EXECUTIVE SUMMARY

Monitoring of Marine Mammals in Hong Kong waters – Data Collection (2008-09)

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This one-year marine mammal monitoring project funded by the Agriculture, Fisheries and Conservation Department represents a continuation and extension of a long-term research programme on local dolphins and porpoises conducted by Hong Kong Cetacean Research Project since 1995. The project aims to collect systematic data for assessing distribution and abundance of Chinese white dolphins and finless porpoises in Hong Kong, and to take photographic records of individual dolphins to update the current photo-identification catalogue.

During the 12-month study period, 178 line-transect vessel surveys with 5,370.5 km of survey effort were conducted among ten survey areas in Hong Kong. From these surveys, 305 groups of 1,051 Chinese white dolphins and 72 groups of 181 finless porpoises were sighted. Most dolphins were sighted in West and Northwest Lantau, while porpoise sightings were found spreading evenly across the southern waters of Hong Kong. In comparison to the distribution records in 2003-08, fewer dolphins were sighted in Northeast Lantau and the eastern section of Northwest Lantau in 2008-09. And they were less often sighted in North and South Lantau regions in autumn months. Finless porpoise distribution in 2008-09 was similar to the past distribution records, but they were less frequently sighted at the southwest corner of Lamma and the offshore waters east of Po Toi Islands than in previous years.

Combined dolphin encounter rate of survey areas around Lantau was 7.2 sightings per 100 km of survey effort. Encounter rate was much higher in West Lantau than other areas in all four seasons. This pattern has been very consistent with those in the past seven years. Temporal trends in annual dolphin encounter rates indicated that the ones in Northwest, Northeast and West Lantau in 2008 were the lowest ever since 1996, and declining trends of dolphin usage in these areas were also detected in recent years. Such trends should be closely monitored, as these three areas represented the main habitats for Hong Kong dolphins. Porpoise encounter rate in southern waters of Hong Kong was 3.3 sightings per 100 km of survey effort, which was slightly higher than that in 2007-08.

Results from the quantitative grid analysis on habitat use suggested that the most

heavily utilized habitats by dolphins in 2008-09 were located east of Lung Kwu Chau, along the west coast of Lantau, near the Brothers Islands, and between the Soko Islands. By using a larger dataset, the habitat use patterns from 2002-08 showed that West Lantau was the most important dolphin habitat in the last seven years, with many of the 34 grids there having recorded very high dolphin densities. On the contrary, the relatively important habitats for porpoises in 2008-09 could be found south of Tai A Chau, near Shek Kwu Chau and Cheung Chau, and around Po Toi Islands. Moreover, grids with high porpoise densities during 2004-08 were found in the waters south of Soko Islands, the offshore waters in Southeast Lantau, near Shek Kwu Chau and Cheung Chau, and around Po Toi Islands. Distinct seasonal pattern in habitat use of finless porpoises was evident. Important porpoise habitats were located mostly in South Lantau during winter and spring months, and around the Po Toi Islands during summer and autumn months.

Dolphin group sizes ranged from singles to 16 animals, and the overall mean of 3.5 animals was well below the ones recorded in 2002-07, implying that their prey resources might have become scarce and more dispersed. Most dolphin groups tended to be small. The smaller dolphin groups were often scattered at the marginal dolphin habitats, while the large aggregations were found around Lung Kwu Chau and in West Lantau. Moreover, porpoise group sizes ranged from singles to ten animals, with an overall mean of 2.5 animals. Since 2001, larger porpoise groups were mostly sighted near Cheung Chau and Shek Kwu Chau, around the Soko Islands and Po Toi Islands, and in the offshore waters of Po Toi survey area.

A total of 12 unspotted calves and 57 unspotted juveniles were sighted in 2008-09, and the percentage of young calves in 2008-09 has rebounded from the previous two monitoring periods. After a noticeable declining trend in calf encounter rate in West Lantau from 2002-08, such trend appeared to be reversed in 2008-09. From 2002-08, high densities of young calves can be found around Lung Kwu Chau, near Tai O Peninsula, Kai Kung Shan, Fan Lau and Kau Ling Chung. All these areas can be considered important nursery areas, which should be protected by more stringent measures. In addition, a total of 35 and 26 dolphin sightings were associated with feeding and socializing activities respectively. Most of these sightings were found along the west coast of Lantau and around Lung Kwu Chau. From 2002-08, several areas recorded higher sighting densities for feeding activities, including the grids near Tai O and Peaked Hill, around Lung Kwu Chau and at Sham Shui Kok. And the grids with very high sighting densities for socializing activities were located at Sham Shui Kok and around Lung Kwu Chau. All these areas could

be considered important feeding and socializing habitats for dolphins.

The photo-identification work has been in a great progress in 2008-09. A total of 131 individuals, sighted 371 times altogether, were identified during vessel surveys. Most of the re-sightings were made in West Lantau and Northwest Lantau. There was a noticeable increase in number of individuals expanding range use from Northwest Lantau to West Lantau or vice versa during the study period. The rate of discovery of new individuals has not reached a plateau yet, and 28 individual were newly-identified in 2008-09. Notably, most new individuals identified in 2007-08 were repeatedly sighted in 2008-09, showing their increased usage of Lantau waters.

Most individual dolphins used Northwest, Northeast and West Lantau as part of their ranges. Some even occupied ranges that spanned across Hong Kong territorial border. Core areas of 62 individuals with at least 15 re-sightings were mainly concentrated around the marine park and Brothers Islands, along the stretch of waters from Tai O to Fan Lau, and around the northeast corner of airport. Individuals using the marine park as their core areas may have more extensive ranges within Hong Kong and across the border to mainland waters. In contrast, most individuals using the Brothers Islands as their core areas strongly relied on this area with very intensive use, and a majority of which were year-round residents. In West Lantau, it that there were frequent influxes of many individuals into this area from neighbouring waters, and they only forage there opportunistically instead of spending a great deal of time there.

During the study period, 19 education seminars were held at local primary and secondary schools about conservation of Chinese white dolphins and finless porpoises in Hong Kong. A PowerPoint presentation was produced for these school talks, with up-to-date information on both dolphins and porpoises gained from the long-term monitoring programme. Through this integrated approach of long-term monitoring research and publicity programme, the Hong Kong public can acquire the first-hand knowledge about cetaceans from dolphin researchers.