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Assessing the health of a scarce and threatened raptor endemic to Southern Africa, the Black Harrier (*Circus maurus*)

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The Black Harrier is a scarce and endemic raptor of South-western Africa. Considered as regionally *Endangered* by the IUCN, its total world population has been estimated as less than 1000 breeding birds, but the reasons for the scarcity of this ground-nesting species are poorly understood. In this context, it is important to evaluate the relevance of potential threats, such as pollutants. Organochlorine pesticides (PCBs and DDTs) are known to be responsible for the population decline of several birds of prey around the world. Despite a widespread prohibition, the use of DDT still persists in some countries for controlling malaria, such as in South Africa. In 2012-2014 we collected blood samples from breeding Black Harriers (N=32) and their chicks (N=170) in two areas, one coastal where natural vegetation predominates, and another one inland and more fragmented by agriculture. Several PCBs were detected (PCBs #52, #101, #153, #138, and #180) in the plasma of sampled birds. PCB levels were significantly greater in the coastal (3.41 ± 0.37 pg/ μ L) than inland areas (2.15 ± 0.50 pg/ μ L). DDTs (*o,p'*DDE, *p,p'*DDE and *p,p'*DDT) levels were significantly higher in adult males than in adult females and chicks (3.10 ± 0.57 pg/ μ L; 1.70 ± 0.46 pg/ μ L; 1.68 ± 1.20 pg/ μ L, respectively). In chicks, DDT levels were higher than DDE levels, suggesting current use of DDT and ingestion through diet. Total levels of DDTs increased when the diet (assessed through pellets and video footage) included proportionally more small-mammals. DDTs/PCBs ratio was higher in inland areas, suggesting that farmland pollution is stronger than industrial pollution there. We also assessed whether detected pollutant levels were related to estimates of healthiness of our sampled individuals, in particular body condition (weight/size) and amount of parasites. We discuss the most likely contaminating pathways (diet, maternal transfer) and the implications for the conservation of the species.

Presented at Raptor Research Foundation Meeting, Sacramento, USA by Sophie Garcia-Heras.

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