



FRESHWATER MEDIATES TOP-DOWN CONTROL OVER SPECIES RANGE LIMITS AND INVASIBILITY IN A MARINE PLANT COMMUNITY.

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The saltmarshes are environments exposed to aquatic and terrestrial conditions (both marine and freshwater) and have marked gradients of physical stress (eg anoxia, salinity) that have important effects on the structure and, in particular, zonation of communities. Particularly in the marshes located in estuaries, quantity, quality and temporal variation of freshwater inflows are essential to the abiotic and biotic components. Much of the large spatial and temporal variations of physical, chemical and biological conditions in estuaries occur due to seasonal and interannual variability in freshwater inputs. The objective of this study was to investigate the role of freshwater input variation and herbivory on species range limits, invasion and competitive dominance in *Spartina* species (*Spartina alterniflora* and *S. densiflora*). We tested the hypothesis that plant zonation and growth of *Spartina* are mediated by crabs and drought stress (water availability) with a fully factorial experiment, that was conducted from September 2017 to april 2019. Forty plots (50x50 cm) with 50% *S. alterniflora* and 50% of *S. densiflora* were delimited (in two marshes on both sides of Negro River). The following treatments will be applied randomly (N=8): Control, Crab exclusion (50x50 x75 cm cages buried in the sediments); water (water addition); water + crab exclusions; and Cage Controls (half cages). The results of this work indicates that *S. alterniflora* dominates plots with water addition treatments, with and without crabs. Predation in *S. densiflora* was higher in treatment with freshwater addition. Our study reveals that an increase in fresh water input will promote sediment stabilization through the effect of *S. alterniflora* roots in sediment compaction.

Keywords: *Freshwater input; herbivory; salt marshes; Spartina alterniflora; Neohelice granulata; S. densiflora*