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SUMMARY RESULTS OF FISH MONITORING IN RIVERS
OTI AND PRU IN GHANA DURING 1992/93

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Fish monitoring, as part of biological studies of the Onchocerciasis Control Programme (OCP) continued in Ghana during the 1992/93 year (ie. Oct. 1992 - Sept. 1993). As before, the main objective was to assess any detectable long term changes in fish populations in relation to larviciding of the rivers. Rivers monitoring in Ghana were the Oti and the Pru at Sabari and Asubende respectively, according to OCP monitoring protocol.

Hydrology of Rivers

Water gauge recording made at Sabari and Asubende during 1993 was generally comparable to records made during the past four years. With respect to annual rainfall, extent and persistence of floods on the plains, the 1993 records were more comparable to observations made during 1989. During the two years (ie. 1989 and 1993) the annual single wet period in the areas of the rivers started during June/July instead of the usual May/June period. However, rains were heavier, thus flooded plains more extensive and the period of high water longer compared to other years within the 5 years.

Catch Per Unit Effort (CPUE) of Fishing

For each of the rivers nine species selected on the basis of their regular occurrence for special studies include *Brycinus nurse* and *B. leuciscus; Petrocephalus bovei, Schilbe mystus, Entropius niloticus, Synodontis ocellifer* and *S. gambiensis*. The odd species for Oti and Pru are *Brycinus macrolepidotus* and *Polypterus senegalus* respectively.

For all the species in both rivers seasonal catch fluctuation during the current year were comparable to previous years. Thus river hydrology continue to be the dominant extraneous factor influencing CPUE. In the Oti mean CPUEs recorded for the four hydrological periods for all species except *B. macrolepidotus* were either the highest or comparable to records obtained during the past four years. In the Pru, recorded CPUEs between January till September were comparable to previous records, but catch between October and December were the lowest recorded for most species.
Fish "Condition" (K)

In river Oti, the annual mean "condition" of regularly occurring species were comparable to estimates of the previous four years. However, seasonal means during dry periods (i.e. October - December and January - April) were generally lower compared to previous years.

In the Pru, seasonal mean condition of fishes were more comparable to the lowest recorded during the past four years.

The low Ks in both rivers was mainly attributed to relatively lower water level during the flood period of the rivers during the 1991/92 year.

A situation which could have affected extent of aquatic habitable space and food availability. The effects of these could be expected to be more evident in the Pru compared to the Oti because river Pru is smaller.

Gonadosomatic Index (GSI) of Fishes

Estimates of GSI as Index of primary reproductive effort by annual spawning fishes in the two rivers continue to indicate that majority of the fishes spawn during June/July and July/August. However, primary reproductive activity commenced from April.

Length-Frequency Distribution of Catches

The Length-Frequency Distribution of four species each in Oti and Pru have been monitored over the years. For both rivers Brycinus leuciscus and Schilbe mystus are two of the four species. The other two species for Oti are Labeo senegalensis and Eutropius niloticus while Polypterus senegalus and Brycinus macrolepidotus were monitored in the Pru.

During the current year the size range (SL) of B. leuciscus caught in Oti and Pru were 50 to 120 and 50 to 100mm respectively. In the previous year sizes caught in both rivers was 50 - 100mm (SL). However, the bulk of catch (i.e. ≥ 60%) in both rivers for the two consecutive years was the 60 - 70mm class. In both rivers the 70 - 80mm class was better represented during the current year. It is therefore anticipated that the species would experience improved recruitment levels during 1994 compared to 1993.

Schilbe mystus

The size range of fish caught in both rivers during 1991/92 and 1992/93 were comparable (80 - 200mm (SL)). Again in both rivers the ranges between 140 and 200 occurred from June till August. No major shifts in size distribution has therefore been observed, thus changes in population size may be related to reproductive success.
**Labeo senegalensis**

In the Oti the size range of fish caught during 1991/92 was 70 - 180mm (SL) compared to 100 - 220mm during 1992/93. The absence of the 70 - 80; 80 - 90 and 90 - 100 classes during the current year may be indication of poor reproductive success during 1991/92.

During both years however, a shift in predominance of smaller size groups to medium size groups occurred from January till June/July.

**Eutropius niloticus** (Oti)

Size ranges caught during the past two years were the same (80 - 210 mm SL). During the current year however, all size groups were better represented throughout the year. It was also observed that the "bigger" fish, 140 mm upwards were more prominent from May till August.

For *P. senegalus* and *B. macrolepidotus* in the river Pru, the upper limit of size ranges caught were higher during 1993 compared to 1992. There was indication that both species recruitment during 1992 was also poor compared to 1993. Like the other species, a higher frequency of reproductively mature fishes were recorded during June - August.