Abundances and morphometric measurements of *Ruppia maritima* to determine the effectiveness of using seagrass as a biological indicator of water quality in estuarine systems in Acadia National Park.

Ruppia maritima is a submerged aquatic seagrass. It is found in salinities ranging from freshwater to 74psu (Thursby 1984). *Ruppia* has been seen to be most productive at a salinity of 10psu and a temperature of 20°C (Thursby 1984; Doering et al 1992). With this wide salinity tolerance, it is proposed that *R. maritima* can be used as a biological indicator for estuarine systems. Two systems in the boundaries of Acadia National Park, Mount Desert Island, Maine, were observed over the course of two summer months (July and August, 2009). Abundance, measured by dry weights was measured per 0.032m^2 quadrats as well as lengths and widths of six plants per quadrat. A total of 45 quadrats were measured within each of the systems. A significant difference was found in dry weights both within a system and between Northeast Creek (NEC) and Bass Harbor Marsh (BHM). In BHM, there was a significant decline in seagrass collected during this experiment when compared to that of Doering and Roman (1997). This could be from eutrophication, different areas within BHM that were measured or it could just be a fluke where *Ruppia* may have good production one year and poor production the following year.

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