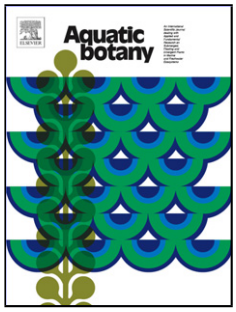


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# Effects of microtopographic variation and macroalgal cover on morphometrics and survival of the annual form of eelgrass (*Zostera marina*)

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Highlights

- Nelson and Sullivan
- In the upper intertidal, annual form *Zostera marina* seedlings had higher abundance, survivorship, and number of shoots per plant in microtopographic low areas.
- Higher green macroalgal cover in microtopographic highs was correlated with decreased recruitment and increased mortality of *Z. marina*.
- Macroalgal rather than desiccation effects mainly determined the influence of microtopographic variation on annual form *Z. marina*.

Abstract

A disjunct population of the annual form of the seagrass *Zostera marina* that occurred in the upper intertidal zone of Yaquina Bay, Oregon was sampled to determine whether there were differences in recruitment, growth, survivorship and morphology associated with microtopographic location on the sand flat. Population responses of seagrass found in areas differing by only a few cm in vertical elevation were compared. There was higher plant abundance and higher number of shoots per plant in microtopographic low areas. Plants in lower areas also had significantly longer shoots, greater total above ground biomass, greater biomass per shoot, and greater biomass of reproductive spathes than plants growing in immediately adjacent, microtopographic high areas. Cover of green macroalgae was higher and accumulated more rapidly in microtopographic high areas as compared to low areas, and