

Rapid action necessary to protect Malaysia's sea cows and their habitat

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Malaysia aims to protect 10% of its marine environment by 2020. Less than 1%, however, is currently protected. This may have dire consequences for the country's endangered dugong population, warn a Malaysian scientist and her research team.

In the shallow, warm, coastal and island waters between East Africa and Australia lives a plump marine mammal, related both to the freshwater manatee and, surprisingly, the elephant.

The dugong is an herbivore and is often called a sea cow because it grazes on seagrass meadows.

Many of those meadows suffer from loss and degradation, threatening the livelihood of the dugong, which in turn, threatens the health of the ecosystem. Dugong populations also face pressures from fishing, hunting and coastal pollution. As a result, dugongs have declined or gone extinct in at least a third of their natural habitats. The International Union for Conservation of Nature has listed this animal's conservation status as vulnerable since 1982.

In 2014, a Malaysian scientist received the Pew Fellowship in Marine Conservation to undertake much needed comprehensive research on Malaysia's dugong population.

Dr Louisa Ponnampalam, a research fellow at the University of Malaya, first conducted aerial surveys in 2010 around the islands on the south-

eastern coast of West Malaysia – known as the Mersing group of islands – to assess the local dugong population.

Her initial surveys covered almost 3,000km of water over a period of eight consecutive days and resulted in 93 sightings of dugongs, 22 of which consisted of mothercalf pairs. The maximum daily count was 20 dugongs, suggesting there is a relatively small dugong population. However, the high percentage of calf sightings indicates this population is reproducing. The highest concentrations of dugongs coincided with areas that have known seagrass meadows, but only 38% of sightings fell within the boundaries of local marine parks.

Dr Ponnampalam's research suggests that the Mersing islands host the most significant congregation of dugongs in peninsular Malaysia. However, these areas are affected by trawl fishing (including encroachment into marine park areas), vessel traffic, agricultural plantations near the coast and mixed coastal developments. These are known to cause habitat degradation and water pollution and to threaten marine life.

Her research team, which includes scientists from Malaysia, the United States and Japan, fears that the islands will not provide sustainable long-term habitats for dugongs if the threats increase. In fact, they conclude that "the conservation concerns are sufficiently urgent that policy makers should take quick action even though science has not yet provided complete answers to critical questions."

"Lack of comprehensive scientific information should not be a deterrent to the implementation of conservation actions," write the researchers in their study published in *Oryx*, the International Journal of Conservation. They recommend the establishment of a dugong conservation area and the undertaking of focused research in priority areas.

Through her Pew Fellowship, Dr Ponnampalam began conducting aerial surveys again in 2014 to investigate dugong distribution patterns. She is also deploying acoustic recorders to study the animals' habitat use, and collecting seagrass and sediment samples to study environmental contaminants and conduct a habitat health risk assessment for the dugongs. These data will assist with focused protected area planning with all relevant stakeholders, including management authorities and local communities.

In 2015, the research team plans to expand its study to include seagrass mapping, an investigation of dugong feeding trails, and an assessment of the total economic value of the main dugong areas in the Mersing islands and its seagrass meadows.

Did you know?

The dugong can stay underwater for several minutes before surfacing. It grows up to three metres in length and up to 500 kilograms in weight. The female dugong is pregnant for a full year before giving birth. Young dugongs remain close to their mothers for about 18 months and form a very close bond. Dugongs need to eat at least 30 kilograms of seagrass per day to sustain themselves. They can travel several hundred kilometres in search of suitable seagrass beds.

Provided by University of Malaya

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