Benthic ecosystem may control jellyfish bloom

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Jellyfish bloom causes serious ecological disasters, it occurs in the sea water as plankton, but the key process leading to jellyfish outbreak may occur in the sea bottom and controlled by benthic ecosystem. Jellyfish can cause ecological disasters in the coastal water, such as moon jellyfish, Aurelia app. and Rhopilema esculentum, they belong to scyphozoan medusa. This kind of jellyfish has a complex life history. Most of their life history lives on the sea floor as benthos in the form of polypus, and only a few months in the water body in the form of medusa as plankton. It has a typical phenomenon of alternation of generations. Many studies have been carried out on jellyfish outbreak mechanism and prevention and control strategy, but most of them focus on medusa stage. So far, we can't predict the jellyfish blooms cross year, that is, we can't predict the number of medusas in the water body in spring and summer of the next year according to the marine environment in autumn, winter of the previous year and early spring, especially the change of sea water temperature. One of the fundamental reasons is that we know little about its polyp stage in the seabed. Our research analyses the relationship between the reproductive strategy of polypus and the sea bottom environment through the simulation experiment and field investigation of the characteristics of the sea bottom environment and the impact of environmental changes on the survival, growth, development, and reproduction of polyp in the coastal area and try to reach the goal of cross year prediction through the observation of the benthic ecosystem.