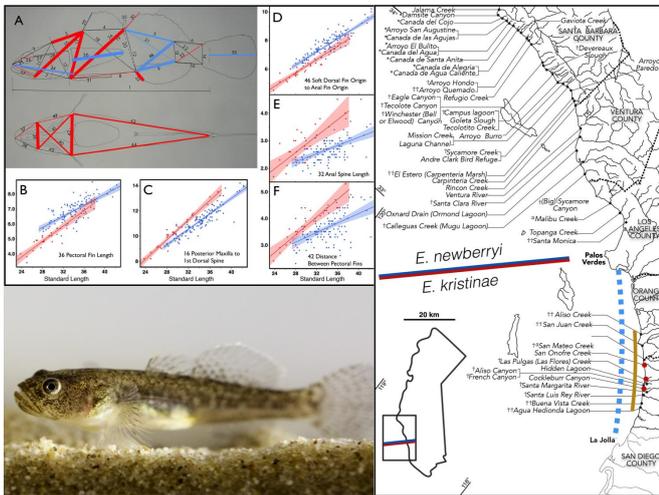


# Morphology suggests an endangered goby in southern California is a new species

27 July 2016



The upper right panel shows the measurements that are larger in the Southern Tidewater Goby (*E. kristinae*) in red and larger in the Northern Tidewater Goby (*E. newberryi*) in blue, with graphs of the five most distinguishing measurements. The range map on the right shows the geographic boundary between the historic ranges of the two species. Note the inferred range (blue dash), historically verified sampled range (yellow bar) and current populations (red dots) of the Southern Tidewater Goby. A photograph of the Southern Tidewater Goby appears in the Lower left. Credit: Brenton Spies

An endangered fish along the coast of California—the tidewater goby—may actually be two species rather than one, according a study published July 27, 2016 in the open-access journal *PLOS ONE* by Camm Swift from the Natural History Museum of Los Angeles County, US, and colleagues.

The tidewater goby lives in coastal lagoons and is threatened by coastal development and drought. Based on a previous analysis of mitochondrial DNA, the southernmost group of this small fish diverged from those along the rest of the state

between 2 and 4 million years ago. To assess whether the southern group is a species in its own right, the authors of this study examined more than 145 museum specimens of tidewater gobies from throughout their range.

Based on differences in mitochondrial DNA and morphological differences, the researchers found that the Southern tidewater goby is a [new species](#) they've named *Eucyclogobius kristinae*. Compared to the northern population, *E. kristinae* had fewer rays in their pectoral fins and more neuromasts, organs that sense movement and vibration in water. Southern tidewater goby has only been found in three lagoons in San Diego County, making this new species critically endangered, and the researchers call for conservation actions to prevent possible extinction as the habitat is threatened by California's drought.

"The description of Southern Tidewater Goby as a species within the already listed tidewater gobies clarifies the need for management of the particular suite of lagoons in Southern California and the need for reestablishment of additional population to increase the likelihood that the Southern Tidewater Goby, which has evolved in isolation in southern California for in excess of 1 million years, will continue to persist in southern California," said David Jacobs. "With active management and small scale restoration the large human population of southern California and this newly described endangered species should be able to live together for many years come."

**More information:** Swift CC, Spies B, Ellingson RA, Jacobs DK (2016) A New Species of the Bay Goby Genus *Eucyclogobius*, Endemic to Southern California: Evolution, Conservation, and Decline. *PLoS ONE* 11(7): e0158543. DOI: [10.1371/journal.pone.0158543](https://doi.org/10.1371/journal.pone.0158543)

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