

Spotted a seahorse or pipefish in local waters? Share info with researchers

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Hidden among seagrass meadows and coral reefs, seahorses and their slender cousins, the pipefish, have gone relatively unnoticed, and not much is known about them locally.

A Singapore marine scientist hopes to change that.

Over the next two years, senior research fellow Neo Mei Lin from the National University of Singapore's Tropical Marine Science Institute will be heading a citizen science project to uncover more about the diversity and distribution of these elusive creatures in local waters.

The project is funded by Mandai Nature, the conservation arm of Mandai Wildlife Group, under the Singapore Conservation Impact Grant, where applicants can apply for up to \$50,000 for a project spanning more than one year but not more than two years.

From June, researchers will be carrying out reviews of previous research to identify hot spots, as well as working with community partners and nature groups to carry out field surveys.

"We know that these creatures are around on our shores, but we don't know what species there are and how they are doing," she said. "Even though seahorses are iconic fish, they are really hard to spot, which results in them being often overlooked."

The seahorse and pipefish often serve as flagship species for marine conservation because of their iconic features. They are also important predators of organisms at



A tiger tail seahorse photographed by marine scientist Neo Mei Lin in Pulau Hantu in 2013. She is heading a citizen science project to uncover more about the diversity and distribution of these elusive creatures in local waters. PHOTO: NEO MEI LIN

the bottom of the sea.

Singapore is home to three species of seahorses – the spotted seahorse, tiger tail seahorse and Japanese seahorse – as well as 19 pipefish species.

As little is known about them, only six of these fishes received a conservation status on the Singapore Red List, which assesses and classifies local flora and fauna based on the risk of extinction.

The three seahorse species were

listed as critically endangered, while the three pipefish species that received a status were listed as vulnerable. Meanwhile, the remaining species of pipefish were determined to be data deficient, which means there is inadequate information to make an informed assessment.

"We don't have enough ecological data on how many of them are truly out there, how often they reproduce, their survival rates... All

these are still knowledge gaps," said Neo.

She added that the survey will help to give researchers a sense of species loss and whether it is happening in tandem with the country's coastal development.

"Even though some of these projects may not be near to some of the key habitats of seahorses and pipefish, it may still have a chronic impact on their population," she said.

"We hope that once we get a better idea of the distribution and ecology of the species and their numbers, we can put them together to build a stronger picture of information that can be used to inform conservation assessments."

Through this project, Neo said, she hopes to raise more public awareness and excitement about these cryptic creatures, while also getting people involved in helping to look for them.

"There are only so many low tides in a year and places that each of us can go, but with citizen scientists, we can divide and conquer and cover more areas," she said.

"I've seen lots of citizen science volunteers who are really good at finding creatures, and we're tapping their power to build a stronger database."

Neo also hopes to create a community of citizen science volunteers, which in turn can help build a longer runway to protect marine biodiversity.

The seahorse and pipefish belong to a family of fish known as syngnathids, which comes from the Greek words for "fused jaw". All creatures in this family have an elongated snout and an exoskeleton of bony plates that act as armour instead of scales.

Syngnathids also have a unique method of reproduction, where males will carry and incubate the eggs laid by females until they are ready to hatch.

The project was developed in collaboration with Adam Lim, director of Save Our Seahorses Malaysia, a non-profit organisation dedicated to seahorse research and marine conservation in the neighbouring country.

"Adam and I also wanted to see if there's potential to have a stronger regional partnership and collaboration, so that we're not studying in silos but also building regional relevance," she said, adding he will be helping with seahorse identification workshops later in 2026.

Neo, who is a giant clam expert, began research work on these massive molluscs in 2006 to better understand their threats and how to save them. She also encountered seahorses on her surveys and worked with marine conservation organisation Project Seahorse.

"I feel there's so much I've learnt from working with giant clams that I can take what I've learnt and apply it to a different animal, and hopefully build a similar conservation programme to raise awareness," she said.

Moving forward, she hopes to start workshops for the public, including teaching volunteers how to identify seahorses and photograph them, as well as the safety considerations.

While syngnathids are masters of camouflage, members of the public should be mindful of proper etiquette when visiting coastal habitats, such as treading carefully and refraining from touching, chasing or removing marine creatures from their habitat.

"To further marine conservation, citizen science efforts are very valuable," Neo said.

"It can bring on board people who do not have prior training to work along with scientists, and get them to understand and become capable of collecting data and appreciating it."

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