Abstract Submitted
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Fluid dynamics of hydrophilous pollination in Ruppia (widgeon grass)[1] NAGA MUSUNURI, DANIEL BUNKER, NJIT, SUSAN PELL, Brooklyn Botanic Garden, IAN FISCHER, PUSHPENDRA SINGH, NJIT — The aim of this work is to understand the physics underlying the mechanisms of two-dimensional aquatic pollen dispersal, known as hydrophily, that have evolved in several genera of aquatic plants, including Halodule, Halophila, Lepilaena, and Ruppia. We selected Ruppia, which grows in the wetlands of the New Jersey/New York metropolitan area, for this study. Our experiments show that the pollen grains from an anther suddenly disperse and form a monolayer when they come in contact with a water surface. This is a crucial first step in the formation of floating porous pollen structures called "pollen rafts," which often contain pollen grains from several anthers. The formation of porous pollen rafts increases the probability of pollination by increasing the two-dimensional reach of the pollen from each individual anther.

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