
Original Paper

Documentation of flora and fauna through celebration of ecological days: A case study on World Wetlands Day at Mahanadi River areas

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Abstract: Ecological days are celebrated worldwide at different levels to create awareness of the specific ecological or environmental importance generally through seminars, conferences, webinars, etc. An attempt has been made to celebrate ecological or environmental days through practical approach towards documentation of important medicinal plants, birds, habitat, threats and involving community interaction, cleaning of habitats of plants, birds, fishes, etc. as a case study on the World Wetlands Day 2024. The visit at Naraj, a part of Mahanadi River recorded about 50 species of medicinal plants, 20 species of birds. The team also took an initiative to clean the river beds by removing plastic litters and trash materials that were not easily degradable. Such approach of awareness and implementation although small step could help largely to protect and conserve certain ecologically important areas like the Wetlands. Through this documentation, people could encourage to celebrate ecological days with field-based awareness, documentation and cleaning the environment for the wellbeing of human.

Keywords: Field-based approach, plastic waste, habitat, threats, conservation

Introduction

The aim of introduction of ecological days are mainly to aware people worldwide about its importance, benefits we gain and effects with the loss, work on the implementation to monitor, make strategies to protect, conserve, and make the sustainable use of specific ecological bioresources. Generally, people all over the world celebrate several ecological days through seminars, conferences, webinars, updating social media with brochures, painting, or essay competition or sometimes through rally with poster of the specific theme of the ecological day. Such celebrations are normally carried out at the institutional and organizational or high school level. Here, it can be noted that the target crowd is somewhere missed

and the objectives of the celebration does not reach the ground implementation or not much change in the behavior of the people could be found towards a sense to make some change for the protection and conservation of the specific ecosystem for the welfare of the future. World Wetlands Day is also an important ecological day which creates awareness on the importance of wetlands. The team of Ambika Prasad Research Foundation (APRF), Odisha introduced and adopted a field-based celebration of World Wetlands Day of 2024 with the global theme of “Wetlands and Human Wellbeing”. Wetlands are valuable gifts of nature, a condense ecosystem depicting a huge food web starting from microbes up to large mammals and human. They are habitat of many birds (wetland, migratory and local) that normally visit in search of food or breeding sites. No wonder they are also habitat for large diversity of aquatic herbs, sedges, and shrubs that not only provide breeding grounds for wetland birds, fishes, mollusca, etc. but also a hub of important medicinal plants. Further, wetlands provide various ecological services like it acts as a cushion and absorb flood water which would otherwise cause natural calamities. The polluted water collected from different sources like rivers, drainage, floods, etc. are dissipated as filtered water and released as clean water into streams. For these reasons, wetlands are also known as “*kidneys of earth*”. Likewise, they also provide many economic values for man. However, increased anthropogenic activities due to fast urbanization led to huge pressure on wetlands like disposal of dumping, sewage water, fertilizers, detergents, plastics, etc. On 2nd February 2024, the team of APRF visited Mahanadi River areas of Cuttack, Odisha as a field-based approach of celebrating World Wetlands Day (Plate 1). The visit could be divided into 3 peculiar types of observation as medicinal plant walk, bird walk, observation of threats, interaction with the locals and implementation of cleaning the habitats or the Mahanadi River beds that are home for large diversity of aquatic plants, medicinal plants, fishes, birds, etc.

Some of the observations are listed hereunder:

1. The medicinal plant walk recorded about 50 medicinal plants and identified by the authors followed by published literature (Kumar *et al.*, 2022; Nayak & Kumar, 2023) including *Solanum virginianum*, *Dentella repens*, *Eclipta prostrata*, *Rotala indica*, *Tamarix indica*, *Marsilea minuta*, *Lindernia antipoda*, *Chrozophora rottleri*, *Heliotropium indicum*, *Bacopa monieri*, etc.
2. The bird walk noted about 20 bird species especially waterbirds like Grey heron, River tern, Ruddy shelduck, River lapwing, Citrine wagtail, White wagtail, Barn swallow, Little cormorant, Intermediate egret, Little egret, etc. Little cormorant and little egrets were found in huge flocks.
3. The visit recorded several threats like plastic waste, dumping's of several trash materials, rubber, glass bottles, fabric clothes polyester and other non-environment clothes like old jeans, food wrapper, nicotine product wrapper, etc.
4. The interaction with the local people about their opinion revealed that they do not much care about the waste that is releasing in the environment and were less aware about the bioresources of the Mahanadi River.

