The Role of AI in Wetland Conservation in India

Dr. Surender Kumar, Assistant Professor, Department of Zoology, SGN Girls PG College, Sri Ganganagar (Raj)

Abstract

Wetlands in India are vital ecosystems that provide essential services like water purification, biodiversity conservation, and flood regulation. However, urbanization, industrialization, agriculture, and climate change threaten their survival. Artificial Intelligence (AI) is emerging as a powerful tool for wetland conservation. AI applications, such as satellite imagery analysis, machine learning, and predictive modeling, are being used to monitor wetland health, detect pollution, and predict ecological changes. AI technologies enable real-time monitoring of biodiversity, water quality, and invasive species, while predictive models help plan for the impacts of climate change. Despite challenges like data gaps, technical barriers, and financial constraints, AI offers a promising solution for restoring degraded wetlands and ensuring their long-term sustainability. By integrating AI with traditional conservation efforts, India can better safeguard its wetlands, enhancing both environmental protection and local livelihoods.