

Two new species of freshwater goby fish discovered in the Philippines

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The new goby species *Rhinogobius estrellae* is small, typically around 3 to 4.5 cm in length. It has orange fins and sky-blue spots dotted along the body. Credit: Ken Maeda, OIST

A team of biologists from the Okinawa Institute of Science and Technology Graduate University (OIST) in Japan and Western Philippines University (WPU) in the Philippines have found two new species of goby fish in Palawan, a Philippine archipelago. The goby fish, both belonging to the genus *Rhinogobius*, were described recently in the journal *Zootaxa*.

One of the species was given the Latin [scientific name](#) *Rhinogobius estrellae*, named for the waterfall Estrella Falls, in Barangay Estrella Village, where the goby was discovered.

The second species was named *Rhinogobius tandikan*, with the name inspired by the Palawan peacock-pheasant known locally as "Tandikan."

"The Tandikan goby has these blue markings on its body, which reminded me of the spots in the Tandikan's plumage," said Dr. Ken Maeda, first author of the study and staff scientist in the Marine Eco-Evo-Devo Unit at OIST.

Rhinogobius estrellae and *Rhinogobius tandikan* are the third and fourth new goby species discovered in Palawan as part of a collaboration project between OIST and WPU, following *Stiphodon palawanensis* described in 2015, and *Lentipes palawanirufus*, described in a study last year.



The new goby species *Rhinogobius tandikan* is similar in size and form to *Rhinogobius estrallae*, but has a more yellow coloring. Credit: Ken Maeda, OIST

The identification of *Rhinogobius* species in the tropical islands of Palawan shows that the range of this goby [genus](#) extends much further south than previously known.

"We were very surprised the first time we saw *Rhinogobius estrallae*, and then really excited when we found the second species," said Dr. Maeda. "The *Rhinogobius* habitat is typically located in temperate and sub-tropical regions further north than Palawan, in places like Vietnam, China, Japan, and even the Russian Far East. Finding gobies from this

genus in Palawan was very unexpected."

The research team also analyzed DNA taken from the mitochondria for the two species, which placed both species in an ancient lineage within the *Rhinogobius* group. Previously, only one other goby, *Rhinogobius similis*, belonged to this evolutionary line. The three species also share similar [physical characteristics](#) unique to this lineage, including the arrangement of sensors on their head.

Unlike the *Rhinogobius similis*, which has a wide distribution range, from Japan to Vietnam, the two new species appear to be endemic, meaning they are only found in one location, even within the island of Palawan itself.



Left: Estrella Falls, in Narra, Palawan is the only known habitat of the goby *Rhinogobius estrallae*. It's the most southern habitat reported for gobies from this genus. Right: A small stream in Barangay Bahile, Puerto Princesa City in Palawan, is the only known habitat of the goby, *Rhinogobius tandikan*. Credit: Ken Maeda, OIST

In order to protect these two [new species](#), the scientists urge that special attention must be given to preserve their habitats.

"Their endemic nature really raises the risk and threat level for both [species](#)," explained Dr. Maeda. "Any disruption to their habitat, such as dams, roads, leisure facilities or development of the land for agriculture could quickly lead to their extinction."

More information: Ken Maeda et al, Two new species of Rhinogobius (Gobiiformes: Oxudercidae) from Palawan, Philippines, with their phylogenetic placement, *Zootaxa* (2021). [DOI: 10.11646/zootaxa.5068.1.3](#)

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