HOW CAN THE YELKOUAN SHEARWATER SURVIVE FERAL CAT PREDATION? A META-POPULATION STRUCTURE AS A SOLUTION?

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The Yelkouan shearwater, *Puffinus yelkouan*, is an endangered Mediterranean endemic species of burrowing petrel threatened by feral cats. The life-history parameters of a small population of Yelkouan shearwaters on a Mediterranean island (Port-Cros) were studied in conjunction with the diet of feral cats, to examine the birds' vulnerability to introduced cats. Yelkouan shearwaters were the birds most frequently found in cat scats, with 431 ± 72 birds killed per year, and predation was the highest during the pre-laying period. A demographic model was created using data for *P. yelkouan* and for closely related shearwater species. Without cat predation, only two of four survival rate scenarios led to a mean growth rate $\lambda \geq 1$. The model was constrained to have a stable population growth rate and used to predict predation scenarios compatible with the observed population stability because the population under study has remained stable at around 180 pairs for at least 20 years despite feral cat predation. The results of assuming that the population is closed were inconsistent with the estimated mortalities due to feral cats, while it was possible to reconcile the observed numbers of breeding pairs with the observed mortalities due to cats by assuming that Port-Cros Island is a sink sustained by immigration. This illustrates that small colonies may need to be sustained by larger ones to avoid being driven to extinction. Unfortunately, the absence of a large geographic scale ringing program makes the precise identification of the origin of the immigrants impossible in this case.