



A DNA-based assessment of the phylogenetic position of a morphologically distinct, anchialine-lake-restricted seahorse

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Isolated populations provide special opportunities to study local adaptation and incipient speciation. In some cases, however, morphological evolution can obscure the taxonomic status of even recently founded populations. Here, we use molecular markers to show that an anchialine-lake-restricted population of seahorses, originally identified as *Hippocampus reidi*, appears on the basis of DNA data to be *H. erectus*. We collected seahorses from Sweetings Pond, on Eleuthera Island, Bahamas, during the summer of 2014. We measured morphological traits and sequenced two genes, cytochrome b and ribosomal protein S7, from seahorses in our sample. On the basis of morphology, Sweetings Pond seahorses could not be definitively assigned to either of the two species of seahorse, *H. reidi* and *H. erectus*, that occur in marine waters surrounding the Bahamas. However, our DNA-based phylogenetic analysis showed that the Sweetings Pond fish were firmly nested within the *H. erectus* clade. Thus, Sweetings Pond seahorses are an isolated population of *H. erectus*. Interestingly, the seahorses from Sweetings Pond differ morphologically from other marine populations of *H. erectus* in having a more even torso to tail length ratio. The substantial habitat differences between Sweetings Pond and the surrounding coastal habitat make Sweetings Pond seahorses particularly interesting from the perspectives of conservation, local adaptation and incipient speciation.

Keywords: Phylogenetics, Conservation and management, Ecology