ABSTRACT

I investigated how experimental increases in social aggregation and resource availability affected ectoparasite prevalence and intensity (number of parasites on infested hosts only) and endoparasite species richness of raccoons. Twelve independent raccoon populations were randomly subjected to differential resource provisions for two years; a clumped food distribution to aggregate hosts \((n = 5\) populations), a dispersed food distribution to control for the effects of food without aggregating hosts \((n = 3)\), and a no food treatment \((n = 4)\). The intensity of ticks was greater in aggregated populations, particularly among male raccoons. Conversely, the intensity of lice on male raccoons declined in aggregated populations due to greater overdispersion of lice and a larger number of male hosts harboring fewer parasites. The intensity of fleas did not differ among treatments and displayed no correlation with host characteristics. Among endoparasites, there was strong evidence that food additions decreased the number of indirectly transmitted parasites, particularly among the oldest age classes at sites with clumped food. Conversely, food and social aggregation had little to no impact on the species richness of directly transmitted parasites. These results suggest that the effects of increased resources and social aggregation of hosts are parasite-specific and can be dependent on parasite mobility and route of transmission, as well as sex-related differences in host behavior or physiology.