

DENSITY-DEPENDENT GROWTH INTERACTIONS BETWEEN *ELEOCHARIS ACICULARIS* (L.) R. & S. AND *JUNCUS* *PELOCARPUS* FORMA *SUBMERSUS* FASSETT

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ABSTRACT

McCreary, N.J. and Carpenter, S.R., 1987. Density-dependent growth interactions between *Eleocharis acicularis* (L.) R. & S. and *Juncus pelocarpus* forma *submersus* Fassett. *Aquat. Bot.*, 27:229-241.

Interspecific and intraspecific interactions were examined in *Eleocharis acicularis* (L.) R. & S. and *Juncus pelocarpus* forma *submersus* Fassett, two rhizomatous perennial plants which occur in the littoral zones of many temperate oligotrophic lakes. Reciprocal replacement series experiments were established in Roach Lake, U.S.A., at 4 ratios and 3 densities during the 1982 and 1983 growing seasons. Changes in biomass and in a variety of morphological characters were measured. Although the species did not differ in biomass change, *Eleocharis* produced more rosettes, longer rhizomes and more new photosynthetic structures in the first season than did *Juncus*. Effects of neighbors, regardless of species, were more important than interspecific interactions. Growth interactions between these species were competitively neutral. Differences between *Eleocharis* and *Juncus* growth dynamics lead to contrasting clonal structures that facilitate coexistence. The results would not have been interpretable without detailed, plant-by-plant morphological data. Such detailed structural analysis may be essential in studies of interspecific interactions among macrophytes.