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EFFECTS OF CANOPIES OF FOUNDATION SPECIES ON UNDERSTORY BETA DIVERSITY

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Study Description

Using intertidal communities dominated by a canopy-forming seaweed, we examined how foundation species canopies affect spatial environmental heterogeneity and the resulting beta diversity. Canopies reduce the spatial variation of temperature and desiccation during low tides. Consequently, a 32-month field experiment found that canopies limit beta diversity for understory sessile species. However, canopies did not affect beta diversity for mobile species, which is consistent with their ability to temporarily occur in stressful areas while foraging or moving to other areas. These contrasting responses may likely apply to other systems exhibiting canopy-forming foundation species hosting sessile and mobile species assemblages.

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Photo 1. Rocky intertidal habitats on the Pacific coast of Chile (Chaihuín) covered by the canopy-forming alga *Mazzaella laminarioides* viewed at low tide. Photo credit: Eliseo Fica-Rojas.



Photo 2. Top view of canopies of the seaweed *Mazzaella laminarioides* from the Pacific coast of Chile (Calfuco) photographed at low tide. Photo credit: Ricardo A. Scrosati.



Photo 3. Side view of canopies of the seaweed *Mazzaella laminarioides* from the Pacific coast of Chile (Loncoyén) photographed at low tide. Photo credit: Eliseo Fica-Rojas.

These photographs illustrate the article "Foundation species canopies affect understory beta diversity differently depending on species mobility," published by Alexis M. Catalán, Daniela N. López, Eliseo Fica-Rojas, Bernardo R. Broitman, Nelson Valdivia, and Ricardo A. Scrosati in *Ecology*. https://doi.org/10.1002/ecy.3999