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Sommario/riassunto	Harmful algal blooms (HAB) are a widespread phenomenon with direct consequences for human health, aquaculture industries, tourism and ecosystem functions. Potent phycotoxins produced by harmful algae can accumulate through the food web, and ultimately endanger humans (e.g. Diarrhetic, Amnesic and Paralytic Shellfish Poisonings, and Ciguatera). Additionally, the production of toxic secondary metabolites (e.g. ichthyotoxins) may trigger significant coastal fish-killing events. Over the past decades, the aquaculture industry in Latin America has suffered substantial economic losses due to HAB occurrence. However, the current knowledge of regional toxic species and established monitoring programs are expandable in this region. Moreover, a transnational scientific approach is still needed to coordinate and advance the understanding and prediction of HABs in coastal areas of Latin America. Marine coastal areas are highly dynamic ecosystems and are subjected to rapid environmental changes induced by eutrophication, intense aquaculture farming and discharge of diverse pollutants. Additional natural gradients between estuarine and open ocean regions create unique ecological niches, of which some potentially favor HAB outbreaks. Understanding the environmental conditions and ecosystem dynamics that lead to HABs is a fundamental key to predict outbreaks and secure human well-being. Gathering new and pioneering data on physiological reaction norms, pelagic-benthic

coupling in life cycle transitions and predator-prey interactions can provide a fundamental basis to feed ecological models to describe HAB dynamics in coastal ecosystems in Latin America. This Research Topic collects articles covering laboratory, field, ecological and modelling studies of freshwater and marine harmful algae, cell physiology and reaction norms response to environmental parameters, life cycle transition, toxin production, cell morphology, and taxonomy and identification.