

Reiner, J. and P. Tilney. "Pigment Flux in a High Marsh Ecosystem: Determining the Applicability of the Outwelling Hypothesis".

The applicability of the Outwelling Hypothesis in high salt marsh ecosystems has been a subject of discussion of many researchers over the last few decades. The goal of our study is to demonstrate that this hypothesis is not applicable in this type of ecosystem. Three replicate samples were taken at three, four, and five hour intervals during two full tidal cycles. With these samples, we tested the levels of chlorophyll a, phaeo-pigments, and total pigment in the water column, the salt marsh substrate, and the benthic sediments. Our results indicated that nutrient flow is greater on the incoming or flood tide than in the ebb or outgoing tide. The mean flux of total pigments on the flood was 66.67 mg.min, while the mean flux of total pigments on the ebb tide was 19.66 mg/min. Two way ANOVA analyses were conducted to determine whether there are significant differences between the mean pigment levels and both tides and time. The results show that there were no significant differences ($P > 0.05$). Overall, the lack of significant differences and the unavailability of proper equipment rendered us unable to accurately assess the applicability of the Outwelling Hypothesis.