

# Status of diversity, abundance and seasonal variations of gill net catches of cichlids in Lake Bosumtwi, Ghana

## Abstract

The cichlids in Lake Bosumtwi are under increasing pressure with a recent build-up in local fishing pressure. This study was conducted to assess the status and seasonal catch rates of fish species using gillnets over a two-year period. Four species and one introduced fish belonging to the Cichlidae family were encountered in the study. *Coptodon discolor* (Günther, 1903) was the most abundant species, making up 75.5% of the total fish caught (100.1 kg). *Tilapia busumana* (Günther, 1903) was the least abundant species, representing only 0.6% of biomass. Catch per unit effort was significantly affected by seasonality; however, species diversity, richness and evenness were not influenced by seasonal variations. The highest catch rates (975.62 g net<sup>-1</sup> night<sup>-1</sup>) were recorded in the minor wet season (August to November). No statistical differences were detected in the diversity indices estimated for all three seasons of study. The key physico-chemical parameters (conductivity, salinity, temperature and pH) measured were within the tolerance range for tilapia survival and growth, with the exception of dissolved oxygen that decreased below 3 mg l<sup>-1</sup> during the lake's deep mixing events in August. Overall, physico-chemical factors explained 75% of fish catches, with salinity levels correlating significantly with catch per unit effort.