

# **Monitoring and Extracting of Surface Water Area from Landsat Imagery Using Water Indices**

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Taung-Tha-Man Lake (TTM) is the major fresh water body providing Amarapura with this water used for various purposes. One of the main challenges faced by the sustainable development of TTM is the need for better water management. The purpose of this study is to extract water area and detect changes in TTM Lake from Landsat imagery. NDWI, Modified NDWI, WRI and AWEI are used for extraction of surface water. The accuracies of the water indices are tested using the error matrix. Among them, MNDWI is the highest accuracy in extract water body compared to other indices. The results illustrate that average accuracy of the water indices method is 90%. Experimental results indicate very small change (0.4032 km<sup>2</sup> in 2000-2010 and - 0.2484 km<sup>2</sup> between 2010 and 2017) in TTM Lake. This study can be used as guidance to protect the lake and manage water resources.