

## **COUNTRY AND MARINE PARKS BOARD**

### **Detailed Design and Progress of the Marine Park Development in South Lantau Waters – Soko Islands Marine Park and Compensatory Marine Park for the Integrated Waste Management Facilities Phase 1**

#### **1. Purpose**

- 1.1 The purpose of this paper is to brief Members on the detailed design and progress on the development of the proposed Soko Islands Marine Park (SIMP) and compensatory marine park for the Integrated Waste Management Facilities Phase 1 (IWMF Marine Park) in South Lantau waters and to seek Members' views on the designation proposal.

#### **2. Background**

##### Proposed Soko Islands Marine Park

- 2.1 In 2000, the Government announced a plan to designate the waters of Soko Islands as a marine park for the protection of Chinese White Dolphins (CWD) and the long-term conservation of local marine environment. To take forward the plan, extensive consultation exercises covering a diverse group of stakeholders were conducted between 2000 and 2002 and in 2009. In early September 2014, the Government re-affirmed its intention to the designation of SIMP. Between 2014 and 2016, the Agriculture, Fisheries and Conservation Department (AFCD) conducted a detailed study on the design and management of the proposed SIMP with a new round of stakeholder consultation. The up-to-date information re-confirms that the waters of Soko Islands are a unique location where both CWD and Finless Porpoises (FP) are regularly sighted.

##### Proposed Compensatory Marine Park for the IWMF Phase 1

- 2.2 The proposed IWMF Marine Park is a mitigation measure for the IWMF Phase 1 project (the Project), as recommended in the relevant Environmental Impact Assessment Report and as stated in condition 2.8 of the Environmental Permit (EP-429/2012/A) issued for the Project. The establishment of the proposed marine park is to compensate for the potential permanent loss of important habitat for FP as a result of the proposed reclamation works and breakwater construction for the Project. The EP stipulates that the proposed marine park shall be in the waters between Soko Islands and Shek Kwu Chau with an area of at least 700 hectares. The project proponent, i.e. the Environmental Protection Department (EPD), is required to submit the detailed design

of the proposed marine park at least one month before the commencement of the construction of the Project, which shall include the proposed location and size, deployment of artificial reefs, release of fish fry, management plan and construction programme of the proposed marine park.

- 2.3 A detailed study was commenced in June 2015 to investigate the technical and practical aspects of the proposed IWMF Marine Park and to prepare for the submission of its detailed design.

### 3. **Stakeholder Consultation**

- 3.1 The waters in the vicinity of Shek Kwu Chau and Soko Islands are used by different stakeholders, in particular fishermen, marine operators and villagers of outlying islands in the southern waters of Hong Kong. It is thus important to address and balance the concerns of these stakeholders for the successful designation and management of the proposed marine parks.

#### Proposed Soko Islands Marine Park

- 3.2 The latest round of stakeholder consultation for the proposed SIMP was conducted from July 2015 to May 2016. The consulted parties included fishermen associations and fishermen representatives, the marine industry, green groups, eco-tour operators, recreational fishers, relevant District Council (DC) and Rural Committees (RCs), representatives from local villagers, and the Capture Fisheries Subcommittee of the Advisory Committee on Agriculture and Fisheries (**Figure 1**). The results of this round of stakeholder consultation were presented to the Country and Marine Parks Board (CMPB) at its meeting on 22 March 2016 (see Working Paper: WP/CMPB/3/2016), which are summarised in paragraph 3.3 below.
- 3.3 Key comments raised by the stakeholders, particularly fishermen, were related to the management of the proposed SIMP, including the patrol and enforcement arrangements and the marine park fishing permit system. Fishermen were also worried about the size of the core area of the proposed SIMP and the complete ban on fishing within the entire core area. Recreational fishers had no strong objection to the proposal but reiterated their request to allow recreational fishing in the proposed SIMP. Members of the Tourism, Agriculture, Fisheries and Environmental Hygiene Committee (TAFEHC) of the Islands District Council (Islands DC) considered that there was no urgency to designate the proposed SIMP. The South Lantau Rural Committee (SLRC) and villagers of Soko Islands objected to the proposed SIMP and believed that village

development would be restricted after designation of the SIMP.

- 3.4 The Marine Parks Committee (MPC) and the CMPB were briefed on the SIMP proposal on 19 February and 22 March 2016 respectively. Both the MPC and the CMPB supported the proposed SIMP in principle. In August 2016, the Chief Executive in Council directed, in accordance with Section 7(1) of the Marine Parks Ordinance, the Country and Marine Parks Authority (the Authority) to prepare a draft map showing the proposed SIMP.
- 3.5 Subsequently, when the AFCD and the EPD consulted the TAFEHC of the Islands DC in September 2016 regarding the proposed IWMF Marine Park, members (particularly the representative from the SLRC) reiterated their opposition to the proposed SIMP and requested for further modification of the SIMP boundary taking into account their comments. They also asked the relevant departments to consult them again after revising the marine park boundary. To further collect views of SLRC on the proposed SIMP, AFCD attended its meeting on 21 June 2017. Members requested the exclusion of the coastline of Tai A Chau and Siu A Chau from the proposed SIMP to avoid impact on the future village development of Tai A Chau and Siu A Chau.

