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Impact on Ecohydrology of Rekawa Lagoon in Southern Sri Lanka and its Restoration Efforts

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The coastline of Sri Lanka is dotted with forty-five lagoons of varying significance. Rekawa (050 58'N & 800 47'E) is one of such a lagoon located on the southern coast, in Tangalle secretariat division, which is 200 km way from capital Colombo. The lagoon is 2.9 Km long and width of about 1 Km at the widest point, which covers a 238.8 ha of water surface. Freshwater to the lagoon is provided mainly by Kirama Oya, Urubokka Oya and Rekawa Oya which are small rivers and had been trapped for agricultural purposes. The Road Development Authority (RDA) of this area constructed a causeway through the lagoon mouth canal in 1984. As a result of the construction of this causeway across the long narrow waterway with twenty-three cylinders which having size of 30cm diameter the water flow was restricted to a considerable level. Due to this reason flush off of the lagoon was not executed to the required level that causes dramatic changes to the lagoon biota. Before the changes made to the lagoon mouth canal, prawn was the major fishery in the Rekawa lagoon and production of the lagoon was about 5 metric tons per year. This was reduced to a significant level due to the water quality changes of the lagoon. Further, the rhythmic pattern of saline water intrusion was not prominent due to limited water flow through causeway constructed with inadequate number of small cylinders. In the year 1998, considering the number of request made by public, a bridge was constructed across the lagoon mouth to enhance the free water flow. This investigation made an effort to compare literature in three stages of developments, before and after construction of the causeway and bridge respectively with the current situation to understand the recovery of lagoon. A mathematical model was constructed to understand the water quality behavior and thereby whether the lagoon is recovering from the stress made by development activities over the lagoon mouth canal. Results clearly indicate that the Rekawa Lagoon system has been losing its balance due to man-influenced differences, which are responsible for the many variations observed and forecasted parameters.