

## DELINEATING THE SPATIO-TEMPORAL VARIATION IN OTOLITH MICROCHEMISTRY OF MIGRATORY *TENUALOSA ILISHA* (HAMILTON, 1822) FROM BRAHMAPUTRA RIVER, INDIA

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*This study explores spatial and temporal variations in trace element composition in otoliths of Hilsa (*Tenualosa ilisha*) from two landing sites along the Brahmaputra River in Assam, India-Guwahati and Dhubri. Otoliths from 60 fish were analyzed for 14 trace elements using ICP-MS. Results showed significant spatial variation, with Chromium and Zinc dominant in Guwahati, and Copper in Dhubri. Statistical analysis indicated high classification accuracy (93.33%) in distinguishing populations. The findings highlight the use of otolith microchemistry for migratory pattern analysis and sustainable fisheries management.*

**Keywords:** *Sagittal Otolith, Trace Elements, ICP-MS, Stock Characterization*

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