#### Proposed Compensatory Marine Park for the IWMF Phase 1

- 3.6 Two rounds of stakeholder consultation were conducted as a part of the detailed study for development of the proposed IWMF Marine Park. The stakeholders consulted are listed in Figure 2. The first round was conducted from May to November 2016. In general, stakeholders had no major comments on the boundary, location and size of the proposed IWMF Marine Park. Key comments raised by the stakeholders were related to the management of the proposed marine park, including the patrol and enforcement arrangements, the marine park fishing permit system and the effectiveness of proposed fisheries enhancement measures. In addition, cable operators were concerned about the application processes for installation and repair of submarine cables in the marine park.
- 3.7 The MPC was briefed on the proposed IWMF Marine Park on 6 June 2016. Members supported the proposal in principle, though some members requested for extending the boundary of the proposed marine park to cover those areas with high Porpoise Habitat Index (PHI) of FP as far as practicable. However, according to findings of the Marine Traffic Impact Assessment undertaken for the proposed IWMF Marine Park, sufficient buffer distance should be maintained from the major Traffic Separation Schemes (TSSs) (namely Lantau Channel TSS, and the recommended TSS at South of Lantau) and the Hong Kong Special Administrative Region boundary to provide an unrestricted vessel

passage around the proposed IWMF Marine Park. In addition, the proposed IWMF Marine Park shall avoid direct encroachment on the Open Sea Disposal Area at South Cheung Chau as well as the long-listed reclamation site being considered by the Civil Engineering and Development Department. As such, further extension of the proposed IWMF Marine Park boundary is considered not feasible.

- 3.8 The comments received during the first round stakeholder consultation have been taken into account in revising the interim design of the proposed IWMF Marine Park. The second round stakeholder consultation was conducted from April to August 2017. In general, stakeholders expressed similar key concerns about marine park management (e.g. patrol and enforcement arrangements and marine park fishing permit system) and effectiveness of proposed fisheries enhancement measures as in the first round of stakeholder consultation.
- 3.9 The MPC was briefed on the proposed IWMF Marine Park again on 11 July 2017 during the second round stakeholder consultation. Some Members maintained their views that the boundary of the proposed marine park should be extended as far as practicable. In response, the EPD further explained that sufficient buffer distance had to be maintained between the proposed marine park and the TSSs and the Hong Kong Special Administrative Region boundary for navigational safety reason and Members have no further comment on this. Members also raised concerns about patrol and enforcement of the proposed marine park due to its remote location. In addition, members questioned about the suitability of the species proposed for release as part of the fisheries enhancement measures and requested that species naturally present in waters of the proposed IWMF Marine Park be considered. Comments received during the second round stakeholder consultation have been considered and incorporated, where appropriate, in revising the detailed design and management plan of the proposed IWMF Marine Park.

#### **4. Proposed Boundaries of Marine Parks**

- 4.1 Taking into account the stakeholders' comments and without compromising the protection of important CWD and FP habitats, some of the inner bays of Tai A Chau and Siu A Chau are proposed to be excluded from the originally proposed boundary of SIMP (**Figure 3**). The MPC and TAFEHC of Islands DC were further consulted on the revised boundary of the proposed SIMP in July and September 2017 respectively and they had no in-principle objection to the revised proposal. The proposed SIMP (with its boundary revised) covers approximately 1,270 hectares of waters. It is also proposed to set up a core area of approximately 145 hectares within which no fishing activities will

be allowed with a view to conserving the fish stocks for the sustainability of fisheries resources in the proposed marine park and its surrounding waters.

- 4.2 The draft boundary of the proposed IWMF Marine Park had already taken into account the important FP habitats in the waters between Shek Kwu Chau and Soko Islands (**Figure 4**), fisheries resources (**Figure 5**), compatibility with existing, planned and potential marine facilities and future usage (**Figure 6**), size requirement and the future management of the marine park. It covered about 797 hectares of waters between Soko Islands and Shek Kwu Chau (**Figure 7**). Having considered the results of the two rounds of stakeholder consultations, the PHI of FP, and the results of the marine traffic impact assessment and the fisheries resources survey, it is proposed that no change would be made to the draft boundary of the proposed IWMF Marine Park.
- 4.3 The two proposed marine parks adequately cover important habitats of CWD and FP as well as areas with moderate to high fisheries resources. The proposed boundaries have also avoided the identified TSSs and areas with high density of marine traffic activities, and will not encroach on other existing, planned or potential marine facilities such as the South of Cheung Chau Sediment Disposal Area.
- 4.4 To achieve better synergy in the future management of the proposed SIMP and IWMF Marine Park, it is proposed to combine them into one single marine park of approximately 2,067 hectares, to be named as the South Lantau Marine Park (SLMP) (**Figure 8**). This approach will facilitate the future management and operation of the marine park in terms of maintenance of facilities, enforcement and patrolling, implementation of fisheries enhancement measures, etc.

