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Impact of Hydroelectric Projects on Commercial Bivalves in a South Indian West Coast Estuary

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ABSTRACT Estuarine bivalves, sedentary invertebrates, in their species-specific spatial niches are more susceptible to hydroelectric projects related ecological changes, especially salinity reduction as the case study in Kali estuary towards the centre of the Indian west coast reveals. A comparison with the situation in Aghanashini estuary in the same district was helpful in unravelling dam-related salinity dilution in Kali estuary and its impact on the bivalves. The pre-dams bivalve scenario as available from secondary sources at four locations away from the Sea reveals a healthier state in the past. Salinity measurement in the study was confined to the pre-monsoon month of February 2012. Releases of freshwater from dams had diluted estuarine salinity in Kali from 33.44, 30.82, 8.76 and 2.43 ppt (pre-dam 1978) to 11.75, 6.40, 0.06 and 0.05 ppt respectively (in the same locations during February 2012). Four notable commercial bivalves had their distribution zones shrunk and shifted closer towards the sea where higher salinity conditions prevail. In comparison in the undammed Aghanashini estuary the commercial bivalve distribution and harvesting goes on rather unchanged. The study cautions damming of Indian west coast rivers can affect estuarine commercial bivalves badly causing also upsets in local livelihoods.