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A review of the ecology and management of temporarily open/closed estuaries in South Africa, with particular emphasis on river flow and mouth state as primary drivers of these systems

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Abstract

Research in South African temporarily open/closed estuaries that includes studies on the hydrodynamics, sediment dynamics, macronutrients, microalgae, macrophytes, zoobenthos, hyperbenthos, zooplankton, ichthyoplankton, fishes and birds is used as a basis to review the ecology and management of this estuary type on the subcontinent. Particular attention is given to the responses of the different ecosystem components to the opening and closing of the estuary mouth and how this is driven by riverine and marine events, as well as anthropogenic influences. In addition, the wider implications of these research findings for the management of temporarily open/closed estuaries in terms of freshwater supply are explored, together with the role of government legislation in maintaining the ecological integrity of these important wetland systems.