## 5. **Proposed Management Plan**

- 5.1 The proposed SLMP will be managed and controlled in a similar manner as the existing marine parks in accordance with the Marine Parks Ordinance and the Marine Parks and Marine Reserves Regulation for conservation, recreation, education and scientific research purposes. Under the Regulation, all vessels operating within the proposed SLMP will be required to adhere to a maximum speed limit of 10 knots. With the proper implementation and enforcement on vessel speed limit within the proposed SLMP, it would reduce the potential impacts of existing vessel activities on marine mammals, which may include the risks of injury and mortality arising from vessel collision and underwater acoustic disturbance.
- 5.2 Activities such as boating (within the 10 knots vessel speed restriction) and dolphin

watching will be allowed in the proposed SLMP. Eligible bona fide fishermen will be allowed to continue fishing within the marine park subject to a permit system. Fishermen are generally worried about further reduction in fishing grounds in the western waters as a result of the designation of marine parks and restriction of their fishing activities under the marine park fishing permit system. To address their concerns, the AFCD is conducting a review of fisheries management measures in marine parks with a view to identifying suitable enhancement measures. Subject to the recommendations of the review, such enhancement measures will be included in the management plan of the proposed SLMP.

- 5.3 Education awareness programme, scientific research programme and eco-tourism within the proposed SLMP will be explored and studied. Ecological and water quality monitoring will also be conducted to monitor the effectiveness of the marine park.
- 5.4 The AFCD would be the key government department responsible for the operation, management and law enforcement of the proposed SLMP. An enforcement team will be set up for the enforcement of regulations within the proposed SLMP. The AFCD would consult the Marine Department and seek their views from navigational safety point of view on suitable ways to demarcate the waters and the core area of the proposed SLMP.

## 6. **Proposed Fisheries Enhancement Measures**

- 6.1 In order to enhance the fisheries resources in the South Lantau waters as required in the EP issued for the IWMP Phase 1 project, deployment of artificial reefs (ARs) and release of fish fry / fingerlings have been proposed for the SLMP. The ARs are recommended to be deployed at an area with restriction of all fishing activities such as a core area within a marine park, so that the aggregated fisheries resources can be adequately protected. Therefore, it is proposed to deploy ARs within the core area of the proposed SLMP, fulfilling the requirements in both technical and management aspects. The ARs will be deployed in depths of less than 15 m below CD for better water quality and light penetration, with a minimum clearance of 4.5 metres above the AR structures for navigational safety. In addition, the location should be sufficiently far away from the coast (i.e. at least 200 m away from the coastline) to avoid the attraction of fish from nearby natural shelters. Based on the above consideration and the availability of suitable seabed, the tentative deployment location has been identified and shown in **Figure 9**. The ARs will be made of pre-casted concretes so that the volume and arrangement of the ARs can provide a heterogeneous and structurally stable habitat for diverse marine life including juvenile fishes.

- 6.2 Results of the geophysical survey indicated that the seabed of the proposed AR deployment area is composed of fine sediment (possibly silt / clay) which generally does not support high level of primary productivity or provide shelters for species of commercial fishes. The fisheries resources in the vicinity of the deployment location would likely be benefited from the increased habitat complexity. In addition, results of the 12 month fisheries resources survey for the proposed IWMF Marine Park recorded several species of groupers (e.g. yellow grouper (*Epinephelus awoara*), chocolate hind (*Cephalopholis boenak*) and rock grouper (*Epinephelus fasciatomaculosus*)) and seabreams (e.g. crimson seabream (*Evynnis cardinalis*), red porgy (*Pagrus major*) and yellowfin seabream (*Acanthopagrus latus*)) in the core area of the proposed SLMP. Groupers occupy holes, crevices and narrow spaces in ARs while seabreams feed near ARs. These species are likely to be benefited from enhanced habitat heterogeneity of deployed ARs which in essence provide suitable habitats for juvenile fishes. Appropriate monitoring including fish resources monitoring and structural monitoring (for at least two years after deployment) will be conducted by the EPD to evaluate and review the effectiveness of the ARs. Key monitoring parameters will include abundance, biomass and species diversity before and after the deployment of ARs. In addition, the structural monitoring results will be used to assess if lateral movement and settlement of the ARs are within acceptable limits.
- 6.3 Release of fish fry / fingerlings will be conducted at the deployed ARs to enhance the fisheries resources. Suitable native species with affiliation to ARs are proposed for the exercise, which include commercially valuable native species such as orange-spotted grouper (*Epinephelus coioides*), yellowfin seabream (*Acanthopagrus latus*) and red porgy (*Pagrus major*). Although no orange-spotted groupers were recorded during the fisheries resources survey under the IWMF Marine Park Detailed Study, this species is found in brackish environment and has been recorded in western waters of Hong Kong. It is expected that orange-spotted groupers can adapt to variable salinities at the proposed location. Low numbers of yellowfin seabream and red porgy were recorded during the fisheries resources survey showing that these species occurred in the natural environment of South Lantau waters. One species will be released at a time to avoid inter-specific competition. Appropriate monitoring (e.g. using hand-lining), will be conducted by the EPD for one year after the release of selected fish species to evaluate and review the effectiveness of the release programme. Key monitoring parameters to determine the effectiveness will include the recapture rate of the released species at ARs and nearby habitats, estimated growth rate of released fish and changes in the diversity and composition of the fish community. Following the completion of one-year fish monitoring surveys for the first released species, the fisheries enhancement measures implemented will be reviewed to determine the overall effectiveness and subsequent

