

## Chinese White Dolphins Face Serious Extinction Threat

The Pearl River Estuary Chinese dolphin population is declining at about 2.5 percent per year and is fast approaching its minimum viability threshold.

[Asian Scientist Newsroom](#) | March 2, 2017 | [In the Lab](#)



*AsianScientist (Mar. 2, 2017)* - Chinese white dolphins (*Sousa chinensis*) inhabiting the Pearl River Estuary face a far greater threat than previously thought, according to a study published in *Scientific Reports*.

The current demographic trajectory of the population and the ongoing loss of their critical habitats leave only a slim chance to prevent their stochastic extinction. For conservationists and management authorities, the time to act is now, said the researchers from the University of Hong Kong (HKU).

Because long-term survival of free-ranging populations depends on the carrying capacity of their habitat, the demographic and ecological threshold values represent the minimum population size that can be long-term viable and the minimum area of critical habitat that has to be maintained to secure a long-term survival of the minimum viable population.

These issues become particularly important for populations that face severe anthropogenic impacts, such as the Chinese white dolphins in waters of the Pearl River Estuary. The natural stochastic fluctuations of their environment are magnified by human impacts and escalate to levels that may impair their survival. Therefore, accurate estimates of demographic and ecological thresholds of a population are critically important in designing effective conservation strategy.

For elusive animals such as dolphins and whales, such estimates are notoriously difficult to generate because of the inherent difficulties of collecting sufficiently robust demographic datasets. It takes many years of tedious data collection to build the minimum scientific evidence needed for such analyses; which is why very few attempts of such work have ever been done.

In a world's first study of coastal dolphins, researchers from the Swire Institute of Marine Science, HKU studied the Chinese white dolphins inhabiting waters of the Pearl River Estuary.

The team estimated that if human impacts were to be excluded and the population was stable, approximately 2,000 dolphins would be a sufficiently viable population and, if given access to approximately 3,000 km<sup>2</sup> of their undisturbed critical habitat, such a population could persist across at least 40 generations (approximately 800 years).

The so-called "critical habitat" is the type of habitat that dolphins use for their daily needs; these are the areas where they find sufficient amount of food and shelter. In Hong Kong, it is primarily alongside the natural coastline of south and southwest Lantau Island. The amount and connectivity of this shallow-water habitat affects dolphins' survival; the less of the critical habitat there is the lower the likelihood of dolphin survival.

However, the Pearl River Estuary dolphin population is currently declining by approximately 2.5 percent per year and is fast approaching its viability threshold. At the same time, all current marine protected areas (MPAs) in the Pearl River Estuary fail to secure the minimum habitat requirement to accommodate sufficiently viable population size that could withstand the ever-growing anthropogenic pressures.

Cumulatively, all current MPAs in both Hong Kong and Mainland waters cover just about 600 km<sup>2</sup>, of which very little represents the dolphin critical habitat. Study leader Associate Professor Leszek Karczmarski pointed out that in Hong Kong, less than 17 percent of the dolphins' core areas and less than 7 percent of their core foraging grounds are under legal protection; and in Mainland waters this ratio is even smaller.

“To be effective, conservation measures should not only increase the volume of the habitat under protection but, importantly, focus the conservation effort on the core areas and key habitats used by the dolphins for their daily needs. Preserving the ecological integrity of those areas should be among the primary conservation targets,” Karczmarski added.

“Unfortunately, our findings indicate that the Pearl River Estuary dolphin population is deemed to become extinct unless effective conservation measures can rapidly reverse the current population trend.”

The article can be found at: [Karczmarski et al. \(2017\) Threshold of Long-term Survival of a Coastal Delphinid in Anthropogenically Degraded Environment: Indo-Pacific Humpback Dolphins in Pearl River Delta.](#)

Source: [University of Hong Kong.](#)

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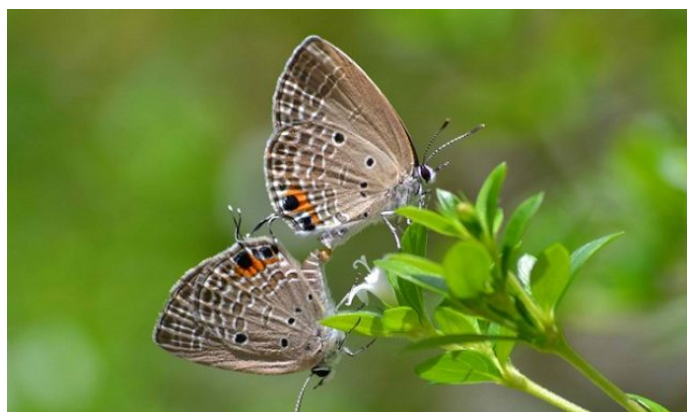
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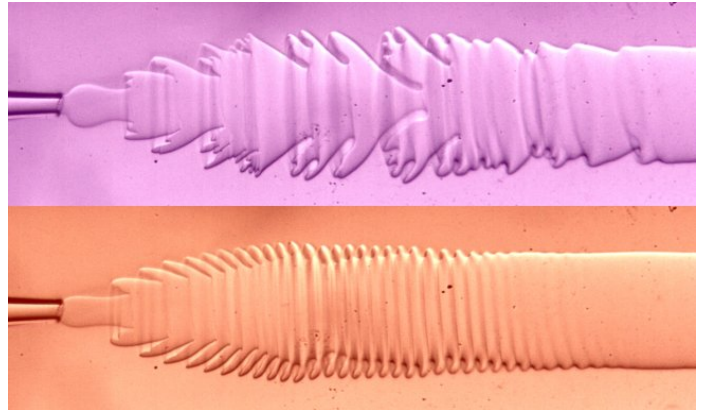
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