



Ichthyofaunal Migration Causes Realized Niche Amplification Leading to Habitat Adaptation and Speciation in Rivers of Bengal Delta

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Abstract: Investigations of thirteen rivers of Southern Bengal delta- India, reveal that high precipitation years create functionally significant interconnections among them to facilitate average ichthyofaunal population rise by 22 %, biodiversity amplification (richness, equitability, diversity indices by 28.29%, 12%, 15.41% respectively and decrease in concentration of dominance by 50%), along with intensified inter-riverine fish migration, than the low precipitation years. Annual average rainfall explains 88% variability in fish count rise within a polynomial relationship, and average rise amounts to 34% across the rivers. In low rainfall years, many migrated species disappear indicating their incapability to reproduce in other habitat conditions. Species depletion percentage ranges from 6.4 to 34.9 across the rivers, with an average depletion of 8%. Species number also differs between high and low precipitation years in each river. Some rivers act as sources and some as sinks for these migrated species. They survive temporarily in sinks, but reproduce only in sources ensuring temporary availability in rivers beyond their ecological amplitude. Such recurring phenomena may have led to habitat adaptations and diversification. High rainfall years trigger realized niche expansion beyond fundamental niche in some ichthyofaunal populations through flood induced river interconnectivity and habitat homogeneity during intense monsoon.

Keywords: Ecotype, Fish-diversity, Habitat-adaptation, Interconnected- Rivers, Migration