course of actions. If releasing at that location is found successful for the first released species, release of the same or another species of fish fry / fingerlings will be considered.

## **7. Way Forward**

- 7.1 After incorporating the views and comments of Members as appropriate, the Authority will seek the direction of the Chief Executive in Council to prepare a draft map of the proposed SLMP in accordance with Section 7(1) of the Marine Parks Ordinance. Afterwards, the Authority will, in consultation with the CMPB, prepare the draft map of proposed SLMP in accordance with Section 7(4) of the Marine Parks Ordinance for public inspection. The AFCD and the EPD will work closely together during the process of the marine park designation, with an aim to completing the statutory designation procedures of the SLMP by 2019.

## **8. Advice Sought**

- 8.1 Members are invited to offer their comments on and support to the SLMP proposal.

Agriculture, Fisheries and Conservation Department  
Environmental Protection Department  
November 2017



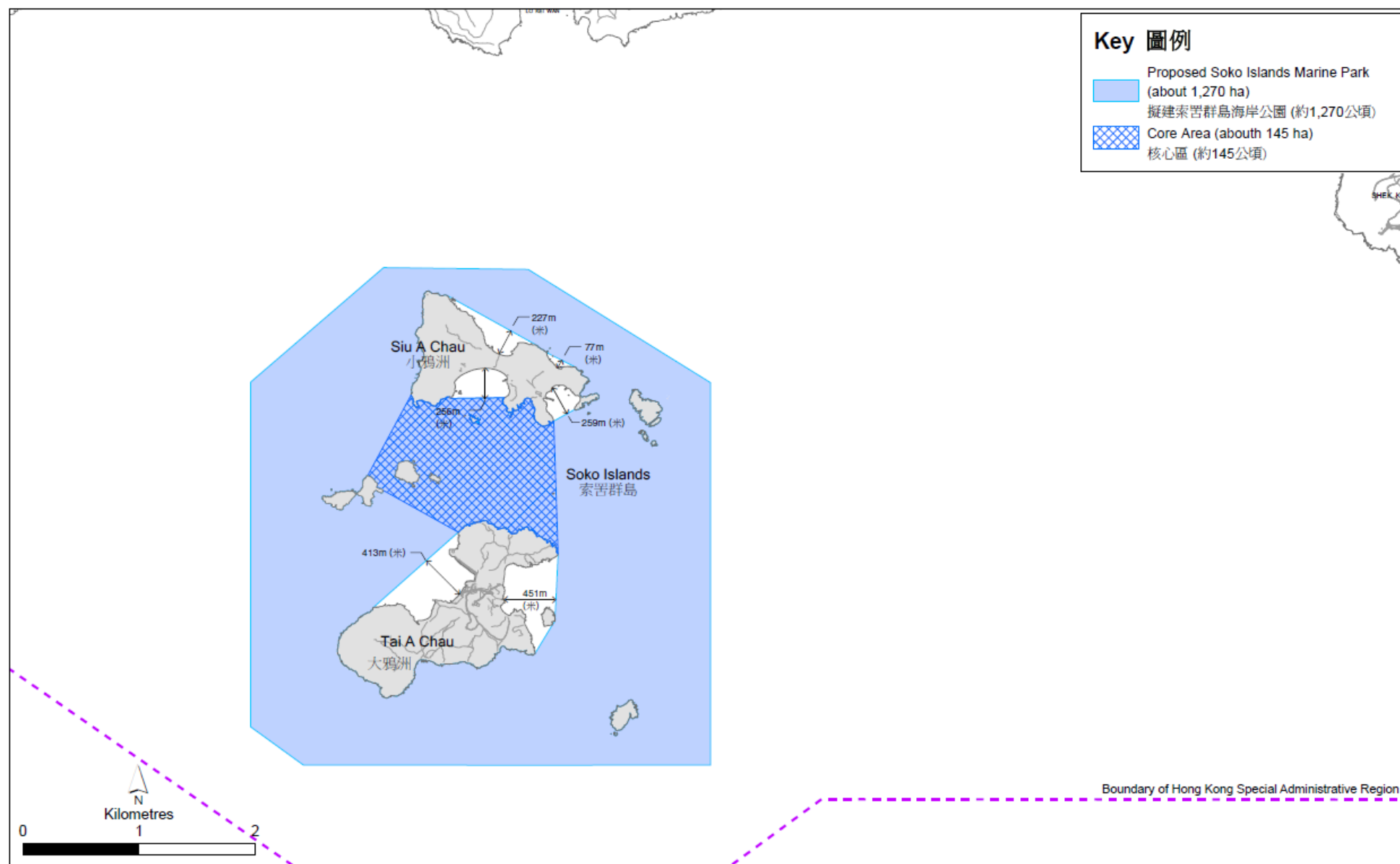
**Figure 1 Stakeholders Involved in the Latest Round of Stakeholder Consultation for the Proposed Soko Islands Marine Park**



