Waterbird habitat requirements and responses to anthropogenic stressors along the Nile in Egypt

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In recent decades, human population growth increased rapidly which increased the anthropogenic pressures on natural habitats. Wetland losses due to environmental changes and human pressures are seen as serious threats to waterbird populations. About 23% of global waterbird populations are declining and 19% of waterbird species have been listed as threatened by the IUCN. Human rapid population growth increases the expansion of settlement over natural habitats which can have negative effect on waterbird species. Some waterbird species avoid areas of high human disturbance levels which can results in costing them more energy or end by occupying less food quality areas. Therefore disturbance can affect energy storage of birds and so impact their behaviour, survival, and breeding success. On the other hand, some waterbird species can benefit from human presence, where they can foraging in associated urban areas habitat of rich food supplies. In Egypt, the River Nile basin and the associated linear habitats are surrounded by unhospitable matrix, the Great Sahara. It is important corridor for migration and its mosaic of habitat is considered important as wintering ground and breeding area for many species. The Nile Valley is one of the oldest human-dominated landscapes river basins; where human and wildlife coexist for millennia. In this PhD project, the effect of various environmental variables in different anthropogenic stressor levels on community composition, foraging movements and behaviour, nesting site selection of selected waterbird species will be assessed. The River Nile will be surveyed in Egypt where we will record species and numbers of waterbirds and will determine environmental variables and human disturbance indices in each transect by using field observation combined with GIS software and satellite imageries. Highly disturbed areas are expected to have relatively poor communities, i.e. communities with relatively low species richness and diversity, in comprising of species that tolerate these stressors. Understand the distribution of waterbirds due to environmental variables can help in predicting the influence of anthropogenic stressors on waterbirds wintering along the Nile in Egypt.