

Abstract

Impacts of the huge tsunami on 11 March 2011 to a nearshore ecosystem in Sanriku Coast.

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Keywords: Tsunami, Sanriku Coast, nearshore ecosystem, seagrass and seaweed beds, aquaculture

A nearshore ecosystem is very important for humankind for its ecological services. It is mainly composed of sea grass and seaweed beds in Sanriku Coast consisting of *Rias*-type bays. Sea grass beds and seaweed beds are distributed on sandy or muddy bottom in the bay head and rock or rock plates from the mid-bay to the bay mouth, respectively. These habitats are essential for fish and mollusks as spawning, nursery and feeding grounds. On 11 March 2011, huge tsunami hit Sanriku coast after the big earthquakes. We conducted field surveys on states of a nearshore ecosystem three months after the tsunami because no boats were available till June 2011. *Laminaria* spp. completely covered rock beds and *Sargassum horneri* grew 7 m high from the bottom in June 2011. On the other hand, acoustic and visual surveys indicated sea grass beds were devastated by the tsunami. It is estimated that the tsunami waves concentrated to the bay head and removed sea grass with bottom sediments consisting of sand. However, seedlings were found in June 2011. They might germinate from seeds produced in previous years and buried in the sediments because flowering season of sea grass is from June to August there. Aquaculture such as shells, seaweeds and Coho salmon have been active in Sanriku Coast. The tsunami destroyed aquaculture facilities. Although we were afraid that escaped Coho salmon reproduced in a natural condition, they could not establish in Sanriku Coast. The ecosystem has already started succession to recover from the damaged conditions.