

EXECUTIVE SUMMARY

This one-year monitoring study of Chinese white dolphins in Hong Kong represents a continuation and extension of a long-term research programme conducted by Hong Kong Cetacean Research Project (HKCRP) commissioned by AFCD of the Hong Kong SAR Government since 1996. The main goal of the study is to collect systematic data for assessing distribution, abundance, habitat use and behaviours of Chinese white dolphins in Hong Kong, and to take photographic records of individual dolphins to update the current photo-identification catalogue.

During the study period (April 2006 to March 2007), a total of 185 line-transect surveys with 6,279.0 km of survey effort were conducted in nine survey areas in Hong Kong waters. Most survey effort was conducted around Lantau Island where Chinese white dolphins commonly occurred, and in calm sea condition (Beaufort 3 or below). From these surveys, 300 groups of Chinese white dolphins, numbering 1,221 individuals, were sighted. Most of these sightings were made in West Lantau, Northwest Lantau and Northeast Lantau. When compared to the past three years of monitoring with similar amount of survey effort, it appears that fewer dolphin sightings were made in 2006-07 in Northwest, Northeast and West Lantau. This might be attributable to the smaller amount of surveys conducted in 2006-07 with more surveys effort allocated in southern and eastern waters. Several hotspots were consistently used by dolphins in recent years, including the waters around Lung Kwu Chau, near Black Point, around the Brothers Island, Sham Shui Kok, and the entire stretch of West Lantau waters from Tai O Peninsula to Fan Lau, which should all be considered the prime dolphin habitats in Hong Kong. Seasonal variation in dolphin distribution was evident during the study period.

The average encounter rate of Northwest, Northeast, West and Southwest Lantau was 6.9 sightings per 100 km of survey effort during the study period, which was somewhat lower than the average encounter rates of the previous four years of monitoring. The relative importance of the four survey areas was very consistent in the past five years of monitoring, with much higher encounter rate consistently found in West Lantau than the other three areas. Moreover, the combined encounter rate of both unspotted calves and unspotted juveniles was also the highest in West Lantau. The consistent high use of West Lantau by mother-calf pairs in the past few years strongly indicated that this is the most important habitat for nursing activities. However, it was also noted that the encounter rate of young calves has dropped

noticeably in recent years. The decline in calf encounter rate in recent years is possibly related to the acoustic disturbance of dolphin-watching activities off Tai O fishing village, or the lower reproductive success and calf survival rate due to environmental contaminants, and this is a serious issue that should be properly addressed.

Group sizes of Chinese white dolphins ranged from singles to 25 dolphins, with an overall average of 4.1 ± 3.53 . As in the past few years, Chinese white dolphins tended to occur in smaller group more frequently. Only 21 groups of dolphins were found associated with operating fishing boats, but it appeared that there was a slight increase in percentage of dolphins in association with fishing boats in 2006.

From April 2006 to March 2007, over 12,000 digital photographs were taken, which were used to compare with and update the Chinese white dolphin photo-identification catalogue in Hong Kong and the Pearl River Estuary. Currently, over 450 individuals have been identified in Hong Kong and the rest of the Pearl River Estuary. A total of 116 individuals with 303 re-sightings were identified during the study period. Among them, 71 individuals were re-sighted, while 45 were new individuals added to the photo-ID catalogue. The discovery curve of new individuals has not yet reached a plateau in Hong Kong waters, and constant influx of dolphins from Chinese waters will probably enable researchers to identify additional new individuals in the near future. Moreover, several individuals were repeatedly re-sighted many times in 2006-07, indicating their regular occurrence in Hong Kong in recent years. A number of newly identified individuals from the past few years have also frequently occurred in Hong Kong waters since then. Finally, it was noted that some individuals have been commonly sighted in Hong Kong since 1995. The life history of these long-lived individuals will provide very useful information for conserving the local dolphin population, and attempts should be made to collect biopsy samples from these individuals.

Monthly occurrence of 18 individuals revealed that most of them were absent from Hong Kong in certain months of the year, indicating their seasonal use of Hong Kong waters. On the contrary, some dolphins used to vacate Hong Kong during certain months of the year, but have increasingly relied on Hong Kong waters as an important part of their home ranges in 2006. From the ranging pattern analysis, 37 of 73 individuals occupied ranges that spanned from Hong Kong across the border to Guangdong waters. Moreover, 21 individuals have ranges spanning across West, Northwest and Northeast Lantau survey areas, suggesting their regular utilization of a

large stretch of waters with no specific preference for core areas within their home ranges. On the other hand, some individuals have more confined home ranges, and have consistently utilized a small stretch of waters in their daily activities. It is apparent that many individuals used West Lantau as part of their home ranges to various degrees. This provides another piece of solid evidence that West Lantau is indeed a very important habitat for the Pearl River Estuary dolphin population. Besides West Lantau waters, the waters around Lung Kwu Chau, the Brothers Islands and Sham Shui Kok were heavily used by many individuals as the core areas of their range, and these three locations can be also considered important dolphin habitats.

The ongoing study of quantitative grid analysis on habitat use revealed that the waters along the west coast of Lantau Island and north of Lung Kwu Chau were the most heavily utilized habitat by the dolphins in 2006-07. The “hotspots” of dolphins in West Lantau included the grids around Tai O Peninsula, near Kai Kung Shan and Fan Lau, which had a number of grids with SPSE and DPSE values over 20 and 100 respectively. In Northwest Lantau, both SPSE/DPSE values in grids near the northwestern side of Lung Kwu Chau were as high as the ones in West Lantau, suggesting that these waters can also be viewed as important dolphin habitat. In Northeast Lantau, the waters around the Brothers Island, near Sham Shui Kok and Yam O were also moderately used by dolphins.

Dolphin sightings associated with four different activities were plotted on GIS separately to identify important areas for feeding, socializing, traveling and milling/resting. Most of the sightings of dolphins that were engaged in feeding activities were made in three main areas: the stretch of West Lantau from Tai O Peninsula to Fan Lau, the northern and eastern sides of Lung Kwu Chau, and between the Brothers Islands and Sham Shui Kok. On the other hand, dolphin groups with socializing activities were found between Tai O Peninsula and Kai Kung Shan, and around Lung Kwu Chau. Sightings engaged in traveling or resting activities were rarely observed during the study period.

In 2006-07, HKCRP researchers have provided assistance to AFCD to arouse public awareness on the biology and conservation of local dolphins and porpoises. In total, 20 education seminars were hosted at local primary and secondary schools about conservation of Hong Kong cetaceans. Through the integrated approach of long-term monitoring research and publicity programme, Hong Kong public can gain the first-hand information from our dolphin researchers.