# Phosphorus speciation in Myall Lake sediment, NSW, Australia

## Author(s)

Daniel Abel Shilla
Takashi Asaeda
Martin Kalibbala

## Abstract

The amount of phosphorus and its fractions in the sediment of Lake Myall, NSW, Australia, was assessed using a sequential extraction technique. Five sedimentary phosphorus reservoirs were measured, namely loosely sorbed phosphorus ($NH_4Cl$–P), iron associated phosphorus (BD–P), calcium bound phosphorus (HCl–P), metal oxide bound phosphorus (NaOH–P) and residual phosphorus (organic and refractory P, Res-P). Samples were taken from the deep and shallow sites of the lake. During the analysis, the average concentrations of each fraction of phosphorus was calculated. The results depicted that the total phosphorus (TP) content and chemically extractable phosphorus in both fine and coarse sediment fractions from the deep sites of the lake were significantly higher than those of the shallow sites, except for HCl–P extracted from the fine sediment fraction. Sediment TP was also strongly and positively correlated to sediment Fe. The phosphorus in the sediment mainly consisted of BD–P and Res-P, while $NH_4Cl$–P and HCl–P only contributed a minor part. The rank order of the different phosphorus extracts was similar for the two sites, namely Residual-P > BD–P > NaOH–P > HCl–P > $NH_4Cl$–P.

## Keywords

Myall Lake Phosphorus Sediment Sequential fractionation