COMPARATIVE ANALYSIS OF LANNER AND PEREGRINE TROPHIC NICHE IN THE MEDITERRANEAN

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Predators are highly sensitive to availability and changes of their prey, which are limiting factors for successful reproductive performances. We studied the diet of the increasing Peregrine falcon (*F. p. brookei*) and the declining Lanner falcon (*F. b. feldeggii*) populations in Sicily. The two species coexist in the same habitats of this large Mediterranean island and require similar feeding resources. We described the type and diversity of prey taken by both species in order to understand whether differences in foraging ecology could explain their diverse population status. During 2014-2016, we collected prey remains and pellets in 15 Peregrine and 6 Lanner nests and we compared the current diets with past data from Sicily (Peregrine: 1978-81; Lanner: 1981-88). We identified 805 Peregrine and 250 Lanner prey. Prey remains per Peregrine nest was on average higher (55.3±28.6) than per Lanner nest (42.0±25.6). Peregrine confirmed to be strictly ornitophagous (100% of prey) while Lanner preyed on birds (92.9%) and also on small mammals (4.0%) reptiles (2.4%) and arthropods (0.8%). The average avian prey of Peregrine is smaller (97.7 g) than that of Lanner (122.5 g). Columbidae, starlings, magpies formed the bulk of prey in both species; swifts and orioles were important prey in Peregrine, while rabbit gave a significant contribution to prey biomass in Lanner. Currently both species are preying upon the collared dove a taxon not present in past '80 diets. The comparison of trophic diversity showed some striking differences, as Lanner in the past preyed upon much more taxa (S_{past} = 55 vs $S_{current}$ = 33) while the reverse occurred in the Peregrine (S_{past} = 38 vs $S_{current}$ = 63). A similar figure occurs also for the alpha-diversity index, while the Simpson (1-D) diversity dropped in the current Lanner diet (0.83) respect with the past Lanner, current and past Peregrine diets (all Simpson values > 0.90). The past/current diet overlap, as showed by the Whittaker index, was generally medium in both species (Peregrine = 0.44; Lanner = 0.48) and across species (past Peregrine/Lanner = 0.42; current Peregrine/Lanner = 0.48). Both species are responding to change of habitats and prey populations (e.g. more predation upon wood pigeon, collared dove, etc) with the more flexible and aerial-hunting Peregrine performing better than the Lanner in altered agro-ecosystems.