

The behaviour of migratory Eels (*Anguilla anguilla* L.) in response to lunar period, winds and rainfall

Kh.-A. HUSSEIN and E.-M. AMIN

National Institute of Oceanography and Fisheries, Alexandria (Egypt)

The Egyptian brackish delta Lakes (Edku, Burollos and Manzalah) constitute important resources for Eels fishery. Fyke nets are the main used gear.

Changes which take place in the morphological characters before spawning migration, behaviour and size of catch with relation to the moon phase, winds and rainfall were studied during the period from October 1985 to September 1986 in Lake Burollos.

Certain morphological changes took place before the onset of seaward spawning migration (October-February). Yellow Eels which were residents of the lake changed into silver sea-going Eels. The head became narrow, snout acute and eye diameter enlarged as shown in the following Table and Fig.1.

A Table showing the morphological measurements of silver and yellow Eels.

Characteristics	Silver Eel (narrow head)	Yellow Eel (wide head)
Head length (% of total length)	10.0	12.6
Head width (% of head length)	25.1	26.9
Snout width	11.9	15.9
Eye diameter	11.7	9.3

Such changes undoubtedly facilitate swimming and vision to evade predators during the very long spawning migration.

The Eels catch extremely increased in periods coincided with the waning of the moon. Rainfall played the same role of increasing the catch of fyke nets distributed in four different areas inside the lake, especially in nights of full moon as shown in Fig. 2 which represented the catch of an area located near the lake-sea opening.



Fig.1 : Migrating silver Eels with narrow heads and pointed snout

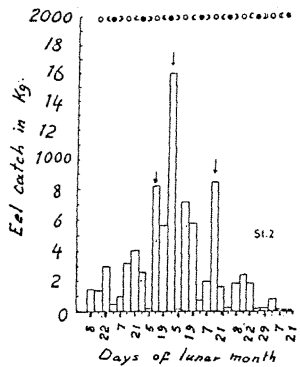


Fig.2 : Eel catch with relation to the moon cycle. Arrows indicate to time of rainfall

Apart from the influence of moon phase on the orientation of Eel and consequently on the size of catch, the influence of wind was significant. Since, during the lake-sea migration, the Northern, North Western, and Western winds were frequently prevailing. Such winds affected water circulation in Lake Burollos, and furthermore affected the locomotor activity of Eels. Locomotor activity in Lake Burollos is directed towards the North-East, where the inflow of sea water to the lake through lake-sea opening.

Knowledge of previously stated influences which affect Eels behaviour, virtually facilitates the determination of suitable time for intensive migration and consequently for the prediction of the size of Eels catch.

