eliminate the potential damage to coral communities due to fishing operations and anchors;
- (b) Marine park fishing permit system should be relaxed by allowing all registered fishing vessels to fish in marine parks;
- (c) Fishing ban could be implemented in some marine parks while allowing all registered fishing vessels to fish in other marine parks; and
- (d) More resources should be allocated to remove abandoned fishing nets/traps in marine parks in order to reduce the potential impacts on marine mammals and coral communities.

5. Advice sought

5.1 Members are invited to comment on the findings of the Study and provide views on the fisheries management options explored for the marine parks of Hong Kong.

Country and Marine Parks Authority
Agriculture, Fisheries and Conservation Department
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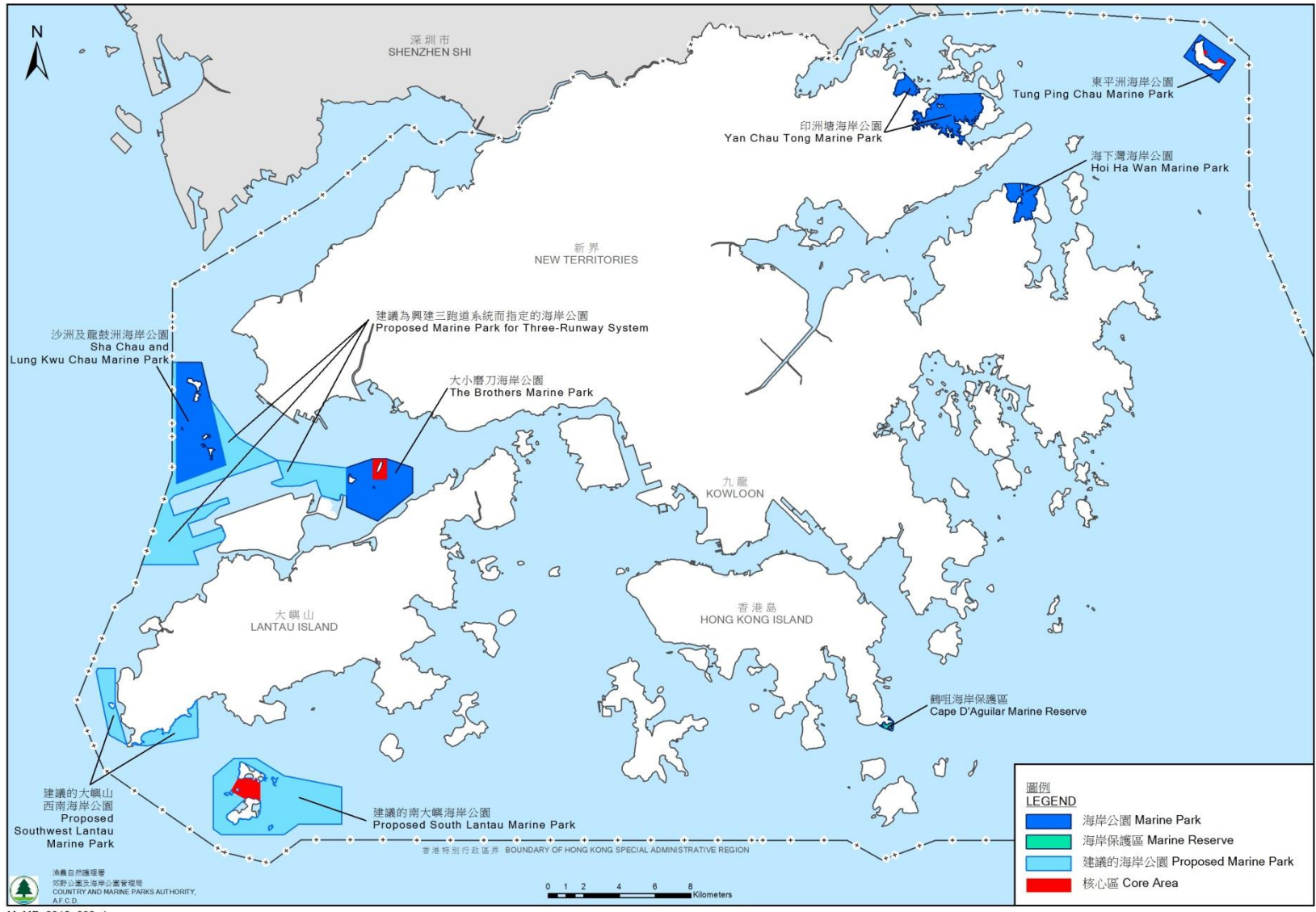
Table 1 Potential Fisheries Management Options

Management Options	Existing and Proposed Marine Parks	
	HHW, YCT, TPC, SCLKC	BMP, SWLMP, SLMP, 3RS
1	Fishing allowed for all registered local fishing vessels under Cap. 171	
2 A	Fishing control by homeport system (existing marine park fishing permit system)	Fishing allowed for all registered local fishing vessels under Cap. 171
2 B	Fishing control by homeport system (existing marine park fishing permit system)	Fishing allowed for all registered local fishing vessels under Cap. 171, with additional fishing control of temporal closure and gear control
3	Fishing control by homeport system (existing marine park fishing permit system)	
4 A	Fishing ban	Fishing allowed for all registered local fishing vessels under Cap. 171
4 B	Fishing ban	Fishing allowed for all registered local fishing vessels under Cap. 171, with additional fishing control of temporal closure and gear control
5	Fishing ban	

