

Wakanda forever! Scientists describe new species of 'twilight zone' fish from Africa

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Africa has new purple-clad warriors more than 200 feet beneath the ocean's surface. Deep-diving scientists from the California Academy of Sciences' [Hope for Reefs](#) initiative and the University of Sydney spotted dazzling fairy wrasses—previously unknown to science—in the dimly lit mesophotic coral reefs of eastern Zanzibar, off the coast of Tanzania. The multicolored wrasses sport deep purple scales so pigmented, they even retain their color (which is typically lost) when preserved for research. The scientists name this "twilight zone" reef-dweller *Cirrhilabrus wakanda* (common name "Vibranium Fairy Wrasse") in honor of the mythical nation of Wakanda from the Marvel Entertainment

comics and movie Black Panther. The new fish is described today in *ZooKeys*.

"When we thought about the secretive and isolated nature of these unexplored African reefs, we knew we had to name this [new species](#) after Wakanda," says Yi-Kai Tea, lead author and ichthyology Ph.D. student from the University of Sydney. "We've known about other related fairy wrasses from the Indian Ocean, but always thought there was a missing species along the continent's eastern edge. When I saw this amazing purple fish, I knew instantly we were dealing with the missing piece of the puzzle."

Underwater Wakanda

The Academy scientists say *Cirrhilabrus wakanda's* remote home in mesophotic coral reefs—below recreational diving limits—probably contributed to their long-hidden status in the shadows of the Indian Ocean. *Hope for Reefs'* scientific divers are highly trained for the dangerous process of researching in these deep, little-known mesophotic reefs, located 200 to 500 feet beneath the ocean's surface. Accessing them requires technical equipment and physically intense training well beyond that of shallow-water diving. The team's special diving gear (known as closed-circuit rebreathers) includes multiple tanks with custom gas blends and electronic monitoring equipment that allow the divers to explore deep reefs for mere minutes before a lengthy, hours-long ascent to the surface.



Using a microscope, the science team examined the wrasse specimens' scales, fin rays, and body structures. DNA and morphological analyses revealed the new fairy wrasse to be different from the other seven species in the western Indian Ocean as well as other relatives in the Pacific. The new species' common name is inspired by the fictional metal vibranium, a rare, and, according to Rocha, 'totally awesome' substance found in the Black Panther nation of Wakanda. The Vibranium Fairy Wrasse's purple chain-link scale pattern reminded the scientists of Black Panther's super-strong suit and the fabric motifs worn by Wakandans in the hit film. Credit: Luiz Rocha © 2018 California Academy of Sciences

"Preparation for these deep dives is very intense and our dive gear often weighs more than us," says Dr. Luiz Rocha, Academy Curator of Fishes and co-leader of the *Hope for Reefs* initiative. "When we reach these reefs and find unknown species as spectacular as this fairy wrasse, it feels like our hard work is paying off."

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Precious life in deep reefs

[In a recent paper](#), the Academy team found that [twilight zone](#) reefs are unique ecosystems bursting with life and are just as vulnerable to human threats as their shallow counterparts. Their findings upended the long-standing assumption that species might avoid human-related stressors on those deeper reefs. The *Hope for Reefs* team will continue to visit and study twilight zone sites around the world to shed light on these often-overlooked ecosystems.

In addition to this new fish from Zanzibar, Rocha and his colleagues recently published descriptions of mesophotic fish from Rapa Nui [Easter Island]

and Micronesia. *Luzonichthys kiomeamea* is an orange, white, and sunny yellow dwarf anthias endemic to Rapa Nui, and the basslet [Liopropoma incandescens](#) (another new species published today in Zookeys) inhabits Pohnpei's deep reefs—a neon orange and yellow specimen collected from a rocky slope 426 feet beneath the ocean's surface.

"It's a time of global crisis for coral reefs, and exploring little-known habitats and the life they support is now more important than ever," says Rocha. "Because they are out of sight, these deeper reefs are often left out of marine reserves, so we hope our discoveries inspire their protection."

More information: Yi-Kai Tea et al. *Cirrhilabrus wakanda*, a new species of fairy wrasse from mesophotic ecosystems of Zanzibar, Tanzania, Africa (Teleostei, Labridae), *ZooKeys* (2019). [DOI: 10.3897/zookeys.863.35580](https://doi.org/10.3897/zookeys.863.35580)

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