

DIATOM BIODIVERSITY AND DISTRIBUTION IN VOLCANIC LAKES OF NORTHEASTERN CHINA

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The surface-sediments from 36 lakes of Northeastern China have been collected using light coring equipment for sampling the sub-fossil diatom assemblages. Among these 36 lakes, 13 are located in the Long Gang area, 3 in the Changbaishan area (Jilin Province), 5 in the Wudalianchi area (Heilongjiang Province) and 15 in the Aershan and Chaihe areas (Inner Mongolia). Most of these lakes have a volcanic origin (maar, crater or dam formed by a volcanic coulee) although 5 are artificial (reservoirs). These lakes span a wide range of physical characteristics, especially water depth (from 0.3 to 127 m).

In parallel with surface sediments, water samples were collected and analyzed for pH, Electrical Conductivity, total alkalinity, total phosphorus, total nitrogen, DOC, Cl, SO₄, NO₃, Ca, Mg, K, Na and dissolved silica. These water samples show wide ranges especially in terms of EC (14 to 425 μ S/cm), TP (1 to 340 μ g/l), pH (5.3 to 8.1) and DOC (1.3 to 24.2 mg/L).

Altogether 435 diatom taxa were identified. Light and SEM-photographs have been taken for most of these taxa. The most diverse genera are *Eunotia*, *Fragilaria*, *Gomphonema*, *Navicula*, *Nitzschia*, *Pinnularia*, *Planothidium*, *Sellaphora*, *Stauroneis*, *Staurosira* and *Staurosirella*.

Their relationship between the diatom species and the measured environmental variables was examined using multivariate statistical methods. Canonical correspondence analysis (CCA) with forward selection and Monte Carlo permutation tests identified EC, maximum water depth, DOC and TP as significant environmental controls over the composition of diatom assemblages in this dataset.