



# **Poster Session Abstract Book**

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### Storm impacts on phytoplankton community dynamics in lakes

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In many regions across the globe, extreme weather events, such as storms, have increased in frequency, intensity and duration. Ecological theory predicts that such extreme events should have large impacts on ecosystem structure and function. For lake ecosystems, high winds and rainfall associated with storms are linked by short term runoff events from catchments and physical mixing of the water column. Although we have a well-developed understanding of how such wind and precipitation events alter lake physical processes, our mechanistic understanding of how these short-term disturbances

translate from physical forcing to changes in phytoplankton communities is poor. Here, we provide a conceptual model that identifies how key storm features (i.e., the frequency, intensity, and duration of wind and precipitation) interact with attributes of lakes and their watersheds to generate changes in a lake's physical and chemical environment and subsequently phytoplankton community structure and dynamics. We summarize the current understanding of storm-phytoplankton dynamics, identify knowledge gaps with a systematic review of the literature, and suggest future research directions by generating testable hypotheses across a global gradient of lake types and environmental conditions.