

Variations in pygmy zebra octopus striping could help with long-term studies

April 13 2023, by Bob Yirka



Photographs depicting *Octopus chierchiaie* of different ages. (A) One-year-old *O. chierchiaie* adult. (B) One-day-old *O. chierchiaie* hatchling. (C) Five-day-old *O. chierchiaie* hatchling already displaying a developing stripe configuration. Credit: *PLOS ONE* (2023). DOI: 10.1371/journal.pone.0265292

A team of integrative biologists at the University of California, Berkeley, has found that differences in pygmy zebra octopus striping are strong enough to tell them apart in long-term studies. In their study, reported in the open access journal *PLOS ONE*, the group raised 25 octopus hatchlings as a means to studying their striping.

The pygmy zebra [octopus](#) (*Octopus chierchiaie*), also known as the lesser Pacific striped octopus, resides in the waters off the West Coast of the U.S. and Central America. The octopus tends to keep to the low intertidal zones and they are well known by their dark brown and white

striping, similar to the zebra. Hatchlings typically take between 250 to 300 days to mature.

In this new effort, the researchers noted that little research has been conducted on the octopus, and therefore little is known about its impact on the environment. They note also that little is known about their striping. To rectify that situation, they planned and carried out a study of pygmy zebra octopus striping in their lab.

The researchers obtained an [adult male](#) and female and allowed them to mate, resulting in the production of 25 offspring. The [offspring](#) were then monitored as they grew older, with the focus on their striping patterns.

The research team found that the stripes began to appear at about two weeks. After four weeks, they appeared to be firmly set. They also noted that, as with other octopus species, the [pygmy](#) zebra tends to change its appearance, including color, when disturbed. Thus, they had to devise a means for filming and photographing the specimens without disturbing them in order to study their persistent striping patterns.

In comparing the striping patterns between individuals, the research team found them to be extraordinarily unique—as much so as the human fingerprint. They also noted that the variations were strong enough that they were easily identifiable—volunteers studying photographs were able to identify specimens with 84.2% accuracy. This, the group suggests, means that the striping effect is strong enough to allow for conducting [long-term studies](#) of individuals in the wild without the need for tagging.

More information: Benjamin Liu et al, Individually unique, fixed stripe configurations of *Octopus chierchiaie* allow for photoidentification in long-term studies, *PLOS ONE* (2023). [DOI: 10.1371/journal.pone.0265292](#)

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