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中文題目：河流洪水導致矽藻群落組成的改變，著重在有害藻類藻華相關的矽藻屬

英文題目：River flooding leads to alterations in the composition of diatom communities, emphasizing the genera associated with harmful algae blooms

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Abstract

Diatoms typically dominate in nutrient-rich coastal waters, and some species of diatoms can cause harmful algal blooms (HABs), which have negative impacts on the environment, aquatic life, and human health. The Matsu Archipelago is located off the coast of China and is influenced by the eutrophic water from the Min River. *Noctiluca scintillans* blooms frequently occur in this area during the spring, however, it is unclear whether diatoms will cause HABs. The aim of this study is to use 18S metabarcoding (qualitative method) and microscopic observation (quantitative method) with a high sampling frequency to investigate diatom assemblage composition and study the species changes of diatom HABs during the flood season. The sampling period for this study was from August 2021 to July 2022, with a total of 91 samples collected. Diatom blooms were observed during the early summer flood season, with abundances reaching 5×10^5 cells L^{-1}. Diatom communities during the flood season exhibited rapid succession, with predominant genera changing in the order of *Pseudo-nitzschia-Chaetoceros-Skeletonema-Chaetoceros*. In the early flood season, *P. multiseries*, *C. tenuissimus*, and *S. marinoi* are the dominant species. The diversity indices estimated from 18S metabarcoding data and microscopic analysis were not consistent. The diversity index estimated by 18S was significantly correlated with environmental factors, with a significant negative correlation with ammonium concentration. The overall diatom abundance was significantly positively correlated with NO_3 concentration, but these HABs appeared to be suppressed by high ammonium concentrations. This study highlights the relationship between diatom succession and environmental changes during the flood season. These data can provide useful management policies for facing environmental changes in the future and have significant implications for environmental and human health.