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Global migration dynamics of transequatorial shearwaters

“In each of the two major oceans of the world, the Atlantic and the Pacific, millions of shearwater migrate across the equator twice a year. Some species breed in the northern, and “winter” in the southern hemisphere, while others conduct the opposite migration, but all pursue for an endless summer. Understanding the global dynamics of these movements can help us to better assess major driving factors, multispecific hot-spots and the risks faced by shearwaters during their journeys. Using geolocation data, we analysed the transhemispheric migration of ten shearwater species, including those breeding in both hemispheres and the two major ocean basins: Cory's (*Calonectris borealis*), Scopoli's (*C.diomedea*), Cape Verde (*C.edwardsii*), Streaked (*C.leucomelas*), Manx (*Puffinus puffinus*), Great (*P.gravis*), Flesh-footed (*P.carneipes*), Pink-footed (*P.creatopus*), Short-tailed (*P.tenuirostris*) and Sooty (*P.griseus*) shearwaters. Concurrent data on marine habitat traits were obtained from the NASA. Spatiotemporal overlap among species revealed a few major large-scale hotspots in both oceans. In the Atlantic, most species followed relatively narrow corridors showing a figure of eight migration associated with the northern and southern oceanic gyres. In the Pacific, however, most species migrated between hemispheres within a western, or a broad eastern corridor. We discuss the consequences for management and conservation of shearwaters in each ocean.”