Following the above observation, the team of APRF took the initiative to pick the waste materials including plastic waste, dumping's, semi-degraded clothes, bottles, wrapper etc. The collected trash was handed over to waste collectors of Cuttack Municipality Corporation (CMC), Cuttack. This step was

crucial and necessary for this field-based approach of celebrating the World Wetlands Day as a case study at the Mahanadi River areas of Cuttack (Lal *et al.*, 2024).



Plate 1: Field-based approach for celebrating ecological days

Mahanadi River, the largest river of Odisha state (Kumar *et al.*, 2018), the team encountered plastic and other waste litters in and around the habitat of important medicinal plants and local & migratory

birds. the plastics found near the shores negatively impacts the ecosystem. Plastics take a long period of time to decay, then also they remain in the soil as minute particles. The microplastics enter the food web through the fishes and reaches the organisms at the top trophic level. This issue of biomagnification of plastics has led to decrease in the bird population due to decline of their prey population from plastic intoxication. Urbanization has destroyed the wetlands. They are now converted into agricultural fields or construction areas leaving no nesting grounds for birds, especially migratory waterbirds. Those birds usually lay eggs in the small brushes near water bodies. Such field-based approach of celebration of ecological days should be encouraged, mainly because the objective of awareness and implementation hardly reach the target population through the present-day approach of awareness by seminars, updating social media, school-based competitions, etc. This gap could be fulfilled through documentation of flora, fauna or avifauna in constantly and interacting and involving the local people with cleaning up the habitats or environment making them understand in the practical way.

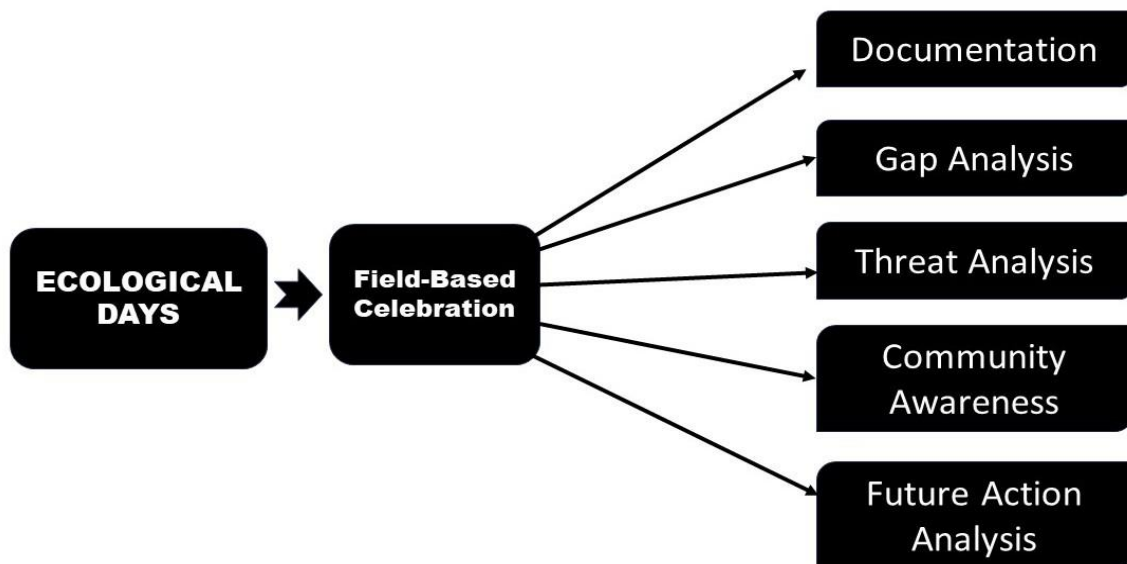


Figure 1: Benefits of field based ecological days celebration

Conclusion & future aspects

The field-based approach of celebrating ecological days by documenting flora, fauna, medicinal plants, birds could help in monitoring the population of these species and help in making strategies to revive or protect the species that are decreasing (Figure 1). This also fills the gap of the objective to aware people on the importance of specific ecosystem that are somehow missed at the ground level by adopting the general mode of awareness system. Further, a small practical initiative to clean, protect and conserve a certain ecosystem by different groups of people including Governmental and Non-Governmental organization, individuals, communities, societies, etc. could bring a large impact on the degrading ecosystems of the world and climate change.

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