



NEWS FROM THE PERCY FITZPATRICK INSTITUTE

Three decades of coastal bird research

Africa has a very long and diverse shoreline, ranging from desert coasts through lush mangrove estuaries and tropical embayments to the rocky shores and temperate salt marshes of the Cape.

The Fitz had been in existence for some 15 years before coastal birds featured significantly in its research portfolio. Early studies in the 1970s included a detailed examination of the role of shorebirds in energy flows at Langebaan Lagoon, commissioned by the then Department of Planning and the Environment in the light of proposed development in the area. In the late 1970s, and in collaboration with the Western Cape Wader Study Group, the Fitz conducted a series of coastal bird counts, covering almost the entire coastline of Namibia and South Africa. These surveys provided key baseline data against which it has been possible to monitor and evaluate subsequent changes in species' regional population sizes.

From the early 1980s, the scientific and geographic focus of our shorebird research changed. Although we have continued to work in southern Africa, we have extended the scope of our research to the East African coast, Madagascar and other islands in the tropical Indian Ocean, and north to the Canary Islands and the Persian Gulf. Scientifically, the past three decades of research can be broadly grouped into six themes: interactions between shorebirds and their invertebrate prey (especially the controlling forces that the birds might impose on prey populations); how prey abundance and productivity influence the local and global distributions of migratory species; conservation risks to migratory species; how artificial

coastal wetlands, such as salt works, can best be managed to improve the environment for shorebirds; what causes rare shorebirds to be rare; and long-term studies of factors influencing the population dynamics of shorebirds.

Species that have figured in these studies are diverse, ranging from colonially breeding Crab Plovers through migratory Grey Plovers and Common Whimbrels to resident African Black Oystercatchers. The findings from some of this research were included in the Fitz book, *Waders of Southern Africa*, published in 1995.

Many of the results of the studies have been very exciting. For example, we found that densities of migratory shorebirds increased along the East Atlantic Flyway from Europe to the Cape (in other words, densities were highest furthest from the breeding grounds). This counter-intuitive pattern could be explained in terms of regional differences in productivity. As shorebirds travel further south from the Arctic, the timing of their residency period increasingly coincides with the growth and reproductive season of their invertebrate prey. For birds that reach the far south, their residency period coincides perfectly with peaks in reproduction of their prey, allowing southern estuaries to support far higher densities of birds than their northern (or even equatorial) counterparts.

Staying with the theme of predator-prey interactions, we have been able to explain why densities of African Black Oystercatchers vary regionally. Again, it has to do with differences in the growth and reproduction of invertebrates and how these influence the predation pressures that they can withstand from birds. We explored these interactions



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Understanding the distribution patterns and population dynamics of shorebirds, such as Common Greenshanks, rests on understanding the very same properties of their prey.

further by examining the same predator-prey relationships between humans and coastal invertebrates. What we learned from these studies allowed us to explain the gradual process of coastal degradation that eventually led to the extinction of the endemic oystercatcher of the Canary Islands *Haematopus meadewaldoi* – an important lesson indeed for global shorebird conservation.

Today, oystercatchers form the focus of our coastal bird research. Over the past 30 years, we have amassed an impressive database on both their population size and their reproductive performance around the coast of southern Africa. Their populations have undergone significant changes over this period. Thanks to our long-term database, we understand how and why these changes have occurred and can identify the extent to which (and why) active conservation measures have contributed to an increasingly healthy population of this coastal conservation icon.