

Effective Measures to Conserve Chinese White Dolphins

Q: Some suggest there is a need to enhance adjacent habitats for Chinese White Dolphins (CWDs) as a compensation measure during the construction phase. Why has the Environmental Impact Assessment (EIA) for expanding the airport into a three-runway system (3RS) not proposed the early designation of marine parks in the West Lantau or Fan Lau areas?

A: Available literature shows that most CWDs identified in Hong Kong have variable-sized home ranges of 39-339 km², usually extending into Mainland waters and covering an area much larger than the proposed 3RS land formation. The EIA recognises that CWDs may temporarily vacate part of their home range as a result of marine works, but are likely to return once construction disturbance is reduced and remaining habitat returns to a healthy state and is able to support important dolphin life functions.

As there are alternative habitats available for CWDs during the 3RS construction phase, including in the Pearl River Estuary, off-site habitat enhancement within Hong Kong waters, for example the designation of a marine park in West Lantau, was not considered necessary as a mitigation measure for the 3RS project. 3RS mitigation measures focus on the areas immediately affected by the project.

The EIA proposes a set of mitigation measures for the 3RS construction phase intended to reduce moderate to high impact on CWDs to acceptable levels. These include imposing diversions and speed restrictions on high-speed ferries during construction, using non-dredge methods during land formation, avoidance of marine bored piling during peak CWD calving season, adoption of 250m Dolphin Exclusion Zone for certain marine works, acoustic decoupling of noisy equipment on barges, enforcement of a 10 knot speed limit and use of predefined routes for works vessels with vessel numbers kept to a minimum, to name a few.

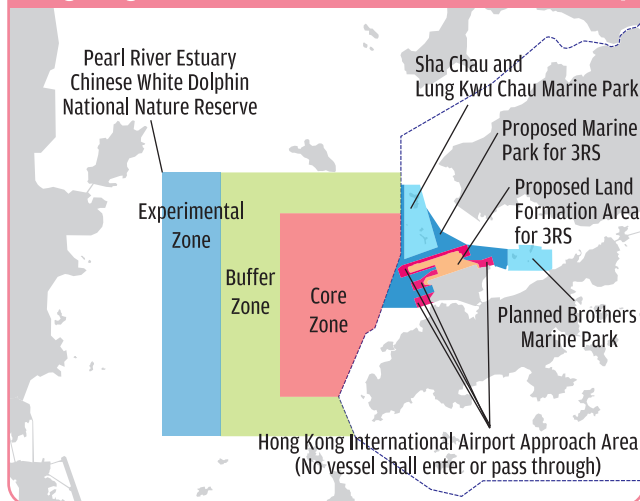
Q: As the marine park will be designated only with the commencement of 3RS operations, will CWDs be able to recover from expected 3RS impacts and return to Hong Kong waters?

A: CWDs are not expected to disappear from Hong Kong waters during 3RS construction, only to temporarily decline in and immediately around the works area. Based on international experience and actual CWD monitoring data from the late stages of the existing airport construction in the 1990s, dolphins are predicted to return after the 3RS is completed as long as the remaining habitats are healthy.

The designation of approximately 2,400 ha of new marine park is, therefore, a very important step in helping reverse the expected decline in CWD abundance.

