

BAGRUS STUDIES

by

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Introduction

The study covered aspects of the tagging programme and the biology of *Bagrus docmac*. During the course of the year the base of operations was transferred from Kisumu to Jinja due to practical considerations for this study.

Following the collapse of the East African Community at the end of June study materials were collected only from the Uganda waters of L. Victoria. Future collection of data from the non-Uganda part of the lake would be considered after consultations and clarification with the relevant authorities.

Fish Tagging Programme

During the 1st half of the year, the exercise of fish tagging was continued as before in the Kenya waters of Lake Victoria on various fish species. This was done in conjunction with the American Research Scientists who were based in Kisumu. A total of 817 different fish specimens were marked by the end of June. Fish species tagged during the first quarter in various places are shown in Table 1 below. Among these, 183 (22%) were *Bagrus docmac*. This work was facilitated by the use of the two 34 foot fibre-glass boats which trawled mainly in the shallow waters (5.8 m deep) of the Nyanza Gulf. Occasionally the beach seine was used to capture fish for tagging purposes.

Fish tag recovery rate had improved tremendously during the first half of the year. About 40 tags were returned with adequate information to the office. This fairly high record was attributed to the steps taken to ensure the success of the programme. This entailed dissemination of information related to the exercise through news media, advertisements on posters, assured payment of reward immediately a tag is turned in and frequent visits paid to various fish-landings within the gulf by the staff of the department. Gratitude should be expressed to the field staff of the Kenya Fisheries Department for their co-operation. It is noted that at the end of the year the number of fish tags recovered was appreciably higher than before and the results obtained invaluable.

TABLE I: Tagged Fish in the Kenya Waters for Lake Victoria During January - March
(1977) Shown by Species and Area

AREA	S P E C I E S											Total
	<u>T.</u> <u>var.</u>	<u>T.</u> <u>nil.</u>	<u>T.</u> <u>sil.</u>	<u>T.</u> <u>leu.</u>	<u>R.</u> <u>doc.</u>	<u>Clar.</u> <u>mass.</u>	<u>Syno.</u> <u>spp.</u>	<u>Bar.</u> <u>altia.</u>	<u>Lates.</u> <u>nilot.</u>	<u>Hap.</u> <u>spp.</u>	<u>Seb.</u> <u>myat.</u>	
USOMA	67	8	-	-0	13	8	-	-	13	-	-	109
USARE	52	54	3	-	18	12	-	-	7	-	-	146
DUNGA	6	5	1	-	11	9	-	-	-	-	-	32
KUSA	2	-	-	-	25	6	9	-	2	-	-	44
INDERE ISL.	19	2	2	-	5	1	2	-	-	-	-	31
HOMA MOUNT	59	5	-	-	45	3	1	-	-	3	-	116
MBITA	2	-	3	-	-	-	-	-	-	-	-	5
SIMDC	8	2	40	4	2	-	-	1	-	-	-	57
MTARA BAY	1	4	9	-	-	-	-	1	-	3	-	10
KARUNGU BAY	1	4	2	-	3	-	-	1	-	-	1	12
TOTAL	217	80	56	4	122	39	12	3	22	6	1	562

Studies on the Biology of *Bagrus docmac*

The research vessel "IBIS" undertook two fairly long fishing trips on the Uganda waters of Lake Victoria. The first one lasting about two weeks took place in January when the vessel carried out stock assessment work in this part of the lake. It was also intended that during the same trip a tagging programme be initiated in Uganda waters. The second trip materialised towards the end of the year, November– December around the waters of Sese Islands. Useful biological data could be collected during such trips. Apart from these trips, a few other trips of short duration, lasting for a day or one night were organised in nearby localities, such as Ingira and Hannington Bays and Napoleon Gulf. During all these "IBIS" surveys specimens of *Bagrus docmac* were examined in the field and some collected for further investigations, and biometric data recorded. About 402 specimens of *B. docmac* were examined in the course of the year. Materials collected included stomachs, ripe gonads, parasites etc. which were preserved and brought to the laboratory for further study.

Experimental gillnetting as a method of fish capture has been rarely used. A fleet of gillnets ranging from 1 inch to 8 inches (stretched mesh) was set at Port Victoria for ten days in January. Net theft continued to be a big menace and threat to experimental gillnetting on Lake Victoria. Some serious measures might have to be adopted in the future to guard against this evil practice if important work like this is to be continued.

Analysis of collected data was made and a few observations noted; but because of the existing gaps due to missing data, a complete picture of the events were not quite realised. Among the mature size of *B. docmac* examined in January, 37% of them were in breeding condition. The rest were either spent, resting or in preparatory stages. This seems to suggest that the fish attain one of their spawning peaks during this time of the year which supports the results of other investigators (Elder, 1960; Rinne, 1975). Further observations are required to confirm this observation.

Whenever possible a few stomachs were examined for their contents. The main item fed on are the abundant *Haplochromis* species which constitute over 90% of the food contents and frequency of occurrence in the stomachs of *B. docmac*. so far examined. The second item in importance are the insect larvae

and pupae of mainly the Chironomidae and Chaoboridae families. In a few cases gastropods, and other fish species, like *Engraulicypris argenteus* and *Mastacembelus victoria* are fed on.

Fecundity studies were attempted but the work had to be discontinued when the collected ovaries were left behind in Kisumu. Otherwise a few ovaries had been examined and egg count made. The results will be published later.

Further studies of the major parasites of the species continued in the course of the year and the progress made appears in the appendix section of this report.

Aquarium tank studies were tried early in the year and the experiments have proved a bit discouraging in that the live fish do not survive for long enough. Most of the fish died after a few days of introduction into the water tanks. The longest survivor so far was 50 days and measured 8.1 cm fork length; hardly any increase was noticed. The main problem lies in the fish refusing to feed on the material (meat, etc) supplied to them. The other conditions like aeration, etc. were kept fairly favourable. Despite these problems met, the study could prove very interesting. More experiments will be tried in future.

References

Elder, N.Y. (1960), *Bagrus docmac*. investigations.
EAFFRO Annual Report, 19-20pp

Rinne, N.J. (1976), The Biology of *Bagrus docmac* in Lake
Victoria. EAFFRO Ann. Rep. 1976: p. 14.