**Development of a Regression Model to Estimate Water Quality in Riverine Wetlands Using Sentinel-2 Satellite Imagery**

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***ABSTRACT***

Estimating water quality in riverine wetlands is necessary for detecting pollution, preventing environmental degradation, protecting public health and preserving biodiversity in these regions. In this research, the various regression models were adapted to estimate the chlorophyll density, a widely used water quality parameter, in the riverine wetlands using the multispectral bands of Sentinel-2 satellite imagery. In the first step of the proposed research, the appropriate bands were selected from the multispectral bands of the given Sentinel-2 satellite imagery by using the correlation coefficients between in-situ chlorophyll measurement and the intensity values of each band. Next, various regression models were developed to estimate chlorophyll density using the Sentinel-2 satellite imagery. Finally, the accuracies of the developed models were assessed using their R-square values.

**Keywords:** water quality, Sentinel-2 satellite imagery, regression model, chlorophyll