**Figure 2 Stakeholders Involved in the Stakeholder Consultation for the Proposed IWMF Marine Park**

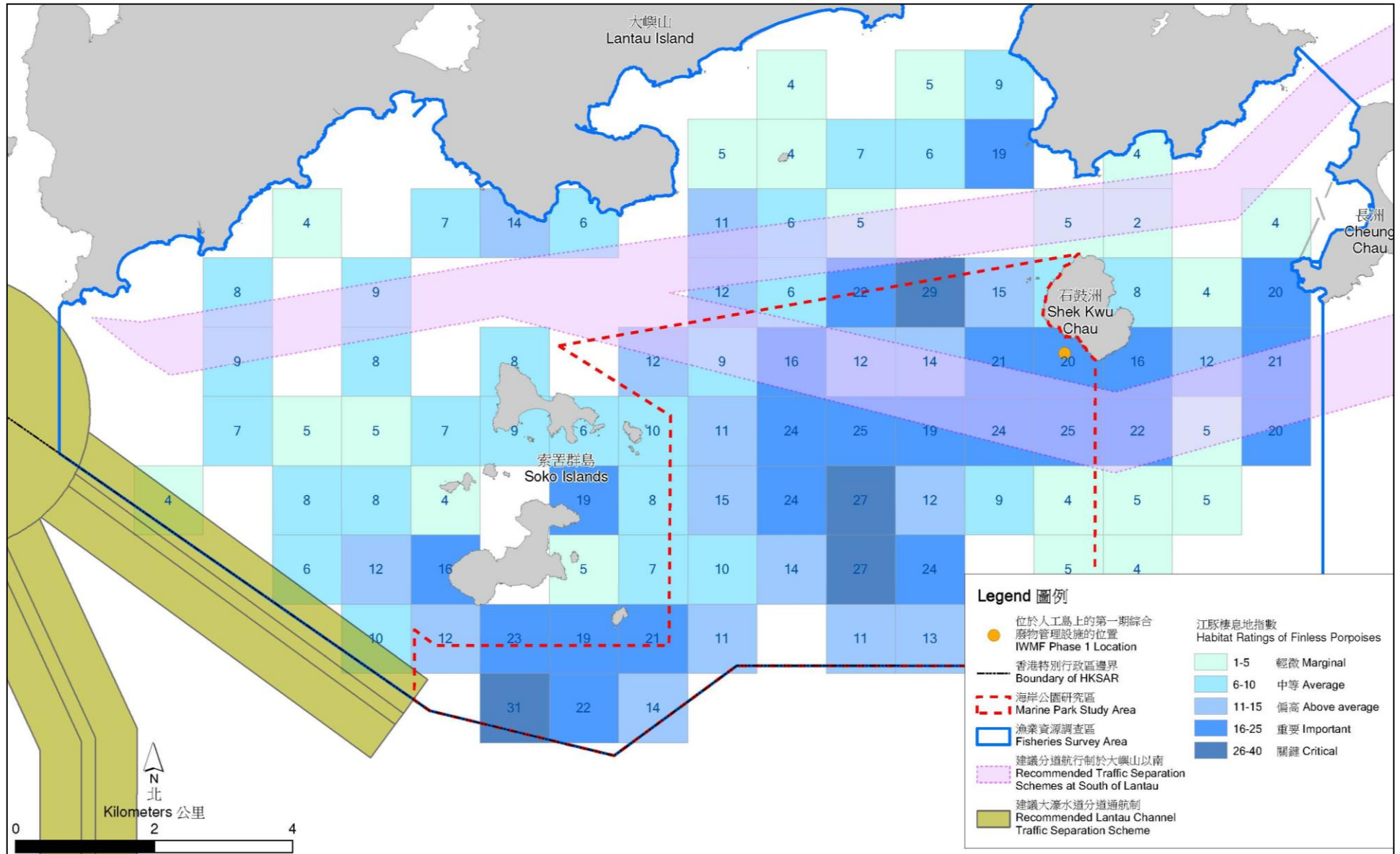
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|--|--|
| <p>漁業界<br/>Fisheries</p>                                   | <ul style="list-style-type: none"> <li>• 立法會漁農界功能界別議員<br/>Legislative Council Member (Functional Constituency - Agriculture and Fisheries)</li> <li>• 主要漁民團體及相關漁民<br/>Major fishermen's organizations and corresponding fishermen</li> </ul>               |
| <p>區議會及鄉事委員會<br/>District Council and Rural Committees</p> | <ul style="list-style-type: none"> <li>• 離島區區議會 Islands District Council</li> <li>• 相關鄉事委員會 Relevant rural committees</li> </ul>   |
| <p>諮詢/法定委員會<br/>Advisory/Statutory Committees</p>          | <ul style="list-style-type: none"> <li>• 海岸公園委員會 / 郊野公園及海岸公園委員會<br/>Marine Parks Committee / Country and Marine Parks Board</li> <li>• 捕撈漁業小組委員會<br/>Capture Fisheries Subcommittee</li> </ul>   |
| <p>海事業界<br/>Marine Operators</p>                           | <ul style="list-style-type: none"> <li>• 高速船諮詢委員會 High Speed Craft Consultative Committee</li> <li>• 本地船隻諮詢委員會 Local Vessels Advisory Committee</li> <li>• 港口行動事務委員會 Port Operations Committee</li> <li>• 領港事務諮詢委員會 Pilotage Advisory Committee</li> </ul> |
| <p>其他持份者<br/>Other Stakeholders</p>                        | <ul style="list-style-type: none"> <li>• 環保團體及學術界 Green groups and academics</li> <li>• 生態旅遊運營商 Ecotour Operators</li> <li>• 電訊營運商 Cable Operators</li> </ul>  |

