

**Daytime variation of temperature and salinity profiles in large-area saltpan solar ponds at Palavi, Sri Lanka**

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This work presents a study of short-term stability of temperature and salinity profiles of a large-area saltpan solar pond of 90 cm deep at Palavi, Sri Lanka. Measurements were taken in the latter half of the daytime during which the influx of solar radiation reached its maximum. It was found that, under the conditions prevailed, the effect of the incident solar radiation was to increase the temperatures of the top and bottom convective zones. A variation of 30 C was observed in the convective zones and the highest temperature observed at the bottom was 64o C. The temperature profile of the middle non-convective zone remained unchanged, within the range defined by the accuracy of the measurements, with a downward positive temperature gradient of 1o C/cm, indicating that the absorption of thermal radiation occurred prominently in convective zones. It was also found that with the reduction of the solar radiation influx, the temperature of the bottom convective zone returned back to its initial status in a short time. According to this observation it can be concluded that the bottom convective zone of the solar pond investigated was in thermal equilibrium, macroscopically, with the environment.