

Analysis of Algal Bloom in Techí Reservoir Using Mahalanobis

Classification Method with Landsat TM Data

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Abstract

We used the observed dinoflagellate densities as ground truth data and selected the training regions with the ground truth data then analyzed the dinoflagellate (*Peridinium bipes*) algal bloom areas in the Techí reservoir using mahalanobis classification method. The results of Mahalanobis classified images and ground truth data are similar. They all showed that algal bloom areas most located on the upstream of the Techí reservoir. The algal bloom sites and areas varied with seasons because many agricultural activities on the upstream of Techí reservoir and fertilizers ran off to the reservoir which provided a good environment for the growth of *Peridinium bipes*. The reason why the algal bloom site and areas varied with seasons is because that the fertilized period and fertilized quantities varied with the different growth period of vegetation, and as the results, fertilized quantities ran off to the reservoir varied with different seasons. In conclusion, Mahalanobis classification method is a powerful tool for monitoring algal blooms, by getting entire water body data and temporal water body data simultaneously.

Key Word : Techí Reservoir, Dinoflagellate, Algal Bloom, Remote Sensing,
Mahalanobis Classification Method

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