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Storms and plankton: the forgotten link

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The physico-chemical fields of the pelagic environment are constantly fluctuating at different spatial and temporal scales. Storms are extreme events of such fluctuations that cascade down to small scales to alter nutrient availability to microscopic algae or swimming and mating behaviour of motile plankton. In coastal ecosystems, storms represent dissolved nutrient injections via run-off and resuspension that trigger planktonic succession events. Storms may also have a role in the development and/or mitigation of harmful algal blooms, events with health consequences that are of growing societal concern. Mediterranean storms are also responsible for the transport of micro and macronutrients from Saharan origin. The effects of the deposition of such nutrients over the ocean may range from small to significant depending on the local conditions.
Overall, albeit it is hard to envision catastrophic consequences, storms affect, directly or indirectly, the dynamics of plankton and hence ecosystem production. The full potential of such relationships will be evidenced once biological time series match the resolution and spatial coverage of meteorological and oceanic data. As the frequency and intensity of storms is subject to global change, future oceanic ecosystem production and diversity scenarios will be affected as well.