







Predicting wetland area and water depth of Ganges moribund deltaic parts of India

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Abstract

Wetland area and depth of wetland in the moribund Ganges delta of India is simulated and predicted up to 2037. Normalized Difference Water Index (NDWI) map from 1987 to 2017 is used for predicting the same. Artificial Neural Network (ANN) based Cellular Automata (CA) simulation is used to predict wetland area and exponential adaptive smoothing and least square regression are used to predict wetland depth. The result shows 17–18% of wetland area may lose their existence in the upcoming two decades. Water depth of large wetlands area is likely to be reduced by 45–50% in both seasons and small fragmented marginal wetlands are going to be dried out in the next twenty years. Large wetland and wetland core area is safer than smaller and fringe wetland. Considering the socio-ecological importance policy should be taken and the result could help to define plan sustainably.