

# Fisheries and Limnology of Two Reservoirs in Northern Ghana

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## Abstract

The fisheries and limnology of Bontanga and Libga reservoirs in northern Ghana were studied with the objective of generating information to support the development, management and sustainable use of their fisheries to enhance the socio-economic status of riparian communities. Using gill nets of various mesh sizes, fishes were sampled monthly and individually identified, weighed and measured for standard and total lengths. Water samples were taken monthly and analysed for physico-chemical parameters. In the Bontanga Reservoir, 21 species belonging to 18 genera and 10 families were encountered. Four families, namely Clariidae, Cichlidae, Cyprinidae and Clarotidae constituted almost 83% of the fishery while *Clarias anguillaris*, *Auchenoglanis occidentalis*, *Barbus macrops* and *Sarotherodon galileus* were the major species. In the Libga Reservoir, 36 species, representing 27 genera and 15 families, were obtained. Two families, namely Mochokidae and Centropomidae constituted almost 67% of the fishery resources while *Synodontis gambiensis* and the Nile perch, *Lates niloticus*, were the dominant species. The fish diversity of the Bontanga Reservoir was lower than that of the Libga reservoir. Carnivorous fishes were dominant in Bontanga Reservoir while fishes of forage feeding habits were the major feeding group in Libga Reservoir. The forage-carnivore ratios of 1.60 and 2.12 for Bontanga and Libga reservoirs, respectively, suggest a suitable ecological balance between carnivorous fishes and their prey populations. The estimated potential fish yield per year for the Bontanga Reservoir (67 tons) was higher than that of the Libga Reservoir (4.7 tons) mainly due to its larger size although the productivity per hectare for Libga Reservoir was slightly higher. Both reservoirs were well oxygenated all year-round with relatively high oxygen demanding substances and slightly acidic from June to October. The Bontanga Reservoir was characterized by a strikingly high ionic content. The nutrient level and the mean productivity of the Bontanga Reservoir were slightly lower than those of the Libga Reservoir.