



KEOLADEO NATIONAL PARK: A PARADIGM OF MANMADE WETLAND CONSERVATION

Akshita Choudhary

School of Environmental Sciences, Jawaharlal Nehru University, New Delhi

choudhary_akshita@yahoo.com

Keoladeo national park: a paradigm of manmade wetland conservation

Wetlands are one of the most productive and threatened ecosystems in the world (Prasad, 2002). They are considered as a link between terrestrial and aquatic habitats. Wetlands account for 4.7% of the total geographical area of India where inland wetlands account for 69%, coastal wetlands 27% and other wetlands 4%. They provide various ecological services such as water storage, water purification, ground water recharge, retention of sediments, nutrients and pollutants, etc (Sharma, 2015). They are known as kidneys of an ecosystem. They support avifauna, especially waterfowl; fish, reptiles, mammals, and invertebrate species as well as several plant species. Wetlands are facing an immense anthropogenic pressure due to growing population, agriculture, urbanization and various developmental activities around the country (Prasad, 2002). Wetlands are important for the survival of many endemic species and they also provide various resources for sustainable agriculture and water availability to humans.

Keoladeo National Park (KNP) is a 29 km² area situated in the city of Bharatpur, Rajasthan, is a manmade wetland, a world heritage site and also a designated Ramsar site in India. It is widely known for its avian biodiversity. KNP is home to thousands of native and migratory birds. It is a mosaic of grassland, wetland and woodland ecosystems. People visit KNP from all around the world for bird watching. It attracts many nature enthusiasts because of the beautiful landscape and presence of many migratory birds that arrive for breeding and wintering in the park through Central Asian Flyway (CAF). The park became famous for critically endangered bird, Siberian Crane (*Leucogeranus leucogenarus*), found nesting and breeding there in the winters. The place is unique in its own way, a wetland in the desert with ample biodiversity.

Conservation issues

Significant changes in land cover have been faced by the national park due to insufficient amount of water supply and aggressive spread of invasive species of weed (*Prosopis juliflora*) in the past decades. It is considered harmful to other species as it takes up huge amount of water for its growth (Mukherjee, 2017). The region often faces periodic episode of droughts. The park dealt with an intense drought period from 2003-2009 due to scanty rainfall and losing river water sources to various development project and improper use of water resources (Sharma, 2015). Other challenges are removal of fodder and fuel-wood, grazing pressure from domestic animals, contamination of water by pesticides, fertilizers, etc. The bird count fell drastically during the drought years. Lesser migratory birds were observed in winters due to unfavourable conditions. There is also a constant conflict between government and locals regarding their rights on resources in the national park.

Management measures

KNP has gone under drastic transformation to maintain its wetland and biodiversity with many government measures. The park has faced many challenges in the past but I consider it a win for humanity to be able to bring back the life to this place. Human beings are often criticized for their involvement in nature's destruction but the management team at KNP has proved it otherwise.

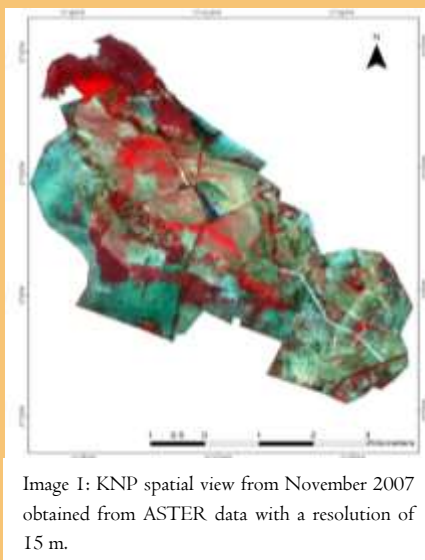


Image 1: KNP spatial view from November 2007 obtained from ASTER data with a resolution of 15 m.

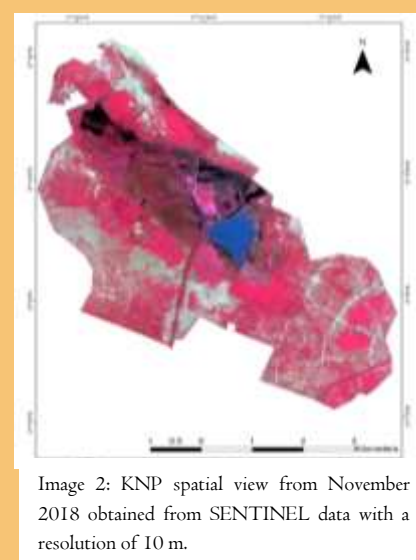


Image 2: KNP spatial view from November 2018 obtained from SENTINEL data with a resolution of 10 m.

Few measures which were taken by government over the years to deal with various issues are as follows:

- Building a wall around the park to lessen human interference.
- Ban on grazing by domestic animals of nearby farmers.
- Restricting access to resources such as collection of fuel-wood and fodder.
- Restrictions on vehicles inside the park.
- Water is supplied to the park from Chambal pipeline which is a drinking water supply for city dwellers. Management is trying to meet water requirements in the park through alternate sources.
- Management organizes many drives from time to time to uproot *P. Juliflora* manually or mechanically.

Present scenario

Government has taken many initiatives to conserve wetlands across the country. KNP may be considered as one of the successful restoration of a wetland ecosystem. It is slowly recovering from the water stress and scrubland is thriving (Image 2). Image 1 is a clear evidence of drought conditions by visual interpretation of satellite imagery from the year 2007. Migratory birds are seen to be returning to their wintering grounds. *P. Juliflora* is still persistent in the park and so does continuous stress on resources by locals but the park has managed to thrive against all odds. It can be made better with community participation and involvement of locals in the conservation policies.

References

- Mukherjee, A., Velankar, A. D., & Kumara, H. N. (2017). Invasive *Prosopis juliflora* replacing the native floral community over three decades: a case study of a World Heritage Site, Keoladeo National Park, India. *Biodiversity and conservation*, 26(12), 2839-2856
- Prasad, S. N., Ramachandra, T. V., Ahalya, N., Sengupta, T., Kumar, A., Tiwari, A. K., & Vijayan, L. (2002). Conservation of wetlands of India-a review. *Tropical Ecology*, 43(1), 173-186
- Sharma, A. (2015). A Geographical Study of Keoladeo National Park, Bharatpur (Rajasthan) with Using Remote Sensing and GIS. *International Journal of Science, Engineering and Technology*, 3(6), 201-210