

Anthropogenic resources and their effects on carnivores in Israel

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In natural systems, food is randomly distributed in both – space and time. Environmental changes made by man cause the depletion of natural food resources on one hand, and an increased availability of rich and predictable anthropogenic food subsidies on the other. The combined effect of these two parallel processes has a tremendous impact on wildlife dietary preferences, movement pattern and behavior. In my PhD work, I examined various impacts of access to anthropogenic food sources on carnivores. First, I tested how the spatial-temporal predictability of food resources affect interspecies interaction, competition, activity pattern and spatial-temporal overlap within a carnivore guild. The results show an increased level of temporal overlap, decreased level of competition and a shift in activity pattern when food is predictable in both space and time. Next, I conducted an experiment aimed at understanding the associations that commensal species are making between a taste-based deterrent (pure Capsaicin), its spatial location, a conditioned stimulus (food), and another conditional novel stimulus-rose water odor. I found that pure Capsaicin can produce a significant short-term aversive response. However, I found no indication of long-term conditioning and generalization of the aversion to the food, the odor cue, or the location. Finally, I explored the movement patterns of the largest carnivore in Israel, the striped hyaena (*Hyaena hyaena*) in a complex matrix, characterized by high level of human interference. Different behavioral states reveal distinct movement patterns for males and females hyaenas in relate to anthropogenic, agriculture and natural areas. From the individual level to the species and the guild level, from the most disturbed habitat in the center of Israel to the least populated areas in the south, my study reveals some substantial behavioral changes as a result of providing anthropogenic food subsidies to carnivores.



This is Einat's final PhD seminar!

