

Development of automatic aquatic macrophytes mapping system in Lake Shinji using Landsat-8 data

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There is a serious problem for aquatic macrophytes expansion in the coastal region at Lake Shinji which is located in the Shimane-Prefecture after 2009. Grasp of the aquatic macrophytes distribution immediately by remote sensing is expected. Therefore the automatic calculation and mapping of aquatic macrophytes using Landsat-8/OLI data (32 scenes from April in 2013 to Nov. in 2015) with sensitive (12bit) and the high spatial resolution (30m) launched in February, 2013 was developed by this research. At first, the NDVI using a method by Sakuno et al. (2013) for the aquatic macrophytes extraction was calculated. The threshold value of NDVI to separate an aquatic macrophytes and non- aquatic macrophytes was set as 0. A median filter was used to eliminate noise of satellite images. Finally, the automatic mapping system was developed via NDVI from OLI data. The characteristic of aquatic macrophytes disributes in high density in the central southern part of Lake Shinji form September to November in particular.

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