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摘要: 为探究太湖蓝藻水华暴发早期预警模型, 选取太湖宜兴段 4 个历史蓝藻水华暴发点, 采用 SPSS 软件对水华暴发时的水质、温度、藻类密度等 4 项指标进行多元回归分析, 建立了太湖宜兴段蓝藻水华暴发早期预警模型。模型显示, 当水温 > 20℃、风速 < 4 m/s、藻类密度 > 10⁶ cells/L 时, 蓝藻水华暴发的风险等级为高风险。关键词: 多元回归理论; 太湖; 蓝藻水华; 早期预警模型

Study on the Early-Warning Model of Feculent and Anaerobic Water Aggregation in Taihu Lake Using the Multiple Regression Theory

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Abstract: Feculent and anaerobic water aggregation (FAWA) is a type of specific environmental disaster with characteristics of occurring abruptly, lasting in short duration, and causing serious consequences on the environment and ecosystems. Experiments choosing algal density as the investigated object were carried out to analyze the parameters using data analysis software SPSS, including the water quality, temperature, and algal density, in four monitoring sites of the Yixing part where FAWA happened historically. An early-warning model using the multiple regression theory was constructed based on the algal cell density together with weather conditions and related algal density threshold when FAWA happened in the past years. Based on the current weather data and real-time water quality parameters in the monitoring site, the model could be used to evaluate the risk grade of FAWA occurring in the monitoring region.

Key words: Multiple regression theory; Taihu Lake; Feculent and anaerobic water aggregation; Early-warning model

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