**Figure 3 Revised Boundary of the Proposed Soko Islands Marine Park**





**Figure 4 Habitat Ratings of Finless Porpoises in the South Lantau Waters between 2005 and 2014**



**Figure 5 Distribution of Fisheries Production (Adult & Fish Fry) in the South Lantau Waters based on AFCD's Port Survey 2006**

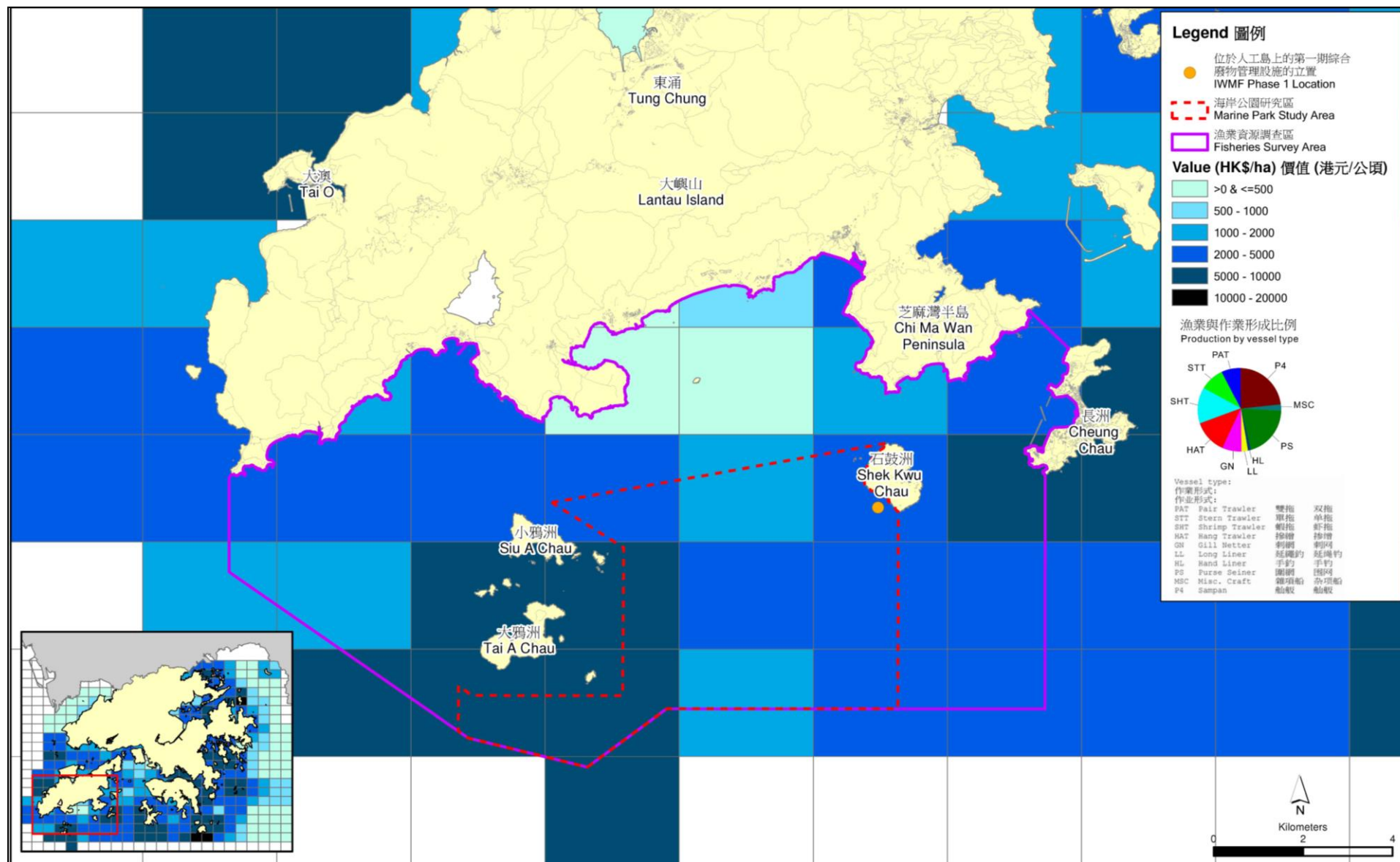
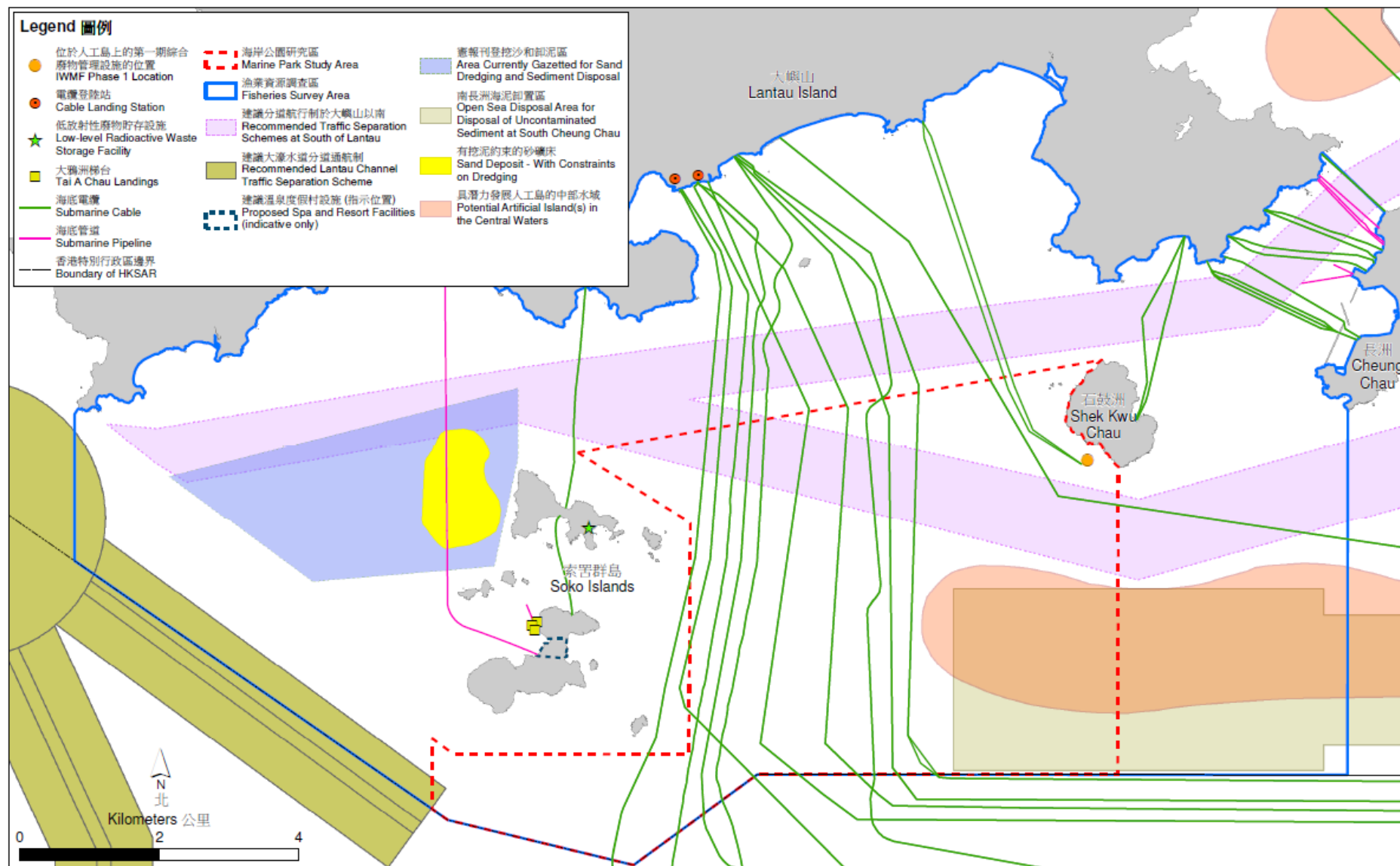


