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108.7: Light Level as a Potential Limiting Factor in the Growth of Eelgrass in the Pacific Northwest.

HYLARIDES, MJ; COWLES, DL; Walla Walla Univ., College PI; Walla Walla Univ., College PI

Justin.hylarides@gmail.com

Eelgrasses serve as important nursery habitats in the Pacific Northwest for diverse marine life and are widely recognized as indicators of coastal ecological health. We investigated seasonal differences in respiration and Photosynthesis-Irradiance (P/I) relationships of a population of marine eelgrass *Zostera marina* in Rosario Bay, WA in order to characterize its growth potential in different seasons. We also estimated the local light availability *in situ* for each season by combining direct light measurement under different conditions with hourly weather and tide measurements. Our results showed that *Z. marina* differed both in respiratory and in photosynthetic rates among seasons with its highest rate of photosynthesis occurring in the summer. Yet the P/I relationship was so steep that sufficient light should be present even in the lowest-light winter season so that clean eelgrass may be able to at least support its metabolism by photosynthesis and have net growth. However, epiphytic algae living on the blades of *Z. marina* likely reduce its access to light, especially in summer, and could potentially lead to light limiting conditions.