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PeerJ Life & Environment

PRESS RELEASE

Accelerating coral reef science: building consensus around the assessment and interpretation of Symbiodiniaceae diversity

New research published in *PeerJ Life and Environment* by Dr. Sarah Davis and sixty-one scientists from 12 countries presents a perspective to build consensus around the assessment and interpretation of *Symbiodiniaceae* diversity. Symbiodiniaceae is a family of marine dinoflagellates (plankton) notable for their symbiotic associations with reef-building corals, sea anemones, jellyfish, marine sponges and other marine invertebrates. Understanding Symbiodiniaceae is important to those working to protect and regenerate coral reefs that are under threat around the world.

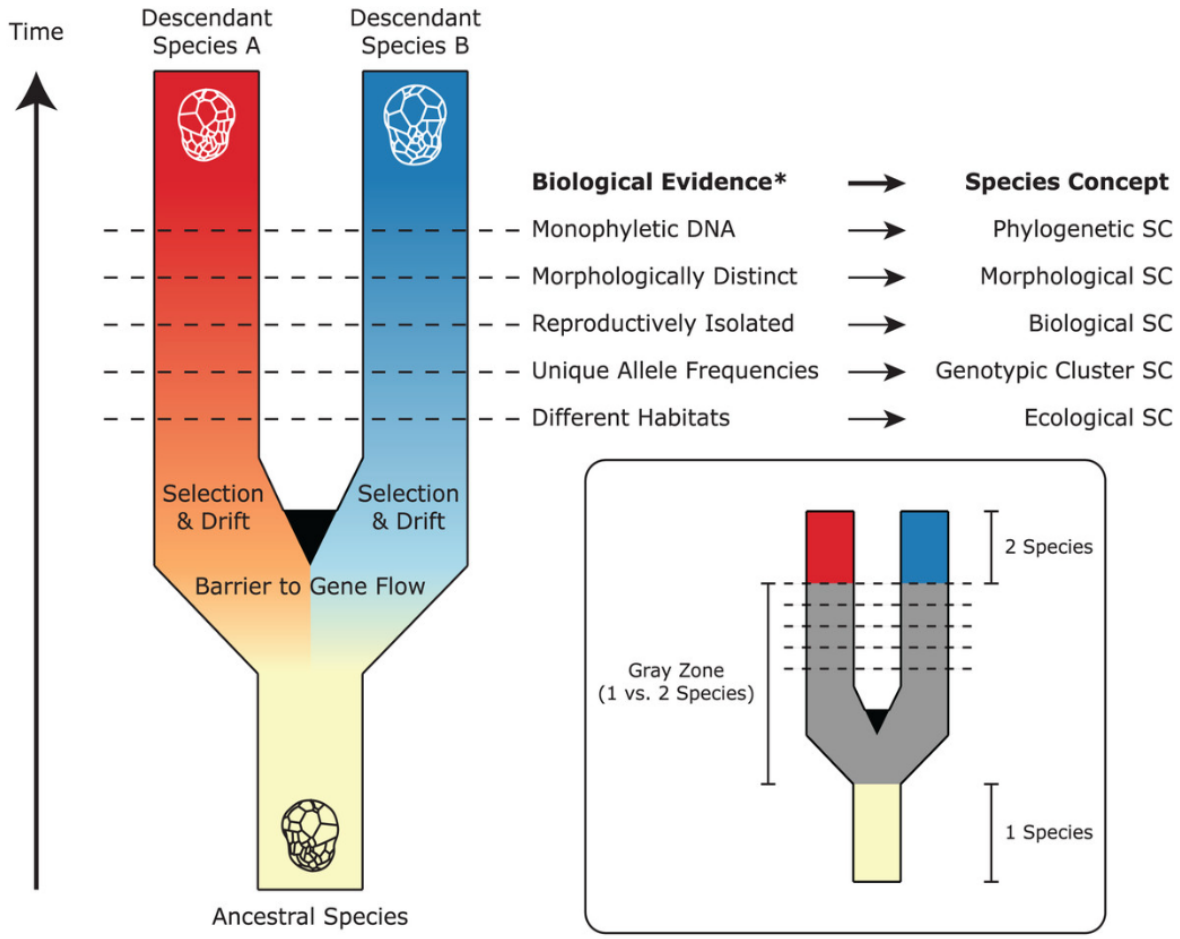
"The authors hope this paper will provide a springboard to launch novel, transformative investigations into coral symbiosis at this critical juncture for reefs," said Dr. Sarah Davis.

Despite advances in Symbiodiniaceae genomics, a lack of consensus among researchers with respect to interpreting genetic data has slowed progress in the field and acted as a barrier to reconciling observations. The authors identify key challenges regarding the assessment and interpretation of Symbiodiniaceae genetic diversity across three levels: species, populations, and communities.

“This manuscript was the result of an NSF-funded workshop aimed at bringing members of the Symbiodiniaceae research community together to discuss past scientific disagreements, identify areas of shared consensus, and craft a more inclusive path forward," said Dr. Sarah Davis.

The research summarizes areas of agreement and highlights techniques and approaches that are broadly accepted. In areas where debate remains, the authors identify unresolved issues and discuss technologies and approaches that can help to fill knowledge gaps related to genetic and phenotypic diversity.

“We also discuss ways to stimulate progress, in particular by fostering a more inclusive and collaborative research community. We hope that this perspective will inspire and accelerate coral reef science by serving as a resource to those designing experiments, publishing research, and applying for funding related to Symbiodiniaceae and their symbiotic partnerships” write the authors.



*Biological evidence in the Gray Zone may arise with different timing and order than depicted.

A simplified representation of Symbiodiniaceae speciation, species concepts (SC), and associated biological evidence.

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