



Living on the Edge: wetlands and birds in a changing Sahel

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This is a large and
informative book

describing the ecology of the Sahel zone in Africa and the lives and fortunes of the Palearctic birds that winter there. It is written by four Dutchmen who have between them spent many years in various parts of the Sahel zone, exploring its habitats and birdlife under a range of rainfall–drought conditions. Consequently, the book is full of interesting information that is either new or otherwise difficult to find, synthesised into a coherent whole that will surely be of great value to those of us concerned over what happens to our summer visitors on their African wintering areas.

The term ‘Sahel Zone’ refers to that huge belt of arid grassland and savannah, lying immediately to the south of the Sahara, where many of our summer visitors spend the northern winter, and which all other European–African migrants pass through when travelling to and from wintering areas further south in Africa. The first part of the book deals with the general ecology of the Sahel zone, its dependence on patterns of rainfall, and the ways in which people are modifying it (mostly adversely), and exploiting the wildlife. Specific chapters describe rainfall, rivers, vegetation and land use. The second part of the book describes each of the vast wetland–floodplain areas, which, in this generally arid region, are crucial to the lives of the birds that live there, including the Palearctic migrants. These wetland areas include the Inner Niger Delta, the Senegal Delta, the Hadejia–Nguru floodplains, the Lake Chad Basin, and the Sudd (which is still the least known of them all). For each of these wetland areas, the seasonal patterns of flood and drought are described, and attempts are made from the available counts to assess the total wetland bird populations in years of different rainfall and flood conditions. Another chapter describes the birds of rice fields, which in many areas are replacing the natural wetlands, but are still used by many migrants, notably Yellow Wag-tails *Motacilla flava* and Black-tailed Godwits *Limosa limosa*. The main impressions for me were

the enormous numbers of birds which use these wetlands, their utter dependence on rainfall, and of course the increasingly disruptive impacts of humanity. It is sobering to read how much of these vast wetlands in the western Sahel have been changed in the last 50 years by construction of dams and reservoirs, irrigation and drainage systems, and similar large-scale ‘prestige’ projects which benefit some people at the expense of many others, and invariably have net negative impacts on wildlife. During this period, most of the large mammals of the floodplains in western Africa have gone, along with many of the ‘woodlands’, to be replaced by burgeoning numbers of domestic livestock; while the human population itself has doubled in less than 30 years.

The third and largest part of the book deals with the birds themselves. Twenty-seven species are each allocated a separate chapter, describing their distribution, ecology and response to rainfall patterns. These chapters also present all relevant ring-recoveries (from the Euring scheme) that mark the movements of birds between Europe and the Sahel. As expected, most species show more or less parallel migrations, with birds from the west of Europe wintering mainly in the west of the Sahel, and those from eastern Europe and Asia further east. This section of the book also includes chapters on ‘Birds, locusts and grasshoppers’ (by W. C. Mullié), on ‘Crossing the desert’, and on the impact of Sahel conditions on the migrant populations, as seen in Europe.

Of the 27 species discussed in detail, about half show clear indications that year-to-year changes in breeding numbers have been linked with year-to-year rainfall or floodplain extent in Sahel wintering areas, while most of the rest have declined over a longer period through shrinking or deteriorating habitat in European breeding areas. It is not only that more birds starve to death in dry Sahel years, but also that many more are killed by local people. This is because, with less floodland, birds are concentrated in fewer areas in dry years, and are therefore easier to reach. For example, in the

Inner Niger Delta, the proportion of wintering Ruffs *Philomachus pugnax* that were killed in this way in the last two decades varied from an estimated 10% in wet years to a staggering 60% in dry years. Females suffered more than males because they depart later on spring migration, and are therefore exposed to hunting over a longer period. As expected, the main impacts of human hunting are on larger bird species, such as herons, ducks and waders, but large numbers of passerines are also killed. For natural mortality, evidence is emerging for some species that major losses occur on the northward migration through the Sahara, and that these losses are greatest in the driest Sahel years, when it is most difficult for the birds to accumulate sufficient migratory fat.

All in all, I believe that this well-produced book provides a step-change in our knowledge of Sahel migrants. It blends the huge and wide-ranging experience of the authors themselves with a vast

amount of other information from disparate sources, much hitherto largely unavailable to the average European ornithologist. The book is also eminently readable, and the large numbers of well-chosen photographs of the landscapes, birds and local people do much to convey a feeling for the area to those of us largely unfamiliar with it. The geographical scope of the book is so huge, covering almost the entire Sahel zone from west to east, that there is little danger of over-generalisation from limited studies in specific areas. In conclusion, the book provides a fascinating read for those who want to know more about European birds in the Sahel zone than they can find in European bird journals. My copy sits on my bookshelf appropriately next to Reg Moreau’s (1972) classic book on *The Palaearctic–African Bird Migration Systems*.

Ian Newton

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