

3rd International Conference on Ecology, Ecosystem and Conservation Biology

3rd International Conference on & Microbial Ecology & Eco Systems

March 18-19, 2019 | Chicago, USA

KEYNOTE FORUM | DAY 1

JOURNAL OF ECOSYSTEM & ECOGRAPHY 2019, VOLUME 9 | DOI: 10.4172/2157-7625-CI-043

Restoration in northern Lake Gehu: A eutrophic lake in China

Lake Gehu is a severely eutrophic lake in southeast China. A series of restoration measures have been implemented since 2009 in northern Lake Gehu. This study compared aquatic plants, water quality, sediment, and phytoplankton between restoration and control areas to investigate the effect of restoration measures. The results demonstrated that aquatic macrophyte coverage increased from 0% to 10.6%; mean TP, TN, and CODMn concentrations increased by 50.0%, 42.4%, and 40.8%, respectively, compared with those before the measures were carried out; the mean Secchi depth (SD) increased to 42.5cm, which is 1.4 times higher than that before

restoration; the mean euphotic depth (Zeu) in the summer increased from 91 to 130cm; the mean chl.a concentration decreased from 34.8 to 20.2 $\mu\text{g}\cdot\text{L}^{-1}$, compared with that before restoration; the Shannon–Wiener index of phytoplankton increased by 28.7%. The mean TP and TN concentrations in sediments decreased by 63.8% and 52.4%, respectively, compared with that before dredging. These results indicate that the restoration in northern Lake Gehu was effective. To complete the transformation from an algae- to a macrophyte-stable state within the region, further measures must be adopted. This restoration of a eutrophic lake can serve as a reference for similar eutrophic lakes.

Biography

Jizheng Pan has more than 20 years experience in ecological restoration and constructed wetland. He is



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accomplished in the research on technology of ecological restoration in eutrophic lakes and treatment wastewater by constructed wetland with artificial aeration. He is skilful in ecological research of lakes. He is good at the pollution control and ecological restoration of lakes.

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