O89. MAPPING AQUACULTURE FACILITIES IN SHIZUGAWA BAY BEFORE AND AFTER THE HUGE TSUNAMI ON 11 MARCH 2011 BY SATELLITE REMOTE SENSING

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Management of aquaculture facilities are not only ecological problems but also socio-economic ones. A prefectural government permits a spatial extent of area where aquaculture facilities are deployed in each bay to a local fishermen's cooperative in Japan by a law. The local fishermen's cooperative administers this extent on behalf of the prefectural government. However, it is very difficult to map the aquaculture facilities because of their number. Satellite remote sensing is suitable for mapping aquaculture facilities. Thus, we conducted a study to map aquaculture facilities with use of satellite images: commercial multiband satellite images with a high spatial resolution such as Geo-eye and Worldview 2 and non-commercial synthesized aperture radar (SAR) images of ALOS-2. We traced aquaculture facilities in Shizugawa Bay before and after the huge tsunami on 11 March 2011 because aquaculture facilities have been changed drastically. Our study revealed that the former could map not only raft type aquaculture facilities but also buoy and line types of oysters, seaweeds and scallops. The latter could the raft type aquaculture due to their coarser spatial resolution. However, the latter images can be obtained even under cloudy weather. We propose a combined use of both multiband and SAR images when fishermen change deployment of aquaculture facilities seasonally.