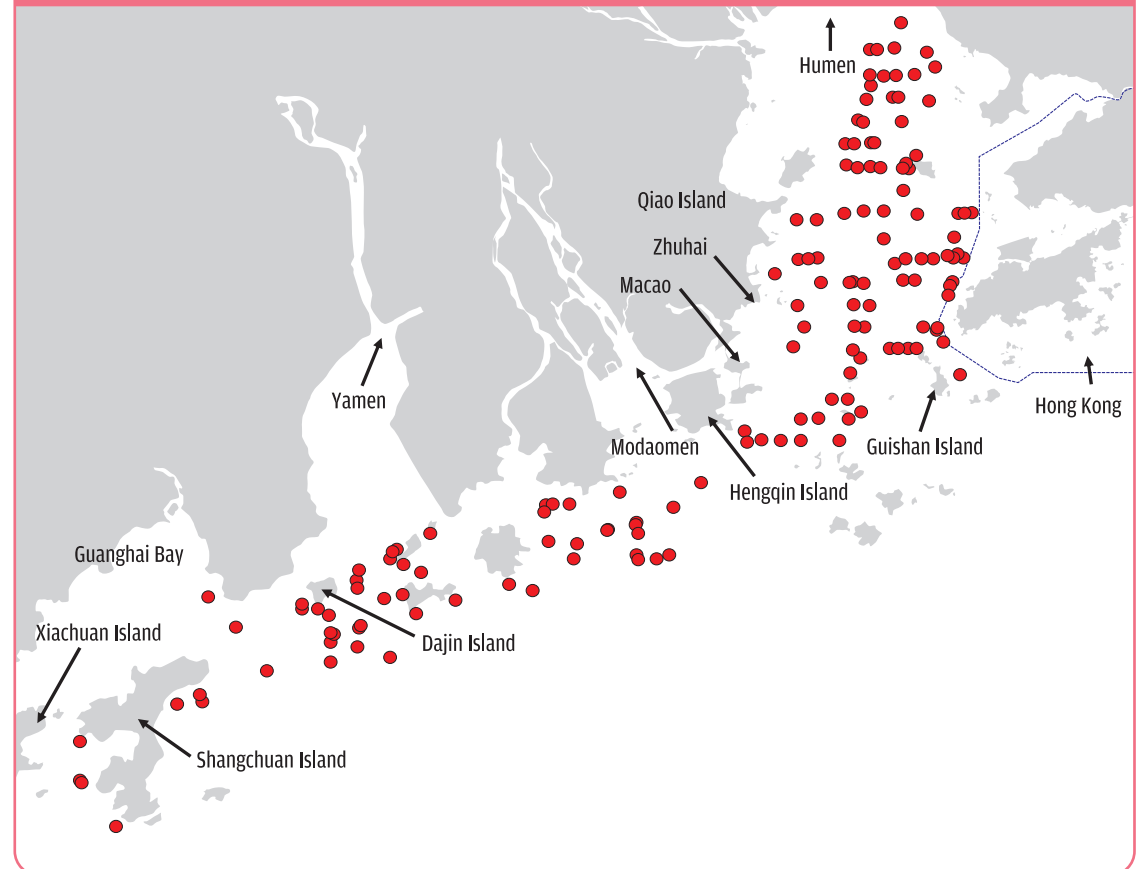
Systematic surveys on CWDs were undertaken before, during, and after the construction of the Aviation Fuel Receiving Facility at Sha Chau as part of the original airport construction between 1995 and 1998. Percussive piling, which was much noisier and riskier for dolphins than the methods proposed for the 3RS project, was employed. The monitoring records showed evidence of a significant drop in CWD numbers, from about 100 around the start of construction to less than 50 during construction. The number quickly returned to about 100 soon after construction was completed. This example provides the best-available indication of what to expect before, during and after construction, as it involved the same sub-population of CWDs.

Existing and planned Marine Protected Areas in Hong Kong western waters and the Pearl River Estuary



Proposed marine park of three-runway system will connect Hong Kong's and Pearl River Estuary's marine protection area to form a very large conservation reserve for Chinese White Dolphins.

Distribution of Chinese White Dolphins in the Pearl River Estuary outside Hong Kong waters (vessel line transect surveys between 2005 and 2008 in dry season from Oct to Mar)



The area of activities for the CWDs in the Hong Kong waters and Pearl River Estuary ranges between 3,900 and 33,900 hectares.

Source: Chen, T., Hung, S. K., Qiu, Y., Jia, X. and Jefferson, T. A. 2010. Distribution, abundance and individual movements of Indo-Pacific humpback dolphins (*Sousa chinensis*) in the Pearl River Estuary, China. *Mammalia* 74: 117-125.

Q: High-speed ferries and construction vessels are considered to pose significant impacts for CWDs. What are the measures proposed to mitigate these impacts?

A: Impacts from high-speed ferries on CWDs are allocated high significance in the 3RS EIA. The EIA proposes that when construction begins, the SkyPier high-speed ferries operating between Zhuhai and Macao should be diverted away from the narrowing water body north of HKIA. High-speed ferries continuing to use this body of water during construction will be reduced by about half, significantly reducing collision risk and noise disturbance to CWDs.

It is the speed of marine vessel traffic rather than the number of vessels that poses the most significant risk of injury and noise disturbance to CWDs. Therefore, although construction vessels will be numerous, they are expected to operate at lower speeds and pose less of a risk to CWDs. The EIA also proposes measures to further reduce construction vessel impacts during works.

