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Are the Epiphytic Animal Communities in the *Sargassum* Forests off the Pacific Coast of Miyagi Recovering from the Alteration Caused by the 2011 Tsunami?

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Sargassum forests usually harbor abundant epiphytic animals such as small crustaceans and molluscs. Most of the epiphytic animals are major food items for coastal fish and work as an important component of the marine forest ecosystem. Therefore, the abundance and diversity of these animals can be key indicators of the environmental state of *Sargassum* marine forests.

We have conducted monitoring surveys of the epiphytic animal communities in *Sargassum* beds at five localities of Shizugawa Bay in June of 2011, 2012 and 2014, and at six localities of Onagawa Bay in September and December 2012, March and July 2013, and July 2014. The survey aimed to show the temporal changes of the communities after the tsunami caused by the 2011 Pacific coast Earthquake. Samples were collected from the apical 20 cm of four different plants in a seaweed bed of dominant *Sargassum* species at each locality. All epiphytic animals retained on 1.0 mm, 0.5 mm and 0.1 mm mesh sieve were classified into eleven taxonomic groups (foraminiferans, nematodes, gastropods, bivalves, polychaetes, mites, ostracods, harpacticoids, isopods, caprellids and gammarids) and individually counted. Biomass of each taxonomic group was estimated from the size group category based on the sieve mesh size and abundance. Post-tsunami data in Shizugawa and Onagawa were compared with the pre-tsunami data of *Sargassum* epiphytic animal communities from 29 sites across Japan (data from the Ministry of the Environment, 2008).

In the post-tsunami epifauna communities on the whole, the abundance was higher and the diversity was lower than in the pre-tsunami communities. On the other hand, in the estimated biomass, no clear difference was found between pre- and post- tsunami communities. The data suggest the predominant immigration of limited number of taxonomic groups in small size (such as harpacticoid copepods) at the earlier stage of the post-tsunami period. From the temporally changes of the post-tsunami community data, the post-earthquake Shizugawa communities seem to be recovered from the alteration by the tsunami by June 2014, but not in the Onagawa communities by July 2013. Further monitoring surveys will be needed for following up the recovering process of the epiphytic animal communities, in particular, in the Onagawa *Sargassum* beds.