

ASIH presentation in 2000

Lovejoy, N.R.; Flecker, A.S.F.; Taphorn, D.C.; M.L.G. deAraujo. 2000. Systematics, biogeography, and population structure of the Neotropical freshwater needlefish genera *Potamorrhaphis* and *Pseudotylorus*.

Phylogenetic relationships of populations and species within the freshwater South American needlefish genera *Potamorrhaphis* and *Pseudotylorus* were assessed using mitochondrial cytochrome b sequences. Samples were obtained from widely distributed localities in the Orinoco, Amazon, and Parana basins, and represented all currently recognized species. The phylogeny of haplotypes for *Potamorrhaphis* corresponded imperfectly to current morphological species identities: haplotypes from *P. guianensis*, the most widespread species, do not make up a monophyletic clade. Geography plays a strong role in structuring genetic variation: *Potamorrhaphis* haplotypes were rarely shared between any localities, indicating restricted gene flow. Also, haplotypes from different localities in the same river basin were not always closely related. Possible causes of these patterns include limited dispersal and the effects of current and past geographic barriers. The phylogeny of *Pseudotylorus* haplotypes shows a different pattern: samples from distant localities are minimally diverged, suggesting more extensive dispersal.