Figure 6 Existing, Planned and Potential Marine Facilities and Development Projects in South Lantau waters



**Key 圖例**

- Proposed Boundary of the Compensatory Marine Park for the IWMF Phase 1
- 擬建的綜合廢物管理設施第1期的補償海岸公園
- Site Location for IWMF Phase 1 at an Artificial Island
- 位於人工島上的第一期綜合廢物管理設施的位置



Figure 8 Boundary of the Proposed South Lantau Marine Park

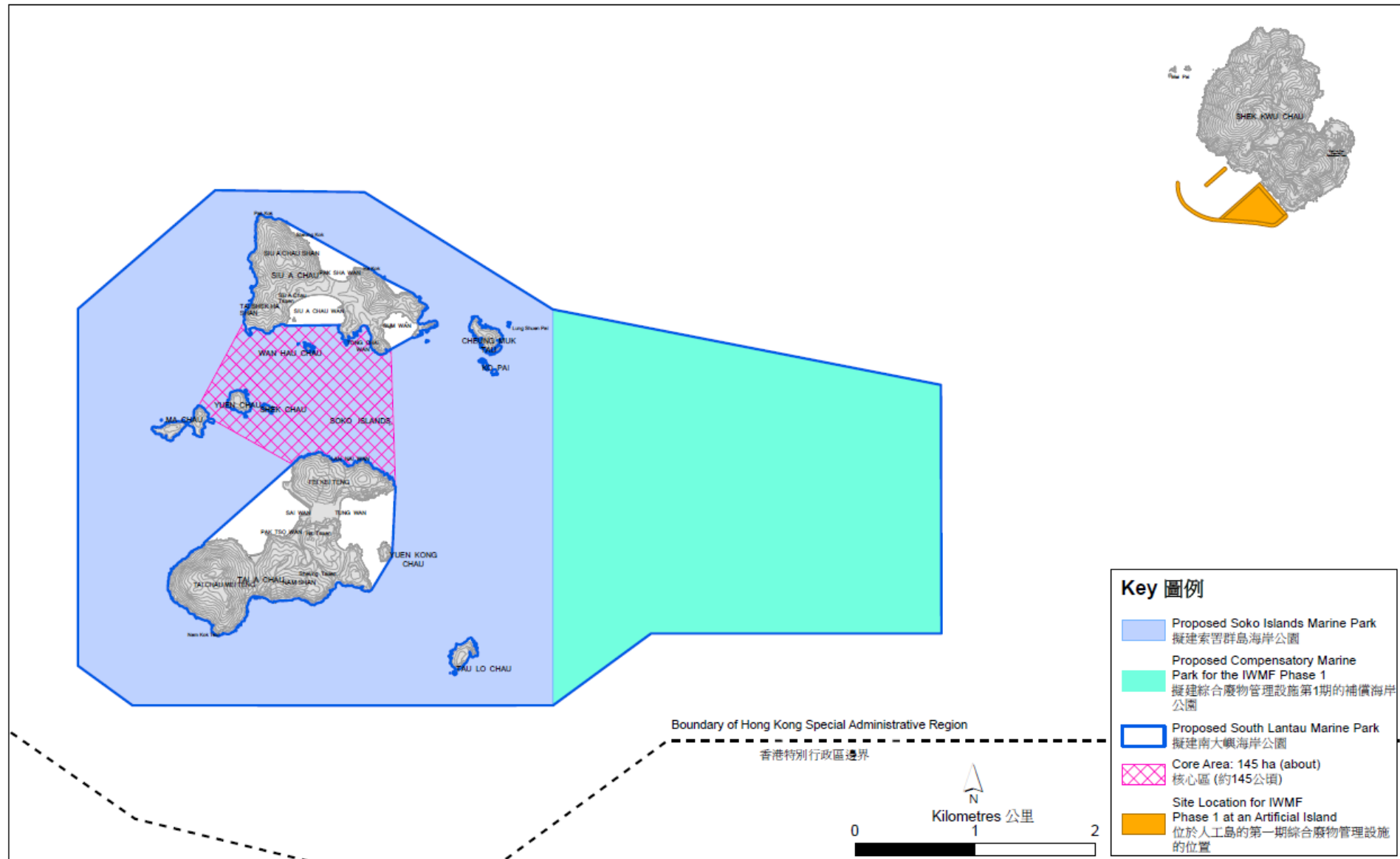




Figure 9 Proposed Artificial Reef Deployment Area within the Proposed South Lantau Marine Park