Remarks:

- HHW: Hoi Ha Wan Marine Park; YCT: Yan Chau Tong Marine Park; SCLKC: Sha Chau and Lung Kwu Chau Marine Park; TPC: Tung Ping Chau Marine Park; BMP: The Brothers Marine Park; SWLMP: Southwest Lantau Marine Park; SLMP: South Lantau Marine Park; 3RS: the compensatory marine park for the Expansion of Hong Kong International Airport into a Three-runway System; Cap. 171: the Fisheries Protection Ordinance
- Fishing is prohibited in core areas in the TPC, BMP and SLMP under all potential fisheries management options.

Figure 1 Locations of the Existing and Proposed Marine Parks and Marine Reserve in Hong Kong



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Figure 2 Levels of Overall Fisheries Resource Biomass in 5 and 20 Years under Different Fisheries Management Options for Marine Parks

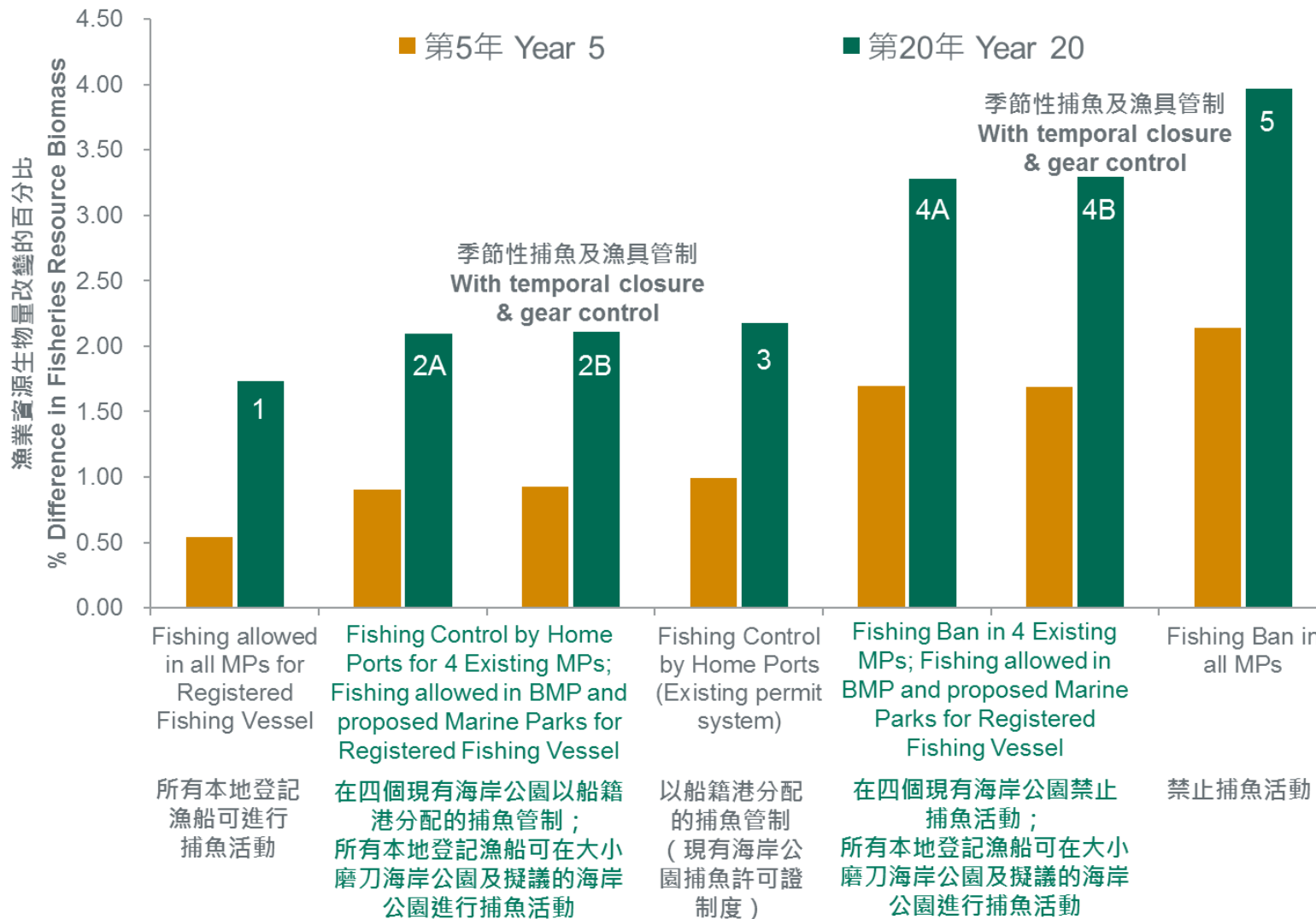


Figure 3 Levels of Overall Marine Mammal Biomass in 5 and 20 Years under Different Fisheries Management Options for Marine Parks

